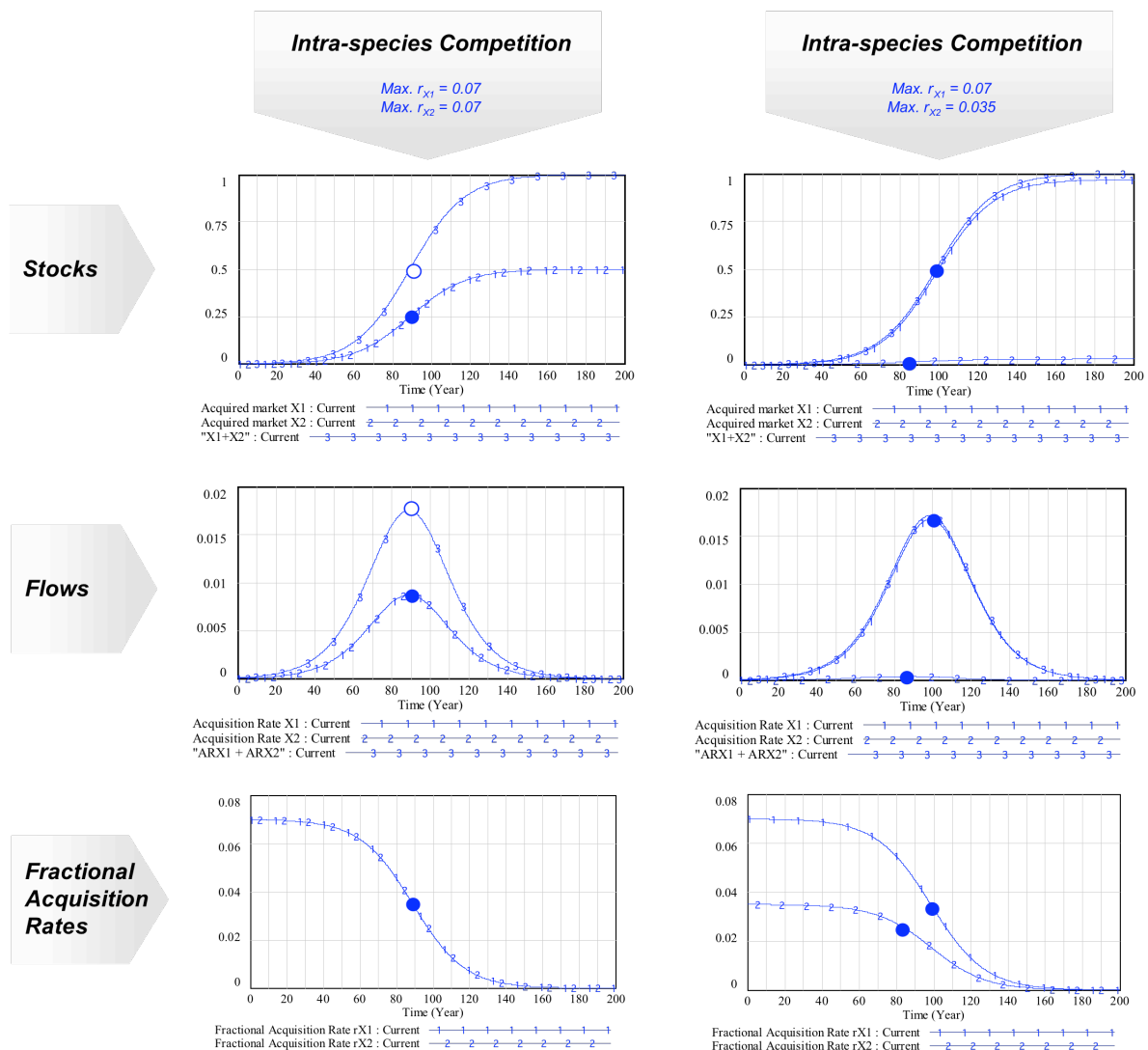


Figure 282 below illustrates the dynamic behavior of intra-species competition between two firms having differing fractional acquisition rates – one firm having twice the fractional acquisition rate than the other. This formulation simply assumes that one firm is more efficient than the other.

Here, the *principle of competitive exclusion* operates, namely that a nonlinear relationship exists between the efficiency of a firm (as expressed by its maximum fractional acquisition rate) and its success. Specifically, a doubling of the maximum fractional acquisition rate, results in a greater than doubling of the acquired market – here a 95% to 5% split of the acquired market. What is slightly counter-intuitive, is that the slower, less-competitive firm peaks sooner than the faster, more-competitive firm.

Figure 282: Dynamic Behavior of Competing *Fractional Acquisition Rates*



### 7.1.4 Inter-species Competition in a Constant Market

We will next cover the case of *inter-species* competition in a constant, unchanging environment. This case is weak theoretically because significant sustained environmental variation is required in order to produce and sustain significant variation in organizational species. Inter-species competition in a constant market could be a special parametric study when exploring inter-species competition in a logistic growth market, in which the market diffusion rate is much greater than the competitor growth rates.

The new, coupled system of differential equations is shown below:

$$dX/dt = AR_X = r_X X (1 - X/K - Y\alpha_{XY}/K) \tag{4a}$$

$$dY/dt = AR_Y = r_Y Y (1 - Y/K - X\alpha_{YX}/K) \tag{4b}$$

The incumbent species, X which builds the market is known in bio-ecology as an *r-strategist*, and the late-entrant challenger species, Y which takes the market is known as a *K-strategist* (MacArthur and Wilson, 1967). The primary difference between this formulation and the previous, is that each competitor's fractional net growth rates are no longer linearly density-dependent, with the (*Modular*) *r-strategist* growing faster when the environment is experiencing rapid growth, and the (*Integral*) *K-strategist* growing faster when the environment's rate of growth is slowing down, as shown in Figure 283 below.

$$r_X > r_Y \text{ when } (X+Y) < K/2 \tag{4c}$$

$$r_X < r_Y \text{ when } (X+Y) > K/2 \tag{4d}$$

Figure 283: Fractional Acquisition Rates of Firms in *Inter-species* Competition

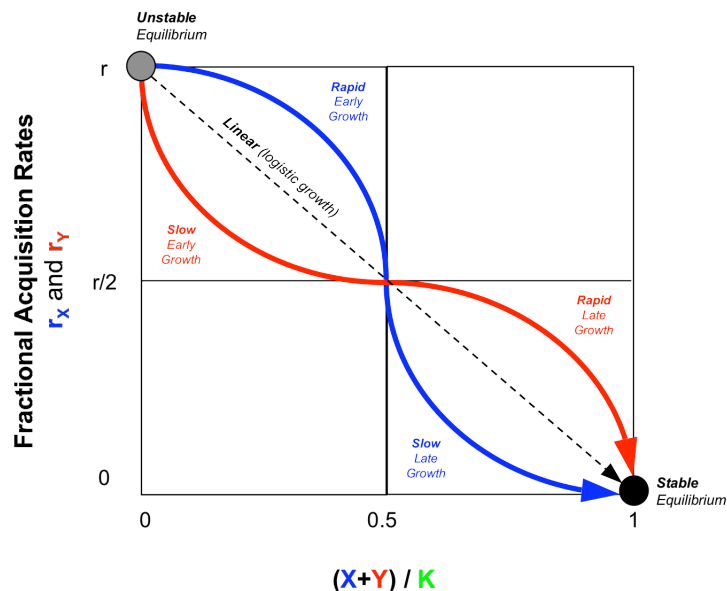


Figure 284 below illustrates the causal structure of this nonlinear second-order formulation, which results in *non-sigmoid* S-shaped growth of each competitor's market capture.

Figure 284: Model Structure of *Inter-species* Competition in a Constant Market

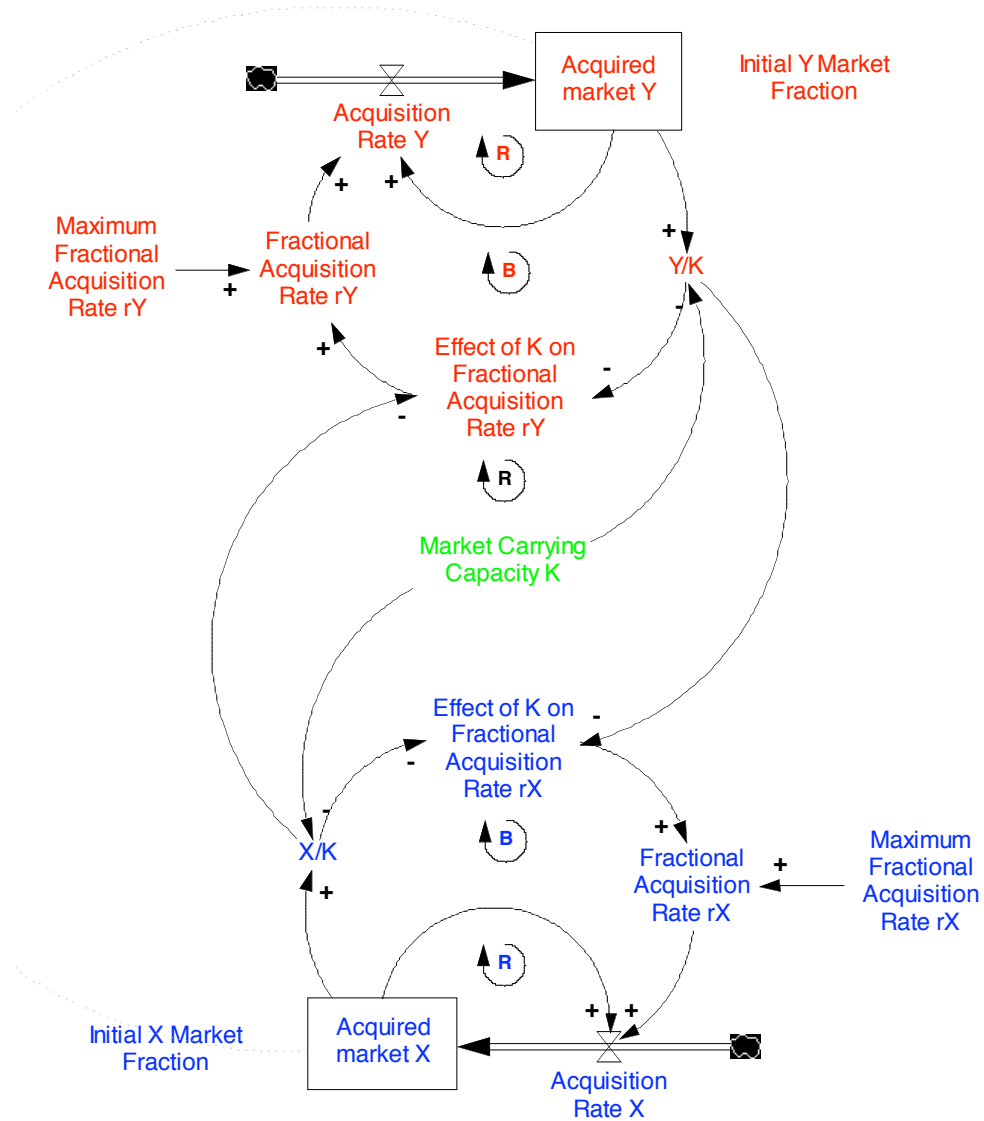
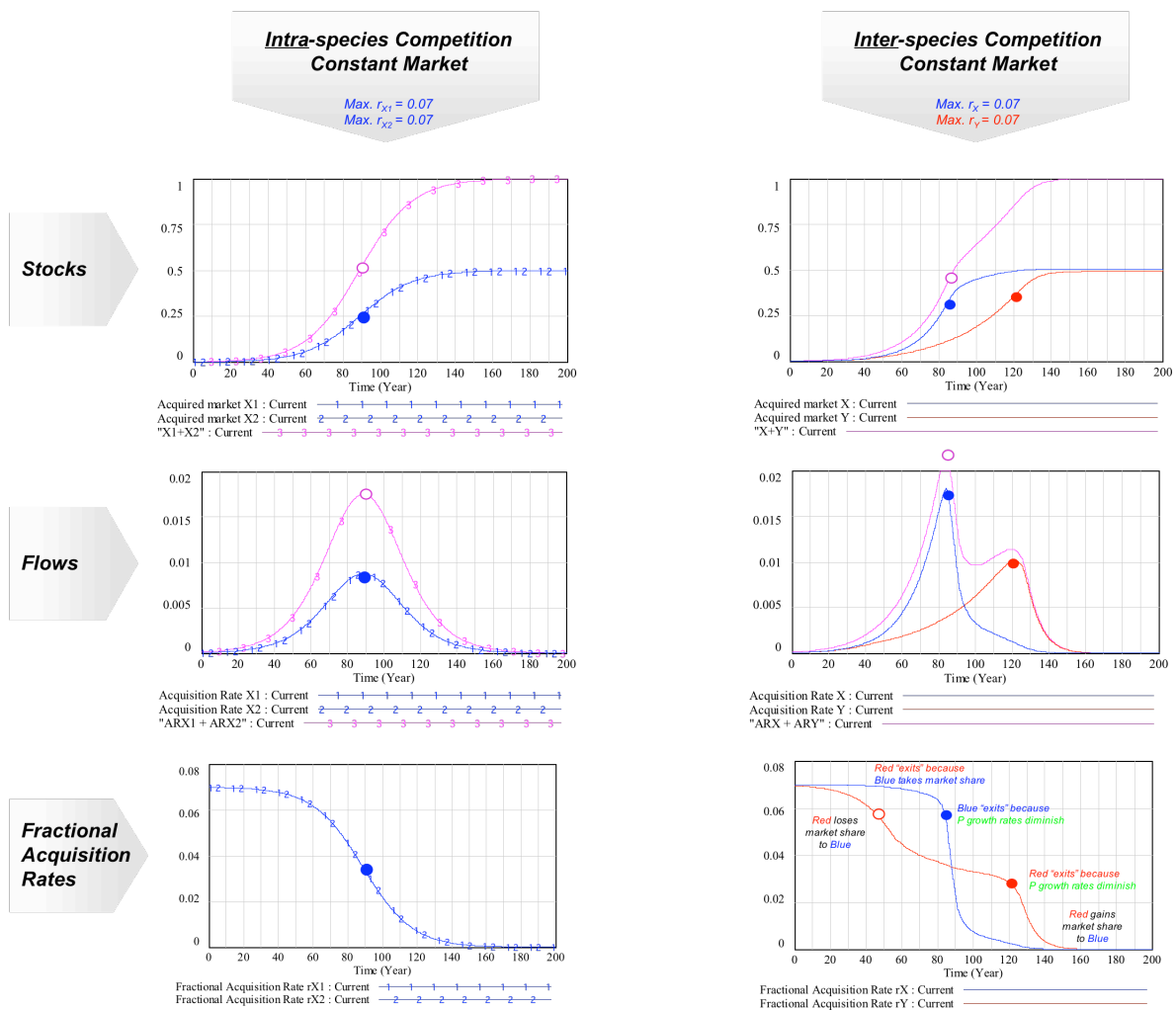


Figure 285 below illustrates the dynamic behavior of inter-species competition between heterogeneous firms in a constant market. First, note that the non-linear fractional acquisition rates result in non-logistic growth in the stocks and asymmetric flow diagrams. Second, note that their peak acquisition rates occur at different times, with X occurring before and Y occurring after the case of intra-species competition. Third, note that in spite of the fact that the maximum flow rates are different and occur at different times, the areas under the respective rate curves are similar, meaning that both firms ultimately split the market 50%-50%. Finally, note that X's fractional acquisition rate time history is a *single* reverse S-curve which is steeper than the intra-species case, and that Y's fractional acquisition rate time history is a *double* reverse S-curve.

Figure 285: Dynamic Behavior of *Inter-species* Competition in a *Constant* Market



## 7.2 Competition in a *Diffusing* Market (Quantity)

### 7.2.1 *Diffusing* Market (Quantity)

Next, we relax the assumption of a constant carrying capacity of the market or resource environment,  $K$  (Brittain, 1994). Instead, we permit sigmoid growth as it approaches its own inherent carrying capacity.<sup>963</sup> This assumption captures the scenario of a new product/service that either:

- 1) diffuses logistically throughout a constant population of potential consumers (Bass, 1969), or
- 2) diffuses instantaneously through a logistically-growing population of potential consumers (Verhulst, 1838), or
- 3) some combination of the two.

#### 7.2.1.1 First-Order Two-Stock Logistic Growth

Previously, we modeled a firm's logistic growth with one stock and two loops, reinforcing and balancing. We now demonstrate that this structure can be represented more intuitively for a market as a two-stock, two-loop structure by introducing a complementary variable, the potential market,  $P$ .

The new, coupled system of differential equations is shown in its most simple form below:

$$\begin{aligned} \text{noting } P = K - A \quad \frac{dP}{dt} = -DR &= -r_d A (1 - A/K) & (5a) \\ &= -r_d PA/K \end{aligned}$$

$$\begin{aligned} \text{noting } P = K - A \quad \frac{dA}{dt} = DR &= r_d A (1 - A/K) & (5b) \\ &= r_d PA/K \end{aligned}$$

Where:

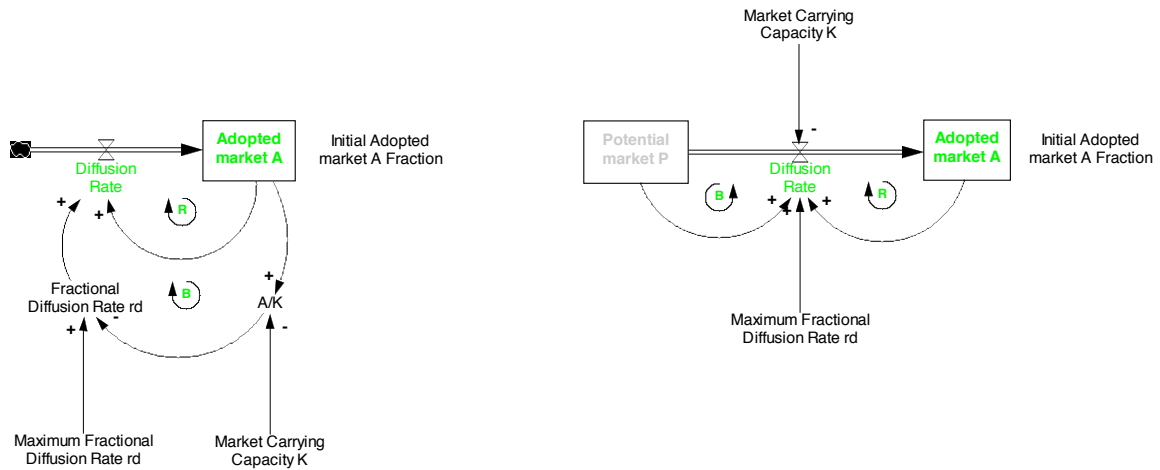
- $P$  = potential market
- $A$  = adopted market
- $dP/dt$  = the rate of change of the potential market
- $dA/dt$  = the rate of change of the adopted market
- $DR$  = diffusion rate of market (the inflow into  $A$ , outflow from  $P$ )
- $r_d$  = maximum fractional diffusion rate of the market

The equivalence of these two market growth model structures is shown in Figure 286 below.<sup>964</sup>

<sup>963</sup> For simplicity, we model a linear relationship between the diffusion rate and available carrying capacity, which results in logistic growth.

<sup>964</sup> Note this model structure is the same as modeling *chronic* infectious diseases, where the susceptible population all eventually becomes infected – also known as the SI model. See Sterman (2000), pp. 300-301.

Figure 286: Equivalence of Logistic Market Growth Model Structures



### 7.2.1.2 Bass Industry Diffusion Model

Although the above model captures the basic diffusion of a technology, product or service into a market, it suffers from a subtle modeling problem, namely how does the disequilibrium momentum get started? A simple way around the problem is to give the Adopted market A stock an initial positive value, which is shown above as the “Initial Adopted market A Fraction” and is formalized as a small fraction of the Carrying Capacity,  $K$ . While this mathematically solves the “start-up” problem, it implies that at time zero, there was already an existing diffused market, no matter how small.

A more appealing formal model of the start-up problem was used by Bass (1969), in which an additional balancing loop is used on the outflow from the Potential market  $P$  to initiate the model momentum. Bass conceived this operationally as an advertising function which generated market or product awareness. We add this additional structure to the model, with the new, coupled system of differential equations is shown in its most simple form below:

$$\text{noting } P = K - A \quad \frac{dP}{dt} = -DR = -r_d A (1 - A/K) + r_{ds} P \quad (5c)$$

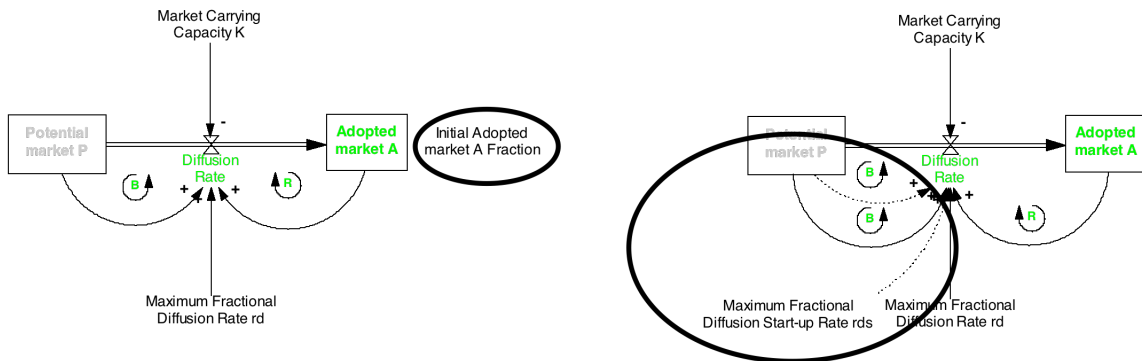
$$\text{noting } P = K - A \quad \frac{dA}{dt} = DR = r_d A (1 - A/K) + r_{ds} P \quad (5d)$$

Where:

- $r_{ds}$  = maximum fractional *start-up* rate of the diffusing market

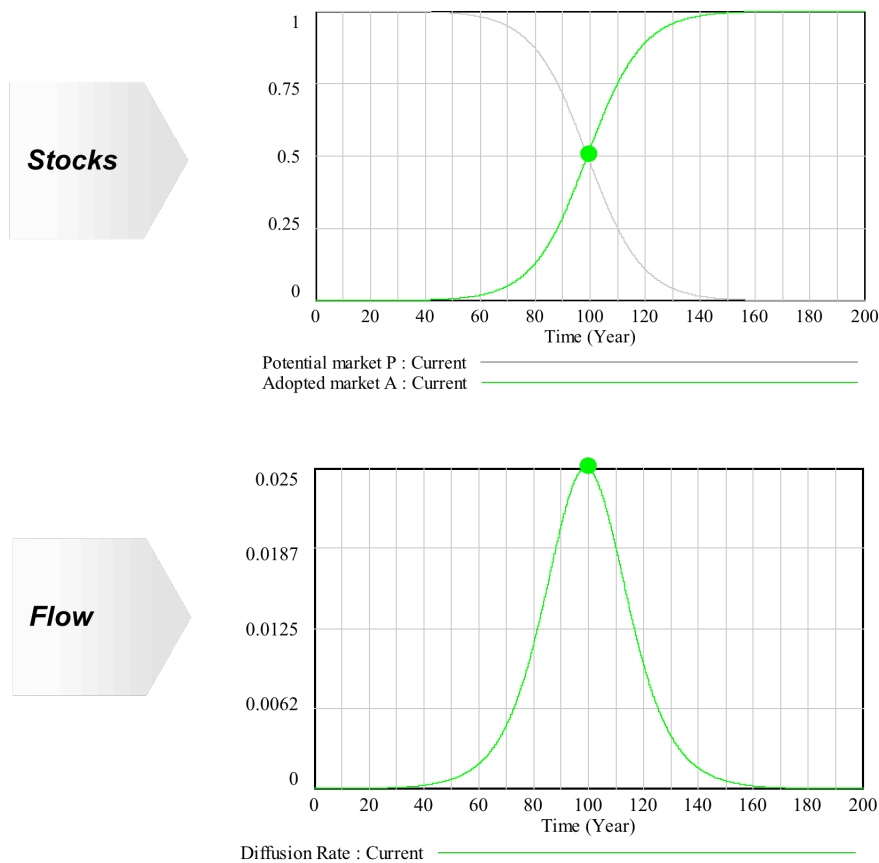
The Bass diffusion model formulation is shown in Figure 287 below and compared with the previous diffusion model.

Figure 287: Comparing the Structures of Diffusion Models



The Bass diffusion model is now applied not to individual products, but instead to aggregations of products or services at the industry level. The dynamic behavior of the Bass model is shown in Figure 288 below.<sup>965</sup>

Figure 288: The Dynamic Behavior of a Bass Industry Diffusion Model



<sup>965</sup> Note: the diffusion rate is comprised of both components due to advertising and word of mouth. As the Fractional Diffusion Start-up Rate is so small, its effects (i.e. a declining logistic curve) are not visible on the figure above.

### 7.2.1.3 Bass Industry Diffusion Model *with Replacements*

The above industry diffusion model assumes that once a unit of market is captured, it remains captured (or adopted) forever. This implies that the market consists of durable goods, with an infinite product life.

In order to make the model more generalizable or more applicable to a wider range of products and services covering a continuum of average product lives, we introduce the notion of replacements to the Bass industry diffusion model.

The new structure of the model requires a new outflow from the Adopted market A back towards the Potential market P, in which a new balancing loop on the outflow which controls the replacement rate.<sup>966</sup> The resulting behavior of this local structure is exponential decay.

The new, coupled system of differential equations is shown in its most simple form below:

$$dP/dt = RR - DR = \frac{A}{L} - (r_d A (1 - \frac{A}{K}) + r_{ds} P) \quad (5e)$$

noting  $P = K - A$

$$dA/dt = DR - RR = (r_d A (1 - \frac{A}{K}) + r_{ds} P) - \frac{A}{L} \quad (5f)$$

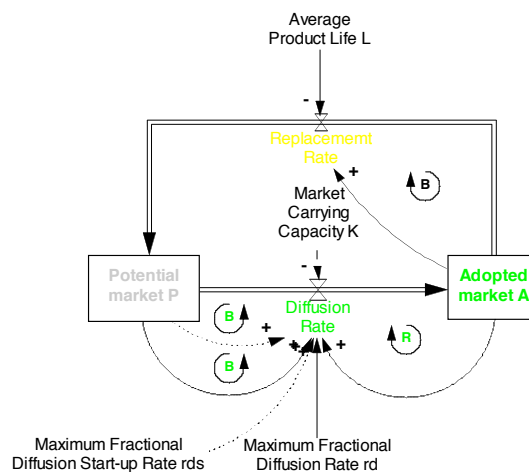
noting  $P = K - A$

Where:

- RR = replacement rate of market (the inflow into P, outflow from A)
- L = Average product life

The industry diffusion model with replacements is shown in Figure 289 below.

Figure 289: Bass Industry Diffusion Model *with Replacements*

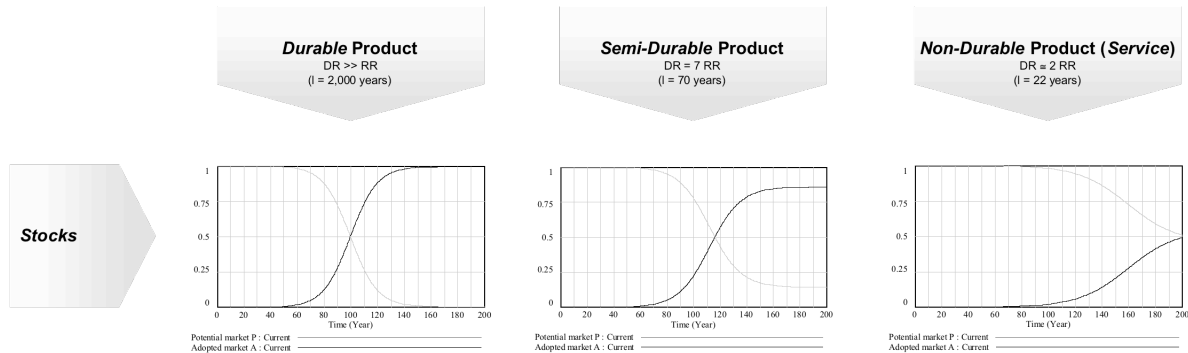


<sup>966</sup> Note, the primary model structure (two flows, three loops: balancing, reinforcing & balancing) is similar to the modeling of *acute* infectious diseases, where the susceptible population (Potential market P) can move to an infected state (Adopted market A) before they move towards a recovered state (Potential market P) – also known as the SIR model. See Serman (2000), pg. 303.



Figure 290 below illustrates the dynamic behavior of the stocks in this nonlinear *first-order* formulation. The results of a parametric study of durability of offering (decreasing from left to right) indicate sigmoid or S-shaped growth for the resource environment, albeit with inflection and peaking occurring later with decreasing durability. This occurs because the lower the durability, the more time spent producing replacement market (and the higher percentage of the Potential market P, that remains potential).

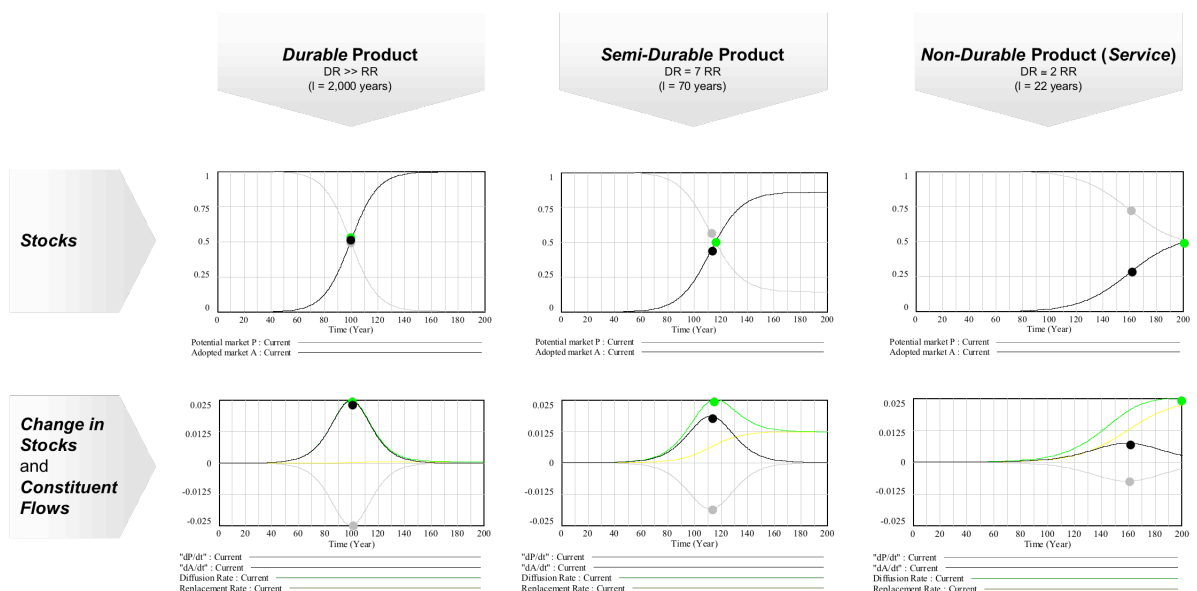
Figure 290: Dynamic Behavior of *Stocks*



The results of a parametric analysis of the rates in a diffusing market are presented in Figure 291 below. As the derivative (slope) of the stocks, equals the value of the rates, it is clear that the peak rates of change in the stocks decline as the durability decreases.

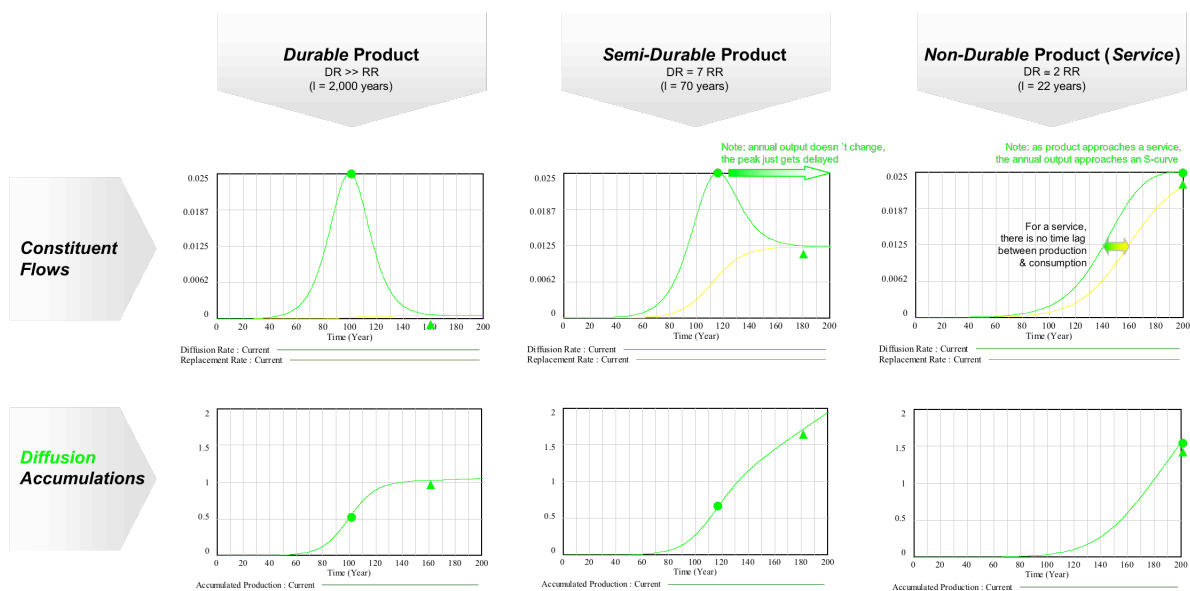
Dissecting the rate of change of Available market A (i.e.  $dA/dt$ ) into its constituent flows of diffusion and replacement rates, reveals that: 1) the replacement rates grow logistically and increasingly as durability decreases, 2) the diffusion rates maintain their peaks, but these peaks are delayed with decreasing durability, and the shape moves from bell-shaped to S-shaped; 3) the diffusion and replacement rates approach each other as durability decreases – the definition of a service.

Figure 291: Dynamic Behavior of *Changes in Stocks and Constituent Flows*



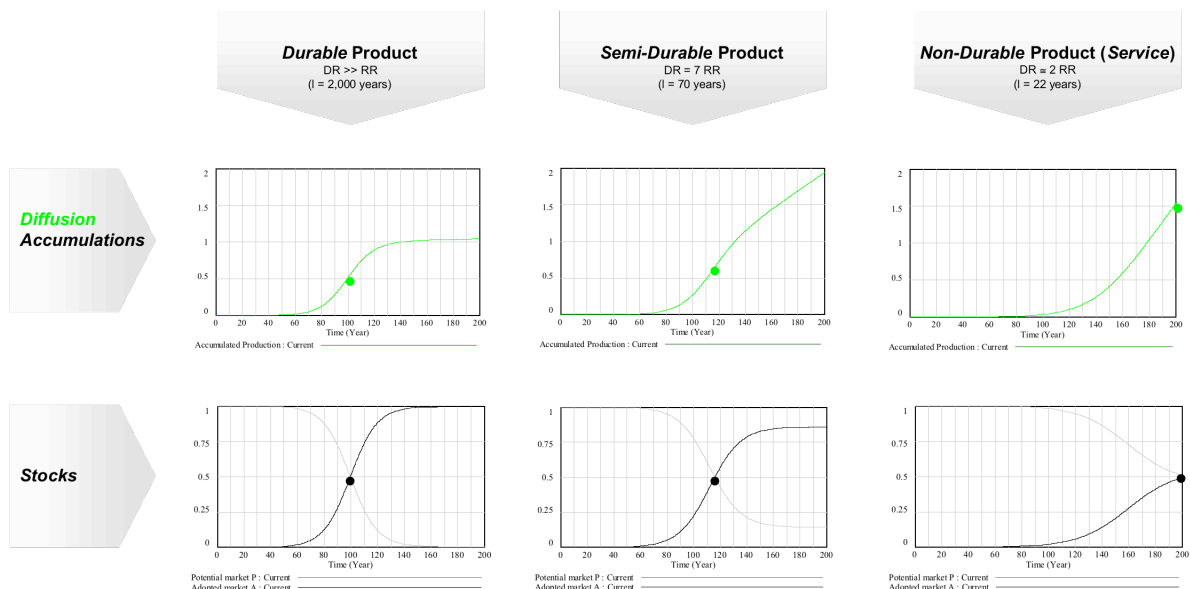
The results of a parametric analysis of the accumulated diffusion in market with replacements are presented in Figure 292 below. When the diffusion rates and replacement rates eventually meet in equilibrium, the accumulated diffusion continues to grow at that constant equilibrium rate. Finally, while durable product industries may diffuse relatively fast, their total market size is smaller than service industries, which diffuse relatively slowly, but which have larger total markets.

Figure 292: Dynamic Behavior of *Diffusion Rates and Accumulated Diffusion*



Finally, coming full circle, the results of a parametric analysis of the accumulated diffusion in market with replacements are presented in Figure 293 below. For a durable product, the accumulated diffusion is the same as the Adopted market A, as there are no retirements. For decreasing durability, the meaning of the Adopted market A loses some relevance.

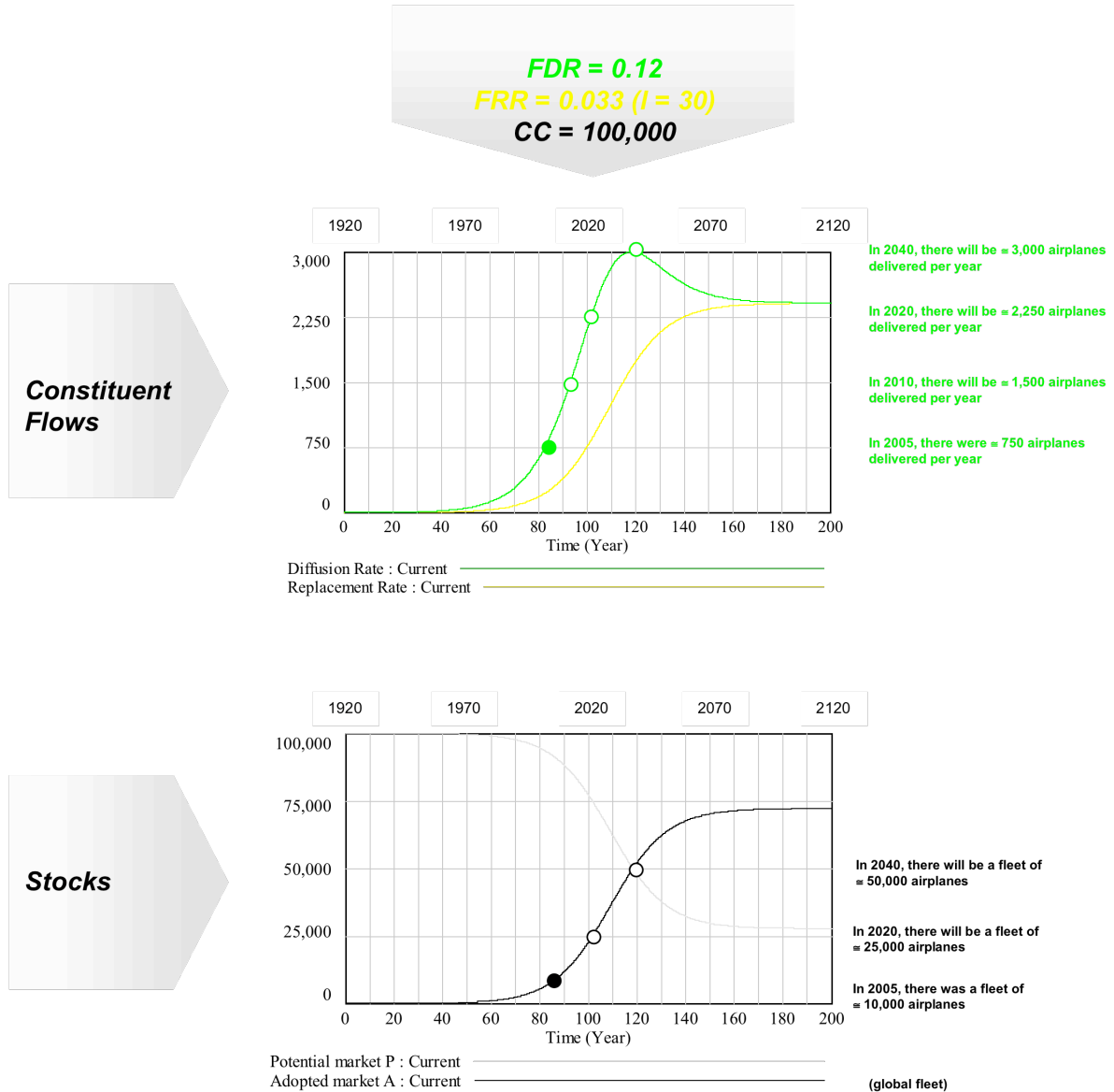
Figure 293: Dynamic Behavior of *Accumulated Diffusion & Stocks*



### 7.2.1.4 Industry Studies of Diffusing Markets

This section demonstrates how the diffusing market model can be applied conceptually to a series of industries.<sup>967</sup> Figure 294 below demonstrates how the diffusing market model is applied to the commercial airplane industry.

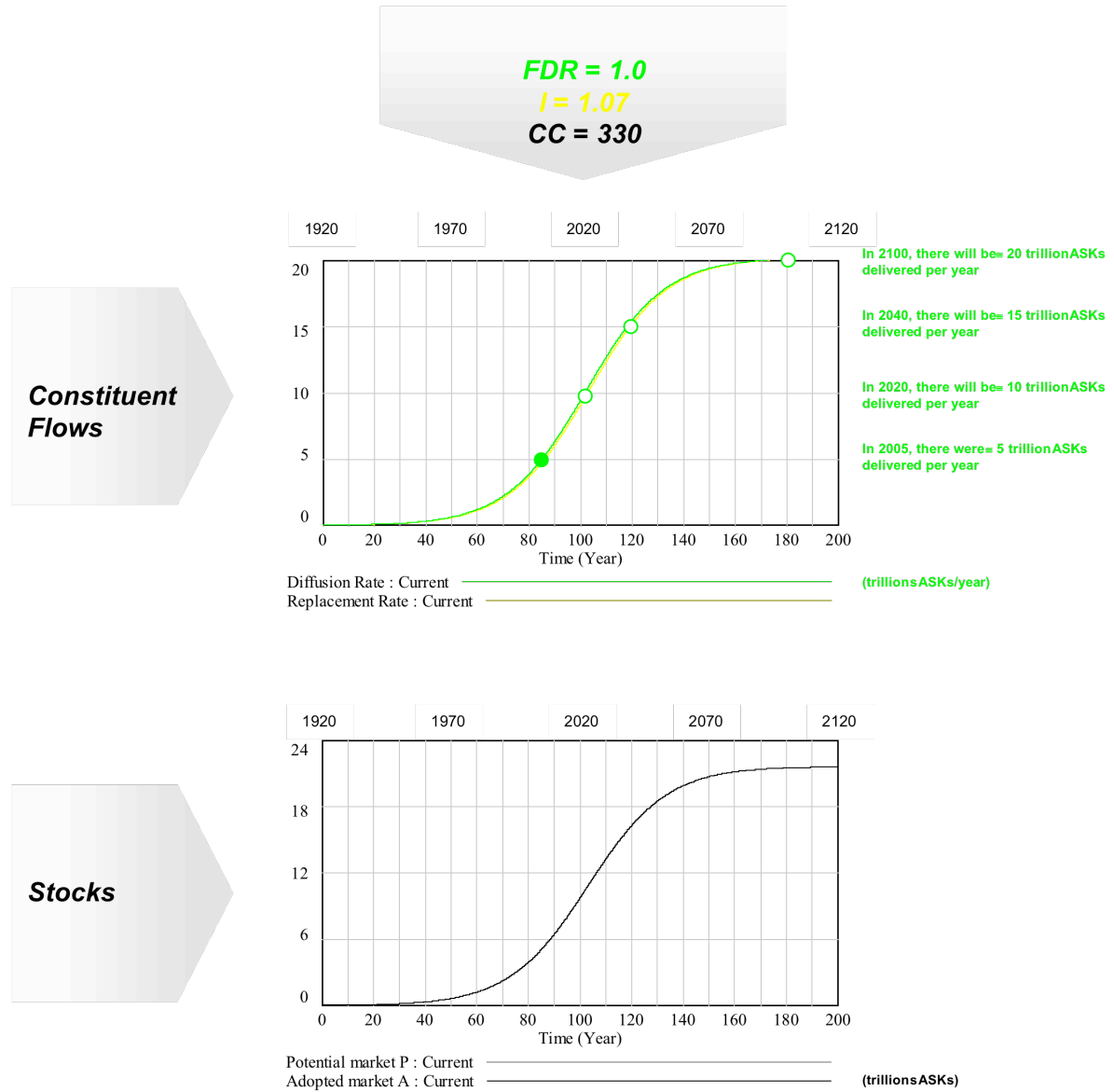
Figure 294: Diffusing Market in the *Commercial Airplane* Industry



<sup>967</sup> The purpose of this section is not to offer detailed calibrated models, but merely a series of conceptual models.

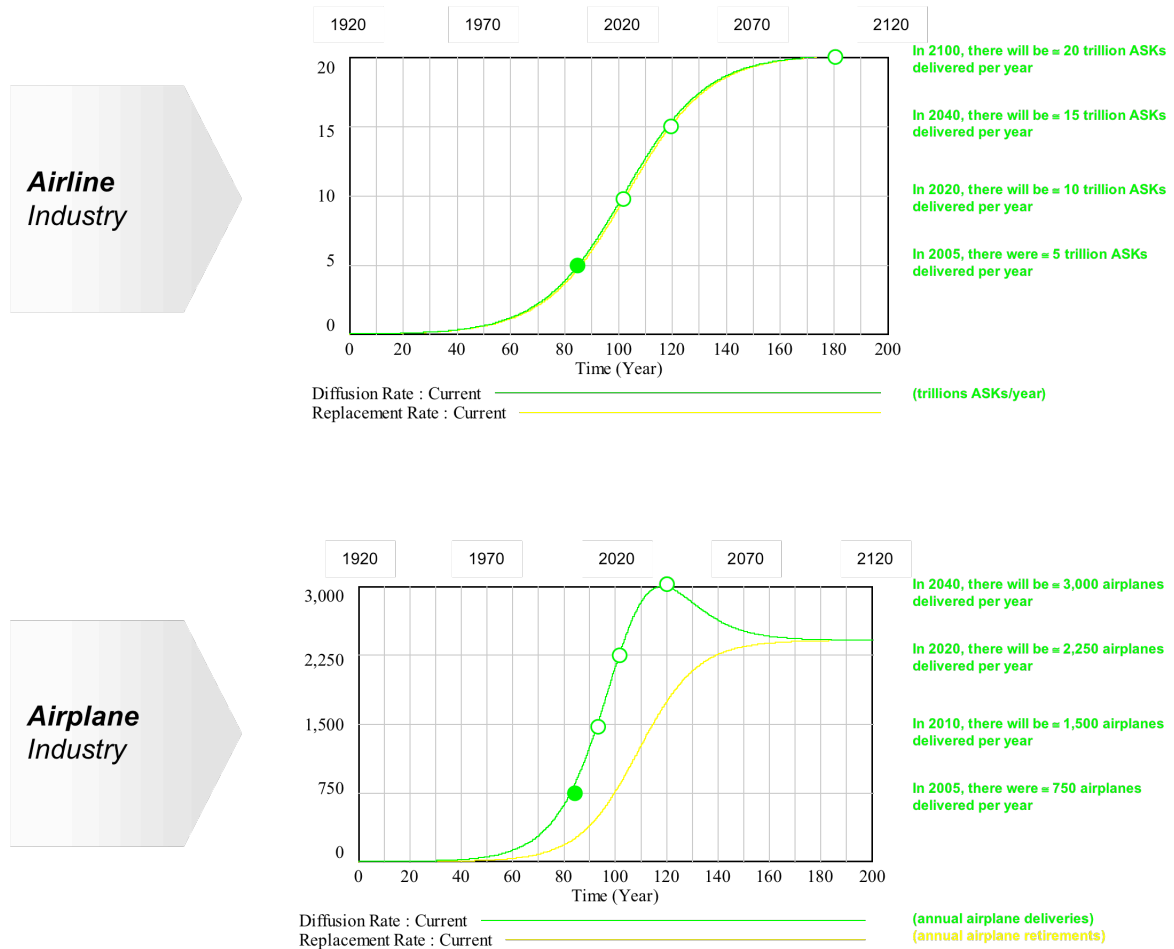
Figure 295 below demonstrates how the diffusing market model is applied to the global airline industry.

Figure 295: Diffusing Market in the *Global Airline Industry*



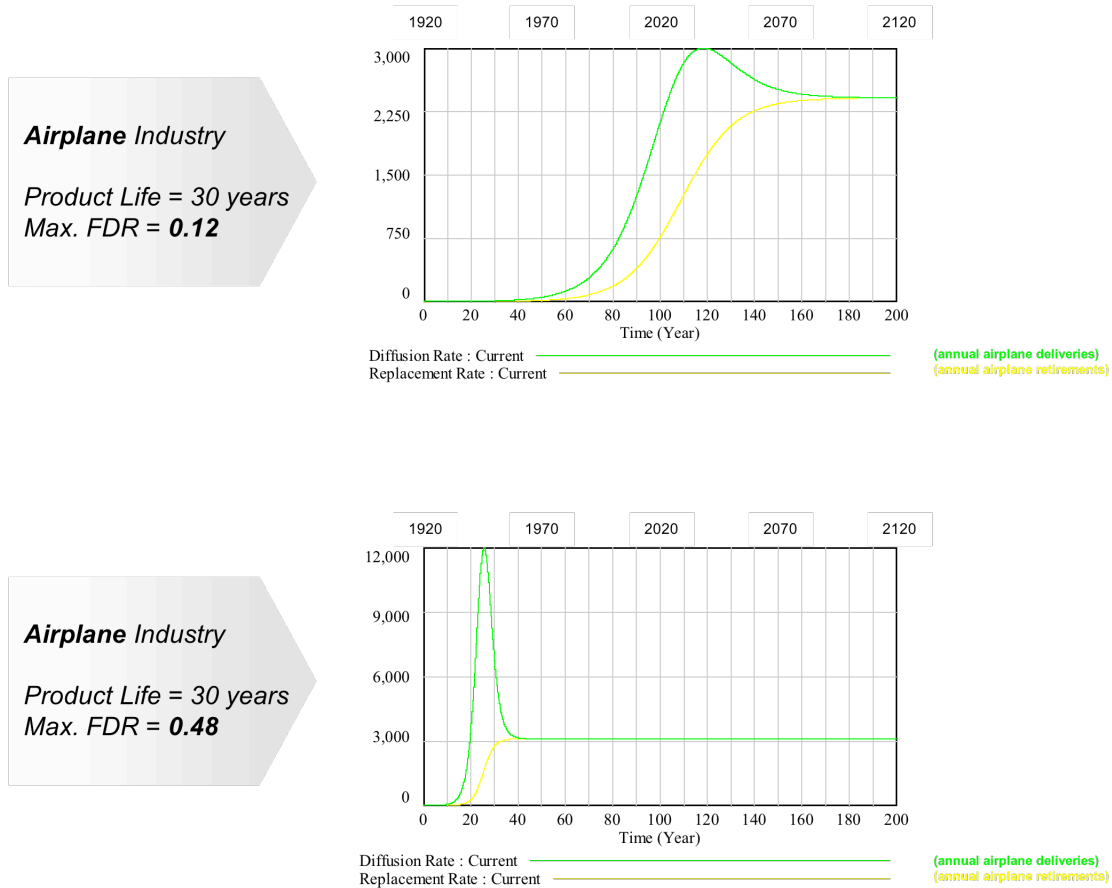
Finally, when comparing the dynamics of a value chain, Figure 296 below demonstrates how the diffusing market model is applied to the global airline and commercial airplane industry.

Figure 296: Diffusing Market in the *Global Passenger Air Transport Value Chain*



Intuitively, one may think of airplanes (having 30 year product lives) as being relatively durable goods. But from the previous figures, their annual production rates do not exhibit the classic “bell-shaped curve” associated with the first derivative of an S-shaped stock. What this demonstrates, however, is that the notion of product “durability” is relative to the diffusion rate of the industry. For example, if we kept the product life of an airplane as 30 years, but had the the diffusion of air transport increase say four-fold, we would begin to see the classic “bell-shaped curve” as shown in Figure 297 below.

Figure 297: Comparing Product Durability vs. Market Diffusion Rate



### 7.2.1.5 Market Diffusion & Obsolescence

Having produced a model of how a market “grows” or diffuses, we will explore how a market “dies” or becomes overtaken by a substitute market. Instead of discussing this here, it will be treated as a special case covered in section 7.5 under “Advanced Topics.”

### 7.2.2 Intra-species Competition in a Diffusing Market

Next, we reintroduce two members of the same species, competing for the logistically growing market. The new, coupled system of differential equations is shown in its most simple form below:

$$dX_1/dt = AR_{X1} = r_{X1}X_1 - r_{X1}X_1^2/K - r_{X1}X_1X_2\alpha_{12}/K \quad (6a)$$

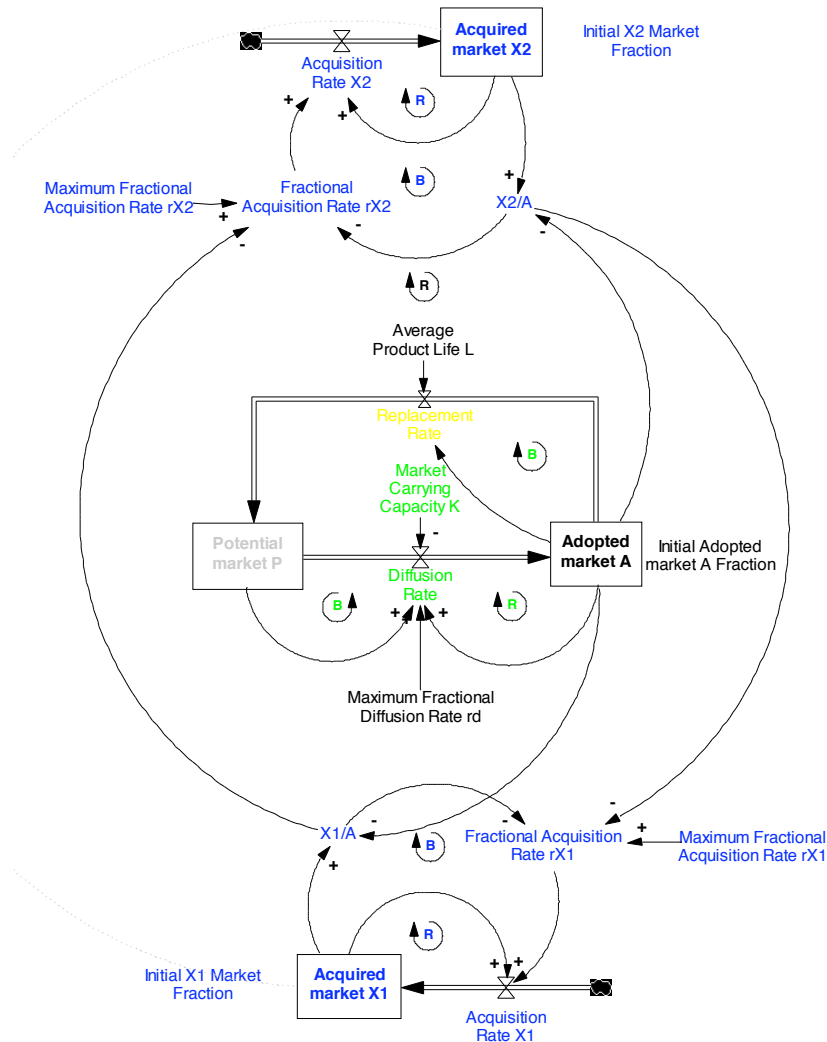
$$dX_2/dt = AR_{X2} = r_{X2}X_2 - r_{X2}X_2^2/K - r_{X2}X_2X_1\alpha_{21}/K \quad (6b)$$

$$dP/dt = RR - DR = A/L - (r_dPA/K + r_{ds}P) \quad (6c)$$

$$dA/dt = DR - RR = (r_dPA/K + r_{ds}P) - A/L \quad (6d)$$

Figure 298 below illustrates the causal structure of this nonlinear *third-order* formulation, which again results in sigmoid or S-shaped growth for both the resource environment and the dominant firm (or population of firms) that created it.

Figure 298: Model Structure of *Intra-species Competition in a Diffusing Market*



Although this refinement of Hannan and Freeman’s (1977) classic does not itself add new insights into the behavior of competing organizations or populations, it is a necessary building block for the next step of the formulation of the evolution of business ecosystems, namely, it establishes the condition necessary for the establishment of interspecies competition, resulting in an extension of the theory of competitive exclusion (Gause, 1934).

Figure 299 below illustrates the fractional acquisition rates  $r_x$  as a function of the available carrying capacity of two homogeneous competitors (i.e. both are equally efficient) engaged in intra-species competition.

Figure 299: Fractional Acquisition Rates of *Homogeneous* Firms in Intra-species Competition

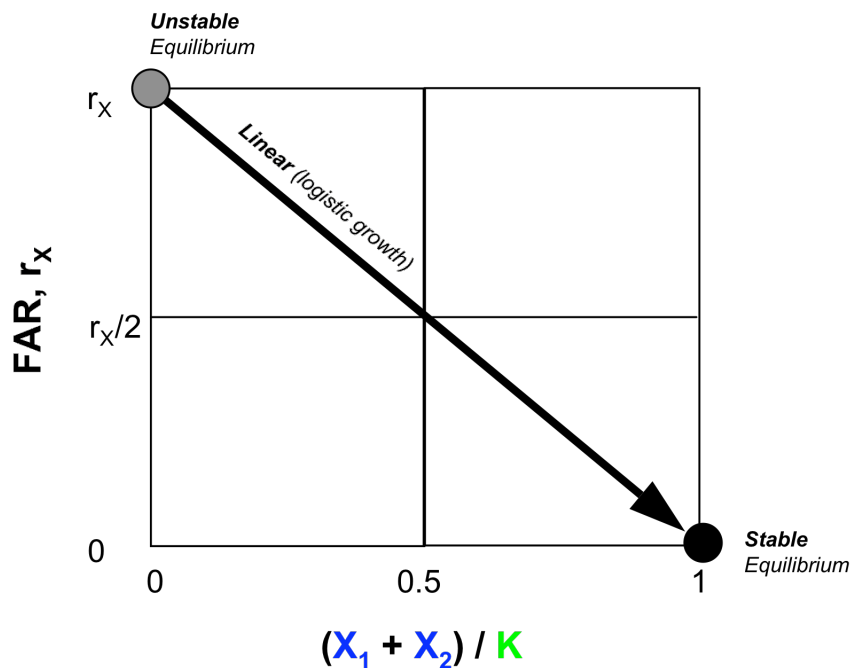


Figure 300 below illustrates the dynamic behavior of intra-species competition between homogeneous firms in a logistically diffusing market, having identical but increasing maximum fractional acquisition rates,  $r_x$ . First in looking at the stocks, note that identical competitors continue to split the market 50%-50%. Next in looking at the stocks and flows, note that a phase lag develops between demand and supply, i.e. the Adopted market A, and the sum of the competitors’ Acquired markets X, when the firms’ maximum fractional acquisition rates are relatively low. Finally note that when firms’ Fractional Acquisition Rates are very high (i.e. 1.0), the FARs initially drop very fast, because initially the firms are growing much faster than the market is diffusing, in order to make up for the initial gap made by the finite A at time 0 (a start-up problem).



Figure 300: Dynamic Behavior of *Intra-species* Competition in a *Diffusing* Market (with Increasing Homogeneous Maximum Fractional Acquisition Rates)

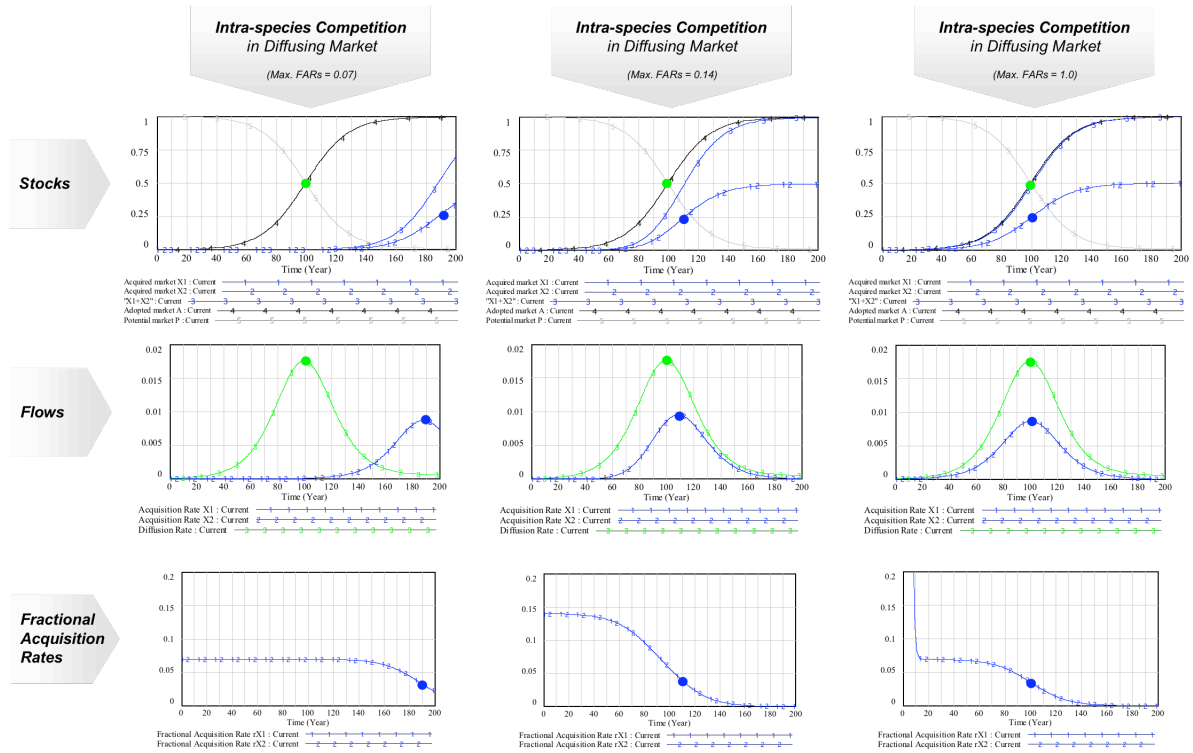


Figure 301 below illustrates the fractional acquisition rates  $r_X$  as a function of the available carrying capacity of two heterogeneous competitors (i.e. one is more efficient than the other) engaged in intra-species competition.

Figure 301: Fractional Acquisition Rates of *Heterogeneous* Firms in Intra-species Competition

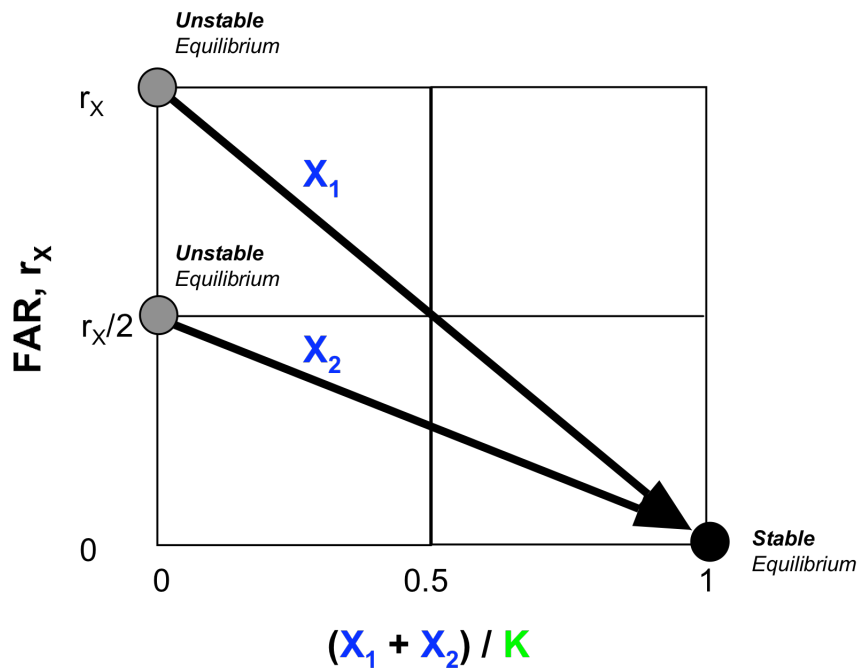
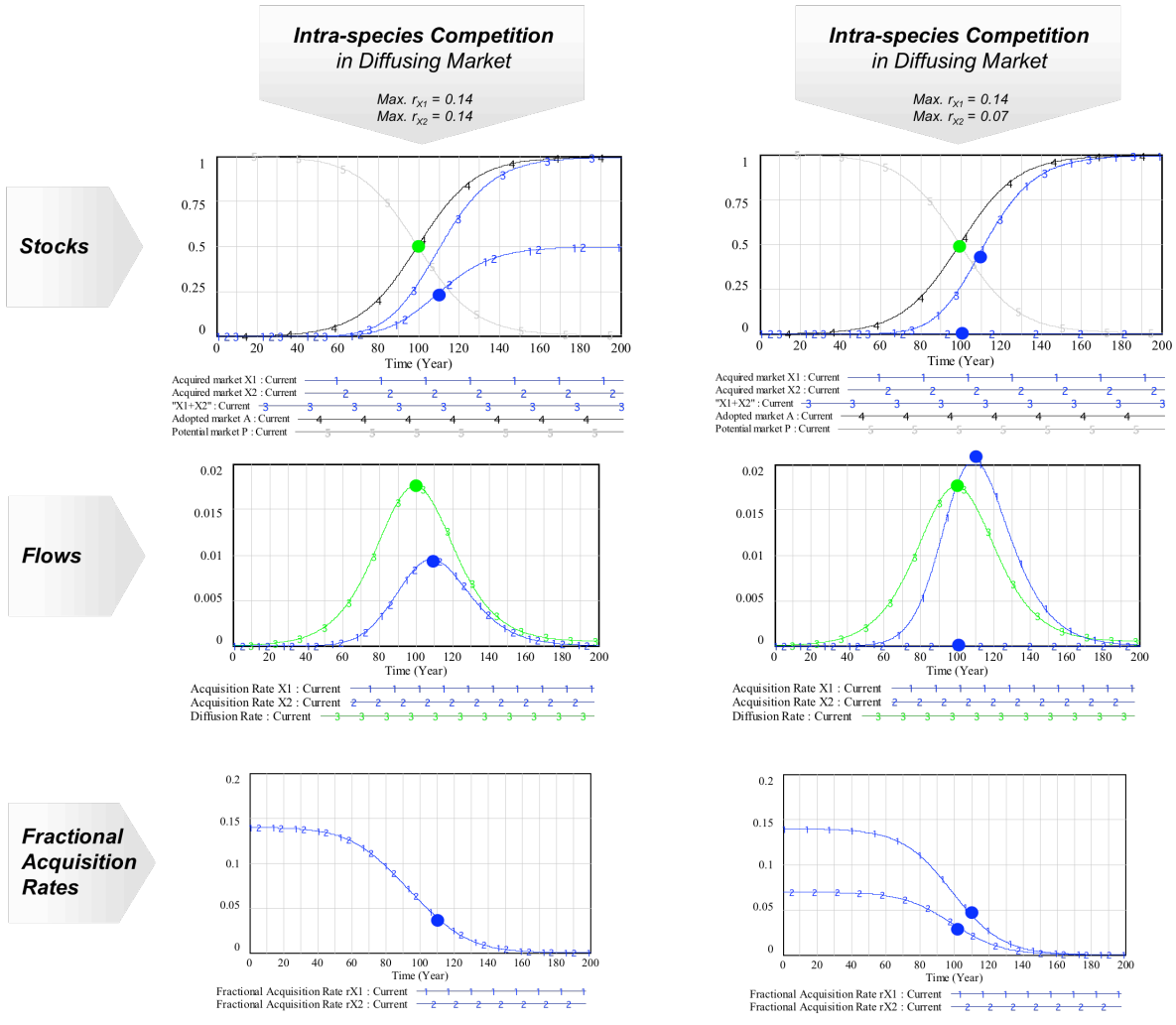


Figure 302 below illustrates the dynamic behavior of intra-species competition between homogenous firms in a logistically diffusing market, having heterogeneous maximum fractional acquisition rates,  $r_X$ . Here, when the firms have heterogeneous Maximum Fractional Acquisition Rates, the principle of Competitive Exclusion again occurs.

Figure 302: Dynamic Behavior of *Intra-species* Competition in a *Diffusing* Market (with Heterogeneous Maximum Fractional Acquisition Rates)



### 7.2.3 Inter-species Competition in a Diffusing Market

Since in the previous stage, we have allowed the environment to grow logistically, we can now acknowledge the possibility of variation in organizational forms as a consequence of variation in environmental rates of growth. This gives rise to the potential for dominance switching: i.e. the late entry of a new species of organization, and the associated early exit of the incumbent species. The two types of competing organizational species modeled therefore reflect either increasing rates or decreasing rates of environmental growth.

The new, coupled system of differential equations is shown below:

$$r_X > r_Y \text{ when } (X+Y) < K/2 \quad dX/dt = r_X X - r_X X^2/K - r_X X Y \alpha_{XY}/K \quad (7a)$$

$$r_X < r_Y \text{ when } (X+Y) > K/2 \quad dY/dt = r_Y Y - r_Y Y^2/K - r_Y X Y \alpha_{YX}/K \quad (7b)$$

$$dP/dt = RR - DR = A/L - (r_d PA/K + r_{ds} P) \quad (7c)$$

$$dA/dt = DR - RR = (r_d PA/K + r_{ds} P) - A/L \quad (7d)$$

The incumbent species, X which builds the market is known in bio-ecology as an *r-strategist*, and the late-entrant challenger species, Y which takes the market is known as a *K-strategist* (MacArthur and Wilson, 1967). The primary difference between this formulation and the previous, is that each competitor's fractional net growth rates are no longer linearly density-dependent, with the (*Modular*) *r-strategist* growing faster when the environment is experiencing rapid growth, and the (*Integral*) *K-strategist* growing faster when the environment's rate of growth is slowing down, as shown in Figure 303 below.

Figure 303: Fractional Acquisition Rates of Competing Firms in a *Diffusing* Market

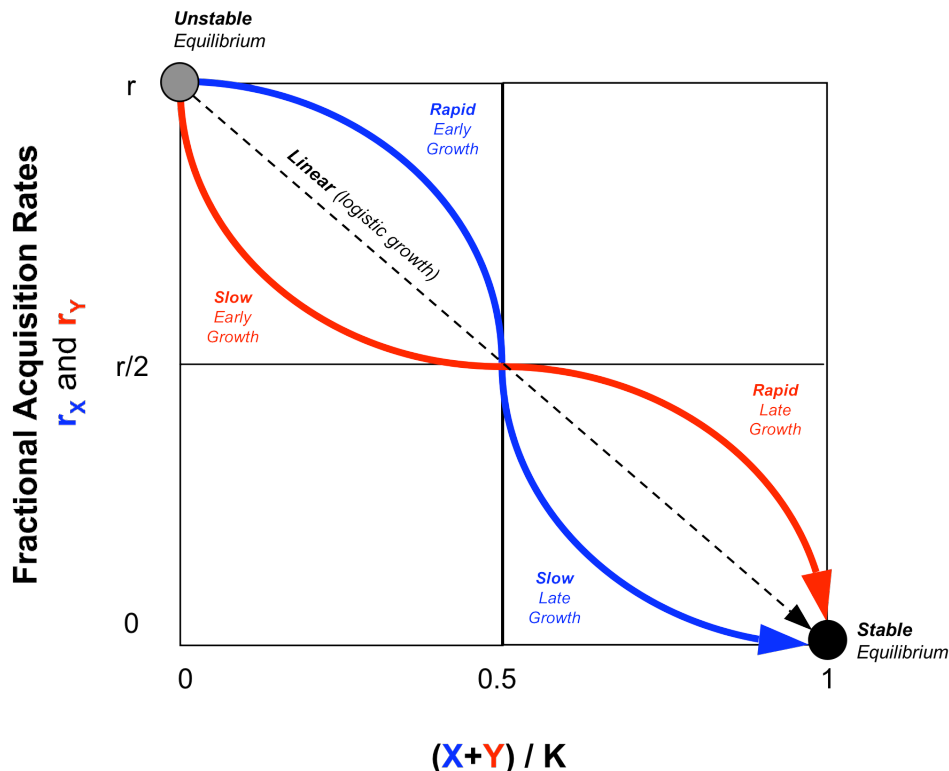


Figure 304 below summarizes the causal structure of this nonlinear *third-order* formulation which results in S-shaped (but no longer logistic) growth for the competitor's state variables. Crucially note that the r-strategist tends to exit when the growth rate of the market begins to drop below its own growth objectives. Environmental variance therefore produces variance in the architectures of the organizational sets, which creates symbiotic inter-species competition, with a more complex theory of competitive exclusion.

Figure 304: Model Structure of *Inter-species Competition in a Diffusing Market*

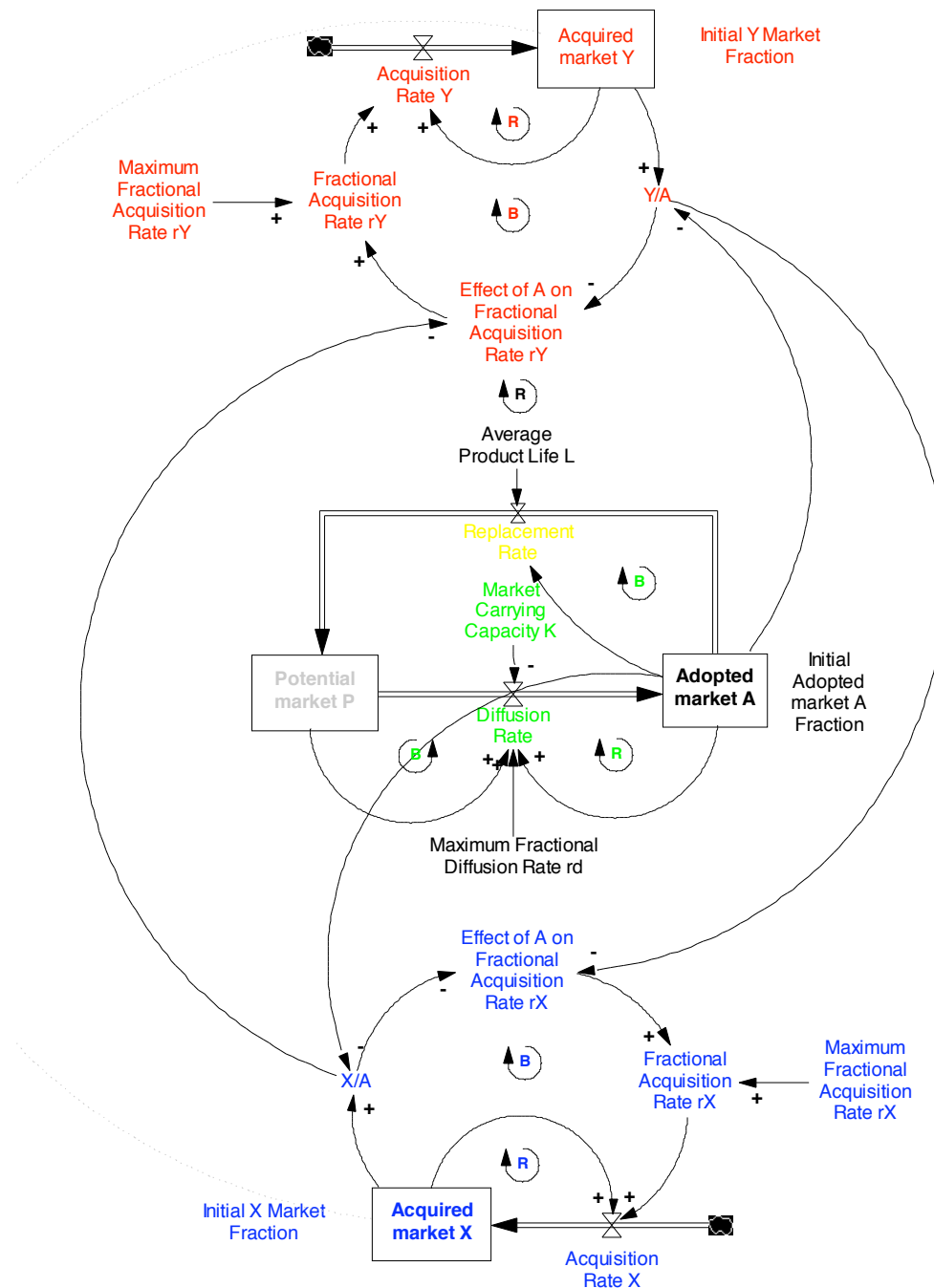


Figure 305 below compares the dynamic behavior of inter-species competition between heterogeneous firms in constant and diffusing markets.

Figure 305: Dynamic Behavior Comparing *Inter-species* competition in *Constant & Diffusing* Markets

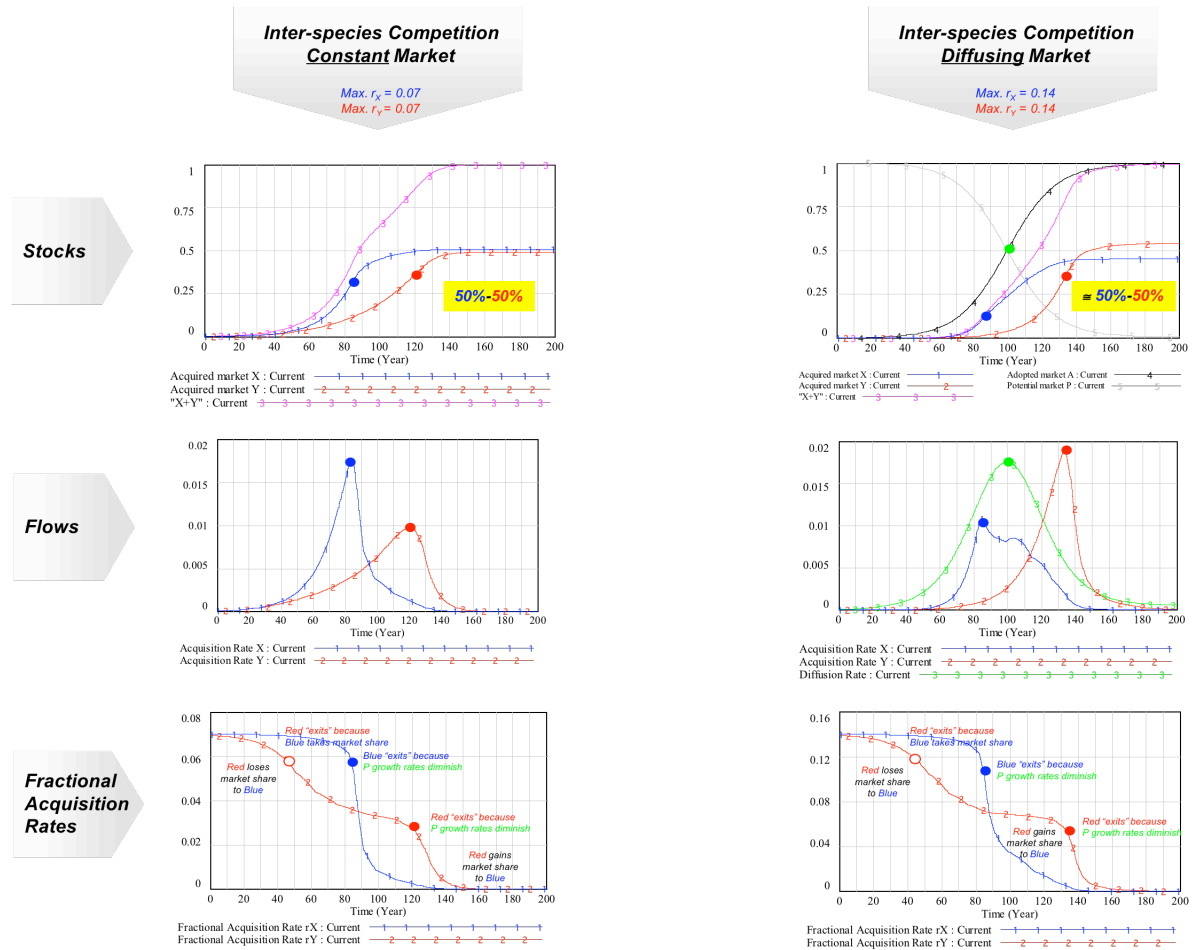
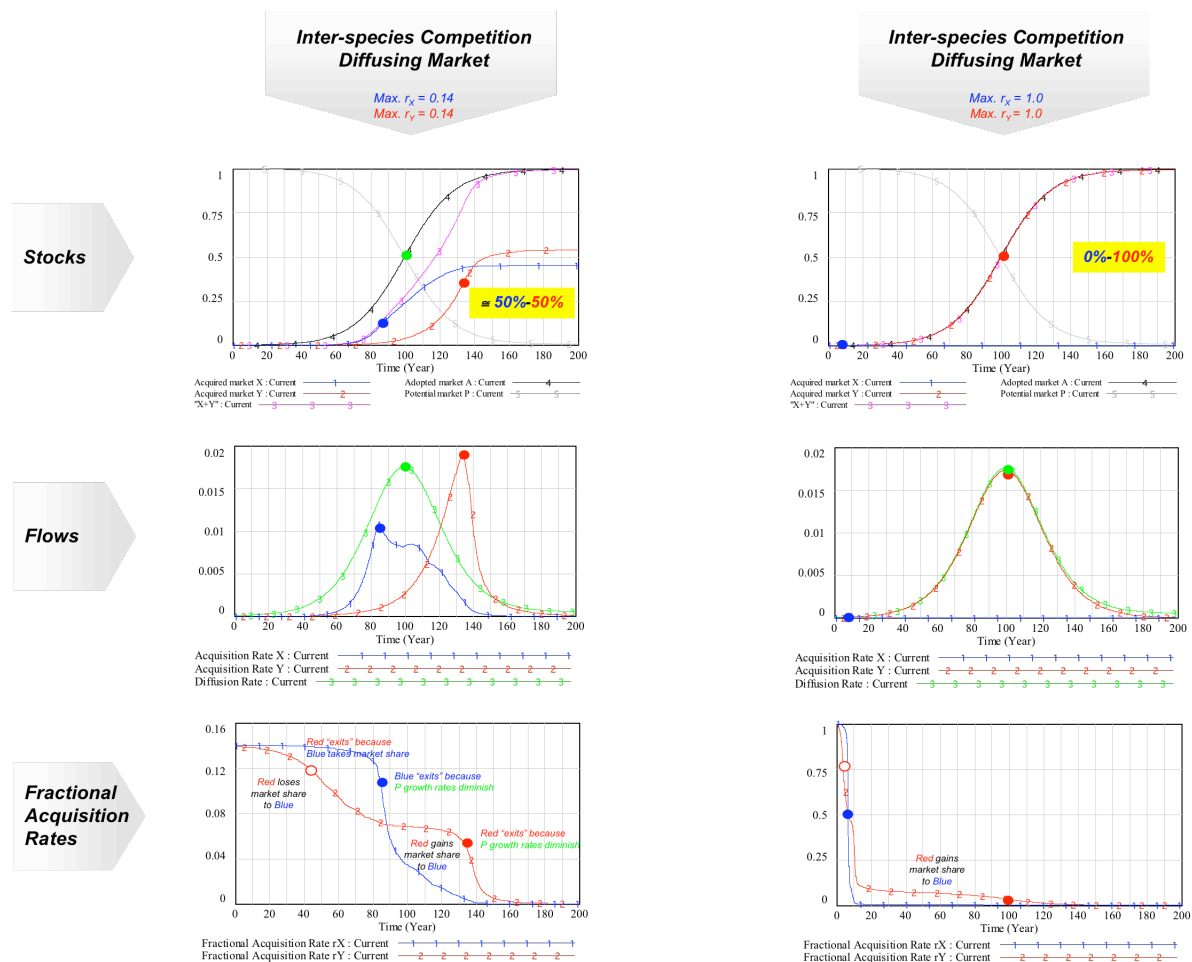


Figure 306 below illustrates the dynamic behavior of inter-species competition between heterogeneous firms in a diffusing market, in which both competitors have the same maximum fractional net growth rates.

Figure 306: Dynamic Behavior Comparing *Inter-species* competition in a *Diffusing* Market



### 7.3 Competition in a *Commoditizing* Market (Quality)

#### 7.3.1 *Commoditizing* Market (Quality)

Having permitted the carrying capacity of the market,  $K$  to grow logistically, we now go back to a constant market assumption, but instead allow the *quality* of the market customer preferences to diffuse (or commoditize) from high-performance *differentiated* products and services towards *low-cost* products and services (Abernathy and Utterback, 1978; Christensen, 1997). This in effect allows market niches to evolve, which has the potential to shape the entry and exit of different species of organizational sets or enterprise architectures.

In the model of market diffusion discussed previously, the potential market is assumed to decay *logistically* (and the associated adopted market is assumed to grow logistically). This makes some intuitive sense, as market growth initially builds slowly with increasing speed, as the customers become more aware of the product/service, and as the suppliers build capacity/capabilities on an increasing returns basis. These increasing rates of growth eventually give way to slowing rates of growth due the approach of the finite carrying capacity of the market. Such causal structure generates logistic behavior.

A legitimate question arises however regarding the commoditization in a market, namely does the supply/demand for high-performance differentiated goods/services decay exponentially, or logistically (like quantity growth). Do the rates of commoditization initially begin at their maximum, or is there initially a slow period of commoditization (caused by entrepreneurially innovative inertia) before the onset of commoditization?

In order to build a model of such commoditization, we begin with a simple, single-loop (balancing) producing exponential decay of the differentiated products niche, before we move onto a more complex double-loop (balancing and reinforcing) producing logistic decay of the differentiated products niche. The governing causal logic will ultimately be determined via careful longitudinal empirical data collection and analysis.

##### 7.3.1.1 Single-Loop *Exponential* Decay

The differential equations defining exponential decay are shown below:

$$dD/dt = - CR = - r_c D \quad (8a)$$

$$dC/dt = CR = r_c D \quad (8b)$$

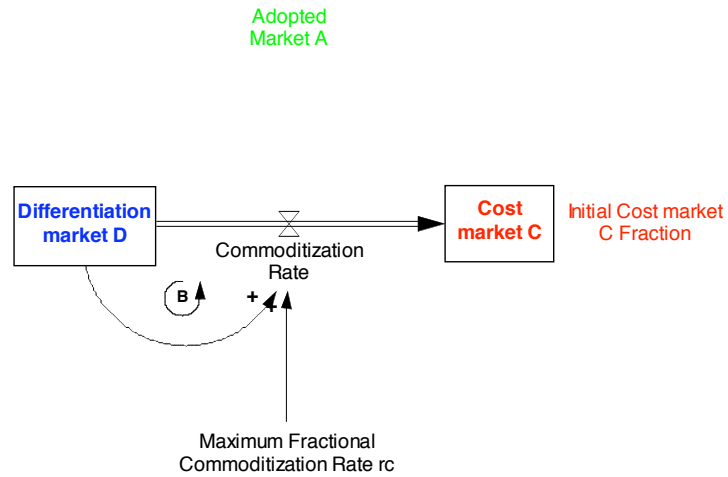
Where:

- $D$  = the market for *differentiated* products & services
- $C$  = the market for *cost-leadership* in products & services
- $dD/dt$  = the rate of change of the market for *differentiated* products & services
- $dC/dt$  = the rate of change of the market for *cost-leadership* in products & services
- $CR$  = commoditization of market (the outflow from  $D$ , the inflow into  $C$ )
- $r_c$  = maximum fractional commoditization rate of the market



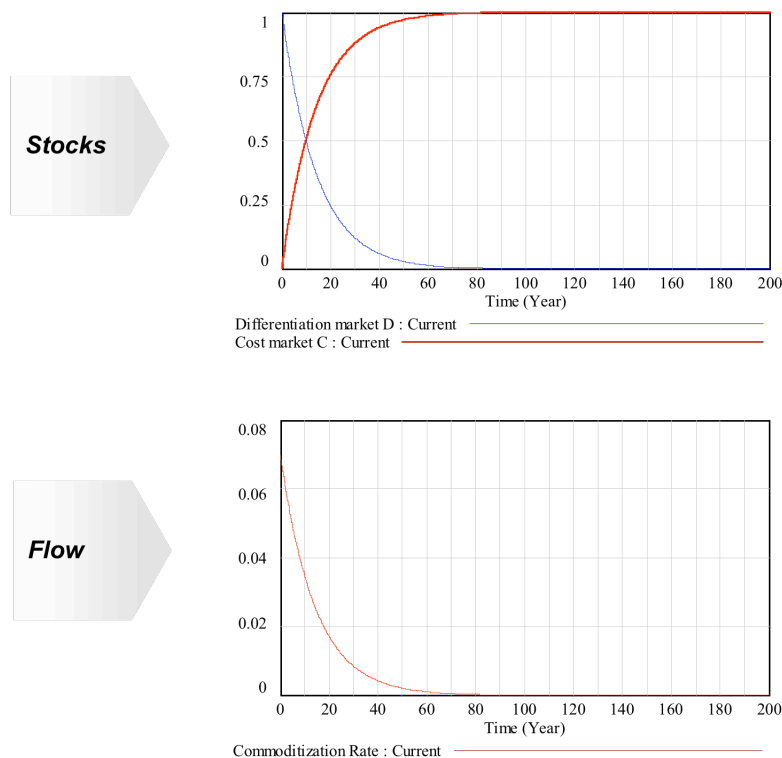
The basic single-loop commoditization model is shown in Figure 307 below. Note that the carrying capacity of the adopted market, A plays no role here, with the fractional commoditization rate  $r_c$  not being reduced.

Figure 307: The Structure of a Commoditizing Market (with *Exponential Decay*)



The dynamic behavior of a commoditizing market with exponential decay of the original differentiation niche is shown in Figure 308 below.

Figure 308: Dynamic Behavior of a Commoditizing Market (with *Exponential Decay*)



### 7.3.1.2 Double-Loop *Logistic* Decay

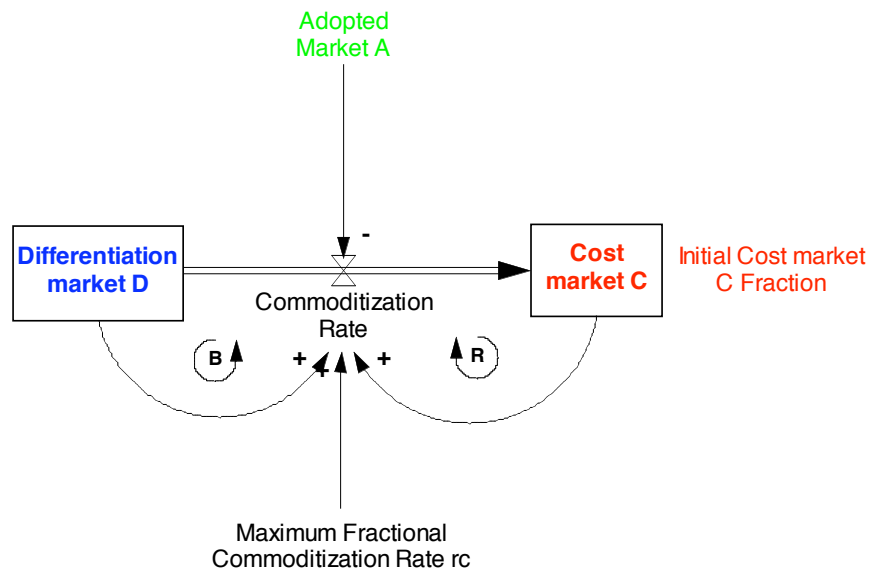
Next, we add a reinforcing loop on the inflow to the cost market. The differential equations defining logistic decay are shown below:

$$\text{noting } D = K - C \quad \begin{aligned} \frac{dD}{dt} &= -CR = -r_c C (1 - C/K) & (8c) \\ &= -r_c DC/K \end{aligned}$$

$$\text{noting } D = K - C \quad \begin{aligned} \frac{dC}{dt} &= CR = r_c C (1 - C/K) & (8d) \\ &= r_c DC/K \end{aligned}$$

The double-loop commoditization model is shown in Figure 309 below.

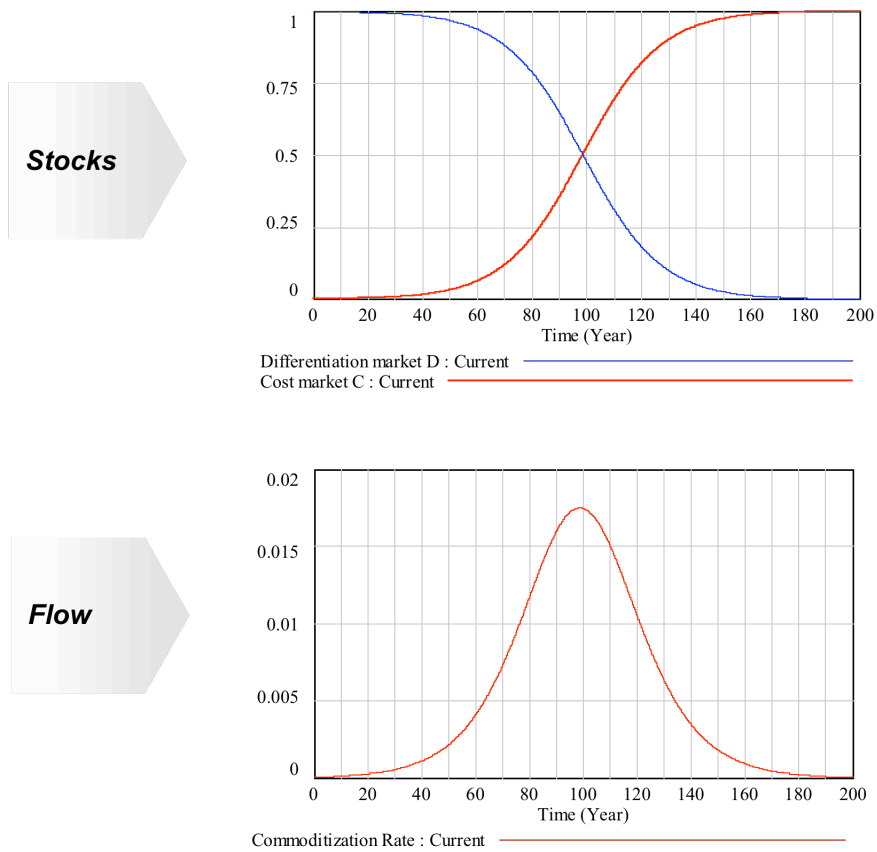
Figure 309: The Structure of a Commoditizing Market (with *Logistic* Decay)



The dynamic behavior of a commoditizing market with logistic decay of the original differentiation niche is shown in Figure 310 below. The behavior of this nonlinear *first-order* formulation, again results in sigmoid or S-shaped growth for the transforming resource environment.<sup>968</sup> Note, the addition of a reinforcing loop acts to slow down the commoditization, by reducing the fractional commoditization rate,  $r_c$  as the cost market, C approaches the carrying capacity of the adopted market, A.

<sup>968</sup> Again, as in the characterization of the diffusing market, the commoditizing market's sigmoid growth is assumed to proceed logistically, for analytical simplicity.

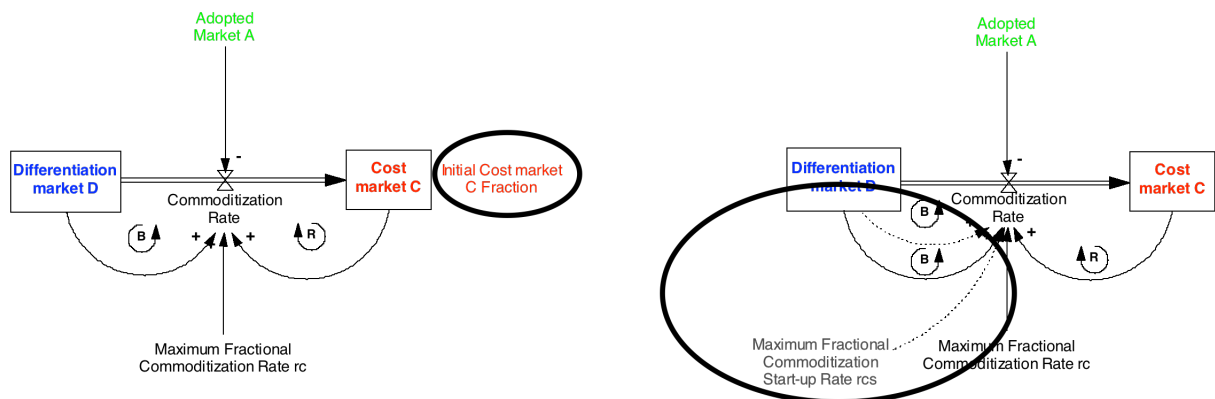
Figure 310: Dynamic Behavior of a Commoditizing Market (with *Logistic Decay*)



### 7.3.1.3 Bass Industry Commoditization Model

Finally, in order to avoid the start-up problem, as we did in the formulation of the industry diffusion model, we add another balancing loop which captures the effects of awareness. The two model structures are compared in Figure 311 below.

Figure 311: Comparing the Structures of *Commoditizing Models*



### 7.3.2 Intra-species Competition in a *Commoditizing* Market

In the previous stage, the resource environment was characterized as existing in one dimension: the rate of change of *market* growth,  $dK/dt$ . This formulation extends the model to include a second dimension: the rate of change of *technology* commoditization,  $dC/dt$ . This captures the construct of a *dominant design* in the product offering (Abernathy and Utterback, 1978), which marks the shift in market demand from increasing rates of change of improvement in product performance, where competition is based on *product* innovation, to increasing rates of change of improvement in product cost, where competition is based on *process* innovation.<sup>969</sup> In order to control for the previous effects of market growth, we hold the market size,  $K$  constant.<sup>970</sup> The new coupled system of differential equations is shown below:

$$dX_1/dt = r_{X1}X_1 - r_{X1}X_1^2/D - r_{X1}X_1X_2\alpha_{12}/(D + C) \quad (9a)$$

$$dX_2/dt = r_{X2}X_2 - r_{X2}X_2^2/C - r_{X2}X_2X_1\alpha_{21}/(D + C) \quad (9b)$$

$$dD/dt = -r_c C (1 - C/K) \quad (9c)$$

$$dC/dt = r_c C (1 - C/K) \quad (9d)$$

Figure 312 below summarizes the causal structure of this nonlinear *third* order formulation<sup>971</sup> which results in sigmoid or S-shaped transition from a market dominated by sales of products/services based on *differentiation*,  $D$  to a market dominated by sales of products/services based on *cost*,  $C$ . Note that this formulation represents *direct* competition between organizations within the environment.

<sup>969</sup> Although a “dominant design” is often seen as a *discrete* event, the market is modeled as a *continuously* evolving.

<sup>970</sup> This control will relaxed in the next section, where both market size,  $K$  and type,  $C$  will grow logistically.

<sup>971</sup> The addition of two state variables is only a first-order addition as one is completely determined by the other.

Figure 312: Model Structure of *Intra-species* Competition in a *Commoditizing* Market

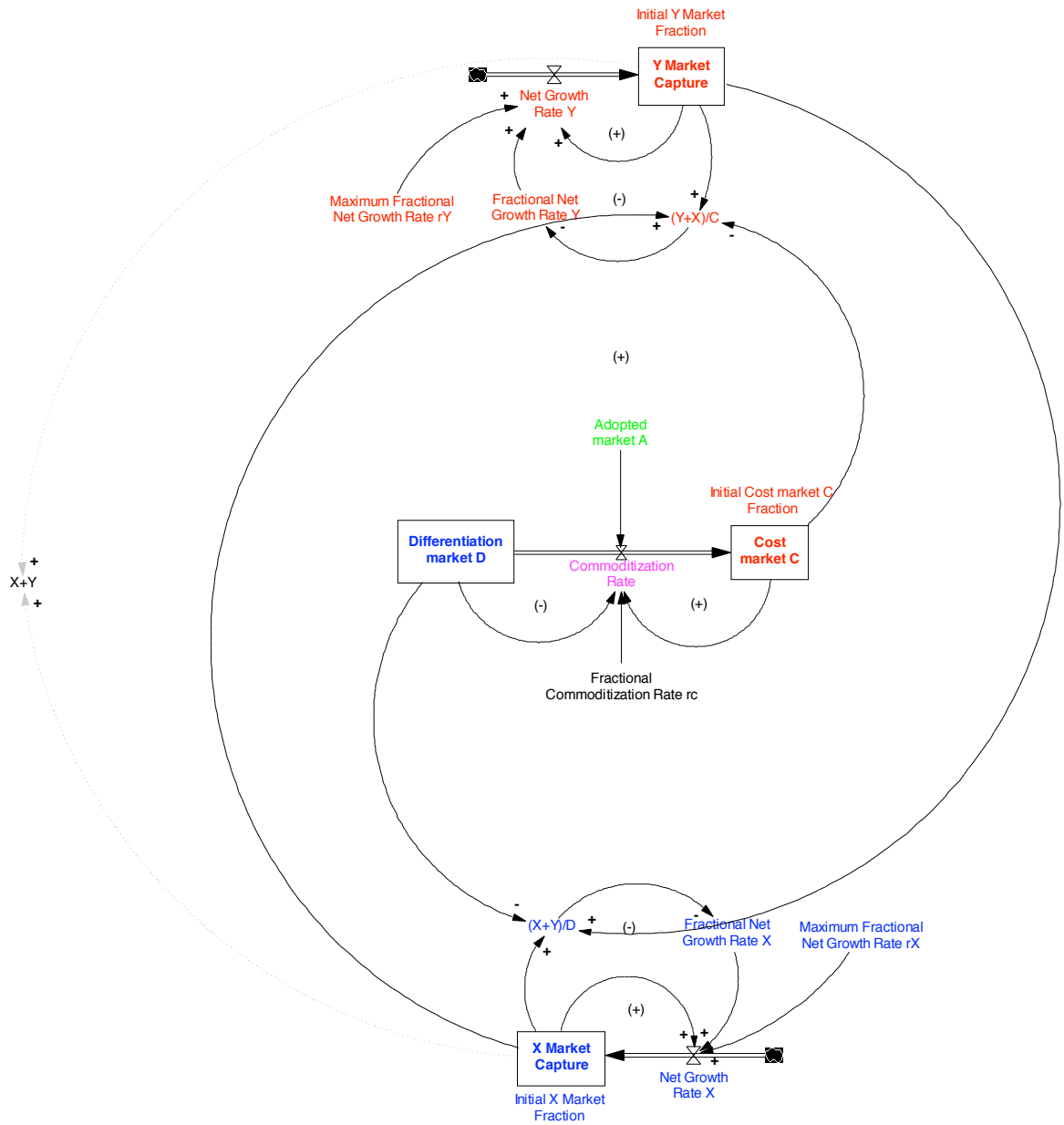
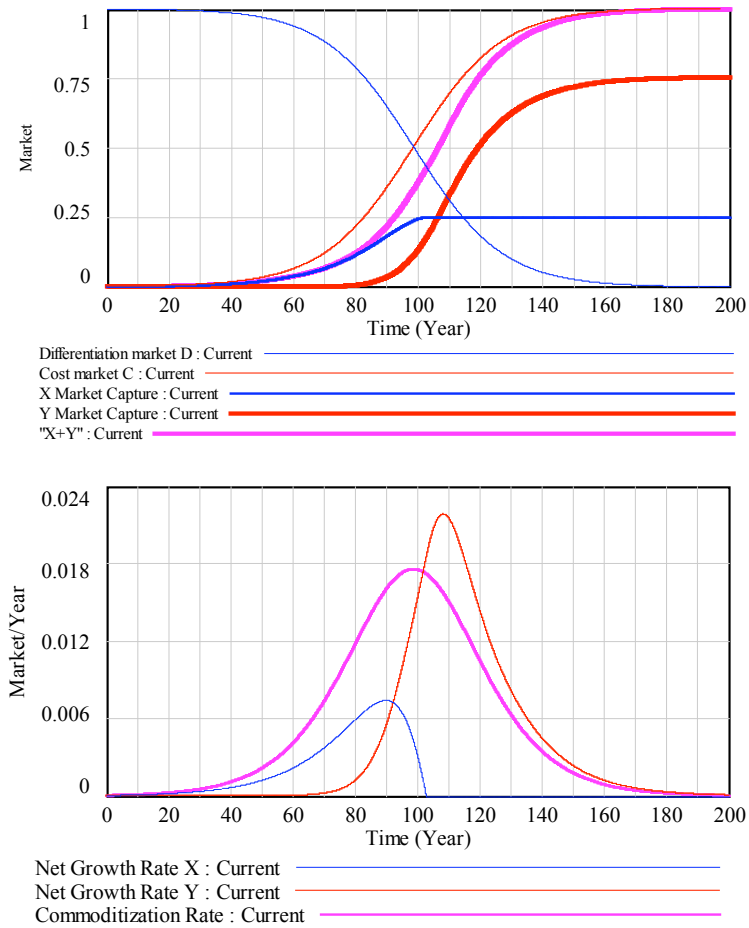


Figure 313 below illustrates the dynamic behavior of *intra-species* competition in a *commoditizing* market.

Figure 313: Dynamic Behavior of *Intra-species* Competition in a *Commoditizing* Market



### 7.3.3 *Inter-species “Competition” in a Commoditizing Market*

In the previous stage, both competitors were assumed to be of the same species, and therefore broadly able to compete in both the differentiation-based and cost-based niches (i.e. the competition coefficients  $\alpha$  were at or near 1) – for example both intra-species competitors, *GM* and *Ford* can transition from a differentiated product focus towards a cost focus. However, the emergence of a new species, having an integral enterprise architecture (like *Toyota*) is much better suited towards cost-leadership, making their competition coefficient  $\alpha$  approach zero. In this extreme case of interspecies competition, each species focuses on the niche that they are best suited to, and “competition” takes on a symbiotic nature, due to the presence of architectural inertia. The new coupled system of differential equations is shown below:

$$dX/dt = r_X X - r_X X^2/D - r_X X Y \alpha_{XY}/(D + C) \quad (10a)$$

$$dY/dt = r_Y Y - r_Y Y^2/C - r_Y X Y \alpha_{YX}/(D + C) \quad (10b)$$

$$dD/dt = r_c D (1 - D/K) \quad (10c)$$

$$dC/dt = r_c C (1 - C/K) \quad (10d)$$

Figure 314 below summarizes the causal structure and resulting behavior of this nonlinear *third* order formulation<sup>972</sup> which results in sigmoid or S-shaped transition from a market dominated by sales of products/services based on *differentiation*, D to a market dominated by sales of products/services based on *cost*, C. Note that this formulation represents *indirect* competition between organizations occupying different niches within the environment.

---

<sup>972</sup> The addition of two state variables is only a first-order addition as one is completely determined by the other.

Figure 314: Model Behavior of *Inter-species* “Competition” in a *Commoditizing* Market

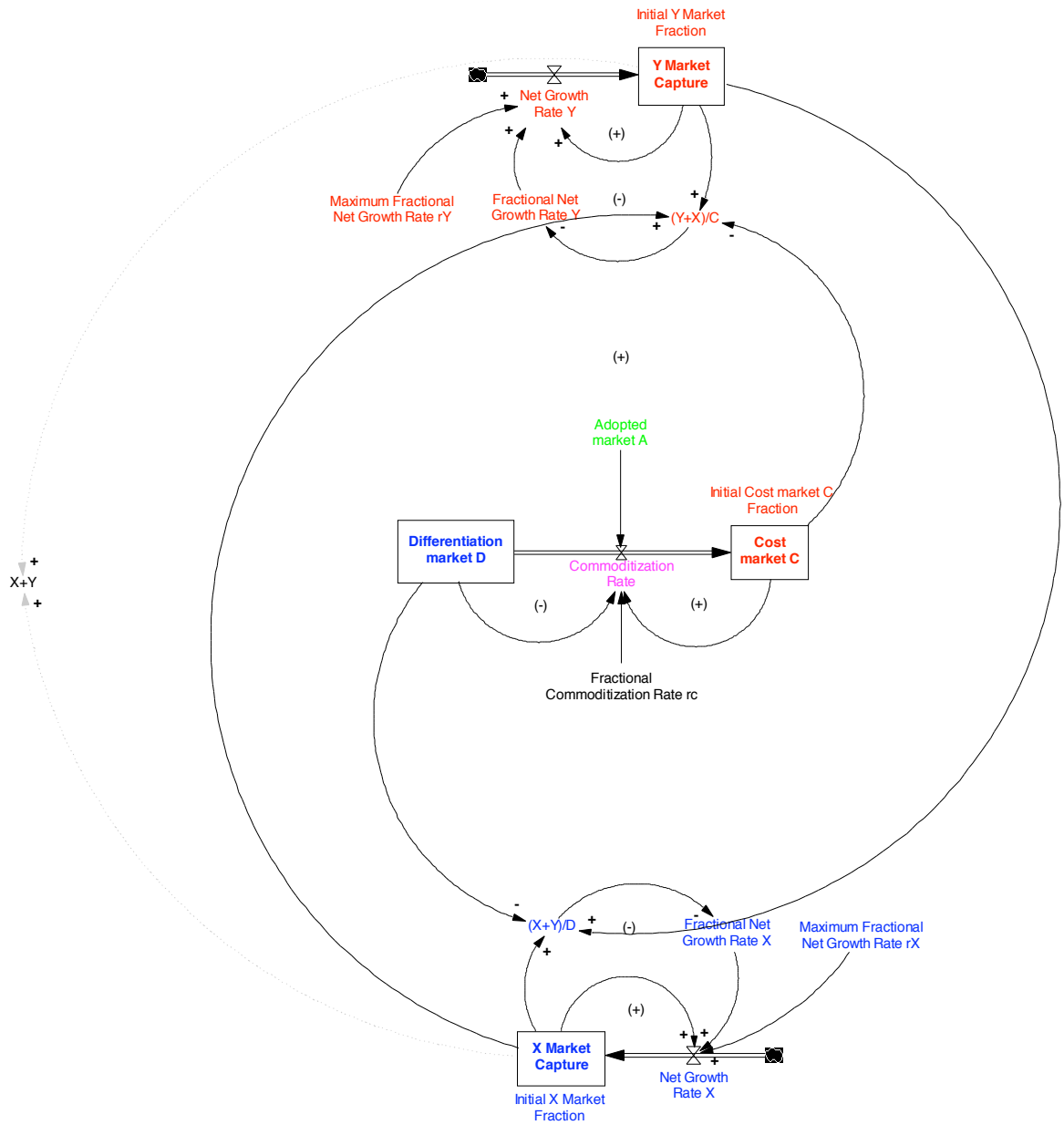
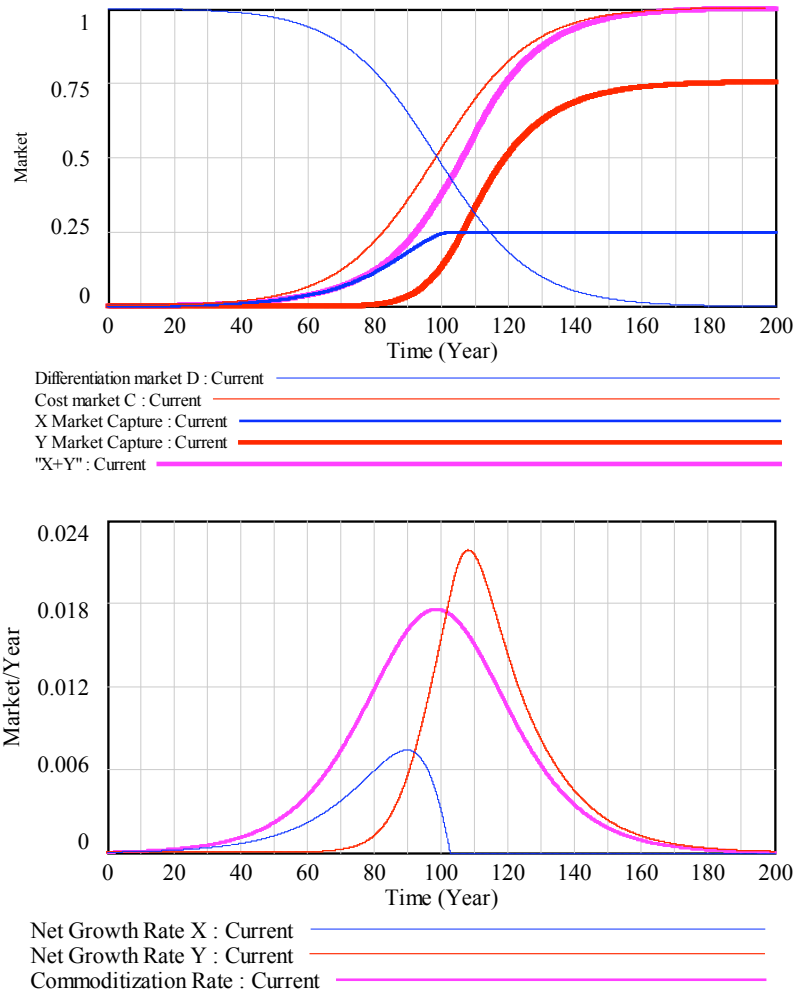




Figure 315 below illustrates the dynamic behavior of *inter-species* competition in a *commoditizing* market.

Figure 315: Dynamic Behavior of *Inter-species* Competition in a *Commoditizing* Market



## 7.4 Competition in a *Diffusing, Commoditizing* Market (Quantity and Quality)

### 7.4.1 *Diffusing, Commoditizing* Market (Quantity and Quality)

We now combine the previous two descriptions of the market environment, where the *quantity* of the market,  $K$  grows logistically (Bass, 1969), while simultaneously, the *quality* of the market customer preferences diffuses from high-performance *differentiated* products and services towards *low-cost* products and services (Abernathy and Utterback, 1978). This allows the entry and exit of different species of organizational sets for two reasons: the rate of change in market *quantity* and the rate of change in technological *quality* enable market niches to evolve.

#### 7.4.1.1 Comparing *Single-* vs. *Double-loop* Diffusing, Commoditizing Models

The new, coupled system of differential equations is shown below:

$$dP/dt = -r_d A (1 - A/K) \tag{11a}$$

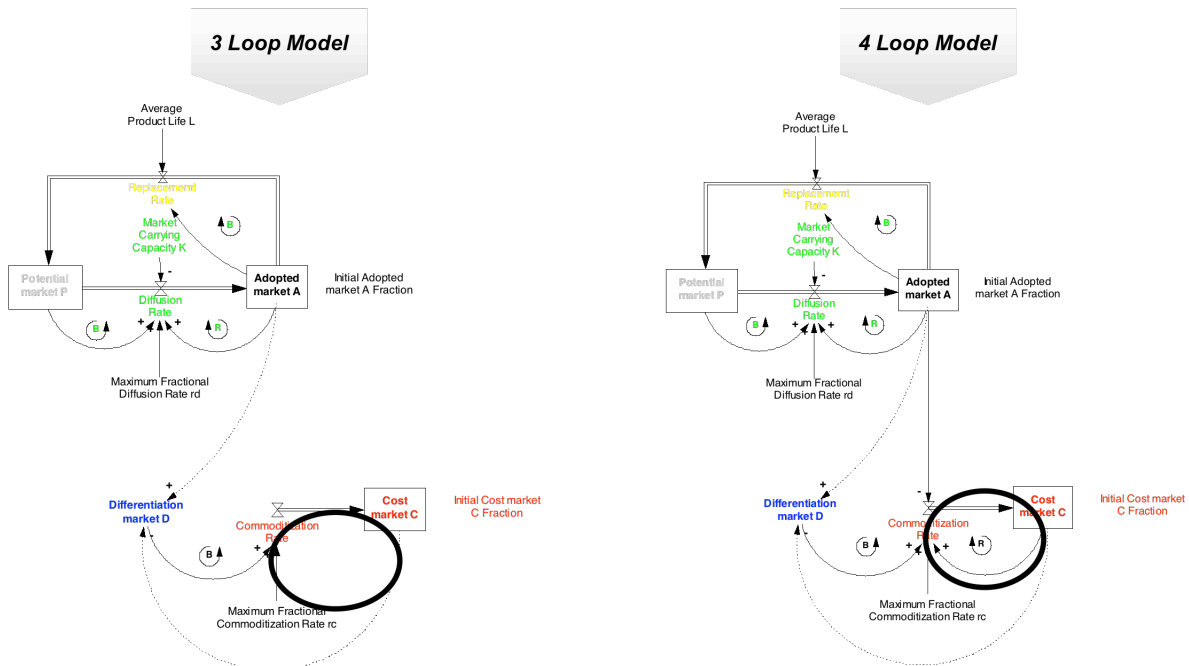
$$dA/dt = r_d A (1 - A/K) \tag{11b}$$

$$dD/dt = -r_c C (1 - C/K) \tag{11c}$$

$$dC/dt = r_c C (1 - C/K) \tag{11d}$$

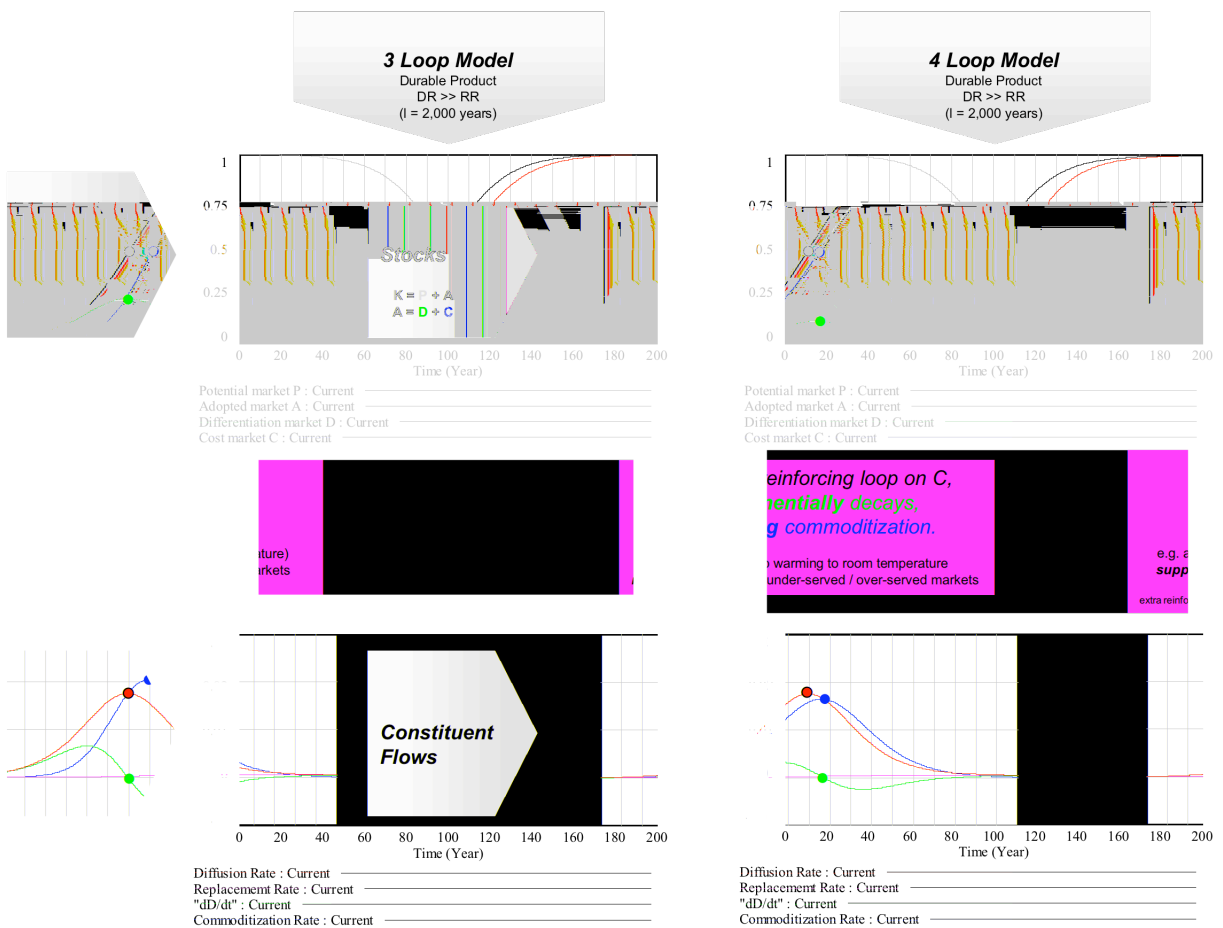
Figure 316 below compares the two different causal structures of this nonlinear *second-order* formulation, developed previously.

Figure 316: Comparing Model Structures of *Diffusing, Commoditizing* Markets



Although the total market,  $K$  again results in logistic sigmoid or S-shaped growth, niche  $D$  rises and falls, while niche  $C$  rises in S-shaped growth to eventually characterize the entire market. Note, however that if the maximum fractional diffusion rate,  $r_d \gg$  than the maximum fractional commoditization rate,  $r_c$ , then the behavior approaches that shown in Figure 310. Figure 317 below illustrates the dynamic behavior of a *diffusing, commoditizing* market.

Figure 317: Comparing the Dynamic Behavior of *Diffusing, Commoditizing* Markets



### 7.4.1.2 Comparing *Diffusion* vs. *Commoditization* Rates

Figure 318 below illustrates the model structure comparing the relative effects of *diffusion*, vs. *commoditization* rates.

Figure 318: Model Structure Comparing Market *Diffusion* vs. *Commoditization* Rates

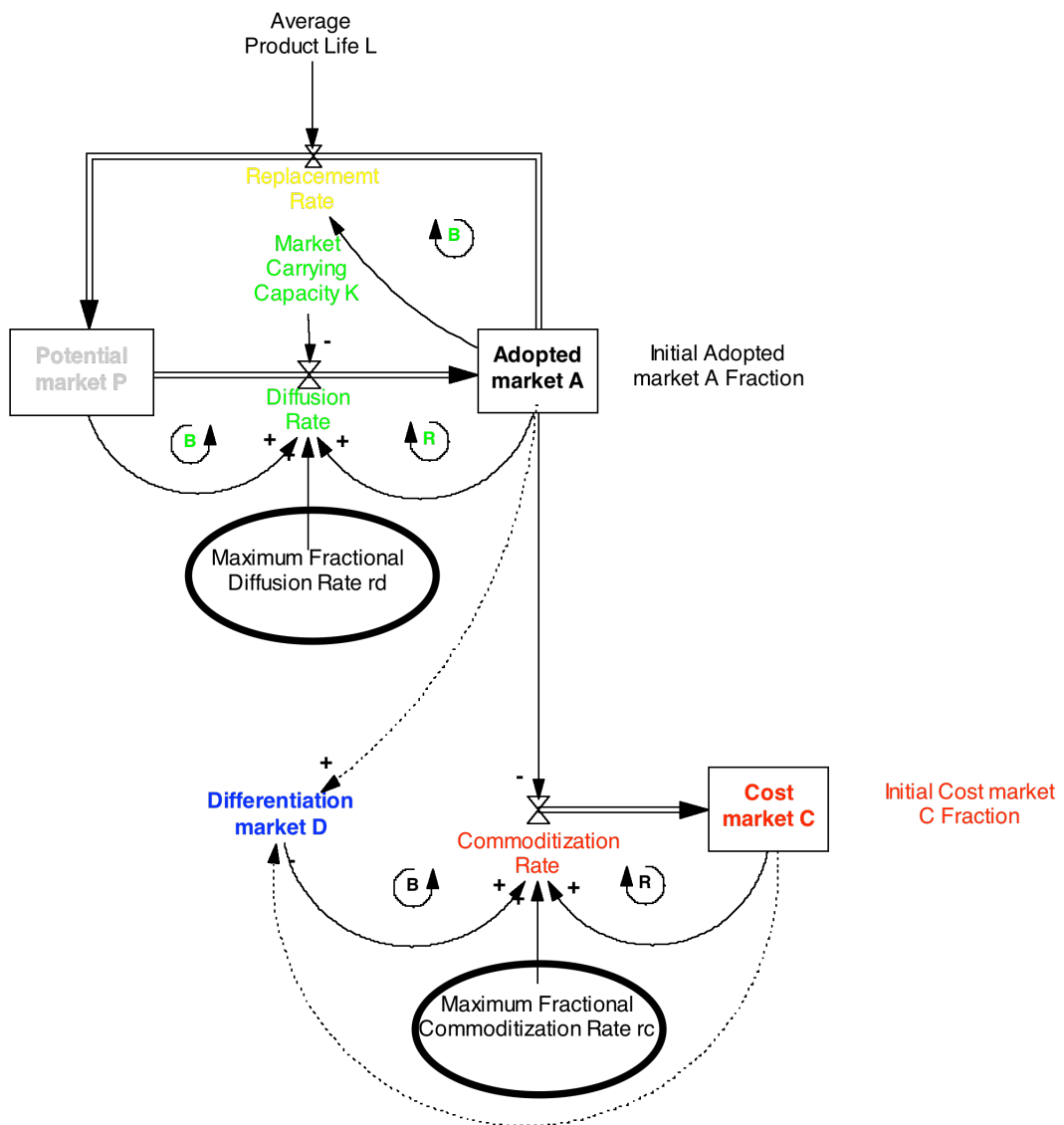
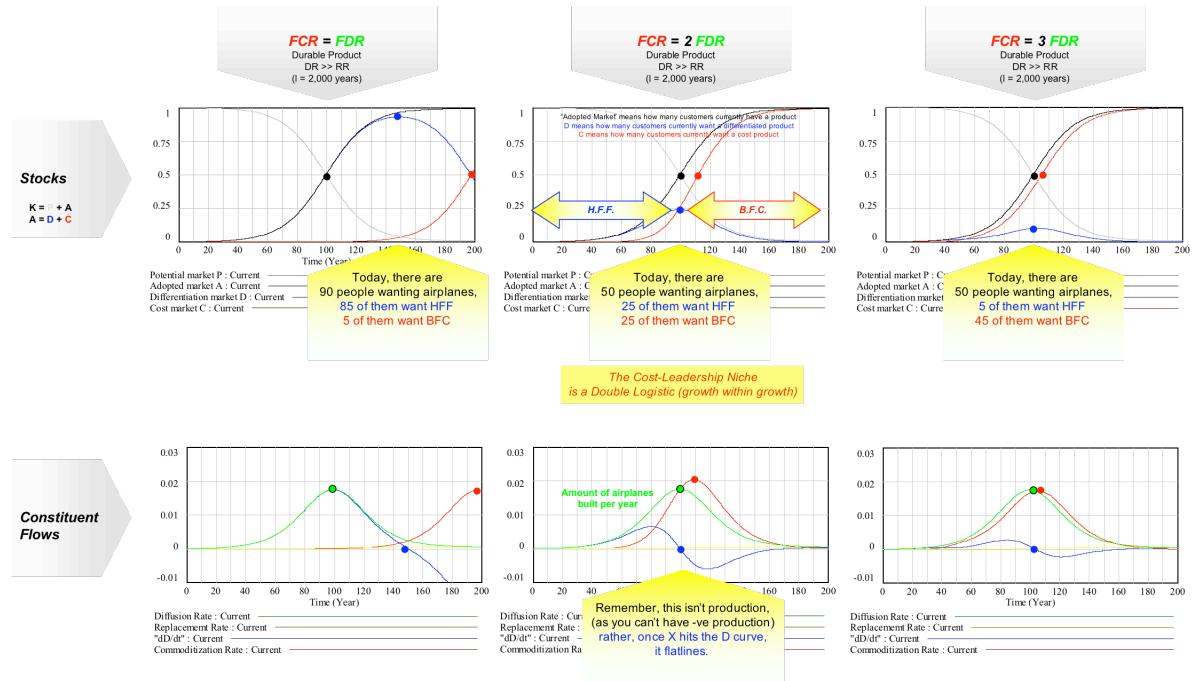


Figure 319 below illustrates the dynamic behavior of a parametric study comparing the relative effects of *diffusion* vs. *commoditization* rates.

Figure 319: Dynamic Behavior of *Diffusion* vs. *Commoditization* Rates



### 7.4.1.3 Parametric Study: *Product Durability*

Figure 320 below illustrates the model structure examining product durability in a diffusing, commoditizing market.

Figure 320: Model Structure of *Product Durability* in a Diffusing, Commoditizing Market

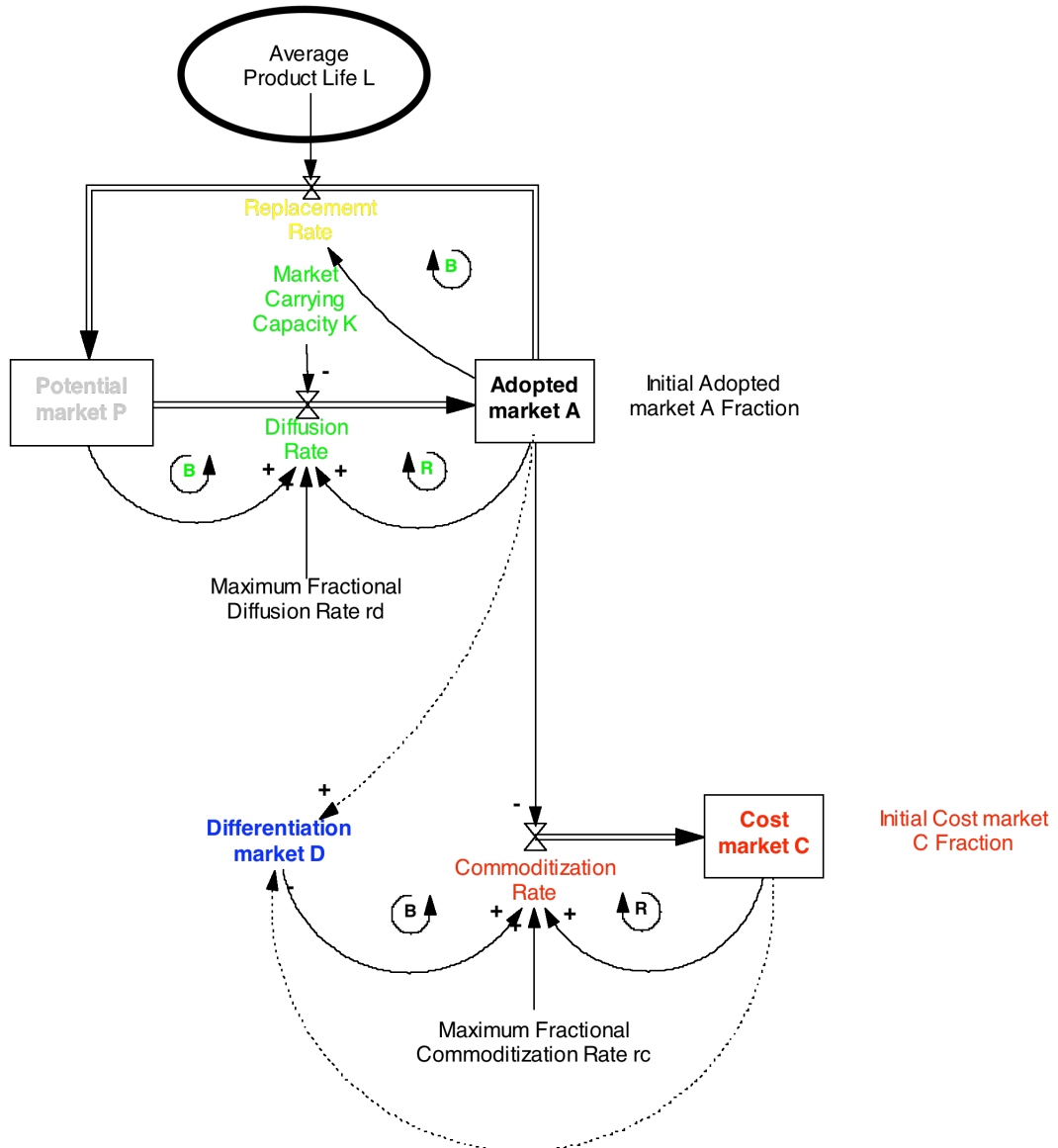
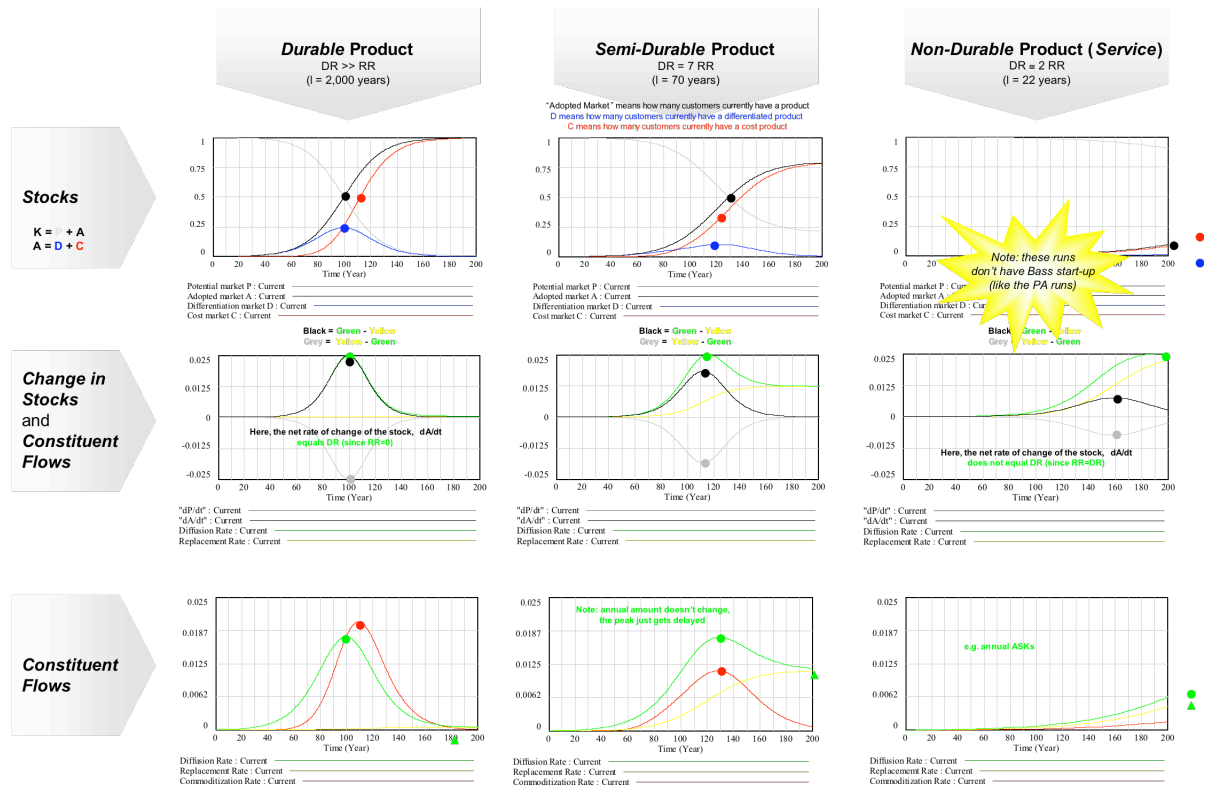


Figure 321 below illustrates the dynamic behavior of parameterized study investigating product durability in a diffusing, commoditizing market.

Figure 321: Dynamic Behavior of a *Diffusing, Commoditizing* Market with Varying Product Durability



### 7.4.2 Intra-species Competition in a Diffusing, Commoditizing Market

The model now has two different ways of defining the state of evolutionary maturity of the environment: *quantity* and *quality* – that is, *how much* product is produced/consumed, and *what type* of product is produced/consumed. This section therefore combines these two characterizations of the market environment into one model, where two firms of the same species (characterized by the architectures of their respective extended enterprises) compete. The extent of competitive intensity is defined by the ability of each firm to overcome architectural inertia and transition from niche D to niche C as the market evolves. A summary of the coupled system of differential equations is shown below.

$$dX_1/dt = r_{X1}X_1 - r_{X1}X_1^2/D - r_{X1}X_1X_2\alpha_{12}/K - r_{X1}X_1X_2\alpha_{12}/(D + C) \quad (12a)$$

$$dX_2/dt = r_{X2}X_2 - r_{X2}X_2^2/C - r_{X2}X_1X_2\alpha_{21}/K - r_{X2}X_2X_1\alpha_{21}/(D + C) \quad (12b)$$

$$dK/dt = r_dK (1 - K/CC) \quad (12c)$$

$$dD/dt = -r_cD (1 - D/K) \quad (12d)$$

$$dC/dt = r_cC (1 - C/K) \quad (12e)$$

Figure 322 below summarizes the causal structure and resulting behavior of this nonlinear *fourth-order* formulation which results in S-shaped growth of the general market K, and the niche, C. Due to architectural inertia, each species is constrained to its own niche resulting in early exit, late entry and dominance-switching throughout the life-cycle of the industry.



Figure 322: Model Structure of *Intra-species Competition in a Diffusing, Commoditizing Market*

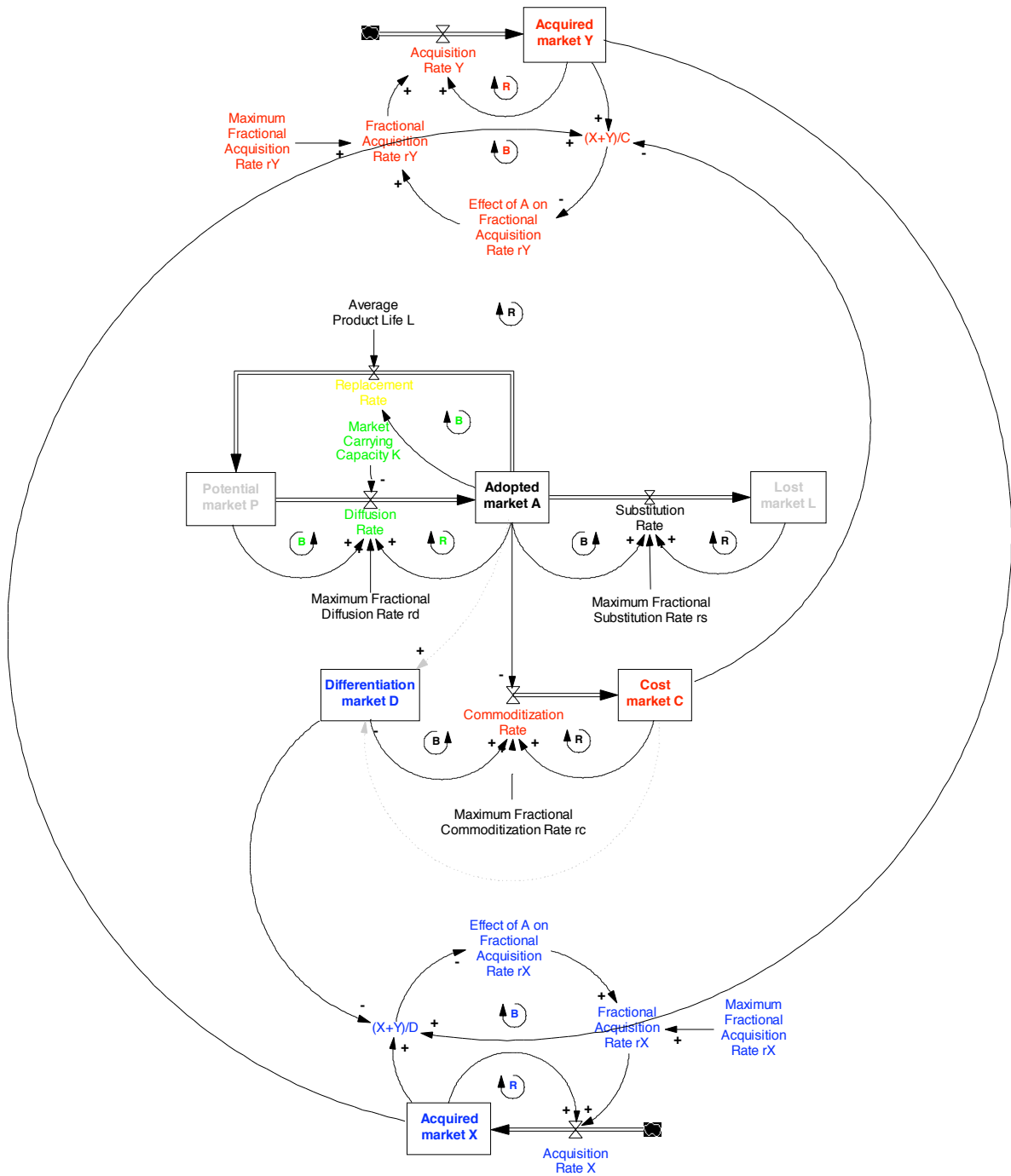
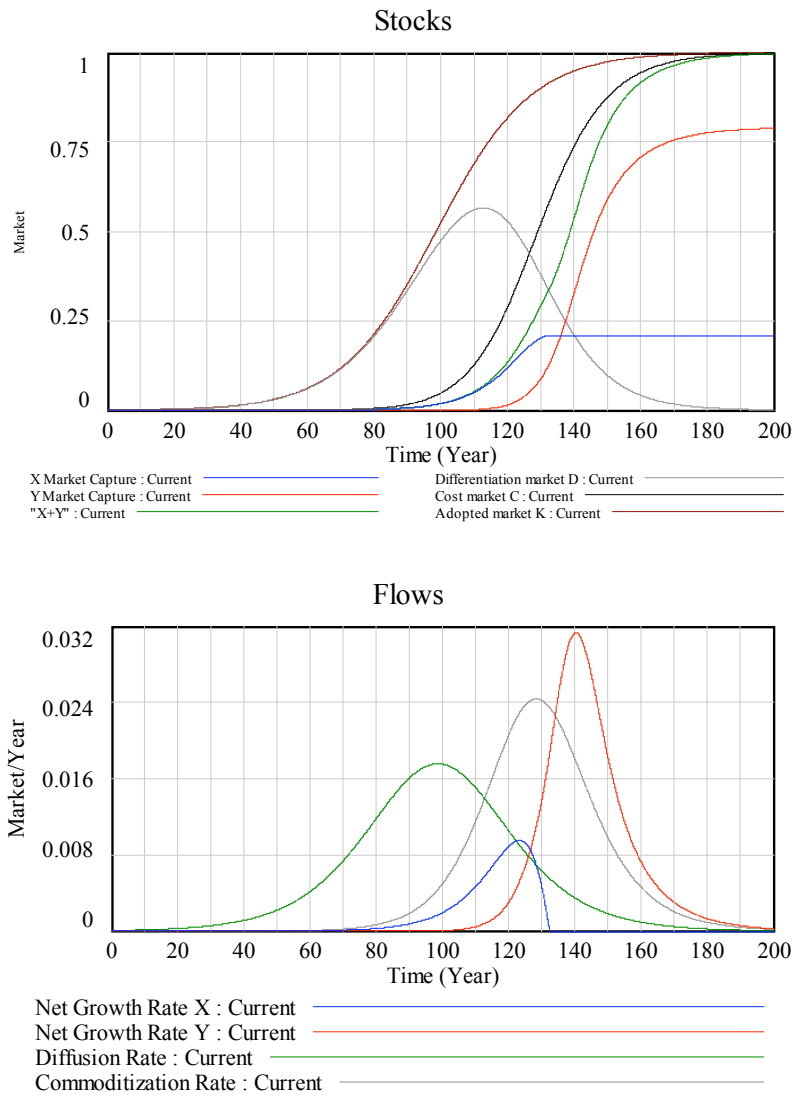


Figure 323 below illustrates the dynamic behavior of *intra-species* competition in a *diffusing, commodizing* market.

Figure 323: Dynamic Behavior of *Intra-species* Competition in a *Diffusing, Commodizing* Market



### 7.4.3 Inter-species Competition in a Diffusing, Commoditizing Market

The model now has two different ways of defining the state of evolutionary maturity of the environment: *quantity* and *quality* – that is, *how much* product is produced/consumed, and *what type* of product is produced/consumed. This final section therefore combines these two characterizations of the market environment into one model, where two different species of firms (characterized by the architectures of their respective extended enterprises) compete. The extent of competitive intensity is defined by the ability of each firm to overcome architectural inertia and transition from niche D to niche C as the market evolves. A summary of the coupled system of differential equations is shown below.

$$r_X > r_Y \text{ when } (X+Y) < K/2 \quad \frac{dX}{dt} = r_X X - r_X X^2/D - r_X X Y \alpha_{XY}/K - r_X X Y \alpha_{XY}/(D+C) \quad (13a)$$

$$r_X < r_Y \text{ when } (X+Y) > K/2 \quad \frac{dY}{dt} = r_Y Y - r_Y Y^2/C - r_Y X Y \alpha_{YX}/K - r_Y X Y \alpha_{YX}/(D+C) \quad (13b)$$

$$\frac{dK}{dt} = r_d K (1 - K/CC) \quad (13c)$$

$$\frac{dD}{dt} = -r_c D (1 - D/K) \quad (13d)$$

$$\frac{dC}{dt} = r_c C (1 - C/K) \quad (13e)$$

Figure 324 below summarizes the causal structure and resulting behavior of this nonlinear *fourth-order* formulation which results in S-shaped growth of the general market K, and the niche, C. Due to architectural inertia, each species is constrained to its own niche resulting in early exit, late entry and dominance-switching throughout the life-cycle of the industry.

Figure 324: Model Structure of *Inter-species Competition in a Diffusing, Commoditizing Market*

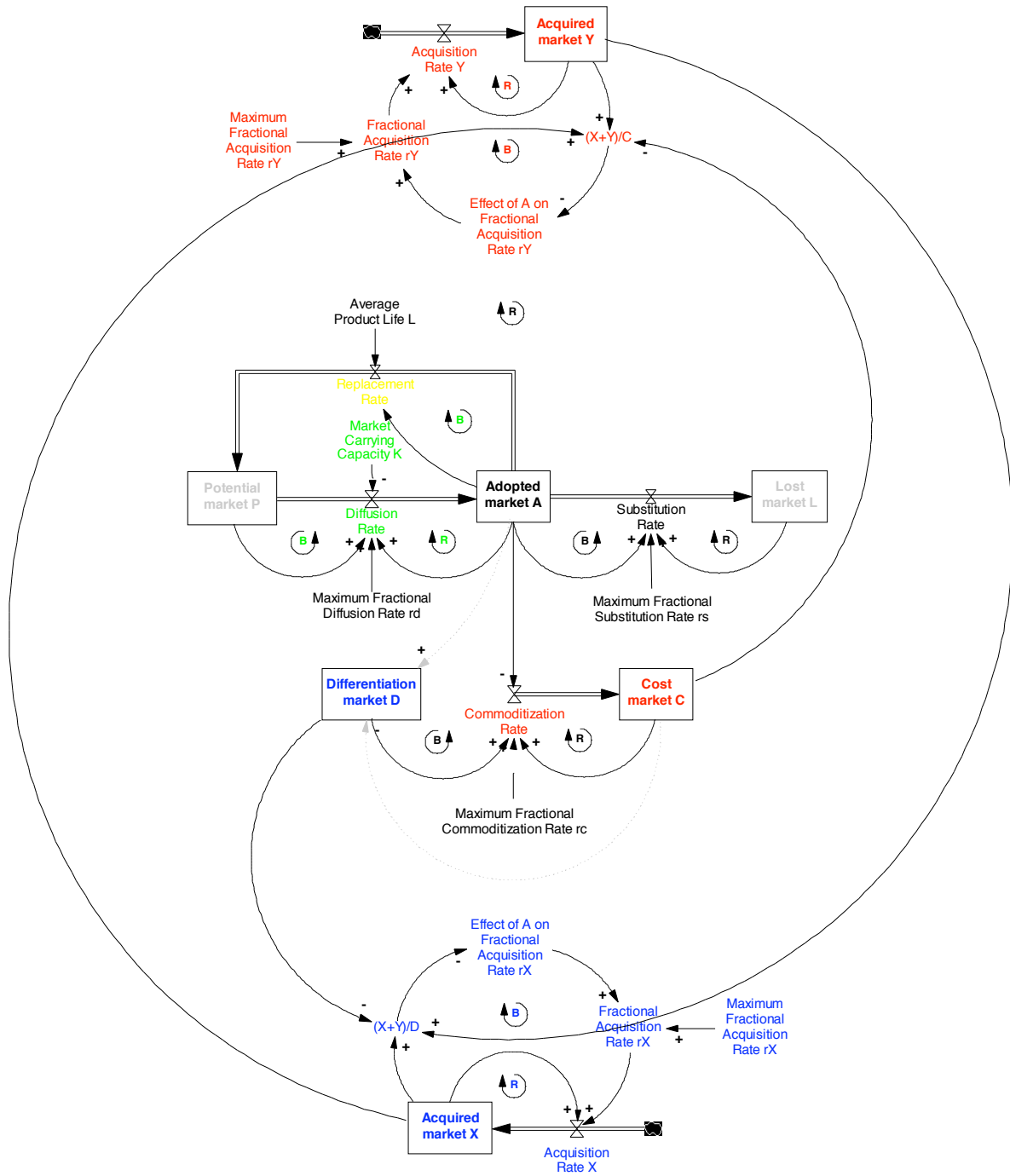
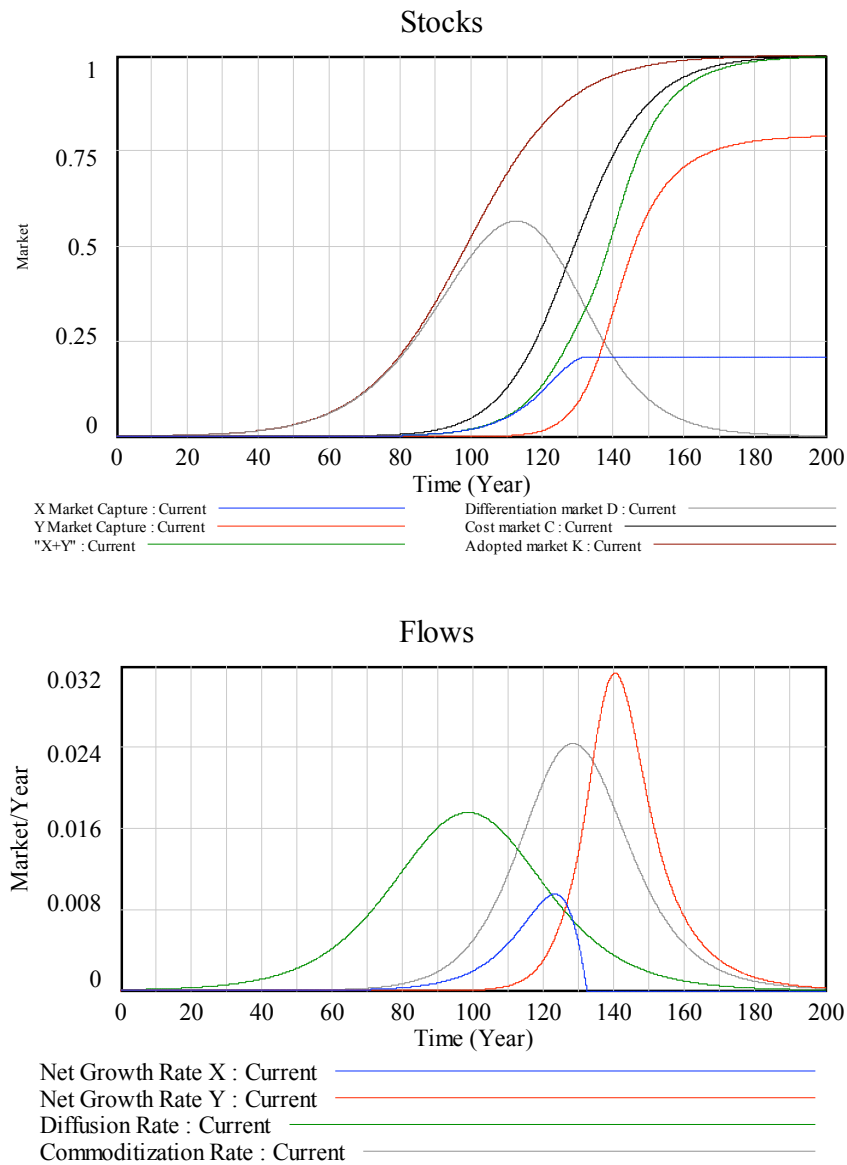


Figure 325 below illustrates the dynamic behavior of *inter-species* competition in a *diffusing, commoditizing* market.

Figure 325: Dynamic Behavior of *Inter-species* Competition in a *Diffusing, Commoditizing* Market



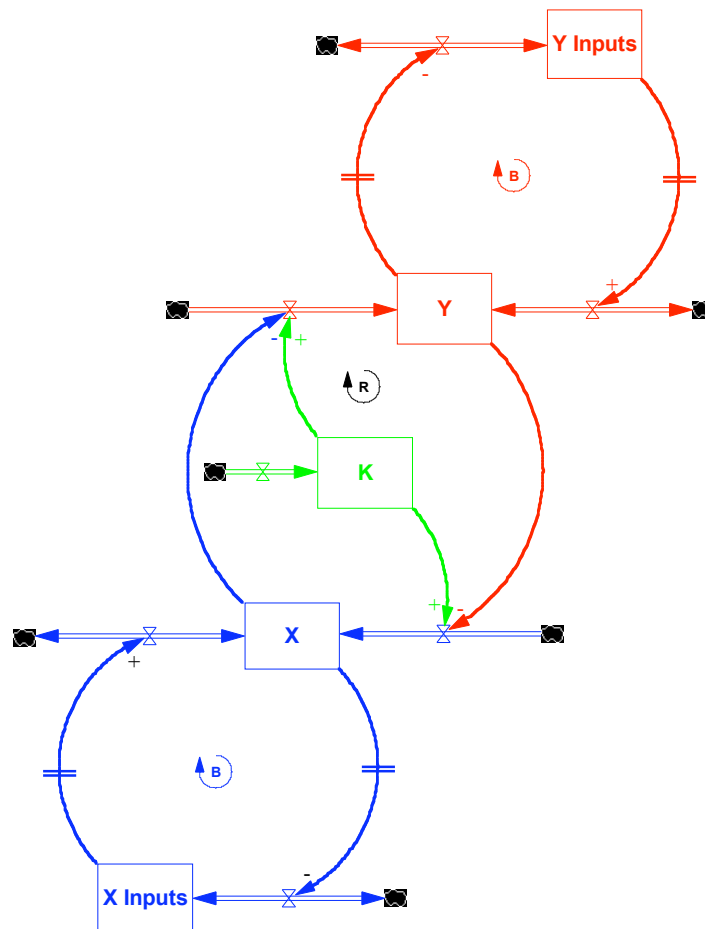
## 7.5 Advanced Topics

### 7.5.1 Firm-sector Topics

#### 7.5.1.1 Oscillation: Demand and Supply Lags

Until now, we have considered only the acquiring of market, which implies the winning of sales or orders. This quantity may be considered to equate to a firm's production output, assuming that there are no time delays or lags between market demand and firm supply (or conversely firm demand for revenues and market supply of revenues). A new causal structure is now required which explicitly captures the equilibrating of demand and supply – a balancing loop. If such delays do exist and are large enough relative to the dynamics under consideration, they can result in an oscillation mode of behavior which is superimposed onto the underlying growth modes that we have already discussed. In addition, additional reinforcing feedbacks may exist between the markets of demand and supply which can act to amplify any oscillatory behavior. Figure 326 below illustrates the conceptual model of oscillation.

Figure 326: *Conceptual Model Structure of a Single Firm Growth and Oscillation*



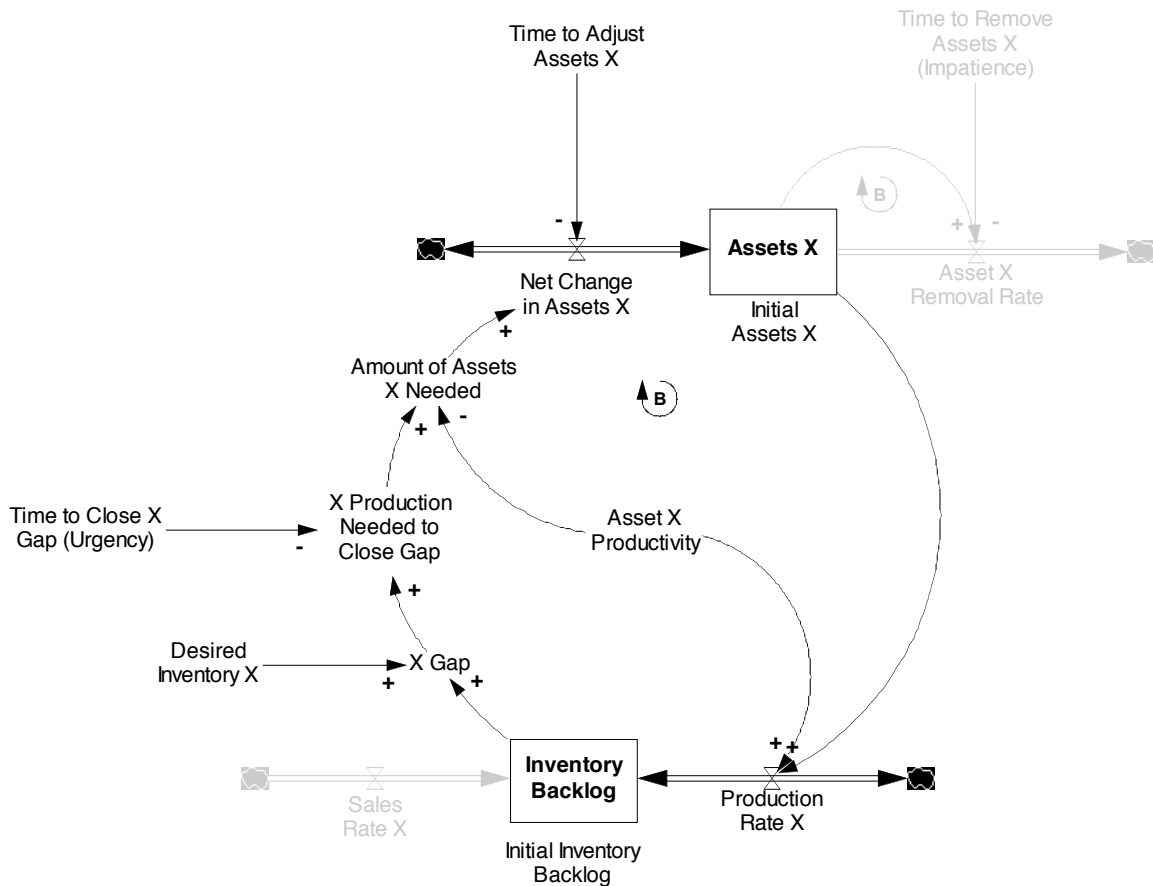
**7.5.1.1.1 Single Firm Experiencing *Undamped Oscillation***

The new system of coupled differential equations is shown below:

- (14a)
- (14b)
- (14c)
- (14d)
- (14e)

Figure 327 below illustrates the causal structure of this linear *second-order* formulation, which results in *undamped* oscillation of the firm's production output.

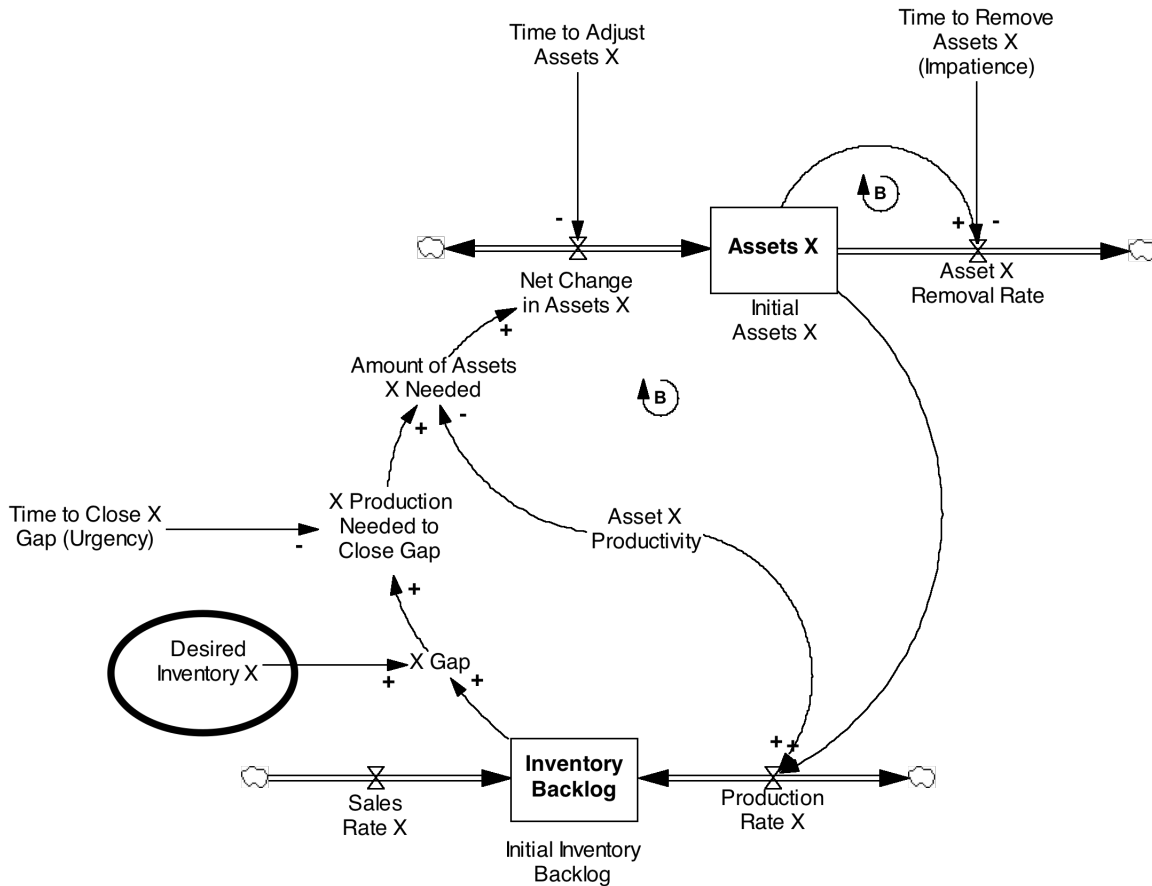
Figure 327: Model Structure of a Single Firm *Undamped Oscillation*



### 7.5.1.1.2 Parametric Study of Goal-Setting

Figure 328 below illustrates the causal structure of this parametric study of the effect of changing goals.

Figure 328: Causal Structure of Goal-Setting

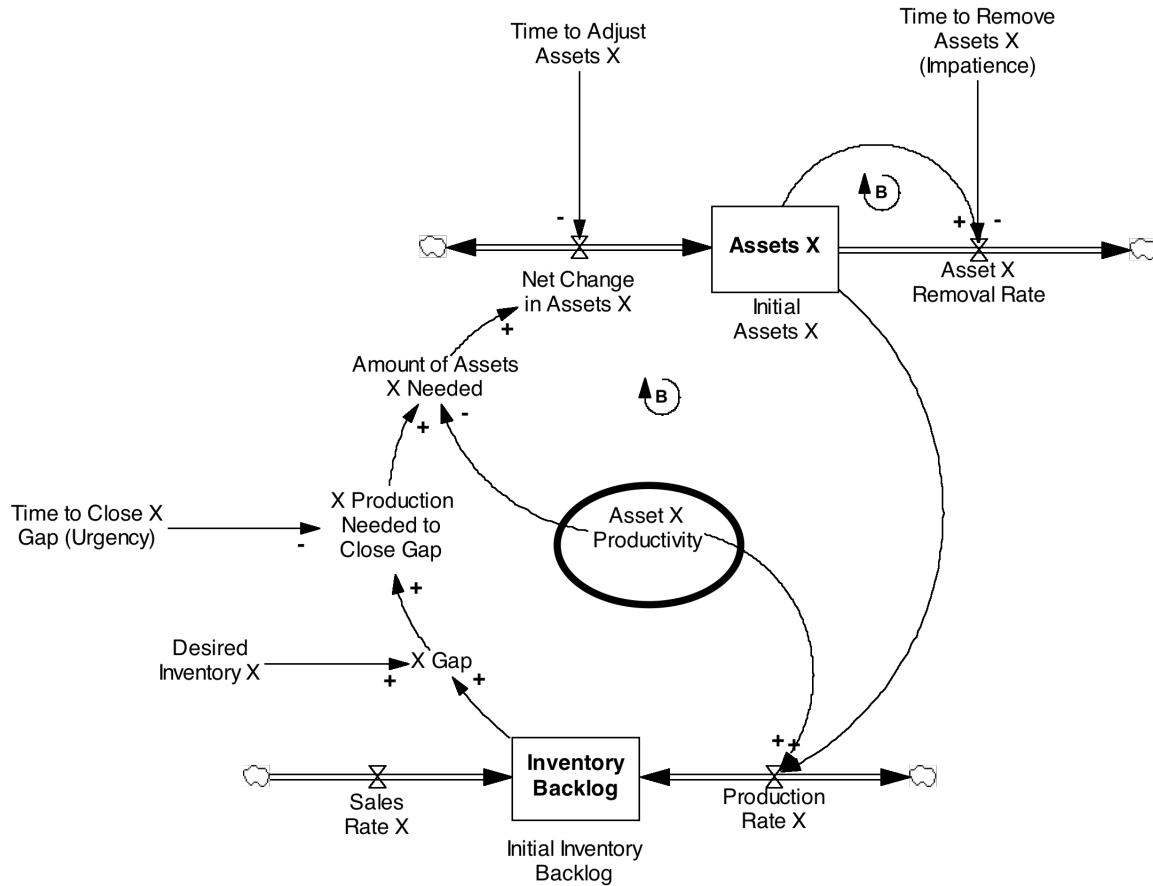




### 7.5.1.1.3 Parametric Study of *Productivity*

Figure 329 below illustrates the causal structure of this parametric study of the effect of changing productivity.

Figure 329: Causal Structure of *Productivity*



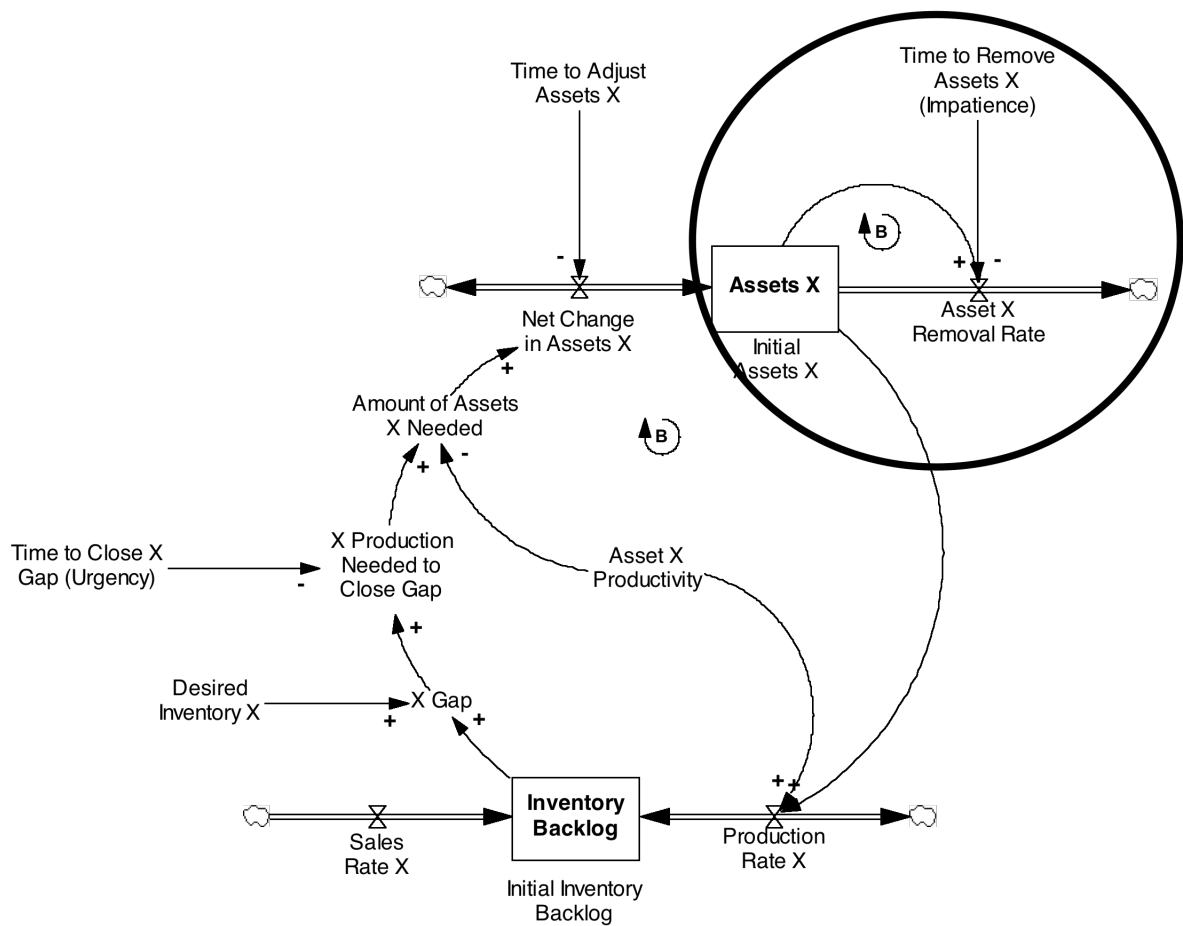
### 7.5.1.1.4 Single Firm Experiencing *Damped Oscillation*

The new system of coupled differential equations is shown below:

(14f)

Figure 330 below illustrates the causal structure of this linear *second-order* formulation, which results in damped oscillation of the firm's production output.

Figure 330: Model Structure of a Single Firm *Damped Oscillation*



### 7.5.1.1.5 Single Firm Experiencing *Growth* and *Damped Oscillation*

The new system of coupled differential equations is shown below:

(14g)

Figure 331 below illustrates the causal structure of this linear *second-order* formulation, which results in logistic growth of the firm's market acquisition and oscillation of the firm's production output. In the firm *growth* portion of the model, the presence of only an inflow on the stock of acquired market (which is controlled by both reinforcing and balancing loops) results in firm growth only. In the *oscillation* portion of the model, however inflows and outflows on the stocks of both the assets and inventory results in a balancing loop with a delay – the structure responsible for producing the behavior or oscillation.

Figure 331: Model Structure of a Single Firm *Growth* and *Oscillation*

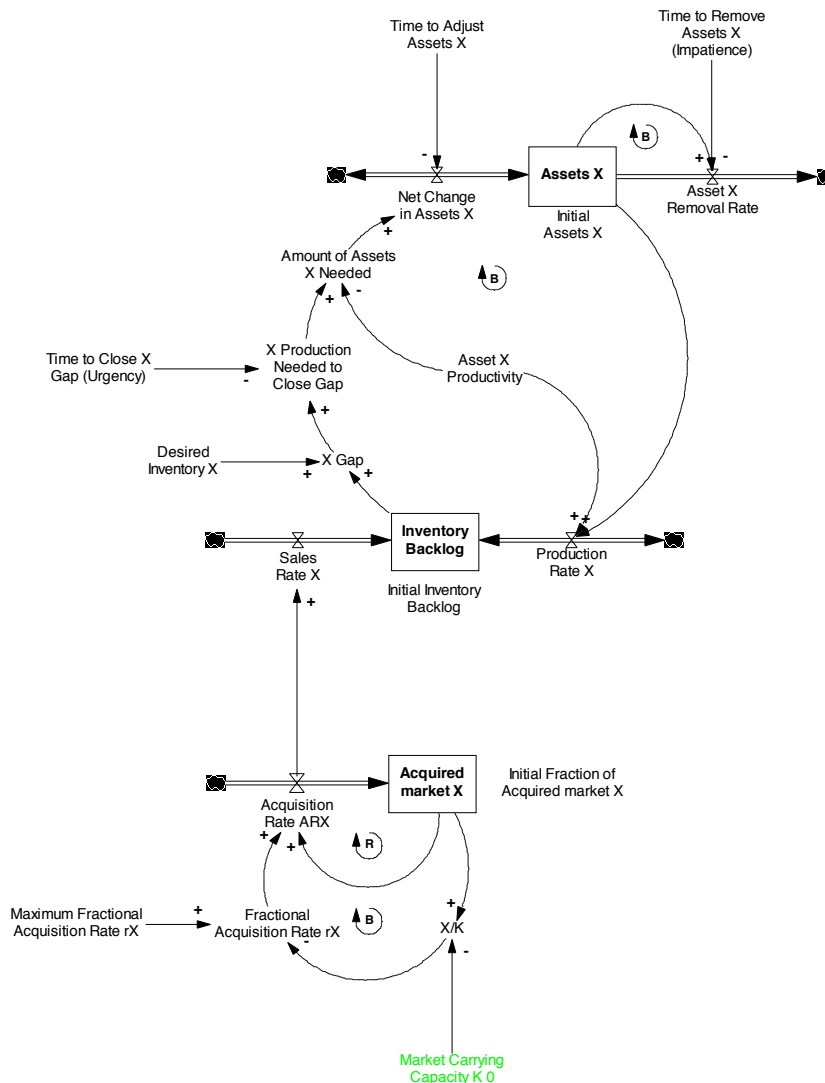


Figure 332 below illustrates the dynamic behavior of a single firm experiencing both growth and oscillation.

Figure 332: Single Firm Experiencing Growth and *Oscillation*

### **7.5.1.1.6 *Intra-species* Competition with Demand-Supply Lags**

### **7.5.1.1.7 *Inter-species* Competition with Demand-Supply Lags**

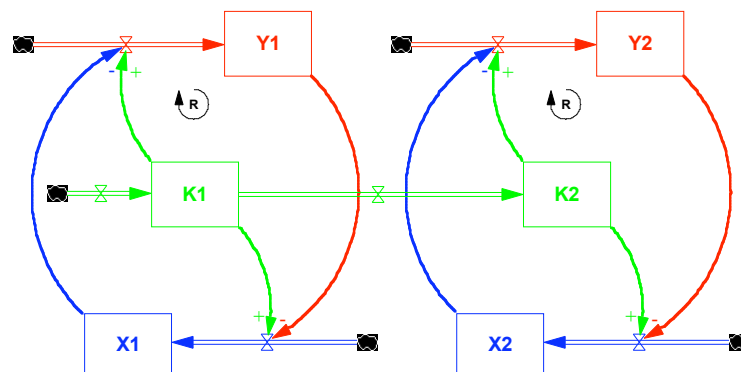
## 7.5.2 Market-sector Topics

### 7.5.2.1 Market Diffusion and *Obsolescence*

Having described earlier how markets *grow* in the model of market *diffusion*, we now begin to describe how markets “*die*” or are substituted for by new technologies in a model of market *obsolescence*. Clearly, this an ambitious task, as the origins of radical innovation are generally seen to be random at best, the causes are undoubtedly exogenous to our current parsimonious model, and the resulting dynamic behavior described as “discontinuity”. Given this, we will begin to lay the foundations for such a model by building from the endogenous model presented thus far.

Figure 333 below illustrates the conceptual model, whereby one market  $K_1$  (which is supplied by the species  $X_1$  and  $Y_1$ ) gives way to a subsequent market  $K_2$  (which is supplied by the species  $X_2$  and  $Y_2$ ).

Figure 333: *Conceptual Model of Market Diffusion and Obsolescence*



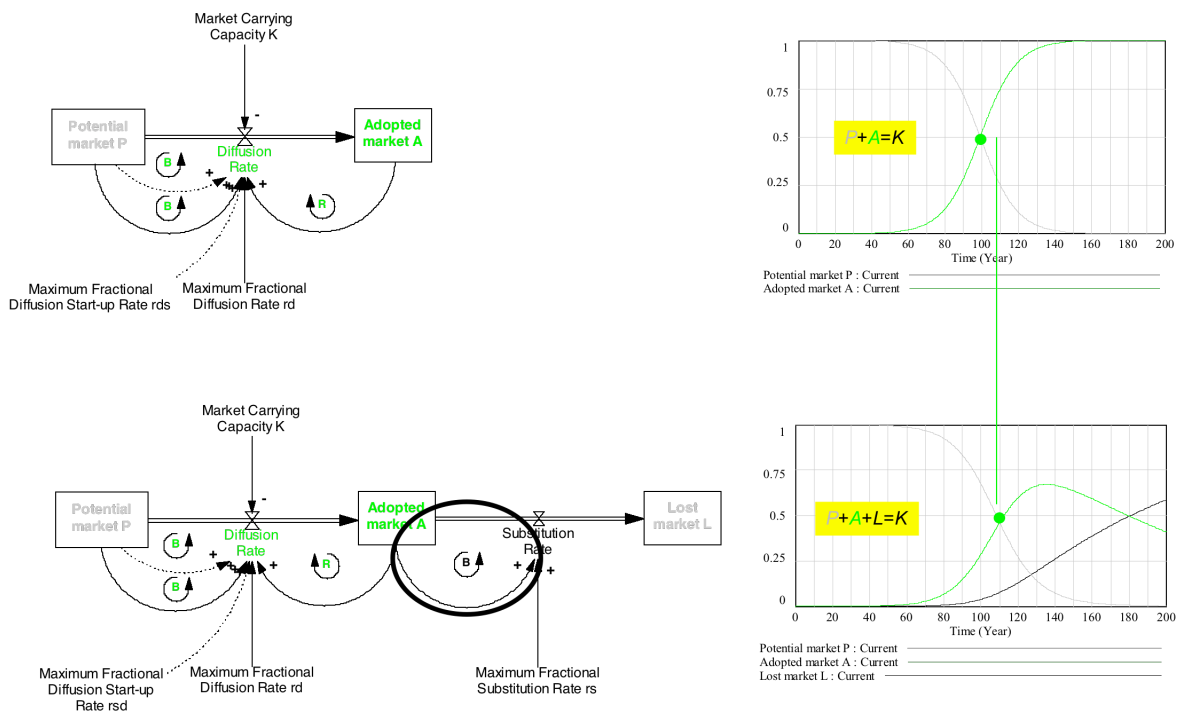
We will now focus however on how market  $K_1$  diffuses and is subsequently rendered obsolete by market  $K_2$ . Previously in the diffusion model, the Potential market  $P$  diffused into the Adopted market  $A$  in a logistic manner, controlled by both a balancing and reinforcing loop. Now, we add another stock,  $L$  representing the Lost market. In this way we have now gone from a two-stock model where the entire Potential market  $P$  eventually becomes Adopted market  $A$  (which is akin to the SI model of *chronic* infectious diseases, where the entire population eventually gets infected) to a three-stock model where the Adopted market  $A$  may not realize its full potential  $P$  (which is akin to the SIR model of *acute* infectious diseases, where the entire population may not become infected).

Next, we must define the causal structure that controls the *obsolescence* rate from Adopted market  $A$  to Lost market  $L$ . Here we could model a single balancing loop on the outflow of Adopted market  $A$ , which would generate exponential decay in  $A$ , with rapid initial losses (i.e. it does not take time for the new market to gain momentum). Or conversely, we could model balancing and reinforcing loops as was modeled in the  $P$ - $A$  diffusion model, which would generate logistic decay in  $A$  (i.e. it takes time for the new market to gain momentum).

### 7.5.2.1.1 Three-loop Representation (S-I-R)

First, we represent obsolescence as a simple balancing loop on the outflow of the Adopted market, A. This formulation is similar to the S-I-R model of *acute* infectious diseases. Figure 334 below compares the model structures and dynamic behaviors of the two-stock diffusion and three stock, one-loop diffusion-obsolescence models. As we can see, the behavior of the stock of Adopted market, A is not symmetric. As we will see when we compare this model to one in which an additional reinforcing loop is added, this formulation represents a rather severe exodus from the Adopted market, A as there is no feedback reducing the fractional substitution rate,  $r_s$ .

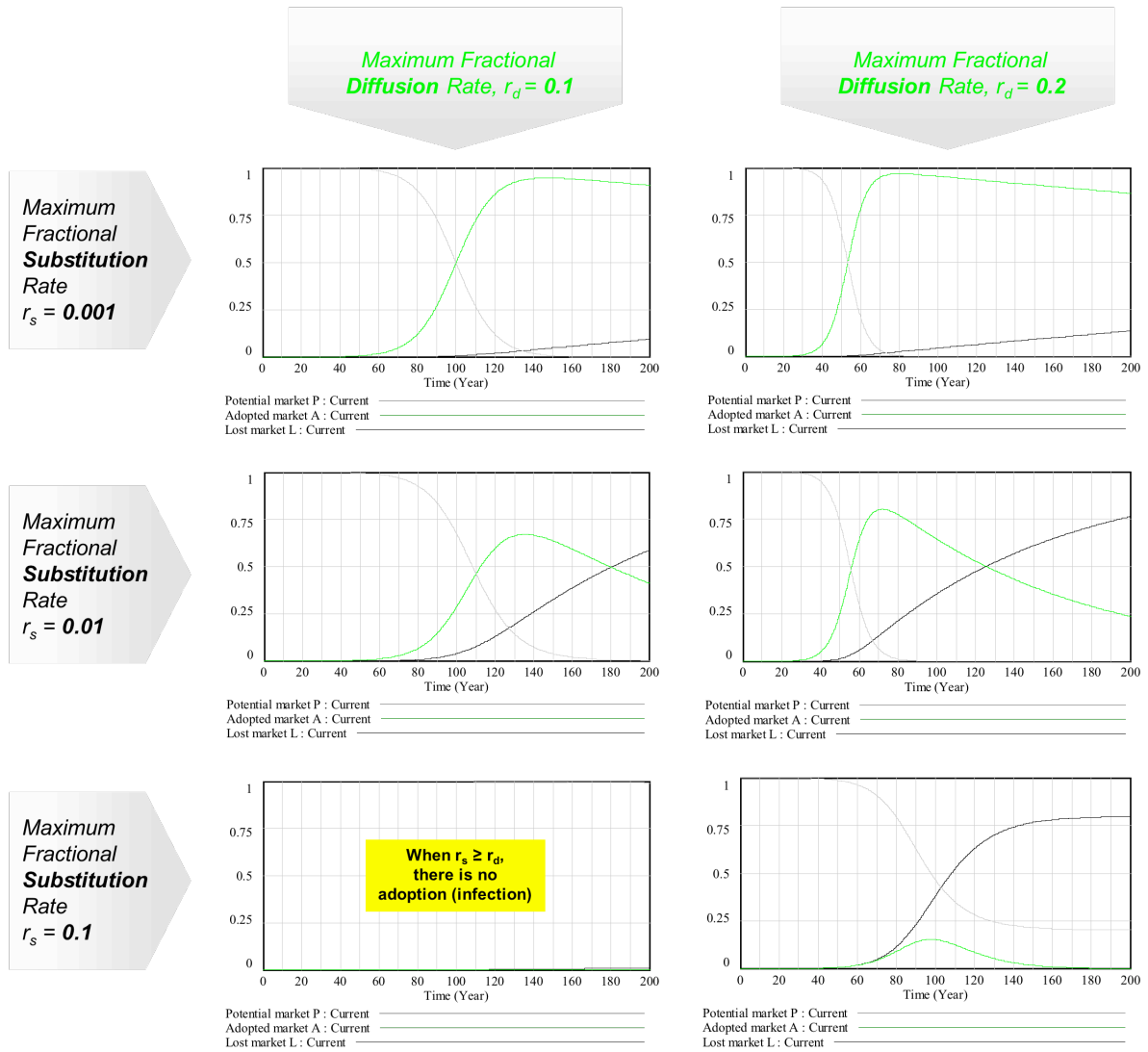
Figure 334: Market Diffusion & (Three-loop) Diffusion-Obsolescence



In Figure 335 below, we present a parametric study of the relative effects of maximum fractional diffusion rates  $r_d$  and maximum fractional substitution rates  $r_s$ . As can be seen, there exists a “tipping point”, or a critical ratio of maximum fractional diffusion rate  $r_d$  to maximum fractional substitution rate  $r_s$ , where the balancing loops dominate the reinforcing loop, which acts to inhibit the development of the Adopted market, A.



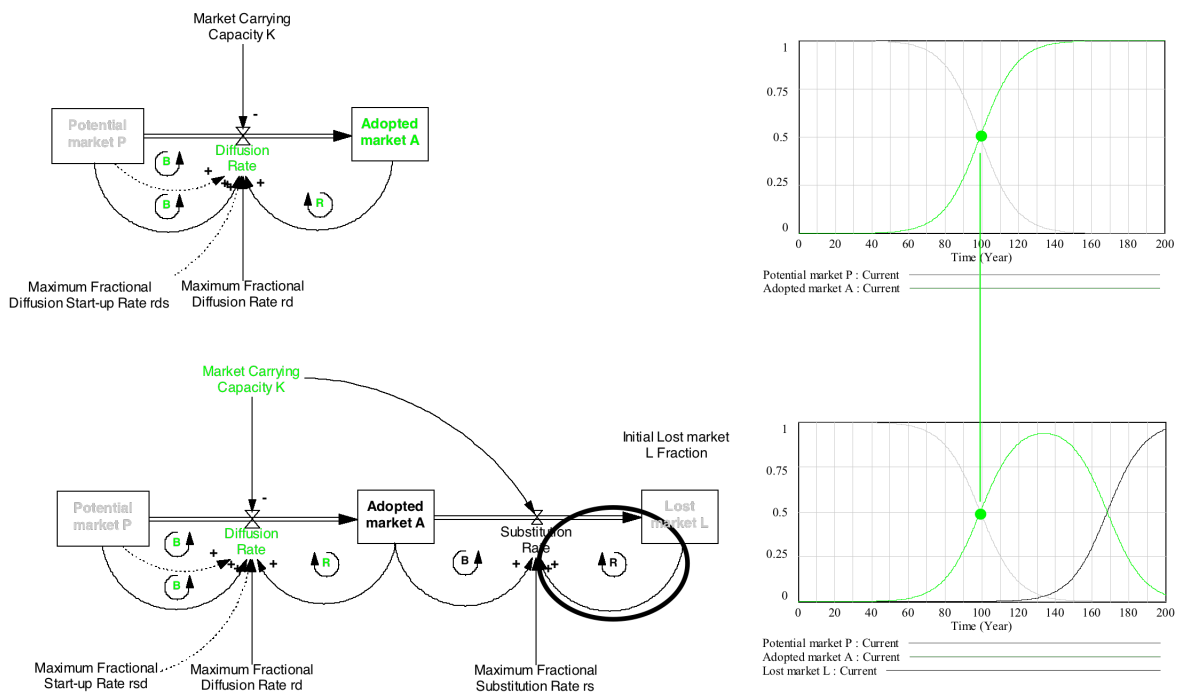
Figure 335: Parametric Analysis comparing *Diffusion* and *Substitution* Rates



### 7.5.2.1.2 Four-loop Representation (*Single Bass*)

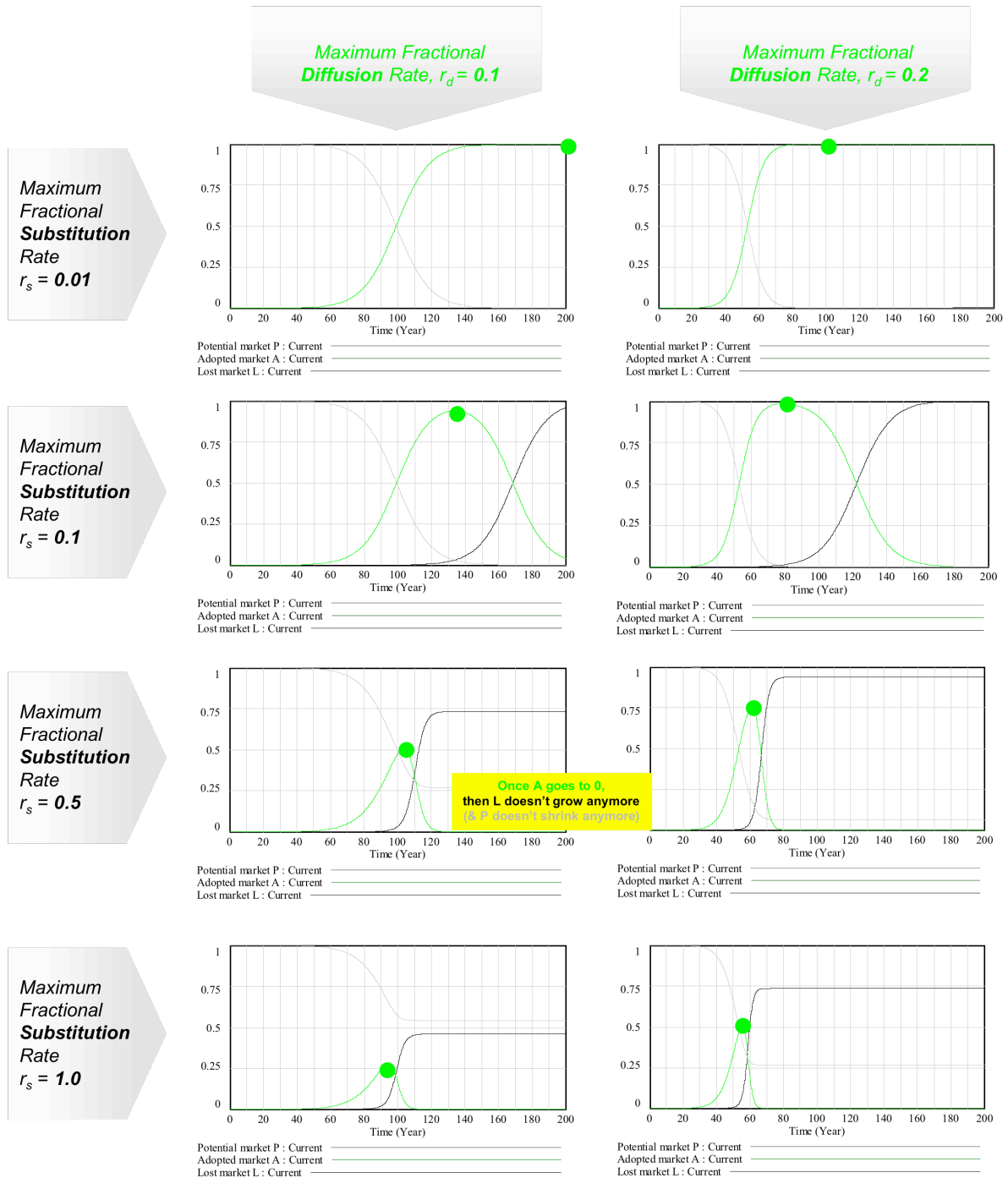
Next, we represent obsolescence as a balancing loop on the outflow of the Adopted market, A plus a reinforcing loop on the Lost market, L. (Note, however that we do not avoid the “start-up problem” with a Bass formulation, this will be demonstrated in the following section.) Figure 336 below compares the model structures and dynamic behaviors of the two-stock diffusion and three stock, two-loop diffusion-obsolescence models. As we saw when we compared this model to one without the additional reinforcing loop, this formulation represents a less severe exodus from the Adopted market, A as there is now feedback reducing the fractional substitution rate,  $r_s$ .

Figure 336: Market Diffusion & (Four-loop) Diffusion-Obsolescence



In Figure 337 below, we present a parametric study of the relative effects of maximum fractional diffusion rates  $r_d$  and maximum fractional substitution rates  $r_s$ . Note, the maximum fractional substitution rates  $r_s$  are an order of magnitude faster than presented in the one-loop model. Note that as the maximum fractional substitution rates  $r_s$  increases, the peak Adopted market, A reduces and occurs earlier in time.

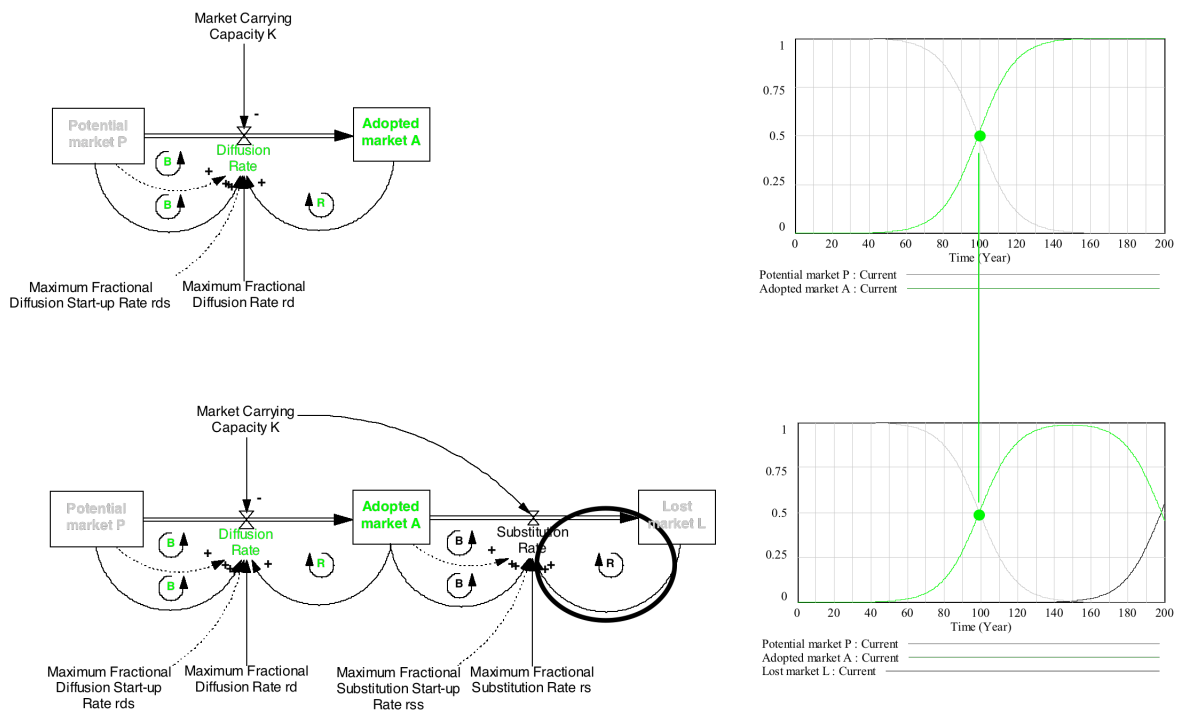
Figure 337: Parametric Analysis comparing *Diffusion* and *Substitution* Rates



### 7.5.2.1.3 Four-loop Representation (*Double Bass*)

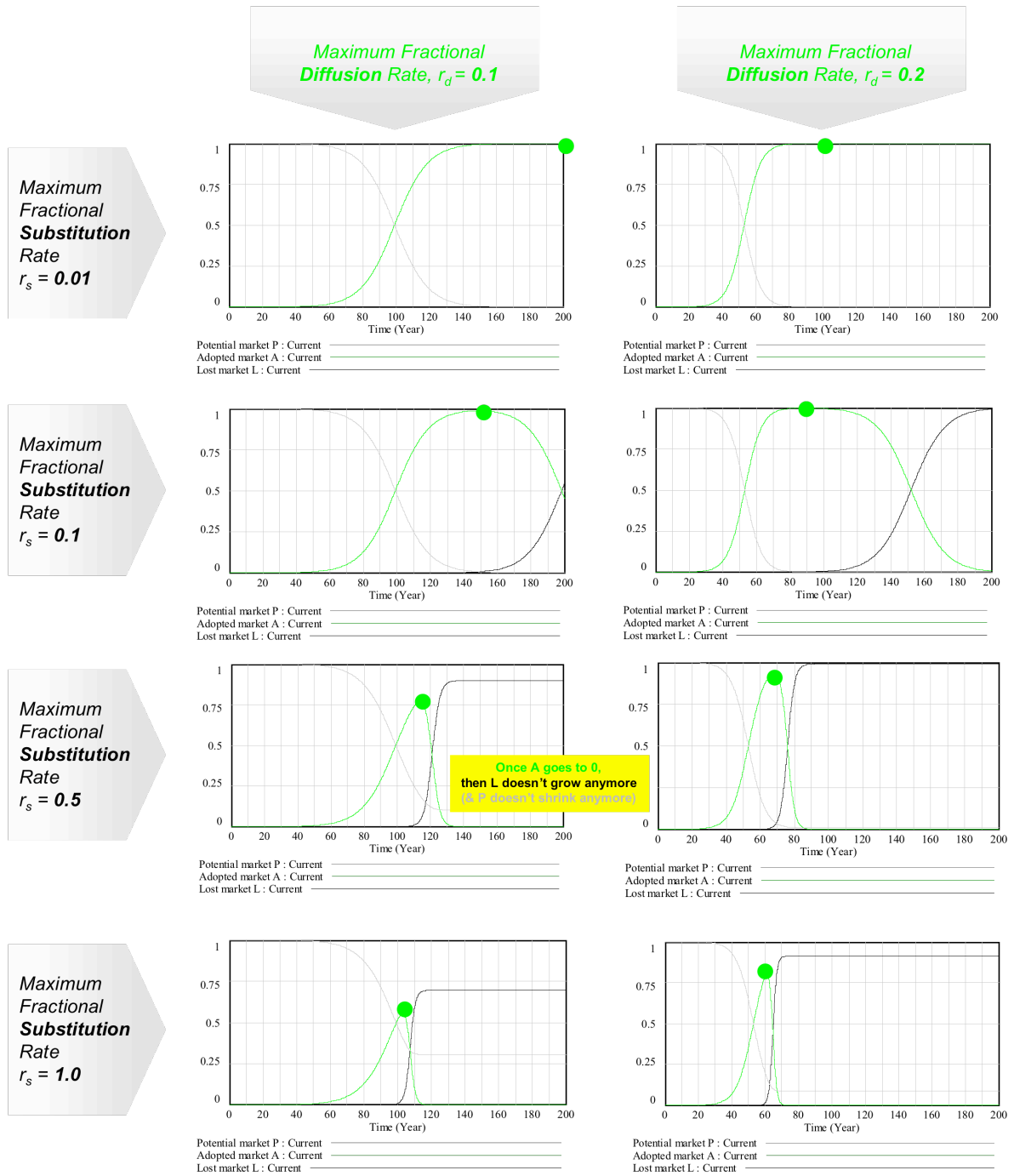
Finally, we represent obsolescence as a balancing loop on the outflow of the Adopted market, A plus a reinforcing loop on the Lost market, L. Now, however that we avoid the “start-up problem” with a Bass formulation. Figure 338 below compares the model structures and dynamic behaviors of the two-stock diffusion and three stock, two-loop (Bass) diffusion-obsolescence models. Again, as we saw when we compared this model to one without the additional reinforcing loop, this formulation represents a less severe exodus from the Adopted market, A as there is now feedback reducing the fractional substitution rate,  $r_s$ .

Figure 338: Market Diffusion & (Four-loop) Diffusion-Obsolescence



In Figure 339 below, we present a parametric study of the relative effects of maximum fractional diffusion rates  $r_d$  and maximum fractional substitution rates  $r_s$ . Again note, the maximum fractional substitution rates  $r_s$  are an order of magnitude faster than presented in the one-loop model. Note that as the maximum fractional substitution rates  $r_s$  increases, the peak Adopted market, A reduces and occurs earlier in time. As expected, there are no significant differences in the dynamic behavior of the models with or without a Bass start-up, there is merely a difference in theoretical justification.

Figure 339: Parametric Analysis comparing *Diffusion* and *Substitution* Rates



### 7.5.2.1.4 Summary of Parametric Study

Finally, Figure 340 below summarizes the comparison of the three causal structures of market diffusion and obsolescence that we presented previously.

Figure 340: Summary of Model Structures of Market *Diffusion* and *Obsolescence*

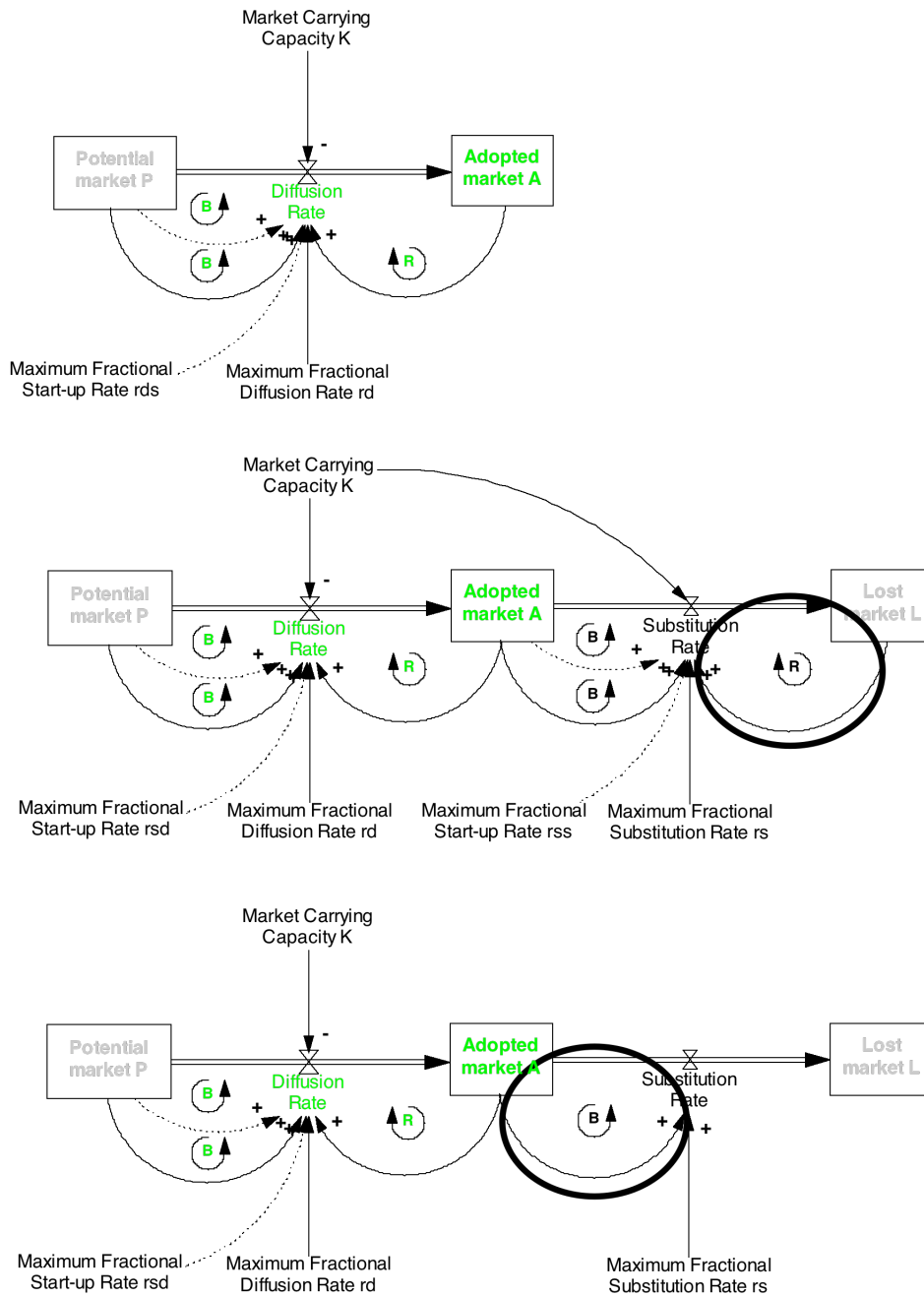
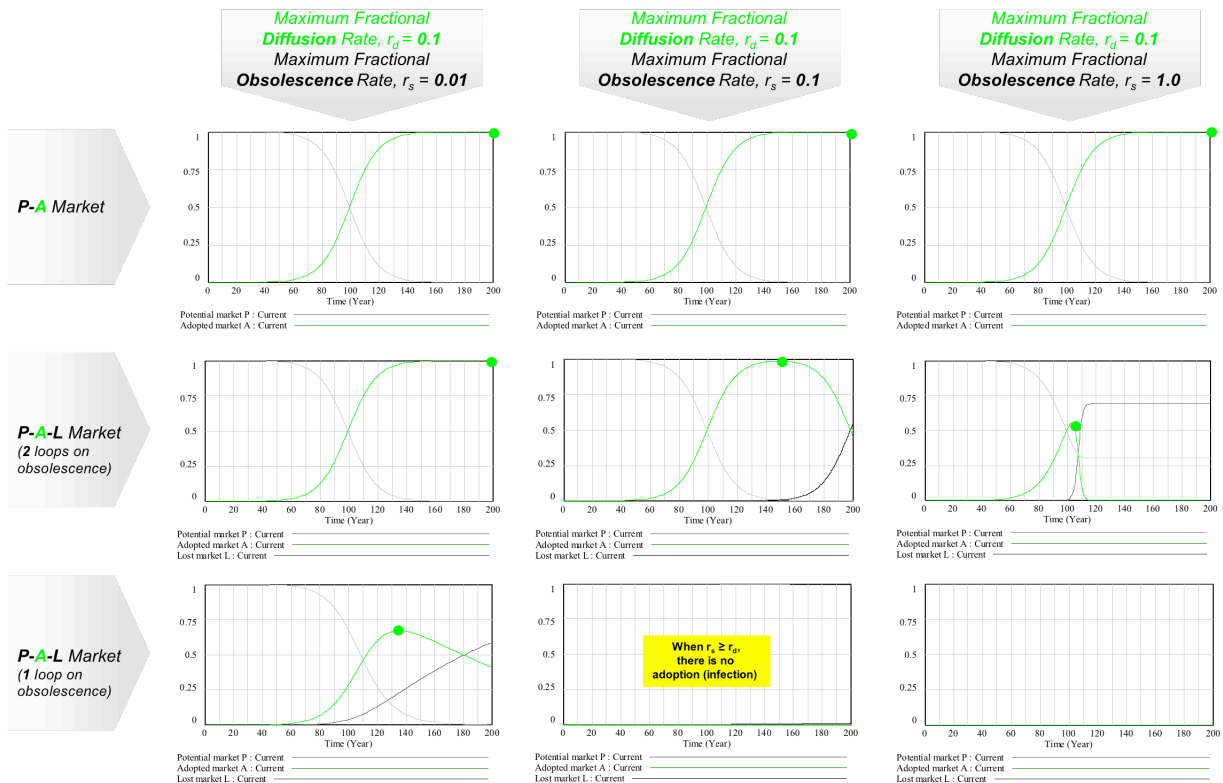


Figure 341 below illustrates the dynamic behavior of the model structures under the parameters of varying fractional diffusion and obsolescence rates. As can be seen, the two loop obsolescence structure begins to limit the peak size of the Adopted market A (relative to the P-A model), while the balancing loop only obsolescence structure is much more severe on A, as it can prevent A's emergence entirely.

Figure 341: Dynamic Behaviors of Market Diffusion and *Obsolescence*



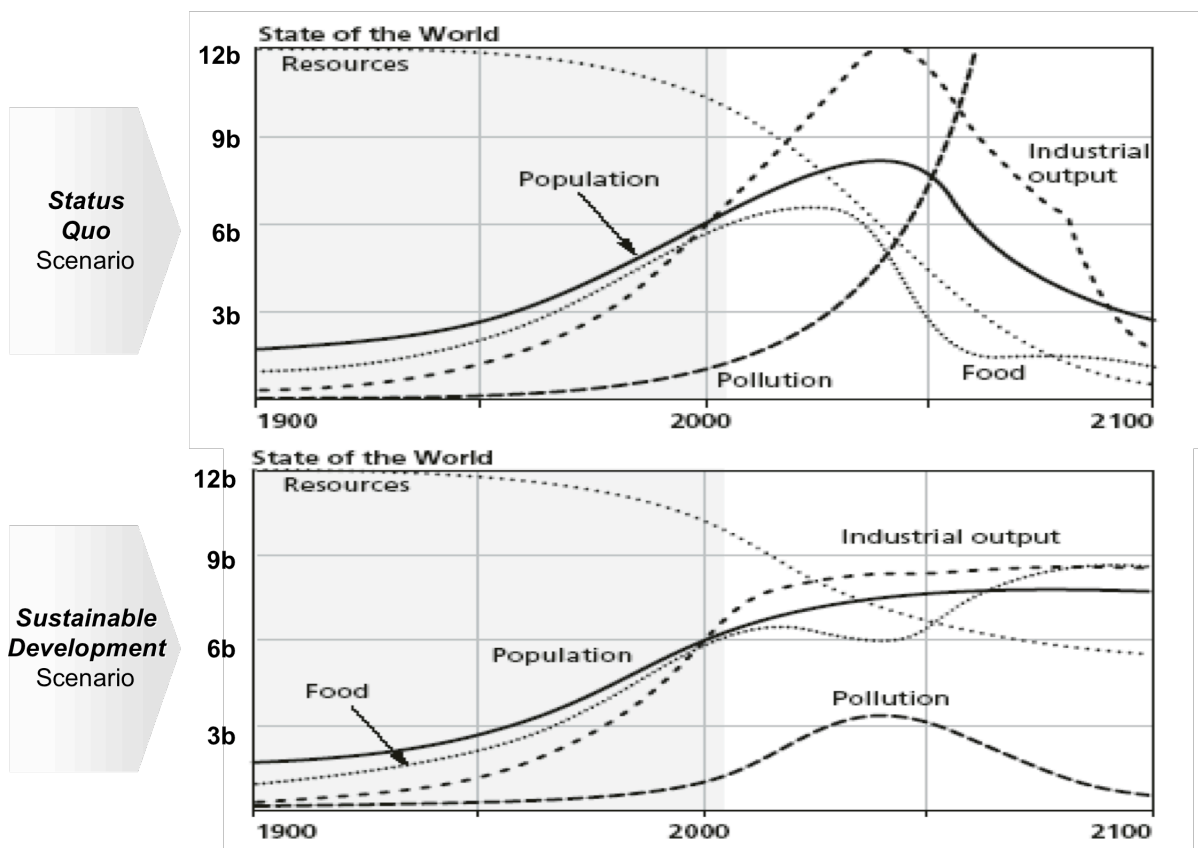
### 7.5.2.2 *Overshoot and Collapse: 200-year Global Market*

Previously, in the market diffusion model, we assumed the scenario of a new product/service that either:

- 1) diffuses logistically throughout a constant population of potential consumers (Bass, 1969), or
- 2) diffuses instantaneously through a logistically-growing population of potential consumers (Verhulst, 1838), or
- 3) some combination of the two.

Since the world population of potential adopters for a specific global product produced by global suppliers (e.g. commercial airplanes or automobiles) is not constant over the evolutionary times scales of interest (e.g. 1900-2100), we need to capture the growth (and possible decay) of this population. One can then combine a bass diffusion of a technology into a population of consumers, which itself is diffusion into its own environment (the earth) having its own ecosystem carrying capacity. Figure 342 Below illustrates the dynamic behavior of two scenarios of complex system dynamics model (Meadows et al., 1972, 1992, 2004) which illustrates the population and industrial growth from 1900-2100.

Figure 342: Global Carrying Capacity into which Global Technologies Diffuse

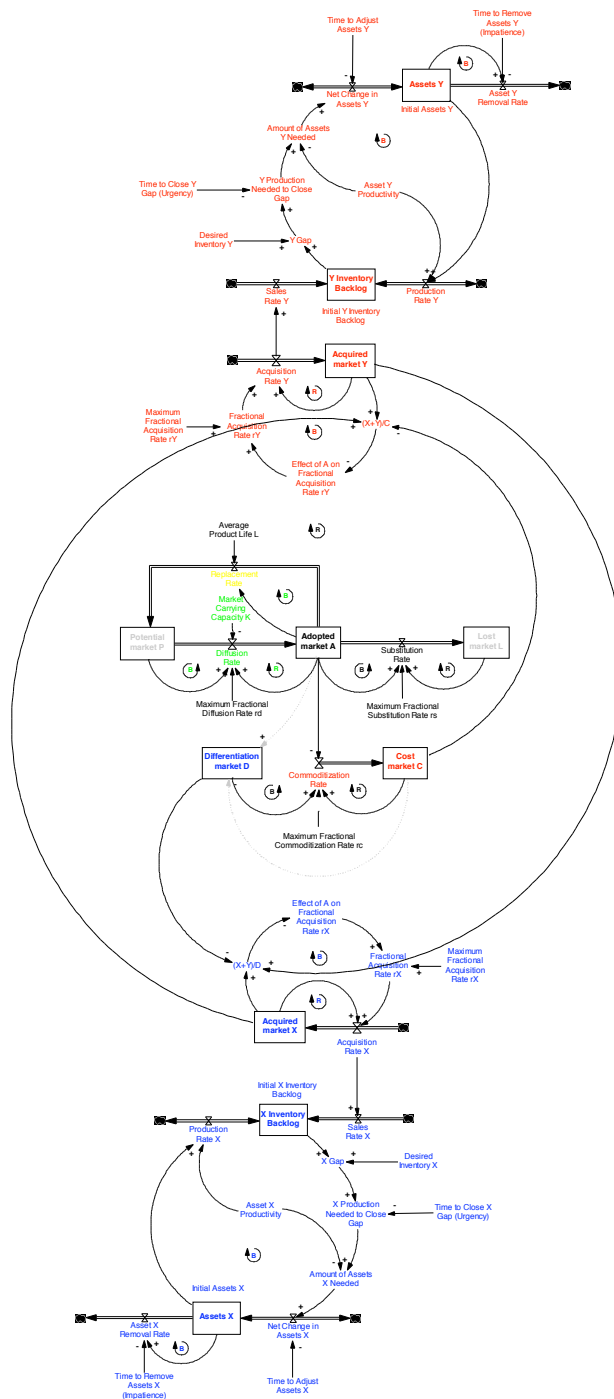




### 7.5.3 Summary

Having defined various market and firm (environment and organization) interaction sector models including demand-supply lags, we can now summarize the model as shown in Figure 343 below.

Figure 343: Full Model Structure of *Inter-species Competition in a Diffusing, Commoditizing Market*



## Chapter 8 Toward a Theory of the Evolution of Business Ecosystems

### 8.1 Framework Summary

The framework will be summarized in two steps. First, we will discretize the evolution of an ecosystem temporally into two phases: growing and maturing. Next we will uncover more detail and complexity by discretizing the evolution of an ecosystem temporally into three phases: exploring (for product innovation), exploiting and exploring (for process innovation).

#### 8.1.1 Two-Phase (simplified) Framework

The previous four chapters each described the construct and process of creation of one of the key parts of the framework. In Figure 344 below, the path of evolution is traced longitudinally, mapping out the first half of the “double helix” corresponding to the *growth* phase of an industry’s development.

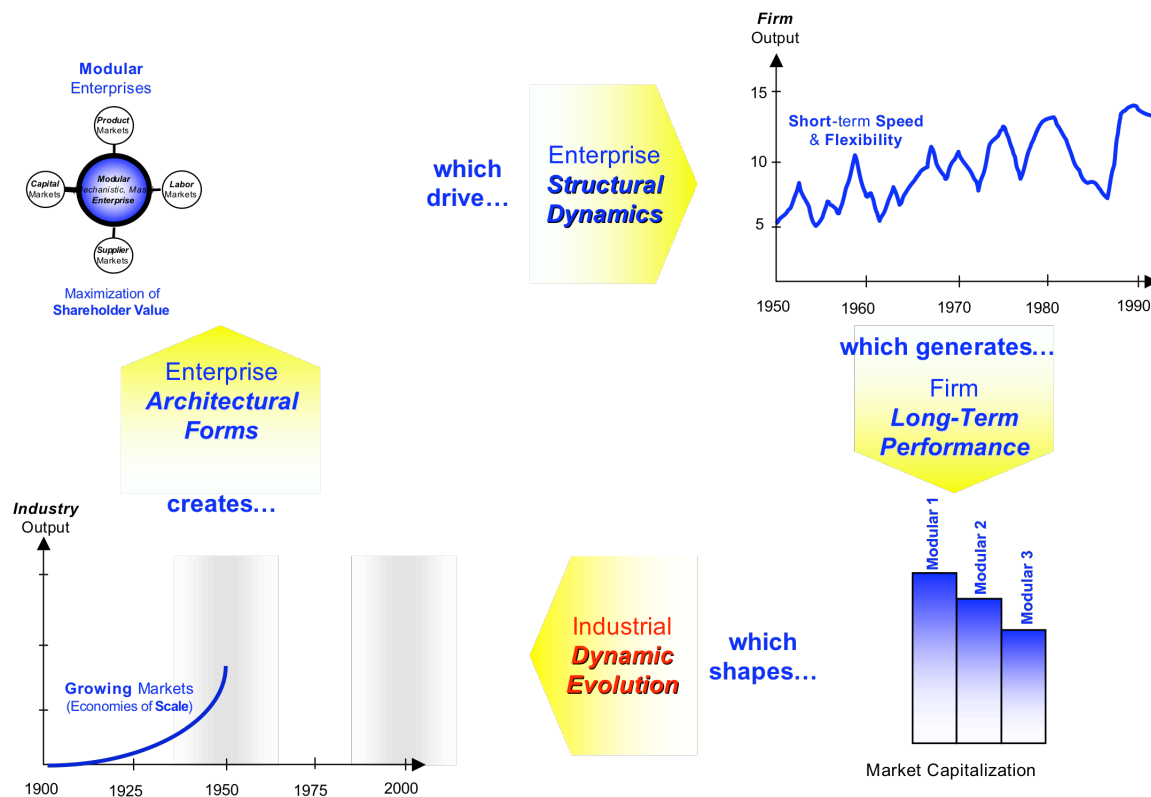


Figure 344: *Growth* Phase of the Industry-Firm Evolution

In Figure 345 below, the path of evolution is traced longitudinally, mapping out the second half of the “double helix” corresponding to the *maturity* phase of an industry’s development.

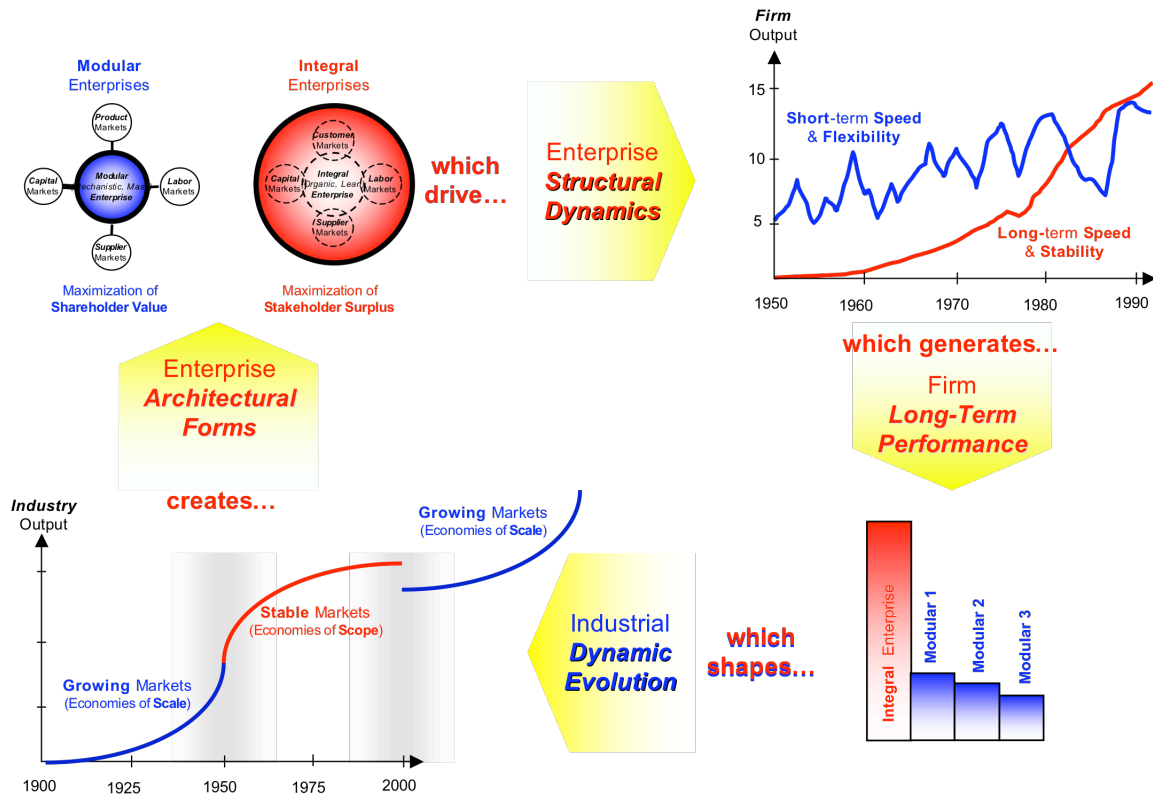


Figure 345: *Maturity* Phase of the Industry-Firm Evolution

The previous two figures can be combined into one figure, which traces out a “double helix” as shown in Figure 346 below.<sup>973</sup>

<sup>973</sup> The notion of “double helix” is borrowed from Fine, C.H. (1998).

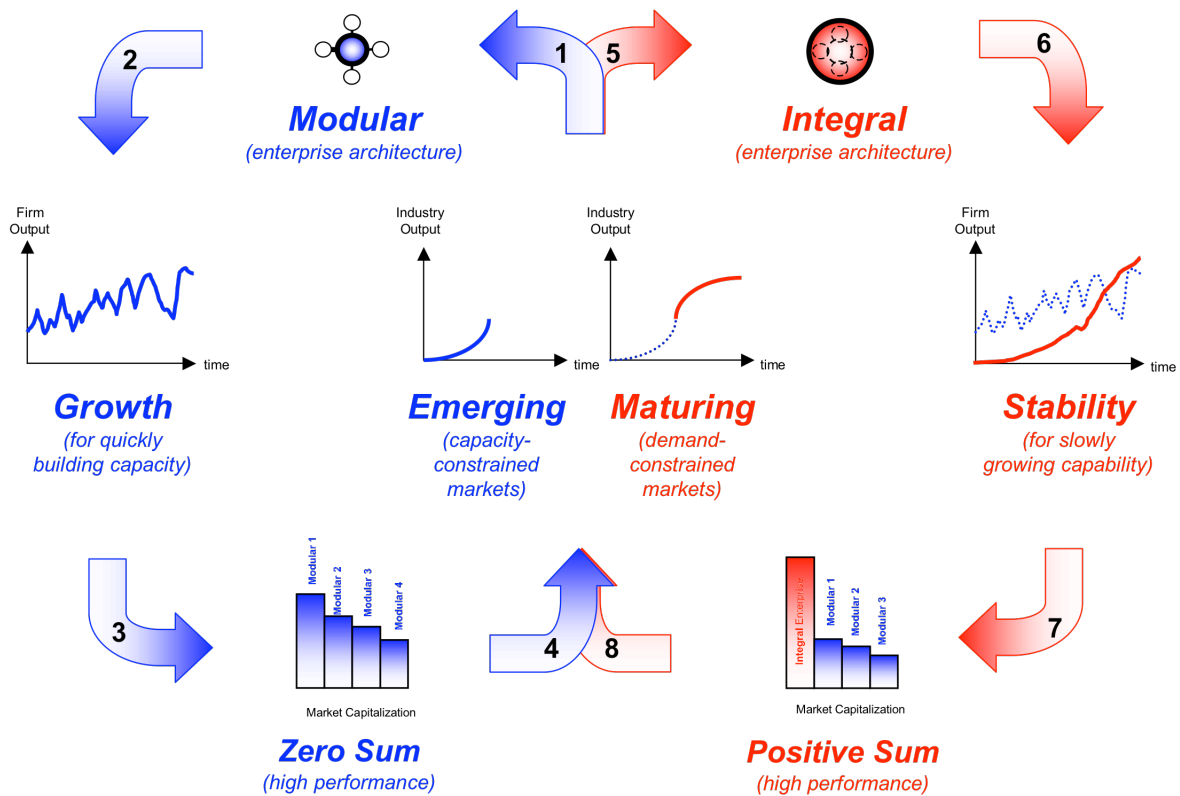


Figure 346: The Two-Phase Framework as a "Double Helix"

Again, returning the design theory metaphor in the design of an enterprise to win a motor sport race, one can see how the two-phase framework produces a double helix as shown in Figure 347 below. At first, exponentially-growing markets are those whose rate of change of output (i.e. speed) are increasing each time period. This is like a fast, smooth racetrack. The architectural form is therefore simply an enterprise that has high speed and low torque, like a racehorse (or hare, to use a literary metaphor). The actual execution of this concept takes the reality of a racecar – well-suited to the racetrack. In order to win in this environment, to capture the most of rapidly-growing markets, one must design, build and operate a system or enterprise that can move fast.

Subsequently, after much racing, the racetrack begins to slow down, either endogenously as the competing cars wear down the surface and deposit tire debris, or exogenously as the rain and other elements outside the control of the competitors begin to turn the racetrack into a mud bog. This will create the second half of the industrial S-curve, in which the market is no longer exponentially-growing, but is now saturating. The rate of change of output (i.e. speed) is now decreasing with each time period. The architectural form best suited to this environment is simply an enterprise that has low (short-term) speed and high torque, like an ox (or tortoise, to use the literary metaphor). The actual execution of this concept takes the reality of a tractor. In order to win in this environment, to capture the most of saturating markets, one must design, build and operate a system or enterprise that can move slowly but powerfully.

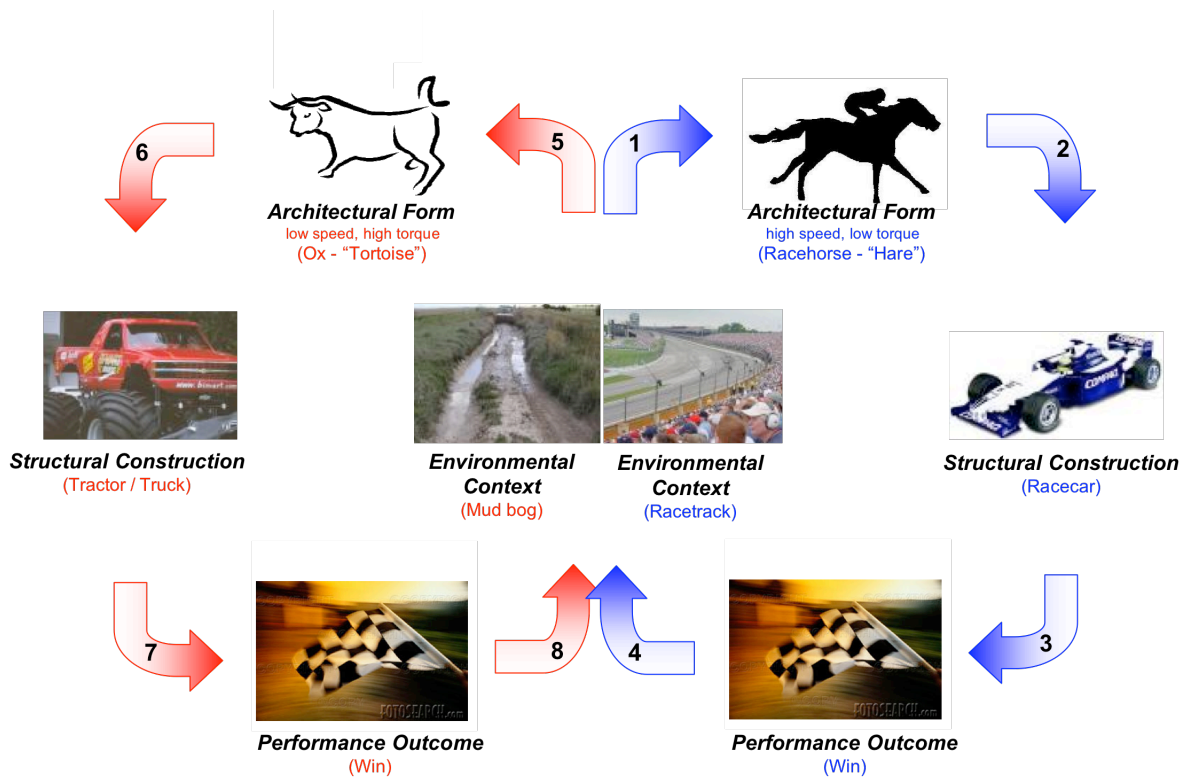


Figure 347: Conceptualization of the Two-Phase Framework as a "Double Helix"

### 8.1.2 Three-Phase Framework

Henry Ford, perceived as one of the greatest (modular) “capitalists”, defended himself from a lawsuit by shareholders in 1919, for suspending *Ford’s* dividend payments by arguing that *Ford* should serve a broader constituency of stakeholders than just the shareholders. He stated *Ford’s* purpose as being:

*“.. to do as much good as we can, everywhere, for everybody concerned...and incidentally to make money.”*<sup>974</sup>

This positive sum objective function, coupled with *Ford’s* vertically integrated Rouge complex, begins to sound like an integral EA, not the modular EA that we have come to observe over the past 50 years. One explanation is that, like *Boeing*, incumbents originally began their lives as integral EA, and have since disintegrated into modular EA.

Likewise, the early leaders of GE echoed the same pluralistic stakeholder-based sentiments:

*“Managers are no longer attorneys for the stockholder; they are becoming trustees for an institution. It makes a great deal of difference in my attitude towards my job as an executive officer of the General Electric Company whether I am a trustee of the institution or an attorney for the investor.”*<sup>975</sup>

<sup>974</sup> Quote taken from *FTmagazine*, June 11, 2005, issue no. 109, pg. 22.

<sup>975</sup> Quote taken from *FTmagazine*, June 11, 2005, issue no. 109, pg. 22.

## 8.2 “Time” as a unifying independent variable

Embedded in the framework presented thus far is the notion of dynamic complexity, or rather that cause and effect are closed and often distant in *space* and *time*. One of the abstract independent variables therefore is the notion of time, and how it is created and used by firms and their extended enterprises.

In the following subsections, we will explore the multiple functions of time.

### 8.2.1 *Time Constants in Managerial Decision-Making (Structural Inertia)*

*“What are the implications of the difference in the time frames involved in firms sustaining superior performance as opposed to experiencing decline and bankruptcy?”<sup>976</sup>*

### 8.2.2 *State of Firm and Industrial Evolution (Architectural Inertia)*

## 8.3 Derivatives of “Time”: Speed and Acceleration

As engineers are very comfortable with time as a primary independent variable, the related “derivative” notions of speed and acceleration soon follow. Rarely, however have these been translated into social science perspectives, particularly regarding the rates of *growth* of the firm which complement the traditional *size* of the firm debates.

## 8.4 Strategic Management Perspectives

Much of these high level principles of time have been discussed in relatively recent strategic management literature. The following summarizes some of the more visible and how they relate to the framework presented herein.

### 8.4.1 Theory of the Growth of the Firm

### 8.4.2 Industrial Dynamics

### 8.4.3 Time-Based Competition

### 8.4.4 Clockspeed

Fine (1998) put forth an interesting and compelling causal mechanism – known as the “double helix” – relating how industries evolve (or integrate and disintegrate) over time. The research herein complements Fine’s original work, in focusing the research lens not on a collection of industries or value chain, but rather on a single industry as firms enter and exit.

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<sup>976</sup> Farjoun, M. (2002), pg. 587.

## Chapter 9 Conclusions

*“Our hope and intention has not been to state eternal truths, but to focus theoretical and empirical attention on organizational action by stating as forcibly as possible **the need to study organizations in toto** and, for that purpose, the significance of the **open system approach** and the **certainty/uncertainty dimension**.”<sup>977</sup>*

The research set out to address the origins and mechanisms of competitive advantage and long-term firm performance from both economic and sociological perspectives, attempting to resolve the micro-macro debates within both fields. The *economic* questions centered on explanation for firm performance residing within the firm or its environment, while the *sociological* questions centered on explanation of strategic choice as resident within the firm (free-will) or the environment (determinism).

In the process, a meta-theoretical framework has been constructed which attempts to link the firm and its environment in a co-evolutionary way, using dual meso-level constructs of *enterprise architecture* coupled with *structuration theory*.

The answer to the above debates appears not to lie either in macro- or micro- explanations, but in an explanation which covers both at different times and for different reasons. In fact, the one place the answer does not reside, is in the middle of the extremes (see Figure 348 below).<sup>978</sup>

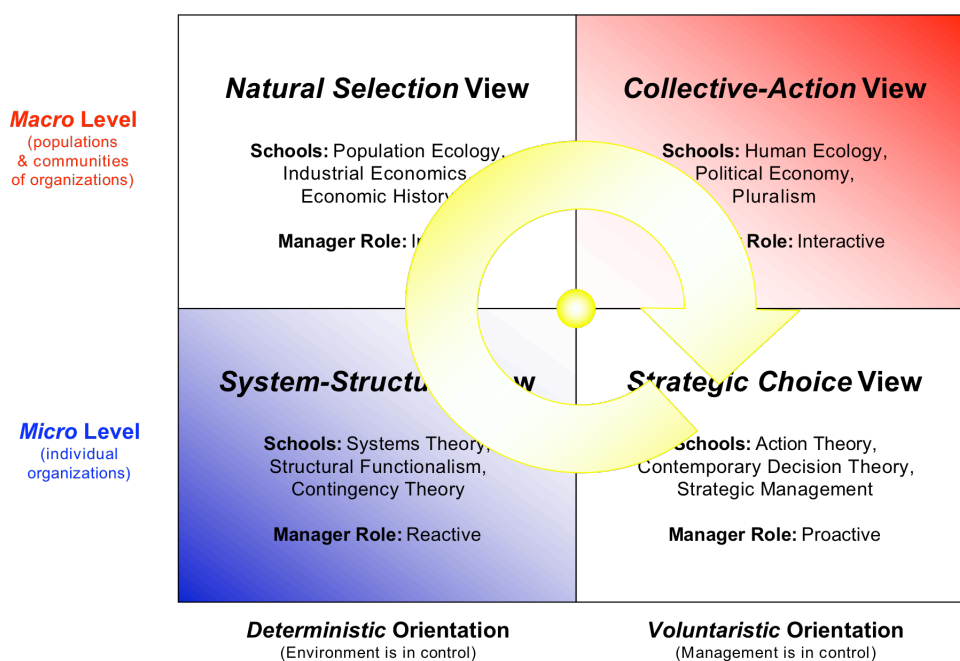


Figure 348: Resolving the Central Debates

<sup>977</sup> Thompson, J.D. (1967), pg. 163.

<sup>978</sup> This fact is not evident in the figure, as time is not represented.

This however does not point to a weak, low-risk, compromise centrist solution. Unlike traditional linear, static, positivist, reductionist thinking which collapses complexity into a neat weighted average “centroid”, the framework presented herein takes a nonlinear, dynamic, interpretivist, holistic thinking approach.

## **9.1 Theory Evaluation in light of “Business Delusions”**

Phil Rosenzweig (2007) offers a compelling list of nine business delusions which not only plague managers, but research in management. The following is a brief description of each followed by a brief explanation of how the theory presented herein attempted to mitigate the delusions.

### **9.1.1 *The Halo Effect***

The halo effect refers to the tendency to make inferences about specific traits on the basis of a general impression. For example, when a company appears to be successful, most, if not all of its attributes (e.g. leadership, culture, strategy, operations) are deemed to be successful as well – it can do no wrong.

In order to counter this, the logic of this research endogenously builds and destroys “halos” over long time horizons. Not every aspect of a successful firm needs to be successful, and the firms success raises and falls over time, endogenously, without changing theories to explain both phenomena.

### **9.1.2 *The Delusion of Correlation and Causality***

Correlation is relatively easy to demonstrate, while causality is rather more difficult, especially, when in most complex systems the causality is bi-directional.

In order to counter this, this research uses circular, closed-loop feedback logic, with co-evolution of the organization and its environment.

### **9.1.3 *The Delusion of Single Explanations***

Most theories emphasize one causal link, whereas in most complex phenomena, multiple, concurrent causes are interacting and equally important.

In order to counter this, this research uses multiple, concurrent causality, highlighting the two broad dimensions of quantity and quality in the characterization of the environment and the organizations within it.

### **9.1.4 *The Delusion of Connecting the Winning Dots***

Searching for what a group of successful companies have in common, will not yield compelling causal mechanisms unless they are compared with less successful companies.



In order to counter this, this research compares pairs of successful and unsuccessful companies over time. Clusters of incumbent (now modular) companies are compared with clusters of their challenger (now integral) companies over time.

#### **9.1.5 *The Delusion of Rigorous Research***

Low quality data, no matter how high the quantity will yield low quality theories.

In order to counter this, this research uses multiple methods and triangulates over stakeholder space and time to secure high quality data.

#### **9.1.6 *The Delusion of Lasting Success***

Almost all high-performing outliers regress to the mean over time.

In order to counter this, this research explains the rise and fall of high-performing companies.

#### **9.1.7 *The Delusion of Absolute Performance***

Company performance is relative to its rivals, not absolute.

In order to counter this, this research explains why high-performing companies both can improve and simultaneously lose relative to their rivals.

#### **9.1.8 *The Delusion of the Wrong End of the Stick***

Noting that **focused or committed** companies outperform **flexible** companies, does not factor in the relatively high risk of these strategies. When numbers of firms in each category are included, a different conclusion may be drawn.

In order to counter this, this research explains how a large number of **Foxes** (or **r-strategists**) and a small number of **Hedgehogs** (or **K-strategists**) can dominate an industry at different phases of its evolution.

#### **9.1.9 *The Delusion of Organizational Physics***

Business organizations are so complex, that their performance can't be predicted with the certainty of deterministic physics.

In order to counter this, this research is a theory of chaos: deterministic order within stochastic "orbits."

## 9.2 Empirical Case Studies

### 9.2.1 Past

Few empirical studies have attempted to define and measure enterprise architectures, and none have done so longitudinally. One notable exception is Schilling and Steensma (2001), which tests previous theory of organizational modularity Schilling (2000). Schilling and Steensma first define modular organizational forms as those which empirically possess greater contract manufacturing, alternative work arrangements and alliances. They then demonstrate that in a wide range manufacturing industries, modular organizational forms flourish when supply and demand are heterogeneous, particularly in the presence of industry standards, technological change and competitive intensity.

*“In many industries, integrated hierarchical organizations have been replaced by nonhierarchical entities that are permeable, interconnected and modular. Other industries, however, maintain relatively high levels of integration. We use the logic of general systems modularity to explain why in some industries there is greater use of modular organizational forms, including contract manufacturing, alternative work arrangements, and alliances, than in other industries. This model was tested using data from 330 U.S. manufacturing industries.”<sup>979</sup>*

Their description of modular organizational forms as: “nonhierarchical entities that are permeable, interconnected” as well as some of their chosen measures of: greater contract manufacturing, alternative work arrangements and alliances might ironically refer to what we describe herein as late entrant integral enterprise architectures. Their paper seems to describe how incumbent integral enterprise architectures disintegrate towards more modular enterprise architectures.

The following is a brief critique of Schilling and Steensma (2001) relative to our own research efforts.

- 1) It is one of the few papers that attempts define and measure “organizational modularity” empirically.
- 2) It demonstrates which industries (as specified by their heterogeneity of supply and demand) are likely to have more modular organizations.
- 3) It is not explicitly longitudinal, and therefore does not demonstrate “disintegration” or “modularization”. It only infers such disintegration in that “integrated hierarchical organizations have been replaced by entities that are modular”. By replace do they imply disintegration or replacement through changing mortality and founding rates?
- 4) It doesn’t have firm performance as a dependent variable. Therefore although it attempts to explain the conditions under which modular organizations exist, it doesn’t explicitly demonstrate whether or not they are the high or low performing firms. For example, a late entrant integral enterprise architecture like *Toyota Motors* or *Southwest Airlines* could be outperforming the population of modular competitors.

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<sup>979</sup> Schilling and Steensma. (2001), pg. 1149.

### 9.2.2 Future

While the present study has been confined to three pairs of incumbent-challenger companies in as many industries (*GM-Toyota*, *United-Southwest*, *Boeing-Airbus*), future research on industries representing extremes of the enterprise architecture typology may include those shown in Figure 349 below, where enterprise architectural differences may account for more variance in long-term firm performance than merely that associated with differences in strategy or operations.

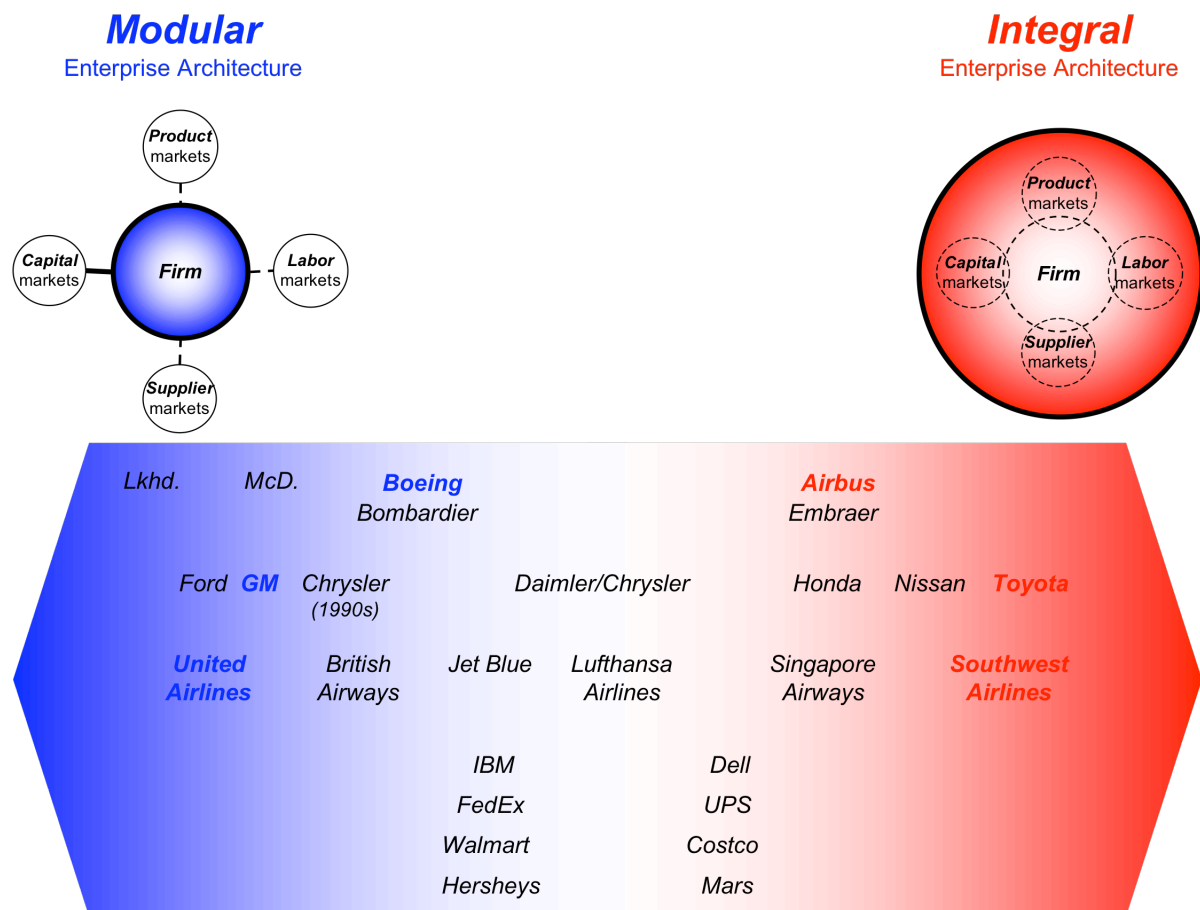


Figure 349: Future Empirical Case Studies

Examples of existing research which can be used to test, refine and extend this framework include:

- *Fiat and Alpha Romeo*. Locke, R.M. (1992).
- *Microsoft*. Cusumano & Selby (1995)
- *Honda and Nissan*. Sako, M. and Helper, S. (1998).
- *Chrysler*. Dyer, J. (2000).
- *Lufthansa and British Airways*. Lehrer, M. (2001).
- *Singapore Airlines*. Heracleous, L., Wirtz, J., and Pangarkar, N. (2005).
- *John Deere*, William J. Holstein, (*Strategy+Business*) Booz Allen Hamilton Inc., (2008).

Examples of companies include:

- *General Electric*: An early entrant integral-turned-modular exploiter moving from niche to niche and from field to field. Now possibly attempting re-integration? Note that *GE/Snecma* appears to be late-entrant integral.
- *BMW & Porsche*: early entrant (to the automobile industry) integral explorers, moving from niche to niche.
- *Apple*: an early entrant (to the PC hardware & software industry) integral explorer focused on niches.
- *Dell*: a late entrant (to the PC hardware industry) modular exploiter focused on the mass market.
- *Microsoft*: an early entrant (to the PC software industry) integral explorer-turning modular exploiter focusing on the mass market. Cusumano notes that *Microsoft* has much in common with *Toyota*'s process, not product innovation, etc. This may refer to their genotypic integral forms.
- *Intel*: an early entrant (to the semiconductor industry) integral-turning-modular exploiter focusing on the mass market.
- *RyanAir*: a late entrant (to the airline industry) modular exploiter focused on the mass market.
- *Mittal*: a late entrant (to the steel industry) modular exploiter focused on the mass market.

### 9.3 Applying the Theory to the Evolution of *Educational Ecosystems*

Before we conclude, it is interesting to reflexively note that this research project was systematically rejected by conventional “world-class” business schools and schools of management around the world. The fundamental basis for the rejection of the work, lay primarily in the motivating premise of the research: to determine a *systematic* explanation of the *longitudinal* phenomena of long-term firm performance. By definition, this is a very ambitious question, requiring a multi-discipline based approach, using a variety of methods over a long period of time. Advice from reputable academics from the above business and management schools was broadly consistent:

*“While your research project represents the raison d’être of our school – and of all business schools in general – the architecture of our enterprise, to use your lexicon – does not enable, and in fact constrains us to not solve this problem. We have become too disintegrated, too functionally specialized, to short-term... What you will need is an entirely new integral organizational form, lead by a bold, ambitious vision...”<sup>980</sup>*

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<sup>980</sup> Conversation with anonymous academic, 2008.

**Part IV: APPENDICES**

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## B. Sources of Profitability: *Industry vs. Firm*

A number of recent empirical studies have attempted to quantify the sources of firm profitability (Hansen and Wernerfelt, 1989; Rumelt, 1991; Powell, 1996; Roquebert et al., 1996; McGrahan and Porter, 1997; Hawawini et al., 2003). These are summarized in Figure 350 below:

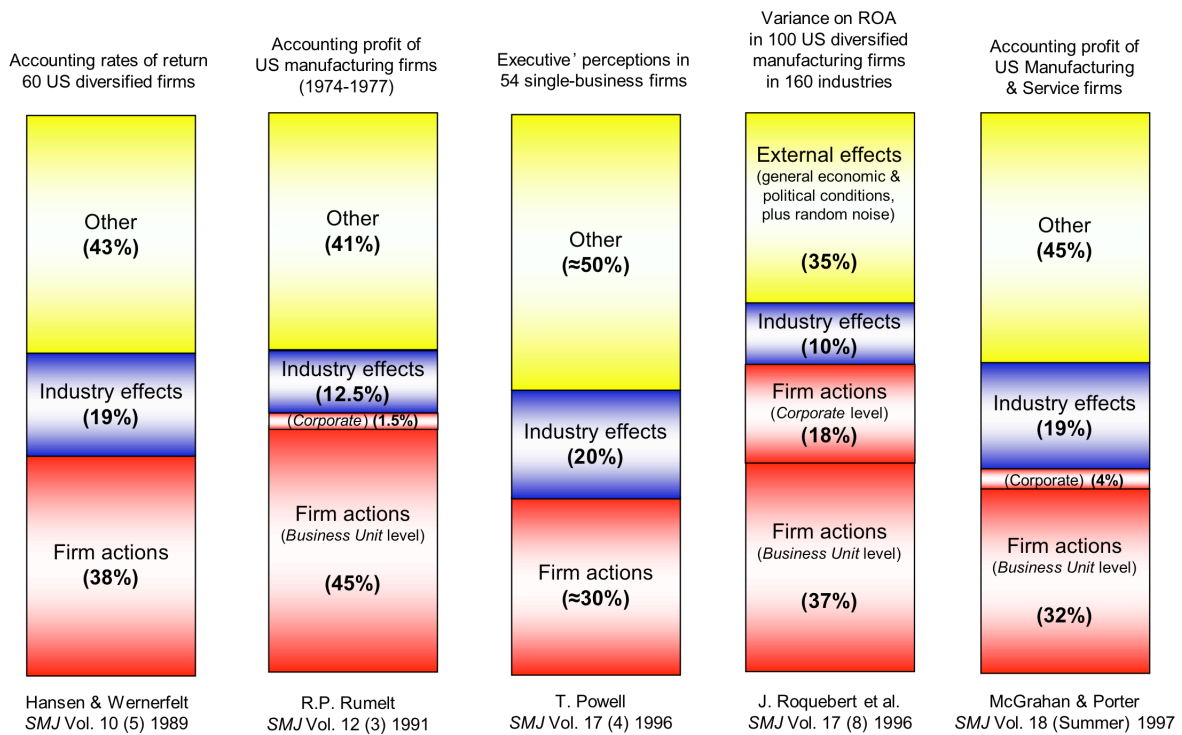


Figure 350: Sources of Firm Profitability: Empirical Studies

### **C. Placement of Research within the *Strategic Management* Field**

The following table highlights those works (in bold) of the 50 most cited publications in strategic management (Ramos-Rodriguez and Ruiz-Navarro, 2004) that have had the greatest impact on this dissertation.

Of the thirteen most influential works highlighted, four represent the field of economics, and in particular two schools of the resource-based tradition: the “dynamic” school (Penrose, 1959; Dierickx and Cool, 1989) and the evolutionary school (Nelson & Winter, 1982)

The remaining nine represent the field of sociology, particularly the contingency theorist (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Thompson, 1967) and population ecologists (Hannan and Freeman, 1977, 1984).

Table 20: Most Influential Research (of the 50 most influential publications in Strategy)

No.	Authors	Date	Title	Journal	Field	Sub-field
1	<b>Porter</b>	<b>1980</b>	<b><i>Competitive Strategy</i></b>	-	<b>Econ.</b>	<b>IO</b>
2	Rumelt	1974	<i>Strat., Struct. &amp; Econ. Perf.</i>	-	Econ.	Div.
3	Porter	1985	<i>Competitive Advantage</i>	-	Econ.	IO
4	<b>Chandler</b>	<b>1962</b>	<b><i>Strategy &amp; Structure</i></b>	-	<b>Econ.</b>	<b>Div.</b>
5	Williamson	1975	<i>Markets &amp; Hierarchies</i>	-	Econ.	TCE
6	<b>Nelson &amp; Winter</b>	<b>1982</b>	<b><i>Evol. Theory of Econ. Change</i></b>	-	<b>Econ.</b>	<b>ET</b>
7	<b>Pfeffer &amp; Salancik</b>	<b>1978</b>	<b><i>Resource Dependence</i></b>	-	<b>Socio.</b>	<b>RD</b>
8	<b>Miles &amp; Snow</b>	<b>1978</b>	<b><i>Org. Strat., Struct. &amp; Process</i></b>	-	<b>Socio.</b>	<b>Cnfg.</b>
9	Cyert & March	1963	<i>Behavioral Theory of the Firm</i>	-	Psych.	Beh.
10	<b>Thompson</b>	<b>1967</b>	<b><i>Organizations in Action</i></b>	-	<b>Socio.</b>	<b>CT</b>
11	Hofer & Schendel	1978	<i>Strategy Formulation</i>	-	Socio.	
12	Wernerfelt	1984	“Resource-Based View”	SMJ	Econ.	RBV
13	Barney	1991	“Firm Resources”	JOM	Econ.	RBV
14	<b>Lawrence &amp; Lorsch</b>	<b>1967</b>	<b><i>Org. &amp; Env.: Differ. &amp; Integr.</i></b>	-	<b>Socio.</b>	<b>CT</b>
15	Andrews	1971	<i>Concept of Corporate Strategy</i>	-	Socio.	
16	<b>Penrose</b>	<b>1959</b>	<b><i>Theory of Growth of the Firm</i></b>	-	<b>Econ.</b>	<b>RBV</b>
17	Ansoff	1965	<i>Corporate Strategy</i>	-	Econ.	
18	Williamson	1985	<i>Relational Contracting</i>	-	Econ.	TCE
19	Scherer	1980	<i>Industrial Market Structure</i>	-	Econ.	IO
20	Quinn	1980	<i>Change: Incrementalism</i>	-	Psych.	
21	Prahalad & Hamel	1990	“Core Competence of Corp.”	HBR	Econ.	RBV
22	<b>Dierickx &amp; Cool</b>	<b>1989</b>	<b>“Asset Stock Accumulation”</b>	<b>MS</b>	<b>Econ.</b>	<b>RBV</b>
23	Jensen & Meckling	1976	“Agency Costs & Ownership”	JFE	Econ.	AT
24	Weick	1969	<i>Social Psych. of Organizing</i>	-	Socio.	
25	March & Simon	1958	<i>Organizations</i>	-	Socio.	
26	Mintzberg	1978	“Strategy Formulation”	MS	Psych.	
27	Bower	1970	<i>Resource Allocation</i>	-	Socio.	
28	Child	1972	“Role of Strategic Choice”	JBSA	Socio.	
29	<b>Aldrich</b>	<b>1979</b>	<b><i>Organizations &amp; Environments</i></b>	-	<b>Socio.</b>	<b>PE</b>
30	Barney	1986	“Strategic Factor Markets”	MS	Econ.	RBV
31	<b>Hannan &amp; Freeman</b>	<b>1984</b>	<b>“Structural Inertia”</b>	<b>ASR</b>	<b>Socio.</b>	<b>PE</b>
32	Lippman & Rumelt	1982	“Uncertain Imitability”	BJE	Econ.	RBV
33	Mintzberg et al.	1976	“Struct. & Unstruct Decision”	ASQ	Socio.	
34	<b>Burns &amp; Stalker</b>	<b>1961</b>	<b><i>Management of Innovation</i></b>	-	<b>Socio.</b>	<b>CT</b>
35	Cohen & Levinthal	1990	“Absorptive Capacity: Learning”	ASQ	Econ.	RBV
36	Hambrick & Mason	1984	“Org. as Reflect. of Top Mgrs.”	AMR	Socio.	
37	Rumelt	1984	“Toward Strat. Theory of Firm”	in book	Econ.	RBV
38	Buzzell et al.	1975	“Market-share: a Key to Profit.”	HBR	Econ.	
39	<b>Tushman &amp; Anderson</b>	<b>1986</b>	<b>“Tech. Discon. &amp; Org. Env.”</b>	<b>ASQ</b>	<b>Socio.</b>	
40	<b>Hannan &amp; Freeman</b>	<b>1977</b>	<b>“Population Ecology of Orgs.”</b>	<b>AJS</b>	<b>Socio.</b>	<b>PE</b>
41	Schendel & Hofer	1979	<i>Strat. Mgmt.: A New View</i>	-	Socio.	
42	Palepu	1985	“Diversification Strategy”	SMJ	Econ.	Div.
43	Rumelt	1991	“Does Industry Matter?”	SMJ	Econ.	
44	Christensen & Montgomery	1981	“Diversification vs Mkt. Struct.”	SMJ	Econ.	Div.
45	Wrigley	1970	<i>Divis. Auton. &amp; Diversification</i>	- (PhD)	Econ.	Div.
46	Peteraf	1993	“Resource-based View”	SMJ	Econ.	RBV
47	Porter	1987	“Comp. Adv. to Corp. Strat.”	HBR	Econ.	Div.
48	Rumelt	1982	“Diversification Strategy”	SMJ	Econ.	Div.
49	Teece	1982	“Theory of Multiproduct Firm”	JEBO	Econ.	RBV
50	Caves & Porter	1977	“Mobility Barriers”	QJE	Econ.	IO

## D. Interview Informants

### The Boeing Company

*The Boeing Company* served as the most encouraging and supportive learning laboratory that one could hope for. I am indebted to those at *Boeing* with whom I have had the privilege to learn along side with. They are listed below alphabetically, grouped according to their informal networks or formal corporate divisions:

- *World Headquarters / Corporate Offices*
  - Mike Cave (EVP, Strategy and Business Development), Paul Gray (Board of Directors), Shephard Hill (EVP, Strategy and Business Development).
- *Boeing Commercial Airplanes Leadership Team*
  - Mike Bair (VP, Business Strategy and Marketing), Dan Becker (VP, Manufacturing; VP Twin Aisle Programs), Scott Carson (VP, Sales; CEO), Mike Cave (VP, Airplane Programs; VP, Business Strategy and Marketing), Ray Conner (VP, Sales), Carolyn Corvi (VP 737 Program; VP, Airplane Programs), Jan Fisher (VP, Boeing International), Karen Freeman (VP, ?), Doug Kight (VP, Human Resources), Jim Jamieson (VP, Airplane Programs; COO), Fred Kiga (VP, Government Relations), Jim Morris (VP, Supplier Management), Rob Pasterick (VP, Finance), Nicole Piasecki (VP, Business Strategy and Marketing), Clay Richmond (VP, ?), Jim Schlueter (VP, Communications), Scott Shearer (VP, ?).
- *Commercial Airplane Programs Leadership Team*
  - Jerry Allyne (VP, Finance), Dan Becker (VP, Manufacturing; VP Twin Aisle Programs), Ross Bogue (VP, 757 Program; VP, Fabrication; VP 747 Program), Carolyn Brandsema, Mike Cave (VP, Airplane Programs), Wade Cornelius (VP, Global Strategy), Carolyn Corvi (VP 737 Program; VP, Airplane Programs), Kris Fellrath (VP, Program Management Office), Jim Jamieson (VP, Airplane Programs), Paula Janson, (VP, Human Resources), Mark Jenkins (VP, 737 Program), Jacki Konesky, David Leonhardi, Larry Loftis (VP, 777 Program), Pat McKenna (VP, 717 Program; VP Fabrication), David Moore (VP, Information Technology), Mike Olszewski, Laura Peterson, (VP, Global Strategy), Sandy Postel (VP, Propulsion Systems; VP Lean Enterprise Office), Steve Schaffer (VP, Supplier Management) Richard Wynne, Bev Wyse (VP, 767 Program), Russ Young (VP, Communications).
- *Airplane Production*
  - Carolyn Corvi, Bill Cogswell, Steve Connelly, Sandra Cope, Wade Cornelius, Rich DeLappe, Lindsey Douglas, Diane Easley, Bruce Florsheim, Debbie Gavin, Jon Geiger, Rick Gross, Mike Hersher, Scott Hoge, Kay Lui, George Maffeo, Craig Martin, Carleton Mason, Dave Moore, Sandy Postel, Jennifer Sumner, Steve Thorson
  - *747 / 767 / 777*
    - Dan Becker, Ross Bogue, Stephen Connelly, Michael Delaney, Debby Kinsley, Jeff Klemann, George Maffeo, Dwight Miller, Atsuo



- Miyake, Larry Loftis, Dan Mooney, David Moore, Don Morgan, Paul Nuyen, John Quinlivan, Jeff Piece, Bev Wyse
- 737 / 757
  - Mark Jenkins, Jerry Allyne, Lindsay Anderson, Bill Cogswell, Mike Delaney, Peter Doman, Kris Fellrath, Valerie Jensen, Larry Loftis, Candace Lydston, Scott Peiper, Castel Pittman, Marie Western
- 717
  - Pat McKenna
- *Fabrication Division*
  - Ross Bogue, Gary Bomhoff, Tony Carolan, John Cornish, Scott Cruikshank, Doug Dahl, Deborah Dustman, Tim Ferris, Jim Frankland, Jon Geiger, Lew Husted, Pat McKenna, Andy Moskowitz, Liz Otis, Mick Norris, Dave Pickering, Jenette Ramos, Mark Ross, Owen Sakima, Jim Paige, Rielda Savage, Jon Self, Kim Smith, Drea Stoner
- *Propulsion Systems Division*
  - Mo Yahyavi, Sandy Postal, Karyl Bartlett
- *Supplier Management*
  - Steve Schaffer, Valery Feliberti, Jeff Luckey, Gary Mesick, Ren Nanstad
- *Wichita Division (now Spirit Aerosystems)*
  - Jeff Turner, Ron Brunton, Don Blake, Dennis Dietz, Tom Greenwood, Carolyn Harms, Marci Johnson, Randy Kysar, John Pilla, Kip Schmidt, Bob Waner, Dan Wheeler
- *Engineering / Manufacturing*
  - Jim Morris, Dan Mooney, Mark Jenks
- *Commercial Aviation Services*
  - Tim Copes
- *Sales*
  - Marty Bentrrott, Scott Carson, Ray Connor.
- *Human Resources*
  - Susan Abbott, Susan Andrews, Curt Brusto, Jeannie Denbo, Joelle Denney, Becky Evans, Mel Fortson, Bill Hartman, Rich Hartnett, Terri Hoge, Bruce Jackson, Paula Janson, Doug Kight, Carey McFarlane, BV McGrue, Duane Shireman, Darlene Thomas, Chris Villiers, Teresa Yoneyama.
- *Marketing & Business Strategy*
  - Fariba Alamdari, Rik Anderson, Tony Arvish, Mike, Bair, Lynda Beaumont, Leyla Beyaz, Jim Billing, Debra Blount, Gretchen Bodine, Silke Boettger, Sherry Carbary, Mike Cave, Nina Clancy, Allison Cook, Larry Coughlin, Deb Dollard, Rasheed El-Moslimany, Blake Emery, Bill Epler, Pradeep Fernandes, Uli Fischer, Kent Fisher, Jennifer Haaginson, Devin Harmala,

Ralph Heinze, Joel Hennig, DeAnn Henny, Scott Hilton, Mike Hurd, Andy Hutchison, Janice Imrich, Adam Kohorn, Kay Le, Drew Magill, Mitch Mann, Gregory Mars, Rachel Martin/Portillo, Miko Masters, Tim Meskill, George Metcalf, James Mitchell, Dennis Morden, David Nestvold, Brian Norwood, Daniel O'Neill, Brian Pearson, Chresten Petersen, Nicole Piasecki, Anthony Ponton, Andy Price, Sandy Randles, Lora Rennie, Dustin Robinson, Linsey Rubenstein, Ken Sain, Sean Schwinn, John Shen, Wendy Sowers, David Suguro, Tiim Swanson, Tracey Talbott, Rhodri Thomas, Beth Thompson, Brad Till, Jeff VerWey, Mike Wargel, Dave Wenndt, Gary Wicks, David Williams, David Wirth, Mike Woodward.

- *Phantom Works*
  - Mark Augustyniewicz
- *Lean+ / Lean Enterprise Office*
  - Mike Hersher, Sandy Postal
- *The Boeing MIT-Leaders For Manufacturing (LFM) Alumni:*
  - Dan Allison, Michelle Bernson, Laura Bogusch, Timothy Copes, Larry Coughlin, Valerie Feliberti, Victoria Gastelum, Tom Greenwood, Steve Herren, Charlie Hix, Keith Jackson, Mark Jenks, Eric Kittleson, Adam Kohorn, Steve Llorente, Rasheed El-Moslimani, Erik Nelson, Dan Park, Linsey Rubenstein, Sharon Rykels, Roland Sargent, Mike VanderWel, Dan Wheeler.
- *The Boeing Career Foundation Program (BCFP):*
  - Kate Beale, Annie Beck, Gretchen Bodine, Kirsten Bowen, Alexa Burns, Michael Cram, Mark Cypher, Leann Decker, Carla Deutsch, Meghan Fiore, Mackenzie Fisher, April Garza, Lauren Henriksen, Rae Kang, Art Livermore, Robert Long, Abbey Louie, Rachel Martin, Josh McDonald, Keely McIlwain, Michelle Mulcahy, Chresten Petersen, Lindsay Petersen, Herb Portillo, Dustin Robinson, Ryan Rubenstein.
- *Alteon*
  - Sherry Carbary, President
- *Shared Services Group*
  - Tim Copes, President

### **Spirit Aerosystems**

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- *Executive Council*

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### **BAE Systems**

- October 2006:

James Baker, Director of Technology and Engineering Services – *Shared Services*; Sean Bond, Vice-President Aerospace; Chris Clarkson, Technical Director, Future Systems & FOAS – *Air Systems*; Geoff Grant, Business Unit Vice-President and Program Manager; Steve Greenbank, Supply Chain and Procurement Director, *Air Systems*; Jim Imrie, Managing Director, Type 45 Destroyer – *Naval Ships*; John Jarman, Vice-President and Deputy General Manager; Bob Kearley, Policy Manager; William Lenz, Vice-President Engineering; Tony McCarthy, Business Improvement Director, *CS&S*; Ian McNeeney, Business Director, Support Programmes; Craig Murray, Human Resources Director – *Insyte*; Paul Perera, Support Services Director – *CS&S*; Nigel Philpott, Programmes Director – *Insyte*; Matthew Riddle, Director Survivability; Jim Schoppenhorst, Program Director DDX; Steve Rowbotham, Managing Director, Munitions; Mike Scrimgeour, Legal Director – *Operations*; Trevor Spearpoint, Vice-President, Mission Success; Andy Start, Managing Director, IFS Defence – *CS&S*; Mike Thomas, Commercial Director – *Insyte*; Phil Thomber,

Comm. and Proc. Director – CS&S; Alan Tough, Finance Director – *Naval Ships*; Nigel Ward, Operations Director – *Submarines*.

- October 2007:

Matt Anderson, Head of Manufacturing Engineering; Nigel Blenkinsop, Director of Integrated Manufacturing – Samlesbury and Warton; Jayne Bryant, Engineering Director – *NA Platform Solutions*; Dominic Carr, Head of Commercial – *Naval Ships*; Michael Christie, Programme Director – *Training Solutions*; Glyn Cragg, CVF Project Director – *Submarine Solutions*; Jenny Cridland, Head of HR – *Business Improvement*; Hamish Davidson, Senior Vice-President; Steve Dowdell, ACA Mission System Director – *Insyte*; Alan Farnworth, Chief Technical Officer – *Insyte*; Bob Fewings, Project Director FRES SOSI – *Strategic Business Development*; Stuart Forsyth, Vice-President Tranche 1/MDC – *Air Systems*; Ed Gelsthorpe, Senior Legal Advisor; Ronald Herzog, Finance Director – *North America*; Bradley Jacobs, Vice-President, Finance – *North America*; Sean McGovern, Operations Director – *Regional Aircraft*; Walt Mueller, C31 Engineering Director; Graeme Ormiston, Finance Director Type 45 – *Surface Fleet Solutions*; John Osterholz, Vice-President Global Communications & Advanced Networks – *Network Systems*; Steve Ripp, General Manager, M/S 01-23LL; Jan Robjohn, Business Development Director – *Insyte*; Amy Shevlin, Director, HR – *North America*; Jim Unterseher, Vice-President, Programs – *North America*; John Wall, Vice-President and General Manager, Flight Systems – *Sensor Systems*; Gregory White, Vice-President Business Management – *North America*.

- October 2008:

Richard Ashooh, Vice-President, Government Relations, E&S; Charlie Blakemore, Managing Director – *Land Systems*; Mark Bowers, Director of Human Resources *Insyte*; Chris Chambers, Sub Vice-President – Sales & Marketing; Jeremy Charmak, Director of Commercial & Procurement; Sam Cole, Vice-President; Malcom Dare, Director of Supply Chain & IT Services – *Submarine Solutions*; Jim Garceau, Director, US Fixed Wing Programs; James Geraghty, Senior Director – Programs; Dan Gobel, Vice-President and General Manager – *Advanced Platform Electronic Warfare Systems*; Neil Graham, Director of Engineering Capability and Performance; Iain Green, Managing Director – *IFS Defence*; David Herr, Vice-President and General Manager – *Commercial Avionics*; Brendan Hindle, Head of Machine Shop Operations; Mark Keeler, Vice-President of Operations; John Kesser, Director – Program I; Rusty Kollmorgen, Director – Program II; Martha LaCrosse, Chief of Staff, Chairman's Office; Paul McDonald, Director of Insurable Risk Services; Paul Nash, Head of Supply Chain; Annie O'Connor, Director of Human Resources Integration; Andrew Price, Chief Counsel – *Insyte*; Mark Ritson, Director of Communications – *Insyte*; Gary Slack, Chief Financial Officer – *Land & Armaments OG*; John Steckel, Vice-President of Business Development; Mark Taylor, Director of Strategy & Business Development – *Regional Aircraft*; Stephen Trichka, Vice-President & Chief Counsel – *Platform Solutions*; Mark Turner, General Manager – *RAF Marham*; Candace Vassella, Vice-President, Government

Relations; Tony Williams, Production Director – *Govan*; Steve Worsnip, Assistant Director – *Typhoon Support Programmes*; Simon Wright, Head of Engineering.

### E. Literature Review of *Mixed Duopoly Economics*

The literature on firms with an objective function other than the classical “profit-maximizing” (PM) is recent and sparse, namely ‘labor-managed’ (LM). Much of it comes from recent work on comparing “mixed” duopoly studies which are summarized in **Error! Reference source not found.** below:

Table 21: Literature Review of *Mixed Duopoly Economics*

Date	Authors	Title	Type of Competition	Key Take-away
1983	Law & Stewart	“Stackelberg Duopoly with an <b>Illyrian</b> & <b>PM</b> Firm.”	Cournot-Stackelberg	
1989	Mai & Hwang	“Export Subsidies & Oligopolistic Rivalry Between <b>LM</b> & <b>Capitalist</b> Economies.”	?	
1991	Horowitz	“On the Effects of Cournot Rivalry Between <b>Entrepreneurial</b> & <b>Cooperative</b> Firms.”	Cournot	
1991	Stewart	“Strategic Entry Interactions Involving <b>PM</b> and <b>LM</b> Firms.”	?	
1991	Stewart	“Management Objectives and Strategic Interactions among <b>Capitalist</b> and <b>LM</b> Firms.”	?	
1992	Cremer & Crémer	“Duopoly with <b>Employee-controlled</b> & <b>PM</b> Firms: Bertrand & Cournot Competition.”	Cournot & Bertrand	
1994	Futagami & Okamura	“Strategic Investment: the <b>LM</b> Firm & the <b>PM</b> Firm.”	?	
1995	Delbono & Scarpa	“Upward-Sloping Reaction Functions Under Quantity Competition in <b>Mixed</b> Oligopolies.”	Cournot	<b>LM</b> dissuades <b>PM</b> from increasing output by matching -making prices fall.
1995	Lambertini & Rossini	“Are <b>LM</b> Firms Really Able to Survive Competition with <b>PM</b> Firms?”	Cournot	<b>LM</b> can’t survive competition with <b>PM</b> when starting from scratch. It won’t enter.
1996	Neary & Ulph	“Strategic Investment & the Co-existence of <b>LM</b> and <b>PM</b> Firms.”	?	<b>PM</b> profitability implies <b>LM</b> profitability; not conversely.
199?	Lambertini	“Cournot vs. Stackelberg Equilibria with <b>Entrepreneurial</b> and <b>LM</b> Firms.”	Cournot-Stackelberg & Bertrand	<b>PM</b> ’s lead & <b>LM</b> ’s follow in Cournot competition. Both follow in Bertrand competit.
1998	Lambertini & Rossini	“Capital Commitment & Cournot Competition with <b>LM</b> and <b>PM</b> firms.”	Cournot	<b>PM</b> firm under-invests while <b>LM</b> firm over-invests.
2002	De Fraja & Delbono	“Game Theoretic Models of <b>Mixed</b> Oligopoly.”	Cournot & Bertrand	<b>LM</b> firms can increase social welfare for governments.

## F. Literature Review of System Dynamics Modeling of *Firm Competition*

System Dynamics has been developed and used over the past 50 years to model complex feedback dynamics in social and socio-technical systems. Many of the early seminal works considered the performance of firms and industries (Forrester, 1961, 1966), however the treatment of competition between firms was not captured explicitly and endogenously. More recent research has begun to explicitly model competition between firms explicitly and endogenously, and of importance to this research dissertation, has begun to model firm heterogeneity. Table 22 below summarizes some of the key research efforts in this area.

Table 22: Literature Review of System Dynamics Modeling of *Firm Competition*

SD Model	Competition			Market-clearing mechanisms	Insights / Summary
	Industry Structure	Types (heterogeneity)	How Modeled		
<b>Industrial Dynamics</b> Forrester, 1961	Many competitors, small feedbacks	Homogeneous (Het. discussed) (pg. 336-37, 340-41)	Not		<i>Oscillation</i> between value chain firms
<b>Market Growth</b> Forrester, 1968	Many competitors, small feedbacks	Homogeneous	Implicitly / Exogenously via benchmark	Delivery delay	<i>Growth</i> failure, even in unlimited market
<b>Sys. Pathology of Organizatns.</b> Hall, 1976	Many competitors, small feedbacks	Homogeneous	Implicitly / Exogenously via benchmark		<i>Growth</i> failure, even in unlimited market
<b>Corporate Planning</b> Lyneis, 1980	Many competitors, small feedbacks	Homogeneous	Implicitly / Exogenously via benchmark	Production, Availability & Price	
<b>B&amp;B Enterprises</b> Paich & Sterman, 1993	Duopoly, large feedbacks	Heterogeneous?	Explicitly / Endogenously	Price & Availability?	Market dynamic complexity defines successful strategy
<b>Duopoly Competition</b> Sice & Mosekilde, 2000	Duopoly, large feedbacks	Homogeneous (pg. 116)	Explicitly / Endogenously	Product quality	Faster reactions lead to limit cycles & chaos
<b>Dyn. of Comp. Industries</b> Kunc & Morecroft, 2004					
<b>Evolution of Industries</b> Kunc, 2004		Heterogeneous? (Differentiated or Low Cost)			
<b>Dyn. of Innov. Industries</b> Weil & Utterback, 2005					Competition is among firms & technologies. Includes firm entry & exit
<b>Getting Big Too Fast</b> Sterman & Henderson, 2007	Duopoly, large feedbacks	Heterogeneous? (Aggressive or Conservative)	Explicitly / Endogenously	Price & Availability? (pg. 9)	Market dynamic complexity defines successful strategy

**G. Mathematical Equations of Numerical Model (*Vensim*)**



## H. Selected Sample of Qualitative Data for *Discourse & Textual* Analysis

In Table 23 below is a selected sample of qualitative data gathered from publically available sources for firms in both the primary and secondary samples. This data complements the qualitative data collected via interviews and direct observation. The data are arranged chronologically, and are categorized by stakeholder interaction and coded for concepts embodied in the theoretical framework developed herein: fit, form, function, performance.

Table 23: Selected Sample of Qualitative Data for Discourse & Textual Analysis

Date	Source	Person / Title	Stakeholder (Category)	Firm	Key Data	Concepts
15 Mar. 1930	<i>United Aircraft and Transport Corporation, First Annual Report to Stockholders, 1929</i>	Frederick B. Rentschler, President, <i>United Aircraft &amp; Transport Corporation</i>	Firm	$\alpha$	<p><i>“United Aircraft &amp; Transport Corporation is a holding company controlling, through stock ownership, various subsidiary companies of outstanding importance in aviation. It occupies a unique and possibly the strongest position in the aeronautical field of any company in the world. Among its subsidiaries are airplane, aircraft engine and propeller manufacturers, as well as companies engaged in the operation of air transport lines, aeronautical schools, airports, experimental laboratories, etc. Almost fifty percent of the total volume of 1929 aeronautical exports from the United States, consisted of products of United Aircraft. Commercial transport operations more than doubled in mileage in 1929 over 1928.”</i></p>	On a disintegrating integral enterprise architecture.
1978	<i>Toyota Production System: Beyond Large Scale Production</i> (pp. 2, 9, 114-115)	Taiichi Ohno, “Father” of the Toyota Production System, <i>Toyota Motors</i>	Firm	$\beta$	<p><b>“Slow growth is scary.”</b></p> <p><b>“During a high period of economic growth, any manufacturer can achieve lower costs with higher production. But in today’s low growth period, to achieve any form of cost reduction is difficult.”</b></p> <p><b>“In a high-growth period, productivity can be raised by anyone. But how many can attain it during the more difficult circumstances induced by low-growth rate? This is the deciding factor in the success or failure of an enterprise.”</b></p> <p><b>“There must be hundreds of people around the world who can improve productivity and efficiency by increasing production quantity. We, too, have such foremen at Toyota. But few people in the world can raise productivity when production quantities decrease. With even one such person, the character of a business operation will be that much stronger. People prefer working with large quantities, however. It is easier than having to work hard and learn from</b></p>	On an Integral Enterprise Architecture’s design for slow growth environments.

					<b>producing small quantities. I think it is more worthwhile in a company to work in the area where there are problems due to dwindling sales than in an area where sales are rising.”</b>	
1978	<i>Toyota Production System: Beyond Large Scale Production</i> (pp. 62-63)	Taiichi Ohno, “Father” of the Toyota Production System, <i>Toyota Motors</i>	Firm	β	<b>“The Tortoise and the Hare: The slower but consistent tortoise causes less waste and is much more desirable than the speed hare who races and then stops occasionally to doze. The Toyota production system can be realized only when all the workers become tortoises. Speed is meaningless without continuity. Just remember the tortoise and the hare.”</b>	On an Integral Enterprise Architecture’s design for slow growth environments, requiring <i>slow</i> action by employees.
1978	<i>Toyota Production System: Beyond Large Scale Production</i> (pg. 36)	Taiichi Ohno, “Father” of the Toyota Production System, <i>Toyota Motors</i>	Firm	β	<b>“Mountains should be low and valleys should be shallow.”</b>	On an Integral Enterprise Architecture’s quest for <i>stability</i> .
1978	<i>Toyota Production System: Beyond Large Scale Production</i> (pp. 8-9, 53, 62)	Taiichi Ohno, “Father” of the Toyota Production System, <i>Toyota Motors</i>	Firm	β	<b>“Cost Reduction is the Goal: At Toyota, as in all manufacturing industries, profit can be obtained only by reducing costs. Cost reduction must be the goal of consumer products manufacturers trying to survive in today’s marketplace.”</b>  “The goal, as I have often said is <b>cost reduction.</b> ”  “ <b>.cost reduction, the most critical condition for a business’ survival and growth... the criterion of all decisions is whether cost reduction can be achieved.</b> ”	On an Integral Enterprise Architecture’s focus on <i>cost-leadership</i> .
1978	<i>Toyota Production System: Beyond Large Scale Production</i> (pp. 53)	Taiichi Ohno, “Father” of the Toyota Production System, <i>Toyota Motors</i>	Firm	β	<b>“In the Toyota Production system, we think of economy in terms of manpower reduction and cost reduction. The relationship between these two elements is clearer if we consider a manpower reduction policy as a means of realizing cost reduction, the most critical condition for a business’ survival and growth. Manpower reduction at Toyota is a company-wide activity whose purpose is cost reduction. Therefore all considerations and improvement ideas, when boiled down, must be tied to cost reduction. Saying this in reverse, the criterion of all decisions is whether cost reduction can be achieved.”</b>	On an Integral Enterprise Architecture’s treatment of <i>employment stability</i> in the service

						of <i>cost-leadership</i> .
1988	MIT Sloan Fellows SM Thesis, Carolyn Corvi, <i>The Boeing Company</i>	<i>The Boeing Company</i>	Firm	α	“First and foremost, management needs to <b>stabilize the organization</b> . Successful strategy implementation lies in adherence to <b>long-term strategies, not short-term goals or revenue targets</b> . Achievement of <b>short-term goals</b> , often overrides the strategic direction established at top levels for the organization. There is less incentive for executive management to stick to the strategy, but rather more incentive to <b>manage ‘by the numbers’</b> . The result is that <b>tactics</b> become more important than <b>strategy</b> . The <b>bottom line and profitability</b> become more important than <b>establishing market presence, etc.</b> ”	On an integral enterprise architect’s assessment of a modular enterprise architecture.
2001		Richard Aboulafia, analyst, <i>Teal Group</i>	Firm-Customers	α	“A potent combination of over-investment in recent years and a well-founded concern about profitability may well lead airlines to defer many orders,” wrote Aboulafia in a monthly letter to clients. Given that, Aboulafia said, the order backlog isn’t all that secure. ‘All told, about half the backlog is less than firm,’ Aboulafia said. ‘And even the truly firm orders can be deferred, with no real cost to the buyer.’”	On temporal inconsistencies in analysts of modular enterprise architectures.  (Compare with same analyst’s statements in March 2008 and 17 Dec. 2008.)
3 Aug. 2001	<i>Seattle Post-Intelligencer</i>	Carolyn Corvi, VP/GM, <i>Boeing Commercial Airplanes</i>	Firm	α	“At a time when airplane orders are down and deliveries of new planes are expected to follow, <i>The Boeing Co.</i> is about to do something it has never done before...the 737 production rate will reach 28 planes a month... At first glance, it might seem odd that <i>Boeing</i> is increasing the production rate of its 737 to record levels during a severe downturn in the airline industry, when many analysts predict that orders for single-aisle jets such as the 737 will be down substantially over the next couple of years. Last year, <i>Boeing</i> won 391 orders for the 737. So far this year, customers have placed only 83 firm orders... And the more airplanes <i>Boeing</i> can turn out a month, the greater the opportunity to capitalize on the many cost-savings that have been made in the production of the world’s most frequently flown jetliner. ‘The more airplanes that go out the factory door, the better the benefits,’ Corvi said... We always want to avoid jerking rates up or down,”	On an integral architect trying to manage stably within a modular enterprise architecture.

					Corvi said. <b>“That’s’s not only counterproductive but expensive.</b> As we work to manage our production system, <b>one of the things we always look at is how do we manage the rates in such a way that</b> allows us to support the demand from the market and at the same time <b>allows us to manage our production so that it’s not costing us a fortune to build the airplane.</b> ”	
20 Sept. 2001	<i>ATI</i>	Philippe Camus & Rainer Hertrich, <i>EADS</i> Co-Chairmen	Firm	β	“We’ve always been more <b>careful about production rates.</b> We do see peaks and troughs but <b>we’ve always managed to limit the highs and lows better than they do</b> in the USA.”	On an Integral Enterprise Architecture’s relatively more stable production.
21 Sept. 2001	<i>Financial Times</i>	Rainer Hertrich, <i>EADS</i> Co-Chairman	Firm	β	“ <b>We do not need to fire people,</b> and it is not the European way,’ declared Hertrich.”	On an Integral Enterprise Architecture’s view of labor stability.
21 Sept. 2001	<i>AFX News</i>	Noel Forgeard, <i>Airbus</i> CEO	Firm	β	“I am always a bit surprised by the <b>speed</b> with which Americans take decisions: that in three days (after the attacks) they announce 25,000 layoffs at <i>Boeing</i> seems to me <b>totally stupefying,</b> ’ Forgeard said. Forgeard said his company’s situation is different ‘because <i>Airbus</i> has a bigger order book than <i>Boeing</i> and <b>growing market share.</b> ”	On an Integral Enterprise Architecture’s relatively slower decision making and its concern for protecting other stakeholders (e.g. labor).
24 Sept. 2001	<i>Aviation Week</i>	Alan Mulally, <i>Boeing Commercial Airplanes</i> CEO	Firm		“ <i>Boeing</i> <b>quickly moved</b> last week to cut commercial transport delivery estimates through 2002 by what could more than 100 aircraft in an announcement that surprised even some veteran <i>Boeing</i> -watchers by its <b>swiftness and scope.</b> At a <b>hastily arranged</b> news conference Sept. 18, one week after the terrorist attacks in the U.S., the company said it could also lay off up to nearly one-third of its commercial aircraft workforce. The decision to reduce the workforce by 20,000-30,000 jobs in the next 15 months results from plans by U.S. airlines to decrease operational capacity by about 20% due to	On a Modular Enterprise Architecture’s relatively faster decision making and its lack of

					traffic reductions. Alan R. Mulally, <i>Boeing</i> president and CEO of <i>Boeing Commercial Airplanes</i> , said the layoffs would begin during the last quarter of this year. ‘When you order airplanes today, depending on the model, the lead time is anywhere from 10-14 months, <b>so we need to make these decisions for production next year as soon as possible.</b> ’ On Sept. 19, Mulally said no orders have been canceled to date and <b>denied that the company had been planning a similar type of job action prior to the airlines' current problems.</b> A primary goal of the company is to keep the market from becoming overloaded with new aircraft it can't use, thereby worsening airlines' financial positions, he added.”	concern for protecting other stakeholders (e.g. labor).
2 Oct. 2001	<i>Le Figaro</i>	Philippe Camus, <i>EADS</i> Co-Chairman	Firm	β	“The respective reactions of <i>Boeing</i> and <i>Airbus</i> [to 9-11] are asymmetrical because <b>we are starting from asymmetrical positions.</b> ”	On an Integral Enterprise Architecture’s view of labor stability.
26 Nov. 2001	<i>Forbes</i>		Firm	β	“ <i>Airbus</i> says <b>holding on to employees is the right strategy.</b> ‘ <b>This thing will turn around, and you can’t risk losing skilled people when the upturn comes.</b> ’”	On an integral enterprise architecture’s view of labor stability.
15 Dec. 2001	<i>Radio Classique</i>	Noel Forgeard, <i>Airbus</i> CEO	Firm	β	“Even with reductions, <i>Airbus</i> remains a company with a lot fewer staff than <i>Boeing</i> , but... we cannot make too many comparisons, because <b>we rely much more upon sub-contractors.</b> ”	On an Integral Enterprise Architecture’s different make-buy boundary.
17 Dec. 2001	<i>Times of London</i>	Noel Forgeard, <i>Airbus</i> CEO	Firm	β	“‘We are introducing <b>massive cost savings based on measures that do not involve forced departures,</b> ’ Forgeard said.”	On an Integral Enterprise Architecture’s view of labor stability.
17 Dec. 2001	<i>Aviation Week</i>	Rainer Hertrich, <i>EADS</i> CEO	Firm	β	“‘ <b>We want to protect our profitability and jobs at the same time,</b> ’ said Hertrich.”	On an Integral Enterprise Architecture’s view of labor stability.
18	<i>Wall</i>	Noel	Firm	β	“Forgeard said that because <i>Airbus</i> has <b>long been</b>	On an

Jan. 2002	<i>Street Journal</i>	Forgeard, Airbus CEO			<b>preparing for a slump in the highly cyclical business, it can avoid following the lead of Boeing.”</b>	integral enterprise architectur’s strategy to smooth environmental instability
17 Feb. 2002	<i>New York Times</i> , “Into Thin Air” (Roger Lowenstein)	Richard Ferris, CEO of <i>United Airlines</i> ; Stephen Wolf, CEO of <i>United Airlines</i> ; Gerald Greenwald, CEO of <i>United Airlines</i> ; Jack W. Creighton Jr., CEO of <i>United Airlines</i> ; James Goodwin, CEO of <i>United Airlines</i> ; Rick Dubinsky, head of the <i>AirLin</i>	Firm	$\alpha$ & $\beta$	<p>“On the evening of Sept. 10, negotiators for the C.E.O. of <i>United Airlines</i>, James Goodwin, huddled in Washington with union officials representing <i>United's</i> 30,000 baggage handlers, customer-service representatives and reservation agents. They were putting the finishing touches on an agreement for a hefty double-digit wage increase, and Goodwin, a tall, likable West Virginian who had been with the company 34 years, was waiting for a call to give his O.K. <b>It didn’t matter that <i>United</i>, which had lost \$605 million in the first half of 2001, was in a financial tailspin: when airline unions are due for a raise, they get one.</b> If you don't understand why, then you don't understand the airline business. As it happened, the talks dragged on, and at 5:30 on the morning of the 11th, the negotiators trudged off to get a few winks. Randy Canale, a union negotiator, returned to his hotel, the Capital Hilton, not far from the Pentagon, figuring they would sign later that day. He awoke earlier than expected, to the sound of sirens. ‘Boy, it sounds awful close,’ Canale murmured. Someone was banging on his door, and puffs of smoke were visible from the hotel window. Two of <i>United's</i> jets were down, the wage hike was history and so was the 57-year-old Goodwin's career. Seven weeks later, he was dismissed by <i>United's</i> board. <b>It hardly mattered that <i>United's</i> directors would have approved the agreement and were as much to blame as Goodwin. They were letting him go for a way of doing business that has tormented <i>United</i> and the entire industry for decades.</b></p> <p><b>Since 1978, when commercial aviation was deregulated, no fewer than 137 carriers have filed for bankruptcy protection.</b> And from the end of World War II, when aviation started to become big business, through 1994, the sum of the industry's profits and losses was less than zero. Warren E. Buffett once remarked that it would have been a blessing for shareholders if someone had thought to shoot down Orville Wright at Kitty Hawk. This is the industry that Congress has rushed to save, and this is the record that -- failing basic changes -- it will have helped to perpetuate. Indeed, even as it reels from last year's record \$3.8 billion operating</p>	On the disintegration and attempted reintegration of a modular enterprise architecture in airline industry.

		<p>e  <i>Pilots                  Associ                  ation                  at                  United                  Airline                  s</i></p>		<p>loss, <i>United</i> is facing the possibility of a strike by its mechanics, pending a vote on a proposed 37 percent wage hike this past week. If this rings faintly of 'Alice in Wonderland,' well, that is because airlines are not like other businesses, where competition breeds variety and choice for consumers and profits for business. <b>They are more like flying utilities.</b> As passengers, we demand quality service -- on-time takeoffs, edible food, plenty of leg room -- and don't much care who provides it, as long as they make it cheap. That leaves the airlines with the dubious honor of competing to be the <i>Ma Bell</i>, the <i>Con Ed</i>, of the sky.</p> <p><b>One reason the major airlines find themselves in this predicament is that they use huge amounts of fixed capital -- wide-body jets go for \$100 million each and can't be readily liquidated. They also depend on a skilled labor force. The two problems exacerbate each other. Since airlines cannot afford to let planes sit idle, they can ill suffer strikes. That makes their unions unusually powerful.</b> Consider some other businesses for a moment: <i>Microsoft</i> has highly skilled programmers but little invested capital. <i>Merrill Lynch</i> has both, but its assets -- stocks and bonds mostly -- could be liquidated overnight. Steel has high fixed capital, but it can replace its workers more easily. Airline pilots (and mechanics too) are not so replaceable. Stringent safety codes strengthen the unions further by introducing a stickiness into the rules that govern hiring and firing. Any other industry would compensate by raising fares, but <b>air travel is a commodity</b>, so the temptation is always to cut fares to fill seats. <b>None of this was caused by the attack on the World Trade Center.</b> But until then, it was possible to believe that airlines were turning a corner. Even though they were losing money in 2001, they had recently enjoyed some good years, thanks to genuine improvements in their operations. They had learned to manage their fleets more efficiently, they had structured their routes better and they had cut overhead. <i>United</i> was emblematic of the airlines' ephemeral prosperity. In the late 1990's, it reported \$4 billion in profits, and its route map, stretching over four continents, was the envy of the industry. <b>Most strikingly, it had ventured a daring solution to the industry's thorniest problem -- labor -- by selling a majority of its stock to its employees. But despite this groundbreaking arrangement, <i>United</i> was never able to fully align the interests of its employees, particularly the pilots, with its own. Rick Dubinsky, longtime head of the <i>AirLine Pilots Association</i> at <i>United</i>, made this clear when he and Goodwin began a recent wage negotiation. 'We don't want to kill the golden goose,' Dubinsky told Goodwin. 'We just want to choke it</b></p>	
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				<p><b>by the neck until it gives us every last egg.’</b> On Sept. 11, the goose ran out of eggs. In five months, <i>United's</i> traffic has shrunk by, on average, a quarter, fares are down and two of its fleets lie mothballed in the middle of the Mojave Desert. Meanwhile, it has been begging senior pilots, who can earn close to \$300,000 a year, to sit home and collect a full 80 percent of their pay for doing nothing; otherwise, they can remain on the premises, though inactive, at full pay. This is why by the end of 2002 <i>United</i> stands to lose every penny it made in the previous five years -- and why bankruptcy for one of the nation's largest and most venerable airlines looms as a real possibility.</p> <p><b><i>United's</i> modern history started in 1985, when Richard Ferris, the C.E.O. at the time, boldly challenged his pilots. The underlying issue -- then, and in every subsequent dispute -- was management's desire to break the contractual stranglehold inherited from regulation.</b> Before 1978, fares were set by the Civil Aeronautics Board, which generally let carriers pass along their costs. Such a cozy set-up naturally bred inefficiency (banks were similarly slothful in the days of managed interest rates), and airlines got used to rubber-stamping union demands. Eventually, they approved a byzantine system of work rules sought by pilots and other employees. Come deregulation, competition intensified, air fares dropped and more people started flying. But the stifling work rules remained and so, of course, did safety constraints and also antitrust concerns preventing mergers. In effect, <b>aviation became deregulated only on one side: free competition for revenue; costs largely immovable.</b> Ferris tried to win points by befriending the pilots. He started flying, got a license and took some union members under his wing. For a while, it worked. Attacking a brazen case of featherbedding, he got the union to agree to cut the number of pilots in the cockpits of Boeing 737's from three to two. But when he tried to impose a lower wage scale for newly hired pilots -- as Robert Crandall had done at <i>American</i> -- the pilots went on strike. <b>The head of the union's strike committee, Dubinsky, was nicknamed Mad Dog.</b> The son of a butcher, he was hired by <i>United</i> in 1965 at a measly \$500 a month. He flew the tobacco route: Winston-Salem, Raleigh-Durham, Chattanooga. In the pilot culture of the day, captains were virtual gods and young flight engineers like Dubinsky received barely more respect than the stewardesses. Dubinsky, though, found a vent for his aggressiveness. He started doing small chores for the <i>AirLine Pilots Association</i> and then handling grievances, and the union discovered that he was a badger. By 1985, he was brimming with class-conscious fervor. The pilots, despite their political conservatism and sense</p>	
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				<p>of themselves as professional people, heeded him. Pilots make good money but lack the free agency of other professionals. If a <i>United</i> pilot moves to <i>Delta</i> or <i>American</i>, he loses his seniority and most of his pay. That makes him utterly dependent on the union -- and makes the union a potent force. Ferris hired replacements to keep <i>United</i> flying, and the pilots returned after 29 days, taking the offer Ferris had on the table. <b>The strike was over, but permanent damage had been done. A certain culture, an implacable Arab-Israeli-like hatred, took hold at the airline, and nobody has been able to dislodge it since.</b> More significant, <i>United's</i> experience helped <b>spread fear through the industry.</b> Airlines began to leapfrog one another, granting successively better terms at each negotiation -- anything to avoid a strike. Today, thanks to generous vacations, sick-leave provisions and clauses that fix minimums for days worked and trips flown, <i>United</i> pilots get paid for 81 hours a month but actually fly, on average, only 50 hours. Considering that a <i>Boeing</i> 747-400 captain gets a top rate of \$302 an hour, you can see what a drain this is. Though pilots spend many nights away from home, a hardship that is worth some extra compensation, they freely admit that flying, on most days, is hardly the risky proposition it was when the first contracts were penned. 'It's not a hard job for a guy that has been around,' says one 40-year-old <i>United</i> pilot I talked to. 'Because of advances in technology, we have great airplanes to fly.' Their flexible schedules allow many pilots to carry on second careers. By 1986, Ferris decided that <i>United</i> couldn't make money just flying planes. So he stitched together a hotel and car-rental conglomerate, aiming to use the airline to feed the travel businesses -- synergy! He paid a consultant \$7 million to rename <i>United's</i> parent the <i>Allegis Corporation</i>. Wall Street snickered. The pilots did not. They feared that Ferris would divert capital into the other divisions until the airline was a rump operation and then start cutting jobs. The ALPA adviser was the illustrious F. Lee Bailey, and he told them that <b>their jobs would never be safe unless they really took control</b> -- a message that the pilots, being pilots, were happy to hear. Dubinsky and Bailey flew to Chicago to meet with a leader of the <i>International Association of Machinists</i> and dropped a proposal for an <b>employee buyout</b> into his lap. The machinists didn't like it. Presciently, they saw the plan as leaving workers to bargain with themselves, an obvious conflict. But Dubinsky made his bid public. It was a strange time on Wall Street, in which anybody could seemingly acquire anyone else and <b>companies were said to be worth more dead than alive.</b> <i>Coniston Partners</i>, a hedge fund, bought a chunk of stock and agitated for a breakup. The board, feeling pressured, sacked Ferris and agreed to sell the travel assets. <b>Stephen Wolf</b>, a veteran of two</p>	
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				<p>previous airline turnarounds, was named C.E.O. late in 1987. After briefly joining with ALPA to attempt a high-priced buyout (which, when it failed, set off the stock-market crash of October 1989), Wolf embarked on an expansion kick, snatching up international routes and ordering \$22 billion worth of equipment. His competitors followed suit. Since wages rise sharply with experience, airlines were desperate to hire younger crews. <b>‘So how do you get more new pilots?’</b> says Harry C. Pinson, an investment banker who worked with Wolf. <b>‘You grow the airline.’</b> The logic was so compelling that airlines bought many more planes than they needed. In aviation, such capital mistakes don't go away. Equipment is so expensive that once a plane is delivered it must be flown. Even carriers that file for bankruptcy limp along for years, usually operating at lower costs and undercutting the rest. Wolf discovered this in 1990, when conflict in the Mideast and a recession at home (sound familiar?) sent the industry into a nose dive. <b>Making matters worse, Southwest, then a relative upstart, was tormenting the industry and, in particular, stealing United's traffic in California.</b> As losses mounted, Wolf clamored for union givebacks. He and Dubinsky began to shadowbox. When <i>United</i> ordered new 747's, a dispute with the pilots' union kept them parked on a ramp. When <i>United</i> tried to start service to India, the pilots delayed it by demanding private restrooms and Western food. Dubinsky kept up the pressure, but his time was running out. His term at ALPA expired. (He lost an effort to rescind a term-limits clause and wrote an acid farewell remembered within the union as "the Nixon letter.") Wolf, a tall, aloof C.E.O. who arrived at <i>United's</i> headquarters near O'Hare Airport at 6 each morning, seized the opportunity. He sold off the flight kitchens, which made the machinists fear that their jobs would be next. Then, with their cooperation, Wolf and the pilots, now led by Roger Hall, a <b>less tempestuous</b> chief, cobbled together an <b>audacious employee stock-ownership plan.</b> Similar ideas had been tried at <i>Northwest</i> and <i>Eastern</i>, but never with workers in control -- that was what bred such hope at <i>United</i>. The pilots, machinists and nonunion salaried employees (the flight attendants opted out) got <b>three board directors</b>, various control provisions and, critically, 55 percent of the stock. The pilots, the biggest bloc, got 25 percent, in exchange for an equivalent percentage cut in wages and benefits. <b>A new era of worker-management cooperation was born.</b> Optimism ran high. Robert Reich, the secretary of labor in the Clinton administration, gushed that the employee-ownership plan <b>‘could change the face of the airline industry.’</b> But there was one devastating oversight: <b>yes, you could turn employees into owners, but could you get them to act that way? Could you get them to place the same value on</b></p>	
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				<p><b>their stock as on their weekly paychecks?</b> The difficulty, as Dubinsky would shrewdly observe when he was back battling <i>United</i> management, is that <b>'you can't eat stock'</b> -- particularly when employees were barred from selling their shares until retirement. In any case, airlines had never generated value for their stockholders. Donald Washburn, a former executive at <i>Northwest Airlines</i>, has observed that <b>airlines are merely 'cash accumulators for other constituencies'</b> -- the various government entities that tax it, the cartel that sells it equipment and the industry's bankers. Its hungriest constituent is labor, which gobbles up nearly 40 percent of operating expenses. The employee buyout temporarily lowered wages, but it didn't change these dismal economics. Arguably, it weakened <i>United</i>. The pilots had always sought control; now they could pursue it from inside the boardroom. As owners, the pilots could pick their own C.E.O., and they did: Gerald Greenwald, famed for helping save <i>Chrysler</i> and fresh from running a trucking concern in newly capitalist Czechoslovakia. When Greenwald told his Czech managers that he was leaving to take over the new worker-owned <i>United</i>, one of them stared incredulously. <b>'We just finished with all that,'</b> he said. Greenwald figured that with <b>workers owning a stake, their interests would have to shift. So he invited pilots and mechanics into strategy sessions</b> and consulted with <i>Fortune</i> to learn how to qualify for the magazine's list of 100 most desirable companies to work for. Many pilots caught the spirit. <b>Absenteeism declined.</b> A captain in Chicago cleaned food trays to shorten turnaround times. And miraculously the good times started to roll. <b><i>United's</i> stock, \$22 when the ownership plan began, broke \$90 three years later. (Today it is \$12.)</b> Partly, airlines were the beneficiaries of good fortune: fuel prices were low and the economy was strong. But they also had learned to be more efficient, eliminating frills, reducing commissions to travel agents, reaping savings from automatic check-in. Unlike in the previous decade, most avoided the trap of overexpanding. Greenwald strengthened his hubs and eliminated unprofitable, marginal routes. He also enhanced <i>United's</i> unmatched network overseas. These were heady days for the big airlines, as they finally capitalized on the promises of deregulation. Except for one little thing. <b>They still could not keep wages under control.</b> Through the 90's, airline wages rose 43 percent, just slightly above inflation. Not bad until you consider that air fares rose only 6 percent. This was, significantly, a time when other industries were holding the line on every conceivable employee benefit. Only the airline industry, shackled by 40-year traditions, continued to kneel to its unions. The regional airlines are a perfect illustration. These carriers, like <i>American Eagle</i> or</p>	
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				<p><i>United Express</i>, fly under the majors' flags and serve an essential role connecting smaller cities to hubs. They also pay their pilots, most of whom are represented by ALPA, significantly lower wages. The business has grown smartly, thanks to a new generation of high-performance jets, but the unions don't like these smaller planes and the lower wages that go with them, so they have successfully negotiated '<b>scope clauses</b>' that limit the size and number of regional jets that a major can hire out. If it were up to the market, a new-generation, 50-seat <i>Canadair</i> might fly from New York to Chicago at off hours, when there wasn't demand for a DC-9 or a <i>Boeing 737</i>. Presumably, that would result in more flexibility and choice for customers. But scope clauses, a bit of protectionism that seems wildly out of place in the 21st century, make it extremely difficult. With their hands tied on costs, airlines turned their attention to revenues. In the 90's, they perfected the art of 'yield management,' exploiting computers to monitor bookings continuously and adjust ticket prices according to availability. Yield management is why you can pay \$1,000 to fly coast to coast and sit next to someone who paid \$200. It is also why so many people hate the airlines. It may seem unfair, but to an airline economist, the passenger -- say a student heading home for the holidays -- who books in advance and the executive who sidles up to the counter without a reservation are not buying the same 'product,' even if they are on the same flight. One is buying a <b>surplus seat</b>, akin to last year's sweater on the bargain rack. The other is buying that sweater when it's hot. It is a good business tactic, but the airlines overplayed it. During the late 90's, they jacked up the premium for business fares as never before. I.P.O. money rained on Wall Street, and plenty of it got spent on plane tickets. <i>United's</i> San Francisco hub, a gateway to Silicon Valley, became a gold mine. Airline unions exploited the boom to demand higher wages, but the good times for airlines -- <b>flying utilities</b>, remember? -- were never good enough. In one recent year, carriers filled 72.4 percent of their seats, just a tad more than their break-even level of 70.4 percent. What this means is that on a typical flight, the entire profit was generated by the last three passengers. From 1995 to 1999, the industry's best half-decade ever, airlines earned only 3 1/2 cents on every dollar of sales, whereas American industry typically earns 6 cents. And through the full cycle -- that is, for all of the 1990's -- airlines made less than a pitiable penny for every dollar of sales. <b>If this were another industry, C.E.O.'s would be forced to resign in disgrace, but airline execs were buoyed.</b> At <i>United</i>, Greenwald gave the pilots and machinists consecutive 5 percent wage hikes, the maximum allowed by the terms of the ownership plan. Then the unions demanded a 'snap back' to take effect in</p>	
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				<p>2000, restoring them to pre-ownership levels. Greenwald consented and, remarkably, so did <i>United's</i> board. <b>It may be unkind to say the company lived in fear of upsetting its employees, but everyone, especially at <i>United</i>, knew what the unions were capable of doing.</b> Meanwhile, <b>management's relations with the AirLine Pilots Association deteriorated.</b> As Greenwald neared retirement from <i>United</i> in 1999, the union nixed his choice of successor; instead, the pilots tapped Goodwin, a company man that many deemed controllable. As negotiations started for the first post-ownership contract, the drumbeat rose for a <b>more confrontational approach</b> -- rose, that is, for Dubinsky. The rank and file were mostly unaware that while out of office, Dubinsky had been busy suing his own union. He would soon collect a six-figure settlement paid from his pilots' dues. No matter. With a big negotiation looming, the union's 26-member governing body voted him in. <i>United's</i> pilots were counting on a contract by April 2000, when the ownership plan expired. The deadline was unrealistic, and it gave Dubinsky a cudgel to wield against the company. Goodwin compounded his problem when, late in 1999, he and Wolf -- who was now running <i>US Airways</i> -- began to plot a merger. The timing was suicidal. Dubinsky, as a board member, was informed of the talks but could not disclose them to the rank and file. He certainly knew the pilots would oppose a merger, because many would lose seniority to <i>US Airways</i> pilots. Thus, Dubinsky had every reason not to conclude a contract until the merger was announced. By early 2000, wage negotiations, predictably, had stalled, and <i>United's</i> increasingly impatient pilots were getting stickers from the union reading, 'On Top/On Time.' They put them on flight bags, in the cockpit, everywhere. As the deadline neared, Dubinsky reminded his pilots that they weren't obligated to fly overtime, as they normally did, and that they should fly '[to the letter of our agreement' -- a euphemism for going slow. Late flights began to mount. Passengers went nuts. Goodwin was living a nightmare. In May, he announced the merger, and the <b>war with the pilots reignited. The nasty labor sore, bandaged but never healed, oozed with all the ugliness of the past.</b> The pilots refused to fly overtime; some of them taxied at 3 knots instead of 15; others flew low, to burn more fuel, or opened landing gear prematurely, adding to wear and tear. Delays and cancellations soared; <i>United</i>, notably, suffered a fourfold increase in delays caused by pilots insisting on repairing inconsequential items, like a broken coffee maker or a burned-out reading light. A pilot in California walked off a full 747, claiming nerves. An executive from a competing airline tells the story of a <i>United</i> flight from Los Angeles to J.F.K. when the captain announced that</p>	
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				<p>because of 'low clouds' he wanted to recheck his instruments. They sat for three hours. <b>The pilots were sabotaging their own company.</b> They did have reason to be upset. <i>United, having grown more quickly than US Airways, had far more newer hires.</i> Pilots feared for their careers and were infuriated that their counterparts at a weaker airline might supplant them -- especially since, they reckoned, management was paying for the deal with the very money it had saved on pilot wages. Their anger was, of course, given a significant push from ALPA. Geoff Garrett, a <i>United</i> pilot from Seattle, says, 'I never received an order to slow down.' However, he admits, there was peer pressure. Pilots who flew overtime would see their names tacked to a bulletin board, and those who arrived on time got flack for 'not flying safe.' Mysteriously, an unsigned publication, <i>The Gardener</i>, began to turn up in cockpits, often in pilots' sun visors. <i>The Gardener</i> was a colored sheet written in country vernacular, reminding pilots to 'fly safe' and so forth. Many pilots think it was produced by the Industrial Relations Committee, a secretive wing of ALPA formed by Dubinsky during the strike. <b>I asked Dubinsky about United's dismal summer -- 20,000 flights were canceled and on-time performance fell to 40 percent, disruptions that cost the airline \$700 million. He said: 'The company was short on manpower; we told them that. And the weather was terrible. Also, our pilots decided to not fly overtime.' Does that mean there was no coordinated effort? 'That's what I'm telling you. If there had been, they could have taken us to federal court.'</b> In fact, <i>United's</i> management had hotly debated whether to do that. Many were in favor, but Goodwin, who had the longest tenure and remembered the 1985 strike vividly, was unwilling to further antagonize the pilots. And so in August, Goodwin agreed to an immediate pay raise of 22 to 28 percent and to additional 4.5 percent raises in each successive year through 2004. This pace-setting and lavish package stunned <i>United's</i> competitors, who had, of course, been guilty of no less in their turn. Then the bottom dropped out. By 2001, high tech had gone bust, and big corporations like <i>Hewlett-Packard, Cisco</i> and <i>Accenture</i> were taking a hatchet to travel budgets. "'We aren't talking about single-digit cuts,'" notes Jake Brace, <i>United's</i> chief financial officer. 'Some of them reduced their flying by 25 to 50 percent.' These two grim developments were capped by a third misfortune when, last spring, the department of transportation blocked <i>United's</i> merger with US Airways. Thus, in the space of a year, <i>United</i> had suffered punishing blows from labor, the government and the economy -- a modest summary of the industry's troubles since deregulation. <b>All that was before Sept. 11.</b></p>	
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					<p>But they do force both sides to talk. And Creighton has held serious discussions with the <i>AirLine Pilots Association</i>. For now, they are talking only wage concessions -- not the work rule amendments that would be needed for <i>United</i> (and <i>Delta</i>, <i>American</i>, et al.) to join the rest of the 21st century. But the talks raise the germ of a possibility. ALPA is demanding something in return for wage cuts. Since the value of the employees' stock from the ownership plan has crashed from \$5 billion to about \$750 million, they certainly won't take more of that. But Creighton and the union have talked about linking wage cuts, in some fashion, to <i>United's</i> profits or revenues. This brings to mind something Dubinsky -- at year-end, when he was retiring -- told me over vodkas in a restaurant near O'Hare. <b>People say the pilots are self-destructive, he acknowledged, 'but we aren't crazy.'</b> Meaning even pilots will ultimately do what is in their interest.</p> <p><b>That is what's so interesting about <i>Southwest</i>, which has been able to co-opt its workers (who also are unionized) into behaving like owners.</b> For sure, relationships with unions are multifaceted, but one difference at <i>Southwest</i> stands out, which is that <b>workers get much of their annual profit sharing in cash. Maybe you can't eat stock, but you can eat cash.</b> And if wages were to vary with performance, not only would <i>United's</i> labor costs <b>stay tuned to the business cycle</b> but its workers -- just maybe -- would also start to think differently about their employer. Over time, they, and potentially workers at other carriers as well, might be willing to fly more hours, to let the market determine the schedule for regional jets, to let airlines design their networks with profits as the main consideration. <b>It sounds rather radical -- downright subversive in this industry --</b> but it is no more than what deregulation was supposed to accomplish almost 25 years ago."</p>	
20 May 2002	<i>Business Week</i> , "Boeing's Secret" (Stanley Holmes & Mike France)	Phil Condit, Chairman & CEO, <i>The Boeing Company</i>	Firm-Investors	α	<p>"On Dec.11, 1996 the directors of defense giant <i>McDonnell Douglas Corp.</i> agreed to a merger [with <i>Boeing</i>]. <b>In the weeks after the merger announcement</b>, parts shortages and overtime approached all-time highs. Facing an <b>unprecedented surge in orders</b> because of a booming economy, workers were toiling around the clock, pushing the assembly line to the breaking point. A special team formed to study the crisis in May 1997, issued a report with a blunt conclusion: <b>'Our production system is broken.'</b> If investors had understood the scope of the problems, the stock would probably have tumbled and the <i>McDonnell</i> deal -- a stock swap that hinged on <i>Boeing's</i> ability to maintain a lofty share price - would have been jeopardized. But <b>shareholders never got the full picture until well after the merger was completed on Aug. 1, 1997.</b> Top executives 'were hoping</p>	On the corporate HQ of a modular enterprise architecture's inability to deal with dynamic and behavioral complexity.



				<p>against hope that none of the problems would bubble up before they got the deal done,' says a top <i>Boeing</i> ex-official. On Oct. 8, former <i>McDonnell</i> CEO Harry C. Stonecipher, by then <i>Boeing's</i> president and chief operating officer, shot an e-mail to Condit [<i>Boeing's</i> Chairman and CEO]. 'We do know for certain that there is a big surprise coming, and I think we owe the Street a heads-up. <b>We have an unmitigated disaster on our hands and need some very candid damage control.</b>' Condit, responded that the disclosure should be delayed. 'My bias is to <b>soften the third-quarter hit</b> with some warning,' he wrote. 'Assuing the scale of the problem remains, use the fourth quarter to prepare the Street to take the real hit then.' On Oct. 22, Condit made the bombshell announcement: The company's massive production problems would force it to write off \$2.6 billion – <b>by far the biggest charge in Boeing's history.</b> Overnight, shares fell 8%, wiping out about \$4.3 billion in value. As investors digested the scope of the mess, the <b>company lost years of hard-earned credibility</b> and the stock fell a further 12% by Oct. 27.</p> <p>The tale provides a sobering view of how easily managemnt <b>can keep investors in the dark.</b> 'Program Accounting', a controversial system that many analysts criticize for its lack of transparency, continues to give <i>Boeing</i> broad <b>leeway to goose earnings</b> – and to make it <b>one of the toughest companies in America to evaluate.</b></p> <p><i>Boeing</i> settled a private <b>securities-fraud suit</b> over the 1997 episode for \$92.5 million. The company did not admit guilt. New details supplied by several inside witnesses indicate that <i>Boeing</i> did more than simply fail to tell investors about its production disaster. '<i>Boeing</i> basically decided <b>in the short-run that [managing earnings] was a lesser evil than losing the merger,</b>' adds Debra A. Smith, a onetime accounting professor.</p> <p>The aerospace giant was a widely held blue chip that had a <b>huge short-term incentive to prop up its stock price.</b> Taking advantage of an investment community willing to tolerate the company's opaque reporting system, <b>executives managed to conceal fundamental operational problems for nearly a year – which raises the question of how swiftly they would let investors know if a similar problem arose today.</b> As is often the case, none of the outside watchdogs ever barked. The <b>board</b> never forced Condit to come clean about the company's production problems. <b>Stock analysts and business journalists</b> underestimated them. An although the <b>company's auditor Deloitte &amp; Touche,</b> raised red flags about <i>Boeing's</i> troubles, it doesn't seem to have put much pressure on its big client to</p>	
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				<p>share this information with investors. As a result, <i>Boeing's</i> financial reporting in early 1997 bore little relationship to its business reality. When the company finally disclosed its problems, <b>'I was stunned,'</b> recalls Richard J. Glasebrook II, managing director of <i>Oppenheimer Capital</i>, owner of 5% of <i>McDonnell</i> at the time. <b>'I thought that <i>Boeing</i> had the building of commercial aircraft down cold.'</b></p> <p>The [production] problem was compounded in late 1994 when <i>Boeing</i> realized that rival <i>Airbus Industrie</i>, the European Consortium, was <b>undercutting it on price, thanks to lower manufacturing costs</b>, and government subsidies. By that year, <i>Airbus</i> had grabbed 30% of the global jet-plane market – up from less than 3% two decades earlier. It was a potentially <b>devastating development, since lost customers in the airliner industry are hard to win back</b> after they've spent a fortune training pilots and mechanics on rivals' equipment. <i>Boeing</i> was <b>forced to knock down costs across the board</b>. It made early retirement offers to 9,500 workers in 1995, <b>slashing its staff of veteran mechanics and engineers</b>. Execs. Also rolled out a bug-ridden new computer system for tracking parts. As a consultant pointed out in a report to factory execs. in the summer of 1997, <b>the proposed doubling of production rates in the face of such change was like attempting a 'four-and-a-half somersault off a 50-foot board into a pail of water.'</b> By early 1997, warning signs were everywhere that <i>Boeing's</i> overheated factories were boiling over. One manager concluded that <b>'we have a real financial crisis on our hands' with 'no relief' in sight</b>. Talking to reporters after the company's annual meeting in April, 1997, Condit said that <b>the ramp-up in demand 'has resulted in near-term decline in productivity at company facilities and some supplier locations.'</b> With characteristic confidence, he said that the first quarter's inefficiencies <b>'would not be repeated during the remaining quarters of the year' and that the company was not having 'systematic' assembly-line malfunctions.</b></p> <p>'The problem with <b>program accounting</b> is that it is virtually <b>impossible to audit,</b>' says Lynn E. Turner, former chief accountant at the SEC. 'No one really knows whether the company will produce as many planes as [are] needed to recover the costs.' To mitigate this problem, the rules require companies to take an immediate charge as soon as they have evidence that a line's long-term profit margin will disappear – or, in industry lingo, that the program will be in a <b>'forward-loss'</b> position. And that's just what appears to have been happening to the 777 line in early 1997. It had a <b>development budget of \$5 billion to \$7 billion</b> for initial design, production</p>	
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2003	<i>The Southwest Airlines Way</i> , pg. 66 (Jody Hoffer	Senior Pilot, American Airlines; Robert Cranda	Firm	α	<p>“There is <b>no trust</b> for Crandall. He is <b>nasty, mean.</b> He’s <b>irascible</b>, he points his finger, he’s boiling inside. Crandall is <b>not loyal to his employees.</b> He has <b>no respect for employees.</b> We’re not going to be loyal to the company or each other. When there is no love for the company, it translates to how you treat each other...<b>People do what they can get away with.</b>”</p>	On not trusting the chief enterprise architect in a Modular

	Gittell)	ll, CEO, <i>American Airlines</i>				Enterprise Architecture.
2003	<i>The Southwest Airlines Way</i> , pg. 238 (Jody Hoffer Gittell)	Rakesh Gangwal, President, <i>US Airways</i>	Firm	$\alpha$	“‘I don’t’ want to <b>take advantage of the situation, but we have to do what is right for the company,</b> ’ Gangwal said in a conference call with analysts. ‘And events of September 11 have opened certain doors for the company that were pretty much closed before.’”	On a Modular Enterprise Architecture’s rapid (zero- sum) response to an exogenous shock.
2003	<i>The Southwest Airlines Way</i> , pg. 56 (Jody Hoffer Gittell)	Ramp Manager, <i>Southwest Airlines</i>	Firm	$\beta$	“[Herb Kelleher and Colleen Barrett] have both got <b>credibility. It’s taken them a while to get to that point.</b> They’ve created this level of <b>honesty</b> with us. <b>If it’s bad, they tell you its bad.</b> ”	On trusting the chief enterprise architect in an Integral Enterprise Architecture.
2003	<i>The Southwest Airlines Way</i> , pg. 2-3 (Jody Hoffer Gittell)		Firm	$\beta$	“ <i>Southwest’s</i> business model, like that of <i>Toyota</i> , is to provide a <b>low-cost</b> product by utilizing its resources efficiently, while providing record levels of reliable service.”	On the strategy of an Integral Enterprise Architecture.
2003	<i>General Motors Annual Report</i> (pp. 3 and 8)		Firm	$\alpha$	“ <b>Here’s what’s new about GM’s strategy this year: Nothing.</b> ”  “GM brought brand <b>differentiation</b> to the world in the 1920s. As the decades passed, and our product portfolio expanded, we <b>slowly drifted away from that simple but effective strategy. Today the GM product revolution again is strengthening our brands, with more innovative marketing that better understands the customer.</b> ”	On a modular enterprise architect ure’s unwilling ness / inability to change.
19 June 2004	Kellogg School of Management	James McNerney, Chairman & CEO	Firm	$\alpha$	“Touching on the recent spate of corporate scandals, McNerney advised graduates to <b>‘fight to make sure the values you bring to work are the ones you use at work. The tragedy is that some of today’s leaders are fundamentally good people who can’t stand the pressure.’</b> McNerney also spoke about the	On a modular enterprise architect ure’s

		of 3M			importance of cultivating a good work ethic. <b>‘Have the courage to lead and the courage to fail,’ he said.</b> ”	leadership style
28 June 2004	<i>BusinessWeek</i> “Coverup at Boeing?” (Stanley Holmes & Mike France)	Carol Jensen, Boeing employee filing class-action suit against Boeing	Firm-Employee	α	<p>“Now that <i>Boeing</i> was faced with telling jurors why its own internal documents seemingly contradicted its legal theory, the company <b>suddenly became accommodating</b>. The documents reviewed by <i>BusinessWeek</i> suggest that <i>Boeing’s</i> efforts to <b>suppress evidence</b> were far more elaborate. The company’s tactics in the pay-discrimination lawsuit, <i>Beck v. Boeing</i>, also raise broader questions about the health of <b><i>Boeing’s</i> corporate culture</b>. Last year, the <i>U.S. Air Force</i> penalized the company for possessing 37,000 pages of <b>sensitive competitive documents</b> some of its employees had <b>stolen</b> from rival <i>Lockheed Martin Corp.</i> Before <i>Boeing</i> eventually acknowledged the <b>theft</b>, it <b>denied any wrongdoing</b>, then <b>misled Lockheed</b> for nearly a year about the amount of material <b>stolen</b>, according to the <i>Air Force</i>. ‘We have felt <b>extremely uneasy</b> about the scandals that have plagued <i>Boeing</i> and led to the departure of its CEO,’ wrote <i>Lehman Brothers Inc.</i> analyst Joseph Campbell Jr. in a June 7 report. ‘We have felt there has been a <b>pattern of less than frank communication with the investment community, and more importantly with itself</b>. But the <b>culture started changing</b> after its <b>merger</b> with the <b>more aggressive McDonnell Douglas</b> in 1997.</p> <p>‘These <b>pay disparities were caused by their own practices</b>,’ Helgren says. ‘<b>None of this was by chance. And they continued for years and years to avoid the problem.</b>’</p> <p>Among [Jensen’s] nine children, she currently <b>‘wouldn’t let any of them work at Boeing.’</b> The pay gap there may disappear one day. But one thing <i>Boeing</i> will <b>never be able to erase is its long history of underpaying women.</b>”</p>	On a modular enterprise architecture’s lack of trust.
21 March 2005	<i>BusinessWeek</i> “Why Boeing’s Culture Breeds Turmoil” (Stanley Holmes)		Firm	α	<p><b>‘Boeing’s board</b> presented the ouster [of CEO Stonecipher] as evidence of a company so committed to <b>ethical purity</b> that under current circumstances it wouldn’t tolerate even a <b>consensual sexual relationship</b> between the CEO and a female exec. Insiders tell another story. They describe an ongoing <b>culture of unrestrained excess</b>. The lack of restraint also led to <b>rampant political infighting</b> among senior managers. The <b>board</b>, meanwhile, <b>seemed oblivious to the turmoil</b>. ‘We are committed to <b>strong ethical leadership</b>, and we have fought hard to restore our reputation.’ <b>Executive shenanigans and infighting</b> are hardly unknown in Corporate America, but <b>the degree to which they pervade Boeing is rare</b>.</p> <p>In the midst of this turmoil, commercial division head Alan R. Mulally held court at a party in</p>	On a modular enterprise architecture’s low-trust environment.

				<p>Kirkland, Wash., attended by 100 managers and employees three days before the Stonecipher bombshell. According to several attendees, Mulally talked openly about who would replace Stonecipher, calling it a two-horse race between himself and Jamse McNerney, who is the CEO of <i>3M</i>, a <i>Boeing</i> director, and a former top <i>General Electric Co.</i> exec. Those same people quote Mulally as saying: 'It's down to the GE guy or me. <b>It's a fight to the death, and if it's him, I'm outta here.</b>'</p> <p>Mulally wasn't the only exec plotting his ascent in recent years. In fact, one of his most serious rivals may have taken his machinations to such an extreme that they led him to <b>unlawful conduct</b>. Former CFO Michael Sears was sentenced to four months in <b>prison</b> for his role in the illegal job negotiations with Air Force procurement officer Darleen Druyen. Insiders say the controversy was part of his attempt to <b>amass a power base at his rivals' expense</b>. <b>'It was clear to everybody [that] Sears was anxious to be the successor to Phil to the point that it got pretty disgusting,'</b> said a <i>Boeing</i> board member. 'You got tired of him acting like the heir apparent.' Sears also <b>took control of Boeing's famed in-house leadership center</b> in St. Louis.</p> <p>Sears's stock rose in the summer of 2003. While he was still <b>in charge of PR</b>, there were <b>leaks to the media</b> implying that [internal <i>Boeing</i> rival] Albaugh withheld information about a \$1.2 billion charge. 'If Mike [Sears] is intent on discrediting me, <b>he does a disservice not only to me but to the company.</b>'</p> <p>The <b>back-stabbing</b> was widespread among the top brass. <b>'It was everybody in the suite gunning for [Boeing CEO] Phil's job,'</b> said a former senior Boeing executive with direct knowledge of the situation. <b>'It was pretty destructive.'</b></p> <p>An <b>unhealthy focus on internal politics</b> wasn't <i>Boeing's</i> only <b>culture problem</b>. In March 2004, <i>Boeing</i> agreed to pay \$70 million to <b>settle a sprawling class action alleging widespread sexual discrimination</b>. Sexual misconduct by executives was a frequent topic of conversation among employees. As <i>BusinessWeek</i> reported in December, 2003, Condit <b>settled at least one wrongful termination lawsuit brought by on a female employee with whom he had a relationship</b>.</p> <p>One of Stonecipher's top goals when he was brought out of retirement as CEO was to put <b>ethics front and center</b>. He created an internal governance office that reported to him and <b>required every employee to sign an ethics statement</b>. <b>'Without integrity you cannot conduct business successfully,'</b> he wrote in June, 2004. <b>'Firing people who lack integrity is</b></p>	
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					<b>good business.’ Words to live by.”</b>	
April 2005	<i>Boeing Frontiers</i>	Scott Carson, VP Sales, <i>Boeing Commercial Airplanes</i>			“Our products bring better value to our customers, and our pricing reflects that value. We also have a responsibility to our shareholders, and that means pricing that allows us to make our financial goals. At the same time we have to be competitive in the marketplace. And we have to realize that our customers face great financial pressures, and price is a key factor in their decision-making. <b>But it is only one factor</b> , and it is critically important that we communicate to our customers on those other factors. <b>Do I think that we will ever be the lower-price option? No. Do I think that should keep us from gaining more than 50 percent market share? I answer "no" to that as well.</b> But let me say one more thing that is absolutely essential to our success in the marketplace. We simply must continue to lower the cost of making our products so we can offer the lowest possible prices to our customers. We must improve our productivity every day, every month, every year, forever. It's essential, it's a fact of life, and we all have a role to play.”	On a modular enterprise architecture's strategy of <i>differentiation</i> (as opposed to <i>cost-leadership</i> )
18 July 2005	<i>BusinessWeek</i> “I Like a Challenge – And I've Got One” (Stanley Holmes)	James McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	$\alpha$	“For McNerney, cleaning up <i>Boeing's toxic culture</i> is Job One. Insiders say a bureaucracy that stifles innovation, <b>resists change, and tolerates rule bending</b> remains largely intact. Adds <i>Lehman Brothers</i> aerospace analyst Joseph F. Campbell Jr.: “this is the <i>Boeing</i> that tolerated behavior that led to <b>sexual harassment suits; debarment, and criminal prosecution.</b> ”  “McNerney says he isn't a big fan of <b>buying for growth, blaming Boeing's recent troubles in part on “banging together a lot of acquisitions.”</b> ”	On a possibly more integral architect than a modular enterprise is accustomed.
Oct. 18, 2005	<i>The Seattle Times</i>		Supplier	$\alpha$ & $\beta$	“ <i>Boeing</i> spokeswoman Yvonne Leach said its one of ‘the ironies of life’ in the new global manufacturing market.”	On <i>Boeing's</i> outsourcing the 787's aft pressure bulkhead to <i>Vought Aircraft Industries</i> , who in turn outsourced it to <i>EADS's</i> military-transport division.
Oct. 19, 2005	<i>Business Ticker</i>		Supplier	$\alpha$ & $\beta$	“ <i>Boeing</i> spokeswoman Yvonne Leach did not see the contract award as surprising. She said <i>Boeing's Hawker de Havilland</i> unit in Australia supplies some parts to <i>Airbus</i> .”	On competitors as part of

						each other's enterprise (supply chain) architectures.
31 Jan. 2006	<i>The Seattle Times</i> , Transcript of Speech by <i>Boeing's</i> Doug Bain	Doug Bain, Senior Vice President and General Counsel, <i>The Boeing Company</i>	Firm	$\alpha$	<p>“Good morning. Jim McNerney asked me to give you kind of a <b>candid assessment of our major scandals</b> and how we got there. As I walked up here, I think I heard [<i>Boeing</i> Chariman and CEO] Jim McNerney mutter, ‘Here comes <b>Dr. Death.</b>’ My overall message is fairly simple: <b>We as the leaders of <i>The Boeing Company</i> get to choose what kind of culture we are going to have.</b> And we make these choices every day by what we do and frankly what we choose not to do. I want to talk about these scandals not so much from the perspective of how we have tried to argue them or spin them, but from the perspective of the prosecutors and what they have told us. The recurring message we have gotten from the prosecutors and frankly everybody else we deal with is nne of <b>shock and surprise.</b> They say, ‘You guys are <i>The Boeing Company.</i> You build things that are larger than life. You do things that are larger than life. <b>You’re not a sleazy company. How did this happen?’</b> And the question that they always ask: <b>Where was the leadership?</b></p> <p><u>Evolved Expendale Launch Vehicle:</u> <b>We did a poor job of the investigation, did a poor job of disclosing it to the government. Why was there two and a half years of silence? Why didn’t somebody say something? Was there a culture of win at any cost? Was there a culture of silence? Where was management throughtout this? So what are the consequences? We lost \$1 billion of launches. Lockheed sued us for anywhere between \$1 billion to \$2 billion. And I’ll get to the criminal and civil issue in a minute.</b> And we have a truly burdensome administrative agreement that Bonnie [Soodnik, senior vice president of <i>Boeing's</i> Office of Internal Governance]’s organization is in charge of implementing.</p> <p><u>Sears/Druyun:</u> On October 17, 2002, Mike Sears [then chief financial officer of <i>Boeing</i>] met Darleen Druyun [then chief acquisitions officer for the Air Force] and offered her a job. The next day, Mike sent an e-mail that said ‘<b>I had a ‘non-meeting’ with Darleen Druyun.</b>’ So, the cultural questions: <b>How come nobody said to Mike, ‘What in the hell do you mean by a non-meeting?’</b> How come in the year 2000 nobody said, ‘Should we really be hiring the relatives of our chief procurement officer for the largest customer we have on the defense side.’ <b>It also raises the question, Do we have a culture of silence – don’t ask the tough</b></p>	On ethics within a modular enterprise architecture.



					<p><b>questions. We have been trying to resolve these things. We have not been successful yet.</b> But there are some within the prosecutors' offices that believe that <i>Boeing</i> is rotten to the core. They talk to us about pervasive misconduct and they describe it in geographic terms of spanning Cape Canaveral to Huntington Beach, to Orlando, to St. Louis to Chicago. They talk about it in terms of levels within the company that go from non-management engineers to the chief financial officer. The State Department's view of <i>Boeing</i> is that we just don't get it. There are too many violations.</p> <p>The numbers at the top [apparently referring to a chart] are the number of formal ethics cases of Ethics and Business Conduct opened in 2004 and 2005. What is astounding to me, of course, is that if you look at 2005, 900 of them were found to have substantiation. So is the problem the rank and file? Or is the problem us? We participated in a survey conducted by the Defense Industry Initiatives, and they surveyed our employees. Of the employees surveyed, 26 percent said they had observed abusive or intimidating behavior by management. I also went back and counted the number of vice presidents who have been separated from the company for ethics violations over the last few years. The total is 15. I found that to be an astronomically high number. While only two of the 15 were separated for committing crimes, among the other issues we've had are expense-account fraud, travel abuse, violating our procedures for hiring consultants, abusive behavior, surfing the Net for porn, sexual harassment and retaliation. But the question is, if you were not surprised that somebody did something, the next question to ask is how did they get there? How did we tolerate their conduct for this long?"</p>	
Mar. 2006	<i>Aerospace America</i> , "Conversations with Alison Wood" (Phillip Butterworth-Hayes)	Alison Wood, <i>BAE Systems</i> , Group Strategic Development Director	Investor	β	<p>"Where do you see the <b>values in your businesses</b>; would you agree these are <b>no longer in producing pieces of aircraft</b> but in integration and net-centric solutions? <i>For BAE Systems, we see four value strings... The fourth value level is Airbus, where we have a 20% investment. We have the tremendous success of Airbus in the marketplace, with the A380 coming on line and the A350 developments.</i></p> <p>Would you agree that in the future it's going to be harder to maintain the transatlantic balance that <i>BAE</i> has been able to achieve, especially when you look at issues such as <b>China— which is both a threat and an opportunity?</b> Which do you think it is? <i>One thing to be clear about up-front is that, with the U.S. business having the role it does in the portfolio, we will not be doing defense business in China. Our U.S. business is important to us, and we would not</i></p>	On the mental models of a modular owner of an integral enterprise architecture.

					<p>destabilize that. It is very clear that within the U.S., China is seen as a military threat. But the question is valid because China is as much an economic as a military threat and opportunity. <b>For Airbus, China is a tremendous opportunity. But for BAE Systems—with a U.S. portfolio— there is natural question: At what expense do you ignore China?</b></p> <p>Are you under any pressure to <b>sell your 20% share in Airbus?</b> Could you lose your <i>Airbus</i> wing work to other <i>Airbus</i> companies? ‘I am sure this is going to be the hot topic for the next 18 months, especially among bankers. <i>Airbus</i> constitutes a very successful business and contributes to our earnings, therefore the group always looks at that as a successful contribution to the portfolio. <b>But probably long term we don’t see ourselves as owners of the business.</b> We haven’t said we want to be out by any particular date, and it’s not an issue of derisking the business; it’s a question of choice about where we put the money. <b>The fundamental competitiveness of the wing work in the U.K. is based on competency and capability,</b> and that goes back to earlier points about the competitive environment in the U.K. If the U.K. ceases to be competitive and trails its other European colleagues in areas such as R&amp;D grants and launch aid, then the <i>Airbus</i> management team, putting politics aside, will make a decision about where is best to put the work. <b>At the moment our colleagues in Airbus U.K. are tremendously capable and have the competency.</b> Both <i>Airbus</i> and <i>Boeing</i> are using more global supply chains. If you look at the sourcing of aerostructures components, they are both looking to Asia and elsewhere. That’s going to change the structure of the supply chain.</p> <p><b>But they keep the value. They will outsource the component work but keep the value of the overall project in-house, so what is the value to you of that Airbus work? ‘We don’t do it. We have transferred that work to Airbus U.K., to stop that becoming an issue. The only return BAE Systems takes out of Airbus is the dividend we take from the Airbus businesses. By having a return from the Airbus business as a whole you do empower the Airbus management team to run that business in the same way as Boeing.</b> As a U.K. citizen I want to see [the <i>Airbus U.K.</i>] Filton plant remain at its current level of competitiveness. <b>But as an Airbus shareholder I want to see Airbus be competitive, and that means if work has to move out of Munich, filton, or Toulouse, because that’s what makes sense in the marketplace, that’s the right decision.”</b></p>	
13 Mar. 2006	<i>BusinessWeek</i> , “Cleani	James McNerney,	Firm	α	<p>“McNerney said that ‘management had gotten carried away with itself,’ that too many executives had become used to ‘hiding in the bureaucracy,’</p>	On an architect re-

	ng Up Boeing” (Stanley Holmes )	Chair man & CEO, The Boeing Compa ny			<p><i>that the company had failed to ‘develop the best leadership.’ ‘I think the culture had morphed in dysfunctional ways in some places,’ the polished, soft-spoken McNerney said in a recent conversation with BusinessWeek, his first extensive interview since taking the job. ‘There are elements of our culture that I think we all would like to change.’ McNerney believes that internal rivalry... is at the root of the company’s ethical scandals. His prescription includes encouraging managers to talk more openly about Boeing’s severe ethical lapses. ‘I want to try to make it O.K. to have that dialogue,’ says McNerney. ‘If we can get the values lined up with performance, then this is an absolutely unbeatable company,’ says McNerney. Insiders say that McNerney is trying to lead by example. He wins praise from co-workers for... not embarrassing underlings in public. ‘Jim is more interested in the human side. He is interested in how to ... create a culture where people speak up and take the risk and stop a production line because something is wrong. McNerney is reform[ing] Boeing’s culture, [by] promoting integrity and avoiding abusive behavior.’”</i></p> <p><i>“McNerney introduced General Council, Douglas G. Bain, who really lowered the boom, railing against Boeing’s pervasive ‘culture of silence.’ Bain warned the audience that many prosecutors ‘believe that Boeing is rotten to the core.’”</i></p>	integrating the low-trust environment of a modular enterprise architecture
27 April 2006	Boeing Conference Board, as reported in Uhl-Bien & Carsten, (2007)	James McNerney, Chairman & CEO, The Boeing Compa ny	Firm	α	<p><i>“We thought we’d done all the right things; we had an ethics leader, ethics advisors assigned around the company, and an anonymous ethics-line to report suspected violations. It wasn’t enough. So then we had to ask ourselves some really tough questions: Were these lapses symptomatic of a larger issue with our corporate culture? Were our leaders modeling ethical behavior? Did our people feel confident enough to speak up about ethical concerns without fear of retaliation? Were our people hiding in the bureaucracy; were they ‘winking’ at wrongdoing or looking the other way?”</i></p> <p><i>The studies concluded that, certain cultural weaknesses had permitted the people (including leadership) who suspected a problem to, in effect (although they didn’t regard it this way) look the other way. In other words: Too many people who thought something ‘didn’t feel right’ failed to raise a red flag for a variety of reasons: They wanted to win a contract, they feared retaliation, they just didn’t want to rock the boat, or they lacked the courage to speak up in a command-and-control culture. We also found that just about every part of our organization responsible for guiding, investigating and enforcing ethics and compliance worked pretty much in isolation – they didn’t necessarily share information with each other.</i></p>	On the chief architect of a modular enterprise architecture, exhibiting integral behavior with regards to leadership

				<p><i>Once we had the facts, Boeing faced a whole new set of challenges: Do we hunker down, fall back on 'process' and make everybody dot every 'i' and cross every 't'? Or do we go for the gold and drive a real shift in how we operate and the culture we operate in? Boeing chose to take the big step. We concluded that we had to make three major changes:</i></p> <ol style="list-style-type: none"> <li><i>1. Get committed, and get aligned</i></li> <li><i>2. Open up the culture</i></li> <li><i>3. Drive ethics and compliance through our core leadership model, not off to the side of other things we're doing every day.</i></li> </ol> <p><i>To open up the culture, we are creating an environment that encourages our people to speak up about their concerns and feel safe in doing so. We drive home the principle that the only way to be profitable and to operate long-term is to conduct our work ethically and compliantly. There are significant consequences for believing that it's okay to ostracize someone who raises an ethical concern. I strongly believe this, and that's why, at Boeing, we stress that there can be no tradeoff between values and performance. They go together, and we can't stray from our values or principles as we strive for better performance. Something done unethically will only undermine our ability to perform.</i></p> <p><i>I know... and you know... that one of the absolute prerequisites for success in ethics and compliance is the belief that it is OK for people to question what happens around them. You have to be absolutely honest and candid in talking about those things. Openness and candor have to start at the top. People mustn't be allowed to think that they can hide in the corporate bureaucracy or wink at the misconduct of fellow workers, or even their leaders – especially their leaders. We also realize it all starts with leadership. If an organization's leaders don't model, encourage, expect and reward the right behaviors, why should anyone else in that organization exhibit those behaviors? This must be... and must be seen to be... a central part of the whole system or training and developing leaders and of the whole process of evaluating and promoting people. This is the key. At the end of the day, the ethos or character of an organization... its culture... comes down to the behavior of its leaders; leaders get the behavior they exhibit and tolerate. What really makes the difference between one company and another? More than anything else, it's people and how they view themselves and their jobs. Do they feel they can speak their mind freely... or do they have to be wheedled and cajoled into giving an opinion?</i></p>	
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May 2006	<i>Boeing Frontiers</i>	Alan Mulally, CEO, Boeing Commercial Airplanes	Firm	$\alpha$	<p><b>“Right now, Boeing may be in the best position we’ve ever been in.”</b></p> <p><b>“Our stock price shows that investors really value our plan.”</b></p>	On Boeing’s record high share price, in spite of its record low market share.
May 23, 2006	<i>Cincinnati Enquirer</i>	Scott Donnelly, CEO, GE Aviation	Supplier	$\alpha$ & $\beta$	<p><b>“Its partnership with Airbus was key for GE becoming a military contractor and becoming a commercial aviation giant.” “Airbus is instrumental in our position as the world’s leading jet engine supplier.”</b></p>	On GE’s success via serving Airbus.
May 29, 2006	<i>Chicago Tribune</i>	Richard Aboufia, Consultant, Teal Group			<p><b>“Airbus is looking at permanent marginalization in the industry if they don’t come back this year.”</b></p>	On the underestimation of system inertia.
May 29, 2006	<i>Seattle Post-Intelligencer</i>	Charles Boffending, Executive Director, SPEEA	Labor	$\alpha$	<p><b>“With Harry Stonecipher, it was all about power-based interactions and intimidation. McNerney is not a flamboyant, force-it-to-happen kind of guy. He’s the efficient, help-it-to-happen-in-the-right-way sort.”</b></p>	On Boeing’s past and present CEO, from the perspective of labor unions. Signaling a potential effort towards reintegration

						ion of enterprise architecture?
May 29, 2006	<i>Seattle Post-Intelligencer</i>	John Leahy, VP of Sales, <i>Airbus</i>	Firm	$\beta$	“Unfortunately, he’s [McNerney] more impressive now [that he left <i>GE</i> ]. It’s a shame he’s running our major competition.”	On <i>Boeing’s</i> CEO, from the perspective of the competitor. Signaling a potential effort towards reintegration of enterprise architecture?
May 30, 2006	<i>Wichita Business Journal</i>	Jim Melvin, VP & GM	Supplier	$\alpha$	“It’s a good opportunity for a United States company to get some business in China on 787, so it’s great.”	On supply chain “arbitrage”: US work sent to China for offsets, and ultimately returning to the US for capability & cost/quality reasons.
14 June 2006	<i>New York Times</i>		Investors	$\beta$	“ <i>EADS</i> stock closed down 26%, the <b>lowest since the stock debuted</b> in July 2000 and on par with some of the biggest one-day plunges in corporate history. <i>Enron</i> shares, for example, fell by 23% on Nov. 20, 2001, after the company restated earnings a second time.”	On the market’s short-term reaction to <i>Airbus’</i> second delivery delay announcement on the

						A380.
14 June 2006	<i>Bloomberg.com</i>		Investors	$\alpha$ & $\beta$	<p><b>“The problem isn’t a delay of a few months, its that we no longer have confidence in what EADS says,”</b> said Xavier Debeugny, a fund manager at Paris-based brokerage <i>Oddo &amp; Cie.</i>’s private banking unit, which oversees some of France’s wealthiest individuals. He said he sold most of his <i>EADS</i> shares three months ago in favor of rival <i>Boeing’s</i> stock.”</p>	On the fluidity of capital among competitors.
15 June 2006	<i>The Wall Street Journal, Asia</i> “Boss Talk: Jim McNerney: Piloting <i>Boeing’s</i> New Course.” (J. Lynn Lunsford)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	$\alpha$	<p>“WSJ: You said you want ethical behavior to become a competitive advantage for <i>Boeing</i>. What does that mean? McNerney: <b>‘Every company of our size has a bad apple or two in it. The question is, are they caught before it becomes a problem.’</b></p> <p>WSJ: How is running <i>Boeing</i> different from your previous stints at <i>General Electric</i> or <i>3M</i>? McNerney: They are all proud, high-performing companies that have attracted very good people over the years where, <b>each at different points in their history, grew a little inward and parts of the culture got a little stale. In all cases, there was a big leadership challenge to retap into the capability of the company and the people and the leadership.</b>”</p>	On a modular enterprise architecture’s view towards leadership.
5 July 2006	<i>MSN Money, “Boeing Shares Could Fail From The Sky: Optimistic Investors are Treating Orders like Revenues. Given the Complexities of Producing the New Dreamliner, Boeing May be in for a</i>		Firm	$\alpha$	<p>“Investors admired the ambition, complexity, profitability and market dominance of industry leaders <i>Fannie Mae</i> and <i>Intel</i> all the way up to the point when their earnings forecasts were proven wildly over-optimistic and blew up. Could the same now happen at <i>Boeing</i>? The parallels are eerie, if not at all perfect. <b><i>Boeing -- the third-best gainer in the Dow Jones industrials over the past year -- is priced for perfection, much as the techs and banks were in 2000. And perfection, as we know all too well by now, is rarely attained. Investors in the European consortium behind Airbus found that out all too well last month when executives had to backtrack from laughable assurances that production of their new super-sized A380 commercial aircraft was on track. The bad news sent the consortium’s shares down 25% in a week. Boeing investors celebrated the Europeans’ bad news, figuring it meant new business from frustrated Airbus customers. But really, they should have taken it as a warning, for it is very hard to believe that the U.S. aircraft maker will manage to escape a similar fate with the construction of its own new plane, the 787 ‘Dreamliner.’</i></b></p> <p><b>Sky-high optimism</b> <i>Boeing</i> rarely built a new aircraft on time when the planes were built start to finish in the greater Seattle area. <b>But somehow it has managed to persuade investors that this time -- when much of the plane</b></p>	On a systemic understanding of modular enterprise architecture.

	<p>Hard Landing.” (Jon Markman)</p>			<p>is being built overseas from hard-to-get materials and organized with a glitchy new software system -- <i>Boeing</i> can not only keep production on schedule but actually build planes at a record clip. A couple of analysts have been sounding the alarm, but have not made much of a dent yet with <i>Boeing</i> bulls. One bearish analyst, David E. Strauss at Swiss-based brokerage <i>UBS</i>, has told clients that the Dreamliner is even more likely to blow deadline than the <i>Airbus</i> A380. ‘Risk to the 787 production schedule will continue to increase from here as the program heads toward first flight in late summer 2007,’ he wrote. If shares of <i>Boeing</i> do go into a nosedive over production delays, as I believe they will, bitter holders will shake their heads over the nosebleed altitude to which valuation has ascended this year. On a trailing basis, over the past 10 years <i>Boeing’s</i> price-to-sales multiple has run from 0.69 to 1.1. It’s now well above the top end of the scale. <i>Boeing’s</i> price-to-book multiple has run from 3.5 to 5 over the past 10 years. It’s now almost 6. Investors pay a premium for an industrial company’s shares when they believe it is halfway through a business up-cycle and recent earnings growth will extend at least three years into the future. They pay absolute top dollar when they think a company whose growth has been cyclical in the past has found a way to smooth out its ups and downs and bring in steadier cash flows through diversification efforts. So what are investors thinking? Forgetting the risk of production delays and the loss of face that would entail, steady cash flows could hardly describe <i>Boeing</i>, which is now, and will forever be, tied to the ups and downs of the worldwide demand for commercial and, to a lesser extent, military airplanes. With energy costs persistently high, global stock markets reeling, worldwide economic growth flattening and the threat of pandemic hanging over travel, the airline business does not look like an ideal place for investment capital at this time -- and that goes double for companies that provide capital equipment, like <i>Boeing</i>. The case for <i>Boeing</i> shares over the past three years has rested on its brilliant campaign to best its only major rival, <i>Airbus</i>, in obtaining orders for next-generation commercial aircraft. <i>Airbus</i> made a big bet on offering a gigantic new double-decker, wide-body jet that would transport up to 800 people at a time; <i>Boeing</i> made its own big bet on the 787, a more fuel-efficient aircraft that proposes to save airlines money. So far, <i>Boeing</i> has won the race for new orders by a handsome margin.</p> <p><b>A source of concern</b> But orders are one thing, and producing the darn thing is quite another. And this is where we get</p>	
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				<p>deeper into the intersection of ambition, complexity and risk. For if the plane misses its 2008 delivery deadline and fails to perform as <i>Boeing's</i> salesmen-engineers promise, then dreamy investors can kiss many of those orders goodbye before the first plane ever takes off. In its marketing material, the Dreamliner has been sold as a plane that achieves its fuel efficiency and streamlined manufacturing costs through an unprecedented reliance on large quantities of titanium, aluminum and carbon-fiber composites, and on a global supply chain held together by a new software system. <i>Boeing</i> has said that its suppliers and software are performing up to par and that it has not encountered any difficulty in securing enough specialty metals. Yet persistent rumors have surfaced over the past six months, denied by the company, that the 787 schedule has been plagued with technical, production and supply hitches. Fear of the loss of a ready source of titanium was in large part behind the company's stunning pledge to spend \$27 billion over the next three decades on engineering and raw materials in Russia, an economically and politically unstable country that happens to house most of the world's supply of the key metal. Two weeks ago, <i>BusinessWeek</i> reported that the passenger seating section of the 787 fuselage has failed in testing. The company blamed the problem on faulty quality controls, but denied that construction problems at Asian or European airframe contractors would force it to bring more of the work back to the United States.</p> <p><b>Cancellations coming?</b>  <i>Citigroup</i> aviation analyst George Shapiro notes that historically, <i>Boeing</i> shares have not performed well during development cycles and adds that their recent success 'reflect(s) a lack of concern about problems developing' with the 787 and its outsourced research and development efforts. Shapiro also warns that the 787 production cycle may be shorter than normal as airline profitability has not recovered enough to support the order surge. He expects a wave of order cancellations, even if delivery schedules are met. Why so glum? Shapiro says new planes containing significant technological innovations inevitably encounter manufacturing problems. Already, <i>Boeing</i> has acknowledged that the 787 is overweight, and with a big advance in electronic complexity, my guess is that some variation of the wiring snafus that have tripped <i>Airbus</i> are virtually a lock to appear. It's precisely due to manufacturing crises that <i>Boeing</i> shares have typically underperformed during development cycles and outperformed once planes are finally delivered. The company ultimately fixes the problems, of course, but the</p>	
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					<p><b>solution comes at the price of higher research costs that depress profit margins. Meanwhile, investors are treating orders as if they were booked revenue, even though past cycles have seen up to a third of orders canceled. Although some 787 orders are still coming in, many were made in an environment of much lower oil prices and interest rates, and stronger economic growth.</b></p> <p><b>Tech echoes</b> You may recall that, <b>in early 2000, tech companies boasted that tremendous order backlogs would lead to fantastic earnings growth, only to learn later that buyers had speculatively double and triple ordered. Jets also are ordered by companies that speculate on traffic boosts that never materialize. Citigroup notes that the Indian market is seeing air traffic grow by 20%, while capacity is expected to grow by 30% -- an imbalance that increases the likelihood that price wars will sap profits and lead to cancelled orders. If cracks appear in Boeing shares' uptrend, the stock could come in for a hard landing.</b> So what are the shares really worth, considering the risk? <b>Boeing has historically traded at anywhere from a 50% discount to a 50% premium to the S&amp;P 500 aggregate price-earnings multiple. Since the index multiple is around 16 and Boeing's multiple is at 25, it's now trading at a 55% premium.</b> Were the multiple to contract to parity with the broad market and earnings were to come in at consensus 2006 estimates, <b>shares would be worth \$56, or 35% less than the current quote. And if the schedule slips and the company disappoints on earnings, well, sky-high is not the word that would be used for either the multiple or the price.</b> Personally, I'll take an aisle seat in coach.”</p>	
24 July 2006	<i>Aviation Week &amp; Space Tech.</i> , (Robert Wall)	Thomas Enders Co-CEO, EADS	Firm-Investor	$\beta$	<p>“EADS especially would like to end the recent large fluctuations in its share prices. <b>‘We need more stability,’</b> Enders says, which smoother operations should provide.”</p>	On production stability causing share price stability.
5 Sept. 2006	<i>The Boeing Company</i> website	Scott Carson, President, Boeing Commercial Airplanes	Firm	$\alpha$	<p>“Boeing Chairman, President and CEO Jim McNerney today announced the appointment of <b>Scott E. Carson</b> as president and CEO, Boeing Commercial Airplanes. Carson, 60, a 34-year Boeing veteran, moves to the leadership position from vice president, Sales, for Commercial Airplanes. He replaces Alan Mulally, who has been named chief executive of <i>Ford Motor Company</i>. ‘Scott Carson is a seasoned and well-respected leader who knows our customers, our business strategies, and our products and services inside and out,’ said McNerney. ‘He is <b>uniquely</b></p>	On a modular enterprise architecture’s creation of a COO position to shore up its

					<p><b>qualified</b> to step in and lead our commercial airplanes team and continue to advance our performance and growth plans.’ <b>Boeing also named James M. Jamieson, 58, to the new position of chief operating officer,</b> <i>Boeing</i> Commercial Airplanes. Jamieson currently serves as senior vice president, Engineering, Operations &amp; Technology, at <i>Boeing’s</i> corporate offices in Chicago. Jamieson will report to Carson and oversee airplane operations and product development.</p> <p>‘Adding the strength of Jim’s background and experience in engineering, operations and product development will make our already strong Commercial Airplanes team even stronger,’ said McNerney.</p> <p>Carson has a long record of accomplishment across <i>Boeing</i>. In his most recent position he reinvigorated sales of <i>Boeing</i> commercial airplanes and related services to airline customers and leasing companies around the world. He has also served as executive vice president and chief financial officer of <i>Boeing</i> Commercial Airplanes, where he led the finance and business strategy organizations, as well as information systems and services. He also held leadership positions in the company’s defense business and was the first <b>president of Connexion by Boeing</b>. ‘I am excited and energized by the prospect of leading the people of this great business,’ Carson said. ‘We will remain steadfast and focused on executing our growth and productivity strategies, and meeting our commitments to our customers.’ Carson will continue to lead the Commercial Airplanes sales team until a successor is named.</p> <p>Jamieson is a 30-year company veteran <b>steeped in commercial airplane engineering, design and production</b>. In his current position, he worked to strengthen engineering and operations functions across the company, and provided leadership to the <i>Boeing</i> technology and information technology organizations. He served previously as senior vice president of airplane programs for Commercial Airplanes, where he was responsible for the design and production of all <i>Boeing</i> commercial airplanes. Other roles he has held include head of <i>Boeing’s</i> single-aisle commercial airplane programs, chief project engineer for the 757, and chief of customer engineering for the 747 and 767 programs.”</p>	new CEO (having little operating experiences in light of the coming 787 challenges).
Oct. 7-13, 2006	<i>The Economist</i>		Firm	β	“The fate of <i>Airbus</i> now depends as much on <b>political courage</b> as on managerial expertise.”	On the importance of political stakeholders on <i>Airbus</i> .
Oct. 12,	<i>Financial Times</i>		Firm	β	“Considering that <i>Airbus</i> , before its latest difficulties, managed to become number one in the	On the success

2006	(Paul Betts)				industry suggests that there is nothing wrong with the model. If anything, it has become a <b>template for success</b> . In short, for such a model to work, you need a <b>skilful architect</b> who has all the plans in his head, knows what needs to be done, and can keep politics and meddling shareholders out of the factory.”	of <i>Airbus</i> ’ model, and the type of leadership required to perpetuate it.
13 Oct. 2006	<i>The New York Times</i> (Mark Landler)	Richard Aboulafla, VP, <i>Teal Group</i>	Consultant	$\alpha$	“ <b>The political balancing act has hampered the company’s efficiency</b> . There are a lot of needless inefficiencies built into the management structure and production processes that are there to satisfy political goals.”	A critique on <i>Airbus</i> ’ explicit political constituency, focusing on the costs and not the benefits.
13 Oct. 2006	<i>The New York Times</i> (Mark Landler)	George W. Hamlin, Consultant, <i>Mortenson, Beyer &amp; Agnew</i>	Consultant	$\alpha$	“ <b>Is <i>Airbus</i> designed to generate a return for shareholders</b> , or is it designed to <b>generate industrial jobs in Europe?</b> ”	On the implied zero-sum mutual exclusivity of goals in the firm objective function.
13 Oct. 2006	<i>The New York Times</i> (Mark Landler)	Manfred Bischoff, Co-Chairman, <i>EADS</i>	Shareholders	$\beta$	“There is no reason to assume that <i>DaimlerChrysler</i> or <i>Lagardère Group</i> want to make sacrifices on the altar of national feelings.”	On the implied zero-sum mutual exclusivity of goals in the firm objective function.
13 Oct. 2006	<i>The New York Times</i> (Mark Landler)	Manfred Bischoff, Co-Chairman, <i>EADS</i>	Shareholders	$\beta$	“If it’s only changing hands <b>for the sake of ownership, it’s not worthwhile.</b> ”	On <i>EADS</i> ’ willingness to sell plants, only if the buyers can operate them more cheaply

						than <i>Airbus</i> .
16 Oct. 2006	<i>Fortune</i> , "How one CEO Learned to Fly" (Geoffrey Colvin)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	α	<p>"<i>Fortune</i>: What have you observed about those who grow and those who don't? Can you tell in advance who they'll be? <b>McNerney: 'No, you can't always tell in advance. It generally gets down to a very personal level – openness to change, courage to change, hard work, teamwork.</b> What I do is figure out how to unlock that in people, because most people have that inside them. But they often get trapped in a <b>bureaucratic environment where they've been beaten about the head and the shoulders. That makes their job narrower and narrower, so they're no longer connected to the company's mission – they're a cog in some manager's machine.'</b></p> <p><i>Fortune</i>: People often draw parallels between sports and other fields. You were enthusiastic about sports – do you see those parallels? <b>McNerney: 'The whole team dynamic is similar in business. Leadership is earned – the captain earns that role; it's not because he's the coach's son. When companies lose their way, they lose their way on these fundamental issues of leadership.'"</b></p>	On a modular enterprise architecture's view of evolving toward integral enterprise architectural leadership.
25 Oct. 2006	<i>Seeking Alpha</i> , "The Boeing Company, Q3 2006 Earnings Call Transcript" (www SeekingAlpha.com)	Jim McNerney, Chairman and CEO; James Bell, CFO, <i>The Boeing Company</i>	Firm-Investor	α	<p><b><u>Jim McNerney (The Boeing Company):</u></b> "Boeing delivered strong results in the third quarter with <b>revenues and core earnings per share growing at double-digit rates.</b> In August, our Board approved a new <b>\$3-billion share repurchase program, an important element of our balanced cash deployment strategy. With this strategy, we continue to deliver value to customers and to shareholders by investing in our growth and returning capital to investors."</b></p> <p><b><u>James Bell (The Boeing Company):</u></b> "Our commercial airplane business is benefiting from <b>a product strategy that's keenly focused on our customers</b> as well as a commitment to continuous productivity improvement. Revenues for the third quarter rose 45%. and BCA's operating margins expanded to 9.7%, despite higher R&amp;D expense. We delivered 100 airplanes in the quarter, a 61% increase over the same period last year, which was <b>affected by the strike.</b> These numbers reflect our success in working with our global partner network to efficiently increase production rates across the entire value chain, while at the same time managing for profitability. <b>The 787 program continues to experience pressure with respect to weights and supplier implementation.</b> We are raising our R&amp;D forecast to reflect these increasing pressures. The increase in total company R&amp;D reflected in our new guidance is expected to be offset by performance improvements at our other businesses. <b>We continue to expect that the 787 and</b></p>	On a modular Enterprise Architecture's defense of its financial performance

				<p><b>the 747-A will be delivered on time and in accordance with our contractual obligations.</b> We expect BCA margins to moderate in the fourth quarter due to the timing of costs and the absence of supplier participation payments to offset R&amp;D expense. Despite lower margins in Q4, <b>we expect BCA's full year margin to exceed 9%</b>, which is consistent with our current guidance. <b>And we also expect BCA margins next year to exceed 10%.</b> Clearly, our commercial airplane business is performing very well in a strong demand environment. <b>During the quarter, we announced that we would discontinue our <i>Connexion</i> service</b> by year end and take charges totaling approximately \$320 million in the second half of 2006. Now, turning to our balance sheet on slide 7. <b>We continue to enjoy outstanding balance sheet strength and liquidity.</b> We ended the third quarter with over \$8 billion in cash and liquid investments. So moving on to cash flow on slide 8. Our cash flow generation remains very strong. <b>Also during the quarter, we repurchased 8 million <i>Boeing</i> shares."</b></p> <p><b><u>Byron Callan (<i>Prudential Equity Group</i>):</u></b> "Yes. Good morning, gentlemen. I am wondering if you can address the <b>specific changes in R&amp;D guidance.</b> What changed since last July?"</p> <p><b><u>Jim McNerney:</u></b> "I think I would characterize what we're doing here as <b>pretty aggressive contingency planning.</b> We are at that point in the development program where <b>weight remains a dogged issue.</b> We know what we have to do. <b>Suppliers occasionally need help,</b> and what I am trying to do along with the BCA team is put a contingency plan in place. Just to give you some context, we have got <b>eight contingency plans</b> that we're looking at. <b>We've funded one right now.</b> We're trying to get out ahead of it just in case. This program has been characterized from the very beginning as a program that cuts across all boundaries within our company and across our company and to other companies that are our partners. <b>We have one database, common tools and processes. We see everything,</b> and what we're trying to do is as we go through this, just be as conservative as we can be; and there is a fair amount of conservatism built into this. <b>We know how to build this airplane. This plane will be done on time and will be done within contractual commitments."</b></p> <p><b><u>Heidi Wood (<i>Morgan Stanley</i>):</u></b> "Good morning, gentlemen. I am wondering if you can provide us a bandwidth of kind of the high, low range where as you see now R&amp;D's possible variance could go versus the '07 guidance you're giving us of the 3.2 to 3.4? I mean, obviously, that's a single-</p>	
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				<p>figure number, but how much risk do you see to that being up over the next couple of quarters? I mean \$100 million to \$200 million a quarter through '07?"</p> <p><b><u>Jim McNerney:</u></b> "As we see it now, that's a pretty conservative number, Heidi, as was consistent with the answer I gave Byron. <b>We are trying to witch-hunt the issues in this program right now, and we do have some weight issues as I have said. We do have some supplier implementation issues.</b> We are addressing all of them with aggressive recovery plans, and we've planned on more, should additional issues crop up. So I would characterize this from where we sit today against the delivery commitments and the contractual commitments we've made, a pretty conservative number."</p> <p><b><u>James Bell:</u></b> "And let me add to that. <b>What you're seeing as the spending profile is still well within the business case, well, actually well under the business case for the current spending that had us to launch this program. As you can see by the number of orders today, it is obviously a lot more successful than we ever envisioned at this point in the program.</b>"</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b> "This is sort of a question for both of you, because it's both a strategic as well as a financial question. <b>But your current market outlook pegs the 787 market niche size at around 3,600 aircraft and assuming a 50% share, that's 1,800 planes.</b> But at the 432 bookings, you're at 25% there before the first delivery. So the business case you guys talked about presumed an <i>Airbus</i> response, but now it's looking like the A350 XWB isn't going to deliver until the 2014 or 2015 timeframe, which gives you sole positioning in the mid-size wide-body niche for a good seven or eight years. Does the A350 look like it's more positioning itself to more than fully take on the 787? I am wondering if you guys can talk to us about how you think about the trade-off in production rates and pricing, given that it appears either your market share or the size of your market assumptions have been conservative?"</p> <p><b><u>Jim McNerney:</u></b> "No. I'd say the 50% looks pretty good, and there is upward pressure in our planning on production rates."</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b> "Would you need to <b>spend additional capital</b>, Jim, to get there, though?"</p> <p><b><u>Jim McNerney:</u></b></p>	
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				<p><b>“Not anywhere near the size of the opportunity”</b></p> <p><b><u>Cai van Rumohr (Cowen):</u></b> “Thank you, gentlemen. Could you give us more color on the <b>supply issue and the weight issues on the 787</b> and perhaps answer the more important question: you have increased the R&amp;D here in '06 and '07, <b>but do you still feel as comfortable about the potential for this program to be solidly profitable as we get out to the 2008 and 2010 timeframe?</b>”</p> <p><b><u>Jim McNerney:</u></b> “Cai, <b>this program's projected economics are significantly better than any airplane program I have been involved with and that's because of the structure of the supply chain, both in its participation and recurring and nonrecurring costs. I think you know the business model. So the structure of it combined with unprecedented market acceptance leads you to a pretty good conclusion about the concept and the strategy. As James pointed out a few minutes ago, even notwithstanding some upward pressure on research and development here in the short and medium term, we are well within the business case. Our internal targets are significantly within the business case because that's the way we like to run our business. This pressure hasn't really changed that outlook, so I don't see a fundamental change in an outstanding business case because of what we're talking about here today, at all.</b>”</p> <p><b><u>Cai van Rumohr (Cowen):</u></b> “And to the issue of supplier issues and weight issues?”</p> <p><b><u>Jim McNerney:</u></b> “Just more color you mentioned. Yes, I would say that we have a significant amount of engineering resources. Now that we've largely completed the engineering release process, there are some places we're going back to get weight out. So the good news is that we completed the majority of the engineering releases within the timeframe we hoped to and we have time to go back with a team. We have a weight reduction team that is going back both on parts that we designed and parts that others have designed. <b>Remember, we're all on the same system. So we understand the design parameters and design specifics on a real-time basis as well with our partners as we do in our own engineering shops. So we are very agile and very quick</b> in terms of being able to go back and put resources on some of that. Other things we're doing, there has been some production process help we've given a couple of suppliers as they're setting up new facilities and</p>	
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				<p>needed some <b>boundary-less kind of collaboration</b> between our production people and theirs to move it along a little faster. It's all the kinds of thing we anticipated. <b>It's all the kinds of things that you do when you share a supply chain with people who have a lot of skin in the game with you. But the good news about a lot of skin in the game is we are both incented to get it done. It is not us pointing at them and them pointing at us. It's us getting together</b> and so it's a mix of weight reduction and production process facilitation, I would say.”</p> <p><b><u>Joe Campbell (Lehman Brothers):</u></b> “Hi, guys. Good morning, all. I would like to go back to the second part of Heidi's question, which is <b>when looking at the stock, it is a bit upset because it looks like people are assuming over runs in R&amp;D are for sure, and estimates that it will do better in the future on the operating performance are maybe.</b> I am wondering whether or not implicit in the numbers that are the 2007 guidance, or if that will do even better? It looks to me like what you've got is a forecast of the second half of 2006 performance forecast into 2007. And if it is true that the R&amp;D is really only contingency, it would seem that we might not be so heavy on the R&amp;D, but we could be better on the operating side while <b>the market seems to be worried that the R&amp;D is for sure, and we might not make the operating profit gains they're going to offset the R&amp;D.</b> So I wondered if you could talk with what you've assumed, <b>in terms of getting better versus I know your hopes are that you will do better.</b></p> <p><b><u>Jim McNerney:</u></b> “<b>We feel good about the underlying operating plan. You know the ramp up, which will continue next year in a number of our airplane programs, has gone well. I think we have confidence that the underlying operating margins for R&amp;D will be delivered. The R&amp;D I would characterize as a conservative number, one that anticipates contingency actions that could happen. We'll be ready for them if they happen. Could there be an upside? Perhaps, but I think planning on an upside is not the way to run a business. James, do you have any other comments here?</b>”</p> <p><b><u>James Bell:</u></b> Yes. And I think the other thing, Joe, if you look at what we're projecting and normalize our earnings this year that we're projecting to potential charges, I think we're still going to have <b>30% earnings growth year-over-year.</b> Although we have the ability to see the way the program is being managed, see the risk early and make a decision to make available resources to have contingency plans to offset those</p>	
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				<p>risks, should the risks hit the beach; <b>I don't want us to lose sight that we've had a significant number of recent accomplishments on this program that are hitting right on schedule.</b> For instance, we have begun major assembly of the center wing section. We started fabrication of the landing gear, the APU integration facility is up and running, we completed the first test of the engine pylon. We've unveiled the wing test box. We're opening the new production propulsion integration center. We've had the first major partner-to-partner delivery, and that was the keel assembly and the pressure deck. We completed the 787 integration test vehicle, and we're now testing the large cargo freighter. <b>I mean those things have been hitting right on point. The fact of the matter is, Jim and I are going to run this business from a conservative perspective, and we're going to make sure that we have in place plans early enough that we can implement, so that we can hold to schedule and meet our customer obligations, and I think that's what you're seeing in this increase in R&amp;D."</b></p> <p><b><u>Doug Harned (Sanford Bernstein):</u></b> "Good morning. <b>Over the last two quarters as you've taken up your estimates for R&amp;D, you've kept your guidance the same in commercial. I am interested in understanding, I mean that's better than a 1.5 points in margin. I am interested in understanding where that benefit is coming from? I know you have had a number of initiatives on the operations side, also on the corporate side. Could you talk about what you see that you've captured, where it has come from and how you get comfortable about those savings?"</b></p> <p><b><u>Jim McNerney:</u></b> "Well, I think the two places we've had pressure are R&amp;D and some sourcing pricing inflation on some key raw materials. I think that's well known in the industry and well known as discussed by us. Where we are offsetting that is in conversion productivity. <b>There is a lot of innovative work going on in the PCA factories, whether it is moving lines in Renton, the beginning of moving lines in Everett which is a revolution in the way airplanes are converted; whether it is volume-related leverage as we take up our rates a bit; whether it is labor productivity. There is a lot of great work being done on conversion productivity, which is by in large, along with volume, offsetting these pressures.</b> That's the business model we run under. I mean when we talk about growth in productivity simultaneously, we mean it. The reason we drive productivity so hard in the Company is to make sure we have resources available to properly fund these huge opportunities we've got. <b>When you look at the 787 which we've talked a fair amount about</b></p>	
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				<p>here this morning. This is one of the most competitive airplanes when both measured against the planes it is replacing and against the planes that the marketplace is offering as an alternative as you will ever see. We don't want to you lose sight of that as we have these candid discussions about how we're managing R&amp;D and managing risk as we develop the airplanes. We want to be up front with you. We want to be up front with ourselves as we march through this program.”</p> <p><b><u>Doug Harned (Sanford Bernstein):</u></b> “That's good. I am trying to understand, though, on the cost side, what's allowing you to get the better margin? If you put R&amp;D aside, is it also the overhead type initiatives that you have let out of corporate?”</p> <p><b><u>Jim McNerney:</u></b> “There is some of that. The answer is yes. I mean, we have reduced some of what you would call corporate and SG&amp;A costs as a percentage of sales. But I think the hard work has been on conversion productivity in our factories and with the way we're working with our suppliers. I think that is leaving aside price inflation on some commodities as a separate issue, as a pressure. I think that is a bigger part of it, and there is more to go on both by the way. There is more to go on conversion productivity, and there is more to go on G&amp;A and corporate costs. We do have, as you point out initiatives in place to address both. A lean plus initiative, our corporate services reduction initiatives as well as our development process excellence initiative which gets at some costs. So we are going to be relentlessly focused on these things.”</p> <p><b><u>Steve Binder (Bear Stearns):</u></b> “And the same question was about pricing. You know, we have no clue what you're assuming not just for escalators, but for pricing on your model types, especially since you have a compromised competitor. That's why I was wondering have you seen any revision in those estimates, variables.”</p> <p><b><u>James Bell:</u></b> “Well, our pricing has stabilized, we think. Clearly, we are expecting more growth going out, we will give you more guidance on that obviously in the fourth quarter as it relates to '08. But we are assuming we're going to get the productivity as we go forward And in fact we've demonstrated it. We've demonstrated we've been able to move up in rate in all the current models and do that effectively and do that profitably. We anticipate to do that going forward, and also to get additional leverage.”</p>	
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				<p><b>Robert Spingarn (Credit Suisse):</b> “Good morning. You know, Jim, as a follow-up to what Steve just mentioned on the 747-8I, could you give us a little bit more color on where you are on that program? Clearly, you have the R&amp;D ramp. It looks like from macro perspective, you may have more opportunity here lately to capture some share just based on some instability perhaps in the marketplace right now, vis-à-vis a competitor. If you could give us more color there.”</p> <p><b>Jim McNerney:</b> “Yeah. I mean I think you have to back off a little bit and get some altitude on it. First of all, this is a derivative program, and the amount of money we're spending on this reflects that. I mean this is taking an airplane we know how to make, we've made for years, one of the world's most successful airplanes and we're modifying it. So as we adjust and tweak to meet specific market requirements, we have to keep the context that it is not a huge development program for us. Now, having said that, I think the requirements have settled down on that airplane now. We've had a lot of dialogue with not only the legacy carriers in Europe that Steve referred to, but a lot of other people. We've made some modifications. We know what we have to do. We understand the engineering of the airplane, and we know how to do it and we have time to do it. So I think we're in pretty good shape, with the requirements having settled down.”</p> <p><b>George Shapiro (Citigroup):</b> “I wanted to pursue the R&amp;D a little bit more. I mean effectively, you've raised R&amp;D pretty substantially now two quarters in a row. When do you think the period of greatest risk in this program is? Or you can't say until we get to say the initial flight test program?”</p> <p><b>James Bell:</b> “Well, I think we're in it. We're in a period of considerable risk, and I think we've identified them early. Obviously, we want to get the contingency plan in place in time and have them resourced in case we need to call on them, George. Obviously, you'll have a different set of risks once you get into the flight test. But I guess the real point I want to make on this is that we think we understand how to build this airplane. I mean we think we've gone through it. We understand the systems we need to go deal with and how to do them. We don't have the complexity on our airplane that the A380 is, we have a fifth of the electrical wiring in it. So I think if some of the concern is being driven by what you see out there in other places, then I think you have to understand there's some distinct differences in what we're doing here.”</p>	
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				<p>What you're seeing here is early risk mitigation. <b>I think we're there in terms of our ability to go look forward and see where those risks might hit the beach</b> and where we can put contingency plans in place and hopefully mitigate it.”</p> <p><b><u>George Shapiro (Citigroup):</u></b> “But if something incrementally worse didn't happen in the third quarter, why wouldn't you have raised the R&amp;D by a bigger amount in the second quarter? I guess I am looking for what did you incrementally see in the third quarter that you didn't in the second quarter?”</p> <p><b><u>James Bell:</u></b> “Well, again, if you remember in the third quarter half of this increase is associated with the 747-A. The other piece that's associated with the 787 is to look at those other contingency plans that we had on the table and we understood in the second quarter, but we now have another quarter of history or time has passed and so we wanted to make sure we had the resources available. <b>So, quite frankly if we were going to focus on something big happening, it would be something that would be totally unexpected like somebody dropping a big piece of hardware or a big piece of tooling or something having a major failure. But right now in terms of the technical things that need to be done, we think we understand them pretty well and we just want to get the weight out of it and then make sure we hold the schedule.</b>”</p> <p><b><u>Jim McNerney:</u></b> “There has been no dramatic or qualitative change in the risks we're managing one quarter to the next. I think it's a matter of as James said, being at that point in the program where, as the risks exist, you want to get out ahead of them and more than get out ahead of them. I think that's what you're seeing here.”</p> <p><b><u>Ronald Epstein:</u></b> And then a product placement or product development question for you. Lately I think the BCA guys have been out talking in industry conferences and have been a little bit more vocal about <i>Boeing</i> being involved with a <b>small plane, something maybe around 100 seats</b>. Jim, I was wondering if you can speak to that, how seriously <i>Boeing</i> is considering that and any color you can add on a smaller narrow bodied jet.”</p> <p><b><u>Jim McNerney:</u></b> “<b>I don't think, Ron, that we have a crystal clear view yet of what the narrow body market of the future is going to look like.</b> Certainly there is a lot of discussion around the 100 packs, and there is a lot</p>	
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				<p>of discussion around a bigger version of a narrow body, you know, the 200-plus size as well as the core of the market, the 150 to 180. A lot of discussion, a lot of debate, different camps within our company. <b>Meanwhile, we're just focused on maturing the technologies that we know will fit into any of those versions as that clarifies. But I hesitate to tell you I know exactly what that market is going to look like eight, nine years from now. Over the next year it's going to get a lot clearer.</b>"</p> <p><b><u>Joe Nadol (JP Morgan):</u></b> "Thanks. Good morning. I was wondering if you could comment just a little bit more on your current production at BCA. <b>You've been running the past couple quarters with unit costs accounting, profits higher than program and this quarter that slipped around. So I was wondering what caused that.</b>"</p> <p><b><u>James Bell:</u></b> "Joe on the <b>unit margins</b> it's just we've had the impact of the <b>increased material costs</b> they had a more dramatic impact on unit margins early, and it doesn't have the ability to have the production improvement that we have over time in programs. <b>So again, with the problem with unit margins, I know you all like them, but they're volatile, because they can be affected by near-term things and doesn't take a program picture into effect. But it's a data point.</b>"</p> <p><b><u>Joe Nadol (JP Morgan):</u></b> "So you characterize the issues you're facing more as just <b>raw material inflation</b> rather than getting the stuff in the door."</p> <p><b><u>James Bell:</u></b> "Exactly. And for the quarter there was a big difference in terms of delivered units which have a pricing impact."</p> <p><b><u>Peter Jacobs (Wells Fargo):</u></b> "Good morning, gentlemen. James, could you just highlight again specifically where you're seeing some of the <b>weight issues</b> on the 787-A program and any kind of additional color you can give there?"</p> <p><b><u>Jim McNerney:</u></b> "No, I don't want to name names. But in general what we have is the airplane is pretty much designed and as you start laying out the components, there are weight opportunities, and <b>obviously the bigger the component, the more generally the opportunity is.</b> So we're trying to attack those that have the highest payback and that we could do within the timeframe necessary to meet our delivery dates and still meet all of our contractual obligations, and so that's the</p>	
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				<p>focus.”</p> <p><b><u>Gary Liebowitz (Wachovia Securities):</u></b> “I am going to kick the R&amp;D dead horse one more time. Jim, in the beginning of the conference call you were speaking that there were eight contingency plans, one of which you had funded. <b>Are you saying that there is potentially seven more contingency plans to be funded?</b>”</p> <p><b><u>Jim McNerney:</u></b> “What I meant by that was that we have around eight, last time I reviewed it, contingency plans in place if we need them. <b>The R&amp;D level that we are talking to you about assumes we fund all of them and more. We've only triggered funding, we've only needed to trigger funding on one of them. I was trying to point out a specific with regard to the conservative posture we have with our R&amp;D. So is that clear? In other words, if we fund them all, we still won't be pressuring the number I gave you.</b>”</p> <p><b><u>Lynn Lunsford (The Wall Street Journal):</u></b> “Good morning. Just one little question and I think it's more looking at <b>nuance</b> than anything else. Up until now you have pretty well said that you expected <b>entry into service for the 787 to be mid-2008. I noticed in your press release that in the graph where you talk about that you just say during 2008. Does that mean you're slipping that or is that just a word?</b>”</p> <p><b><u>Jim McNerney:</u></b> “<b>Not at all.</b> I mean that's wording. I believe it's August '08. It has always been late August, early September has always been the timing and still is the timing. That was advertent, Lynn.”</p> <p><b><u>James Wallace (Seattle Newspaper):</u></b> “Yeah. Good morning, Jim. I had a question and in previous interviews that <b>Mike Bair</b> has done with me and others, he has mentioned <b>2% has been the overweight issue, plus or minus something. Has the weight increased recently or are you just trying to tackle the same weight that he's been talking about?</b>”</p> <p><b><u>Jim McNerney:</u></b> “I think it's within the range of what he is talking about. I don't know when you last talked to him, but <b>I would say the weight pressures have increased slightly</b>, but also the opportunities to reduce them have increased. So we're working it, but it's within that range sort of <b>low single-digits.</b>”</p> <p><b><u>Dominic Gates (The Seattle Times):</u></b> “Good morning a couple of things. I wondered, Jim,</p>	
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					<p>if you could give us any idea of <b>what the one contingency plan that you have had to fund, what that was exactly?</b></p> <p><b><u>Jim McNerney:</u></b>  <b>“There will be some work that is going to be brought to Seattle. That was going to be done by a couple of our suppliers that is more efficiently done in Seattle, and so we've made an adjustment there, and that's the one we have triggered.”</b></p> <p><b><u>Dominic Gates (The Seattle Times):</u></b>  <b>“Is it major work?”</b></p> <p><b><u>Jim McNerney:</u></b>  <b>“Well, I don't know what you would categorize as major work. I mean it is <b>systems installation work</b>, that is systems that are going to be installed in the airplane.”</b></p> <p><b><u>Dominic Gates (The Seattle Times):</u></b>  <b>“Thanks for letting me back in. I just wanted to go back to one answer that Jim McNerney gave earlier. <b>I was a little surprised when you told Lynn Lunsford that the first deliveries of the 87 would be in late August of '08, because I certainly understood it was going to be earlier that summer. One of the reasons for that was the Beijing Olympics, the Chinese airlines that have ordered the 87 wanted it for the Olympics. Isn't that going to be too late if you're delivering it in late August? The first one goes to Japan, not China.</b></b></p> <p><b><u>Jim McNerney:</u></b>  <b>“Dominic, you're right. I may be confusing when we're shipping an airplane to somebody versus when they are implementing it. Our date for delivery to the Japanese and Chinese airlines have changed. If I have confused the date, I apologize. We'll reaffirm that with you. I am not trying to signal any change at all.”</b></p>	
1 Jan. 2007	<i>Aviation Week &amp; Space Technology</i> (Michael Mecham & Anthony Velocci)	Alan Mulally, Former Pres. & CEO of Boeing Commercial Airplanes. Current Pres. & CEO	Firm	α	<p>“I don't think one bit about whether it can be done or not, I'm focusing on how to do it, to turn it around, to find a way to do it. <b>And if it can't be done, then the assets will go to somebody else. And they should, it's business.</b>”</p>	On a modular enterprise architect's views of competition and capital.



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31 Jan 2007	<i>Seeking Alpha, "The Boeing Compan y, Q4 2006 Earning s Call Transcri pt"</i> (www.S eekingA lpha.co m)	Jim McNer ney, Chari man and CEO; James Bell, CFO, <i>The Boeing Compa ny</i>	Firm- Investo r	α	<b><u>Jim McNerney (The Boeing Company):</u></b> “We made great progress in 2006 which has given us a solid foundation for <b>even better performance in 2007 and beyond</b> . This was an important year for <i>Boeing</i> , one in which <b>we turned a corner and positioned ourselves for what we believe promises to be a very exciting future</b> . Speaking of the 787, let me give you an update on where we are. I will start by telling you exactly what we're telling our customers. <b>We expect to deliver the 787 on time with first delivery in May 2008 and in accord with our contractual commitments. Over the course of the year in 2006 we achieved important milestones on 787 which position us well for the task ahead</b> . We began flying the Dream Lifter, or the large cargo freighter. We commenced major assembly of the first 787 airplanes, and <b>we made strides in our technology development and weight reduction programs</b> . Looking ahead to 2007, our key milestone targets include... flying of 787 engines on their airplane test beds in the first quarter; arrival of major assemblies in Everett, Washington, also during the first quarter; <b>final assembly of the 787 in Everett during the second quarter; 787 rollout in July and first flight of the 787 which is targeted for the end of August</b> . These areas represent the bulk of our R&D spending at this point, and we're making progress on all fronts. <b>On weight</b> we have identified a number of areas where we are taking weight out of the airplane. <b>We've redesigned numerous parts and changed some materials. And we feel confident we'll get where we need to be</b> . To mitigate schedule risk, we've continued to provide engineering and manufacturing support to our partners, many of <b>whom I have personally visited over the last twelve months</b> . We continue to make good strides there as well. <b>We continue our process of robust contingency planning which keeps us looking forward at risks we may encounter and mitigation actions we may need to implement. We have committed resources for these plans as we need to, and retired plans no longer required</b> . To help you track our progress on the 787, <b>we plan to update you at least twice a quarter</b> , once during our earnings call and once by Mike Bair, our 787 program head during his quarterly call with media and investors. So, while mindful of the inherent challenges and risks that lie ahead on a program like this, <b>we are pleased nonetheless with the progress we are making on the 787 and with the airplane's performance, which we expect will exceed the overall performance levels we committed to customers when we launched</b> . We continued to invest in developmental programs like <b>787 and the 747-8, both of which will be major growth programs for</b>	On a modular Enterpris e Architect ure's defense of its finanaica l performa nce

				<p><b>this Company for a long time to come.</b> While we improve the value and performance of our business, we further enhance the value we provide to shareholders by increasing our dividend 17% and authorizing a new \$3 billion share repurchase program. <b>We see more potential to return capital to owners through share repurchase and dividends as our financial performance improves. You have heard me say that we are committed to delivering financial results that match the quality of our people and our technology</b> with our momentum and continued focus on growth and productivity we have a great opportunity to do just that.”</p> <p><b><u>James Bell (The Boeing Company):</u></b> “Now turning to our segment guidance. BCA airplane deliveries are forecast to grow to between 440 and 445 airplanes in 2007. <b>Deliveries in 2008 are expected to be approximately 515 to 520 airplanes, driven by higher production rates and the introduction of the 787 Dreamliners.</b> Looking further out, we expect airplane deliveries in 2009 to be higher than those in 2008. Commercial Airplane revenue guidance for 2007 is between \$32.5 and \$33 billion. And it's expected to grow to between \$39 and \$40 billion in 2008. <b>We expect 2007 operating margins for Commercial Airplanes to be above 10%, reflecting higher deliveries and continued productivity.</b> For 2008 we expect BCA margins will continue to expand to approximately 11%. Now, in terms of airplane orders, we expect the strong demand for our products will keep our book-to-bill ratio above 1 for 2007, resulting in a further increase in our backlog.”</p> <p><b><u>Jim McNerney:</u></b> “Thank you, James. Well, this is the second time I have addressed you to discuss our year-end performance and the road ahead. <b>Last year I told you we had embarked on a new course based on a new management model, dedicated to the simultaneous pursuit, growth and productivity and founded on the principles of leadership development. Our results show we are making very good progress on this new course. I also told you last year we moved to put some of the ethics and business problems from our past, put them behind us, and we have succeeded there as well. I personally believe that we will look back on 2006 and see it as a pivotal year in the history of the Boeing Company. We will heighten our focus on growth in productivity. We will expand our leadership development, and we will redouble our efforts to meet commitments while living the Boeing values. We want to remain the world's strongest, best integrated aerospace company, and we want to make sure our stakeholders see us</b></p>	
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				<p>like that that I am talking about. The weight reduction thing is a major effort, and <b>I am feeling good about the progress there.</b>"</p> <p><b><u>Cai von Rumohr (Cowen and Company):</u></b> "Thank you. Like to follow up on Heidi's question. <b>Even if the 787 were at 0 profit</b> given you're going to be down 150 to 200 bips in R&amp;D, and also you're going to get a positive swing in pension, <b>it looks like your margin before R&amp;D is down, is that pricing? Is it conservatism? What is it, because basically the numbers don't add up.</b>"</p> <p><b><u>James Bell:</u></b> "We're conservative, Cai."</p> <p><b><u>Cai von Rumohr (Cowen and Company):</u></b> "Okay. Thank you."</p> <p><b><u>James Bell:</u></b> "You got me."</p> <p><b><u>Howard Rubel (Jefferies &amp; Company):</u></b> "The dilemma that you sort of talked about, Jim, is that things are so good, how do you make them better, might very well be characterized with one of your challenges, and one of them is that your backlog stretches so far that, how do you keep your sales force motivated to continue to sell airplanes? And are -- have we -- if we look at what we see in the way of <b>rate schedules</b>, there have to be at least one or maybe two more rate increases planned beyond what you've announced. Is that fair?"</p> <p><b><u>Jim McNerney:</u></b> "I think we have to get a little more visibility longer term before we consider -- we just raised -- we are just getting there now, and listen. I don't want to argue with you, because your big point is right which is that with this kind of demand we are always looking at rate increases, but <b>we always want to do them prudently, so because as you know, companies like ours get in trouble when they chase rate without the proper supply chain management. And so you're going to see us raise rates prudently,</b> and I think the -- I think our sales force, by the way, they have a lot to do out there as they work with airlines and work with other customers and the infrastructure that supports them to make sure we get the current technology that's moving out installed properly and supported properly, and they're not taking Wednesdays off."</p> <p><b><u>Joseph Campbell (Lehman Brothers):</u></b> "Good morning. I wanted to ask again about production rates. You were careful in 2006 to make sure that you raised the production rates. I can't remember your exact phrase, but it had to do with</p>	
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				<p>more attention to the backlog right now than book-to-bill. If the backlog were a lot smaller, I think book-to-bill would be a more relevant -- something you would worry about a little bit more.”</p> <p><b><u>Lynn Lunsford (Wall Street Journal):</u></b> “You said also that one of the key things with this ramp-up is, <b>can you raise your rates and maintain increasing profitability. Are you pleased with where that's going so far?</b>”</p> <p><b><u>Jim McNerney:</u></b> “<b>Yes. The short answer is yes, I am pleased with where that's going so far.</b> We have had a number of rate increases, and there is some here in the planning period that we have discussed, and I think <b>Scott Carson and Jim Jamison and the team there are bound and determined to do this in a disciplined way, and I am certainly philosophically aligned with that. And so the steady increase in margin expansion that you're seeing combined with the on-time delivery of our planned rate increases with suppliers who are committed to working with us, is working so far, and we're just going to keep doing it that way.</b>”</p> <p><b><u>Dominic Gates (Seattle Weekly):</u></b> “I would like to go back to the 787 supply chain and the various glitches there. Two parts. You said <b>three or four partners are having some difficulties.</b> Are those all structures people or are the systems partners working and are you having to help any of them out as well. And then second part, with regard to the structures work that traveled from Japan to South Carolina, could you talk about how that, <b>the new business model for the 787 may, perhaps, be creating a much more complicated situation than in the past.</b> Where if work had traveled <i>Boeing</i> would just have done it in Everett. Now you've got global aeronautica having to cope with work traveling to them, and so are they asking for more money as a result, and are you in effect having to renegotiate contracts with the Japanese and global aeronautica as a result of work traveling that way?”</p> <p><b><u>Jim McNerney:</u></b> “Your first question, Dominique, the three or four partners we've been working with over the last few months have -- it has centered on the structures side of the business as we're trying to share learning across all of them and us to make sure we get it right, and there has been a lot of cooperation going there. <b>As to the traveled work question, I see it a little differently. I think because the fundamental work is spread out a little bit, because there is an interim step in South Carolina on the way to Seattle, there is a little more flex in the system to</b></p>	
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					<p>handle traveled work, quite frankly, than in the days where everything showed up in Washington and there was a huge geographically centered "Oh my God" that where the number of people and the amount of work all came together at one time, and there is a little more opportunity the way we're doing it now to handle it within a more flexible environment. As to the last part of your question, as you know, many of the contracts -- most of the contracts with our supplier partners do leave room for accommodation when more or less work happens than was anticipated, and there are often times robust discussions with our -- and this has happened in every airplane program we've ever had, robust discussions with these partners as to price and the amount of the end result of the financial accommodation, and, yes, we're having those discussions, and occasionally they last more than a minute."</p>	
19 Feb. 2007	<p><i>Business Week</i>, "Soaring Where Boeing Struggled: How Spin-off Spirit Aerosystems Built a new Model for Worker-Management Cooperation" (Stanley Holmes)</p>		Supplier	α & β	<p>"For union workers, a new corporate owner usually means one thing: <b>mass layoffs</b>. So it comes as quite a surprise that, after buying <i>Boeing Co.'s</i> Wichita aircraft plant, the Toronto private investment firm <i>Onex Corp.</i> <b>kept on most of the 4,000 employees</b>. Of course, the Machinists union wasn't happy that more than 800 people lost their jobs. But the new owners helped ease the pain by giving the remaining workers \$246 million in cash and stock options. The money was a reward for helping the company, now named <i>Spirit AeroSystems</i>, cut costs and pull off a successful initial public offering. 'I can't tell you what a thrill it is to give our organized workforce nearly \$250 million,' says Seth M. Mersky, an <i>Onex</i> managing director. <b>The comity between Spirit management and the International Association of Machinist &amp; Aerospace Workers is partly a sign of the times.</b> The commercial plane business is booming, which is why <i>Spirit</i> expects to post a 2007 profit of \$260 million on projected revenues of \$4.1 billion, up from about \$3.2 billion in 2006. That won't last forever. But for now <b>the unusual deal is being widely praised as a promising new labor model. No one is more bullish than the man who helped put it all together, former Democratic House Minority Leader Richard A. Gephardt of Missouri. 'It is what we are going to have to do in a lot of our industries to be globally competitive,'</b> says Gephardt, who is a consultant with <i>Goldman, Sachs &amp; Co.</i> <b>'It aligns [workers] with the company and gives them a fair reward for their contribution.'</b> This improbable story began several years ago, when <i>Boeing</i>, in a bid to <b>shed weak assets and outsource more of its manufacturing work, decided to sell its uncompetitive Wichita plant.</b> Although it was <i>Boeing's</i> biggest internal supplier, cranking out fuselages and nose cones, it suffered from <b>inflexible work rules, high wages, and testy labor relations.</b> Enter Mersky and fellow</p>	<p>On a spun-off "integral" division of a modular enterprise architecture, becoming more integral.</p>

					<p><i>Onex</i> Managing Director Nigel S. Wright. Where <i>Boeing</i> executives saw lemons, the two turnaround specialists saw lemonade. They reasoned that if they could cut costs, make the plant <b>more productive</b>, and start working for <i>Airbus</i>, defense contractors, and regional jetmakers, the Wichita plant could become profitable. But first <i>Onex</i> had to get costs under control. The firm saved \$40 million annually by <b>slashing corporate overhead costs</b> inherited from <i>Boeing</i>. <b>It negotiated price reductions from <i>Spirit's</i> suppliers and simplified the procurement process. It managed to reduce the complexity of work rules, reducing 160 job classifications to 13.</b> Finally, it asked the unions for a 10% wage cut to better reflect the prevailing wages in the area and told them it would reduce the workforce by 15%.</p> <p><b>SHARING THE PAIN</b></p> <p><i>Onex</i>, which sought the union's support, lost the first vote with the Machinists. Many workers came from third- and fourth-generation <i>Boeing</i> families and wanted to stay with the giant. 'It was tough on people,' said Ron Eldridge, the Machinists' aerospace coordinator for Wichita. 'It was like an ugly divorce.' The managing directors approached R. Thomas Buffenbarger, international president of the union. <b>'They asked: 'What's it going to take?'</b>' Buffenbarger recalls. <b>'I said, 'If you want to share some of the pain, then give us a stake in the enterprise.' They warmed to it quickly.'</b> A new deal was negotiated: For the wage and job cuts, <i>Onex</i> offered union members a 10% equity stake in an eventual IPO. The new owners sketched out a scenario where workers could earn some \$30,000 in stock and cash over five years as long as the IPO was successful. Now, 18 months later, the bargain has exceeded everyone's wildest dreams. An IPO on Nov. 21 raised \$1.4 billion. Each Machinist is about to receive \$61,440 in cash and stock. Given <i>Boeing's</i> backlog of orders, plus a surge of defense-related spending, analysts figure <i>Spirit's</i> stock will do well in the next few years. <b>That should buy the company goodwill for when the industry hits the skids."</b></p>	
Feb. 21, 2007	<i>Bloomberg.com</i> (Andreas Cremer)	Manfred Bischoff, Co-Chairman, <i>EADS</i>	Shareholders	β	<p>"The board members of <i>EADS</i> nominated by <i>DaimlerChrysler</i> are solely geared to the success of <i>EADS</i> and <i>Airbus</i>. Thus, the allegation that they might act in national or political intent is absolutely wrong. At the same time, the inevitable impacts in the countries involved must be made acceptable and enforceable by means of a fair distribution of future opportunities."</p>	On the accusation that the shareholder <i>DaimlerChrysler</i> is pushing to keep A350 jobs in Germany for



						political and not financial reasons. Demonstrates the complexity of how <i>Airbus</i> emphasizes the balancing between shareholder and stakeholder interests. Are capital and labor really uncoupled factors of production?
Feb. 21, 2007	<i>Bloomberg.com</i> (Andreas Cremer)	Christian Wulff, Prime Minister of the state of Lower Saxony	Government	β	“This crisis can be overcome <b>if all players stand together.</b> ”	On Germany’s offer to fund <i>Airbus</i> R&D in return for keeping jobs in Germany.
Mar. 14, 2007	<i>Forbes.com</i> (Parmy Olson)	Arnaud Lagardère, Co-chair of EADS	Shareholders	β	“ <i>Lagardère</i> recently reported a 57% drop in 2006 profit, due largely to the poor performance of its 7.5% stake in EADS. Chief executive Arnaud Lagardère, who also co-chairs EADS, also ruled out the sale of the company’s stake in EADS when announcing his annual results. <b>‘I will play my role and I want to carry on being part of EADS’s growth,’</b> he told <i>Le Monde</i> . He added that he saw no need for a capital increase at EADS, presumably in lieu of politicians who wish to take a bigger role in <i>Airbus</i> . <b>So concerned was Lagardère about EADS’ future that he vowed to return any upcoming dividend back to the company. ‘The Airbus situation has affected everyone, the employees above all, but also the shareholders and notably the small investors who have suffered from the drop in shares,’</b> he said.”	On “patient capital” in an integrated enterprise architecture.
30	<i>Flightgl</i>	David	Firm	β	“It is not exactly <i>Boeing</i> but it is <b>radically different.</b> ”	On

Mar. 2007	<i>obal.com</i> (Helen Massy-Beresford)	Micklewright, VP Procurement			<i>It's about halfway to Boeing and that is pretty radical for Airbus."</i>	<i>Airbus' plans to outsource risk to the supply chain on the A350, compared to Boeing's similar efforts on the 787.</i>
22 Apr. 2007	<i>Seeking Alpha, "The Boeing Company, Q1 2007 Earnings Call Transcript" (www.SeekingAlpha.com)</i>	Jim McNeerney, Chairman and CEO; James Bell, CFO, <i>The Boeing Company</i>	Firm-Investor	$\alpha$	<p><b><u>Jim McNeerney (Boeing):</u></b>            "In summary, <b>we are off to a good start in 2007</b>, we delivered solid top-line performance during the first quarter with strong double-digit growth in operating income, net income and earnings per share. These results are inline with our expectations for the quarter and represent good progress towards the challenging goals we have [set] for ourselves both this year and beyond that.</p> <p>While we make progress on our financial goals and grow our record backlog, we also continue making progress on our major development programs, including the 787 Dreamliner. Scott Carson and Mike Bair gave you a detailed 787 update last month, and as you've seen as soon as yesterday with the Virgin and Air Canada announcements, demand for the Dreamliner continues unabated. <b>We are also making progress toward our development milestones for this year and next.</b> Let's review just a few of those. During the first quarter, we surpassed 500 orders for the Dreamliner, which is an unprecedented achievement by the BCA team. We now have 544 firm orders from 44 customers, which is the highest tally ever achieved by a commercial jet program within three years of its launch. We are now in the process of bringing the 787 to life. Major structural elements of the first airplane are being assembled, and <b>in some areas we are already working parts and assemblies for airplane #5. Fuselage sections from Japan, Italy, South Carolina, and Wichita, are coming along well, as is the wing box from NHI.</b> Second special 747 Freighter or Dreamlifter has taken its first flight and delivered its first components. And we have a third Dreamlifter at the Mod Center and a fourth one heading there. Our engine partners are making good progress on their flying test beds. And work on the systems side is moving ahead as we enter integration testing of these major elements. In Everett, the upgrade of the final assembly day is going well and we have started receiving components there. The horizontal stabilizer arrived just very recently and</p>	On a modular Enterprise Architecture's defense of its financial performance

				<p>other major components will be arriving in the next few weeks. <b>We will rollout the first 787 out of our Everett factory on July 8th, an event we will webcast so all of you can see the airplane. As you know, we are targeting a first flight in late August, which will kick off our flight test program. We will remain on-track for first delivery to ANA in May of 2008.</b> As we have said before, we are working late, scheduled, and supplier challenges, as we strive to meet our milestones. These areas represent the bulk of our R&amp;D spending at this point and we are making strides in each area. We are moving into the very critical final assembly and systems integration phases of our program, and as you can imagine the entire 787 team is working very hard to achieve our milestones. So, mindful of the inherent challenges and risks that lie ahead, particularly in the latter stages of major airplane development programs, <b>we are nonetheless pleased with the progress we are making on the 787. We are also pleased with the airplane's performance, which we expect will exceed the overall performance levels we committed to customers when we launched this program.</b> We will continue to update you on the 787 as we move through our key milestones.</p> <p>So, let me wrap up my opening comments by saying that <b>we have reaffirmed our financial guidance for 2007 and 2008.</b> Our record backlog, increasing productivity and the progress of our development programs have us on track to achieve our growth and productivity objectives.”</p> <p><b>James Bell (Boeing):</b> “R&amp;D spending for the quarter was on track at \$788 million. <b>We expect BCA’s R&amp;D to begin declining in the second half of this year</b> which along with productivity improvements will drive margin expansion consistent with our guidance. <b>Program margins exceeded unit margins this quarter due to new customer introduction costs and pricing mix that reflects airplanes sold two to three years ago in a tougher pricing environment.</b> We captured 109 gross orders in the first quarter which lifted BCA’s backlog to another record of \$188 billion which is 6 times current BCA revenues. <b>Now Jim has already talked about the tremendous success of the 787 as enjoyed in the market and the progress we are making in its development.</b></p> <p>We continued our balance cash deployment strategy as we invested in organic growth programs, <b>repurchased 4 million shares for \$360 million, and contribute to our pension plans, as well as, paying a 17% higher dividend to shareholders.”</b></p> <p><b>Jim Mc Nervey:</b></p>	
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				<p>Thank you, James. You can see from the outlook James just discussed, that <b>we have some ambitious goals for this year and next. We are confident we can meet those goals. Our businesses are executing well, and all of us are focused on executing even better. We are in healthy markets</b> pursuing prudent growth strategies and seeking to boost productivity in each of our factories and our offices. Meeting the financial commitments we make to you is as important as meeting the performance commitments we make to our customers. We are determined to deliver on both. <b>We want to remain the world's strongest, best integrated aerospace company.</b>"</p> <p><b><u>Byron Callan (Prudential Equity Group):</u></b> "Jim, you have been at the helm for almost two years. I am just curious where do you think you have made the most progress with things you want to change at <i>Boeing</i>. What are you most keenly focused on today? And are there areas you are <i>disappointed with or frustrated with</i> that you think the company can do better at? Thanks."</p> <p><b><u>Jim McNerney:</u></b> "Yeah, sure. <b>Listen this was certainly not a broken company when I took the helm a couple of years ago.</b> It was a company that was doing a lot of things right and had some good strategies in both its businesses. I think though we are emerging from era of management turmoil, some uncertainty with regard to priorities and I thought, just to use a term, <b>some of the software the company needed addressing in terms of leadership development, management needed to be infused with a little more accountability in some cases. So, it was more around the leadership.</b> A refocus helped the company regain its confidence in itself, because the strategies were good and the products were by and large good, also focused a lot more on international I would say and some of that effort is beginning to bear fruit."</p> <p><b><u>Byron Callan (Prudential Equity Group):</u></b> "Okay. And areas that you think you could still do better out here?"</p> <p><b><u>Jim McNerney:</u></b> "Well, I don't want to give the bullish answer which is there is nothing we can do better, because there is a lot of things we can do better. But I think with \$260 billion plus backlog, the issue is obviously around execution, because the markets and our customers are accepting our technology, and the backlog represents to all of us at <i>Boeing</i>, both a huge opportunity and a big burden to get it done properly. And so <b>we are focused on a lot of things that you don't see, which have to do with new ounces of</b></p>	
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				<p><b>making sure priorities are right, making sure people are aligned and accountable, making sure that we have balanced work across the enterprise and make sure that people feel like they are growing and are excited about what they are doing.</b> Those are the kinds of things we are focused on now.”</p> <p><b><u>Howard Rubel (Jefferies &amp; Company):</u></b> “Thank you very much. I want to kind of go from the broad to a little bit more narrow, two things are sort of notable, one is that if you exclude the Research and Development spending from your operating profits, <b>it looks like you are about 19.8% versus 17.5% year ago Jim. And that would sort of indicate to me that there is some real change in the way you are addressing productivity and profitability,</b> where do you take up from here, and as we look out <b>this could imply maybe as much as 15% operating margins in commercial, is that a fair way to think about it?”</b></p> <p><b><u>James Bell:</u></b> “Well, first of all Howard your math is impeccable. Yes, it’s not bad at all. And <b>I think you are seeing the fact that we really are starting to harvest a lot of benefit not only from lean but our other productivity initiatives that we implemented a year ago,</b> and we would expect there is more opportunity as we get the volume from our higher production rates and the lower order traffic. And as Jim mentioned earlier, as we have the opportunity to convert this record level backlog and convert that to value. So, we will continue to be working that to see how we get these pre-R&amp;D margins up.”</p> <p><b><u>Jim McNerney:</u></b> “And I think you said it James, I think we are going to continue to face into a competitive environment though, every dollar of improvement that we get may not flow to the bottom line because we have customers that need to be productive, and <b>we have competitors that aren’t going to sit still and let us take easily as much of the market forever as we are taking now.</b> So, how that exactly gets expressed in terms of progress towards a 15% operating margin or whatever target will sort of unfold, but we are determined to be ready to make any necessary competitive responses, any kinds of investments we need to making customers and grow our margins as we move along.”</p> <p><b><u>Steve Binder (Bear Stearns):</u></b> “Just wanted to follow-up on Howard’s question, because James you touched on <b>a difference between unit and program</b> in your introductory comments and you did touch on pricing on the unit costs so I bet it’s reflecting deliveries at a less favorable pricing</p>	
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				<p>and you changing your program method. So, I am just wondering the reason for that increase in the pre-R&amp;D margin to 19.8 from the low 18% range in the fourth quarter of '06. is that really just cost system or visions or is it also reflecting a better pricing environment that's built in to your blocks?"</p> <p><b><u>James Bell:</u></b> "It's both I would tell you its productivity and better pricing going forward. The planes which you are seeing in the unit margins and the impact of that is two or three years ago we really were faced with a much more competitive pricing environment and also a phase we are trying to have pricing that bridge us to new market particularly for the 747-8 and then also we saw a more robust market in this time period for the 777 two or three years ago and we needed to make sure we got there along with the single arm. So, I think you are seeing a combination of both the better pricing as it stabilizes today and then also our productivity efforts."</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b> "James and Jim, I want to also hark on the margin outlook for commercial and make sure I have got through the right puzzle pieces as we think this is true. If you look at our guidance in '07 versus '08, you are talking about 20% uptick in volume and over 13% decline in overall R&amp;D, which means that commercial R&amp;D is going down more, and yet only a 10% increase in BCA margins year-over-year. So, again just what are some of the key assumptions that would help offset that mix of productivity and mix in R&amp;D tailwind?"</p> <p><b><u>James Bell:</u></b> "Are you talking going forward, Heidi?"</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b> "Yeah, I am just trying to think what keeps us from thinking about 15% margins by 2010."</p> <p><b><u>James Bell:</u></b> "Well, principally, what's going to keep us from that by 2010 is the fact that we are going to have dilution from the 787 margins. Obviously, it's the beginning of a new program, and although it will start out more probable than any new program, any new product introduced at least in our history. It will still dilute the margins that we experienced on our mature programs. And so clearly to the 2010 timeframe that's going to have an impact particularly since we expect to deliver over 100 airplanes in the first two years and then that will grow in the third year."</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b> "And that more than overpowers the increase in</p>	
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				<p>volume and decrease in R&amp;D?”</p> <p><b><u>James Bell:</u></b> “I won't say that it more than overpower. I am just saying to you that we are going to have that dilutive impact and we will have to wait and see as we get closer if we are able to get more productivity as we ramp up on the 87 because that dilution is real. <b>And remember just what we have been talking about 18% or 19% in these years for our pre-R&amp;D margins on our mature program. Obviously, it's going to take us some time to get to that same level on the 787.”</b></p> <p><b><u>Cai von Rumohr (Cowen &amp; Company):</u></b> “Yes, thanks a lot. If I go back to the commercial margin issue, your R&amp;D commercial was 10.4% of sales. Even if you come in at the absolute tippy-top of your R&amp;D estimate \$3.4 billion, I mean it's got to be down at least \$200 million to \$250 million and unless a program accounting margin pre-R&amp;D go down from that 19.8%, <b>it's kind of hard for me to see how the margins for the year won't be above 11%?”</b></p> <p><b><u>Jim McNerney:</u></b> “Well, I think I got your question there Cai. Look, I think is there opportunity to expand our margins? Yes. Are there other things we are wrestling with to make sure they are put in the box before we revise anything? Yes. But the opportunity to continue to improve our margins in BCA certainly lies in front of us and the head set of Scott Carson and his team supported by me and James is to do just that.”</p> <p><b><u>James Bell:</u></b> “And Cai we do feel comfortable. <b>We will hit our guidance at greater than 10.”</b></p> <p><b><u>Robert Stallard (Banc of America Securities):</u></b> “But these are very distance dates, is that leaving to airlines <b>encouraging you to raise rates how aggressively than you would like?”</b></p> <p><b><u>Jim McNerney:</u></b> “<b>Yes. We have been encouraged to raise rates. But I have a fundamental belief, which is that the best customer service is to deliver on your promises. And so to raise rates and then later not be able to deliver because the supply chain was not with you and the planning was not done properly is a lesson that this industry teaches itself every decade or so, and I am bound and determined not to learn that lesson that way while in this job. So, we want to raise rates because our customers do need the airplane, and we as you noticed were raising rates and we are doing it prudently and we are going to keep looking at</b></p>	
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				<p><b>raising rates because we do want to satisfy these customers. But it will be done when we can do them.”</b></p> <p><b><u>Robert Toomey (E.K. Riley Investments):</u></b> “There has been a lot of news lately about China entering the commercial jet market, and I am wondering if you could make some comment on your observations on what China maybe doing here in the near-term, I guess, in your industry in the next five years? And then also if you could make a comment on your assessment of the airline, on behalf of your major customer, the airline industry? Thank you.”</p> <p><b><u>Jim McNerney:</u></b> “Yes, I think there is no doubt that the Chinese will be someday in the commercial airplane business. There is lots of speculation on how long it will take them. It will probably take them a considerable period of time to get there, but they have a large internal market. They have technical capability, and they have the resources to do it. So, I think whether its 10-years or 20-years, I think, we will see somebody probably in the narrow-body segment from China competing there. Listen, it is a huge market for us, we have many partnerships over there. <b>I am one of these people who believes that partnering with people who are potentially competitors is not necessarily a bad thing.</b> So I think we will have a headset of both competing with them and partnering locally because we benefit from it as a company, it strengthens our company. And they will find us the top competitors and they would expect to. It’s close to what’s probably a 10% to 12% of our sales over the last few years had been in China that will moderate a bit as other parts of the world get back in the game, but they will continue to be major customers, and they have shown preference for our products, and we continue to think they will, for a pretty long period of time.”</p> <p><b><u>Stanley Homes (BusinessWeek):</u></b> “Hey, I wanted to just ask you, or actually follow-up on the <b>contingency funds that you set aside for the 787?</b> Could you just wanted you to let us know how many again you have triggered and have you triggered anymore since the last time you talked about those funds and using them, setting aside those funds for some of the production issue?”</p> <p><b><u>Jim McNerney:</u></b> “I think we are at roughly the same place we were the last time we chatted with you. I mean we have got contingency efforts in place for wiring, for tubes, for traveled work, other forms of traveled work. These break down into three teams, that we hope</p>	
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				<p>won't have a lot of work to do. But if they need to, they are ready to go. And we are training them and standing them up, and as we re-planned some work as pieces come into Charleston and then to Seattle and these guys will be ready to go. <b>And I am always asking the question, so as Scott, are these teams ready? Are there enough of them in our worst case scenario? And we feel very comfortable with where we are.</b> So, the specific answer to your question is, there is three teams ready to go. We have retired one team actually, that was whether we got in place to make sure we had any extra composite work that needed to move around. But it turn out, we didn't need that. All the partners did their composite work that they promised they could do. So, that team is sort of gone mute."</p> <p><b><u>Stanley Homes (BusinessWeek):</u></b> "Okay. So, you have retired a composite team and then you have three teams that are for wiring, tubes and traveled work. Those are the ones that are still sort of setup, ready to go if you need them?"</p> <p><b><u>Jim Mc Nerney:</u></b> "Yeah, wiring and then the tubes, clips, brackets, those kinds of thing."</p> <p><b><u>Stanley Homes (BusinessWeek):</u></b> "Alright, okay, yeah."</p> <p><b><u>Jim Mc Nerney:</u></b> "And then some other traveled work that we would have to plan and that, as you know, when these kinds of things, <b>Stanley, those teams would need to be in place for their first, usually 20 airplanes or so,</b> just as it winds down and all the work settles in and where it's going to be."</p> <p><b><u>Stanley Homes (BusinessWeek):</u></b> "And then finally how are the <b>Italians</b> doing? And why were they little <b>slower</b> than some of the others? What were their issues? And I am assuming that they're pretty much on track, is that correct?"</p> <p><b><u>Jim Mc Nerney:</u></b> "Yeah, I think in a word they're doing better. I think the transition from prototype to production was not easy for any of our partners, and it may have taken them a little longer, but they are now flowing with the work, and so we are feeling better about it. Still challenges in front of us, still <i>Boeing</i> people working with them, but I would say we are feeling incrementally better there."</p> <p><b><u>Lynn Lunsford (Wall Street Journal):</u></b> "This is kind of a follow-up on that, is <b>looking at the 787 program clearly there is a whole bunch of folks who are sitting on the sideline and waiting</b></p>	
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					<p><b>for Boeing to stand up and say oops! and so far you keep reiterating that you are on track and on schedule.</b> What is probably the single biggest challenge that you still have to meet? Is it making sure that all of the systems come together, and where if you just have to kind of handicap your biggest hurdle yet, what would it be?"</p> <p><u>Jim McNerney:</u> "Well, I think, obviously the system's integration at this stage in a program becomes very important and things can happen that require re-work, re-looping work, and that represents in our norm. <b>So far that's going well, but it represents a risk.</b> I think when you add it all up Lynn, whether the airplane flies at or around the time that our milestone says it should, will be the time when everything comes together. And if we hit that milestone on or within a reasonable time around our target there and EIS is now threatened, then I think you could look at that and say we are in good shape. Now, the next risk is what you would find out in flight test, and there could be some unknowns there as well. <b>But as we sit here today we think it's going to come together, and we think we will be flying.</b>"</p>	
4 Jun. 2007	<i>Business Week</i> "The New Heat on Ford" (David Kiley)	Alan Mulally, CEO, Ford	Firm	α	<p><b>"We have been going out of business for 40 years."</b></p> <p>"Mulally, who is moving to <b>lengthen job tenures</b>, finds [<i>Ford's</i>] system <b>appalling</b>. 'I had the same job at <i>Boeing</i> for seven years,' he says. <b>'You can't hold somebody accountable for a job they've done for nine months.'</b>"</p> <p><b>"You can't manage a secret."</b></p>	On the CEO as Chief Architect. Note that as CEO of <i>Boeing</i> , Mulally was a modular architect relative to <i>Airbus</i> , while at the more modular <i>Ford</i> , Mullaly appears relatively integral.
27 June 2009	<i>Flightblgger</i> (Jon Ostrower)	Mike Bair, VP Program, <i>Boeing Commercial</i>	Firm	α	<p><u>Update 3 - June 25, 2007 - 10:25pm</u> "Mike Bair said today, <b>'The aircraft will be structurally complete at rollout but will still have systems, ducting, wiring and similar work to be done before first flight. When those tasks are completed, it will be powered up and proceed to ground test before it flies.'</b>"</p>	On a modular enterprise architecture's overpromise and under-

		<i>Airplanes</i>				delivery.
25 July 2007	<i>Seeking Alpha, "The Boeing Company, Q2 2007 Earnings Call Transcript" (www SeekingAlpha.com)</i>	Jim McNeerney, Chairman and CEO; James Bell, CFO, <i>The Boeing Company</i>	Firm-Investor	$\alpha$	<p><b>Joe Campbell (Lehman Brothers):</b> Will you say something about what you are going to do with the 87? I thought that might have been part of the answer about what it is that you are going to book. <b>I think a lot of people are thinking with a big block size you are going to have more normal profits than you would usually have here, but -- so we are pretty much in the dark about how to think about the 787 in '08.</b></p> <p><b>James A. Bell (Boeing):</b> Think about it in two ways -- <b>it will be profitable from the first airplane, which is something that is different than what we have experienced in the past, but on the same token, it will not be as --</b></p> <p><b>Joe Campbell:</b> <b>You are saying it will be profitable on a unit cost basis from the beginning?</b></p> <p><b>James A. Bell:</b> <b>I think it will be profitable on a program accounting basis and it may also be slightly profitable on a unit basis. We'll have to take a look at that but clearly it will be dilutive to the mature margins we experienced on the 777 and the 737 today. So I think the way you think about it is it is going to contribute but it is going to contribute at a much lower margin rate than our other airplanes."</b></p>	On a modular Enterprise Architecture's defense of its financial performance
Sept. 24, 2007	<i>CNN Money.com</i>	Tom Enders, CEO, <i>Airbus</i>	Firm	$\beta$	<p><b>"We will decide when we are ready. Announcements will only be made when Airbus has arrived – together with the potential partners – at concrete terms and conditions for a promising long-term partnership."</b></p>	On <i>Airbus'</i> picking investor companies to buy some of its internal manufacturing facilities. (Contrasted with <i>Boeing's</i> process of selling off its internal Wichita division.)
5 Oct., 2007	<i>Reuters</i>	French state bank, <i>CDC</i>	Investor	$\beta$	<p><b>"The CDC said in a statement that when it bought the shares it was acting as a 'long-term investor, alongside other financial institutions."</b></p>	On accusations that underval

						ued EADS shares were bought by a French state bank after the A380 problems .
24 Oct. 2007	<i>Seeking Alpha, "The Boeing Company, Q3 2007 Earnings Call Transcrip t"</i> (www.S eekingA lpha.co m)	Jim McNer ney, Chari man and CEO; James Bell, CFO, <i>The Boeing Compa ny</i>	Firm- Investo r	α	<p><b><u>“David E. Strauss (UBS Securities):</u></b> Could you just address <b>profitability on an initial batch of 787, I think in the past you talked about from a program accounting standpoint you expected it to be possible. I think from a unit accounting standpoint you also said it would be profitable. With the delay obviously we are seeing the schedule with some of the penalty payments and I am note sure if you are capitalizing any other cost, could you just address what you are looking as far or thinking about in terms of profitability on the initial batch?</b></p> <p><b><u>James A. Bell (Boeing):</u></b> <b>We still think the initial units will be profitable. We haven't gone through and completed our analysis yet on what the accounting quantity side will be and are they still working all the cost estimates and then obviously we have a pretty good feel on pricing because we have sold so many of the airplanes but we haven't concluded those... that analysis yet we are working through our auditors and we will meet quite frankly, but we do know and still feel that those initial units will be profitable, but they will be diluted from a margin standpoint to our marked mature material programs.</b></p> <p><b><u>Benjamin Fidler (Deutsche Bank):</u></b> Question if I could, just to clarify a bit more on the 787. <b>Just in terms of how far through the supply renegotiations and the discussions with your airline customers you now are on the 787 and when you expect to fully complete those?</b></p> <p><b><u>James A. Bell (Boeing):</u></b> Well obviously we're on the supply chain as Jim mentioned, the discussions around any changes associated with the slide, <b>any changes in statement of work associated with the development program are pretty mature and we believe we have the... what the ultimate settlement position on that already taking care of both in our R&amp;D guidance, where would be the R&amp;D related and then our assumptions for booking rate on the program of accounting the assumptions. So that when we start</b></p>	On a modular Enterprise Architecture's defense of its financial performance

					<b>to delivering in the next year, that is already included.”</b>	
29 Oct. 2007	<i>Reuters, “Boeing Sets \$7 billion Share Buyback” (Bill Rigby)</i>		Firm-Investors	α	<p><i>“Boeing Co. said on Monday it would buy up to \$7 billion of its own stock, <b>one of the planemaker’s largest repurchase plans on record</b>, but kept its cash dividend unchanged. <b>The announcement comes amid a three-month slide in Boeing shares</b>, which have lost about 10 percent of their value after hitting an all-time high in July, as <b>production problems</b> have delayed the company’s new 787 Dreamliner.</i></p> <p><i>Boeing’s shares added to gains shortly after the announcement, and closed up 97 cents at \$96.99 in afternoon trading on the New York Stock Exchange.</i></p> <p><i>The plan allows the repurchase of about <b>9 percent</b> of Boeing’s outstanding shares at current prices. <b>Boeing’s biggest plan on record</b> authorized the repurchase of about <b>15%</b> of outstanding shares in 1998, the year after it took over rival <i>McDonnell Douglas Corp.</i> Boeing suspended stock buybacks after the attacks of September 11 and resumed only in 2004. Since then, it has bought about \$8 billion of its own stock. Its last repurchase authorization, which is nearing completion, was for \$3 billion worth of stock, set in August 2006. The new authorization has no specified time limit.</i></p> <p><i>‘Our <b>strong financial performance</b> allows us to return value to our shareholders while continuing to invest in growth and becoming more productive,’ said Boeing Chief Executive Jim McNerney, in a statement. “We are executing a <b>balanced cash deployment strategy</b> that’s serving Boeing and its shareholders well.”’</i></p>	On a modular EA’s investment strategy
1 Nov. 2007	<i>The Boeing Company website: “2007 Speeches – University of Washington Business School’s Business Leadership Banquet</i>	Jim McNerney, Chairman & CEO of The Boeing Company	Firm	α	<p><i>“My father talked about leadership in MBA-level classes. <b>It’s a whole lot tougher to be a leader than a follower, my father would tell his students, because the leader aims to do the impossible – or what others regard as impossible. But then he would go on to say: ‘don’t overestimate the opposition. If you have the will and courage to lead, you will gain a lot of support along the way.’</b></i></p> <p><i>Now, let me turn to another mentor – Jack Welch at GE. There were striking similarities between him and my dad. <b>One was having the foresight to see the need for change when almost no one else did. Another was having the courage to lead. Now the point I want to stress here is that Jack didn’t just chart the course; he stayed the course, when that made him an unpopular and even hated figure.</b></i></p> <p><i>To ‘set high expectations’ through bullying, duplicitous or retaliatory behavior... without knowing how to ‘inspire others’... is to <b>fall fatally</b></i></p>	On the chief architect of a modular enterprise architecture, using integral rhetoric with regards to leadership

				<p><i>short of being a leader. Similarly, to ‘deliver results’... while compromising your company or organization through close-to-the-line or unethical behavior... is to poison the well from which everyone in the organization drinks. It is the exact opposite of real leadership in any kind of positive – or even practical – sense.</i></p> <p><i>Part of living the Boeing values and doing the right thing is being absolutely honest and candid with others in evaluating their work and providing feedback on a regular basis – all constructively done. For many people, this is sometimes the most difficult – and the most painful – part of the job of being a leader. If you rate the majority of employees as ‘above average,’ you under-value the work of those who ought to be recognized for truly superior performance.</i></p> <p><i>An open culture cannot work without reality-based communication – honest and respectful conversation. That is why the candid, constructive, one-on-one discussion between a manager and his or her direct reports is an essential element in developing people and achieving strong performance within an open culture. Done well, it is that interaction, more than anything else that engages people’s hearts and minds, that excites them and moves them forward.</i></p> <p><i>As we’re thinking of it here, leadership might seem to consist of a series of paradoxes. To be a leader, you have to be:</i></p> <ul style="list-style-type: none"> <li><i>• Both tough and inspirational</i></li> <li><i>• Far-seeing and results-oriented</i></li> <li><i>• Unsparingly honest and strongly supportive</i></li> </ul> <p><i>Well, that’s a little daunting, isn’t it? Just how do you do it all? You don’t want to go to work every morning, desperately thinking to yourself ‘What do I need to do today to be seen to be both tough and inspirational?’ In my view, that is the wrong mindset. You will wind up being both tough and inspirational if you give yourself a chance to grow into leadership... thinking of it less as a form of play-acting during dramatic, life-and-death moments, and more as an organic, continuing part of what must be done to help an organization or team proceed toward a shared goal. As we all intuitively know, it is when you are working for the larger good of others that the courage to lead decisively can be found within yourself. Nonetheless, pushing someone hard, even in their own eventual self-interest, is not easy.</i></p> <p><i>That brings me back to leadership development,</i></p>	
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					<p><i>which I regard as <b>the single most important part of my job</b>. We have metrics for assessing every one of our managers and executives on how well they perform against the six leadership attributes. <b>It is well understood within Boeing that a leader's job consists – in large part – in helping others to discover their own capacity for improvement.</b></i></p> <p><i>As my own father – and mentor – would have said: <b>Aim high. And don't overestimate the competition. If you have the will and courage to lead, you will gain valuable support along the way. I wish you well in your future endeavors.</b></i></p>	
1 Nov. 2007	Seattle Post- Intelligence, "Mike Bair's 'Remarkable' Speech" (James Wallace )	Mike Bair, VPMar keting & Strateg y, <i>Boeing Comm ercial Airpla nes</i>	Firm- Suppli er	α	<p>"Mike Bair, former 787 boss, gave a pretty <b>blunt talk about 787 suppliers</b> on Wednesday to a group in Everett. I was unable to attend, but check out my report, though late, on what he had to say. Some of the highlights: <b>'Some of these guys we won't use again,'</b> Bair said. He did not name names. <b>Did Bair mean to include Boeing's top-tier partners in the U.S., Italy and Japan</b> that are responsible for manufacturing the composite wings and fuselage sections of the new jet? I put that question to <i>Boeing</i> on Thursday. <b>'The suppliers you name and some of their subtiers,'</b> a <i>Boeing</i> spokeswoman said when asked to clarify Bair's comments. Was Bair's speech reviewed and approved ahead of time by his immediate boss, Scott Carson, or by anyone else at <i>Boeing</i>? Bair did not have a prepared speech, the spokeswoman told me. One industry analyst called Bair's speech 'remarkable.' <b>'It's remarkable that Boeing is saying publicly that some of their world partners are falling down on the job and that Boeing made a mistake and that they will do it differently the next time,'</b> said Scott Hamilton of <i>Leeham.net</i>. For <i>Boeing's</i> next all-new jet program after the 787, Bair said, it would be better to have a central manufacturing site rather than the global assembly method that is being used for the 787. He said <b>Boeing would put pressure on its suppliers the next time to locate in the same area.</b> On the 787 program, <i>Boeing</i> gave some of the design work to suppliers, in addition to manufacturing responsibilities. Bair said some of that design work had to be done by <i>Boeing</i> when suppliers could not. <b>'Some of them proved incapable of doing it,'</b> he said"</p> <p><b><u>Posted by unregistered user at 11/2/07 3:29 a.m.</u></b> "Hmm, Mike Bair and rest of the top management at <i>Boeing</i> must have felt, that <b>after the Sonic Cruiser boondoggle, the 7E7 would have to constitute a technological leap forward, if they were to remain an equal contender at the forefront in the civilian airliner business.</b> I would guess that the <b>mandrel molding production method must have looked like a simple and elegant method to them, and not the least; a 'hi-tech' way in which to leapfrog</b></p>	On a modular enterprise architecture's relationship with its suppliers

				<p><i>Airbus</i>; however rushed their design might be. Currently, <i>Boeing</i> does carry a lot of weight as an Original Equipment Manufacturer, and based on its past performance credentials, the company obviously has a lot of clout with their customers. However, past performance is not necessarily indicative on how a future program will perform; and especially not when the OEM does not follow industrial best-practice recommendations that suggest new products should use existing processes and tools, the existing organization and demonstrated technologies. Well, guess what, <i>Boeing</i> didn't follow any of the industrial best-practice recommendations. <b>It appears that they threw a <i>Hail Mary</i> pass to try to "win" the fierce fight for market share in the LCA business in the second decade of the millenium.</b>"</p> <p><u>Posted by unregistered user at 11/2/07 12:26 p.m.</u> "Ok, talking Barrel Mismatch From the 'unofficial photos'... One barrel was clearly overflush by approx 0.25" at one point, at no other point on the diameter was it underflush, therefore the diameter of one barrel was approx 0.25" greater than the other. The real problem is that the circumference is therefore 0.75" longer on one barrel when it should be much closer, so when you start bolting up you either need a lot of spacers to distribute the gap around the fuselage (prohibitively expensive and work intensive), you make 'proper' matching barrels, or you do what <i>Boeing</i> have done, make up some special joining pieces down one side and whack in a load of filler. <b>There is no easy fix to this problem! Commentators such as Leelaw were correct pillory the rollout, it was a complete joke! This was a <i>Boeing</i> interface slip up!"</b></p> <p><u>Posted by unregistered user at 11/2/07 2:20 p.m.</u> "It is important that these companies do take risks. That is the point, <b>if they played it safe they would have an updated 767, what good would that have done.</b> Risk and failure is how companies grow provided two things - The failure is not so immense it takes them down, and two they learn from it. <b>If the 787 turns into a 2 year delay boondoggle then it may approach that immense failure. If <i>Boeing</i> actually manages their way out the maze and actually deliver 100+ planes by 2009 then all will be well and the risk and failure will permanently move the bar to a higher level. If they deliver 6 airplanes by April of 2009 then they will be in serious serious trouble. So it is to early to call the risk an abject failure.</b> We will now get to see how well <i>Boeing</i> Executives can really manage. It will be interesting to see how they do compared to <i>EADS</i> when they ran into trouble."</p> <p><u>Posted by unregistered user at 11/2/07 8:58 p.m.</u> "Bair used to say we 'hired them for their ability</p>	
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				<p><b>to the job'. What an incredible screening process.</b> Bair said, it would be better to have a central manufacturing site rather than the global assembly method that is being used for the 787. No kiddin, I don't believe it. That is radical. Real engineers can look at the 787 and see that it is an aluminum plane made out of graphite. Revolutionary? he, he. <b>Boeing Senior Managers, take a good look in the mirror and you'll see who's at fault."</b></p> <p><u>Posted by unregistered user at 11/3/07 10:29 a.m.</u> "When are <i>Bloeing</i> due to give the next 787 program update? I'm looking forward to hearing about <b>misaligned barrels, phantom fasteners, software code issues, overweight aircraft, underperforming GE engines, etc..."</b></p> <p><u>Posted by unregistered user at 11/4/07 1:06 a.m.</u> "When the photos of the mismatch were leaked <i>Boeing</i> were livid. For such photos to get out showed serious breaches in security not to mention confidentiality issues from employees. <i>Boeing</i> have now clamped down as they were mortally embarrassed by both the photos and by the leak itself. You will not see a 0.25" gap from 120 feet. The mismatch problem still exists. I reckon they will now have spacer panels moulded up that go 360 degrees around the joint. What this will do for fatigue on the bolts is anyones guess, and it will have added much weight and cost. This is one relatively minor issue, I'd love to see what else is going on. <b>The program is an utter mess."</b></p> <p><u>Posted by unregistered user at 11/4/07 6:16 a.m.</u> 787-8 Specifications 2006: OEW <b>240k</b> MZFW 340k Payload 100k MTOW 480k</p> <p>2007: OEW <b>252.5k</b> MZFW 345k Payload 100k MTOW 484k</p> <p><b>It has a comparable weight to the A330-200 now. A slightly lower max payload and a lower MTOW."</b></p> <p><u>Posted by unregistered user at 11/5/07 9:55 a.m.</u> "What is it with this guy Bair?????? I don't understand ,usually when you get kicked out of a job for not doing your job properly you don't go and publically admit it too!!!!!"</p> <p><u>Posted by unregistered user at 11/5/07 11:47 a.m.</u> "Hey 1/4" gap guy, and <i>Boeing</i> is a stupid job outsourcing guy, answer a question for me. <b>If</b></p>	
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				<p><b>Boeing has screwed the pooch so bad how come their stock is still up above \$90 and EADS is below 25 and headed down?"</b></p> <p><b><u>Posted by TriplePac at 11/5/07 12:34 p.m.</u></b> "Seriously though, as one who grew up in the culture of one of the suppliers AND customers, <b>he should be shot for such a public flogging of them regardless of the problems. Maybe that's a little insight into his day to day management style. Counterproductive American arrogance in a global economy; period. For Boeing's case, they need to get rid of him. Boeing seems to be exhibiting an alarming level of leadership. Keep it up &amp; they'll be worrying about Mitsubishi instead of Airbus."</b></p> <p><b><u>Posted by unregistered user at 11/5/07 1:14 p.m.</u></b> "Counterproductive American arrogance: Apparently creating the greatest economic engine the world has ever known is counter productive. <b>'The transformation of EADS requires substantial efforts across the group. Airbus in particular, requires an overhaul of the original industrial set-up, a behavioural evolution and more modesty....'</b> This little gem came from EADS own website, so who is the arrogant ones?"</p> <p><b><u>Posted by Leelaw at 11/5/07 10:33 p.m.</u></b> "However, I find the 'Great Satan' Aboulafia's assessment of Mr. Bair's recents remarks in his November Newsletter far more interesting:</p> <p><i>...Boeing has done extremely well with global sourcing so far. The 767 and 777 were hugely successful with exactly this kind of global supply chain. The top-tier 787 suppliers that Bair criticized, by the way, are valued partners or suppliers on these aircraft. And the 787 looks set to be the successful culmination of these global trends. Geography has never been a problem for Boeing. Outsourcing (in the US and abroad) works great for the company. The real problem is that this time they trusted, but didn't verify. In their zeal to maximize profit and spread much of the financial risk, they offloaded most of the airframe responsibilities without the due diligence needed to ensure that their partners could do the design and integration work. Boeing's unrealistic 787 program schedule didn't help either. Even if it was the partners that screwed up, it was ultimately Boeing's mistake—the buck stops at the prime contractor. The supesite idea, by contrast, sounds completely dysfunctional. Imagine the labor consequences. In good times, you'd see hellish wage inflation for engineers and manufacturing workers, with Boeing and its contractors all poaching employees from each other. In bad times, you'd have a regional</i></p>	
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8 Nov. 2007	<i>Forbes.com (AFX News Ltd.)</i>	Moody's Investors Service	Firm-Government	$\beta$	<p>"Moody's cites <b>strong government support as a reason for a stable outlook</b> for EADS' rating."</p>	On EADS rating being unaffected by Airbus' A400M delivery delays.
16 Nov. 2007	<i>Seattle Post-Intelligencer, "Boeing Bosses Spy on Workers" (Andrea James)</i>		Firm-Employee	$\alpha$	<p>"Within its bowels, <i>The Boeing Company</i> holds volumes of proprietary information deemed so valuable that the company has entire teams dedicated to making sure that private information stay private. One such team, dubbed "enterprise" investigators, has permission to <b>read the private e-mails of employees, follow them and collect video footage or photos of them. Investigators can also secretly watch employee computer screens in real time and reproduce every keystroke a worker makes.</b> One company source said some employees have raised internal <b>inquiries about whether their rights were violated.</b> Sometimes, instead of going to court over a grievance on an investigation, <b>Boeing and the employee reach a financial settlement. The settlement almost always requires people involved to sign non-disclosure agreements,</b> the source said. <i>Boeing</i> desires to keep investigation details under wraps.</p> <p>Recently, a <i>Boeing</i> investigator told a Puget Sound-area employee that <b>he was followed off company property to a lunch spot, that investigators had footage of min 'coming and going' and that</b></p>	On a modular enterprise architecture's low-trust environment.

					<p><b>investigators had accessed his personal Gmail account.</b> The primary reason for the 2007 investigation, the employee said, was <i>Boeing's</i> suspicion that he had spoken with a member of the media. <b>He has since been fired.</b> 'I wasn't surprised, but more just disappointed in them, that instead of looking at the problems, instead of investigating that, they investigated the people that were complaining and got rid of them,' said the employee, who had been an auditor in the company's Office of Internal Governance and asked that he no be named.</p> <p><b>The problem,</b> Ed Mierzwinski [consumer program director at the federation of Public Interest Research Groups] said, <b>is when companies use the surveillance tactics available to them to root out whistle-blowers.</b></p>	
26 Nov. 2007	<i>Financial Week "Boeing, Boeing ...Gone? Stumble Could Cost CEO"</i> (John Pletz & Paul Merrion)	Jim McNeerney, Chairman & CEO, <i>The Boeing Company</i>	Firm-Investor	$\alpha$	<p>"After <i>Boeing</i> publicly assured investors in September that production glitches <b>wouldn't delay delivery</b> of the first plane, Mr. McNeerney revealed a <b>few weeks later that it would be six months late.</b> 'I think the reason we will be able to meet the new timetable is the <b>detailed bottom-up planning</b> we've done to assure that we can make it.'</p> <p>'McNeerney has to deliver. <b>This is strike two and you're out,</b>' said Noel Tichy, a professor of management and organizations at the University of Michigan who worked with Mr. McNeerney at <i>GE</i> and in a forthcoming book, lauds his handling of the ethics scandals.</p> <p>Slowing down production for several months may be 'the next shoe to drop,' <i>J.P. Morgan Chase</i> analyst Joseph Nadol predicted in a report earlier this month, <b>'which may be perceived as negative by the market but in fact could be the first step on the road to recovery.'</b> Mr. Nadol, <b>one fo the first analysts to predict serious 787 production delays,</b> remains neutral on the stock, which is off 7.3% since the delivery delay was announced Oct. 10, after rising 56.8% in the preceding 27 months of Mr. McNeerney's tenure.</p> <p>'McNeerney needs to exercise more hands-on control so he's got the straight poop,' said Scott Hamilton, an airline consultant at <i>Leeham Co.</i> <b>'People simply don't buy their spin.'</b></p> <p><b>'The last thing they want to do is what Airbus did: announce a six-month delay, then come back and delay it even further,'</b> said Paul Nisbet, an analyst at <i>JSA Research.</i></p>	On a Modular Enterprise Architecture's relationship with its investors.
5 Dec. 2007	<i>The Seattle Times,</i>	Ralph Crosby, North	Firm	$\beta$	<p>"If <i>Airbus</i> were to go ahead, 'its tantamount to <i>Toyota</i> entering the U.S. auto market' with U.S. factories. <b>'Its Toyota all over again,'</b> he [a person</p>	On an integral enterpris

	“Airbus Production May Move to U.S.” (Dominic Gates)	American executive of Airbus parent company EADS			close Airbus] said. “We become Americans.””	e architecture’s organic geographic growth strategy
7 Dec. 2007	Wall Street Journal, “Jet Blues: Boeing Scrambles to Repair Problems with New Plane,” (J. Lynn Lunsford)	Scott Carson, President & CEO, Boeing Commercial Airplanes	Firm	α	“Rejecting the idea that Boeing might be better off increasing production more slowly, Mr. Carson says, ‘I couldn’t stand the pain of telling a customer it’s going to be worse off for them, just to make my life easier.’”	On a modular enterprise architecture’s view of courage and stability
12 Dec. 2007	Aviation Week’s Things with Wings, “Falling Out of Love with Boeing” (Joe Anselmo)	Heidi Wood, analyst, Morgan Stanley	Firm-Investors	α	<p>“One of the biggest Boeing bulls on Wall Street is having second thoughts. Morgan Stanley research analyst Heidi Wood lowered her rating on the company’s stock to ‘equal-weight’ -- the equivalent of neutral -- following a yearend briefing on the 787’s status by the program’s new general manager, Pat Shanahan. Shanahan maintained the program’s recovery plan is on track to deliver the first 787 by the end of next year. But Wood, in a research note issued Wednesday morning (Dec. 12), says the hurdles ahead are just too risky to tell her clients to keep buying Boeing stock. ‘We have a new level of concern the 787 risks are likely to linger over the stock and not be retired as we had earlier believed,’ she writes. ‘For the time being the risk/reward trade-off is no longer sufficient to warrant a [buy] rating.’</p> <p>Wood’s downgrade is a sharp departure from her tone in October, when she said investors had over-reacted by selling off Boeing stock after the 787’s first delivery was delayed at least six months because of problems with suppliers. At that time, she predicted Boeing shares ‘could soar in the 50% vicinity’ over the long run. Boeing’s stock is down about 12% since the 787 delivery slip was disclosed in October. Wood believes another six-month delay in the 787 could send Boeing shares tumbling an additional 18-20%. The stock ‘is apt to trade on event risk versus valuation until the 787 risk perception meaningfully clears,’ she writes. Conversely, if Boeing is able to hold the 787 to its</p>	On the valuation of a modular enterprise architecture.

					new schedule without any major problems, <b>the stock could rise 35% to \$120 a share</b> , Wood predicts. <b>She also remains bullish that the commercial aerospace upcycle won't peak until 2011 or 2012.</b> "	
20 Dec. 2007	<i>The Wichita Eagle</i>	Jeff Turner, CEO, <i>Spirit Aerosystems</i>	Supplier	$\alpha$ & $\beta$	"In the end, we just couldn't close a business case that met both our <b>customer</b> requirements and our <b>shareholder</b> requirements."	On <i>Spirit Aerosystem's</i> losing bid for <i>Airbus</i> plants.
20 Dec. 2007	<i>The Wichita Eagle</i>	Stefan Schaffrath, <i>Airbus</i> spokesman	Firm	$\beta$	"The three partners had better offers commercially and technically, were more aggressive than <i>Spirit</i> in the last round of negotiations. Politics had no influence."	On <i>Spirit Aerosystem's</i> losing bid for <i>Airbus</i> plants to European partners, <i>GKN</i> in the UK, <i>OHB Technology MT Aerospace</i> in Germany, and <i>Latecoere</i> in France.
Dec. 20, 2007	<i>The Wichita Eagle</i>	Robert Spingarn, Analyst, <i>Credit Suisse Group</i>	Investor	$\alpha$	"[ <i>Credit Suisse</i> ] praised <i>Spirit</i> management for not overpaying for the plants, particularly given the difficult long-term governmental and labor climate in Europe."	On <i>Spirit Aerosystem's</i> losing bid for <i>Airbus</i> plants.
Dec. 20, 2007	<i>Seattle Post-Intelligencer</i>	Scott Carson, CEO, <i>Boeing Commercial Airplanes</i>		$\alpha$	" <i>Boeing</i> picked world-class partners, but then failed to provide adequate <b>insight</b> about what was happening with those partners. 'We looked into them, but it was more from the outside in,' Carson said. 'When I talk about <b>insight</b> , its about having enough knowledge, enough sense of what's going on in their factory on a daily basis to identify issues that may bite them... so you can help clarify and resolve those kinds of challenges. I think we came too late to realizing we needed that <b>insight</b> . When I look back at this thing, the lesson I carry away is you have to manage the production process as voriously when it is <b>distributed</b> as you do when it is <b>centralized</b> . And frankly, shame on me for not recognizing that sooner.'"	On <i>Boeing's</i> "Large-scale Systems Integration" strategy on the 787.
Jan. 26,	<i>The Econom</i>	Christi an		$\beta$	"What has characterized most of Mr. Streiff's career is <b>boldness</b> and a <b>bullish impatience</b> to get things	On the manage

2008	<i>ist</i>	Streiff, Former CEO of Airbus			done. Mr. Streiff should have known that running Airbus would require <b>political skills</b> of a high order. Describing his first few days as ‘ <b>vertical take-off</b> ’ at ‘ <b>full thrust</b> ’, he threw himself into the job of <b>saving Airbus, as he saw it, from itself</b> . The EADS board told him that his <b>behaviour was not acceptable</b> . He claimed that his plan had been undermined by the <b>dysfunctional corporate governance at Airbus</b> . But the more <b>emollient</b> Louis Gallois who succeeded him showed what could be done even in less than ideal circumstances, and Mr. Steiff now admits he could have been <b>more diplomatic</b> . There is certainly no doubting Mr. Streiff’s effectiveness when it comes to <b>managing down</b> .”	ment qualities of a failed modular leader in an integral enterprise.
Jan. 29, 2008	Reuters, James Regan	Louis Gallois, CEO of EADS	Firm	$\beta$	“[Gallois] sees no sign of a downturn in the aviation industry, despite global financial turbulence and does not expect more major swings in demand after a record year for orders in 2007. While in the past, planemakers had suffered from a ‘ <b>very brutal cycle with peaks and canyons</b> ’, the emergence of an autonomous second market in the Middle East and Asia made the industry less susceptible to the current credit crisis and threat of a U.S. recession. ‘We do not see that the second market is suffering from the downturn for the time being. <b>It’s two different markets, two different cycles. We could expect not to have peaks and canyons, but more hills and valleys</b> .”	On characterizing the dampening of the business cycle.
30 Jan. 2008	Seeking Alpha, “The Boeing Company, Q4 2007 Earnings Call Transcript” (www SeekingAlpha.com)	Jim McNerney, Chairman and CEO; James Bell, CFO, The Boeing Company	Firm-Investor	$\alpha$	<p>“<b>Steve Binder (Bear Stearns):</b> Can you maybe just touch on the 08 BCA guidance as far as margins obviously is not, <b>productivity is one of the drivers of the margin improvement</b>, is it coming at all from <b>block changes</b> or is that coming <b>simply from productivity improvement</b> and maybe you can address which lines it pertains to.</p> <p><b>James Bell (Boeing):</b> It really is coming from <b>productivity improvement</b> across the in-production airplane programs. We clearly are continuing to focus on driving our productivity initiatives in the BCA and we are starting to bear those fruit and it is primarily what we are seeing of the 777 moving line as we get into its implementation and we continue to harvest the kind of productivity we have seen in the past going forward on the 737.</p> <p><b>Steve Binder:</b> And if I can just follow up, you addressed the <b>cycle</b> to some degree that growth and demand across the globe, maybe if you can address, <b>how do you believe the so-called credit crunch we are seeing today</b> both in rate increases and availability of credit in the aviation industry granted that is mainly tied to the US carriers, but certainly it is affecting the ability of some leasing companies and some lower grade airlines around the world to get financing, how does</p>	On a modular Enterprise Architecture’s defense of its financial performance

				<p>that affect your decision on what the rates, the 373 rates further number one, and two, how does that affect you achieving your rates that you plan to get to by the 2010 timeframe.</p> <p><b><u>Jim McNerney:</u></b>  <b>I do not think the credit situation, while it has had an impact in parts of the capital markets, I do not think it has changed our thinking on the near-term, medium-term opportunity in front of us.</b> Most of our planes are financed by non-capital market institutions that have remained in pretty good shape throughout all of this whether it is sovereign credits. The leasing companies themselves have been doing reasonably well. I think the capital markets, you have seen a risk premium built-in in some of the faultier deals are not getting done, but we are actually seeing a little bit of loosening up there as some paper that was not being sold, maybe four or five months ago is now being sold again in the capital markets albeit at a higher premium, <b>but I would characterize that as marginal and not yet impacting nor do we see it impacting, quite frankly our prospects for growth.</b></p> <p><b><u>Doug Harned (Sanford Bernstein):</u></b>  On the 787, now, we are looking at a <b>delay of at least nine months</b> in delivery off of the original schedule and I am just wondering if you could give a perspective on when you look at the areas that we might see <b>higher cost and financial impact and I classify those as customer penalties, supplier costs, for your own operational costs as time stretches out</b>, where do you see the greatest risk financially?</p> <p><b><u>Jim McNerney (Boeing):</u></b>  <b>The business case remains sound.</b> Obviously, we are very disappointed with the delay in terms of its impact on our customers, but the backlog remains in place. <b>The profitability of the airplane could be marginally impacted and will be marginally impacted by the delay in terms of some increased cost in the supply chain and some possible penalties on the customer side, but we do not see those kinds of cost having a significant impact over the huge volume base that we are fortunate to have on this airplane, so this is a case where I think the value of the plane to our customers as borne out by the record order book is helping mitigate what are bound to be some cost.</b> In the meantime, James, do you have any further comments there.</p> <p><b><u>James Bell:</u></b>  I think the other side of that equation is that the schedule stretch out that we have experienced is going to allow us to work harder on finding</p>	
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				<p>opportunities for productivity that would also offset some of the cost we would experience as a result of the delay, so we have not gotten through the assessment yet to really know where things are going to fall out, but I think, along with the risk, there will be other opportunities that we have not foresaw previously.</p> <p><b><u>Doug Harned:</u></b> So I would assume particularly from your guidance at least in the near term and even <b>as you go out a couple of years, I am looking at margin, it sounds like you are not seeing anything that really changes your economic case for the airplane even over the next couple of years other than a push back.</b></p> <p><b><u>Jim McNerney:</u></b> <b>Absolutely not.</b></p> <p><b><u>Howard Rubel (Jefferies &amp; Co.):</u></b> I want to talk for a second on DFA certification process that you are going through on the 78, I know you cannot fly the airplane, but there is a whole bunch of things that you can do in the process to get there. Could you sort of touch on that and then again, Jim maybe talk about <b>how this delay has been able to have been insulated from the core business which really showed terrific results.</b></p> <p><b><u>Jim McNerney (Boeing):</u></b> Well, you are right about your observation on the cert process. About 70% of the certification effort documentation does not have to come from the flight test program. It can come from things we are doing today and we have got about half of that done, and we have got a clear plan with the FAA so we are feeling pretty good about that. Obviously, the flight test program has its own set of risks, but we are feeling pretty good about it and we are certainly working as well with the FAA on this program as we have on any that I can remember.</p> <p><b>Now, one of my jobs, I think is to work with Scott Carson to make sure that when you have a program that is struggling and in terms of schedule that you get as much focused effort on that program as you can. You get the best leadership and we have done a lot of that over the last months and we have got our best of Boeing team working on that program now on the 87 and a lot of folks from BCA obviously and with some help from IDS depending on the task at hand, and at the same time, we have got to make sure that that effort does not impinge on the fundamental running of the business. I mean, the 87 while a critically important program for us is one of 300 programs we manage here at Boeing and we have</b></p>	
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				<p><b>got to make sure that the leadership understands that struggles are one part of our company do not mean distraction, rather it means, intense focus to make sure that we keep delivering the results that the total corporation is aiming for.</b> So that is a leadership challenge and it is all about how we work together and help lead and manage each other and that is one of my tasks and I am very sensitive to it.</p> <p><b><u>Robert Spingarn (Credit Suisse):</u></b> Just to follow up on your answer to that last question on <b>leadership and particularly on communication within Boeing between Seattle and Chicago, between suppliers in Seattle. How has your oversight and your involvement in 787,</b> recognizing it is one of many programs, how has that evolved over the past six months or so?</p> <p><b><u>Jim McNerney (Boeing):</u></b> As is typical in big corporations like what we are part of here, there are days when <b>Scott and his team probably feel I am too involved and then there are days I wake up and say to myself, ‘why are you not more involved?’</b> But the fact is I think, we have a pretty good balance. I mean <b>there is a very good team out there.</b> I am probably more involved now, as you can imagine. I mean I think part of my job is to get involved when help is needed. And that has been the case on the 87 over the last few months as we have all tried to understand together the issues. I try to understand the right way forward and I think it is done in the spirit of less of oversight and administration, more in the spirit of all getting in the boat together, trying to figure it out. So, yes, I am a little more deeply involved now than I was, but that could be said about some other programs that we are trying to manage to the success we know they can have.</p> <p><b><u>Robert Spingarn:</u></b> Would you say that you are involved to the point that you are very comfortable that your <b>R&amp;D guidance of 3.2 to 3.4 in '08</b> will not go up?</p> <p><b><u>Jim McNerney:</u></b> <b>Well look, I am comfortable with that guidance and that is why we are giving it.</b> But, are there some risks inherent in research and development? <b>The answer is yes, but I feel comfortable with that guidance and we have been through it pretty thoroughly and Scott and his team are committed and I am in the boat with them.</b></p> <p><b><u>Ronald Epstein (Merrill Lynch):</u></b> Just kind of going back to the 787 for a minute, when we think about the <b>compressed flight test schedule, Jim, how do we get comfortable with that?</b> You know, if you compare it to previous aircraft, all the</p>	
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				<p>new stuff on this airplane, it seems like getting the airplane out on this new schedule is really contingent upon that Flight Test schedule. <b>You mentioned in the past, we are going to run it like an airline. It is not so much as flying the plane but it is crunching the data in dealing with the issues when they arise.</b></p> <p><b><u>Jim McNerney (Boeing):</u></b> Yes well I think, it is a <b>non-aggressive Flight Test program</b>. It is a little less aggressive than the Flight Test program schedule we had earlier, but still aggressive and I think one of the silver linings of the delay is we have had more time to test systems, which are critical elements to the Flight Test program, ensure software compatibility and have a little more time with static and fatigue, which I think all are giving us reassurance that some of the more mundane things that can happen during a Flight Test program would not happen, which still leaves us some of the fundamental risks. <b>But we think the program is eminently doable</b>, the head start we have got with the FAA is helping us here and so, I think it is one airplane type, it is not multiple airplane types, one-engine type, or engine configuration I should say. So, I think there is less complexity in this Flight Test program than there is in our usual set of Flight Test programs. So, <b>we are confident we can do it.</b></p> <p><b><u>Ronald Epstein:</u></b> And then one follow up, if I may, <b>you have got roughly \$12 billion of cash on the balance sheet and you are deploying it for share buybacks.</b> What else are you thinking about?</p> <p><b><u>James Bell:</u></b> Well clearly, what you see is our fundamental basic deployment strategy and obviously other things that we are looking at, we could not talk about in any detail, but we are always looking at better ways to provide value to our share holders with that cash and that can include some things like you have seen in the past, particularly with the addition of AVO and how we can support our capabilities in our support business and how we could look at our strategy in terms of being <b>horizontally versus vertically integrated</b>. We look at that as we always do and see if there is opportunity there to create better value than current cash deployment strategy will provide, but we are looking at a lot of things.</p> <p><b><u>Joe Campbell (Lehman Brothers):</u></b> Good morning, our aircrafts seems like firmly on the weight of 40 narrow-body a month and with somewhere between 250 and 300 on the FWB [XWB?] pushing forward on that aircraft, targeted against the 777, I guess with delivery in 2013 but</p>	
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				<p><i>Boeing</i> thus far has narrow-body only to 31 a month, apparently constrained by factory production issues, your judgment for that, what would be prudent in the ramp up and perhaps <b>some apprehension about the cycle and the sustainability</b>. But it seems to me that most of these concerns on the narrow-body have been delayed but thus far, we have not seen any comments from you on plans to at least put in place the option of going higher with the 737 nor anything about the response to the A-350. So I was just wondering, whether that difference above, almost a hundred airplanes a year on the narrow-body and the stretch from the 787 were seen as serious and we will be seeing response in 08.</p> <p><b><u>Jim McNerney (Boeing):</u></b> I will take that one. First the A-350, I think that the model that will compete for the long-range 777's if the plane has the performance that <i>Airbus</i> thinks it can have is the 1000 and I think that that is not a 2013 airplane, I think it is more 2015 or 2016, I am not sure. It is certainly later, it could be seven or eight years from now. So, I think we have time to assess that plane and we have time to assess what we might need to do if anything with the long-range 777s. So that is one.</p> <p><b><u>Joe Campbell:</u></b> Nothing in '08?</p> <p><b><u>Jim McNerney:</u></b> In terms of what our R&amp;D on the 777?</p> <p><b><u>Joe Campbell:</u></b> With this response from you, <b>in order to get ready for whenever they are going to have their plane ready.</b></p> <p><b><u>Jim McNerney:</u></b> <b>Well I think my point is that we do not have to do anything in 08</b>, if I am getting the sense of your question.</p> <p><b><u>Joe Campbell:</u></b> <b>Yes that is right, I was thinking, so you are going to wait until 09 or 10 to do something.</b></p> <p><b><u>Jim McNerney:</u></b> <b>Well yes.</b> I think we need to see what the performance of the A-350 might be. We are not just sure. I know they have designed goals, but I think they have, just like anybody would, us included, seven or eight years ahead of an introduction. There are a lot of unanswered questions about the performance of the airplane and I do not think we want to put too many wheels in motion although we are obviously thinking through some contingencies and we are doing some preliminary work in the</p>	
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				<p>normal course of events, but I would not see a major program emerging until after this year.</p> <p><b><u>Ivy Wood (Morgan Stanley):</u></b> I am curious about your comment <b>about another good order year for BCA</b>, can you define that for us a little bit better. Kind of talk about where you are seeing incremental demand coming from geographically and perhaps where you are seeing demand may be exhausting and what you are thinking also about 09 and 2010 in terms of units and book to bill.</p> <p><b><u>James Bell (Boeing):</u></b> Well, <b>we think the traffic that we have seen in prior years remain and so we think that is where we will continue to get it. We also believe that it is going to pick up domestically</b> as Jim has mentioned and we have talked about before that although the US carriers really have it engaged heavily in the cycle that with the higher oil prices and their needs at least we understand them. They will have to get engaged soon. That is kind of where we would expect to see the order traffic come from this year and then going forward. I mean, there is a lot of aging aircraft in the US that cannot be operated economically and clearly can be competitive and allow them to create value for their shareholders if they continue to operate them in this current environment. And then that coupled with all that is going on with green and the environment, I just think that there is going to be a lot of pressure to replace old airplanes and that is what we see.</p> <p><b><u>Ivy Wood:</u></b> <b>But do you see demand exhausting in the Middle East and Asia Pacific where it has been inordinately robust in the last couple of years. I mean, does that slow down?</b></p> <p><b><u>James Bell:</u></b> <b>At some point, I think it will. We have not seen it yet,</b> but obviously at some point we are not sure exactly all that drives their needs, we know a lot of it. An issue had been the infrastructure, but we will see.</p> <p><b><u>Troy Lahr (Stifel Nicolaus &amp; Company, Inc.):</u></b> James, I thought you talked about <b>aircraft service work and how it increased this year at a double digit rate</b>, can you maybe talk a little bit about what was driving that and do you expect that growth rate to continue at a double digit pace next year end of 2008?</p> <p><b><u>Jim McNerney (Boeing):</u></b> We do have good momentum. <b>The base business there is obviously sparse</b> and some routine work,</p>	
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				<p>but more and <b>more we are getting our technology into play</b>. The drivers are convergence. There is a lot of passenger to freighter convergence. That business is continuing to grow and also some modification kind of work and then, supply chain work where increasingly, our customers are looking for folks like us to manage their supply chain for them more productively on an outsourced basis, so those tend to be drivers and we see it going and I would say on the productivity side, we are beginning to share infrastructure across the two sides of our services businesses, the defense and commercial side that can give us a little more productivity and best practices and things like that. We are beginning to leverage all of <i>Boeing</i> to improve that overall business.</p> <p><b><u>Troy Lahr:</u></b> <b>But the double digit growth rate, that should continue?</b></p> <p><b><u>Jim McNerney:</u></b> <b>Yes, low double digits is the plan.</b></p> <p><b><u>Joseph Nadol (J.P. Morgan):</u></b> My question is on the <b>747-8 passenger variant</b>. Just wondering what your outlook is perhaps for this year for demand. You have the one order from Lufthansa so far and also the development program. How do you characterize that as progressing and then stepping back after that, <b>what is your commitment to the aircraft if your order outlook does not meet expectations?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b> I do not have the numbers right here in front of me, somewhere between a hundred and hundred fifteen orders for the two airplanes. We have got about 27 or 28 on the PAX side. DLH with 20 as you pointed out and then we have some other small orders, so the majority remains freighters which are an extremely well received in the marketplace. We have got about ten discussions going on right now with folks for the PAX version. So we anticipate success here. <b>We do not anticipate failure</b>. And so none of our plans include an offer up here. All of our plans include making this a success and it would not surprise me in 08 if you saw a few of those customers shake loose and we all felt a little differently about it a year from now.</p> <p><b><u>Joseph Nadol:</u></b> Can you characterize the difference or the incremental and definite requirement to do, the passenger in addition to the freighter very qualitatively and maybe the commonality between the two aircraft.</p> <p><b><u>Jim McNerney:</u></b></p>	
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				<p>a little bit of color on how you plan to drive greater <b>efficiency through the production process and could that potentially mean dropping under performing partners?</b></p> <p><b><u>Jim McNerney:</u></b> Well, I think obviously the whole concept here, when we get through the startup is to have an extremely efficient production process where multiple organizations are each focusing on their piece and through the repetition become very good at a drive down their own learning curves and when you add them all up, it is better that we were all doing it, that is the concept. What was the second part of your question there?</p> <p><b><u>Julie Johnson:</u></b> I was just wondering if potentially you—</p> <p><b><u>Jim McNerney:</u></b> By enlarge, we have absolutely no plans to drop any suppliers. When we qualified our partners early on, we did it with our eyes wide open and they did it with their eyes wide open. We have each put a lot of investment into it, now I think from time to time, we shift work around. We restructure relationships the way the work flows in order to capitalize on things that emerge as strengths, or things that emerge as weaknesses, but I would characterize it more as fit and finish and that way than ever thinking about dropping the supplier except in some extreme circumstance, but we do not see that here.</p> <p><b><u>Sebastian Svanki (Book Review):</u></b> I would like to ask another question on the 787 production partners, please. <b>Has Boeing any intention to maybe invest financially or organizationally in your production partners in order to strengthen them and maybe help them through the dire times when they do not get the money back in time,</b> and if you would today have to decide about like a 737 follow on, would you do the very same production set up or would there be something different given the experience you have made until today?</p> <p><b><u>Jim McNerney (Boeing):</u></b> Two very good questions. I mean, I think the form of financial support that we might contemplate in extreme circumstances would be more jointly carrying inventory or material together if we put an undue hardship on somebody, rather than investing in their own facilities, but we have a good feeling about the way we are approaching this airplane despite the startup difficulties, would we do it exactly the same? We might do it a little bit differently, but the overall strategy would be the</p>	
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				<p>same. I think we now have learning about the relative strengths between ourselves and our partners and I think we might draw some lines in different places, but we would not change the concept.</p> <p><b><u>Lyn Munsford (Wall Street Journal):</u></b> This is kind of just a high level question here, but in the last several months, it seems that your issues with having to push off the schedule on the 787 have been kind of the result of this voyage of discovery you have been on, how do you feel right now, are you at a point now where you can see to the bottom of the barrel to know that you do not have any more surprises coming up or when do you expect to be at that point?</p> <p><b><u>Jim McNerney (Boeing):</u></b> I think it is true that the projections we made earlier when we did not have much experience with all the work that traveled to our facilities unanticipated where we did not have robust enough contingency plans when you look backwards. It is true that we missed some projections. Now, we are a lot closer today to completing the first airplane now that we have properly staffed the effort, we now more fully understand the requirements as they came in from our partners and work that we thought they were going to do. And just by virtue of being closer to the end than to the beginning and having had experience with working with the engineering drawings of our partners, having now rounded up the supply chain, a lot of the original supply chain issues have gone away as we have gotten our arms around inventory that was going to travel to other places and things like that, so I think just by virtue of having the experience of getting deep into the first airplane and seeing the end of it gives us more confidence in our projections. It is not much more complicated than that.</p> <p><b><u>Lyn Munsford:</u></b> Okay, thanks and just one other thing is, do you anticipate as a result of some of the things you are seeing here that you might ramp up a little more slowly than you initially expected so that, when you do actually start getting into the production of airplanes, it would not be at a super aggressive rate and it will be more gradual?</p> <p><b><u>Jim McNerney:</u></b> Well, that question has to be answered over the next couple of months Lyn. We are very mindful of committing to a ramp that we can execute. We are also very mindful that we have already disappointed some of our customers in terms of when we are getting them the technology that they</p>	
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					<b>have faith in us to deliver. So, that tension, I think will produce a realistic but aggressive ramp.”</b>	
22 Feb. 2008	<i>The Seattle Times</i> , Dominic Gates	Ray Goforth & Cynthia Cole, SPEEA Executive Dir. & President	Union	α	<p>“The white collar engineering union at <i>Boeing</i> doesn’t begin formal contract talks with management until later this year, but <b>its leaders are already talking war with the company.</b> Senior officials with the Society of Professional Engineering Employees in Aerospace (SPEEA) told members... to start saving money to prepare for the possibility of a strike. <b>‘The company does seem to be leading us down toward a crisis,’</b> said SPEEA’s new executive director, Ray Goforth. He said a strike is <b>‘a very realistic possibility.’</b> SPEEA’s leadership is angry over several matters: comments made to them in a private meeting this month by commercial-airplanes chief Scott Carson that they consider <b>aggressively anti-union.</b> SPEEA President Cynthia Cole said she’s advising members to set aside part of their 2007 incentive bonuses the company began to pay Wednesday, as well as a portion of coming paychecks. <b>‘I’m starting my strike fund,’</b> she said. <i>Boeing</i> spokesman Tim Healy said <b>the company is ‘committed to continuing dialog with SPEEA,’ but is concerned ‘that these kind of statements are being made before we even begin the formal negotiation process.’</b> <i>Boeing</i> engineers have had an <b>extended strike</b> only once before. <b>Eight years ago</b> this month, the union began a <b>40-day strike that crippled Boeing</b> and won what was considered a landmark victory. <i>Boeing</i> can ill afford a strike this time. It is grappling with serious technical issues on its new 787 Dreamliner program... That situation has contributed to an <b>unusually amicable atmosphere between Boeing and the Machinists union, which is typically more strident than SPEEA.</b> Machinists district President Tom Wroblewski has talked up the <b>improved relations with Boeing</b> since Carson succeeded Alan Mulally. In the past year, Machinists <b>negotiated concessions giving back pay to rehired workers.</b> In contrast, <i>Boeing</i> has supported efforts to <b>decertify</b> smaller <i>SPEEA</i> bargaining units at plants in California, Kansas and Utah. <i>SPEEA</i> officials in Wichita also face a <b>decertification</b> drive at the former <i>Boeing</i> parts plant, now <i>Spirit AeroSystems</i>. Goforth believes that <i>Boeing</i> is supporting that, too. <b>‘Boeing is still coordinating things with some of its major suppliers.’</b> According to union officials, an initial meeting Feb. 4 between Goforth and Carson was <b>very frank.</b> Goforth said Carson made ‘overt’ statements that <b>‘the company will continue to support efforts to get rid of the unions at Boeing.’</b> Cole, who was also present, said <i>Boeing</i>’s top labor negotiator, Doug Kight, expressed a <b>‘desire to dismantle our pension plan and our health-benefit plan.</b> Things got a little heated,’ Cole said. That meeting came on Goforth’s <b>first day on the job.</b> <b>‘It was somewhat disconcerting to see the rhetoric and the tenor already in a bad place,’</b> Goforth said. <b>‘It</b></p>	On pending strike negotiations (particularly on the adverse relations between labor and capital - i.e. “Corporate” - not between labor and the firm).

					doesn't have to be that way. Members of the union take pride in working for <i>the Boeing Company</i> . They are somewhat bewildered by the <b>provocative stance</b> .' Still, his assessment of Carson was <b>not negative</b> . 'I came away from that meeting <b>liking the guy</b> ,' said Goforth. 'I didn't like what he was saying, but I liked his <b>candor</b> and I appreciated it.'	
Mar. 2008			Firm-Customer	$\alpha$	"All the signs suggest that 2008 will prove another boom year for the industry.' Aboulafia believes that the current upturn, which began in 2004 shows little sign of running out of impetus and could carry on until at least 2011."	On temporal inconsistencies in analysts of modular enterprise architectures.  (Compare with same analyst's statements in 17 Dec. 2008 and 2001.)
2 Mar. 2008	<i>Seattle Post-Intelligencer</i>		Customer	$\alpha$	"There has been a <b>gulf</b> between <i>Boeing</i> and its <i>Air Force</i> customer ever since the procurement scandal,' said Loren Thompson, a defense analyst with the Virginia-based <i>Lexington Institute</i> . 'That has made it hard for <i>Boeing</i> to understand its customer the way it once did.' 'This is such a <b>stunning upset</b> ,' he said. 'It shows <b>something fundamental has gone wrong (in the relationship)</b> with their biggest military customer."	On losing the bid to provide the US Air Force with a tanker replacement to <i>Northrop/EADS</i> .
3 Mar. 2008	<i>Reuters</i>		Customer	$\alpha$	"This was not a close outcome in any sense of the term,' the analyst, Loren Thompson of the <i>Lexington Institute</i> , told <i>Reuters</i> . ' <i>Northrop</i> won decisively and completely, and <i>Boeing</i> simply was not competitive in the major measures.' Air Force reviewers pressed <i>Boeing</i> to <b>stretch out its aggressive development schedule</b> for a new version of its 767 jet, <b>which in turn added cost</b> . In fact, the <i>Boeing</i> proposal was initially rated as ' <b>high-risk</b> ' because the reviewers were concerned that <i>Boeing's</i> proposal to build a new version of the 767, using parts from other versions, would <b>cost more than expected</b> . "Although some observers expected that the <i>Northrop</i> team would offer a <b>better price</b> , nobody expected that they would be <b>better in every significant regard</b> ,' Thompson told <i>Reuters</i> . Buying the <i>Boeing</i> tanker would have resulted in a <b>much</b>	On losing the bid to provide the US Air Force with a tanker replacement to <i>Northrop/EADS</i> .

					<p>slower tanker replacement rate. “The reviewers concluded that if they funded the <i>Northrop Grumman</i> proposal, they could have 49 superior tankers operating by 2013, whereas if they funded the <i>Boeing</i> proposal, they would have only 19 considerably less capable planes in the year,” Thompson said. Air Force reviewers also had <b>less confidence in Boeing’s past performance</b> due to ‘<b>poor execution</b>’ in three relevant programs, including <b>long-delayed</b> tanker deliveries to Japan and Italy, Thompson said. <i>Northrop</i> got higher ratings due to ‘<b>satisfactory execution</b>’ on six programs deemed relevant to the tanker competition. <i>Boeing</i> had expected to face tough competition from <i>Northrop</i> on <b>cost</b>, but it <b>compounded its problems</b> by failing to <b>adequately explain its assumptions in calculating the cost of developing a tanker</b>, Thompson said. ‘The resulting <b>low confidence in Boeing cost projections undercut its claims of lower life-cycle costs</b>,’ he said.”</p>	
11 Mar. 2008	<i>The Press Association</i>	Louis Gallois, CEO of EADS	Investor	β	<p>“‘<i>EADS</i> is gaining speed and altitude,’ chief executive Louis Gallois said. ‘<b>We are cautious by nature</b>, but I feel <i>EADS</i> is establishing a firm footing on a higher ground.’”</p>	On <i>EADS</i> ’ nature in setting market expectations.
12 Mar. 2008	<i>The Seattle Times</i>	Senior Executive, Leasing Company	Customer	α	<p>“It would have been <b>preferable</b> for <i>Boeing</i> to have <b>announced one 18-month delay</b> back in October, the executive said. <i>Boeing</i> management would have ‘<b>looked liked heroes</b>’ if they had then <b>delivered sooner</b>. He said customers have lost faith in <i>Boeing</i> because of the <b>cascade of delays preceded by promises that everything is fine</b>. ‘<i>Boeing</i> didn’t learn anything from the A380.’”</p>	On over-promising and under-delivering.
17 Mar. 2008	<i>The Tacoma News Tribune</i>	Ray Goforth, SPEEA Executive Director	Labor Union	α	<p>“‘Before I took this job, I’d been told that relations with <i>SPEEA</i> and <i>Boeing</i> were <b>pretty darned strained</b>, and I had hoped that could be fixed, but I learned that isn’t going to happen easily. Mr. Carson explained that he wanted to <b>get rid of all unions</b> at <i>Boeing</i> and that he intended to continue to support the efforts to <b>bust the bargaining units</b> where they could. It was disappointing. I appreciated the candor. It did supply some clarity on these problems. I went into this <b>hoping that we could partner to solve these problems, but the answer was ‘no’</b>. They shared their plans to <b>eliminate the pension plan for all new hires and to make negative changes to the medical plan that will drastically shift costs onto the employees</b>. They seemed to be <b>setting us up for what could be a cataclysmic conflict this fall</b>. Their stance on the pension plan came after the news that <i>Boeing</i>’s pension plan is overfunded by \$5 billion, and they are enjoying healthy profits so this is not like the auto industry where they’re facing some tough problems that call for some creative solutions. <b>These aren’t things</b></p>	On pending strike negotiations (particularly on the adverse relations between labor and capital - i.e. “Corporate” - not between labor and the firm).

					<p>they need to keep the business healthy. These are things that they simply want. If I wanted to synthesize it, I'd have to say it is bewilderment that the people who run the company are intent on running it into a ditch and won't listen to the people that really do the work. My members are telling me we're going to have even more delays. Within <i>Boeing</i> management there's an almost religious belief right now that this offshoring is good, and when you point out the problems, it's seen almost as a challenge to the fundamental belief tenant rather than a discrete problem to be fixed. Hopefully we will find solutions to these problems that are peaceful and quiet and professional. Thus far, <i>Boeing corporate</i> has found no interest in finding solutions, so we've begun to prepare our membership for very tough negotiations and possible adverse labor actions."</p>	
19 Mar. 2008	<i>The Financial Times</i>	Steven Udvar-Hazy, Chairman, International Lease Finance Corporation	Customer	$\alpha$	<p>"<i>Boeing</i> admitted on Wednesday that it would have to redesign parts of its troubled 787 Dreamliner, raising the prospect of a third delay in recent months to delivery of the new aircraft. Mr. Hazy told a <i>JPMorgan Chase</i> conference that the state of the Dreamliner programme was 'not pretty'. He said first deliveries would be delayed for at least another six months because its centre wing box – which holds the wings in place – needed to be redesigned. <i>Boeing</i> refused to comment on the specifics of the redesign work but said Mr. Hazy was not painting an accurate picture of the overall programme. 'We are doing some redesign work but things are more complex than what we said,' said Yvonne Leach, for <i>Boeing</i>. Mr. Hazy said he expected delivery of the jet to be delayed until the end of the third quarter of next year. <i>Boeing's</i> most recent guidance was that the Dreamliner would be ready in 'early' 2009. <i>Boeing</i> said it was sticking to its most recent guidelines. A further delay would be hugely embarrassing for the company. Last month <i>ILFC</i> said it would seek compensation 'on a large scale' from <i>Boeing</i> for the 787 delays. The 787 is <i>Boeing's</i> most successful new aircraft, with 857 orders in place, worth about \$140 billion. But analysts are asking difficult questions about how profitable the whole programme could be if penalty payments are added to other cost concerns. 'The large number of 787s sold at low prices, combined with rising recurring costs, are steadily eating away at programme margins and long-term programme profitability,' wrote Joseph Nadol of <i>JPMorgan</i> in a research note on Wednesday."</p>	On a modular enterprise architecture's overpromising and underdelivering.
26 Mar. 2008	<i>BBC News</i>	Alan Mulally, CEO & Pres.,	Firm	$\alpha$	<p>"Now, it is time for <i>Ford</i> to concentrate on... our plan to create a strong <i>Ford Motor Company</i> that delivers profitable growth for all."</p>	On a modular EA's particular growth objective

		<i>Ford Motor Co.</i>				s
31 Mar. 2008	<i>Seattle Post-Intelligencer</i> "Boeing Leaks 'For the Greater Good,' Eastman said (Andrea James)	Mike Bair, VP, <i>The Boeing Company</i>	Firm-Employee; Firm-Customer	α	<p>"Senior deputy prosecutor Scott Peterson on Monday called his <b>big gun</b> witness: Former 787 program chief Mike Bair.</p> <p><b><i>Boeing Commercial Airplanes'</i> senior leadership team is so cautious about information leaks that it meets in a room without exterior windows, Bair said. The room is also swept for recording devices, and wireless technology is not allowed. 'We were nervous that somebody could intercept it in the parking lot,' Bair said.</b></p> <p>Bair said the <b>leaks</b> to <i>The Seattle Times</i> were so <b>disturbing</b> that <i>Boeing</i> considered <b>polygraph test of its leadership team</b>. <b>'Initially, we thought the source of the leaks had to be one of the 10 or 12 people on the leadership team, or two or three support people in meetings during conversations,' Bair said. But management scrapped the polygraph idea when it 'decided that would look bad when that leaked out,' Bair said.</b></p> <p><i>Boeing</i> investigators <b>questioned those privy to the information, and checked phone and e-mail records.</b></p> <p>Among the <b>files confiscated</b> from Eastman's <b>home computer, the biggest 'heart-stopper'</b> concerned <b>airplane concessions</b>, Bair said.</p> <p>Concessions are the <b>closely guarded</b> difference between the list price of an airplane and what <i>Boeing</i> actually charges customers. <b>'This is as close to the jewels you can get in terms of sensitive information,' Bair told the jury. If an airline buys a jet and then finds out that its competitor paid millions less for the same plane, 'We'd have a social problem with that customer,' Bair said. On cross-examination, Bair admitted that the concession data never appeared in any media reports.</b></p> <p><b>'Everyone knows we live in a duopoly with a competitor that is heavily subsidized by the French, German and U.K. governments,' Bair told the jury. 'And every day is intensely competitive with Airbus.'</b></p> <p>One of the jurors upon seeing Bair remembered that he <b>used to work for him</b>. Bair still works at <i>Boeing</i>, but is no longer 787 program chief. The juror works on the 787 program, and has worked as a <b>finance estimator who helped prepare the type of long-range business planning documents that Eastman is accused of leaking</b>. Judge Monica Benton excused the juror and sent him home, leaving 13</p>	On Firm-Employee and Firm-Customer "Trust" in a Modular Enterprise Architecture.

					jurors including one alternate.  Jurors were let out early Monday because one juror had a <b>self-inflicted injury involving scissors.</b>	
4 April 2008	<i>Business Week</i> (online blog)	“Ben”	Investor	α	“Boeing is in the same dream state that the US car companies were for the last few decades. They have had a string of failures and clearly they have not learnt one bit. As a <i>Boeing</i> shareholder I would like to see the whole leadership team changed. <b>Unfortunately the institutional shareholders (like the pension funds) are not proactive and will allow the current leadership team to run the company into the ground.</b> It is sad to see yet one more American icon go down the tube.”	On shareholder in-activism
7 April 2008	<i>Flightglobal.com</i>	Ross Bogue, <i>Boeing Commercial Airplanes</i> VP & GM of 747-8	Firm	α	“ <i>Boeing</i> now acknowledges that sticking to the 747-8 Freighter programme’s original schedule could mean that the aircraft is delivered slightly above nominal weight targets. Part of the weight problem is caused by <i>Boeing</i> ’s decision to keep deliveries for the 747-8 on schedule, Bogue says. If deliveries were delayed, <i>Boeing</i> ’s engineers would gain more time to optimize the design of the aircraft to reduce weight. The 747-8 has faced <b>schedule pressure</b> [due to a delay on] the <b>787 programme</b> , [which] meant that engineers from that programme could not be transferred to work on the next-generation 747. <i>Boeing</i> solved the problem by <b>outsourcing engineering work</b> to a variety of aerospace firms abroad. The engineering workforce at <i>Boeing</i> IDS also were loaned to the programme. Although this strategy has helped to overcome the workforce shortfall for the 747-8F, <i>Boeing</i> has also learned that the <b>work was distributed too broadly</b> , Bogue says. “I would tell you we spread the work too far on the Freighter,” he says.	On how to make architectural tradeoffs between time and product performance, modularizing an integral product.
8 April 2008	<i>Seattle Post-Intelligencer</i> “Mistrial for ex- <i>Boeing</i> Inspector” (Andrea James)	Mike Bair, VP, <i>The Boeing Company</i>	Firm-Employee; Firm-Customer	α	“ <i>Boeing</i> ’s investigations team <b>searched for three years</b> to find the source of the leaks, and <b>even checked the emails and phone records of senior leadership.</b> ”	On Firm-Employee “Trust” in a Modular Enterprise Architecture.
8 April 2008	<i>Bloomberg.com</i>	Jon Kutler, Head of <i>Admiralty Partners Inc.</i>	Investor	α	“ <b>The more they miss, the more I get the impression they don’t even know what the problems are. It’s going to take a whole lot to repair their credibility.</b> ”	On how information is shared between the firm and its investors (after the announcement of a



						third delay to its 787 program.
8 April 2008	<i>Bloomberg.com</i>	Myles Walton, Analyst, <i>Oppenheimer &amp; Co</i>	Investor	$\alpha$	<b>“I don’t think anyone will believe them.’ The stock is ‘kind of treading water.’”</b>	On how information is shared between the firm and its investors (after the announcement of a third delay to its 787 program.
8 April 2008	<i>Bloomberg.com</i>	Cai von Rumohr, Analyst, <i>Cowen &amp; Co.</i>	Investor	$\alpha$	<b>“These guys had two predictions before and they’ve blown both of them. This time they’ll want to reset the schedule once so that they can hit it.”</b>	On how information is shared between the firm and its investors (after the announcement of a third delay to its 787 program.
8 April 2008	<i>Bloomberg.com</i>	Joseph Nadol, Analyst, <i>J.P. Morgan</i>	Investor	$\alpha$	<b>“The enormous sales success of the program may have been more a curse than a blessing, as it locked <i>Boeing</i> into the schedule that ultimately could not be executed.”</b>	On how information is shared between the firm and its investors (after the announcement of a third delay to its 787 program.
9 April 2008	<i>The Times (UK)</i>	Doug McVitie, Managing Director, <i>Arran</i>	Industry analyst	$\alpha$	<b>“This is a massive blow to <i>Boeing’s</i> credibility because it is <b>drip feeding bad news</b>, which gives the impression it <b>does not have a handle on the problems.</b>”</b>	On how information is shared between the firm and its investors

		<i>Aerospace</i>				(after the announcement of a third delay to its 787 program.
10 April 2008	<i>Speigel Online</i>	<i>Handel sblatt</i> (German business daily newspaper)	Media analysts	$\alpha$	“The untried model of getting suppliers from across the world to take part in the financial risk has shown itself to be a <b>flop</b> , and <i>Boeing</i> has lost control of the project... the company’s credibility is tarnished.”	On critiquing the 787 “risk-sharing” partnership model.
13 April 2008	<i>Emirates Business 24/7</i> , “ <i>Boeing Failed to Learn from Airbus</i> ” (David Robertson)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	$\alpha$	<p>“A couple of years ago Jim McNerney, the chief executive of <i>Boeing</i>, was in London to persuade the world’s airlines that they should purchase the 787 Dreamliner. Over lunch at a Mayfair restaurant I asked McNerney whether he and <i>Boeing</i> had <b>learned anything from the chaos</b> that was unfolding at <i>Airbus</i>.</p> <p>The European aircraft manufacturer was at that time doing a swallow dive from the high board into concrete. Chief executives were departing on a monthly basis...</p> <p>Without pausing for thought, <b>McNerney said no. He felt there was nothing to learn from Airbus.</b> I thought at the time that such <b>arrogance was hubris</b> and events since have proved the foolishness of McNerney’s words.</p> <p><i>Boeing</i> announced last week that the 787 Dreamliner, one of the world’s most important industrial projects, is now running 18 months late.”</p>	On modular EA’s inability to learn
17 April 2008	<i>Business Week</i> , “What <i>Airbus</i> learned from the Dreamliner”	Greg Albert, <i>Honeywell</i> Vice-President	Supplier	$\beta$	“To avoid production glitches, <i>Airbus</i> is giving contractors an unprecedented role in designing the A350. For months, engineers from aerospace companies such as <i>Honeywell International</i> and <i>Thales Group</i> have been working alongside <i>Airbus</i> staff, poring over the design and suggesting changes to simplify manufacturing. <i>Boeing</i> held similar consultations, ‘ <b>but Airbus is taking it a step further,</b> ’ says Greg Albert, a <i>Honeywell</i> vice-president who oversees its work with <i>Airbus</i> .”	On <i>Airbus</i> ’ different approach in treating suppliers on the A350 than <i>Boeing</i> did on the 787.
18 April 2008	<i>The Seattle Times</i> , “ <i>Boeing</i> Labor Negotia	<i>Ray Goforth</i> and <i>Tom Wroblewski</i> ,	Union	$\alpha$	“Relations with the white-collar engineering union already are so strained that the union’s new executive director, Ray Goforth, talks openly about the potential for a strike. “ <b>We can absolutely do it,</b> ’ Goforth said. <b>‘I have every confidence members will stand up for themselves if necessary. The</b>	On <i>Boeing</i> ’s discussions with its unions about

	<p>tior Wants Pension -lan Change for new Hires”</p>	<p><i>SPEEA</i> Execut ive Direct or, and <i>IAM</i> district Preside nt</p>		<p><b>union is pretty darn unified.’</b></p> <p><b>‘This is unbelievable,’</b> said Wroblewski, district president for the International Association of Machinists (IAM) Local 751, on hearing of the idea from a reporter. Although Kight had previously informed engineering union leaders of the proposal, he hadn’t mentioned it to Wroblewski. Wroblewski said that in 2005, when <i>Boeing</i> proposed daking away retiree medical benefits for new hires, <b>‘it ended in a strike...This is unacceptable. I’m sure our members will walk again.’</b></p> <p><b>‘We’re going to have disagreements,’</b> Kight said. <b>‘The key, as leaders, is how you respond.’</b> The Machinists’ 2008 negotiations slogan is <b>‘It’s our time this time!’</b> Said Kight, <b>‘I wish we were half as good as the IAM at crafting great slogans.’</b></p> <p><b>‘Past, present, future, it doesn’t matter. We fight for all our members. You’re fighting for the unborn,’</b> Wroblewski said. <b>‘Our members didn’t fall for it in 2005. They won’t fall for it this time.’</b> The Machinists have struck <i>Boeing</i> six times since 1948, including a 69-day walkout in 1995 and a one-month strike in 2005.</p> <p>That fighting stance followed an initial meeting with Kight and <i>Boeing Commercial Airplanes</i> Chief Executive Scott Carson. Goforth and the two other union officials present insist that Carson told them candidly he’d prefer <b>‘to get rid of all the unions at Boeing’</b> and intended to continue to support efforts to do so. Kight, who was also at the meeting, flatly denied that. <b>‘He didn’t say that,’</b> Kight said. <b>‘He knows it would be a fool’s errand to make a statement like that.’</b> Late last month, Carson himself defended his remarks in the February meeting in a letter to an employee. His version of what he said was: <b>‘I wish Boeing didn’t have to work through a third party to have discussions with employees. To say these comments indicate that Boeing is anti-union is, in my opinion, a mischaracterization.’</b></p> <p><b>‘I’m responding to a campaign of aggression against the union. The company is essentially trying to put us out of business,’</b> Goforth said. <b>‘If they attack us in one place, they attack us all.’</b> Kight said the efforts to unseat the union in each place were employee-driven, and the outcomes were determined by employee wishes. <b>‘It’s up to the employees,’</b> Kight said. <b>‘We respect the choice.’</b> Clearly, well-paid white-collar workers do not strike lightly. <b><i>SPEEA</i> has only had one strike that lasted more than a day in 2000.</b></p> <p>Goforth cited a survey of his members, the results of</p>	<p>changing its pension plan for new hires.</p>
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					<p>which are still coming in. Of the almost 4,000 people who have responded so far, <b>three-quarters registered ‘low confidence’ or ‘no confidence’ in Boeing corporate management.</b> ‘<b>This is setting us up for some pretty tough negotiations,</b>’ Goforth said. ‘<b>My fear is that we might find ourselves stumbling into a strike.</b>’ At this point in the 787 program, that could be disastrous for Boeing. ‘<b>All of us must continue to keep focused on what we’ve got to do to meet customer commitments,</b>’ Kight said. ‘<b>The last thing we can afford to do is slip up on our promises to customers.</b>’</p>	
18 April 2008	<p>Seattle Post-Intelligencer, “Boeing to ask Unions to Drop Pension Plans for New Hires.”</p>	<p>Ray Goforth and Tom Wroblewski, SPEEA Executive Director, and IAM district President</p>	Union	α	<p>“The change is ‘about attracting a new generation of employees that may not have the same appreciation for the value of the traditional pension,’ [Boeing spokesman Tim] Healy said. ‘The new generation may not be willing or have a desire to stay at the same company for 30 years,’ and would instead favor a more portable retirement plan.</p> <p>While Boeing said it has broached the subject with both unions, comments made by top labor negotiator Doug Kight and published in Seattle-area newspapers Friday seem to have taken both by surprise. ‘<b>They have never come out and said, it is our goal,</b>’ Tom Wroblewski, president of Machinists Union Local 751, in an interview. ‘<b>I’m pretty upset about it.</b>’ Wroblewski said the company’s plans would shrink new employees’ retirement savings and <b>leave them more vulnerable to market swings.</b> ‘<b>If the employer wanted to restructure the retirement package in a way that didn’t take money away from the employees, we’re open to discussing anything. But what they’re trying to do is take money away from employees and put it in their pockets,</b>’ Goforth said.”</p>	<p>On Boeing’s discussions with its unions about changing its pension plan for new hires.</p>
21 April 2008	<p>Reuters, “Boeing, Northrop CEOs met with Air Force on Tanker” (Andrea Shalalesa)</p>	<p>Anonymous official, U.S. Air Force</p>	Customer	α	<p>“Boeing has also run a series of full-page advertisements in U.S. newspapers condemning the Air Force’s handling of the deal as ‘<b>flawed by countless irregularities.</b>’ ‘<b>It’s really gotten ugly,</b>’ said one Air Force official who spoke on condition he not be identified.</p> <p>Defense analyst Loren Thompson, of the Virginia-based <i>Lexington Institute</i>, said the meeting was clearly prompted by Air Force concerns about the tanker debate. ‘<b>The tone of the tanker debate has turned so negative the Air Force leaders are concerned that it could damage their long-term relationship with Boeing,</b>’ he said.</p>	<p>On Boeing’s deteriorating relationship with its long-time customer.</p>
22 April 2008	<p>Reuters, “Boeing CEO Admits 787 Dreamliner</p>	<p>Jim McNerney, Chairman &amp; CEO, The</p>	Firm	α	<p>“Boeing Co.’s chief executive has admitted that the company’s <b>ambitious plan to outsource most of the production</b> of its new 787 Dreamliner jet has <b>not been completely successful</b> and could lead to a re-evaluation for future programs. ‘<b>The global partnership model of the 787 remains a fundamentally sound strategy,</b>’ said Boeing CEO</p>	<p>On a modular Enterprise Architecture’s emphasis</p>

	Errors” (Bill Rigby)	<i>Boeing Company</i>			<p>Jim McNerney in a memo circulated to employees on Monday, ‘but we may have gone a little <b>too far too fast</b> in a couple of areas.’</p> <p>The plan, which <b>offloads</b> some of the financial risk of developing the plane to its main partners, was hailed as the future of aircraft manufacturing by some, but <b>dismissed as mere cost-cutting</b> by others. Naysayers felt that <i>Boeing</i> may have given up <b>too much control of the manufacturing process</b>.</p>	on execution and not strategy.
23 April 2008	<i>Business Week</i> , “Boeing’s McNerney: ‘Digging Out of a Hole’” (Judith Crown)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	α	<p>“Analysts say that <i>Boeing</i> could face from <b>\$2 billion to \$4 billion in penalties</b> to airline customers because of 787 delays, as well as <b>reduced profit margins over the next decade</b>. Chief Financial Officer James Bell said the company <b>won’t book profits for the first 25 Dreamliners, but added that the 787 will be profitable over the long haul</b>.</p> <p><b>Absentee CEO? McNerney has been barely visible amid the questions about the 787 delays.</b> ‘I’ve neither met him nor heard from him,’ says Ray Goforth, executive director of the Society of Professional Engineering Employees in Aerospace. <b>Indeed his style has been to ride herd on top managers</b>, giving them tools they need to do their jobs and then holding them accountable if they don’t deliver. <b>‘Its O.K. to confess you’re in trouble, we’ll get you help,’</b> he said in a 2006 interview with <i>Chicago</i> magazine. The question is whether that style works as well when Wall Street is demanding constant assurance about make-or-break programs. <b>‘If you’re not out there leading, you are subject to other people’s interpretations, and you hold yourself hostage to the stories that other people spin,’</b> says Adam Galinsky, a professor at the Kellogg School of Management at Northwestern University.</p> <p><b>McNerney inherited a 787 strategy that had been put in place by Alan Mulally, Boeing’s</b> longtime head of commercial operations, and program manager Michael Bair. <b>‘In hindsight, [McNerney] wishes he would have stepped in sooner,’</b> says Noel Tichy, a professor at the University of Michigan who worked with McNerney at <i>GE</i> and has written about his management style. <b>‘Otherwise, he wouldn’t be digging out of a hole.’</b> Indeed, if there is another 787 delay, the spotlight will intensify on McNerney. <b>‘With three strikes already, it would be hard to retain confidence,’</b> says Richard Aboulafia, the <i>Teal Group</i> consultancy’s vice-president for analysis.”</p>	On a modular Enterprise Architecture’s emphasis on execution and not strategy.
23 April 2008	<i>Business Week</i> , “From the <i>Boeing</i>	Jim McNerney, Chairman &	Firm	α	<p>“For me, two themes emerged from the 787 at this early stage in its life. One centers around innovation, the other around execution. <b>We have gotten the innovation piece of it right</b> (notwithstanding the ever-present potential of unknowns). <b>The execution</b></p>	On a modular Enterprise Architecture

	Cockpit ” (by Jim McNern ey)	CEO, <i>The Boeing Compa ny</i>			<p><b>piece – with specific regard to the business model and our oversight of the supply chain – has been much more of a challenge.</b></p> <p>Fundamental, game-changing innovation like that we’re pursuing on the 787 usually has a ‘<b>bleeding-edge</b>’ quality to it – meaning it goes beyond ‘leading edge’ into a realm where both the risks and the potential returns are high.</p> <p>The global-partnership model of the 787 remains a fundamentally sound strategy. But we may have gone a little <b>too far, too fast</b> in a couple of areas.</p> <p><b>The revised 787 plan reduces schedule risk and lays out a more gradual ramp-up.”</b></p>	ure’s emphasis on executio n and not strategy, and an eventual reversion towards Integral Enterpris e Architect ure principle s.
23 April 2008	<i>Seeking Alpha</i> , “ <i>The Boeing Compan y, Q1 2008 Earning s Call Transcri pt</i> ” (www.S eekingA lpha.co m)	Jim McNer ney, Chari man and CEO; James Bell, CFO, <i>The Boeing Compa ny</i>	Firm- Investo r	$\alpha$	<p>“<b>Steve Binder (Bear Stearns):</b> May be just about your '09 guidance, I think James you touched on, you are assuming the <b>zero margin</b> with 787 program, <b>just assuming</b>. Since <b>you had not fully scrubbed I guess supplier payments, renegotiation with suppliers</b>, as well as your kind of your new schedule as far as your ramp cost with respect to a new production schedule. I am just wondering <b>do you feel confident would you characterize your cost estimates to be on the initial block size to be conservative</b>, such that you want to meet figure with forward charge?</p> <p><b>James Bell (Boeing):</b> Yes I would. I would say that <b>its our best ability to estimate</b>, but a couple of things that we’ve high confidence in. One <b>we’ve confidence that we have almost 900 orders today which would help us relative to set what the pricing is, relative to that. We’ve negotiated quite a bit of the subcontractor cost</b> and we have pretty good idea of how we are going to finish in negotiating as it relates to some of the impacts or some of the changes we’ve experienced. The area obviously that is <b>less certainty is how do we settle all of the issues we have with our customers</b>. Although, <b>we think we are being relatively conservative by starting out with the zero margin</b>.</p> <p><b>Cai von Rumohr (Cowen &amp; Co.):</b> So what sort of impact does this assume, <b>you are paying Spirit per their 8-K, it looks like 350 million plus that was not on the plan. You presumably have some payment to airline at some point</b>. What do though the suppliers and airline compensation requirements due to this cash flow?</p> <p><b>James Bell (Boeing):</b> So, <b>we are not going to get into the specifics of what we have assumed, Cai</b>, but believe that the impact of what we believe based on what we know</p>	On a modular Enterpris e Architect ure’s defense of its finanaica l performa nce

				<p>today cash that would be extended out because of the payment flow coming from customers as well as what we would have to pay for pay to suppliers to be there and because of contract terms are included in the guidance for both '08 and for '09.</p> <p><b><u>Joe Campbell (Lehman Brothers):</u></b> I have a question about the performance of the commercial company in the first quarter. <b>The difference between the program accounting and the unit accounting was some \$330 million, which is the largest number we have ever seen I think in a single quarter</b> and 71 million of it, which is pretty much consistent with what we have been seeing is related to the 777-300ER. I wondered if you could sort of tell us what was going on because the actual is so different from the assumed program performance?</p> <p><b><u>James Bell (Boeing):</u></b> Yeah, some of it was -- again <b>we are still experiencing the impact of the more aggressively priced airplanes several years ago</b> that we are delivering, which has a more profound impact on unit margins than program. Then coupling that with the <b>mix</b> that was delivered in the quarter had the increase the gap a bit based on what's in the accounting quantity relative to that mix and the pricing associated with it, Joe.</p> <p><b><u>Joe Campbell:</u></b> James, what was the mix difference. <b>I didn't notice anything especially different?</b></p> <p><b><u>James Bell:</u></b> Well, there were <b>more 777</b> in it today in the...</p> <p><b><u>Joe Campbell:</u></b> <b>777 wasn't the issue</b>, it was only 71 million of the 330? So the big number...</p> <p><b><u>James Bell:</u></b> You are only talking about the difference in pricing on 777, there is a mix difference also that would be associated with better priced airplanes out in the outyears, Joe.</p> <p><b><u>Joe Campbell:</u></b> But, I mean, you are showing us the difference between actual and program assumptions on the 777 to be only \$71 million. So is it not correct to assume that 330 minus 71 is related to <b>some airplanes other than the 777?</b></p> <p><b><u>James Bell:</u></b> Well, there is. Yes, there is.</p> <p><b><u>Joe Campbell:</u></b></p>	
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				<p>So, I am asking what that 200 million is, which is...</p> <p><b>James Bell:</b> It's mostly the 777, but there would be some mix relative to the 777s as well that's in the cost base that's beyond which you are seeing in deferred production and it would be <b>quite frankly the mix between freighter and passenger.</b></p> <p><b>Heidi Wood (Morgan Stanley):</b> Jim when you, James I guess, when you go through and analyze the <b>range of possible additional costs on these customer penalties and supplier support. In totality what's the highest negative cost outcome that's realistic. I mean does that number ever exceed 4 billion.</b> We are really struggling on the outside to conceptualize this. I mean if we can't think of it is 2 to 4 billion is that a reasonable bandwidth?</p> <p><b>James Bell (Boeing):</b> Well Heidi, you know, <b>the fact of the matter is we go through and struggle with that same thing ourselves and with the information we have to date, its hard to set a number. And that's why we obviously have taken the position that we are going to start off booking the program at a zero margin to make sure we have adequate reserve in order to deal with that. I can't predict what the number will be. I just know that our past history would suggest that we do a pretty good job of mitigating that and not having and roll through to be a significant impact to your financial performance.</b></p> <p><b>Heidi Wood:</b> Alright. You gave us color on <b>when</b> you are going to make the decision on the <b>program block</b>, but maybe can you give us more <b>transparency</b> on the process of how will you make the determination for the <b>accounting block size for earnings recognition.</b> And when you look at all of this backlog that you have, obviously <b>the implications of these higher non-recurring</b> is very different if you use a 400 block or an 800 block. Can you walk us through the process of that?</p> <p><b>James Bell:</b> I can Heidi. Let me start with <b>history.</b> Typically when we got to a point of <b>delivering the first airplane we sell it about a 100</b>, this in raw numbers on our new airplane models. And as you mentioned <b>typically the block turned out to be -- the initial block turns out to be and about 400 airplane range.</b> So what that is beyond the long orders you look at what the market potential is for the airplane you look at a time period over which you can estimate your cost and estimate you revenue. And so</p>	
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				<p>you take those things in consideration and then you settle on what the accounting quantity is and then what's your <b>booking margin ought to be on these airplane as you deliver them.</b> Well in the case of the 787 we are going to have probably a 1000, so by the time we deliver it. So we are going to be more constrained by which obviously, gives us <b>great opportunity over a time period to product good earnings</b> and value for both us and our customers and it also gives you <b>great capacity to deal with unknowns that you don't understand</b> you will experience as you look back to today. But we will be more constrained about is what we'll be able to estimate over a time period and what we'll be able to produce in that time period. So you can get the significant opportunity we are going to have on the initial opening quantity here. But what we see today and what we understand based on what our contracts have in them, based on N-SAR, our very very preliminary discussion with our customers, it is hard to estimate what the customer settlements will be but we do believe that whatever the opening quantity will be based on the price theory I just described, <b>there will be significant profitability in the program today to cover.</b></p> <p><b>Heidi Wood:</b> Well that's interesting so basically <b>in the scenarios on this initial program block, you're saying that in every scenario the costs are still less than the revenues?</b></p> <p><b>James Bell:</b> <b>That's correct.</b></p> <p><b>Heidi Wood:</b> Okay, thank you. And then one last one, if you don't mind, again a bit of a doubles [divagate] question for you. You had <b>one 747 order</b> in Q1 and a great booking quarter of 289 planes. <b>You had 25 747s in '07, yet you are raising the R&amp;D and raising the non-recurring on the 747. You've gone from some 280 changes on the wings that started of mildly to what looks like to a whole new wing design which is kind of \$3 billion to \$4 billion. Help us understand why is that the right answer?</b> I mean, we knew there is backing out the door to buy 787s and <b>your costs are rising on the plane,</b> we can understand it <b>but in this situation your costs are rising and we're not getting confirmation for higher customer demand.</b> Can you walk us through your rationale there?</p> <p><b>Jim McNerney:</b> Well hi this is Jim. I think we've about 110 orders for both the freighter and the passenger. And I think James just talked historically about models we've introduced at about that rate and so we're already</p>	
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				<p>aware and we're still over a year late from introduction. Now having said that, I will be rest in Canada, if I didn't tell you <b>I wish we had more intercontinental orders</b> which is I think what you were talking about, the passenger version.</p> <p><b><u>Heidi Wood:</u></b> Yeah.</p> <p><b><u>James Bell:</u></b> Well we've 26 orders....</p> <p><b><u>Heidi Wood:</u></b> And only one major customer....</p> <p><b><u>Jim McNerney:</u></b> Yeah and one major customer, although the minor customer would not appreciate your characterization there by the way, but we're in discussions with about 8 to 10, serious discussions with 8 to 10 major carriers. It is impossible for me to predict how many of those will order but typically when we're at this stage, a large number of them would. So, I think we are still basing our spending on what we perceive to be the market and by the way we are up to a pretty good start with a 110 orders worth over a year to go before we have to set accounting quantities and the like. But I also wish we had another couple major intercontinental orders right now and the guys are really working hard at it and I think there is a good chance we'll have some soon.</p> <p><b><u>Howard Rubel (Jefferies):</u></b> Thank you very much. I want to go back to the R&amp;D. You kind of I mean we all live in glass houses in form or another and <b>you've sort of had to go through this a couple time</b> and raise that. <b>Is there any change in process</b> that Jim that you need to look at in terms of helping you think about estimates for programs?</p> <p><b><u>Jim McNerney (Boeing):</u></b> Well, <b>we can be better</b>. I think if you're looking for a <b>root cause, it would probably center on the 87 development. As we've struggled with getting the supply chain in place and the costs associated with recovering from that. We've been forced to keep an experienced set of engineers on that program that had been planned to go on off to other programs. The 47-8 that increased costs as we scrambled to find the engineering capacity we need the trading, we need outside help supplementation from time to time, little more costly, so. I think part of what you are seeing is the scramble but having said that I'm not happy and Scott Carson is not happy with our inability to get our arms around predicting the development cost. The business case for both</b></p>	
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				<p>airplanes remains good but we need to do a better job there and we are working hard to do that. And we do not have shortage of business reviews around the subject.</p> <p><b><u>Ron Epstein (Merrill Lynch):</u></b> A boarder strategic question for you Jim. If the tanker stays with <i>EADS</i> and <i>Airbus ends up setting up a wide-body production in North America</i>. I mean how will that change the <b>strategic outlook for the industry</b>. I mean how do you have to consider them now if you get your competitor here in a <b>dollar cost structure</b> putting together wide-bodies?</p> <p><b><u>Jim McNerney (Boeing):</u></b> Yeah, I mean <b>I think it wouldn't change the nature of their business and it wouldn't introduce another competitor</b>. But would change where they produce or have the capacity to produce some things. So it ultimately gets down to a dollar based production site. If they end up wining this thing <b>believe me that site will be pre-occupied with modifying freighters made in France for a long time</b>. So I'm not sure they'd immediately convert hat into something else. So it's more of a geographic deployment. They've announced similar things in China, US. <b>They've got lots of dispersed production in Europe. It will not be an in complicated supply chain for them to manage</b> by the way as you look at from managing manufacturing operations it will tough.</p> <p><b><u>Ron Epstein:</u></b> Okay and then just one follow on if I may, I think everybody else did. When you look at your suppliers everything from raw material down to your Tier-I's, Tier-II's, on the <b>legacy programs</b>. I mean how's the supply chain doing?</p> <p><b><u>James Bell:</u></b> On through <b>legacy programs, its doing fine</b>. Not that it doesn't labor from time to time. I think the team quite frankly is doing an <b>excellent job on the legacy programs</b>. We've go through periods where certain raw materials are scarce, other periods where quality funds are found. But I would categorize them as being <b>well managed and less difficult than you probably imagine</b>. Most of our supply chain issues have been centered over and found the 787 development and those are well chronicled. So I am trying to paint a picture, when I managing at everyday we are but we have had no major disruptions in our production and with our fingers crossed we think we can keep that record going.</p> <p><b><u>Robert Spingarn (Credit Suisse):</u></b> Jim you've already noted earlier in the call the prevailing weakness in broad economy and <i>Boeing's</i></p>	
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				<p>very impressive backlog here, and you said many times and you alluded to this earlier that you <b>resist the temptation to over ramp at BCA</b>. So with that said, <b>what kind of backlog erosion could Boeing tolerate</b> before 2009 and lets say 2010 production plans would be impacted?</p> <p><b><u>Jim McNerney (Boeing):</u></b> Let me answer your question by a array of siding <b>another stressful time and that would be the recession 2000 and then closely followed by 9/11</b>. I think when you looked what happened there roughly <b>6 or 7%</b> of our orders ended up being <b>cancelled</b> and that was a very tough situation. There where a number of reschedules, a push outs, and number that the majority didn't change. But we managed to work through with our customers we are facing difficult headwinds to say the least of that time. And a lot of those orders were US based carriers then. And as you heard me earlier describe that's in contrast where we are today, we are the vast majority of orders 80% plus are with international carriers backed by Ex-Im financing. So we are in a stronger backlog position, today all you can use is data here, because you can't predict future. So if you had exactly the same situation happened to you as happened to you in 2001 same kind of pressures although differently constructed you can end up with something like that. And I think that given that we have constraints on most of our product lines right now, we can get people airplanes right now. <b>And as you say we are sort of a biased to be cautious on the rate increases even though we are increasing, but you add that all up, the strong ability to managing the past when we got lacked</b>. We are in pretty conservative position to go again and return we have more order than we have production. <b>And so could there be some impact? Yes. Would it be a major thing? Probable not.</b></p> <p><b><u>Robert Spingarn:</u></b> Let me also understand because I think you just said that if you had a 6 to 7% cancellation to fuel environment which is the similar trend that we saw following 9/11 is that what you said?</p> <p><b><u>Jim McNerney:</u></b> No I am just saying no. Because there were other factors that impacted our financial performance. I was only dealing with the question of volume and I was simply pointing out that at that time we had more than 6% deferrals okay 6% cancellations is what I said.</p> <p><b><u>Robert Spingarn:</u></b> Okay.</p> <p><b><u>Jim McNerney:</u></b></p>	
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				<p>We tend to assume that kind of cancellation rate as we put together our business plans and our financial promises.</p> <p><b><u>Robert Spingarn:</u></b> Okay. Because <b>people are going to look to the ramp down from the '01 production rate of over 500 to 240 or so two years later and I want to clarify that's that not what you are talking about?</b></p> <p><b><u>Jim McNerney:</u></b> <b>No, you are right. I mean that's not what I am trying to portray and I can see, why I confused you.</b> What I am trying to say is that 6% orders loss were in much more -- and <b>a lot of that ramp down was a result to push outs.</b> But we are in a much stronger position today in that or insulated from economic conditions with most of our orders outside the United States Ex-Im Bank financing. <b>So you would see a lot less deferrals in my opinion this time around.</b></p> <p><b><u>Lynn Lunsford (Wall Street Journal):</u></b> This has to do a little bit more with the deliveries on 787 kind of in the out years; some of your customers that have airplanes that are <b>way at the end of the delivery line</b> here, are kind of expressing a little bit of <b>concern that the delays will cascade down through the chain.</b> Do you have any sense of how far down the airplanes maybe delayed by the slower ramp up? <b>Is there a scenario that all 900 of them could be delivered later than people had thought?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b> Lynn, this is Jim. <b>We don't believe that the slide will impact all 900.</b> Having said that we're still working through exactly what the impact will be. As you know, I think we've told you what's going to happen in '09 that the ramp-up will be slower after that and full rate production in 2012. We're seeing if that could be pulled in. We don't know and we're seeing what we can do to ramp-up beyond that, after that, that both of those could significantly improve the situation and when we've thought through that, we'll be able to be more precise with everybody. <b>But we don't see a scenario where all 900 would be delivered late.</b></p> <p><b><u>Hal Weitzman (Financial Times):</u></b> You said earlier Jim that <i>EADS</i>, if they were to end up winning the tanker contract would face a complicated supply chain and I just wanted, given your own experiences with the 787, <b>what have you learned in terms of supply-chain issues?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b> <b>Well, we have learned a lot and have the scars to prove it;</b> I guess would be my summary on the 87. I</p>	
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				<p>think having <b>real time visibility of your partner's inventory</b> as well as their rep as they as they are assembling things so a <b>global understanding of how things are coming together all the way down to Tier 3 and 4 would have helped us a lot. So, IT visibility</b>, like we had on the engineering side and so there is some learning there for us. We are already doing it differently. And whether <i>Airbus</i> chooses to learn from that or not is something that, then at last they will be confronted with similar challenges and I think they know it will not be easy.</p> <p><b><u>Hal Weitzman:</u></b> The next time around, you're going to do things differently?</p> <p><b><u>Jim McNerney:</u></b> No, our strategy will be the same. We believe that <b>global leverage is important both from a cost and risk mitigation standpoint.</b> We might draw some lines at different places, <b>now that we understand our own capabilities; better understand the capabilities of our partners.</b> I think we all learned and I think it will be more of an <b>adjustment</b> to the strategy than a <b>change</b> in strategy.</p> <p><b><u>Dominic Gates (Seattle Times):</u></b> I just wanted to clarify if something Heidi Wood has asked about. She characterized a change to the 747-8 program. The wing -- <b>the change to the wing was effectively a new wing and put a price tag on it, total price tag I think of 747-8 development of somewhere between 3 and \$4 billion.</b> So, is the characterization of more or less the whole new wing accurate and what about that price tag?</p> <p><b><u>Jim McNerney (Boeing):</u></b> The wing was an issue we had to wrestle through. <b>There was some redesign that had to happen there, it took us longer than we thought,</b> but I think we are largely through it. We feel comfortable with it and <b>it did explain a lot of the non-recurring pressure that we had particularly last year.</b></p> <p><b><u>Dominic Gates:</u></b> And is that increasing the cost to about the levels Heidi cited of 3 to \$4 billion?</p> <p><b><u>Jim McNerney:</u></b> Yeah, <b>I don't think we talk about that publicly. It obviously cost more than we thought it was going in, but we remain very comfortable that this will be a profitable program and the business case remains strong.</b></p> <p><b><u>Mike Mecham (Aviation Week):</u></b> Hi. A couple of weeks ago, Steve talked about some <b>weight issues in the 787 continue to had in the -10</b></p>	
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23 April 2008	<p><i>The Wall Street Journal</i>, "Ford Eyes More Cuts As Recovery Advances" (Mike Spector)</p>	<p>Alan Mulally, CEO, <i>Ford Motor Company</i></p>	Firm	$\alpha$	<p><b>"The firm isn't done cost-cutting.</b> According to people close to Mr. Mulally, he is looking at <b>selling Volvo</b>. Similarly, he hopes to <b>shutter</b> the ailing <i>Mercury</i> brand.</p> <p><b>More job cuts may be coming.</b> In <i>Ford's</i> most recent buyout offer, only about 4,000 workers signed on, about half the desired total. Mr. Mulally will likely offer one more round, then could resort to <b>layoffs</b>. <b>'Clearly, we have lots of mechanisms to keep taking the fixed costs out,'</b> Mr. Mulally says.</p> <p><b>'This is a classic example of how one can shrink to grow,'</b> says Peter Nesvold, an analyst at <i>Bear Stearns</i>. Mr. Mulally <b>'is making many difficult decisions during a down cycle, which should benefit the company as they enter the next upturn.'</b></p> <p>Mr. Mulally came to <i>Ford</i> from <i>Boeing</i>, the aircraft maker, where he had spent his entire career. <i>Boeing</i> twice passed him up for the CEO's job despite his work <b>rehabilitating Boeing's once struggling commercial airplane division by borrowing efficiency ideas from Toyota.</b></p> <p>Mr. Mulally wanted <i>Ford's</i> <b>market share to reach its 'natural level'</b> – the volume where cars sell without big discounts. <b>'I don't care what market-share level you are,' Mr. Mulally says, the goal is to 'get back to profitability.'"</b></p>	<p>On a modular Enterprise Architect's approach.</p>
24 April 2008	<p><i>Reuters</i>, "Four-hour strike hits Airbus France Production." (Nicolas Fichot, Jessica Mead)</p>	<p>Jacques Rocca, Director of Communication, <i>Airbus France</i></p>	Firm	$\beta$	<p><b>"Striking workers disrupted production at Airbus factories in France for four hours on Thursday in a dispute over restructuring. The strike was called after Airbus dropped plans to sell some of its factories in Germany to an outside investor but pressed ahead with plans to sell two of its three factories in France. French Unions say French and German plants should be treated equally. Airbus declined to comment. 'We will let the strike speak for itself,' said Jacques Rocca, director of communication at Airbus France."</b></p>	<p>On the quality and quantity of labor strikes in an Integral Enterprise Architecture</p>
25 April 2008	<p><i>Bloomberg</i>, "Ford Chief</p>	<p>Alan Mulally, CEO,</p>	Firm	$\alpha$	<p><b>"The confidence in our plan is really increasing,"</b> said Mulally, 62 in a <i>Bloomberg Television</i> interview yesterday. <b>'We said we had to aggressively restructure to meet real demand.'</b></p>	<p>On a modular Enterprise</p>



	Mulally May Do for Automaker What He Did at <i>Boeing</i> ” (Bill Koenig)	<i>Ford Motor Company</i>			<p>At <i>Boeing</i>, Mulally <b>slashed employment</b> as head of the commercial airplane division by more than half, to about 50,000 in eight years. He <b>sped production</b> of a more fuel-efficient jetliner, the 787, and helped lay the groundwork for record orders.</p> <p>In his current post, Mulally has <b>eliminated 46,300 jobs</b> in North America over the past two years as <i>Ford</i> has <b>closed or scheduled to close nine plants</b> to match its <b>shrinking manufacturing footprint</b>.</p> <p><b>The system is patterned after <i>Toyota</i>, the automaker Mulally studied when he was at <i>Boeing</i>.</b>”</p>	Architect’s approach .
28 April 2008	<i>Seattle Post-Intelligencer</i> , “ <i>Boeing Won’t back Down, but Civility is Key In Tanker Dispute</i> ” (James Wallace)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	α	<p>“<i>Boeing</i> Chairman and Chief Executive Jim McNerney knows a thing or two about <b>rough play</b>...</p> <p>‘Our view is the (tanker selection) process chose the <b>wrong tanker</b>,’ McNerney said. ‘Which is why we are protesting. And everything we learn as we move thorough the protest makes us feel better about having protested that process.’</p> <p>In a report issued Monday, Loren Thompson, a noted defense expert at the <i>Lexington Institute</i>, wrote, ‘If you want to understand how <b>former allies end up going to war – or former lovers end up getting divorced</b> – take a look at how <i>Boeing</i> and the <i>Air Force</i> are treating each other in their <b>angry confrontation</b> over the award of a next generation tanker program to <i>Northrop Grumman</i>.’ Thompson said that <i>Air Force</i> leaders believe <i>Boeing</i> ‘<b>is willfully misstating the facts in a bid to obscure the inferior performance of the plane it proposed</b>. A marathon session of <i>Air Force</i> acquisition experts two weeks ago concluded that none of the 200 issues raised by <i>Boeing</i> in its complaint to the GAO was likely to be upheld, and that whatever minor problems the accountability office might uncover would be far from sufficient to overturn a competitive outcome that service says <b>was not close</b>.’ Beyond the merits of <i>Boeing</i>’s case, Thompson wrote, ‘<i>Air Force</i> officials are <b>insulted</b> by the tone of the company’s public statements,’ which have used phrases such as ‘<b>deeply flawed</b>’ and ‘<b>severely prejudiced</b>’ to describe the tanker selection process.</p> <p>‘<b>There is nothing I’d like better than to get that work back into our company</b>,’ McNerney... told shareholders at the company’s annual meeting.</p>	On how a modular enterprise architect solves disputes with its customer
29 April 2008	<i>The Seattle Times</i> “ <i>Boeing Won’t Throw</i>	Jim McNerney, Chairman & CEO,	Firm	α	<p>“<i>Boeing</i>, <b>chided</b> by the <i>Air Force</i> along with <i>Northrop Grumman</i> for the tone of its military-contract dispute, will avoid throwing ‘<b>sharp elbows</b>’ without backing down from the protest, Chief Ececutive Officer Jim McNerney said Monday.</p>	On how a modular enterprise architect

	'Elbows ' in Dispute " (Susanna Ray)	<i>The Boeing Company</i>			<i>Boeing</i> lost its first chance at the contract in 2003 after an <b>ethical scandal</b> sent a company executive and a former <i>Air Force</i> official to jail. 'There is a certain amount of <b>shamelessness</b> about <i>Boeing's</i> current campaign to overturn the awarding of the tanker contract to a different company,' <b>shareholder</b> Peter Flaherty, president of the <i>National Legal and Policy Center</i> , said at Monday's meeting.	solves disputes with its customer , (and the response of one of its investors. )
29 April 2008	<i>Reuters</i> "Airbus in 'Major Review' of A380 Deliveries" (James Cordahi )	Tom Enders , CEO, <i>Airbus</i>	Firm	$\beta$	"I am currently conducting a major review of the <b>ramp up plan</b> ," Chief Executive Tom Enders told reporters in the <i>United Arab Emirates</i> . 'This is a <b>very steep ramp up</b> and this is something one always needs to be <b>concerned about</b> ,' he said, calling it a ' <b>difficult subject</b> .'  Enders said the company had a <b>limited ability to save money by cutting jobs because it needs staff to meet its delivery obligations</b> . <i>Airbus</i> has already announced plans to slash 10,000 jobs and sell plants to restore its competitiveness. ' <b>At a time of ramp up, cutting jobs has its limits</b> so we are thinking seriously about structural measures,' he said. Enders said it <b>might consider offshoring</b> 'major parts of the work in manufacturing as well as engineering because the cost is a very serious problem for us with the dollar at \$1.50 to \$1.60 (against the euro).' But the <b>challenge to offshoring</b> , he said, was in <b>finding 'high quality and trained personnel'</b> to ensure standards are maintained. Enders also noted that <b>meeting its targets also required suppliers to come through</b> . 'The industry has <b>multiple supplier problems and stuff like that obviously has been taken into consideration as well</b> ,' he added. ' <b>There will be no miracles.</b> '"	On an Integral Enterprise Architect's management of 'wicked messes' (i.e. high dynamic and behavioral complexity)
29 April 2008	<i>Forbes / Thomp-son Financial News</i> . "Airbus France Workers Stop Work to Protest Sale of Plants in France, Germany" (Greg Keller)	Tom Enders , CEO, <i>Airbus</i>	Firm	$\beta$	"Unions at the <i>EADS</i> unit had called on employees to stop work for <b>two hours</b> Tuesday between 9:30 a.m. and 11:30 a.m., at all of <i>Airbus'</i> French plants. The work stoppage, which follows a <b>four-hour</b> stoppage last Thursday, coincided with an extraordinary meeting of <i>Airbus France's</i> works council, to be followed by a meeting between unions and the head of <i>Airbus France</i> , Fabrice Bergier.  While unions claimed a higher mobilization Tuesday than last Thursday, <i>Airbus</i> management said <b>30 percent</b> of all employees of the Toulouse plants had taken part in the work stoppage. Last Thursday, French union <i>Force Ouvriere</i> , <b>the largest union in Airbus</b> , said that the strike was followed by <b>80 percent</b> of Toulouse employees compared to management's estimate of <b>60 percent</b> ."	On the quantity and quality of an Integral Enterprise Architecture's labor strikes
8	<i>Seattle</i>	<i>Boeing</i>	Firm	$\alpha$	"Although <i>The Boeing Co.'s</i> 787 Dreamliner may be	On a

May 2008	<i>Post-Intelligence</i> , “Some Buyers Will Get 787s 2-1/2 Years Late” (James Wallace)				<p>only 15 months or so behind schedule, delivery delays will be as much as twice as long for some customers... 24 to <b>30 months late</b>.</p> <p>Some industry analysts are forecasting that the 787 delays could end up costing <i>Boeing</i> as much as <b>\$4 billion</b> or more in penalty payments.</p> <p><i>Boeing</i> is <b>drastically cutting 787 production... ramping up production much more slowly</b> than first planned. ‘We are still working through what the impact will be,’ McNerney said. ‘<b>But we don’t see a scenario where all 900 would be delivered late.</b>’”</p>	modular enterprise architecture’s backtracking from modular instability toward integral stability
8 May 2008	<i>Bloomberg</i> , “ <i>Boeing</i> Unions May Use 787 Delay for Contract Leverage” (Susanna Ray)	Tom Wroblewski, <i>IAM</i> President; Ray Goforth, <i>SPEEA</i> executive director; James Bell, <i>Boeing</i> CFO	Firm-Labor	$\alpha$	<p>“<i>Boeing Co.s</i>’ delayed 787 Dreamliner may give its two main unions <b>extra leverage</b> in contract talks. ‘Unions have the <b>upper hand</b> now,’ said Richard Aboulafia, an analyst with Teal Group, an aviation consulting firm. ‘<b>They’re determined to get their share of the good times.</b>’ ‘The last two negotiations, <b>we were at the mercy of the company,</b>’ said Thomas Wroblewski, president of the International Association of Machinists’ Seattle-based District 751. <i>Boeing’s</i> Puget Sound-area machinists have gone on <b>strike six times since the union was founded in 1935</b>. With profit and demand rising, <b>the union is in ‘the best position we’ve been in a long time,’</b> Wroblewski said. ‘<b>Its our time this time.</b>’</p> <p>The Society of Professional Engineering Employees in Aerospace has staged <b>work stoppages twice</b>, most recently for 40 days in 2000. ‘We seem to be on a <b>repeat pattern</b> this year with the same kinds of issues that provoked our members the last time,’ said Ray Goforth, who took over as executive director. ‘There could be some <b>serious conflict</b> this fall. I’m hoping not, but it’s <b>looking pretty bad.</b>’</p> <p>‘Outsourcing is obviously a concern for us,’ Goforth said in his Seattle office, where a poster with a picture of the 787 says, ‘<b>Bring back the work so it’s done right.</b>’ <i>Boeing</i> Chief Financial Officer James Bell said that <b>the company may do more production itself and have back-up capacity at its own factory if a supplier gets into trouble.</b> ‘<b>In some cases we drew the line too far and we ought to pull back a bit and retain some of the work,</b>’ Bell said. ‘<b>But it would only be a moderate bit.</b>’ ‘<b>We absolutely believe in this model,</b>’ Bell said. ‘<b>It is the model you will see us using going forward.</b>’”</p>	On a modular enterprise architecture’s increasingly short-term relationship with labor,
8 May 2008	<i>Seattle Post-Intelligence</i> , “ <i>Boeing</i>	Doug Kight, VP HR, <i>Boeing</i>	Firm-Labor	$\alpha$	<p>“Doug Kight, head of human resources and labor relations for <i>Boeing’s</i> commercial airplanes unit, outlined some of the company’s thinking. One of <i>Boeing’s</i> <b>key worries</b> is that its <b>growing obligation to fund its employee pension plan could undercut</b></p>	On a modular enterprise architect

	<p>Machinists Union Open Contract Negotiations” (Jessica Mintz)</p>	<p><i>Commercial Airplanes</i></p>			<p><b>its ability to maintain booming orders and a massive backlog.</b> ‘In a <b>long-term business</b> like <i>Boeing</i>, where you have <b>long-term capital investment requirements to invest in your new products</b> and the design of your next generation of airplanes, a <b>market downturn that all of a sudden obligates you to spend billions and billions to fund your pension</b> is a real challenge,’ Kight said. ‘We’ve got to have more <b>stability and predictability</b> so that we can have some assurance that <b>we’ve got the resources there to invest in the product line.</b>’</p> <p>The proposal, which the union opposes, is also designed to make <i>Boeing</i> <b>more attractive with a younger generation of workers who may not stay at the plane maker for five years and want a retirement plan that’s portable and vests immediately</b>, Kight said. Citing a 7 percent annual increase in health care costs, Kight said <i>Boeing</i> is asking the <i>Machinists</i> to accept a modest increase in what workers pay for coverage and <b>elimination of early retiree medical benefits for new hires who retire before age 65.</b> The union has threatened to strike over the company’s pension demands. ‘They’re posturing to take away benefits that we’ve fought hard for,’ said Tom Wroblewski, president of Machinists Union Local 751 in Seattle, adding a jab about <i>Boeing’s</i> much-delayed new jetliner: ‘<b>That strategy is as flawed as their 787 production system.</b>’ Wroblewski said <i>Boeing’s</i> <b>blockbuster earnings</b>, most recently a 38 percent jump in profit to \$1.2 billion in the first three months of 2008, should <b>support more benefits for workers, not the cuts and higher costs</b> <i>Boeing</i> proposes. The union struck for 30 days over company demands to cut retiree medical benefits, Wroblewski noted. ‘<b>I can’t believe they would come back again and want to talk about that again,</b>’ he said. He also said the union wants higher pay for all levels of workers, in <b>addition to any productivity incentive plan</b>, [as] the company is also considering <b>incentive plans</b> offering workers <b>extra pay for improving productivity.</b></p> <p>The Machinists will also try to <b>regain control over jobs lost to outsourcing</b>, Wroblewski said. He would not give any details about the union’s proposals in that area. <i>Boeing</i> spokesman Tim Healy said <i>Boeing’s</i> outsourcing of jobs and deals with suppliers around the world is <b>in response to customer demands and rapid growth.</b></p>	<p>ure’s increasingly short-term relationships with labor, (as well as its slightly inconsistent logic and focus on exogenous events)</p>
<p>19 May 2008</p>	<p><i>Aviation Week</i> (Guy Norris &amp; Robert Wall)</p>	<p><i>Airbus</i></p>	<p>Firm</p>	<p>β</p>	<p>“Moreover, <i>Airbus</i> is <b>spending \$155 a year on continued A320 development engineering upgrades</b>, and is planning to invest another \$420 million over the next two years in additional improvements as part of a production ramp-up in Europe and China.”</p>	<p>On an integral enterprise architect ure’s increment</p>

						tal and sustained approach to developing growth.
19 May 2008	<i>Seattle Post-Intelligencer</i> , "Boeing Touts 787 Progress" (James Wallace)	Boeing	Firm	$\alpha$	"The first Dreamliner was essentially <b>an empty shell</b> , without wiring or systems, <b>when it was unveiled to the world</b> July 8."	On a modular enterprise architecture's over-promising and under-delivering
20 May 2008	<i>Forbes</i> , "EADS' Gallois Says 'No Urgency' to Find Investors for Airbus Site Units"	Louis Gallois, EADS CEO	Firm	$\beta$	"EADS NV CEO Louis Gallois said there is ' <b>no urgency</b> ' in finding investors for the subsidiaries it is creating to group together certain sites in Germany and in France.  <b>The priority is 'maintaining the development rhythm</b> of the A350 XWB', the company's forthcoming wide-body aircraft programme, due to enter service in 2013, Gallois said at a press briefing.  Gallois said the <b>company's cash position</b> means finding investors to take stakes in the subsidiaries is not urgent, but we do not want the discussions 'prolonged for ever.'	On an integral enterprise architecture's time horizons.
20 May 2008	<i>Forbes</i> , "EADS' Gallois Says 'No Urgency' to Find Investors for Airbus Site Units"	Louis Gallois, EADS CEO	Firm	$\beta$	The CEO also said <b>EADS has got rid of its system of stock options as remuneration for management</b> . Instead the company has put in place a system of ' <b>virtual stock options</b> ' under which the person holding the option does not decide when to convert it, but instead this takes place automatically, removing any grounds for suspicion, Gallois said.	On an integral enterprise architecture's incentives for leaders.
21 May 2008	<i>BusinessWeek</i> "Can Boeing Benefit from High Oil Prices?" (Judith)	Jim McNerney, Chairman and CEO, Boeing Company	Firm	$\alpha$	"U.S. carriers are mothballing planes as the airlines crumple under the weight of soaring fuel prices. <b>But Boeing is counting on the energy crisis to boost demand for its new generation of fuel-efficient jets</b> , CEO James McNerney told analysts."	On a modular enterprise architecture's exogenous view of the business

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21 May 2008	<i>Forbes</i> "Boeing CEO Says Keeping an Eye on Possible Acquisit ions"	Jim McNer ney, Chair man and CEO, <i>The Boeing Compa ny</i>	Firm	$\alpha$	"McNerney said any purchase would have to fit into <b>Boeing's strategy of long-term profitability and productivity improvement</b> for the group."	On a modular enterprise architecture's attempt to transition towards integral
22 May 2008	<i>Chicago Tribune</i> , "Boeing Positive Heading Forward " (David Griesin g)	Jim McNer ney, Chair man and CEO, <i>The Boeing Compa ny</i>	Firm- Suppli er	$\alpha$	"Chief Executive James McNerney said the company remains committed to its strategy of relying on major partners around the world to share the cost, risk and potential profits of new airplanes, but <b>it will change the way it manages the system</b> with any new airplanes. The company <b>lost its line of sight deep into its global supply chain</b> and was surprised by some of the shortcomings that caused delays, McNerney said. <b>'We should be managing the supply chain as if corporate borders do not exist,'</b> McNerney said. <i>Boeing did not have adequate systems and people in place 'to see and manage as well as we could have,' he added. "We still believe that the global-supply-chain model is the way to do this thing. <b>We just didn't get it right the first time. We're on the bleeding edge of taking a big, big step that was just a quarter step too far.'</b>"</i>	On a modular enterprise architecture's learning to integrate its supplier relationships.
22 May 2008	<i>Chicago Tribune</i> , "Boeing Positive Heading Forward " (David Griesin g)	Pat Shanih an, head of 787 progra m, <i>The Boeing Compa ny</i>	Firm	$\alpha$	"In some aspects it will be a photo finish, but <b>I'm highly confident</b> we will get power on in <b>June,</b> " Shanihan said.	On a modular enterprise architecture's over-promise and under-delivery
22 May 2008	<i>Flight International</i> , "Airbus Set to Roll Out Carbonf ibre A350 Fuselag e Demons trator," (Max Kingsle y-Jones)	Didier Evrard , <i>Airbus</i> A350 progra mme chief	Firm	$\beta$	"The A350 fuselage's structural design comprises carbonfibre panels and frames, together with metallic cross-beams – a departure for <i>Airbus</i> which has traditionally used aluminum for the bulk of the fuselage structure. <b>'We need to have a very mature technology both from the technical and the manufacturing point of view,'</b> says A350 programme chief Didier Evrard.	On an integral enterprise architecture's technology strategy

<p>23 May 2008</p>	<p><i>Bloomberg</i>, “Airbus at ‘Less Than Zero’ Value Still Loses Altitude ” (Andrea Rothman)</p>	<p>Louis Gallois , EADS CEO</p>	<p>Firm- Investor</p>	<p><math>\beta</math></p>	<p>“<i>Airbus SAS</i>, the world’s largest commercial aircraft maker, is valued at <b>‘less than zero’</b> after this year’s 32% drip in the shares of parent <i>EADS</i> according to <i>Lehman Brothers Holdings Inc.</i> analyst Joe Campbell. <b>‘The market is viewing Airbus as a liability, rather than an asset,’</b> said Campbell, 62, who is based in New York and has ranked among the top five aerospace analysts for six consecutive years in an <i>Institutional Investor</i> magazine poll.</p> <p><i>EADS</i>, on May 13 reported an <b>additional three-month delay in deliveries of the A380</b> superjumbo jetliner, which was already two years behind schedule. <i>Airbus</i> is also <b>six months to a year late on the A400M</b> military transport.</p> <p>The planemaker sought in part to <b>shift investment for new planes to subcontractors</b> who would buy <i>Airbus</i> plants. It chose local companies in France and Germany that <b>lacked the capital to shoulder the risk</b> and the plan fell apart.</p> <p><b>Investors’ low valuation of Airbus is ‘a bizarre outcome for a large company,’</b> Campbell, whose firm is an investment bank for <i>EADS</i>, said in an interview. ‘It reflects both the industrial challenges of engineering and making big airplane programs, and <b>particularly and primarily, the euro trading at \$1.50 or \$1.60.’</b> He rates the shares <b>‘equal weight.’</b></p> <p><b><i>EADS’s non-Airbus</i> assets are worth 15 or 16 euros a share, or about where the stock is trading,</b> estimates Campbell. <i>Non-Airbus</i> businesses contribute a third of the company’s sales, which totaled 39.1 billion euros in 2007. Scott Babka and Rupinder Vig at <i>Morgan Stanley</i> in London say <b><i>EADS</i> without Airbus is worth 13.5 euros a share. Getting an aircraft maker for free might provide a floor for the stock,</b> according to Vig. In an interview, [<i>EADS</i> CEO] Gallois agreed with Lehman’s Campbell about <i>EADS’s</i> valuation. ‘He’s right,’ Gallois said. <b>‘Either you’re getting Airbus free or the other activities are free. In any case, the shares don’t represent the company’s value. Our shares are very linked to the dollar – I’d say too much [linked to the dollar].’</b>”</p> <p>When <i>EADS</i> was founded in 2000, <b>management promised 10 percent margins on earnings before interest and taxes by 2003. The best so far was 7.3 percent in 2005.</b> CEO Louis Gallois in March 2008 forecast <b>margins on earnings before interest and tax at Airbus ‘in the mid-single digits’ through about 2011.</b> ‘As long as Gallois and Enders and people at the top of the company can’t give guidance that EBIT margins will go above 5 percent, there’s not a lot of incentive to buy the</p>	<p>On an integral enterprise architecture’s overinvestment (as a mixed duopolist) and subsequent valuation</p>
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					<b>shares,'</b> said Klaus Breil of <i>Cominvest Asset Management</i> in Frankfurt.	
28 May 2008	<i>International Herald Tribune</i> , "WTO Ruling on Subsidiaries for Airbus Jets May Ripple to Other Countries" (Mark Landler)	Richard Aboulafia, <i>Teal Group</i>	Industry Analyst	$\alpha$ & $\beta$	"Aboulafia said he figured that the heaviest expenditures at <i>Airbus</i> for the A350 – around <b>2013</b> , when the plane is scheduled to be introduced – would coincide with the <b>low ebb in its production cycle</b> . By then, he predicted, <i>Boeing</i> will turn out <b>447</b> planes a year, compared with <b>296</b> for <i>Airbus</i> ."	On a modular industry analysts' systematic inability to predict long-term operations (i.e. assumption of instability of integral enterprise architectures)
28 May 2008	<i>BusinessWeek</i> , "Facetime with <i>Boeing's</i> Jim McNerney" (Maria Bartiromo)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm	$\alpha$	<p><i>Boeing</i> Chairman and CEO Jim McNerney has <b>taken his share of hits lately</b>. The ambitious 787 Dreamliner is about 15 months behind schedule, and in late March, <i>Boeing</i> lost out on a multi-billion contract to build a fleet of refueling tankers for the U.S. Air Force. <i>Boeing's</i> stumbles have <b>caught many by surprise</b>, primarily because McNerney, a disciple of former <i>GE</i> CEO Jack Welch, is <b>held in such high regard</b>.</p> <p><i>Boeing</i> stock went from 100 to 75 because of delays with the Dreamliner, How did you allow that to happen? 'Well I would characterize the 787 as <b>bleeding-edge innovation, all right?</b> The good news is we have market acceptance for this airplane that has been better than any airplane ever marketed.'</p> <p>Do you have any regrets about the way you handled it? Some people say: 'Look, he's a high-profile manager and highly regarded. How come he was so low-profile during such an important time for the company?' 'I don't think the guys in Seattle would characterize me as low-profile regarding my involvement with the 787. Having said that, you can always look back on these situations and say if I'd moved two months earlier here or a month and a half earlier there... we probably could be in slightly better shape... I can learn from that.'</p> <p>What kind of confidence do you have that the targets you've got for the 787 will be met? 'We have a <b>high level of confidence</b>. It's still the most</p>	On a modular enterprise architectural models of over-promise and under-deliver



					<p><b>successful introduction in aviation history.'</b></p> <p>I was talking with a money manager who has a position in <i>Boeing</i> stock, and he said: <b>'The dollar has put enormous pressure on Airbus, and yet they're outselling Boeing in the smaller end of the market.'</b> How is that possible? Why haven't you been more successful there? <b>'The fact is our sales levels are about the same in the narrow-body segment... so I wouldn't characterize us as losing out in the narrow-body side. But our competitor has been doing a good job there.'</b></p> <p><b>You've got roughly \$12 billion in cash right now.</b> A lot of people might say: 'That's about \$16 a share. We would like a high dividend or more acquisitions.' Are there any plans to use that cash differently? <b>'We are mindful of the employees first – in terms of pension plans and health-care plans – and our investors.</b> But you have to remember, <b>aerospace is a lumpy industry.</b> I'm a pretty conservative manager who likes to keep probably more than enough cash around.'"</p>	
1 June 2008	<i>Seattle Post-Intelligencer</i> , "Boeing Says It can Handle Airline Fuel Crisis – For Now" (James Wallace)	Scott Carson, President & CEO, <i>Boeing Commercial Airplanes</i>	Firm	$\alpha$	<p>"Although sky-high aviation fuel prices have thrown a scare into the airline industry not since the horrendous 9/11 downturn that resulted in massive layoffs at <i>The Boeing Company</i>, the leader of the company's jetliner business said that <b>the aerospace giant will be able to manage its way through the current crisis without much impact</b> – at least for now. <b>'In terms of the impact on us, it is all very manageable right now,'</b> Scott Carson, president and chief executive of <i>Boeing Commercial Airplanes</i>, said in an interview. <b>'It is all consistent with patterns we have seen in the past and we have provided for those patterns,'</b> added Carson.</p>	On a modular enterprise architecture's ability to see and understand exogenous events.
4 June 2008	<i>Spirit Aerosystems</i> Investor's Conference	Rick Schmidt, CFO, <i>Spirit Aerosystems</i>	Supplier	$\alpha$ & $\beta$	<p>"Potential Headwinds for Margin Expansion:</p> <ul style="list-style-type: none"> <li>• <b>Lower margins on 787 first 500-unit block</b></li> <li>• <b>Cyclical downturn in large commercial deliveries."</b></li> </ul>	On the cost of instability in a modular enterprise architecture.
5 June 2008	<i>Seattle Post-Intelligencer</i> , "Airbus says It Won't Repeat Errors,"	John Leahy, <i>Airbus</i> COO	Firm	$\beta$	<p><b>"You don't bite off more than you can chew,"</b> Leahy said in an interview. 'I think we learned that on the A380,' he added. <b>'It was a very painful tuition. We needed to have a slower ramp-up, better program management and better coordination of the supply chain. Boeing didn't learn those lessons from us, and so it's repeating the mistakes with the 787. We have been watching very carefully.'</b></p>	On an integral enterprise architecture's approach to stability,

	Delays” (James Wallace )				<p><b>Airbus plans a much less ambitious production ramp-up on the A350 than Boeing initially proposed for the 787</b>, Leahy said. <i>Boeing</i> recently revised [its original] target and <b>will ramp up 787 production at a slower and more traditional pace</b>. Leahy said he and others at <i>Airbus</i> had believed for some time that <i>Boeing</i> would never be able to meet its initial 787 production targets. ‘We thought their ramp-up was way too ambitious,’ he said. ‘Our people said they would not be able to match that five years later on the A350, and it turned out that maybe we were right.’ He said <i>Airbus</i> has built ‘cushions’ into the A350 schedule to allow for the kinds of development and production issues that always crop up on new airplane programs. ‘It is always more difficult in reality than sitting around in meetings and deciding how fast things can get done.’ ‘We will have a much slower ramp-up than <i>Boeing</i> had with the 787, with extra padding built in for our program based on our experience with the A380 and what we learned from (<i>Boeing</i>) on the 787,’ Leahy said. ‘I think we will be right on time. I’m hoping even a bit early.’ Leahy said <i>Boeing’s</i> delays on the 787 mean the competing A350-900 will be <b>getting to market at almost the same time</b> as the 787-9, and that’s where the <b>real battle between the planes will be fought</b>. Because of the delays, <i>Boeing</i> recently said delivery of the bigger 787-9 has been pushed back until 2012, or <b>just one year</b> before the A350 arrives. The A350-900 will be the first version that Airbus delivers, in 2013. The smaller A350-800 will come next, followed by the biggest A350-1000 in 2015. Leahy long maintained that <b>Boeing made the 787-8 too small</b>. ‘The 787-8 is too small for a widebody plane,’ Leahy said. ‘I’m even discovering that my A350-800 might be a bit small. Most airlines are pushing for bigger capacity.’</p> <p>‘<i>Airbus</i> has an A350-1000 that <b>absolutely kills the 777-300ER</b>,’ he said, ‘<b>and they know it.</b>’”</p>	and the modular enterprise architecture’s predisposition to ‘over-promise and under-deliver’.
9 June 2008	<i>Reuters</i> , “ <i>Boeing’s</i> 787 Dreamliner First Flight On Schedule,” (Robin Paxton)	Mike Bair, VP, Business Strategy & Marketing, <i>Boeing Commercial Airplanes</i>	Firm	α	<p>“<i>Boeing Co.</i> said on Monday its 787 Dreamliner would make its first flight in the fourth quarter of 2008, repeating the revised schedule for the new airplane’s launch announced in April. The company <b>clarified its schedule after Mike Bair</b>, vice-president of business strategy and marketing at <i>Boeing Commercial Airplanes</i>, said on Sunday <b>the plane would fly ‘by the end of the summer.’</b> He did not say that the schedule had changed.”</p>	On a modular enterprise architecture’s tendency to overpromise and underdeliver.
11	<i>The</i>	Elmer	Suppli	α	<p>“<i>Vought</i> Chief Executive Elmer Doty said today that</p>	On a

<p>June 2008</p>	<p><i>Seattle Times</i> "Vought Chief Elmer Doty Explains Why Company Pulled Out of Part of Boeing's 787 Program," (Dominic Gates)</p>	<p>Doty, CEO, Vought</p>	<p>er</p>	<p><b>his company pulled out</b> of one part of <i>Boeing's 787 Dreamliner</i> program <b>because it didn't have direct management control over other suppliers.</b> Doty compared the complicated supply chain that must deliver parts for a new jet to a <b>relay race where each member of the team must run in sequence.</b> 'A year ago ago, definitely we were at the back of the pack,' Doty said. 'We've moved to the middle of the pack, and we're moving up. <b>The thing about this race is, it only counts when everyone gets across the finish line.</b>'</p> <p><i>Boeing did not disclose what it paid Vought</i> for the ownership stake, which leaves <i>Boeing</i> and <i>Alenia</i> of Italy as 50-50 partners in the joint venture. Tuesday in Charleston, Bob Noble, vice president in charge of <i>Boeing's 787</i> supply chain, <b>insisted to skeptical journalists that Boeing hadn't bought Vought out Global Aeronautica (GA) wasn't working well.</b> 'It was not performance-related,' said Noble.</p> <p>Enzo Caiazzo, <i>GA's</i> chairman and also chief operating officer of <i>Alenia North America</i>, went further and insisted that <b>Vought's four-year participation in GA could not be considered a failure because it had created a state-of-the-art airplane manufacturing plant on a previously empty site.</b></p> <p>Speaking in a phone interview from <i>Vought</i> headquarters in Dallas, Texas, Doty gave his take on why it happened. Doty said <b>Vought's role in the GA venture became problematic when the supply chain broke down and work supposed to have been completed at other major suppliers traveled to Charleston for GA to finish.</b> <i>GA</i> takes large sections from <i>Alenia</i> as well as from <i>Fuji</i> and <i>Kawasaki</i> in Japan and integrates them with a lot of <i>Boeing</i>-furnished parts. <b>The problem was that Vought had no control over the procurement of those large pieces,</b> Doty said. <i>Boeing</i>, as the prime contractor, was responsible for managing those major partners. <b>To manage the traveled work efficiently, you need that responsibility,'</b> Doty said. Though the half share in <i>GA</i> accounted for less than 10 percent of <i>Vought's 787</i> program revenue, he said, 'It was a huge distraction and difficult to execute' because <i>GA</i> lacked that partner oversight role. 'That is best done by the prime,' Doty said. <b>After discussions with the 787 leadership team, Boeing agreed.</b></p> <p>Initial customer payments won't begin to flow until at least 14 months later than originally planned and after that more slowly than anticipated as <b>Boeing holds down the new jet's delivery rate. Boeing paid Vought a cash advance of \$122 million in March as partial restitution for that loss of cash</b></p>	<p>modular enterprise architecture's dis-integration.</p>
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					<p><b>flow. Further payments are being discussed.</b> A person familiar with the negotiations said <b>Doty played hardball with Boeing, insisting that the company wouldn't continue to build parts – grindin the whole 787 supply chain relay race to a halt – unless Vought got paid.</b> In the interview today, Doty would say only: <b>'It's a negotiation. Boeing is my biggest customer.'</b></p> <p><b>With sales of the Dreamliner sky high, the program will likely deliver big profits in time. But with revenue flow pushed out, for now all the suppliers are hurting as they continue to spend big. Struggling financially, Vought secured \$200 million in loans in the first quarter.</b> 'Of course, it's a good idea to be on the program,' Doty said. <b>'You're talking to someone who just arranged to take out additional debt and worked hard to find ways to finance this program.'</b> The money from the <i>GA</i> sale will help, too.</p> <p><b>Longer term, private equity firm the Carlyle Group, which owns Vought, is looking to sell the company. Possible buyers include Spirit Aerosystems of Wichita, Kan., or conceivably Boeing itself.</b> Doty said he couldn't comment on prospective buyers. <b>'We were for sale the day I walked in,' said Doty, who became CEO in February 2006. 'My job is to continue to build.'</b></p>	
12 June 2008	<i>The Seattle Times</i> , "Boeing's Dilemma: If Company Loses Tanker Appeal, Should it Throw in the Towel?" (Dominic Gates)		Firm	$\alpha$	<p><b>"The argument that U.S. jobs should factor into the contract decision goes against Boeing's long-standing support of free trade and globalization.</b> It's also contrary to the view of Boeing's major defense rivals – and not only <i>Northrop</i>.</p>	On a modular enterprise architecture's inconsistent logic, when facing an integral enterprise architecture.
13 June 2008	<i>The Seattle Times</i> , "Boeing Dreamliner's From Ent Gets	Terry George, 787 Director of Operations, Spirit Aerosy	Supplier	$\alpha$	<p><b>"Terry George, Spirit's 787 director of operations, attributed the success here to the company's Boeing heritage, its familiarity with Boeings' tools and processes, and the experience that managers here, including himself, gained in past stints in Everett. 'We had a lot of Boeing DNA,' said George."</b></p>	On an integral relationship as success within a modular enterprise

	Finishing Touches at <i>Spirit Aerosystems</i> " (Dominic Gates)	<i>stems</i>				architecture.
13 June 2008	<i>The Seattle Times</i> , "Boeing Dreamliner's From Ent Gets Finishing Touches at <i>Spirit Aerosystems</i> " (Dominic Gates)		Supplier	$\alpha$	" <i>Spirit</i> is erecting a plant in Kinston, N.C., to build the A350 fuselage-panels, but will assemble them in Europe. Ron Brunton, executive vice president and chief operating officer, said it isn't clear if <i>Spirit</i> will own that assembly plant. Given that guarded response, it seems possible <i>Spirit</i> workers may end up doing assembly at an Airbus location."	On a modular enterprise architecture, learning to work within an integral enterprise architecture.
18 June 2008	CNN, "EADS CEO – New Airbus Cost Saving Plan Not Ready Yet", (David Pearson)	Louis Gallois, EADS Chief Executive	Firm-Investor	$\beta$	"European Aeronautic Defence & Space Co. Wednesday said it is still working on a package of additional cost-cutting measures for its commercial aircraft subsidiary Airbus, and hinted it might miss its deadline of rolling out the plan by the summer. The raft of additional measures to supplement the Power8 cost-saving and restructuring program announced in early last year and aimed at achieving cost savings of EUR 2.1 billion by 2010 'will be ready when it's ready,' EADS Chief Executive Louis Gallois told a press luncheon. He added, 'I'm not going to let my calendar be influenced by pressure from outside the company.'"	On the patience of capital in an integral enterprise architecture.
18 June 2008	CNN, "EADS CEO – New Airbus Cost Saving Plan Not Ready Yet", (David Pearson)	Louis Gallois, EADS Chief Executive	Firm-Investor	$\beta$	"Gallois said that once it has carved out two industrial facilities in France into a separate subsidiary, Airbus will have four tier-one suppliers of aerostructures in France: EADS' subsidiary Socata, Sogerma, Latecorere SA and the Airbus entity that will initially be 100% owned by EADS. 'Maybe in the future we will look for a solution involving a certain consolidation of these tier-one suppliers. I think it's desirable,' the CEO said."	On the way an integral enterprise architecture restructures its supply base.
18 June 2008	<i>Chicago Tribune</i> , "Boeing, Airbus	George Shapiro, analyst	Firm-Customer	$\alpha$ & $\beta$	"Orders are starting to slow for planemakers Boeing Co. and Airbus SAS after three straight years of record-shattering sales. What's unclear is whether airlines are taking a breather after splurging on	On the modular nature of the

	<p><i>Jet Orders Tailing Off</i>, (Julie Johnsson)</p>	<p>, <i>Citi Investment Research</i>; Randy Tinseth, VP Marketing, <i>Boeing Commercial Airplanes</i>; John Leahy, COO, <i>Airbus</i></p>		<p>more than 7,300 new aircraft, <b>or</b> whether they are headed for a global <b>shakeout that will force them to cancel or defer</b> plane orders on a large scale.</p> <p>Analyst George Shapiro of <i>Citi Investment Research</i> sees <b>early signs that a sharp downturn looms</b> for the planemakers and the companies that supply them. The aerospace sector to date has been largely unaffected by the twin forces squeezing airlines: an oil shock and slowing economy. Shapiro predicted in a research note Tuesday that <b>‘over the next several months, orders will fall off sharply, cancellations and deferrals will increase.’</b> He thinks <b>the next downturn could be the steepest since the 1989 market correction</b>, when about <b>one-third of Chicago-based Boeing’s order backlog was canceled.</b> <i>Boeing</i> and <i>Airbus</i> say they are closely monitoring oil’s impact on global travel but believe they are <b>protected by a record backlog of orders that will keep production lines at both companies humming for the next seven years.</b> ‘This is going to create great strain on the airlines,’ Randy Tinseth, vice president for marketing with <i>Boeing’s</i> commercial airplane division, told the <i>Tribune</i> last week. <b>‘We’re watching it very closely.’</b> Other analysts downplay the risk to <i>Airbus</i> and <i>Boeing</i>. <b>‘With such deep backlogs, whether a particular customer receives delivery of an aircraft next year or in three years is of little consequence to the [manufacturers],’</b> said Brian Studioso, aerospace analyst with <i>CreditSights Inc.</i>, in a report Tuesday. Shapiro believes foreign carriers will widely adopt the survival tactics that have taken hold in the U.S.: price hikes, parked aircraft and cash preserved at all costs. <b>‘Usually, airline profitability takes two years to go from peak to a loss, but it will likely be only one year this time, increasing the risk of a sharp downturn,’</b> Shapiro wrote.</p> <p><b>Most affected will be orders for smaller jets,</b> known as narrow-bodies, that carry passengers over short hops, Shapiro said. Orders for larger aircraft have held up in other industry downturns and this time will be buoyed by late deliveries of <i>Boeing’s</i> 787 Dreamliner and <i>Airbus’</i> A380 superjumbo jets. While new narrow-body aircraft are more fuel-efficient than older models, <b>the savings aren’t great enough to offset the costs of financing the new jets,</b> said Vince Kolber, president of <i>Residco</i>, a Chicago-based firm that invests in aircraft. Shapiro thinks that <b>cash-strapped carriers will do the math and decide it is cheaper to stick with older planes,</b> reducing the volume of replacement orders at the manufacturers.</p> <p>But <i>Boeing</i> isn’t taking the current situation lightly. <b>Its managers meet weekly to match current and future sales with production schedules,</b> a practice it</p>	<p>global airline industry in creating the boom and bust order and delivery cycle; as well as the modular nature of <i>Boeing</i>.</p>
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					started during the airline collapse following the Sept. 11 attacks. <b>‘The important thing is that we actively manage our production system,’</b> Tinseth said. <b>Airbus, too actively manages its order book,</b> Chief Operating Officer John Leahy told the <i>Tribune</i> last week via e-mail. <b>‘So far, [Airbus] is handling the airline crisis well, but if the fuel price bubble were to soar to \$200 per barrel, then all bets would be off,’</b> he wrote.	
19 June 2008	<i>Business Week</i> , “How Big is Boeing’s Big Win?” (Keith Epstein)		Government	$\alpha$	“‘We’re going to the mat,’ vows Representative Norm Dicks (D-Wash.). Their quest: <b>Round up enough congressional votes to stymie funding for the tankers unless Boeing gets the deal.</b> ”	On a modular enterprise architecture’s relationship with government
19 June 2008	<i>Forbes</i> , “EADS Shares Shrug Off Boeing Victory” (Lionel Laurent)	Zafar Khan, Analyst, <i>Societe Generale</i>	Investors	$\alpha$ & $\beta$	<p>“It was business as usual for <i>European Aeronautic Defense and Space</i> share on Thursday, closing down – but in line with the sector – after <i>Boeing</i> clawed back a victory over a disputed fuel-tanker contract with the <i>United States Air Force</i>. Shares in <i>European Aeronautic Defense and Space</i> fell 2.5%, or 34 euro cents (53 cents), to 13.21 euros (\$20.48), in Paris on Thursday. But this was not an isolated plummet: <i>BAE Systems</i> closed down 2.8%, in London, while component-supplier <i>Meggitt</i> lost 2.1%. The European aerospace sector is squeezed on all sides by eye-wateringly high oil prices, a weak dollar and the imminent prospect of a recession in the aviation sector. So it was not surprising to see <i>EADS</i>’s stock perform in line with its peers, despite fresh doubts over a <i>U.S. Air Force</i> contract awarded to <i>EADS</i> partner <i>Northrop Grumman</i> that could now end up going to Boeing. ‘In our view, this is not the big issue in people’s minds at the moment,’ said Zafar Khan, analyst with <i>Societe Generale</i>. <b>‘Its more a sentiment issue than hard numbers.’</b></p> <p><i>Boeing</i>’s shares closed up 3.1%, to \$76.95 in New York on Thursday. <i>Northrop Grumman</i>, its chief competitor for the fuel-tanker, was not far behind: its shares closed up 1.9%, to \$71.35.”</p>	On the market’s relative valuation of a modular and an integral enterprise under a common event.
19 June 2008	<i>Bloomberg News</i> , “Airbus Speeding, Not Slowing, Production” (Andrea Rothman)	Louis Gallois, CEO, <i>EADS</i>	Firm	$\beta$	<p><b>‘Airbus, the world’s largest maker of commercial planes, said it will continue increasing production even as airlines under pressure from high oil prices may defer or cancel aircraft orders. Airbus is ramping up production rates until it can turn out 40 single-aisle planes and as many as 11 widebody airliners a month by the end of 2010,</b> Louis Gallois, chief executive of <i>Airbus</i>, said Wednesday. <b>‘For now, we don’t see any movement in that sense, but we’re following the market very closely,’</b> Gallois said. <b>‘At the last shareholder committee meeting of Airbus, we</b></p>	On an integral enterprise architecture’s need / ability to continually expand.

	n)				<p><b>looked at the airlines, one by one. And right now there's nothing that leads us to panic for airlines.'</b> <i>Airbus</i> has a backlog of 3,655 planes, or more than six years of work. It delivered a record 453 planes to airline customers last year and is planning to deliver about <b>470</b> this year. At least 24 airlines have quit operating or filed for bankruptcy protection this year as record fuel prices eat into earnings and a global tightening or credit slows economies. Airlines may report combined losses of <b>\$6.1 billion</b> this year, the worst since 2003, the International Air Transport Association said earlier this month. Gallois also said that the <i>European Aeronautic Defence and Space Co.</i>, <i>Airbus'</i> parent, is still grappling with the challenges of meeting production schedules on the A380 superjumbo and the A400 military transport. The company should get those issues under control in 2008, he said."</p>	
19 June 2008	<i>Bloomberg News</i> , "Airbus Speeding, Not Slowing, Production" (Andrea Rothman)	Louis Gallois, CEO, <i>EADS</i>	Firm	$\beta$	<p>"Gallois said <i>Airbus</i> job cuts in <b>Germany have been slower</b> in coming than in France, Spain and the U.K. because <b>labor laws</b> make the process of letting people go more cumbersome."</p>	On an integral enterprise architecture's internal heterogeneity.
20 June 2008	<i>Aviation Week</i> "Boeing Reconsiders Plan for 787-10" (Robert Wall)	Scott Carson, President & CEO, <i>Boeing Commercial Airplanes</i>	Firm	$\alpha$	<p>"The 787-10, although not formally launched, would be a double-stretch of the basic 787-8 and the top end of that aircraft family, But <i>Boeing Commercial Airplanes</i> President Scott Carson says <b>the paramount consideration now is whether the double-stretch concept makes sense.</b> Carson, however, says the company is '<b>not threatened</b>' by <i>Airbus</i> activities.</p> <p>One of the <b>challenges</b> for the Seattle manufacturer will be <b>finding the industrial resources to birth the twin-widebody in the same timeframe as the 737 replacement.</b>"</p>	On a modular enterprise architecture's inability to perform long-term product strategy.
20 June 2008	<i>Aviation Week</i> "Analysis: 25% of Aircraft Orders at Risk" (Joseph C. Anselmo)	Robert Stallard, director, <i>Macquarie Capital</i>	Investors	$\alpha$	<p>"A new analysis finds that a quarter or more of the commercial aircraft backlog at <i>Boeing Co.</i> and <i>Airbus</i> could be at risk as high oil prices continue to batter airlines. The two aircraft builders have taken comfort that the hardest-hit segment of the industry – U.S. airlines – accounts for just 12% of their backlogs. But Robert Stallard, a director at <i>Macquarie Capital</i>, <b>warns that orders from undercapitalized startups in Asia and Europe and carriers with overly aggressive growth plans also are at risk. He believes 25-30% of the backlog of commercial aircraft orders could be deferred or canceled.</b> 'The question that has yet to be answered</p>	On a modular enterprise architecture's inability to see long-term trends due to its myopia.



					<p>is not whether there will be a downturn, but how bad it will be,' says Stallard.</p> <p>There are <b>two schools of thought</b> on how to answer. <b>Optimists believe that with backlogs equal to seven years worth of production, Boeing and Airbus can afford to lose orders and still make it to the industry's next up-cycle with minimal pain.</b> They argue that demand for air travel should continue to grow in places like China and India, making up for declines in other regions. <b>Indeed, Boeing refuses to lower its 20-year demand outlook, even though the forecast is based on oil selling at a fairy tale price of \$70-80 per barrel when in reality it's closed ro \$140.</b> The second, more negative answer is that a step change in global energy demand has created a permanent era of high prices and sent the airline industry into uncharted territory. While many of the challenges of the last downturn - overcapacity, inefficiency, labor costs – were within management's span of control, this time there is no obvious remedy. As cash reserves rapidly dwindle, all choices will have to be draconian.”</p>	
20 June 2008	Boeing website	Pat Shanahan, VP Program, Boeing Commercial Airplanes	Firm	$\alpha$	<p>“In <b>completing the Power On sequence</b>, we have verified both that the electrical power distribution system is installed as designed and that it functions as intended.”</p>	On a modular enterprise architecture's achievement of a milestone, 5 months later than originally planned.
23 June 2008	ATW, “Airbus, Boeing Committed to Biofuels but Differ on Target Date” (Sandra Arnoult)	Renee Martin - Nagle, Airbus North America VP; Billy Glover, MD Environmental Strategy, Boeing	Firm	$\alpha$ & $\beta$	<p>“Both [Airbus'] Martin-Nagle and Boeing MD-Environmental Strategy Billy Glover see a bright future for biofuels, although they <b>differed somewhat on a timeline</b>. ‘It's a <b>long process</b>,’ Martin-Nagle said. ‘<b>We have to move through a testing phase and then it has to be proved</b>. I'd say 8-10 years.’</p> <p>Glover, by contrast, told attendees, ‘<b>I'm quite a bit more optimistic</b>.’”</p>	On the contrasting rates of technological innovation which underly modular and integral enterprise architectures
23 June	Business Week	Tom Enders	Firm	$\beta$	<p>“The French also say they are bearing the brunt of the so-called Power 8 restructuring plan to slash \$7.5</p>	On the difficulty

2008	“A Granco-German Civil War at <i>Airbus?</i> ” (Carol Matlack)	, CEO, <i>Airbus</i>			billion in operating costs by 2010. As of March 31, <i>Airbus's German operations have achieved only 23%</i> of the cost reduction target, while the <i>French operations had achieved 39%</i> . ‘The social climate is not good,’ <i>Airbus</i> boss Tom Enders acknowledged in an interview published June 23 in the French business newspaper <i>La Tribune</i> . ‘ <b>It’s impossible to change everything at the same time and at the same speed. To have a total, permanent equilibrium, as some of our unions want, is absolutely unrealistic,</b> ’ Enders said. Enders told <i>La Tribune</i> that he understood the concerns in Toulouse about the large number of Germans working in the factory. ‘I asked the same thing when I arrived last year,’ he said. ‘ <b>But the sad reality is, the lack of integration in <i>Airbus</i>, caused by an organization of work along national lines as well as different kinds of training and language problems,</b> forced us to bring a large number of Germans’ to complete the work that had been started in Germany. As for moving some aircraft cabin work to Toulouse, Enders said, ‘ <b>It was a decision that went against the traditional division of labor, and it proves that the management is ready to make pragmatic decisions if necessary.</b> ’”	of maintaining integrity.
24 June 2008	<i>Boeing</i> website	Rick Stephens, Senior VP, Human Resources and Administration, <i>The Boeing Company</i>	Firm - Employee	α	“ <i>The Boeing Company</i> is introducing a new retirement benefit program for <b>nonunion</b> employees hired or rehired on or after Jan. 1, 2009. ‘We are changing our retirement program for nonunion new hires for several reasons,’ said Rick Stephens, senior vice president, <i>Boeing</i> Human Resources and Administration. ‘This new approach addresses new employee preferences for retirement programs that offer <b>flexibility and portability</b> and responds to <b>market trends and practices of peer companies</b> . At the same time, it allows us to <b>better manage our retirement plan expenses and reduce financial risk.</b> ’”	On a modular enterprise architecture’s continued disintegration of the firm-labor link.
25 June 2008	<i>Reuters</i> , “ <i>Boeing</i> Shares Plummet After <i>Goldman</i> Cut” (Esha Dey)	Richard Safran, analyst, <i>Goldman Sachs</i>	Investor - Firm	α	“ <i>Boeing Co.</i> shares fell to a <b>two-year low</b> on Wednesday after <i>Goldman Sachs</i> cut its rating on the airplane maker and defense company to ‘sell’ from ‘neutral’, reflecting falling orders, problems facing airlines and high fuel prices. The stock fell <b>5.5 percent – its biggest one-day drop in more than five years</b> – to \$70.68 on the New York Stock Exchange, its lowest point since February 2006. The stock is <b>down 34 percent from its all-time high</b> of \$107.80 last July, hurt by the delays on its 787 Dreamliner program and general concern about high oil prices. ‘We expect the weak macroeconomic backdrop and record fuel prices to hurt airlines and translate to a <b>significant slowing in the order book,</b> ’ said <i>Goldman</i> analyst, Richard Safran in a research note published on Wednesday. He put a <b>\$60 price target on the stock for the next 12 months,</b>	On a modular enterprise architecture’s non-systemic, short-term view on valuation

					but said there was substantial <b>risk the stock could go lower</b> . Safran, who downgraded the whole commercial aerospace sector to 'cautious' from 'neutral,' expects <b>orders for the sector to drop 50 percent in 2008 and another 50 percent in 2009</b> as airlines focus on restoring profitability through aggressive capacity cuts and price increases. 'Aerospace stocks are off nearly 30 percent from October highs, but <b>history indicates the stocks could fall another 20 percent or more</b> as we think the market is not factoring in that the combined effect of accelerated crude prices, a weak economy and rapidly deteriorating airline fundamentals could pose a worse problem for the aerospace group than 9/11 and SARS,' wrote Safran. He said there is <b>more risk to the 787 program than is priced in as the program has yet to even enter flight test, where historically most issues on development aircraft are found</b> . Other aerospace suppliers also fell sharply on Wednesday, including <i>Spirit Aerosystems Holdings Inc.</i> "	
25 June 2008	<i>Wall Street Journal</i> , "Boeing, Boeing, Gone" (David Gaffen)	Richard Safran, analyst, <i>Goldman Sachs</i>	Investor-Firm	α	"Shares of aerospace giant <i>Boeing Co.</i> have been weak in the last few months, and they're getting weaker in early trading Wednesday, down 5% after <i>Goldman Sachs</i> put the company on its ' <b>conviction sell</b> ' list, <b>a move that's hard to misconstrue</b> . The stock is down 34% since a 52-week high of \$107.83 and <i>Goldman</i> says the economic environment is none-too-friendly for a maker of large aircraft. 'We expect the weak macroeconomic backdrop and record fuel prices to hurt airlines and translate to a significant slowing in the order book, driving further <b>multiple compression</b> ,' writes analyst Richard Safran. He adds that delivery rates and margin expansion will suffer, and added that the Dreamliner <b>787 program contains more risk than 'is currently priced in as the program has yet to even enter flight test.'</b> "	On a modular enterprise architecture's non-systemic, short-term view on valuation
25 June 2008	<i>Wall Street Journal</i> , "Boeing, Boeing, Gone" (David Gaffen)	<a href="http://Marketbeat@wsj.com">Marketbeat@wsj.com</a> (blog)	Investor-Firm-Employees	α	"I am highly suspect of the <b>motives of Goldman Sachs</b> report by Richard Safran." [Comment by John Hannahs].  "this is bs, <b>just 3-days before boeing employies will get there share value</b> , they analyst and boeing ceo give the ok to <b>trash this stock</b> . There is a <b>big payoff going on !</b> but again not for co employies" [Comment by dave].  "I would like to thank Mr. Safran @ <i>Goldman Sachs</i> for his most <b>timely downgrading</b> of <i>Boeing</i> . Now my <i>Boeing</i> Shared Value Trust award will be less. We had a June 30 stock price that would set the amount of the award. Perhaps a little boeing birdy told him hummmmmmm?????" [Comment by satman].  "Watch for <b>another BA stock buy-back</b>	On a modular enterprise architecture's potential zero-sum game, due to allegations from unconfirmed employees.

					<p>announcement around the time 2<sup>nd</sup> quarter earnings are released. <b>BA seems to drop in value before Share Value Trust payout and then the company announces a major buy-back.</b> [Comment by Former BA Analyst].</p> <p><b>“Boeing had a record last quarter</b>, record boeing sales/backlog, dreamliner on track/power on, and GAO vindication. <b>Goldman Sachs downgrade is pathetic</b> like the way they look after their own finances.” [Comment by Richard].</p> <p>“Wall Street Gerbils and Goldman Sucks just put their hands on the scales they must want to <b>load up at \$65 and sell at \$100 this fall.</b>” [Comment by Richard].</p> <p><b>“Two years ago our last Share Value award was tanked by a huge write down by Boeing the day before the award.</b> Now this? Maybe Mulder and Scully should come to investigate this conspiracy theory.” [Comment by I Believe].</p> <p><b>“Look out Ba at the next contract.”</b> [Comment by nu know].</p>	
26 June 2008	<i>The Seattle Times</i> , “Boeing Stock Price Slumps Days Before Magic Bonus Day” (Dominic Gates)		Investors-Firm-Employees	α	<p><b>“Boeing shares slumped nearly 7 percent</b> Wednesday to a <b>30-month low</b> – and even employees who don’t buy company stock may have lost some money as a result. After a <i>Goldman Sachs</i> analyst reduced his rating on the stock from ‘neutral’ to ‘sell,’ <i>Boeing</i> shares closed down \$5.15, or 6.9 percent, to \$69.64. The downgrade came as 80,000 <i>Boeing</i> current and former workers in Washington state await word on a company incentive program that hinges on what the average share price will be on Monday. This time around, the <b>trigger price is \$54</b>. If the average share price on Monday is \$70, the <b>average payout would be about \$1,493 in company stock</b>, a <i>Boeing</i> spokesman said. <i>Boeing’s</i> Share Value Trust pays <b>nonexecutive employees once every two years</b>, assuming the stock price is above a predetermined threshold. Employees who <b>worked the entire four years</b> beginning July 1, 2004, qualify for the full amount. Those who worked less receive a pro-rated amount. Companywide, about 196,000 people are eligible for incentive payments under the Share Value Trust. <b>Collectively they would receive about \$309 million in Boeing stock</b>, based on a \$70-a-share price.</p> <p>The trust payout in <b>2006</b> yielded <i>Boeing</i> workers an average <b>\$5,231</b> before taxes. That was the result of a much larger spread between the <b>threshold share price of \$47 and the stock price on the final day of the period, \$82.29.</b>”</p>	On a modular enterprise architecture’s potential zero-sum game, due to allegations from unconfirmed employees.
26 June	<i>CNN</i> , “GM	Tom Libby,	Investors-	α	<p><b>“General Motors</b> stock price fell almost <b>11%</b> Thursday, to the <b>lowest level in more than 33 years</b>,</p>	On a modular

2008	Shares End at 33-Year Low” (Beth Braverman)	analyst with <i>Power Information Network</i> , an automotive research company; David Cole, chairman of the <i>Center for Automotive Research</i>	Firm- Employees		<p>as analysts reacted to a <i>Goldman Sachs</i> downgrade and <b>continued concerns about the automaker’s competitiveness</b>. That was the lowest price for <i>GM</i> shares since Dec. 24, 1974, when shares traded at \$11.16. The price has been adjusted for splits and other price-affecting distributions. The selloff followed a report issued Thursday by <i>Goldman Sachs</i> downgrading the automaker to ‘Sell’ from ‘Neutral.’ Analysts lowered their six-month price target for <i>GM</i> to \$11 from \$19. ‘We expect <i>GM</i> shares to continue to under perform as <b>market fundamentals deteriorate which exacerbates liquidity concerns</b>,’ the report states. ‘We think <i>GM</i>’s automotive <b>cash flow burn this year and next is likely to lead it to look to raise capital, which we believe could lead to significant shareholder dilution and/or a cut to the company’s dividend.</b>’</p> <p>Tom Libby, an analyst with <i>Power Information Network</i>, an automotive research company said the automaker faced increasing material and <b>high labor costs</b>, representing an additional hurdle when competing with <b>Asian manufacturers on price</b>. “<b>Their market share is under pressure now, and it will be for the rest of the year,</b>’ Libby added.</p> <p><b>It will take over a year for <i>GM</i> to realize the cost savings of the recently negotiated contract with the <i>United Auto Workers Union</i>,</b> said David Cole, chairman of the <i>Center for Automotive Research</i>. ‘<b>The big question is whether they have enough cash to make it from here to there,</b>’ Cole said. ‘It is going to be tough, and <b>it depends on the economy. Once they start to realize their labor savings, we may see profits increase like we have never seen from <i>GM</i>.</b>’”</p>	enterprise architecture’s non-systemic financial policy (e.g. under-investment, non-conservative balance sheet), as well as potential zero-sum game between factors of production.
8 July 2008	<i>Flight International</i> , As <i>Airbus</i> A350 Takes Shape, Can it Avoid the A380’s Troubles?” (Max Kingsley-Jones)	Gordon McConnell, <i>Airbus</i> A350 chief engineer	Firm	β	<p>“After a turbulent couple of years for the A350 XWB programme, <i>Airbus</i> finally finds itself in a <b>relatively calm state</b>. There are now more than 4,000 engineers working on the A350, which McConnell [A350 chief engineer] says is <b>a lot more than on previous aircraft for this stage of the programme</b>. ‘<b>We’ve front-loaded the programme deliberately because we want to have a very mature aircraft when we go to flight test so we don’t have many changes,</b>’ he says. <b>This should reduce the number of changes required after certification to enable a faster ramp-up</b> during the flight-test programme when production of customer aircraft will be under way. ‘<b>We’ve also selected our suppliers earlier than on previous programmes.</b>’ <b>The earlier supplier selection is part of <i>Airbus</i>’s strategy to follow the industry trend to involve companies in the design process sooner.</b> ‘<b>Once we’ve selected the suppliers, we immediately put in place a joint development phase</b> and there are currently 21 JDPs running with system suppliers,’ says Francois Caudron, vice-president A350 customer and business</p>	On an integral Enterprise Architecture’s de-risked approach to new product development.

					development. Significantly, <b>all contracts for the outsourced aerostructures work are dollar rather than euro-based, despite much of it staying in Europe.</b> Much of the fuselage work has in fact been allocated to existing <i>Airbus</i> plants in France and Germany that will eventually be <b>divested</b> , which are dubbed French and German <b>‘newcos’</b> for the time being. <b>‘The two ‘newcos’ will be created in France and Germany and owned by EADS,’ says Caudron. ‘The next step will be to open the capital of the shareholding to the public to meet the divestment target of Power8.’”</b>	
14 July 2008	<i>Aviation Week &amp; Space Technology</i> , “Lessons Learned” (Anthony L. Velocci and Joseph C. Anselmo)	Jim McNeerney, Chairman and CEO, <i>The Boeing Company</i>	Firm	α	<p>“There’s been a lot of speculation about how the 787 program got off track. What’s your take? “I think it’s a case of <b>the bleeding edge of innovation. We did not do a good job of execution</b>, and that’s the bleeding edge part of the innovation. The last time we talked [in June 2006] you identified <b>supply chain as the big issue. It was a prescient question, because that’s the place where we did not execute as well as we had planned</b> and where we have spent a lot of time fixing and refocusing. <b>I don’t think we had a joint industrial plan among all partners</b> that was as effective as it could have been. Companies like ours have to <b>work as effectively with factories that we don’t own as those that we do. That’s where we stumbled.</b>”</p> <p>Do you think those lessons have been assimilated? ‘When you’re in <b>scramble mode</b> like we’ve been, there’s a lot of learning and <b>kluging together of things. It will be done a lot better on the next program.</b> I do believe in the global model that leverages engineering and manufacturing capability. But we <b>drew the line too aggressively on the 787, we bit off a little more than we could chew</b>, and we’ve had to learn from that. <b>So we have to figure out where to draw the line, who the strong partners are, the systems we need to have in place, the right rhythm of work.</b>’</p> <p>It’s pretty clear that the date for a next-generation 737 has slipped. When can we expect to see it? ‘[Probably] closer to the end of the next decade. We’re just finding it harder to reach the goal that the airlines have given us. That is a big challenge on <b>the 737, an airplane that essentially is continually refreshed.</b>’</p> <p>It seems that large, complex programs in this industry almost invariably have execution problems. ‘There’s always going to be <b>bleeding edge</b> kinds of issues. Having said that, I think the industry has a <b>tendency to overpromise. Half the answer is more discipline at the beginning about what you can and can’t do</b>, and what risk is and isn’t. <b>You have to have the courage to lose a program as well as the desire to win one. I think we are more prepared</b></p>	On lessons learned from the architect of a modular enterprise architecture. (Note that the modular architect appears to think that the problems are fixed going forward, and are therefore non-systemic – e.g. going from 787 to 747-8).

					today than we were 7-8 years ago to say ‘I don’t see how we can do that. We’re stretching as hard as we can, and we can’t do that.’ I think that is a better answer for both our customers and for us than the answer that starts us down a cliff, into the ocean, to the bottom of the ocean.”	
16 July 2008	<i>The Seattle Times</i> , “Machinists Vote to Authorize Strike at Boeing” (Isaac Arnsdorff)	Tom Wroblewski, President of IAM (International Association of Machinists)	Labor	α	“Girding for a <b>fierce battle</b> this fall, members of the Machinists union who work at <i>Boeing</i> voted today to authorize a strike if negotiations with the company break down. The margin of victory is not yet known but is expected to be in the 90 percent range. <b>Chants of ‘strike’ swept the fired-up crowd</b> of an estimated 14,000 in KeyArena. Union members and leaders said they would make <b>big demands of Boeing</b> and, unlike in recent negotiations, <b>had the leverage to secure them</b> . ‘The fact is, it’s no secret, <b>we are in the strongest bargaining position we have been in years, and we intend to leverage that position</b> ,’ said Tom Wroblewski, president of the union’s Washington district. In his 20-minute speech, he repeated the event’s catchphrase, ‘ <b>It’s our time this time</b> ,’ at least 21 times. <b>Boeing is being pressured by an order backlog of more than \$340 billion and an already delayed 787 delivery</b> . The 787 Dreamliner’s first flight is scheduled before year-end. Union leaders are hoping <b>that on this tight production schedule, Boeing won’t be able to abide a strike, but, with soaring profits, could stand to make some concessions to workers</b> . ‘ <b>Hopefully, Boeing can’t afford a strike</b> ,’ said material handler David Raines, who has weathered two layoffs in his 20-year stint at <i>Boeing</i> . ‘ <b>Not that I want to strike</b> ,’ he added, ‘ <b>that’s for sure</b> .’ ‘We’re the ones out there building the planes, and we <b>need to share more of the profits that Boeing makes</b> ,’ said electrical technician Dennis Bolestridge. Union members said whereas they <b>barely held their ground in the last contract</b> , both <i>Boeing</i> and the union are now on better footing. <b>In the last round of negotiations three years ago, 8,000 members were on layoff. Since then, the union has added 6,000 members. Employees said they wanted a larger slice of Boeing’s soaring profit - \$1.2 billion last quarter. Topping their wish list are cost-of-living-adjusted retirement benefits, expanded medical coverage and a general wage increase.</b> ”	On a modular enterprise architecture’s adversarial relationship with labor.
17 July 2008	<i>Seattle Post-Intelligencer</i> , “Machinists 99% in Favor of Strike” (James)	Tom Wroblewski, President of IAM (International Association of Machinists)	Labor-Firm	α	“ <b>It’s payback time</b> ,’ one union leader, Mark Blondin, said to thunderous applause. He was president of Local 751 of the International Association of Machinists during contract talks in 2005 and 2002 and is now the national union’s aerospace coordinator.  ‘We understand the historical practice of holding this vote and understand that it is largely procedural,’ a <i>Boeing</i> spokesman said. ‘ <b>But we are disappointed</b>	On a modular enterprise architecture’s adversarial relationship with

	Wallace )	of Machinists); Mark Blondin, IAM national aerospace coordinator.			<p>that the union is holding it during the week and promoting other activities that keep employees away from work. We have production schedules to meet and delivery commitments to meet.'</p> <p>'Our members came despite management e-mails and intimidation in crew meetings to stay at work,' IAM District 751 President, tom Wroblewski said in a statement after the vote. 'Our members shut down airplane manufacturing at the biggest aerospace company in the world because without our members there are no Boeing airplanes.' 'It's our time this time for workers to get their fair share,' Wroblewski added. In an interview, Blondin said the union will hold firm on pensions and medical benefits and a good wage increase for each year of the contract. 'We have the leverage now that the company had in 2002 and 2005,' he said. 'And we are going to use it. They are going to have to pay up to get an agreement from this membership... A lot of our members have it in their gut that it's payback time.'"</p>	labor
17 July 2008	Forbes, "Boeing Machinists Approbe Strike Authorization" (Dan Catchpole)	Tom Wroblewski, President of IAM (International Association of Machinists); Mark Blondin, IAM national aerospace coordinator.	Labor-Firm	α	<p>"'We're in the strongest position we've been in in 10 years, and we intend to leverage that utility,' Districty 751 President Tom Wroblewski told the crowd. 'The fact is, by the time you've had your second coffee break on your first day, Boeing CEO Jim McNerney has already made more than you will all year,' he said. District 751 members haven't had a general wage increase since 2004, but have had lump sum bonuses and cost of living adjustments, according to Boeing spokesman Tim Healy. Union members are still resentful over the past two contracts, in 2002 and 2005, Wroblewski said. In 2002, the union accepted concessions due to the economic downturn after the Sept. 11, 2001, terrorist attacks. By 2005, machinists complained that the company had brought them a bad contract when it was doing well. 'It's payback time!' union official Mark Blondin told the crowd. Blondin was District 751 president in 2005 and now oversees all IAM contract with Boeing.</p> <p>'We need a contract that rewards employees but allows us to continue having that success,' Healy added. The average Boeing machinist has 17 years of experience and makes \$27 an hour or about \$56,000 a year. The pay scale ranges from \$8.72 an hour to \$35.13 an hour.</p> <p>Robert Fowler, a seven-year Boeing veteran, wants better health benefits, stronger job security and a general wage increase. 'Typically if you look at the top 40 people at the Boeing Co. they make 1,000 times what the machinists make, and we're the backbone of the company,' he said. Fowler doesn't want to strike, but will if he thinks it is necessary. 'This meeting is a sanction to use the</p>	On a modular enterprise architecture's adversarial relationship with labor



					baseball bat, and hopefully we won't have to but we need the ability to use it if is necessary,' he said.	
17 July 2008	<i>Financial Times</i> , "Airbus Presses Ahead with Production Boost" (Kevin Done)	Scott Carson, CEO, Boeing Commercial Airlines; Tom Enders, CEO, Airbus	Firm	$\alpha$ & $\beta$	"Tom Enders, Airbus chief executive, said that <b>in spite of concerns that the aircraft maker might face more airlines seeking to defer or cancel deliveries the group saw no reason to change its plan to increase production rates. 'At this point we have no reason to question that.</b> Of course we are watching the market and we will see again after the peak summer season is over. <i>Airbus's determination to continue to raise production is in sharp contrast to the much more cautious stance adopted by Boeing.</i> Scott Carson, chief executive of <i>Boeing's</i> commercial aircraft division, said this week that the group has <b>no plan to increase output rate of its 737 family</b> of short-haul jets, its main volume product. <i>Airbus is increasing output of its A320 family of short-haul jets from 34 now to 40 a month by 2010."</i>	On the differences in growth rate between modular and integral enterprise architectures
17 July 2008	<i>Forbes</i> , "Airbus Orders Top Boeing's at Farnborough" (Jane Wardell)	John Leahy, Airbus COO	Firm	$\beta$	" <b>'We are quite comfortable with the fact that we are going to have 50 percent of the world market,'</b> [Airbus COO, John Leahy] added, when asked if the company was disappointed that <i>Ethiad</i> had split its order between the two major plane makers. <b>'We have never had a goal to do what they have done in the past years and dominate the market with 80 percent or 90 percent.'</b> "	On an integral enterprise architecture's apparent growth ambitions.
17 July 2008	<i>The Economist</i> , "Marathon Man: Can Tom Enders, the Chief Executive of Airbus, Turn the Planemaker into a 'Normal' Company?"	Tom Enders, Airbus CEO	Firm	$\beta$	" <b>'I knew this was not going to be a sprint, but a marathon,'</b> says Thomas Enders as he looks back on his first years as chief executive of <i>Airbus</i> - the firm that, with <i>Boeing</i> , holds a duopoly in the market for large civil aircraft. <b>The emphasis Mr. Enders puts on the long haul is calculated.</b> This week, at the biennial Farnborough Air Show, the aviation industry had the chance to judge whether Mr. Enders has the right stuff to give the planemaker <b>the stability and strategic clarity it desperately needs.</b> But Mr. Enders admits that much more must be done if he is to turn the <b>technologically brilliant but politically dysfunctional</b> firm into what he calls a <b>'normal company'</b> .  Plagued by <b>power struggles within the core group of EADS shareholders</b> as well as its bizarre governance, <i>Airbus</i> suffered when it admitted that deliveries of its new superjumbo, the A380, would be seriously delayed. Shares in <i>EADS</i> tanked. The immediate cause was problems wiring up the huge aircraft, brought on by the use of incompatible software in the firm's French and German factories. But the <b>underlying reason for the mess was a hopeless lack of integration within the company.</b> A month later, at the 2006 Farnborough Air Show, a	On the leadership qualities of an integral enterprise architecture.

					<p>new chief executive, Christian Streiff, confirmed just how bad things were... <b>Mr. Streiff lasted a hundred days, quitting after he concluded that the politicized EADS board would interfere with his own radical cost-cutting programme</b>, known as Power8. After Mr. Streiff's stormy exit, <b>the sophisticated and emollient Mr. Gallois</b> held the fort for several months before Mr. Enders was finally appointed. The Power 8 restructuring plan, which included selling some factories in Europe to suppliers, was <b>proceeding slowly, but with less union resistance than had been feared</b>.</p> <p>Mr. Enders is adamant that nothing will deflect him from the task at hand, which is <b>'to drive the company as far and as fast as possible in the direction of being a normal company</b>. Aerospace is a political and strategic industry, but we need to make as much room as possible for <b>business thinking and entrepreneurial decisions</b>.' In practice, he says, that means both <b>fixing the integration woes</b> that beset the A380 and internationalizing the company. <b>'We will not survive as a non-integrated political plaything</b>, and we will not survive as a mainly European company,' he adds. Paradoxically, Mr. Enders is himself a product of the <b>nexus between politics and aerospace</b>. Over his career he has moved seamlessly between academia, high-powered research institutes, politics and business. <b>'Politics is structured chaos</b>,' he says."</p>	
17 July 2008	<i>The Economist</i> , "Crisis, What Crisis? The Airlines are Suffering, but the Order Books of Boeing and Airbus are Bulging"	Philippe Jarry, Airbus Head of Market Development	Firm	$\beta$	<p>"Philippe Jarry, Head of Market Development at Airbus, claims that <b>airlines 'could get 15% efficiency gain tomorrow' if they ended their 'frequency frenzy' by operating fewer flights</b>. <b>'We refuse to carry on our shoulders the misery of the industry</b>,' he says."</p>	On the leadership qualities of an integral enterprise architecture. Customers are but one of many stakeholders.
18 July 2008	<i>The Times UK</i> , "Boeing Tests	Jim McNerney, Chairman	Firm-Customer	$\alpha$	<p>"Jim McNerney, the chief executive of Boeing, said this week that a <b>bruising transatlantic battle with Airbus</b> over a \$35 billion Pentagon contract <b>risks damaging his company's relationship with the Federal Government</b>. Boeing's decision to protest</p>	On a modular enterprise architecture

	Pentagon over Tanker Protest” (David Roberts on)	and CEO, <i>The Boeing Company</i>			the contract, which is likely to become the largest ever Pentagon procurement project, is understood to have <b>angered the United States Air Force (USAF). The USAF has repeatedly said that it believes the Airbus aircraft is the best suited to its needs</b> and the recompetition will postpone a decision on the already much-delayed tanker contract by at least six months. <b>Service personnel have privately expressed anger that Boeing has questioned their judgement</b> in selecting the <i>Airbus</i> plane and delayed the tanker still further. Mr McNerney, who was attending the Farnborough Air Show, said: <b>“I realise that we took some risk with our relationship when we protested. We were very uncomfortable with that. We are very sensitive to our relationship with our customer and only after a lot of thought did we protest. We did take a risk.”</b>	ure’s adversarial relationship with its key customer .
23 July 2008	<i>Seeking Alpha, “The Boeing Company, Q2 2008 Earnings Call Transcript”</i> (www SeekingAlpha.com)	Jim McNerney, Chairman and CEO; James Bell, CFO, <i>The Boeing Company</i>	Firm-Investor	α	<p><b>“Ron Epstein (Merrill Lynch):</b> Yes, good morning. I just want to just talk a little bit about the <b>commercial revenue</b>. I think I was a bit <b>surprised</b>, and probably some other investors, with the <b>weakness in the quarter in those revenues</b>. When you kind of look at the aircraft that you delivered and the customers that you delivered to, I think you delivered ten 737s to <i>Continental</i>, nine to <i>ILFC</i>, nine to <i>Southwest</i>. I mean the weakness we saw in the quarter, I mean is that an <b>indication of a trend</b> or was it truly just a <b>weak customer mix in terms of pricing</b> in the quarter?</p> <p><b>Jim McNerney (Boeing):</b> It's not a trend. I won't say it's a weak customer mix. I would say that it is the difference in the customer mix that we expect to see in the second half, Ron, where we think the pricing will be a little better on those delivered airplanes. And then also we had a difference in the mix in terms of we had <b>more single aisle and fewer wide-body delivered</b> for this quarter, which also impacted the revenue. Again, that's timing.</p> <p><b>Ron Epstein:</b> Okay. Great and then one follow-up if I may, <i>Continental</i> changed their outlook with regard to <b>refunds in pre-delivery deposits</b>. They were expecting 8 million this year. Now they're expecting 71 million, that would be <b>66 million additional dollars they're getting back from you guys in pre-delivery deposits</b>. Are we going to see that from other airlines that have ordered the 787?</p> <p><b>Jim McNerney:</b> I don't think you're going to see it from us, so I don't know what you'll see from a, you know, I—<b>that's news to me</b>.</p> <p><b>James Bell:</b> Yes, we're going to be refunding any deposits to</p>	On a modular Enterprise Architect ure’s defense of its financial performance

				<p><i>Continental.</i></p> <p><b>Howard Rubel (Jefferies):</b> Mr. McNerney, <b>you talk about, you know sustained focus on productivity and an improvement and execution and yet these results fall short of that.</b> Could you <b>reconcile</b> kind of the two? And then just related to that, a lot of the, you know, initiatives that you talk about or at least you hint at that you can do in the <b>short term</b> to help you make the numbers seem hard to understand, given the <b>long-term</b> nature of the business and just the way in which the accounting system works and recognizes a lot of your costs?</p> <p><b>Jim McNerney:</b> Let me try it this way. The two, actually <b>three major headwinds</b> we faced this quarter, two of which were development programs, 87 push out and the AW&amp;C, I think the way we're trying to run the company is to have an ongoing productivity program that assumes that when we have stumbles in innovation, which those two represent, that we can largely cover it with a <b>strong productivity program, which we do have here—and were it not for a strong productivity program we would not be able to reaffirm guidance</b> this year. So I think that is the philosophy behind it. Both IBS and BCA have got well-funded, well-resourced programs, for example the productivity program and Everett, the moving line, a number of similar programs in St. Louis and Southern California and Philadelphia—so when we have these disappointments on the development side, we are ready to cover them. <b>Now, obviously we are very disappointed with the development program issues that we are facing, and we are working very hard to minimize those. And I would say we are closer to the end than to the beginning of working through a number of those legacy development programs that have caused us some pain.</b></p> <p><b>Howard Rubel:</b> I mean, Jim, just to follow up, it is a 200 basis point slip in commercial and some of that should have been recognized at the time you moved the 787 schedule. And so I'm struggling a little bit to understand <b>how we are going to get such strong performance in the back-half of the year.</b> Can you be a little bit more specific either in terms of quantifying it, or lay out some of the initiatives?</p> <p><b>Jim McNerney:</b> Yes, well let me just say one thing, and then James you can talk about the booking. I mean, roughly half of the running-rate issue that I think you are alluding to here is timing, maybe a little more than half is related to timing of revenues and costs, but there are</p>	
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				<p><b>significant productivity program efforts that are underway now—that we are not just dreaming up now, that are underway now that we are counting on as we have counted on before.</b> So James, you want to talk about the booking?</p> <p><b><u>James A. Bell:</u></b> Yes, Howard, I just wanted to also say that you are talking about approximately \$200 million short in earnings overall. About half of that is related to the <b>timing</b> and some of the product mix we experience, so we'll pick that up when we deliver those airplanes during the second half. The other part, though, partially is also timing of expenses. We'd expect the expenses and cash to be lower in the second half than they were in the first in terms of those expenses incurred to provide infrastructure to support their future growth requirement, and then <b>we will start seeing—as we gain more experience—more benefit out of some of the productivity initiatives that have been in place like the 777 moving line as we get more clarity around the benefit of that and it continues to smooth out</b>, we expect to see more benefit there. And we have asked the BCA team and they have accepted the challenge and they're committed to going out to see what we can do to reduce some of the other cost in the infrastructure to moderate those as the base has diminished somewhat with the flying of the 787. So we believe it's doable.</p> <p><b><u>David Strauss (UBS):</u></b> Jim and James, can you give us some color with where you are with <b>787 supplier and customer negotiations</b>, how much progress you made in the quarter, and on the customer side, are you seeing <b>airline customers opt for cash, in terms of the damages</b>, or are they looking for additional lift to make up the GAAP [gap]?</p> <p><b><u>Jim McNerney (Boeing):</u></b> Well first of all, every <b>customer</b> is different in terms of both the contractual obligations we may have with them or they may have with us, and every customer situation is different relative to the things that can be brought to bear to resolve the discussion. So it is very hard to generalize. We have gone through customer-by-customer. We do have a view of the cost in cash that it will take to resolve it. It is in our guidance. The majority of it is resolved within the 87 program, but there are some resolutions that impact current numbers, and that's all taken into account in our guidance.</p> <p>Also, with the <b>suppliers</b>, our supplier partners, as I said, I went out and visited all of them last month and I have a great deal of confidence in their business progress and while every financial discussion is not yet complete, most are well along.</p>	
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				<p>And again—they're the typical issues around scope, timing, execution that we have on every program, and we're getting those resolved. And the supplier discussions are probably ahead of the customer discussions in terms of resolutions, but again, we tried to capture all of the projected resolutions which we can quantify in total, roughly, in a conservative way.</p> <p><b>David Strauss:</b> Okay, and as a follow-up on the 787: <b>What's left until the plane is completely assembled</b> at this point, and <b>when</b> do you actually expect the plane to be completely assembled?</p> <p><b>Jim McNerney:</b> <b>Well, the plane will be flying in the fourth quarter, as you know.</b> We are on or slightly ahead of both the assembly and the testing. The structural assembly of the plane is largely complete. There are some systems installations that have yet to be done, but the electronic infrastructure and backbone, the structures itself, as evidenced by the Power On test going very well and the hydraulics and control surfaces tests going very well. You need a largely assembled airplane to accomplish all those things. So it's a matter of getting the final systems in and then doing some ground testing and then flight testing, and <b>we're on schedule.</b></p> <p><b>Joseph Nadol (J.P. Morgan):</b> James, just on the <b>program accounting</b> versus <b>unit accounting margins</b> in the quarter, I guess big picture, trying to understand if there are any <b>changes to your either pricing or volume assumptions in the out-years</b> that might have impacted what you recognize this quarter? Because <b>program accounting earnings came down sequentially a lot more than unit accounting</b> did.</p> <p><b>James A. Bell (Boeing):</b> There is, there was only an addition of 200 to the 737 accounting quantity and 25 to the 747. That was what impacted it. I think what you are seeing is the GAAP [gap?] is closing. The impact is really what we talked about earlier, and that again is the mix of customer and product that were delivered in the quarter that would affect that difference. <b>That's all it is.</b></p> <p><b>Joseph Nadol:</b> <b>At what point would we expect to see the lines cross? Because program, in theory, is a smoothed version of earnings and it should be more volatile. In good times earnings should be higher than program,</b> but how do we think about –</p> <p><b>James A. Bell:</b></p>	
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				<p>I got you, but what you will see over the course of this year is that <b>GAAP [gap] is going to narrow and, we think, narrow pretty significantly. It's hard to say when it will really cross</b>, because if we get new customer introductions and we get new things that add to the cost that we would inventory because the subsequent delivered units would benefit from it. That could extend it, Joe, but what I would say to look for is that, as we go through the course of this year, the GAAP [gap] will definitely narrow.</p> <p><b><u>Joseph Nadol:</u></b> And there are no <b>changes</b> in terms of your <b>narrow-body pricing assumptions</b>?</p> <p><b><u>James A. Bell:</u></b> <b>No.</b></p> <p><b><u>Robert Spingarn (Credit Suisse):</u></b> James, your guidance implies that <b>BCA margins in the back-end of the year, the second half has to be in the low 12s</b>, maybe 12.5% in order to hit that <b>11.5 for the full year</b>. And you talked a bit about reimbursed R&amp;D et cetera, but <b>you're guiding to 11.5% for next year</b>. So do we have a decline in margin from the back-end of '08 into '09? Is that attributable to some 787 next year? How should we think about that, and the carry of this infrastructure absorption for the next several quarters until those aircraft are actually delivered?</p> <p><b><u>James A. Bell (Boeing):</u></b> Well, you're right. We are expecting that they are going to deliver higher margins in second quarter—and it's in the range of the second half, in the range that you mentioned—and that is going to be driven by the lower R&amp;D cost, including subcontractor contributions. But it's also going to be the timing of some of the expenses will be down again. The annual what we thought from a cost standpoint will hold for the year. <b>Now as we go into '09, we will be better prepared and we would expect to see good performance, but that good performance will be impacted by the dilution of delivering the 787</b> that we will start delivering in 789 [ph 00:43:10], in 2009. So that will dilute the margin picture, and that's why we are saying <b>we're going to hold 11.5 year-over-year</b>.</p> <p><b><u>Robert Spingarn:</u></b> Okay, and then James or Jim, how do you think about that <b>R&amp;D profile as we get into the out-years, when we have to consider potentially a 777 refresh or the next-gen platform</b>, obviously at Farnborough Gene [ph 00:43:35] talked about a new engine ready for 2016, and that sort of thing. And you're spending, on the commercial, around 2.9 billion. We expect that to trend down over time.</p>	
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				<p><b>Where do you think you'll trough on R&amp;D and when?</b></p> <p><b><u>Jim McNerney:</u></b> Well, this is Jim. Obviously we are <b>projecting some of the R&amp;D coming down off the current program of spends on the 87 and the Dash 8 that's going to begin to come down significantly in the second half of this year.</b> We see it continuing into next year although we are going to sustain some level of investment in R&amp;D against the two things you mentioned. And the 777—either a refresh or a renovation, based on what we see with our customers and what we see that the A350-1000 is or isn't, and we'll have plenty of time to look at that. I think its delivery is in the 15, 16 timeframe. And then obviously, stay positioned to mature the technologies associated with the narrow-body. And those are the two things that we have to do, so when the actual program ramp-up of those happens is to be determined. but we don't see the big ramp-up happening within our guidance right now.</p> <p><b><u>Robert Spingarn:</u></b> It sounds like it might not even be by 2010, and so what is the 9% R&amp;D against commercial revenues can have by then?</p> <p><b><u>Jim McNerney:</u></b> Well, listen, <b>the marketplace has changed. Competitive environment's changed. Customer requirement's changed.</b> And when we get the 10 guidance, we'll discuss that the best way we know how.</p> <p><b><u>Doug Harned (Sanford Bernstein):</u></b> I wanted to go back to the <b>BCA margins</b> and just understand. You talked about, in Q2 you had some period expenses and then you had overhead absorption. Can you mention how much is each, give an idea where the real impact was? And then when you look at going forward the next two quarters, there's the overhead absorption issue. This added cost, does that stay with you at the same levels it did in Q2?</p> <p><b><u>James A. Bell (Boeing):</u></b> So, it's about half-and-half if you look at the timing versus the increased spending. And some of the increased spending, remember, is also timing-based in that we expect lower spending particularly in cash in next quarter. Now the infrastructure absorption issue, <b>the BCA team is committed to go and look at what they can do to reduce that during the second half of the year without doing something that would reduce capability needed again in 2009 as we get this 787 program on track from a production-support perspective.</b> That's how I</p>	
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				<p>would look at it. It's about half-and-half and we absolutely believe we have great plans in place with opportunities to correct the cost growth that we experienced in the first half, in the second half.</p> <p><b><u>Doug Harned:</u></b> If I went back to Q1 and your guidance at that time—and as you looked ahead at that point in time, did you expect to have this level of overhead absorption to deal with?</p> <p><b><u>James A. Bell:</u></b> No, we did not. We did have an estimate in there, which we obviously underestimated the disruption that would be caused relative to these costs being allocated to programs, and so we tried it up in second quarter.</p> <p><b><u>Doug Harned:</u></b> So you're saying that the productivity-improvement effort that you are doing now has to step up a little more than you had expected back then to get to the same margin level?</p> <p><b><u>James A. Bell:</u></b> Well I think—we think—we have to continue to drive good productivity and if it stepped up a little more than the current levels, I wouldn't be disappointed, let's put it that way.</p> <p><b><u>Myles Walton (Oppenheimer):</u></b> Just a quick question for you on R&amp;D into '09. Your guidance reflecting a \$500 to 600 million tech decline, James is that entirely within commercial, or is there also some anticipated decline on defense as maybe the international tanker winds down?</p> <p><b><u>James A. Bell (Boeing):</u></b> It's primarily in commercial and it's primarily representing, as we complete and finalize the design effort on the 747-8 freighter. The R&amp;D is already starting to come down on the 787 from prior year levels.</p> <p><b><u>Myles Walton:</u></b> Yes, I guess I was referring to when you raised the guidance from 2.8 to 3.2 to 3.4, you said 50% of the change was—</p> <p><b><u>James A. Bell:</u></b> Yes, there was a little piece in there associated with international tankers, and that's behind us. But the bulk of it was driven by 747 and increased spending on the A7 [87?].</p> <p><b><u>Joe Campbell (Lehman Brothers):</u></b> Let me go back to our favorite margin target on DPA [BCA?]. I'm still struggling a little bit to</p>	
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				<p>understand—</p> <p>I'm trying to understand what was going on still, <b>I know you've told us three or four times on BCA, what these margins were. So I'm trying to understand why the disruptions of the 787 aren't just allocated to the 787, and why they're spilling over to the production programs.</b> Or is it simply a difference that you assumed you would be able to charge stuff to 87, because you thought that you would deliver the planes that are not now happening? And I wondered if you could also say something about the after-market? <b>Many of the suppliers are saying that the after-market is weak,</b> and I wondered whether you could say something about how Aviall and the rest of the affiliated BCA companies' outlook has changed, or not—</p> <p><b><u>James A. Bell (Boeing):</u></b> Okay, Joe, I'll take your first question and Jim will take your second.</p> <p>But essentially on the 787 issue, we planned on the old schedule to have more 787 work in-house this year than now the actuality, with the slide of the schedule, is actually showing up. And so the cost that we're talking about here, the heart of the very infrastructure costs are constant. And it only can be allocated for the work that's in-house, and so that's why we're seeing a shift of the 787 program <b>onto the other production programs because that's the work that's currently in-house.</b> Is that clear?</p> <p><b><u>Joe Campbell:</u></b> Yes, so I guess it means that the <b>overhead went up and you were expecting it to be covered by 787. So why's the overhead up?</b></p> <p><b><u>James A. Bell:</u></b> The infrastructure cost remained constant. What we assumed is we'd have more 787 work in-house than we did after the schedule slide, so less of that constant cost was allocated to 787 and more of it was allocated to the production program—at 787's program was then allocated to 787 program accounting and inventory. The remaining, since the 787 work did not show up, that differential went to the production programs and flowed through the earnings.</p> <p><b><u>Joe Campbell:</u></b> Okay, got it.</p> <p><b><u>Jim McNerney:</u></b> And then on the services, you know it is true Joe, we are seeing a <b>moderation in the spares rates</b> and that makes sense. <b>As people are taking out older inefficient aircraft, which tend to have slightly</b></p>	
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				<p><b>higher maintenance rates</b>, and some of the mod work is slowing a bit too as planes are staying in service, not being modified to freighter configuration—for example, because of A380, 87 delays. Having said that, the other parts of our business are doing well and the guys are achieving their business plan although <b>they're breathing a little harder than they were a quarter ago</b>.</p> <p><b>Joe Campbell:</b> So but then <b>you're still expecting to make their business plans that you have in the '08 and '09 guidance? A lot of other people are moderating their '09 business plans and you haven't changed anything.</b></p> <p><b>Jim McNerney:</b> <b>Listen, we're not changing our overall guidance which obviously has puts and takes in it, Joe, okay?</b> And obviously the services, the BCA business is a watch-item for us and despite some softening, they're doing well. But I think as we put together the specific plan for that specific piece of the business, we'll have to see what the environment and the competitive situation looks like. So there are other places where we have less pressure and other places we have upside, and that's what gives us the confidence to give you the guidance. But to your earlier point, <b>we have seen a softening in spares and conversions.</b> We're dealing with it and we'll just have to monitor the situation.</p> <p><b>Cai von Rumohr (Cowen And Company):</b> Yes, to maybe understand a little bit better the [inaudible 00:54:31] costs, <b>if infrastructure costs were shifted from the 87 to other programs, does that mean that the other programs profit-accrual rates have gone down and if not, why not?</b> And secondly, you mentioned period costs in the second quarter, those presumably costs are expense as incurred. How big were they in the second quarter and how big are they likely to be for the entire year?</p> <p><b>James A. Bell (Boeing):</b> On your first question on the infrastructure costs: The infrastructure costs, as I said earlier, were constant and then they're just allocated on the basis in-house, and what was the second half of that question? [Interposing] What it is is that the profit rates on the production program, before allocation of those costs, would remain constant. Then it would have taken up a bigger absorption of those costs through the allocation process, if the work was there.</p> <p><b>Cai von Rumohr:</b> True, but if that happens, their accrual-rate goes down and the profit margin stays the same, how come?</p>	
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				<p><b><u>James A. Bell:</u></b> Exactly, their accrual rate was impacted this quarter as a result of the allocation of those costs.</p> <p><b><u>Cai von Rumohr:</u></b> Right, but I mean, presumably program is through the end of the program, so if you have lower program accrual-rates in this quarter, presumably you're looking forward and that continues. And if so, given the guidance hasn't really gone down that much, why not?</p> <p><b><u>James A. Bell:</u></b> Because we plan on dealing with the increased cost we experienced in the second quarter in the second half of the year.</p> <p><b><u>Cai von Rumohr:</u></b> Okay, and then the period cost that you mentioned that are expensed as incurred, how big approximately were they in the second quarter and how big would they be for the year?</p> <p><b><u>James A. Bell:</u></b> So if you're just talking to <i>Delta</i>, it would be about half of the \$200 million difference we saw, in what we anticipated the earning rates to be versus what they were.</p> <p><b><u>George Shapiro (Citigroup):</u></b> Good morning. James, is part of the issue with the allocation happening this quarter because this was the quarter that the 787 was supposed to be initially delivered?</p> <p><b><u>James A. Bell (Boeing):</u></b> It's because, George, we expected to have more 787 work in our shop this quarter than it turns out we did because of the schedule slide. It wasn't just because of deliveries. It's more about the amount of work on the 787 program that we originally anticipated having in the shop.</p> <p><b><u>George Shapiro:</u></b> Okay, and then if you could go forward, James, why wouldn't I assume that you'll probably wind up being short of your margin in commercial aircraft but you'll be better on unallocated, because you only have 130 million through six months and you're saying it will be \$1 billion for the year?</p> <p><b><u>James A. Bell:</u></b> Well, we think we're going to make our plan in commercial airplanes, but if we don't, we'll still make our earnings per share expectations and the guidance we provided you.</p>	
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27 July 2008	<i>The Wichita Eagle</i> "Boeing Wichita Head Prepares for Change" (Molly McMillin)	Scott Strode, formerly in charge of development and production of Boeing's 787 Dreamliner program	Firm	α	<p>"Before coming to Wichita, Strode was in charge of development and production of <i>Boeing's</i> 787 Dreamliner program. The issues <i>Boeing</i> has run into on the 787 are <b>not unusual</b>, he said. <b>In hindsight, the right plan was in place. 'it's just a matter of executing it,'</b> he said. So what could have been done differently? <b>'Some of the issues we could have recognized earlier,'</b> he said. But <b>'we were busy inventing an airplane, too.'</b>"</p>	On a modular enterprise architecture's non-systemic view of separation of design from execution.
30 July	<i>The Seattle</i>	Mark Blondi	Firm-Labor	α	<p>"The lead negotiator for the Machinists union said Tuesday that <b>contract talks with Boeing are 'in</b></p>	On a modular

2008	<p><i>Times</i>, “Machinists Say Contract Talks with <i>Boeing</i> “In Deep Trouble” (Dominic Gates)</p>	<p>n, lead negotiator for the International Association of Machinists (IAM);  Doug Kight, <i>Boeing Commercial Airplanes</i>, VP HR</p>			<p><b>deep trouble’ and implied a strike in September is likely</b> if the company’s offer doesn’t improve. The <b>tough talk</b> from Mark Blondin, lead negotiator for the International Association of Machinists (IAM), came during a joint teleconference with representatives of the white-collar engineering union at <i>Boeing</i>. <b>The two unions also delivered a scathing critique of the state of the 787 Dreamliner program and of the company’s strategy of global outsourcing.</b> The outsourcing of 787 work and the prospect of <i>Boeing</i> sending out more work on future jets add tension to this year’s labor negotiations, which climax next month ahead of the new plane’s expected first flight in October. ‘So far, all they are talking about is take-aways,’ Blondin said. ‘If that continues over the next couple of weeks, they are in deep trouble.’ <b>Blondin said <i>Boeing</i> is ‘acting right now like it is in bankruptcy court, rather than where they are with a record backlog of orders and record profits.’ ‘There’s enough orders right now to sustain two or three bargaining cycles, and we know it,’ he said. ‘We’re going to get our share of those profits.’</b></p> <p><i>Boeing’s</i> top labor negotiator, Doug Kight told employees this month that the company will release full details of its final offer by Labor Day weekend. <b>Kight’s message gave no hint of an impasse in the talks.</b> ‘We’re about three weeks away from moving to the hotel for the final phase of negotiations,’ Kight wrote. <b>‘I am pleased with our progress.’</b></p> <p><b>“I am very surprised <i>Boeing</i> has come out with the same tactics in 2008,’</b> said Blondin, who headed the District 751 Machinists when they went on strike three years ago. <b>‘Our members didn’t stand for those divisive tactics last time. I don’t see it happening this time.’”</b></p> <p>Stan Sorscher, director of research for SPEEA, said <b>the union has argued for a long time that outsourcing airplane design cannot work as it may for simpler products, say sneakers. Building something as complex as a plane requires a tight community of experienced engineers and mechanics working together to overcome the inevitable challenges,</b> he said. <b>‘We thought the 787 would be a test case for this,’</b> Sorscher said. <b>‘The results are in.’</b></p> <p>One rank-and-file member who requested anonymity said only a strike will demonstrate to workers that they got the very best deal. <b>‘Negotiators need proof they drove the best bargain they could, so a strike is almost a given,’</b> he said. <b>‘The real debate is on its duration.’”</b></p>	<p>enterprise architecture’s adversarial relationship with labor</p>
30 July	<p><i>The Herald</i>,</p>	<p>Ray Gofort</p>	<p>Firm-Labor</p>	<p>α</p>	<p><b>“<i>Boeing</i> cannot afford a disruption by its skilled work force,’</b> David White, assistant director of</p>	<p>On a modular</p>

2008	“Machinists and Engineers Question <i>Boeing’s</i> 787 Business Strategy” (Michelle Dunlop)	h, SPEEA Executive Director; Mark Blondin, aerospace coordinator for the International Association of Machinists (IAM); Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>			strategic resources for the International Association of Machinists, said in a conference call. <b>‘We’re a force to be reckoned with and to be respected,’</b> said Mark Blondin, aerospace coordinator for the Machinists. <b>‘We sacrificed during the lean times,’ he said. ‘Now it’s time for <i>Boeing</i> to pay up.’</b>  <b>The aerospace giant is adopting the ‘exact wrong’ strategy by relying more on foreign suppliers and focusing less on retaining its skilled work force in this country,</b> said Ray Goforth, executive director of the Society of Professional Engineering Employees in Aerospace. <b>However, <i>Boeing</i> Chief Executive Jim McNerney hasn’t budged much on the company’s global business model. ‘We’ve learned a lot and have the scars to prove it,’ McNerney said of the 787 in April. ‘I think it will be more of an adjustment in strategy rather than a change in strategy,’ he added. ‘We’re heading into these negotiations in a negative context,’ Goforth said.”</b>	enterprise architecture’s adversarial relationship with labor
31 July 2008	<i>The Seattle Times</i> , “ <i>Boeing</i> Tanker Bid Gets Big Boost” (Les Blumenthal)		Firm-Government	α	<b>“<i>Boeing</i> received a major boost from a House of Representatives subcommittee Wednesday, which proposed tight restrictions on the Pentagon as the Defense Department seeks new bids on a \$40 billion contract for Air Force aerial-refuelling tankers. The language in the bill would require the Pentagon to seek a medium-sized tanker like the one <i>Boeing</i> offered and it would prohibit extra credit for a larger tanker like the one offered by <i>Northrop-EADS</i>.”</b>	On a modular enterprise architecture’s intermittent relationship with the stability of government
31 July 2008	<i>Seattle Post-Intelligencer</i> , “Bill Might Give	Rep. Norm Dicks, D-Wash.	Firm-Government	α	“Rep. Norm Dicks, D-Wash., who has called on the Pentagon to <b>rerun the competition ‘family and competitively,’</b> said the tanker provision in the defense bill <b>‘just tries to create a level playing field.’”</b>	On a modular enterprise architecture’s intermittent

	<i>Boeing an Edge in Tanker Bid</i> ” (Jennifer A. Dlouhy)					ent relationship with the stability of government
1 Aug. 2008	<i>Chicago Business</i> , “Boeing Recovering After Hitting a Three-year Low”		Firm-Investors-Employees	$\alpha$	<p>“The stock has ‘certainly had a rough time’ in recent months, <b>mostly because of delays related to the long-awaited 787 jetliner</b> and fears over high oil prices, <i>JSA Research</i> analyst Paul Nisbet said in an interview.</p> <p>In a note to investors, <i>Banc of America Securities</i> analyst Harry Nourse <b>wrote of a ‘looming’ strike</b> by union machinists working for <i>Boeing’s</i> commercial airplane business. <b>‘Following a recent conference call with union officials, we believe that there is a high chance (greater than 70 percent) of a work stoppage at Boeing in the near future,’</b> he wrote. A <i>Boeing</i> spokesman, Tim Healy, said the company had adopted a new approach that entailed meeting early with union representatives and discussing critical issues, such as wages and benefits. <b>‘We think it’s going well... and we’re driving toward an agreement,’</b> he said.”</p>	On a modular enterprise architecture’s valuation due to overpromising and underdelivering as well as its adversarial relationship with labor.
28 Aug. 2008	<i>Business Week</i> , “Boeing’s Tanker Challenges Mount” (Keith Epstien)		Firm	$\beta$	<p>“<i>EADS</i> would be able to assemble freighters at a plant it intends to build in Mobile, Ala., thus shifting production out of Europe and <b>taking advantage of favorable exchange rates and lower labor costs. It could sell its commercial planes for less.</b> By <b>combining production</b> of a commercial tanker based on the freighter, <b>‘they would achieve economies of scale</b> that would make a commercial operation in Mobile even more attractive,’ says <i>Lexington Institute</i> defense analyst Loren Thompson. <b>‘The workforce, the overhead, and the supply challenge is diminished if you build planes for both military and commercial customers off the same airframe design.’</b> Adds Thompson: <b>‘Boeing is at least as worried about their key commercial customers in the U.S. market as they are about the tanker franchise. Once EADS sets up a commercial operation in the U.S. market, Boeing loses a lot of its national advantage in terms of competing for congressional support, protests from the [U.S. trade Representative], and so on.’</b> <b>‘They don’t want to have a domestic competitor’ for commercial aircraft,</b> says Jacques Gansler, a former top U.S. military acquisition official.</p> <p><b>‘Yes, we’ve been making some changes,’</b> an <i>EADS</i> source tells <i>BusinessWeek</i>. <b>‘We’re looking at potential business opportunities and therefore examining our business structures. It’s part of</b></p>	On an integral enterprise architecture’s ability to make more complex cross-platform trade-offs.



<p>29 Aug. 2008</p>	<p>USA Today, "Toyota's Plunge Into Big Pickups Veers Into A Texas-size Ravine" (Chris Woodyard)</p>	<p>Toyota Motors Corporation</p>	<p>Firm</p>	<p>β</p>	<p><b>our strategy. We're looking down the road."</b></p> <p>"Now, about 2,000 permanent employees <b>draw a paycheck from a plant that doesn't produce anything.</b> They perform maintenance, talk about ways to improve quality, and relearn tasks as basic as the best way to drive a bolt. <b>They're luckier than the plant's 200 temporary workers who work as needed and an army of employees at its parts suppliers, who have been furloughed.</b> Opened with great fanfare only a couple of years ago, the <b>plant halted production</b> on Aug. 8 after demand collapsed for its Tundra full-size pickups, amid sky-high fuel prices and free-falling home values. Production won't restart until at least November. It's a blow to San Antonio residents, who nevertheless are <b>grateful the company has kept so many workers on the payroll.</b> The San Antonio plant's <b>month-long closure is testing how Toyota,</b> one of the world's most respected and savvy companies, <b>handles a miscalculation.</b></p> <p><b>The decision to jump into making full-size pickups now is eating into the Japanese automaker's bottom line and raising questions about why it, too, was suckered by the same siren call of profitable big trucks that's now sapping Detroit's Big Three. It's humbling for an automaker noted in the past for being able to grab market share when its American counterparts stumbled. Toyota got into full-size trucks with 'a little bit of hubris and pride, thinking, 'We conquered all these other segments, and here is an opportunity to put the Marlboro Man out of a Ford and into a Toyota,' says James Womack, chairman of the Lean Enterprise Institute, and educational group that fosters steamlined production systems such as Toyota's. The lesson: 'Toyota's crystal ball doesn't work any better than anyone else's.' 'The lure was money,' Womack says. 'It would have taken a lot of discipline to stay out of this thing.'</b></p> <p><b>"We're a full-line manufacturer,"</b> Bob Carter, U.S. sales chief for Toyota's cars and trucks, said in a recent conference call. <b>'Certainly the market has been surprised in the truck area, but we have full confidence it's going to return in the future.'</b></p> <p><b>Toyota, flush with cash, 'is a long-term player,'</b> says Michael Robinet, vice president of auto market forecaster <i>CSM Worldwide</i>. <b>'The Asian culture thinks in years and decades, not months and quarters.'</b></p> <p><b>Toyota archival Honda, by contrast resisted the temptation of full-size trucks and has been rewarded. 'They were smart,'</b> Robinet says of <i>Honda</i>. <b>'This is a company that said, 'We're not</b></p>	<p>On an integral enterprise architecture's ability to absorb economic downturns.</p>
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					<p><b>going into the truck market. We're going to stick to out knitting.'</b></p> <p><b>Mostly non-union Toyota is continuing the Japanese tradition of lifetime employment policies for permanent hires. Breaking with that practice could lead to consequences at other global Toyota facilities. 'If they laid off San Antonio workers for three months, that would be the shot heard 'round the world,'</b> says Jeffrey Liker, a University of Michigan professor whose <i>The Toyota Way</i> and other books on <i>Toyota's</i> production system have become business best sellers.</p> <p>If the training program for the San Antonio plant stoppage works, the result could be <b>workers with higher skills and more loyalty, lowering the plant's costs in the future. It is also building a reservoir of local good will. 'If I were in Texas, I think any sane person would say, 'the market is awful, and this crazy company is actually keeping people employed,'</b> Liker says.</p> <p><b>Texans express gratitude toward Toyota for continuing paychecks, and say they believe Toyota will continue to invest in the plant. 'Toyota is still the top,'</b> says Judge Nelson Wolff, the Bexar County executive who took a leading role in trying to lure <i>Toyota</i> here. <b>'They are there for the long term.'</b> Former Texas state legislator John Longoria said the Japanese <b>'plan 10, 30, 40 years ahead of time, and they didn't foresee this.'</b> As Wolff, the city's former mayor, points out in his book <i>Transforming San Antonio</i>, <b>if Toyota hadn't taken extra steps to protect workers during the shutdown, 'It could force closer scrutiny of Toyota's agreement that led to creation of the plant.'</b></p> <p>Stephen Carter, a physician in the <i>Toyota Family Health Center</i> outside the complex's south perimeter, says <b>workers are confident they'll get through this rough patch."</b></p>	
29 Aug. 2009	<i>The Seattle Times</i> , "Some Machinists Jeer Boeing's 'Final Contract Offer'" (Dominic Gates)		Firm-Labor	α	<p><b>"I'm as against it as I possibly can be,"</b> said Joe Albanese, a parts expeditor on the 777 program in Everett who's <b>concerned the pact would permit Boeing to continue outsourcing</b> of parts delivery. <b>'I don't care about the money,' he said. "If they don't give me job security, it doesn't matter.'</b> A colleague, Ron Seelye, said he, too, is ready to strike. <b>'I've done it so many times before, I can do it again,' he said. 'They've got to share their profits.'</b> One Everett Machinist, a relatively new hire, said <b>'I have home improvement projects to last through September, and money enough to stay out for six months.'</b></p> <p>One affirmative voice was a Machinist who works at the spares distribution center in SeaTac, who said</p>	On a modular enterprise architecture's views of compromise.

					he and a dozen workmates were inclined to accept the deal. He added, however, he had heard the mood was different in side the bigger plants in Evertt and Renton. <b>‘We’re afraid that our leaders will drag this out for an unnecessary strike,’ said the worker, who asked for anonymity. ‘It seems no reasonable offer will be good enough.’</b>	
29 Aug. 2009	<i>Forbes</i> , “Boeing Machinists Respond to Proposed Contract” (Daniel Lovering)	Richard Aboulafia, an industry analyst with the <i>Teal Group</i>	Firm-Labor	α	“Richard Aboulafia, an industry analyst with the <i>Teal Group</i> , said <i>Boeing</i> had used a ‘smart tactic’ by making its latest offer ‘sweet enough to stop the most strident union elements’ from pursuing a strike. ‘The question is, ‘Are there enough people who really believe in the idea of job security?’ he said. ‘No employer in America is willing to talk about job security. That just doesn’t happen in today’s economy.’”	On the prevailing views of how a modular enterprise architecture operates within a Liberal Market Economy.
29 Aug. 2008	<i>Bloomberg</i> , “Boeing Union Urges Workers to Reject Offer and Strike” (Susanna Ray)	Richard Aboulafia, an industry analyst with the <i>Teal Group</i>	Firm-Labor	α	<p>“The IAM also filed <b>unfair-labor practice charges against Boeing</b> with the National Labor Relations Board for ‘<b>direct dealing with our members,</b>’ spokeswoman Connie Kelliher said today near Seattle, the company’s manufacturing hub. <b>Managers met one-on-one with workers ‘to enhance their own bargaining position, undermine the union and intimidate our members.’</b></p> <p>The union’s members in Washington state, Oregon and Kansas have <b>followed leaders’ voting recommendation in three of the last four negotiations</b>, stopping work over two of them to gain contract improvements.</p> <p><b>The plan would preserve the way Boeing uses contractors, rejecting changes the IAM sought and had warned it would be willing to strike over. ‘Boeing is gambling that their concessions are appealing to enough of the workforce to keep a strike from happening, but job security is a sticking point for a lot of them,’</b> Richard Aboulafia, an analyst with <i>Teal Group</i> in Fairfax, Virginia, said today. <b>‘There is no question that union management feels as though the company is working around them.’</b></p> <p>Lead company negotiator, Doug Kight said, ‘As leaders it is not only our right but our obligation to talk to employees, owners of the company, about our business.’”</p>	On a modular enterprise architecture’s zero-sum competition between labor and the firm.
29 Aug. 2008	<i>BusinessWeek</i> , “The		Firm-Labor	α	“By the time <i>Boeing</i> puts its first new 787 into the air this fall, after delaying the so-called Dreamliner for more than a year, <b>the company will have racked up</b>	On a modular enterpris

	Dreamliner's Cost to Boeing" (Joseph Weber)				<p><b>extra costs that may top \$2 billion.</b> That hit comes with deferred sales worth at least \$3.5 billion, and a roughly 40% slide in its stock market value. Such dismal numbers—and <b>the possibility of even further delay—pressured Boeing at the contract bargaining table since it can ill afford a work disruption.</b> Fears of rising costs spurred by additional Dreamliner delays make Boeing executives especially wary of a strike. The \$2 billion-plus estimate, toted up by <i>American Technology Research</i> analyst Peter Arment, is twice the figure analysts broached last fall when Boeing announced its first six-month delay. The company followed that delay in January with a three-month holdup and another six-month delay last April. <b>'It's been a strain financially and from a credibility standpoint,'</b> says Arment. <b>The tab includes penalties Boeing owes customers for delayed orders and additional research charges, as well as payments to suppliers.</b> <b>'This is an enormously complex program and that comes with a lot of risks,'</b> says Arment. <b>'They've spent more than four years modeling and testing and developing the systems for this aircraft, but this is still an all-new composite frame and all-new electronic system architecture. There are many different systems.'</b>"</p>	e architecture's non-systemic labor policies impacting production schedules and product launches.
30 Aug. 2008	Market Watch, "Boeing Risks 787 by Refusing to Deal with Outsourcing Problems, Says SPEEA"	Ray Goforth, executive director of SPEEA	Firm-Labor	α	<p><b>"The Boeing Company's public acknowledgement that outsourcing is causing problems with the 787 program is lip service until action is taken to correct problems created by a global network of suppliers and inexperienced workers,</b> according to the <i>Society of Professional Engineering Employees in Aerospace (SPEEA)</i>, IFPTE Local 2001. Officials at SPEEA and other unions, including the <i>International Aerospace Machinists (IAM)</i>, repeatedly warned the aerospace giant that it was a mistake to part out highly complex aerospace products to inexperienced workers around the world. <b>More than one year after a ceremonial 'roll out' of a 787 shell, the same aircraft remains in the factory incomplete and missing parts from suppliers.</b> <b>'Continued statements that everything is fine with the 787 global supply network just doesn't fly,'</b> said Ray Goforth, executive director of SPEEA. Last week, the company announced plans to <b>place full-time Boeing inspectors at key suppliers to reduce flaws and maintain quality.</b> The announcement, reported by the <i>Puget Sound Business Journal</i>, said Boeing will first target about one dozen problem companies. SPEEA's Goforth said <b>more inspectors at suppliers escalates cost and avoid the real problem – Boeing's great experiment to outsource large parts of the engineering and manufacturing of the next major leap in air travel failed.</b> <b>'It's time for Boeing to stop the lip service and take real action,'</b> Goforth said. <b>'Face the fact that the global network is a</b></p>	On a modular enterprise architecture's disintegration of its supply and labor modules, and its inability to reveal the true status of progress.

					<p>failure and bring back the critical work back so the experienced employees can get the 787 back on track.’</p> <p><i>Boeing</i> needs more than paid advertising and internal campaigns to regain the trust of customers and employees. The most recent <i>Rittenhouse Ranking Survey</i> of corporate candor ranked <i>Boeing</i> 98<sup>th</sup>, six spots below <i>Exxon Mobil</i>. The annual survey evaluated 100 <i>Fortune 500</i> companies and CEOs for fair, open and sincere communications.</p> <p>‘Instead of thanking and rewarding employees for correcting the errors of suppliers and management, <i>Boeing</i> is banking profits and shifting costs onto employees,’ Goforth said.</p>	
30 Aug. 2008	<i>Bloomberg</i> , “ <i>Boeing</i> Communications Strategy May Goad Machinists Into Strike” (Susanna Ray)	Tom Wroblewski, president of the IAM’s District 751 in Seattle	Firm-Labor	α	<p>“<i>Boeing</i> believes that its offer, which is actually quite good would appeal to workers if only presented to them directly,’ said Gary Chaison, a labor-relations professor at Clark University in Worcester, Massachusetts. ‘The company seems to have confused public relations with collective bargaining,’ usurping union leaders’ role in communicating with members. Tom Wroblewski, president of the IAM’s District 751 in Seattle, in an earlier interview, said the company had ‘shot itself in the foot’ with its tactics.</p>	On a modular enterprise architecture’s power struggle with labor.
31 Aug. 2008	<i>Reuters</i> , “ <i>Boeing</i> Machinists Union Says Members Should Strike” (Kyle Peterson et al.)	Richard Aboulafia, aerospace analyst at the <i>Teal Group</i>	Firm	α	<p>“Richard Aboulafia, aerospace analyst at the <i>Teal Group</i>, said <i>Boeing</i>’s latest offer has not eased the union’s concerns about job security and he put the chances of a strike at around 60 percent. ‘<i>Boeing</i> and most manufacturing companies have shown zero willingness to compromise on that,’ said Aboulafia.”</p>	On a modular enterprise architecture’s zero-sum view of job security.
1 Sept. 2008	<i>Financial Times</i> , “ <i>Boeing</i> 787 Dreamliner Threatened by Strike” (Hal Weitzman)		Firm-Labor	α	<p>“<i>Boeing</i> aims to fly the 787 for the first time by December and to start making deliveries to customers by the third quarter of 2009, at least 14 months behind schedule. Another delay to that timetable would be a headache for the company, which is facing demands from customers for compensation. <i>Boeing</i> has already said it is assuming all 787 deliveries it expects to make next year will not generate profit because of compensation payments.</p> <p>During the union negotiations, <i>Boeing</i> opted for a strategy of appealing directly to workers over the</p>	On a modular enterprise architecture’s continued lack of trust between firm and labor.

					<p><b>heads of union leaders. The aircraft-maker posted its offer on the internet, rather than allowing union leaders to present the details to their members first.</b> It stopped bargaining last week in order to give workers time to study the final offer before voting. As the company attempted to secure the support of one-third of union members it needs to avoid a strike, <i>Boeing also held one-on-one meetings with machinists.</i> The company says the meetings were merely intended to get feedback on the negotiations. <b>However, the union filed an unfair labour practice complaint with the National Labor Relations Board, alleging that Boeing violated US laws prohibiting such ‘direct dealing’.</b> ‘The disrespect they have shown for the negotiation process is exactly the same way our members have felt and why they have been marching in the factories at lunchtime for the past weeks,’ said Tom Wroblewski, president of the union’s district 751 in Seattle.”</p>	
1 Sept. 2008	<i>Puget Sound, “Boeing Machinists: Penny Wise and Pound Foolish”</i> (Eric Earling)		Firm-Labor	α	<p>“It seems clear from the decision of the Machinists Union leadership to support a strike against <i>Boeing</i> that they have <b>learned nothing of the lessons of how the modern economy has evolved in the last quarter century.</b> In the next quarter century they'll likely have the declining jobs for their members to prove it.</p> <p><i>Boeing</i> gave in on initial proposals to phase out retiree health care and traditional pensions - though those issues remain serious concerns for a company trying to <b>avoid crippling legacy costs.</b></p> <p>Clearly, <i>Boeing</i> doesn't want to see a strike given the volume of cash being thrown at the Machinists and the number of other concessions the company has made. Nevertheless, the union says the deal isn't rich enough, including ongoing rank-and-file complaints about a <b>lack of "job security."</b></p> <p>Sadly, no one seems to have told the union and its members <b>that the era of a single job with one corporation for life is well nigh over. More importantly, it is obvious the lessons of the domestic auto, airline, and steel industries have been utterly missed by these guys.</b>”</p>	Perceptions on the inevitable logic of a modular enterprise architecture.
2 Sept. 2008	<i>The Financial Times, “Boeing Could Make European Acquisit</i>		Firm	α	<p>“<i>Boeing</i> (NYSE: BA), the listed, Chicago, Illinois-based aerospace systems integrator, could be seeking defense <b>acquisitions abroad</b>, several sources told mergermarket. Possible reasons for acquisitions abroad include a target-poor environment in the US. [An] analyst said that <i>Boeing</i> <b>has strength in the commercial side with its 787 project. However, the company could look to acquire some of its smaller suppliers, like its March stake purchase in Global Aeronautica, on that project to help</b></p>	On postulated reasons for a modular enterprise architecture’s inorganic

	ions to Respond to Toughening Domestic Conditions” (Charles Rice & Beranger Guille)				shape things up.”	growth.
2 Sept. 2008	<i>Bloggin g Stocks,</i> “A Strike at Boeing, A Mistake by Management” (Douglas McIntyre)		Firm- Investo r	$\alpha$	“ <i>Boeing</i> (NYSE: BA) can't take a strike. It has too much depending on the launch of its new Dreamliner. That launch has been delayed three times and carriers are already asking for compensation for their costs due to the fuel-efficient plane being behind schedule. <i>Boeing</i> has been going at it with its large machinists union and it looks like the two sides have made no progress. <i>Boeing's</i> logic is that it does not want to face high costs in the future when its revenue may be lower. But that logic is deeply flawed, and the union knows it. <i>Boeing</i> has a heavy delivery schedule that goes out at least five years for the Dreamliner and other planes. The company also says that deliveries over the next two decades will be strong due largely to demand in Asia. <i>Boeing</i> management is making a tactical error and shareholders will pay for it. The stock is at \$65, but the strike will send it to \$50.”	On a more integral assessment of a modular enterprise architecture's pending strike.
3 Aug. 2008	<i>The Street.com</i> “Boeing Strike Would Hurt, But How Much?” (Ted Reed)		Firm- Investo r	$\alpha$	“I think <i>Boeing</i> is calculating that a strike is not necessarily the worst scenario,’ says Bill Swelbar, a research engineer in MIT's International Center for Air Transportation, and a labor consultant. ‘They have said 'Here's my final offer, this is what I can live with, figure out if you can live with it.’ The tactic may reflect a new approach to collective bargaining, one that follows on the bankruptcy strategy -- utilized in recent years by airlines -- that left little room for negotiating, Swelbar says. At <i>US Airways</i> , for example, unions were told that they could either accept contract offers, or potentially be forced to accept even harsher terms likely to be approved by a bankruptcy judge. ‘This could be a point where pattern bargaining changes,’ Swelbar says. ‘ <i>Boeing</i> is saying that the traditional form of labor leverage is not going to produce anything better than what they are offering.’  Swelbar says <i>Boeing's</i> primary concerns include a comparison of its costs with costs at <i>Airbus</i> , its only major competitor. Several months ago, <i>Airbus</i> suffered as the dollar weakened against the Euro, but more recently the dollar has been strengthening. ‘Ultimately, their costs converge,’ Swelbar says.	On a modular enterprise architecture's increasingly disintegrated way to “negotiate” with labor.

				<p><b>‘From an [airline] customer relations standpoint, you wouldn't want to strike, but financially, Boeing can take a strike,’</b> Hamilton says. As for Wall Street, he says, <b>‘small investors will see their shares fall and might be unhappy, but analysts might rally behind management.’</b></p> <p>As a company that has recorded \$13 billion in after-tax profits over the past five years, <i>Boeing</i> recognizes it cannot stand pat on salary. It has offered 11% over three years, plus a series of sweeteners, and says the average worker would gain \$34,000 over three years. The union is seeking a 13% increase. Health care, pensions and other items also separate the two sides. <b>Outsourcing remains a key issue.</b> For years, <i>Boeing</i> has been increasing the amount of outsourcing in its aircraft. Today, about 70% of the work on <i>Boeing</i> aircraft is done by outside employees. <i>‘Boeing never has made 100% of the airplanes it builds,’</i> says <i>Boeing</i> spokesman Marc Birtel. <i>‘Sourcing from suppliers domestically and internationally has always been part of the Boeing business model and any other aerospace manufacturer's model.’</i> As outsourcing has increased, he notes, <i>‘a number of our legacy airplane programs [e.g. the airplanes other than the 787] are now comparable to the make/buy percentages for the 787, predominantly resulting from the sale of several former Boeing-owned operations.’</i> <b>The IAM says it is determined to protect the jobs it still has.’</b></p>	
3 Aug. 2008	<i>DW-World, “EADS Unveils Investment Plans for Plants in Germany”</i>		Firm-Supplier	<p><math>\beta</math> <b>“After the failed sale of its three plants in the German cities of Augsburg, Nordenheim and Varel, Airbus parent European Aeronautical Defense and Space NV (EADS) is whipping the sites into shape. According to a company spokesman, some 360 million euros (\$518 million) will be invested in the Augsburg and Nordenham plants. A new 180 million-euro plant will be built in the southern German city of Augsburg. According to the Augsburg plant manager Hans Lonsinger, it will be the most modern of its type, producing fuselages for Airbus A350 long-distance aircraft. Another 180 million euros will be invested in Nordenham, on the North Sea. Originally EADS wanted to get rid of the plants in order to minimize the A350 development risks. The planned sale fell through at the end of March, however, due to the falling dollar and the turbulence in the international financial market. Despite the failed sale, EADS still wants to form a new subsidiary called Premium Aerotec that will group together the two plants in Augsburg, along with the plants in Nordenham and Varel, said the spokesman. ‘We can't just lay our hands in our laps and wait and see what happens,’ he said. One of the main goals of the factory will be changing the material used in the fuselages from aluminum to carbon fiber.”</b></p>	On an integral enterprise architectur’s “reversal” of its prior outsourcing decision.



3 Sept. 2008	<i>Bloomberg</i> , "Boeing Bets on a Third of Machinists to Avert Strike" (Susanna Ray)		Firm- Labor	α	<p><b>"Boeing's refusal to go along with changes the union sought on using outside vendors was enough to convince 23-year machinist Art Schilling to vote to strike. 'We're not asking for the moon; what we're asking for is a fair shake,'</b> Schilling said today after casting his ballot at the union hall outside <i>Boeing's</i> Renton, Washington, factory, where 737s are built. Hundreds of machinists marched together from <i>Boeing's</i> factories to vote at union halls on their breaks, some carrying signs saying, 'Out the gate 2008' and '<b>Go fly this, Kight,</b>' referring to Doug Kight, <i>Boeing's</i> lead negotiator.</p> <p>One wildcard is a change in the <b>union's demographics</b> since the last contract in 2005, when more than 18,000 workers walked out. <b>Back then, 37 machinists were under age 30. Now there are 2,300 -- about 10 percent of the IAM membership</b> in <i>Boeing's</i> main Seattle manufacturing hub -- because <i>Boeing</i> has recalled laid-off workers and hired new employees. <b>'The determining factor is going to be the new hires,'</b> Tim Limestall, who's also worked for <i>Boeing</i> for 23 years, said after voting to strike at the Renton union hall. <b>'They're younger and a lot of them come from non-union shops.'</b> <i>Boeing's</i> hiring spree since the last contract has cut the average age of machinists to 46 from 49. <b>The average wage fell in the past year by \$1 an hour to \$26. 'This is to a certain extent a test for the machinists to see how good a job they've done socializing the younger workers into the IAM,'</b> said John Budd, a professor of industrial relations at the University of Minnesota in Minneapolis. The question is whether they <b>'are willing to fight for pension benefits and retiree medical coverage and those types of issues, or whether they're more focused on salary and job-security issues.'</b></p> <p>Tom Wroblewski, president of the IAM's District 751 in Seattle, said the younger workers seem to be united with older machinists and <b>'more resolved than we'd anticipated' to strike.</b>"</p>	On a modular enterprise architecture's approach to labor.
3 Sept. 2008	<i>Seattle Post Intelligencer</i> , "Boeing Waits on Machinists Vote" (James Wallace )		Firm- Labor	α	<p><b>"When we go out on strike, the price goes up,"</b> Tom Wroblewski, president of local District lodge 751 of the International Association of Machinists and Aerospace Workers, said as he stood on a side walk down the street from the plant gate and slapped hands with many of the Machinists as they marched by toward the union hall and the all-important vote. <b>'They miscalculated,'</b> Wroblewski said of <i>Boeing</i>. As the Machinists marched, they chanted, <b>'Union power! Union power!' 'It would surprise me if we came back before the first of November,'</b> said one longtime <i>Boeing</i> machinists who did not want to be quoted by name. <b>'The company is dug in and so are we.'</b>"</p>	On a modular enterprise architecture's approach to labor.

3 Sept. 2008	<i>The Seattle Times</i> , "Machinists Turn Out to Vote on Boeing Contract" (Dominic Gates)		Firm-Labor	α	<p><b>"We can't afford to go on strike, but we can't afford this contract,"</b> said Lindsey Good, who has been an interior mechanic for six months. <b>"They want to stuff money in this pocket while taking money out of this one,"</b> said Good. Philip Conklin, another Machinist of six months, voted against the contract even though it offers a raise that would give him better pay than some people who have worked there longer. <b>"My uncle has been here more than 20 years,"</b> Conklin said. <b>"If I sat down at the dinner table with him on Sunday and said, 'Yeah, that's a great contract for me,' we wouldn't see eye-to-eye."</b> For Jimmy Le, who has worked at the company since 1986, <b>it will be unusual if there is no strike.</b> "Only one time was there no strike," he recalled. An electronic technician on airplane interiors, Le said that <b>as long as Boeing's top executives receive big pay increases, so should the Machinists.</b> <b>"They make good money, and the last two contracts they didn't give up anything,"</b> Le said. Alicia Winkler, 24, who distributes and inventories tools for mechanics, sported pierced lips and eyebrows. She said she feels threatened by <i>Boeing's</i> lack of movement on the issue of subcontracting parts and tools delivery work. <b>"Mostly I'm concerned about outsourcing. I don't want to lose my job to someone else,"</b> said Winkler. <b>"We need to stick together as Americans."</b> The older generation of Machinists was for the most part equally supportive of the union leadership. "I've been through three strikes," said Patrick Ferguson, 48. "I'm well-prepared." Some Machinists indicated their willingness not only to strike but to stay out for a long time by wearing a black T-shirt with the slogan <b>"Walk the Line till '09."</b> The marchers from the factory carried signs leaving no doubt how most of them will vote. <b>"The best and final offer is when WE decide,"</b> read one sign. <b>"Look out, Ford. Here comes McNerney,"</b> read another, referring to <i>Boeing</i> Chief Executive <b>Jim McNerney and the fact that former commercial airplanes boss Alan Mulally left Boeing since the last strike in 2005 to become CEO at Ford.</b></p> <p><b>"There's a few things in the medical plan I don't like, but the way times are, it's a fair contract,"</b> said Tom Yardy, 40, who assembles doors on the 767 and has been with <i>Boeing</i> 20 years. <b>"I really don't want to go on strike."</b> Yardy seemed to be in a minority, but he pointed out that some who plan to vote yes will not advertise it but do so quietly.</p>	On the zero-sum relationship between the firm and labor in a modular enterprise architecture.
3 Sept. 2008	<i>Bloomberg</i> , "Bombardier"	<i>Bombardier</i>	Firm	α	<p><i>Bombardier Inc.</i>, the world's third-largest commercial-aircraft maker, may widen its share performance gap over <i>Boeing Co.</i> with turboprop planes. <b>The higher fuel prices that hurt sales of</b></p>	On contradictory claims

	Beats <i>Boeing</i> Returns in Turboprop Revival” (Hugo Miller)				<b><i>Boeing's</i> biggest jetliners are spurring orders for <i>Bombardier's</i> 74-seat passenger planes and commuter-rail equipment, sending the two companies' shares in opposite directions. <i>Bombardier</i> has gained 41 percent in Toronto trading this year as <i>Boeing</i> has dropped 24 percent in New York. <b>The higher the fuel price gets, the more attractive a turboprop is</b>, so it just feeds into the advantage of a turboprop market,” Drew Hall, <i>Bombardier's</i> director of commercial aircraft product planning, said in an interview. <b>Turboprops were fading into commercial-aviation history a few years ago. They owe their revival to a doubling of fuel prices since January 2007 and 30 percent greater efficiency than jets.</b> The shares are valued at <b>15 times this year's estimated profit</b>, higher than <i>Embraer's</i> 14 and Chicago-based <i>Boeing's</i> 11, according to Bloomberg data.”</b>	between competing modular enterprise architectures about how high fuel prices increase demand for their products.
4 Sept. 2008	<i>Washington Post</i> , “ <i>Boeing</i> Waits on Count of Strike Vote” (Michael Fletcher)		Firm-Labor	$\alpha$	<p><b>‘People feel that in a time of record profits, the company should not come with any takeaways,’</b> said Connie Kelliher, a union spokeswoman. <b>‘When times were bad, workers went for years without a salary increase. But now things are good.’ <i>Boeing</i> officials have said that to offer more than it has already would hamstring the company with unsustainable labor costs.</b> ‘Our best and final offer rewards employees for the company's success and allows us to remain competitive,’ <i>Boeing</i> said in a statement.</p> <p><b>‘Without a question, the company has drawn a line in the sand,’</b> said Harley Shaiken, a professor at the University of California at Berkeley who specializes in labor issues. <b>‘But it is a risky gamble given the stakes. High labor and benefit costs can be a burden, but if there is a strike, the company could be doing more damage to itself if it disrupts production and progress on the 787 Dreamliner.’</b> <b>‘Any further delay will have both a tangible and intangible effect,’</b> said Howard Rubel, an aerospace analyst at <i>Jefferies &amp; Co.</i> <b>‘The tangible will be that the planes are even later. The intangible is, ‘When do we regain the trust of this company?’</b>”</p>	On the zero-sum game between the firm and labor in a modular enterprise architecture.
4 Sept. 2008	<i>Bloomberg</i> , “ <i>Boeing</i> Union Rejects Contract; Leaders Delay Strike” (Susanna Ray)		Firm-Labor	$\alpha$	<p><b>“Eighty percent of the voters opposed the three-year contract and 87 percent supported a walkout,</b> the International Association of Machinists and Aerospace Workers said tonight in Seattle. <b>Union leaders Mark Blondin and Tom Wroblewski were shouted off the stage by workers,</b> many already holding ‘On Strike’ signs, who wanted to walk off the job tonight. <b>‘It was our job to negotiate a contract that's acceptable to you, not to negotiate a strike,’</b> Wroblewski told the crowd.</p> <p>Chicago-based <i>Boeing's</i> lead negotiator, Doug Kight, said he was ‘disappointed’ by the vote. <b>‘Our job at</b></p>	On the zero-sum game between the firm and labor in a modular enterprise architecture.

					<p><b>this point is to listen to the union; we put the last contract offer on the table,</b> he said a press conference. <b>‘We will seek to understand and then make an assessment to see if there is a path forward.’</b></p> <p><i>Boeing</i> agreed to federal mediators' request to negotiate another 48 hours, Kight said, adding that he's willing to hear out the union on the ‘critical-few issues.’”</p>	
4 Sept. 2008	<i>Washingon Post</i> , “ <i>Boeing Machinists Vote to Strike</i> (Michael Fletcher)		Firm-Labor	α	<p><b>“The disrespect they have shown for the negotiation process is exactly the same way our members have felt and why they have been marching in the factories at lunchtime for the past weeks,</b>’ the union said in a statement posted on its Web site early this morning.”</p>	On the zero-sum game between the firm and labor in a modular enterprise architecture.
4 Sept. 2008	<i>The Seattle Times</i> , “ <i>Machinists at Boeing Reject Contract; Strike on Hold for 48 Hours as Mediator Steps In</i> ” (Domingo Gates)		Firm-Labor	α	<p>“One thing that must worry <i>Boeing</i> management now is that a <b>new generation of workers is learning about union power and joining older employees in the long history of bad blood between the IAM and the company.</b> Brett Baehm, 20, is one of the thousands of younger workers hired since 2004. He was hired in June to work on the 777. The <i>Boeing</i> offer would have given Baehm an immediate wage increase that looks good to him. Yet he said he still voted to strike. At an Everett factory march on Wednesday morning, he revealed in the <b>brotherly solidarity.</b> <b>‘For me, it's a decent contract. But if it's bad for everybody in general, I won't accept it,’</b> Baehm said. <b>‘Everybody is looking out for each other right now.’</b></p> <p>The threat of a lengthy strike is high. During these contract negotiations, <b>Machinists seemed determined to use their leverage when the company is flush with profits</b> and has a seven-year production backlog. Before the vote, <i>Boeing</i> was firm that its offer was final. <b>‘If we go out one day, it'll be at least 30,’</b> said Robert Fullerton, a lead mechanic on the 777 and 30-year <i>Boeing</i> veteran. <b>‘This is the best time for our union to get what we need.’</b></p> <p>One big stumbling block is outsourcing. <b>For future airplanes, the union wanted to stop the subcontracting of parts-delivery work forced upon it in the 2002 contract and now a reality on the 787. But Boeing has always refused union demands to give up its ability to outsource.</b> ‘Our jobs in parts receiving and kitting are jeopardized,’ said Judy Simpson, 66, a Machinist for nine years</p>	On the zero-sum game between the firm and labor in a modular enterprise architecture.

					<p>whose son and daughter also work at <i>Boeing</i>. <b>‘They can bring anybody in there and lay us off.’</b></p> <p><b><i>Boeing</i> also appears to have miscalculated the appeal of the economic aspects of its contract offer to both the younger, newer hires and the more senior machinists at the top of the pay scale.</b> One older Machinist, who asked for anonymity so as to avoid company retaliation, outlined the perspective of longtime workers in an e-mail message. "I have to foremost think of myself and my wife's future," he wrote. "We do get paid well, but we are more concerned with our health and retirement plans." <i>Boeing's</i> offer increased the basic monthly retirement pension from \$70 to <b>\$80</b> per year of service. Machinists wanted the company to do better, given \$13 billion in net profits over the last five years, half of those profits from the commercial airplane unit. Soon after the initial offer from <i>Boeing</i> last week, Machinists started forwarding around e-mails from a 2006 <i>Boeing</i> filing with the Securities Exchange Commission showing that at that time <b>low-level executives got monthly pensions of \$400 per year of service and top executives got \$4,000 for each year of service.</b></p> <p>Jayleen Roman, who was hired 18 months ago as an electrician on the 787 line, was incensed that new hires will earn the same rate as her. ‘We’ve been working one-a-half years for what?’ she asked. Roman said her family has a long <i>Boeing</i> tradition. Her dad has been there 28 years and her brother 11 years. <b>She knew to save for a strike. ‘When you apply to <i>Boeing</i>, you learn to expect this,’ she said.”</b></p>	
4 Sept. 2008	24/7 Wall St., “ <i>Boeing</i> : A Strike the Company Can’t Afford” (Douglas McIntyre)		Investors-Firm-Labor	α	<p><b>“The aircraft firm's executives have not been terribly adroit at making a case that they cannot give the unions more. <i>Boeing's</i> recent news releases are filled with announcements of sales of its new Dreamliner, and its older but popular 777. <i>Boeing</i> has also been bullish on its prospects over the next two decades, in part due to expected sales in China.</b></p> <p><b>The reasoning behind <i>Boeing's</i> statement that it has given the union all it can is that higher labor costs could hurt future earnings. That would be especially true if the company hit a sales downturn. By <i>Boeing's</i> own admission, it has a multi-year backlog of aircraft orders, so the argument is a bit thin.</b></p> <p><b><i>Boeing's</i> management has not done anyone a favor by holding out.</b></p>	On a modular enterprise architecture’s overselling to investors, which gives bargaining leverage to labor.
4 Sept. 2008	<i>Seattle Post Intelligencer</i>	Jim McNerney,	Firm	α	<p>“Our negotiations team worked very hard to reach a contract agreement that handsomely rewarded a vital group of employees, ensured continued strong</p>	On a modular enterprise

	<p>ner, "Boeing /IAM Meeting at Disney World" (James Wallace )</p>	<p>CEO, The Boeing Compa ny</p>			<p>support of our customer commitments, and <b>maintained our long-term competitiveness</b> against a strengthening and growing list of commercial and military competitors,' McNerney said. He added: 'Clearly, we are committed to doing our best to prevent a work stoppage and the disruption it would cause inside and outside our company. But we will do so <b>ever mindful of our responsibilities to protect our long-term competitiveness</b>, maintain our ability to best serve our customers, and to ensure fairness and equity for all employee groups."</p>	<p>e architect ure's rare invocatio n of "long- term vision"; implicit in this claim is that outsourci ng is a strategy for achievin g long- term cost- competiti veness, whereas integral enterpris e architect ures appear to achieve higher competiti veness by taking an opposing view on outsourci ng.</p>
<p>4 Sept. 2008</p>	<p>Chicago Tribune, "Boeing Laborin g over 787 Dreamli ner" (Julie Johnsso n)</p>		<p>Firm</p>	<p>α</p>	<p>"But even without a strike, the 787 isn't likely to take wing 'until well into December, if this year,' said a senior executive of a major Boeing supplier. 'Officially, they're not saying that, but through the grapevine it seems like things may be slipping a little bit,' said Michael Derchin, aerospace analyst for FTN Midwest Securities Corp. 'Instead of the first half of the fourth quarter, [the first flight] may be in the last half of the quarter.' A strike 'obviously would be a blow to that,' he added.</p> <p>The company missed an internal deadline to wrap up work on the first aircraft by Aug. 31 and isn't likely to complete the tasks needed to make the airplane airworthy before October, according to Flightblogger, a site that closely tracks Dreamliner production. 'While things are moving within the schedule, we're still on track to fly in the fourth</p>	<p>On the systemic consequences of over-promising and under-delivering</p>

					<p>quarter,' said Yvonne Leach, a <i>Boeing</i> spokeswoman."</p>	
5 Sept. 2008	<p><i>The Australian</i>, "Boeing Delays Delivery of 778 Again (Geoffrey Thomas)</p>		Firm	$\alpha$	<p>"While [<i>Jetstar</i>] the <i>Quantas</i> offshoot is yet to be advised of any changes in the program, sources in Seattle told <i>The Australian</i> that <b>the first flight of the 787 would be at the earliest in late December or, more likely, January.</b></p> <p><b><i>Boeing</i> has come in for considerable criticism over the past year, for not being more proactive with updates on the delays with the 787, with industry media becoming the leading source of information on the status of the program."</b></p>	<p>On a modular enterprise architecture's general tendency to overpromise and underdeliver; as well as its tendency to conceal/delay revealing problems.</p>
5 Sept. 2008	<p><i>Market Watch</i>, "SPEEA Supports IAM 751 Efforts to Secure a New Contract from <i>Boeing</i>"</p>	<p>Ray Goforth, executive director of SPEEA</p>	Firm-Labor- Investors	$\alpha$	<p>"The <i>Society of Professional Engineering Employees in Aerospace</i> (SPEEA), IFPTE Local 2001, <b>supports fellow union members at <i>Boeing</i> and congratulates them on the resounding defeat of the company's veiled substandard contract offer. 'This is a failure of <i>Boeing</i> management,"</b> said Ray Goforth, executive director of SPEEA. <b>"By forcing this strike vote, <i>Boeing</i> management has again failed its customers, employees and its shareholders.'</b> SPEEA is distributing 'I Support IAM' signs for employees to display in vehicles and at work. <b>'The company has bulging coffers, plane orders to the horizon and was faced with reasonable union demands,</b> Goforth said. <b>'Instead of sharing the success of <i>The Boeing Company</i> with the employees who made it successful, <i>Boeing</i> is trying to force employees to accept takeaways.'</b> <b>'There is no reason a strike should happen,'</b> Goforth added. <b>'Shareholders should hold <i>Boeing</i> executives accountable.'"</b></p>	<p>On a modular enterprise architecture's zero-sum game against labor.</p>
9 Sept. 2008	<p><i>BusinessWeek</i>, "Boeing's On Strike, So Why Isn't <i>Airbus</i>?" (Carol Matlack)</p>		Firm-Labor	$\alpha$ & $\beta$	<p>"Take two companies—let's call them <b>A</b> and <b>B</b>—competing head-to-head in the same business. Rank-and-file worker salaries at both are roughly comparable. <b>But Company A is struggling financially. Most employees got a 1.5% raise this year, and management has announced plans to eliminate about one in five jobs. Company B, though, is in pretty good shape. Management recently offered workers an 11% pay raise over the next three years, along with bonuses of more than \$5,000 and a 14% boost in company payments into their pension plan.</b> So, guess which company's employees are out on strike? OK, so the headline</p>	<p>Comparing the modular and integral enterprise architectures: zero-sum competition vs. positive-</p>

				<p>gave it away: <i>Airbus</i> is Company A, and <i>Boeing Co.</i> is B. On Sept. 6, members of <i>Boeing's</i> biggest union walked off the job, halting production and throwing the timetable for the already late-to-market 787 Dreamliner into confusion. Contrast that with <i>Airbus</i>, based in Toulouse, France. <b>It has suffered only minor labor protests as it moves to eliminate 5,000 jobs over the next two years</b> as part of its so-called Power 8 restructuring plan. Union leaders also agreed to that 1.5% pay raise, well below France's 2.5% inflation rate in 2007. What happened to those <b>famously militant French labor unions?</b> At <i>Airbus</i>, most of the rank-and-file is represented by the Force Ouvrière, or Worker Power union, one of the country's most hardcore labor groups. Sounds ominous--but the truth is, <b>private-sector strikes in France are exceedingly rare.</b> Transit workers, teachers, even doctors, frequently walk off the job, but factory workers almost never do. At <i>Airbus</i>, <b>union leaders may realize that a strike could aggravate an already precarious situation.</b> The company has posted operating losses for the past two years as production delays on the A380 mega jet knocked billions off the bottom line. The euro's rise against the dollar has seriously dented its competitive edge against <i>Boeing</i>. And, it must be said, <b><i>Airbus</i> is still a pretty good place to work.</b> Starting pay for the least-skilled production workers is about \$15 an hour, and experienced machinists make \$26 or \$27 an hour--roughly the same as the average machinist salary at Boeing, though it's difficult to make direct comparisons because <b>French workers get more-generous benefits than Americans.</b> Among other things, they pay practically nothing out-of-pocket for health care, and under French labor law, most can expect nice severance packages if they're laid off. Moreover, <b><i>Airbus</i> isn't laying anyone off: The job cuts are being made through attrition and early-retirement buyouts.</b> To the unions' relief, <i>Airbus</i> also has scrapped plans to sell some of its French and German factories, a move that had sparked fears that the new owners would shift jobs to lower-cost countries. <i>Airbus</i> abandoned the idea after it was unable to find buyers. <b>'We were afraid of outsourcing, but things have calmed down,'</b> says Matthieu de Georges, a Force Ouvrière representative. For the moment, he says <b>union members have no major complaints about <i>Airbus</i>.</b> 'Of course if they say they aren't happy, we'll act.' Asked if Force Ouvrière would care to comment on the <i>Boeing</i> strike, de Georges politely demurs. But it's hard to avoid the conclusion that <i>Airbus</i> stands to benefit if <b><i>Boeing's</i> unions stage a long and crippling strike, or if they win concessions from management that significantly drive up production costs.</b></p> <p>NEWS FLASH: Those <i>Airbus</i> union members now</p>	<p>sum cooperati on.</p>
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					have a new reason to protest. Louis Gallois, the CEO of parent company <i>European Aeronautics Defence &amp; Space</i> , tells French newspaper <i>Le Monde</i> in an interview September 9 that <i>Airbus</i> will begin producing some aircraft components in Tunisia to cut costs and reduce its exposure to the strong euro. Stay tuned!"	
11 Sept. 2008	<i>The Economist</i> , "Boeing and Airbus: Striking Differences"		Firm-Labor	$\alpha$ & $\beta$		
11 Sept. 2008	<i>Wired</i> , "Airbus Kicks Boeing While it's Down" (Dave Demerjian)		Firm	$\beta$	"Airbus announced yesterday that starting in 2010, it will offer a <b>higher gross weight version of its popular A330-200</b> . <i>Airbus</i> hopes that'll position the plane as a viable alternative to Boeing's much hyped and much delayed next-gen mega-jet, the 787 Dreamliner."	On an integral enterprise architecture's strategic, systematic and incremental approach to product development
12 Sept. 2008	"Respect and the Strike at Boeing"	Gary Chaison, Professor of Industrial Relations, Clark University	Firm-Labor	$\alpha$	On September 3, when the 27,000 production workers at <i>Boeing</i> walked off their jobs in a strike, most observers began the usual searching for the underlying cause. After all, the parties were fairly close in their offers and demands (the union--the International Association of Machinists--asked for a 13 percent wage increase over three years and the company offered 11 percent as well as a signing bonus of \$2500). Substantial wage increases are not common in manufacturing. <b>The conventional wisdom seemed to be that the strike was over Boeing's insistence on its right to outsource work done by the union members.</b> While this is certainly one of the contributing factors, I feel that primary reason for the strike can be found in <b>bargaining style, not bargaining issues.</b> Quite simply, <i>Boeing</i> was disrespectful. <b>It didn't treat the Machinists as the rightful bargaining agent.</b> When the Machinists announced the results of the strike vote (87 percent of the workers for it) and the rejection of <i>Boeing's</i> proposed contract (80 percent against it), the union emphasized how <b>the company had behaved disrespectfully.</b> There is ample evidence of this. First, <i>Boeing</i> attempted an 'end run' around <b>the union bargaining committee by appealing</b>	On a modular enterprise architecture's adversarial style, as opposed to the substance of its poor offer, as the reason for a strike.

					<p><b>directly to the workers--something that is never done in mature bargaining.</b> <i>Boeing</i> widely advertised that its contract proposal was available on the company web page. Second, <b>it offered the workers a signing bonus if they approved the contract. I see this as a bribe for going against the union's recommendation that the contract be rejected.</b> Finally, <i>Boeing</i> told the workers know that the proposal was its 'best and final offer'. When they used this phrase, <b>the company was declaring that as far as it was concerned, bargaining was over.</b> <i>Boeing</i> was mistaken in it's belief that it could sell a collective bargaining agreement to its workers. <b>It confused public relations with collective bargaining,</b> assuming that it could be so persuasive that the workers would vote against a strike, against their union, and for the contract. <b>But it forgot that the role of the union is to act as a bargaining agent by standing between the workers and the company.</b> The workers knew that if they accepted <i>Boeing's</i> proposal and rejected a strike it would be a vote of 'no confidence' in their union and they weren't about to do this. <b><i>Boeing</i> doesn't have to like the Machinists and it doesn't have to like the process of collective bargaining, but it has to respect the Machinist's role as an equal at the bargaining table. The strike will be over when, and only when, the company understands that if must first persuade the union's bargaining team to accept the terms of the new contract, and then let them to recommend that the members' accept it."</b></p>	
12 Sept. 2008	<i>Business Week</i> "Boeing Strike: No End in Sight" (Joseph Weber)	Jim McNeerney, Chairman & CEO, <i>The Boeing Company</i>	Firm - Labor	α	<p>"Just how <b><i>Boeing</i> and its workers went off the cliff yet again,</b> may be an object lesson in <b>how tough it can be to bridge the gap between labor and management in a globally competitive, old-line business.</b> If Chief Executive W. James McNeerney Jr. wanted to use this go-round to <b>break a nearly 60-year cycle of acrimonious relations</b> between <i>Boeing</i> and the International Association of Machinists &amp; Aerospace Workers (IAM), <b>he certainly hasn't succeeded.</b> And if the IAM leaders figured this was the time when they could <b>humble management and right the wrongs they felt done to them in prior contracts,</b> they seem to have badly misjudged the determination of the CEO and his managers.</p> <p>Certainly, McNeerney &amp; Co. <b>sought to set a different tone from 2005, when the IAM last went on strike. Then, the machinists shut down commercial planemaking at <i>Boeing</i> for 28 days. This time a fresh team of <i>Boeing</i> negotiators, trying to iron out differences well in advance,</b> began last May to sound out the union leadership on what contract terms might fly and what would be dead on arrival. The effort was part of a drive to</p>	On a modular enterprise architecture's ideological belief that outsourcing is the best/only way to maintain competitiveness.

				<p><b>'listen very carefully to our employees,'</b> chief management negotiator Doug Kight said. The company, he argued, wanted to <b>share its success with the workers even while making sure it could stay competitive.</b> In a May memo, Kight said the early talks were a chance <b>'to have open and respectful conversations.'</b> For the union leaders, however, the early start did little more than <b>raise suspicions.</b> <i>Boeing</i>, they figured, just wanted more time to sell its least palatable plans to the workers. Among them: proposals to eliminate medical benefits for some retirees and to kill off a traditional pension program for new hires while giving them a 401(k)-like retirement plan instead. Though skeptical, union chief negotiator Mark Blondin went along with the early start to talks. Now, he says, <b>'I sensed a PR thing coming, and sure enough that's what happened.'</b> Just how much listening really took place is far from clear. By July, the union leaders didn't think they were making much headway. The proposed "givebacks" on medical and pension benefits, which the union leaders had warned were sure strike-starters, remained on the table. So the leaders told their members to start saving for another strike, which would be the <b>seventh launched by the IAM against Boeing since World War II.</b> Sure that a walkout was inevitable, some longtime workers canceled summer vacations and set aside enough cash so they could get by on the \$150 a week in strike benefits.</p> <p>Despite the early start, no real movement took place until the end of August. With a Sept. 3 strike vote looming, <b>management caved in</b> on the plan to end medical benefits for some retirees. They decided to stick with traditional pensions even hiking the amounts the company would contribute. Kight and his team made a best-and-final offer on the Thursday before Labor Day, offering raises of 5% in the first year of a new contract and 3% each for the two years afterward. <b>To pry any doubters loose, they sweetened the pot</b> by offering more than \$6,000 in bonuses, some \$2,500 of which depended on getting a fast majority vote for the deal. The offer was, CEO McNerney told employees in a memo, 'the best contract in the aerospace industry.' But <b>the take-it-or-leave-it tack, which barred further talks before the vote, proved to be a dud.</b> <i>Boeing</i> blitzed the Seattle radio waves with ads making the case for the deal and urged workers to read the details about its offer on the company Web site. But such tactics, union leaders charged, amounted to <b>improperly going over the heads of the union bargainers.</b> The communications, they bristled, were nothing more than a bid to bargain directly with workers—an approach that seemed quickly to backfire as the leaders condemned "givebacks" that offended them. <b>The workers, meanwhile, were furious.</b> Angered</p>	
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				<p>by proposals the company was floating, they had been staging marches around the factories. The distractions made it impossible to get work done, some workers say.</p> <p>The union pored over the offer and pounced on terms it found objectionable. Trims in health-care benefits loomed large, even though <i>Boeing</i> officials insist the changes on balance would be neutral, with higher co-pays offset, for instance, by cuts in premiums. <b>Even more problematic, however, is the company's power to subcontract work</b>, to let suppliers from around the U.S. and in other countries provide parts and have nonunion outsiders deliver such goods to the assembly lines in Washington. The union fears that such outsourcing, which it says has been on the upswing, will ultimately kill off jobs. Management contends that globalization requires it be able to have work done around the world—especially in countries where that might help it sell more planes. <b>McNerney 'wants the flexibility to do what's right for the business,' says Noel Tichy</b>, a management professor at the University of Michigan who has known McNerney since he was a rising star at General Electric (GE) in the 1980s. <b>It's an issue, Tichy says, on which the CEO can't compromise.</b></p> <p><b>'Can you together work out a reasonable compromise? Yes,' says the professor. 'But I think it's [McNerney's] position that there are some things that he does consider non-negotiable, and the other side is saying the same thing.'</b> Part of the problem is union officials have <b>long memories</b>. Some are still troubled that the outsourcing power was put in place in a nettlesome contract in 2002. That contract went into force only because the union fell short of getting a two-thirds vote for a strike, even though most members opposed the contract. Then the union was unable to get the language pulled in 2005. "It puts our members' jobs at risk," says negotiator Blondin.</p> <p>By Sept. 3, when 87% of the workers backed a walkout, <b>it was clear the union had long been spoiling for a fight</b>. Sporting T-shirts emblazoned with the slogan 'It's Our Time This Time,' the workers paraded to the union polls led by motorcycle-riding colleagues. Many were angry when the union leaders agreed to delay the strike for 48 hours, until late Sept. 5, to see if any common ground could be found.</p> <p><b>Some machinists argue that <i>Boeing</i>, which has been blessed with record profits and its biggest backlog of plane orders ever, can well afford to scrap all "givebacks" and to "bargain up,"</b> as a union spokeswoman said. Gutting the outsourcing language is a key part of what the union hopes to</p>	
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				<p>gain. Its leaders figure that <b>concerns about further delays for the new 787 Dreamliner on Wall Street and in the Boeing executive suite, give workers leverage.</b> It's really anyone's guess just how drawn out and costly this fight will ultimately be. Analyst Cai von Rumohr of <i>Cowen &amp; Co.</i> figures a strike could last between 29 and 65 days, pushing a conclusion into mid-November at the latest. He figures the end of health-care coverage, at the opening of October, will put the first bit of serious pressure on workers, while in November the approach of the holidays steps it up. The union went on strike at <i>Boeing</i> for 69 days in 1995.</p> <p>Von Rumohr estimates <i>Boeing</i> could lose as much as \$2.3 billion in revenues this quarter. Some of that, of course, could include deferred rather than lost sales, but company officials do fret that demand for planes could slip over time, especially as the global economy slows. <b>Some workers say they'd love to see a change in the contentious relationship between the company and the union that flares anew with every contract round.</b> 'My family and I are completely exhausted with going through a financial disaster or potential disaster every three years,' says one 21-year veteran worker. On the other hand, he looks on the IAM as one of the last strong unions able to hold the line on hard-fought gains, while other industrial labor groups have folded.</p> <p>For the company's part, when Kight began the talks with the union back in May, he seemed to do so with the best intentions. '<i>Boeing's</i> goal is to create an open and honest environment by communicating frequently and having robust discussions,' he told managers back then in an e-mail message. <b>But when the differences—and distrust—are deep, honesty may do little to bridge the gap. Instead, it boils down to which side can stand the pain of a strike long enough to claim victory.</b>'</p>	
12 Sept. 2008	<i>The Wall Street Journal</i> , "Boeing Strike Rattles Key Suppliers" (J. Lynn Lunsford & Daniel Michaels)		Firm – Supplier - Labor	<p><math>\alpha</math> &amp; <math>\beta</math></p> <p>"<i>Triumph Composite Systems Inc.</i>, which produces air ducts and composite floors for <i>Boeing</i>, said it would <b>lay off at least 220 of the 550 workers</b> at its Spokane, Wash., plant. The company said it would be forced to <b>lay off another 15% to 20% of its work force if the strike runs past Sept. 21.</b></p> <p><i>Spirit AeroSystems Inc.</i>, which builds every <i>Boeing</i> 737 fuselage as well as the flight decks and nose sections for a variety of other models, said it was <b>cutting production immediately and reduced its workweek to three days</b> for many employees in an effort to <b>avoid layoffs</b> at its facilities in Wichita, Kan.</p> <p>Although many suppliers say they hope <i>Boeing's</i></p>	<p>Comparing how integral and modular suppliers responded to an exogenous shock (i.e. a labor strike at its main customer).</p>

					labor dispute is resolved quickly, some are also privately <b>rooting for Boeing to hold strong</b> . They know that any concessions <i>Boeing</i> makes will likely surface in their own labor negotiations down the road. 'It's a global industry in more ways than one,' said an executive at a supplier."	
14 Sept. 2008	<i>Fobes</i> , "Boeing CEO McNerney Gamble on Strike" (Bill Rigby)	Jim McNerney, Chairman & CEO, <i>The Boeing Company</i>	Firm - Labor	$\alpha$	<p>"<i>Boeing Co.</i> chief executive Jim McNerney is <b>betting his career</b> that the world's biggest-selling plane maker can <b>survive a strike</b> by its assembly workers and <b>emerge stronger by holding firm on its right to outsource work</b> on its aircraft. The decision to <b>play hardball with the company's biggest union is a gamble</b> for McNerney, 59, a star baseball pitcher at Yale, where he was a <b>classmate of U.S. President Bush</b>. The outcome will dictate the direction of the most famous name in aerospace and one of the biggest U.S. exporters. <b>'If it's a choice between getting it (the strike) stopped quickly, or doing what is good for the company in the long run, he's going to choose the second,'</b> said Richard Aboulaflia, an aerospace analyst at research firm <i>Teal Group</i>, based in Fairfax, Virginia. <b>'To a certain extent, he has no choice. Compromising on the company's competitiveness is a losing game.'</b> Simply put, <i>Boeing</i> wants to design and assemble planes, but leave the labor-intensive manufacturing to others. Its new 787 Dreamliner is being built by other companies in Japan, Italy, South Carolina and elsewhere, and only assembled by <i>Boeing</i> in the Seattle area. The machinists' union sees this as an attempt to destroy local jobs. But McNerney is <b>committed to the new way of working and is calculating that the long-term benefits of outsourcing will outweigh the bad will, cost and delay caused by a strike</b>. A week into the stoppage, <b>he still has the support of Wall Street</b>. The company's share price is holding steady around its 12-month low, but <b>most analysts expect a jump when the strike ends</b>. <b>'Things could turn around here after the strike has been resolved,'</b> said Paul Nisbet at aerospace equity specialists <i>JSA Research</i>, based in Newport, Rhode Island. <b>'I would expect things to start moving pretty favorably in the company's direction.'</b></p> <p>The International Association of Machinists and Aerospace Workers (IAM), <b>sensing the upper hand as Boeing reaps record profits</b>, is holding out for a hefty pay rise and removal of contract wording <b>giving Boeing almost unfettered power to use outside suppliers</b>. The company came close to meeting pay demands, but is refusing to budge on outsourcing with no further talks planned. Resolving the strike, which is costing <i>Boeing</i> \$100 million a day in revenue, <b>looks to be the biggest challenge in the CEO's career</b>. Walter James McNerney Jr., who prefers to be called Jim, worked his way quietly</p>	On a modular enterprise architectur e's logic which assumes modular vs. modular competition. (This logic is orthogonal when competing against an integral enterprise architecture.)

					<p>into one of the most important positions in U.S. business. He came to <i>Boeing</i> after four and a half years at the helm of manufacturer <i>3M Co.</i> and a 19-year career at <i>General Electric Co.</i> where he lost out to Jeff Immelt in the race to take over from Jack Welch. <b>His time in charge at <i>Boeing</i> has been relatively calm, after the company lost two CEOs in dubious circumstances.</b> Philip M. Condit resigned in December 2003 after it emerged that <i>Boeing</i> had improperly offered a high-paying job to the U.S. Air Force's No. 2 acquisition official. The successor, Harry C. Stonecipher, resigned in March 2005 when it was revealed he was having an affair with a <i>Boeing</i> executive.</p> <p>After taking over in July 2005, <b>McNerney moved quickly to clean up <i>Boeing's</i> legal and ethical problems,</b> settling long-running federal investigations into its procurement practices and illegal appropriation of <i>Lockheed Martin Corp.</i> rocket program documents. <b>His leadership has coincided with a three-year boom in commercial plane sales and steady growth in U.S. defense spending.</b> Last year, <i>Boeing</i> had a banner year, crushing rival <i>Airbus</i> with an industry record 1,413 plane orders and its highest-ever annual profit of \$4.1 billion. Despite those successes, <i>Boeing's</i> shares have plunged about 36 percent in the past 12 months, compared with a 15 percent drop in the <i>Standard &amp; Poor's</i> 500 index, hit by the credit crisis sell-off, spiking oil prices, and worrisome delays on the 787. 'He's not coming out smelling too much like a rose at this point, with problems on the 787 and not being able to reach an agreement with the workers,' said Nisbet. <b>'But they (<i>Boeing</i>) are definitely right. They could be leading the aerospace industry down the same path of the airline industry and the auto industry if they didn't take a stand.'</b>"</p>	
15 Sept. 2008	<i>Financial Times</i> , "GKN Pays £136m for <i>Airbus</i> Plant" (Kevin Done)		Firm- Investor-Supplier	$\beta$	<p>"Around 1,500 employees, <b>25 per cent of the workforce</b> at Filton, will transfer from <i>Airbus</i> to <i>GKN</i>. Tom Enders, <i>Airbus</i> chief executive, said the group's remaining wing, landing gear and fuel systems design and engineering business at Filton was core to its role of being an aircraft <b>'architect and integrator.'</b> It would <b>retain a workforce of around 5,000</b> at Filton including for the assembly and equipping of the composite wings for the A400M military transport aircraft."</p>	On an integral enterprise architecture's method of divesting and outsourcing capacity not knowledge.
17 Sept.	<i>The New</i>	Alan R.	Firm-Governor	$\alpha$	<p>"Alan R. Mulally, the chief executive of <i>Ford</i>, was even more upbeat. <b>'It was a great day,'</b> he said.</p>	On a modular

2008	<i>York Times</i> , "Federal Aid to Detroit Seems Likely" (David Herszenhorn)	Mulally, the chief executive of Ford	Government		When a reporter asked what Mr. Mulally might say to people who viewed the <b>loan guarantees as a bailout</b> , he replied in a chipper voice, <b>'I would characterize it as an enabler.'</b>	enterprise architecture's sporadic, "boom & bust" relationship with government.
18 Sept. 2008	<i>Bloomberg</i> , "Boeing Engineers' Union Says Talks Many End in 'Train Wreck'" (Susana Ray)	Ray Goforth, Executive Director, SPEEA	Firm - Labor	$\alpha$	<p><b>"Things are looking worse,"</b> Ray Goforth, executive director of the Society of Professional Engineering Employees in Aerospace, said in an interview after a meeting with <i>Boeing's</i> negotiating team yesterday. <b>'These negotiations will end up in the same train wreck as they did with the machinists if they don't change how they're approaching us.'</b></p> <p>The engineers are demanding the <b>return of some work the company gave suppliers to help control costs</b> while developing and building planes like the new 787 Dreamliner. In its first response to the union, Chicago-based <i>Boeing</i> said yesterday <b>it's sticking to its outsourcing strategy</b>. The current contract expires Dec. 1.</p> <p><b>'We won't give up the flexibility that we have, but we're willing to talk about other ways to increase productivity or other initiatives like that,'</b> Karen Fincutter, a <i>Boeing</i> spokeswoman in Seattle, said in an interview.</p> <p><i>Boeing</i> says its business plan counts on external suppliers and it needs to make sure it keeps costs low enough to stay competitive. <i>Boeing</i> proposed a contract longer than the current three years. <b>'What they proposed today was full of take-aways, so even if we were to accept such a terrible contract, why would we lock that in for longer?'</b> Goforth said. <b>'They were completely unsympathetic to our concerns' about outsourcing.'</b></p>	On a modular enterprise architecture's method to compete in "Cost Leadership"
19 Sept. 2008	<i>Financial Times</i> , "Airbus Sticks with Production Increase Goal" (Kevin Done)	John Leahy, Airbus COO, Customers	Firm	$\beta$	<b>"Airbus is sticking with plans to raise commercial aircraft production</b> by almost a third in the four years to 2010, in spite of the rapid deterioration in the financial state of the airline industry. John Leahy, <i>Airbus</i> commercial director, said the European aircraft maker had reviewed its production plans this week and remained "on track" to raise output of its single-aisle A320 short-haul jets from a current level of between 34 and 36 a month to 40 a month by early 2010. Output of its wide-body, long-haul jets, chiefly the A330, was being raised from eight to between 10 and 11 a month by 2010, he said. <b>'We are still seeing demand and we still have some</b>	On an integral enterprise architecture's production at sustainable rates.



					overbooking [in the production schedule] for 2009 to 2011' for the A320 aircraft. <b>'You know someone will not turn up, but you don't know who.'</b> The level of overbooking had fallen from a year ago, however, and the higher production schedule was being maintained <b>'with fingers crossed'</b> . Mr Leahy said <i>Airbus</i> was <b>'increasing somewhat' the amount of 'back-stop' financing it was providing to airline customers facing difficulties in securing finance for new aircraft deliveries.'</b>	
20 Sept. 2008	<i>Hearld Net, "Boeing's New Hires Go Right on Strike"</i> (Michelle Dunlop)		Firm-Labor	α	"Even as its Machinists strike enters its third week, the <i>Boeing Co.</i> continues to hire new production workers -- who then go on strike. Most of the new workers report to picket duty rather than to <i>Boeing's</i> commercial jet factories, which have been silenced since 27,000 Machinists went on strike Sept. 6. <b>'It doesn't make sense to turn off the system,'</b> said <i>Boeing</i> spokesman Tim Healy. <i>Boeing's</i> hiring process takes several weeks of screening and preliminary tests, including some unpaid time. Newly hired workers are informed of the ongoing strike and most opt to participate in it. Since Sept. 5, the company has hired about 130 new Machinists, said Connie Kelliher, spokeswoman for the union. That's not an uncommon practice during a labor strike, she added. <b>Since 2005, Boeing has been on a hiring spree, bringing on as many as 200 Machinists in a week to handle a big backlog of orders.</b> But that trend has slowed, according to the latest Snohomish County job numbers reported by Employment Security Department this week."	On a modular enterprise architecture's non-systemic approach.
22 Sept. 2008	<i>ATW, "Boeing Machinists Strike Enters Third Week"</i> (Geoffrey Thomas)		Firm-Labor	α	"One worker who said he'd rather not be striking cynically observed that the <b>Seattle area's great late summer weather was contributing to the strike. Indeed, picket lines observed by this website were quite small.</b> The disgruntled IAM member noted that <b>Washington State's hunting season for deer and game birds started Sept. 1 while elk season kicked off Sept. 8.</b> Two other strikers said the work action would give them a welcome break. <b>'I want to spend more time with my family,'</b> said one."	On a modular enterprise architecture's "boom & bust" approach to labor-management. <i>Boeing's</i> over-promised and under-delivered commitments on the 787, caused the company to have machinis

						ts work excessive amounts of overtime in the months running up to the labor negotiations.
24 Sept. 2008	<i>Forbes</i> , "Boeing CEO Says Talks with Unions at 'Standstill'" (Scott Malone)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm	α	"Analysts have warned that 25 percent of the sales backlog at <i>Boeing</i> and European rival <i>Airbus</i> , a unit of EADS, could be imperiled as a result of the economic slowdown. But McNerney said history suggests the effects would not be that severe. 'We've examined past economic downturns like we're experiencing now and it tends to be that the risk is in the 5 to 10 percent range,' McNerney said. 'Could be a little worse, could be better than that. We'll have to monitor the situation.'"	On the leader of a modular enterprise architecture being <i>unconservative</i> in representation of data.
24 Sept. 2008	<i>Bloomberg</i> , "Boeing's McNerney Sees Financing Demand, Backlog Risk" (Edmond Lococo & Susanna Ray)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm-Labor	α	"Boeing's plane factories have been shut since 27,000 machinists walked off the job Sept. 6, demanding more job security and better wages and benefits. Its 21,000 engineers, whose contract expires Dec. 1, also are insisting on a greater share of work now given to suppliers to help <i>Boeing</i> control costs on planes such as the 787 Dreamliner.  McNerney today characterized <i>Boeing's</i> outsourcing strategy as a 'management-rights' issue. Both sides have been 'unable to find the common ground that we need to find to have the discussion we need to have to solve the problem,' he said."	On the leader of a modular enterprise architecture describing the zero-sum, non-collaborative ideology.  Management-rights and responsibilities: "Management-rights" do not seem to be associated with manage

						ment taking responsibility for employee strikes.
24 Sept. 2008	<i>International Herald Tribune</i> , "Airbss Making Headway as Boeing Sits Idle, (Caroline Brothers)	John Leahy, Airbus COO, Customers	Firm-Labor	$\alpha$ & $\beta$	<p>"Ten thousand job cuts are expected. Entire plants are being sold or split off. Union members are getting a pay rise of only 1.5 percent for this year, and managers are working to send more jobs abroad. Yet European <b>workers at Airbus are not out on the picket lines</b>. They are working round the clock to rewire at least 6 A380 superjumbos by hand to meet a target for completing 12 of them this year. Meanwhile, in <b>developments that turn national stereotypes on their head, American workers at Boeing, worried about job security, have been on strike for almost three weeks, despite an offer of an 11 percent pay increase over three years</b>. The strike is further delaying production and costing the company \$100 million a day in lost revenue.</p> <p>There is little rejoicing over <i>Boeing's</i> problems at <i>Airbus</i>, which has been through plenty troubles of its own over the past two years. But managers at the <i>Airbus</i> headquarters in Toulouse say their work force seems to agree on the urgency for change, at least for now. <b>'We have pretty good working relations with the unions, which are not nearly as adversarial as in Seattle,'</b> John Leahy, the top salesman at <i>Airbus</i>, said Friday during an interview in Toulouse as <i>Qantas</i> received its first A380 here. <b>'We have more of a partnership here, and whether you are on the assembly line or an engineer you can understand the euro-dollar problem, and see the foreign exchange rate going in the wrong direction.'</b></p> <p><i>Airbus</i> has not been without labor problems as it tries to recover from its own stumbles, mostly related to A380 production, while adapting to tough market conditions. <b>Work on Airbus assembly lines was disrupted three times in as many weeks in February and March of 2007 as more than 33,000 demonstrators protested thousands of planned job cuts.</b> Smaller job actions continue sporadically. On Friday, as many as 300 workers from one small union walked off the job for two hours in Toulouse to protest the restructuring. But the hand-over ceremony to <i>Qantas</i> was not disrupted.</p> <p><b>Analysts say strikes at Airbus tend to be shorter than those at Boeing partly because there is greater and more frequent communication between the two sides in Europe in regular forums like works councils. At Boeing, by contrast, unions tend to face off with management</b></p>	Comparing modular and integral approaches to labor.

				<p>every three years to negotiate a big collective contract, so there is much more at stake.</p> <p><b>Boeing and Airbus are operating in the same constrained environment</b>, however, trying to sell new models to an industry stricken by soaring oil prices, <b>slowing economies</b>, and a major shakeout among the Wall Street institutions that finance aviation companies. <b>Both companies are battling to cut costs</b>, and both are outsourcing supplies and parts of the assembly process. <i>Airbus</i> is especially feeling pressure to shift production out of the euro zone and into lower-cost regions, including the United States. That is mostly because aircraft are priced in dollars, and <i>Airbus</i> has the disadvantage of bearing the bulk of its costs - labor and supplies - in euros. The strong euro also means that the discounts manufacturers usually give to win big orders cut deeper into <i>Airbus</i> revenue. ‘<i>Airbus</i> has less margin to maneuver,’ said Howard Wheeldon, senior strategist <i>BGC Partners</i>, a brokerage firm in London. ‘It gives discounts that it can ill afford to give.’ Thus, most of the recent expansion has been outside the euro zone and toward growth markets. <i>Airbus</i> is about to start assembling some A320 planes in <b>China</b>, a fast-growing market. The company gets half of the doors for the A320 from <i>Hindustan Aeronautics</i>, an Indian company. <i>Airbus</i> also had big plans to start building the cargo version of its A330 in Mobile, <b>Alabama</b>, until its U.S. Air Force contract to produce refueling tankers, based on the A330, was thrown into jeopardy this year. Still, the company is moving ahead with plans to ship some of its production in France to <b>Tunisia</b>. Thomas Enders, the <i>Airbus</i> chief executive, said last Friday that <b>30 percent</b> of the airframe of the <i>Qantas</i> A380 had been outsourced, half from suppliers in the United States. The level of airframe outsourcing on the wide-body A350 will be <b>50 percent</b>, Enders said. <b>Though Airbus employees have not walked off the job en masse, that does not mean they are unconcerned about greater amounts of production being done outside the company and outside Europe. Workers fear that Airbus will make itself more vulnerable to delays if it loses control of core competencies</b>, especially on new technologies like the lighter composite materials that will replace the aluminum and alloy fuselage on the new A350. This plane is the intended competitor to the <i>Dreamliner 787</i>, which has slipped behind <i>Boeing’s</i> original production plan and may have been further delayed by the strike. <i>Airbus</i> said in May that <i>Spirit AeroSystems</i>, a former <i>Boeing</i> subsidiary based in Wichita, Kansas, would design and produce part of the central fuselage of the A350 at a new factory in North Carolina. An <i>Airbus</i> union official who had taken part in recent talks with managers expressed concerns about working with outsiders. <b>‘With the</b></p>	
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					<p><b>A380, we didn't master all the production inside the group, and we are even more anxious with partners we don't know and who don't know our processes,'</b> he said, speaking on the condition of anonymity because of the sensitive nature of relations with management. <b>'Airbus was solid enough to support the cost of the A380, but we are not sure it can support the A350 if it is delayed.'</b> Enders said Friday that the fear of losing control of its critical operations was a legitimate concern. <b>'That would be a danger if we didn't know what our core competencies were,'</b> he said. <b>'But we've done studies into what should be core and what noncore. There are risks to this concept, but I'm optimistic we can manage it.'</b></p> <p>Geoff Dixon, the chief executive of <i>Qantas</i>, who had waited two years and two months for its first A380 and who had expected to have 8 to 12 by now, said Friday that he was not especially concerned about potential delays. Dixon said that <i>Qantas</i> had ordered 20 of the superjumbos, with options for 4 more, and that he intended to exceed number on order. <b>'Both Boeing and Airbus have outsourced,'</b> he said. <b>'We can be critical if they don't meet deadlines. But with airlines also trying to find more efficient ways to run their business, we can understand it.'</b>"</p>	
2008	<i>Boeing "Current Market Outlook 2008-2027"</i>		Firm	$\alpha$	<p><b>"Over the past 20 years, air travel grew by an average of 4.8 percent each year. This was despite two major world recessions, terrorist acts, the Asian financial crisis of 1997, the severe acute respiratory syndrome (SARS) outbreak in 2003 and two Gulf wars.</b> During 40 years of producing the <i>Current Market Outlook</i>, we have learned that the resilience of air transport growth comes from its intrinsic importance to the livelihood of people around the world.</p> <p><b>On average over the next 20 years, passenger travel will grow at 5.0 percent and cargo at 5.8 percent. The fastest growing economies will lead the transformation into a more geographically balanced market. More productive, new airplanes will play a greater role, and there will be relentless pursuit of further environmental progress."</b></p>	<p>On a modular enterprise architecture being <i>unconservative</i> in representation of data.</p> <p>Ignores the fact that global population growth rates have already peaked and are decelerating. Assumes that exogenous events</p>

						like wars, will occur at a lower rate than experienced in the past.
28 Sept. 2008	<i>Bloggin Stocks, "Airbus Gets a Leg Up on Boeing"</i> (Douglas A. McIntyre)		Firm-Investors-Labor	$\alpha$ & $\beta$	<p>"It is hard to do business, make sales, and drive profits when your company is shut down by a strike. It also aids the competition. <i>Boeing Co.</i> is finding that out the hard way. According to <i>Bloomberg</i>, '<i>Airbus SAS</i>, starting its first aircraft assembly today outside Europe, said it may buy up to \$1 billion of components from China by 2020, as the world's most populous nation may need 3,000 planes in the next 20 years.' By putting a plant inside China and offering to put money into the economy, <i>Airbus is making best friends with the central government, a move that is almost certain to garner significant orders from the nation's commercial airlines.</i></p> <p><i>Boeing</i> management made a huge mistake by allowing its machinists to go out on strike instead of improving their compensation packages enough to keep the company operating. <i>Boeing</i> said that its margins could be hurt by the size of the deal the union wanted. The machinists knew better. They could see the size of the <i>Boeing</i> back-orders for products like the new Dreamliner going out for years and year driving higher and higher sales.</p> <p>Each day that the strike goes on, <i>Boeing</i> risks losing more customers to <i>Airbus</i>. <b>Management has not done the shareholders any favors."</b></p>	Contrasting modular and integral approaches to labor & investors.
29 Sept. 2008	<i>The Seattle Times, "Simmering Boeing Strike Scorching Both Sides"</i> (Dominic Gates)		Firm-Labor	$\alpha$	<p>"With the aviation business teetering on the edge of a major downturn, however, <i>Boeing</i> management remains adamant the company must rein in long-term costs and cannot offer concessions on job security. <i>Boeing</i> also knows that making big concessions increases the chance of another strike in 2011. And sooner than that, any job-guarantee commitment to the IAM invites matching demands from the Society of Professional Engineering Employees in Aerospace, the engineering union that has just begun contract negotiations.</p> <p>Most Machinists display a firm resolve to stay out, while handling the strike in individual ways. On Thursday, Jayleen Roman, a younger machinist on the 787 program, began a 10-day Hawaiian vacation with her parents. Her dad is a 28-year veteran machinist. They had long planned and saved for both the vacation and the strike. '<b>We're ready to stay out as long as it takes,</b>' said Roman. Stephen</p>	Management of Modular Enterprise Architectures views job-security as a long-term cost, without seeing it as a source of long-term productivity

					<p>Watkins, an electrician on the 777 program, has been building a fence for his brother-in-law while on strike, and will move on to do some work for his father-in-law. Like many veterans, Michael Spears, a team leader on the 777 jet program in Everett, has borrowed from his 401(k) retirement funds and set aside money for his mortgage payments through January. If the strike lasts a month or two, he expects to repay the loan from a signing bonus typically part of any IAM strike settlement. <b>If it's more drawn out, he said he'll plan to work until 57 instead of retiring at 55.</b> For now, Spears is enjoying the break from the heavy noise and vibration of his workplace. <b>'For the past 18 months I've been working 10-hour days, seven days a week, sometimes a month straight. My body is appreciating the downtime.'</b></p> <p><b>Blondin says the possibility of a downturn in aviation — with the potential for layoffs at Boeing — makes the union demand for an end to outsourcing 'that much more important to fight for now. 'We need to get that job-security stuff solved first and the rest is doable,' he said. Kight counters that the option to outsource work or slow production in a downturn is key. Boeing, he said, must be able to 'react nimbly to what can be very sudden and dramatic changes in our marketplace.'</b></p>	ity increases, and therefore a route towards reining-in long-term costs.
29 Sept. 2008	<i>The Seattle Times</i> , "Simmering Boeing Strike Scorching Both Sides" (Dominic Gates)		Firm-Labor	α	<p>"A <i>Seattle Times</i> analysis using the company's online wage and benefit calculator shows that the current offer over three years gives the average Machinist approximately an extra \$22,000 over the 2008 compensation level. (The company has said the contract adds \$34,000 but it acknowledges that figure ignores substantial extras included in 2008 pay, including a lump-sum bonus.) Average pay with overtime and bonuses, all totaling \$68,000 in 2008, will rise to \$80,000 in 2011, said <i>Boeing</i> spokesman Tim Healy. <b>Based on those averages, the company offer would increase Boeing's total annual cost for its IAM work force by some \$550 million, from \$2.43 billion this year to about \$3 billion in 2011.</b> <i>Boeing</i> must weigh its goal of capping those future costs against the reality of profits drained away in the present.</p> <p>After the 2005 Machinists strike, which lasted 28 days, <i>Boeing's</i> regulatory filings pegged the hit to its profits at up to <b>\$300 million</b> for that year. However, those filings do not reflect the full financial impact because Boeing spreads its program costs over hundreds of airplanes and about four years of production. <b>'Boeing's accounting disclosures don't reveal the true cost of the strike,'</b> said an analyst at a Wall Street firm that doesn't allow him to be quoted. A solid estimate for the real cost of the 2005</p>	On the non-systemic hidden costs behind a strike in a modular enterprise architecture.

					<p>strike is revealed in an internal <i>Boeing</i> document obtained by <i>The Seattle Times</i>. It was prepared for then-Chief Executive Alan Mulally and his senior management team in October 2005, soon after the Machinists went back to work. The document projected that over a four-year period through the end of 2009, the net loss of profits due to the 2005 strike would be just over <b>\$700 million</b>. That figure included profits deferred from the planes not delivered during those four years, as well as more than <b>\$200 million in "abnormal costs" including penalties paid to suppliers. The implication of the projection is that three years after the 2005 strike — and in the first month of a new IAM strike — Boeing has still to make up that \$700 million in missed profits.</b> After the strike ended in 2005, <i>Boeing</i> decided not to catch up on deliveries by ramping up production beyond its long-range plan. Instead, it simply pushed the entire delivery schedule out one month, so that the financial impact flows right through to today. Extrapolating from the 2005 projection, based on today's much higher production rates and profit margins, the Wall Street analyst estimated that the <b>total hit to profits for a one-month strike now would be at least \$1.3 billion.</b> Balancing that, <i>Boeing</i> has plenty of money in reserve: more than \$10 billion at last report, compared with \$8 billion three years ago. 'The company is in a strong financial position should ... this situation get extended,' said Kight."</p>	
29 Sept. 2008	<p><i>Washington Post</i>, "Clearer Skies May Be Ahead for <i>Boeing</i>" (Klana Polyak)</p>		Firm-Investor	$\alpha$	<p>"Then there's the 15-month delay of introducing <i>Boeing's</i> much touted fuel-efficient jet, the 787 Dreamliner. <b>The program has been delayed four times.</b> Should the strike continue for more than a few weeks, delivery of the Dreamliner could be pushed to 2010. <b>Delays notwithstanding, the Dreamliner's potential is huge. 'Long-term,' says Fletcher Perkins, an analyst with Hillman Capital Management, 'it will turn into a very good profit source for Boeing.'</b></p>	<p>On a modular enterprise architecture's understanding of complexity.</p>
8 Oct. 2008	<p><i>Bloomberg</i>, "Boeing, Union Say Crisis Won't Break Strike Resolve" (Susanna Ray)</p>		Firm-Labor	$\alpha$	<p>"<i>Boeing</i> Chief Executive Officer Jim McNerney told employees in an Oct. 6 memo that the 'ongoing turmoil in the financial markets' shows why it's important for the company to be able to <b>react quickly and not restrict its competitive moves through job promises.</b></p> <p>'Decisions on where to place work, to whom, when, must be owned by the company; that is a boundary that we're not going to cross,' Kight said in an interview yesterday at <i>Boeing's</i> commercial-plane headquarters near Seattle. <b>'We are also not in a position, nor is any other employer, particularly when you look at what's going on in the world today, to guarantee employment.'</b>"</p>	<p>On a modular enterprise architecture's inability to acknowledge how integral enterprise architectures guarantee</p>



						e lifetime employment, in the face of challenging exogenous events.
9 Oct. 2008	<i>Forbes</i> “The Upside of Downside for <i>Boeing</i> ” (Carl Gutierrez)		Firm	α	“Paul Nisbet of <i>JSA Research</i> believes the recent global financial turmoil has brought added pressure on union members to start working again. ‘I’m sure many of them have lost money in the market and in pension plans, Nisbet said, ‘and as the situation has changed there are quite a few minds that have changed as well.’ Although Nisbet believes <i>Boeing</i> will give in to some extent on higher wages, better provisions for health care and pensions, he expects the company to be steadfast in its stance on its ability to outsource. <b>‘I think <i>Boeing’s</i> view on outsourcing is if it does give in it will lead the aerospace industry down the same path as the auto and airline industries have seen,’</b> Nisbet said.”	On commonality between modular enterprise architecture’s views across the aerospace, airline and automotive industries (the three industries of the theoretical sample in this research)
9 Oct. 2008	<i>Seattle Post Intelligencer</i> “Striking Machinists Rally Around Union Leaders Before Talks Resume” (James Wallace)		Firm-Labor	α	“‘We don’t want subcontractors in our workplace setting up parts distribution centers. That’s our work,’ [IAM Preseident] Blondin said. <b>‘We will work with the company on lean activities and process improvements, but the IAM has to be a partner in that,’</b> he added. <b>‘But we are not going to have suppliers come in while our members are being laid off. That’s really what it is all about. That’s part of job security.’</b> <i>Boeing</i> knows the union’s position, so the fact the company is willing to start talking again is an encouraging sign it may be willing “to move” on this issue, Blondin said. ‘I hope they are not wasting our time.’ The other big issue that could prove difficult to reach agreement on involves outsourcing. The union wants more opportunity to compete for work that <i>Boeing</i> is contracting out. <b>‘We are not looking to shut them (<i>Boeing</i>) down globally,’</b> Blondin said. But what the union will insist on in any new offer, he said, is the right to bid on future work that <i>Boeing</i> wants to	On a union’s more integral approach in working with a modular enterprise architecture.

					<p>outsource. ‘We don't get a look at the work that goes out the door day to day throughout the country, much less the overseas stuff,’ Blondin said. <b>‘We get a very narrow slice to look at. If the company determines that it is emergent or temporary, we don't get to look at it. What we are saying is that 'emergent' is not work that goes out for a year. And 'temporary' is not work that goes out for a year. If you are going to call it emergent or temporary it better be short term.’</b> He said the union wants language in the contract that allows it to bid on that work. <b>‘We want to be able to compete with all things considered, including material costs, labor costs, delivery costs and rework costs. The whole works,’</b> Blondin said.</p> <p><b>Thursday's union rally included pilots from Alaska, United and Horizon airlines, as well as flight attendants and mechanics from those carriers. They came to show support for the Boeing strikers.”</b></p>	
10 Oct. 2008	<i>Forbes</i> “Boeing Shares Sink As Analyst Cuts Projections”		Firm	α	<p>“Goldman Sachs analyst Richard Safran lowered delivery forecasts for the Chicago-based airplane maker to <b>462</b> aircraft in 2009, down from an earlier estimate of <b>489</b>, and <b>392</b> in 2010, down from <b>524</b>. ‘We believe that the inability to obtain financing will cause customers to defer or cancel orders,’ he wrote in an investor note. <b>‘As a result, we believe (Boeing) will lower production rates.’</b>”</p>	On a modular enterprise architecture’s use of “exogenous” events to drive growth/contraction plans.
10 Oct. 2008	<i>Seattle Post Intelligencer</i> , “Analyst: 787 Won’t Deliver Until 2010” (James Wallace)		Firm-Labor	α	<p>“Here is part of what David Strauss of <i>UBS Investment Research</i> said in his report Friday:</p> <p>‘Watching flights into Paine Field in Everett: We are tracking movements of <i>Boeing’s</i> modified 747 ‘Dreamlifter’ fleet to gauge the progress of 787 production. Specifically, we are monitoring Dreamlifter flights into Snohomish County Paine Field Airport (KPAE) in Everett WA, adjacent to 787 production, to gauge the pace of shipments from the major structural suppliers. Major structural components are delivered via the Dreamlifter fleet to <i>Boeing</i> in Everett and include the wings from Japan, aft fuselage from Charleston SC, center fuselage from Italy (via Charleston), and forward fuselage from Wichita KS. Strike halts already slow-paced structural deliveries: We did not track any Dreamlifter flights into Everett in September as <i>Boeing</i> has apparently halted all 787 deliveries from its suppliers given the ongoing Machinists strike. We continued to track some center fuselage deliveries to Charleston. Flight test program now unlikely to</p>	On the true effect of a strike on the delay of the 787.

					complete prior to early 2010: <b>Even prior to the Machinists strike that began in September, the slow pace of structural deliveries had led us to believe that <i>Boeing</i> was highly unlikely to hit its revised 787 flight test schedule.</b> <i>Boeing</i> has now missed the scheduled assembly complete dates for the first three flight test aircraft and we believe the flight test program is unlikely to complete prior to early 2010.”	
20 Oct. 2008	<i>Business Week</i> “How <i>Toyota</i> Plans to Beat the Downturn” (Ian Rowley)	Katsuki Watanabe, President of <i>Toyota Motors</i>	Firm	β	<p>“After taking over as <i>Toyota</i> (TM) president in June 2005, Katsuki Watanabe regularly warned of the dangers of complacency creeping in at the Japanese automaker (<i>BusinessWeek</i>, 3/5/07). But until recently, it was a tough message to get across. The company was doing too well: In the year through March 2008, <i>Toyota</i> sold 8.9 million vehicles, an increase of 32% over five years, while its net profits rose 53%, to \$17 billion. This year it will likely overtake <i>GM</i> (GM) to become the world's largest carmaker. These days, though, Watanabe need only point to <i>Toyota's</i> stock price to keep employees' feet on the ground. <b>Since the beginning of the year, <i>Toyota's</i> shares have fallen 37%. While roughly in line with Japan's benchmark stock index, the performance isn't much better than troubled <i>GM</i>, whose stock is down 39%. And <i>Toyota's</i> recent sales, though not nearly as bad as the Big Three's, hardly instill confidence. Some analysts are sounding the alarm.</b> In an Oct. 10 note to investors, <i>NikkoCitigroup</i> auto analyst Noriyuki Matsushima predicted ‘a sudden and substantial earnings decline’ for <i>Toyota</i>. <b>‘We believe <i>Toyota</i> needs to draft a new strategy that changes its existing course and includes initiatives to secure appropriate sales volumes,’</b> he wrote. Lowering his projections for the current fiscal year, Matsushima expects <i>Toyota</i> to post operating earnings of \$11 billion, a 50% decline compared with the year that ended Mar. 31, and \$5 billion less than the company's projection. <b>Time for investors to bail out? Not exactly. Even if <i>Toyota's</i> earnings drop by half this year, the company's operating profits are still likely to exceed \$10 billion. And with a solid balance sheet, more than \$20 billion in cash, and a slew of new car initiatives, <i>Toyota</i> is better placed than most automakers to weather economic uncertainty. ‘Once [<i>Toyota</i> executives] have made the decision to do something, they can get on and do it without having to arrange financing,’</b> says Andrew Phillips, an analyst at <i>KBC Securities</i> in Tokyo. <b>For now <i>Toyota's</i> problems seem minor compared with the Big Three's</b> (<i>BusinessWeek.com</i>, 10/7/08)—and it's moving to keep it that way. <b><i>Toyota's</i> bulging coffers will help it most in the U.S.</b> There, it's using the cash—\$3 billion at its U.S. financing unit, as of the end of June—to plug falling sales. Facing an increasingly severe slowdown and</p>	On how an integral enterprise architecture manages in a low-growth environment.

					growing inventory, <i>Toyota</i> on Oct. 3 began offering for one month interest-free financing on 11 models, including the Corolla, Camry, and Tundra full-size pickup. The risk, say critics, is that 0% financing could undermine car-resale values and hurt the brand if the company decides to extend the offer. <b>Toyota is also taking radical steps</b> at its North American factories. After opening a plant for big Tundra pickup trucks in San Antonio in 2006, the company has since curtailed production. It also has suspended production at three U.S. plants for three months in August to retool them so there's more emphasis on smaller, fuel-efficient models. <b>(It's not letting go of the 4,500 workers, though; they're keeping busy by doing everything from training programs to filling in at assembly lines elsewhere or volunteering in local communities.)</b> And for the first time, its hot-selling Prius gas-electric hybrid will be built in the U.S., at a plant in Mississippi—a move that will help it meet a target of selling 1 million hybrids a year early in the next decade.”	
21 Oct. 2008	<i>The Seattle times</i> “Boeing , <i>SPEEA</i> will Tussle over Outsourcing” (Dominic Gates)	Ray Goforth, executive director of the Society of Professional Engineering Employees in Aerospace (SPEEA); Mike Denton, vice president of engineering for <i>Boeing Commercial Airplanes</i>	Firm-Labor	α	“As <i>Boeing</i> and its engineering union prepare to sit down next Tuesday for intensive contract talks, the <b>perennially contentious issue of outsourcing</b> looms alongside the bread-and-butter questions of pay and benefits. <i>Boeing's</i> technical work force, much like the striking Machinists, is <b>anxious over the global-partner strategy used on the 787 Dreamliner</b> as well as the hiring of thousands of non- <i>Boeing</i> engineering contractors for in-house work. Ray Goforth, executive director of the Society of Professional Engineering Employees in Aerospace (SPEEA), says the <b>787 outsourcing has produced program delays unprecedented in Boeing history and has fueled ‘disdain for corporate management.’ ‘We want to make sure they never make this disastrous decision again,’</b> said Goforth, ‘We would like the professional and technical community to have a serious say in how future production systems are set up.’ Across from Goforth when main-table talks begin next week at the SeaTac Doubletree Hotel will be Mike Denton, vice president of engineering for <i>Boeing Commercial Airplanes</i> . <b>Denton won't promise the union a say in organizing future programs but says Boeing will address the errors it's made in the Dreamliner's design and production. On its next plane after the 787, Denton said, Boeing plans to keep in-house some of the major work.</b> Ahead of the talks, <b>the two negotiators have opposite perceptions of the mood of the technical work force.</b> The Machinist union has been on strike against <i>Boeing</i> for more than six weeks. And the looming recession must give pause to anyone who contemplates forgoing a paycheck. Yet Goforth puts <b>the chance of avoiding a white-collar strike at no better than 50-50.</b> He says <b>preliminary talks in</b>	On a modular enterprise architecture's agency issues between management and labor.

				<p>the past few months have gone badly. Goforth complains <i>Boeing</i> officials have not engaged in genuine discussion, instead rejecting union proposals out of hand, which he said will infuriate his members. 'If [management] don't understand that, they are fools. They know nothing about collective bargaining,' said Goforth. 'And they will lead this membership to a strike that is absolutely unnecessary.' But Denton sees an engineering work force with restored morale and a renewed faith in the company. He says that in 2000 — when the union had its first and only extended strike — many employees feared <i>Boeing</i> was on its way out of the commercial-jet business. 'Today, people don't doubt that we have a future,' said Denton. Denton said that in meetings with his engineers he doesn't detect the heightened anxiety he hears from Goforth and other SPEEA officials. 'I truly hope they are wrong.' <i>Boeing</i> engineers earn on average almost \$89,000 a year in base salary, and technical staff average about \$67,000, according to SPEEA. Overtime and incentive pay increase those averages to \$108,000 and \$82,000, respectively, according to <i>Boeing</i>.</p> <p>Goforth, 40, has a youthful vigor and charisma. With a rakish twinkle in his eye, he rattles off energetic threats to <i>Boeing</i> with machine-gun delivery. The first in his family to go to college, Goforth grew up 'working poor' in Los Angeles, built an early career in social services, then went to law school. He worked his way up to a job in Seattle as strategic adviser with a local government employees union. Goforth took the top staff job at SPEEA at the start of this year. A month later, he signaled a startling new SPEEA militancy when he warned union members they should begin to save for a possible strike. At that stage, preliminary talks had barely begun. He says technical workers' frustration with <i>Boeing's</i> executive leadership is 'the culmination of years of being ignored, of having their experience discounted and of having to clean up the messes.' The design work done by <i>Boeing's</i> partners on the 787 or by Russian engineers at <i>Boeing's</i> design center in Moscow often 'comes back all screwed up,' he said, and his members must work constant overtime to fix the problems. And he says <i>Boeing's</i> use of a few thousand nonunion contractors to do in-house engineering work will leave the company ill-equipped to recover on future jet projects. 'What happens when the next program runs into development problems? They won't have the internal capacity to dip into to fix it,' said Goforth. SPEEA is proposing restrictions on <i>Boeing's</i> use of contractors to do engineering work. And Goforth will push the broader demand for more say in how future airplanes</p>	
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					<p>are designed and built, even though it's unclear how exactly that might be incorporated into the contract.</p> <p>Denton, 53, a 31-year technical veteran of <i>Boeing Commercial Airplanes</i>, was a SPEEA member before joining the management ranks in 1988. Now <i>Boeing's</i> chief liaison between the executive leadership and the technical staff, he says, 'I think of the engineers as my team.' His father flew Air Force bombers in World War II and the Korean War, and was briefly a pilot for United, says Denton, so 'aviation is sort of in my blood.' Denton said <b><i>Boeing has hired so many contract engineers to avoid pitching union members into a roller-coaster 'hire-and-fire cycle.'</i></b> When the 787, the 747-8 and the 777 freighter all finally start production, there'll likely be a lag of some years when fewer design engineers are needed. <i>Boeing</i> can let the contractors go and keep its core technical team, he said. And he believes work-force morale is far better than at the time of the SPEEA strike in 2000. Denton recalled the <b>'depressing environment' at Boeing then: Executives had halted several new airplane development programs, and then-company President Harry Stonecipher hit a nerve when he pushed for a profit-driven approach to replace what he called <i>Boeing's</i> 'family' culture.</b> Today, Denton said, 'a lot of those wounds are healed,' because <i>Boeing</i> has combined 'the good of Harry's message with the good of the traditional <i>Boeing</i> culture.' 'I'm not shy of talking about family,' he says, <b>but 'you have to recognize, too, that you are in business.'</b> He concedes the outsourcing of the detailed design of major parts of the 787 — <i>Mitsubishi</i> of Japan does the wing, for example — has become a major issue for the technical work force as the program has faced major delays. 'Some would have preferred doing that design work,' said Denton. <b>'The fact that they are having to fix it later is doubly irritating.'</b> But Denton said that <b>as a result of the lessons learned on the 787, Boeing is likely to keep in-house 'some part of major production' on the next airplane. 'We want to be on the leading edge of technology,' he said. 'Whether it's all of a wing, or all of the fuselage, or some [other] part of production — all of that is to be figured out. But that's the general direction we will go.'</b>"</p>	
21 Oct. 2008	<i>Business Week</i> , "Pressure Builds for Boeing and Machinists to		Firm-Labor	α	<p>"Indeed, the union contends it has been willing to compromise, particularly around the sensitive issue of outsourcing. In the recent talks, for instance, the IAM suggested it would let suppliers enter factories and deliver parts to receiving areas near assembly lines, where the parts would then be transported further by IAM members. The arrangement could protect some 2,000 jobs, the union says. <b>But the company argues it needs more flexibility than</b></p>	On a modular enterprise architecture's misaligned objective

	Settle” (Joseph Weber)				that, including the ability to cut jobs if needed. ‘They want to put a bubble around these 2,000 jobs,’ says <i>Boeing</i> spokesman Tim Healy. ‘There’s no way, especially in this economy, we can agree to preserve the jobs in perpetuity.’”	s between manage ment and labor.
Fall 2008	<i>MIT Sloan Management Review</i> , “The Management Lessons of a Beleaguered Industry” (Michael S. Hopkins)	MIT Sloan Prof. Thomas A. Kochan	Firms	$\alpha$ & $\beta$	<p>“<i>Southwest’s</i> model is a difficult model [to copy] because in some respects it’s a bit anti-American.”</p> <p>“The two most financially successful airlines in the world are <i>Ryanair Holdings plc</i>, in Europe, and <i>Southwest</i>, headquartered in Texas. Both emphasize low unit costs. That is, providing a service at low cost. The fundamental difference is that <i>Ryanair</i> get there by minimizing labor costs, by squeezing employees, by adopting very harsh working conditions, by high levels of turnover so that costs don’t build over time. Whereas <i>Southwest</i> gets to low cost by emphasizing improved productivity [and] loyalty on the part of employees so they stay a long time and use their skills and knowledge to build a successful airline that meets customer service needs [and] that is designed with a work system that maximizes employee ideas and discretion for solving problems and achieving their financial objectives. So you have two highly successful airlines in financial terms but, on the one hand, <i>Southwest</i> does it by engaging employees, and <i>Ryanair</i> does it by squeezing employees, by having constant fights with their work force and by maying minimal benefits and wages.</p> <p><i>Southwest</i> employees are among the highest paid. They’ve moved to that position as the legacy carriers have either gone into bankruptcy and lowered their wages or cut wages through concessions outside of bankruptcy.</p> <p><i>Ryanair</i> has taken some of those same attributes from <i>Southwest</i>, but said, ‘All right, we’re going to do this but we’re going to do it bare bones and make sure we don’t get unions.’ <i>Ryanair</i> has certainly been successful in keeping their costs down, just in a very different way from <i>Southwest</i>. <i>Southwest</i> said, ‘Look, we’re in the airline industry, just about everyone is unionized, we need to get off the ground, we need political support, we don’t want to have theses battles.’</p> <p><i>Southwest</i> is a low-fare competitor, and they’ve had high-quality jobs. They make sure they hold their employees accountable for providing the productivity that warrants a higher wage.</p> <p>If you look at evidence across industries, we see productivity differences between 20% and 35% among companies that have high-quality employee-management relationships and those</p>	On the differences in how modular and intergral enterprise architectures pursue “cost leadership” in the airline industry – i.e. via flexibility and commitment respectively.

					<b>that have standard labor-management relationships. That's an enormous number."</b>	
22 Oct. 2008	<i>Seeking Alpha, "The Boeing Company, Q3 2008 Earnings Call Transcript"</i> (www.SeekingAlpha.com)	Jim McNeerney, Chairman and CEO; James Bell, CFO, <i>The Boeing Company</i>	Firm-Investor	α	<p>(Note: [ph] means "problems hearing" for the transcript).</p> <p><b><u>"Joe Campbell (Barclays Capital):</u></b> Yes good morning. My one part question is for James and it's about the <i>Boeing</i> commercial <b>margins</b> in the quarter. In the last quarter, we saw some issues related to <b>overhead absorption related to the 787, and I suppose there is some extra block [ph] pressures from the strike that will be recorded in the margins going forward. And I wondered what was going on with the margin before R&amp;D,</b> at the <b>program</b> level not the <b>unit</b> level <b>where we will see the strike,</b> and whether these margins reflect their estimate of the impact of the strike, the ongoing strike, the recovery, the extra cost, as well as whatever is left over from that absorption issue?</p> <p><b><u>James Bell (Boeing):</u></b> Yes, Joe, it is. We were making really good progress and we were really encouraged by what we saw in BCA relative to <b>overcoming the infrastructure cost impact related to the 787 slide</b> and the move to the C14 [ph] schedule we announced in April. And <b>obviously, it has been overcome by the addition of infrastructure costs associated with the strike.</b> But if you look at the margins, we do have the strike impact in there, as well as the improvement we saw over the second quarter and the efforts that has been performed by BCA to offset that, which was related only to the move of the 787 schedule. So we will continue to work that hard, but yes both for and also the improvement event [ph].</p> <p><b><u>Joe Campbell:</u></b> But in other words, we had the better – whatever we had, the <b>better priced airplanes,</b> because we have talked about having the program margins, which are not reflective of the current period of the strike but of your estimate of the full block for the production airplanes. So <b>I'm struck by how much the margins went down.</b> So apparently, I mean I know you're not giving '09 guidance <b>but unless something changes, your current estimate to complete the blocks is significantly lower than it used to be.</b></p> <p><b><u>James Bell:</u></b> No, I think the available margins – the margins that are on the airplanes, particularly those that slid out both due to the strike and the galleys, these issues are pretty, and so the impact on earnings this quarter is more significant as a result of that. In terms of the difference between what we would expect versus what we recorded, because as you know on the galleys, it is mostly the white [wide?] bodies that</p>	On a modular Enterprise Architecture's defense of its financial performance



				<p>moved out, Joe.</p> <p><b>Joe Campbell:</b> <b>But I'm still confused James with that</b>, and we can do it offline if you want, but I mean if the program is coming, it would reflect the <b>difference between unit and program</b>, it would cause that thing to be really big and talk about the program margins [ph].</p> <p><b>James Bell:</b> Yes, the difference between unit and programs are large.</p> <p><b>Joe Campbell:</b> Yes, I know. That's what I say, but I don't understand why that would affect the program margins, unless you had made some big adjustments about what the future costs would be.</p> <p><b>James Bell:</b> Well, we did not make, we actually put the strike impact in there as well but <b>if we excluded the strike impact and if we excluded the slide out, the program margins would have been 11%</b>, about 11.1% in the operating. So and the pre-R&amp;D margin would have been in the range we've always talked about around <b>30%</b>.</p> <p><b>Robert Spingarn (Credit Suisse):</b> Jim, you referenced two <b>cancellations</b> and <b>80 deferrals</b> this year and talked about offsetting demand for those slots, but a little more color please. Are these generally front-ended in the backlog and has the pace of these types of discussions changed recently, and how should we think about strike deferred airplane supporting rates next year and in 2010?</p> <p><b>Jim McNerney (Boeing):</b> Well, first of all, the cancellations and deferrals are pretty much in line with what we've experienced over the last three or four years, and we still have a – I would say, a significant overhang of demand, people who'd like to move their positions forward if other want to move them out. Now, I would say the discussion slightly more, but I would not say step function more discussion along those line. So we're monitoring it very closely. But I think it does speak to the fact that a lot of our backlog is in economically strong parts of the world. I think that speak – and that our airplanes are relatively productive compared to their fleets that things were hanging in, but we're monitoring it very closely. In terms of the impact on production rates, again, the – we have steadily increased production rates in a measured way over the last few years, as you know. We have tried hard to meet demand without getting</p>	
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				<p>beyond our headlights, so to speak and I think that's serving us well now, because I – we'll provide guidance going forward once we understand exactly where we are post strike. But we're feeling good about our production rates over the next couple of years. But we want to make sure we understand the impact of – any impact of the strike before we give you a definitive answer to that question.</p> <p><b><u>Howard Rubel (Jefferies):</u></b> I want to go back to an operational question and sort of use the 747-8 as the paradigm. I mean, you have again that looks like a charge or additional costs associated with that program. And if we kind of look, there's been – whether it's been the AWACS or the airborne early warning control or even the 787, you had just a series of what I call development misses relative to what normally Boeing is able to do. So, what are you doing to go back and look at program management or operational management to not have these misses?</p> <p><b><u>Jim McNerney (Boeing):</u></b> On the BCA side, I think the 87, we're trying to learn from that. I think, in retrospect, we bit off more than we could chew. New composites, new design tools, new production process, global responsibility for design as well as production. I think there is a lot to learn from how we did that. There's a lot of good and there's some bad, obviously, that we are committed to learn from and hopefully, you'll see that reflected in some of our newer programs. On the -8, we're not particularly proud of how that is sorting out but we'll get that program done. And it's one that – it's suffered from a few mis-assumptions that we've caught up on now, and we're going to get fixed.</p> <p><b><u>Howard Rubel:</u></b> And so when we look at some of this, there's – I mean, I don't think it's systemic. I mean, it just – I mean, what you've done to solve the problem, I mean, it's just not costing. I mean, it's process as well and I mean, could you just elaborate for one more moment on what sort of process changes you've done to help me feel more comfortable looking forward?</p> <p><b><u>Jim McNerney:</u></b> Sure, but on the defense side, okay, you will not see big fixed price development programs, okay? So that's one thing that if you add up the challenges we've had over the last three or four years, that would explain more than half of them, okay? So that's one process fixed. I think the other one is learning how to manage this global supply chain</p>	
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				<p>that is at the center of the 87, and it has to do with IT. It has to do with design responsibility. It has to do with visibility on supply and production through these IT environments, as well as visibility in design which we did do well. And so, it is like many in other industries before us, we did not have the kind of controls that we now know we have to have both management and IT to manage globally remote activity and it's – we are fixing it.</p> <p><b><u>David Strauss (UBS):</u></b> Could you just give us an update on <b>negotiations with your 787 customers?</b> It looks like you've now settled up with some of your early Japanese customers. And in light of what you're seeing there along with what looks like an additional delay on the 787, are you still comfortable with the <b>zero margin assumption, program margin assumption for 787?</b></p> <p><b><u>James Bell (Boeing):</u></b> Well, let me talk about how they're going with the customer settlements on the initial delays. We're off to a good start. We have settled some and we did better than what we anticipated in those settlements, and so not to say that we have a trend yet. We still have an awful lot of other ones to get through yet, but we do think we have a very disciplined robust process that appears to be working that's both satisfying our customer needs and also protecting our corporation. And so, we're really pleased with the start we're off to. The second part of your question again was – what was it?</p> <p><b><u>David Strauss:</u></b> Based on what you're seeing there with your customer negotiations along with what looks like an additional delay on the 87, does the <b>zero program margin</b> still hold?</p> <p><b><u>James Bell:</u></b> So again, the <b>zero margin</b> was solving – we were solving for whether or not today we felt we had a <b>forward reach</b> and the leading to the <b>zero margin</b> is just that's where we are in terms of <b>firming up the costs that are incurred</b> that we are looking at relative to our cost accounting base and for the program margin assumptions. That will <b>mature over time and by the time we deliver the first airplane, we'll have a lot more definition around those cost categories, and we'll be much better able to tell you what the right margin will be on the delivery of this airplane.</b></p> <p><b><u>David Strauss:</u></b> Yes, I guess what I was getting at was <b>are you approaching a position where you think you might have to take a forward loss?</b></p>	
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				<p>that I think is best.</p> <p><b><u>Tim Klass:</u></b> Can you <b>elaborate</b> on the conversations you've had with the union leadership?</p> <p><b><u>Jim McNerney:</u></b> <b>Not particular.</b> I mean, I think the nature of these things are private constructive discussions and I think both of us would just assume they stay that way.</p> <p><b><u>Susanna Ray (Bloomberg News):</u></b> You mentioned the possibility of having to <b>send some workers home</b>. Was that the engineers or who were you talking about? You mentioned the possibility of having to send some workers home, and I'm wondering if you're referring to the engineers or to whom?</p> <p><b><u>James Bell (Boeing):</u></b> Listen, what I was talking about that as the strike goes on, if it goes longer, we would have to looking at more significant action to manage the ongoing costs that would, if in fact it went longer enough, could include sending people home. Right now, there are no plans to do that.</p> <p><b><u>James Wallace (Seattle P-I Newspaper):</u></b> Yes, Jim, in a couple of your messages to your employees since the strike began, you've commented about how <b>disruptive this continual labor problems are</b>. When it comes time to find a site for your next all-new airplane after the 787, <b>how much consideration or how much of a factor will these strikes and labor unrest be in deciding where to build that new airplane?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b> Well, it's far too early to figure out where we're going to build a plane that we haven't designed yet. But listen, the workers, not withstanding the strike and not withstanding the frustration on behalf of our customers that I have about interrupting their lives on a pretty regular basis, I think we're – <b>I'm a human being, I think we're all human beings who are frustrated by that.</b> Not withstanding all that, the workers on Puget Sound, represented by the IAM, are very fine workers. And they do a good job and I'm anxious to get them back to doing a good job, and they can compete for any work that we've got.</p> <p><b><u>James Wallace:</u></b> If I could follow up, Jim, when <b>Alan Mulally and Mike Bear</b> came to Chicago to make the presentation for the 787 to be built in Everett, you were on the board. Were you considering at that time that a possible labor strike like this one was going to</p>	
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				<p>disrupt production of the 787 just as you got started?</p> <p><b><u>Jim McNerney:</u></b> I don't think that that was a front and center consideration, to be honest with you, back then. I mean, I think we were trying to find the best production structure. Alan, at that time, was trying to find the best production structure and the best place to build the airplane. And I think that issue gets front and center during a time like this when you're making an investment decision. <b>It probably wasn't a huge factor.</b></p> <p><b><u>Andrea Rothman (Bloomberg News):</u></b> Yes, hello. A question for Mr. McNerney. Can you tell me, do you have a <b>threshold for order members on the 747 AC before actually committing to build that plane?</b> I know you have (inaudible). I'm not even sure if Eric has actually signed firm for the four that they announced in (inaudible).</p> <p><b><u>Jim McNerney (Boeing):</u></b> Now, we have committed to build the plane.</p> <p><b><u>Andrea Rothman:</u></b> Okay. So even if you <b>only had 30 or so orders</b>, you will still move forward with it?</p> <p><b><u>Jim McNerney:</u></b> Yes. I mean we have – I think the combined orders are somewhere in the neighborhood of about 100 and 110 or so which is, I would say, about average in terms of this stage in a program development. So we – <b>while we're frustrated by the incremental cost we're seeing</b>, that doesn't change our mind about getting this done for our customers. There is good demand for this plane.</p> <p><b><u>Andrea Rothman:</u></b> Okay, can I just follow up to get a clarification from Mr. Bell? There's a question about who you would send home if you – if you had to send workers home, you said we might have to send people home. Who would those people be? I mean is it engineers or ...?</p> <p><b><u>James Bell:</u></b> We don't know. We'd have to get to there and see.</p> <p><b><u>Andrea Rothman:</u></b> So you don't...? Okay.</p> <p><b><u>James Bell:</u></b> No, we're not planning on sending anyone and we have no plan yet. I'm just saying it was a hypothetical discussion around if the strike continued longer, would you have to make different decisions and the answer to that is, yes, including what we</p>	
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					<p>would do to manage and conserve our resources both here and with our supply team and collectively we will figure out what's the right thing to do. In order to that including –</p> <p><b><u>Jim McNerney:</u></b> Cost reduction.</p> <p><b><u>James Bell:</u></b> – and that would <b>drive cost down until we got them back to work.</b>”</p>	
23 Oct. 2008	<p><i>The Seattle Times,</i> “Boeing Profits Dive; Execs Admit Strike Isn’t the Only Production Problem” (Dominic Gates)</p>		Firm	α	<p>“The quarterly results <i>Boeing</i> announced Wednesday revealed <b>big problems with jet production beyond the Machinists strike</b>. <i>Boeing</i> profit dropped 38 percent in the third quarter, <b>hit not only by the strike</b> that began Sept. 6 but also by a <b>major supply-chain glitch: German supplier Sell was unable to deliver onboard galleys</b> so that five to 10 wide-bodies couldn't have been delivered from Everett anyhow. And on a teleconference to discuss the earnings, Chief Executive Jim McNerney also revealed that <b>another major airplane program besides the 787 Dreamliner is in trouble: the 747-8 update to Boeing's iconic jumbo jet is costing more than expected and the delivery schedule is under pressure</b>.</p> <p>The results also show <i>Boeing's</i> <b>cash and liquid assets slashed by \$3 billion for the quarter, due to the strike, 787 costs related to delays before the strike</b>, and spending on several defense acquisitions. Company spokesman Todd Blecher said <b>the hit to Boeing's cash position that can be directly attributed to the strike's impact during September is slightly less than \$1 billion</b>. <i>Boeing</i> ended the quarter with \$7.2 billion in cash.</p> <p>The <b>galley glitch</b> was responsible for 25 cents a share or about <b>\$185 million in net corporate profits</b> and reduced the commercial unit's pre-tax reduction operating profits by about \$250 million. <i>Boeing</i> said that its supplier <i>Sell</i> is now "making good progress" and the galley problem should be under control after the strike ends. Had the galley problem not existed, those wide-body jets would not have been delivered anyway due to the strike. So arguably the full strike impact on profit would have been \$445 million in net earnings (or \$600 million to pre-tax operating earnings).</p> <p>On the <b>747-8</b>, McNerney said ‘<b>We're not particularly proud of how that is sorting out, but we'll get that program done. ... It suffered from a few misassumptions that we've caught up on now and we're going to get fixed.</b>’</p> <p>In July, <i>Boeing</i> said it would conduct test flights of</p>	On a modular enterprise architecture's systematic problems.

					the plane in the fourth quarter. But Wednesday it said it would offer no further details on the plane's schedule until the strike ends.”	
23 Oct. 2008	<i>The Seattle Post Intelligencer</i> , “Boeing’s CEO Sees Room to Negotiate” (James Wallace)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i> ; Tom Buffenbarger, national president of the International Association of Machinists and Aerospace Workers	Firm-Labor	α	<p>“As <i>The Boeing Co.</i> and its striking Machinists union renew talks Thursday aimed at settling the 47-day strike, Chairman and Chief Executive Jim McNerney said <b>there is room for compromise</b>. <b>‘There’s a way to work with the union to meet some of their goals,’</b> McNerney said Wednesday during a conference call to discuss the company’s third-quarter earnings, which were severely affected by the strike. Profits declined by 38 percent from a year ago and revenue dropped 7 percent. <i>Boeing</i> delivered 35 fewer planes in the quarter <b>because of the strike and a supplier issue</b>.</p> <p>McNerney sounded somewhat <b>optimistic</b> that the strike, which began Sept. 6, could be resolved during the upcoming talks in Washington, D.C., with a federal mediator. But Tom Buffenbarger, national president of the <i>International Association of Machinists and Aerospace Workers</i>, told <i>The Associated Press</i> after the <i>Boeing</i> earnings call that he had not spoken with McNerney and <b>he was ‘not optimistic’ about a quick settlement, in part because he was told McNerney would not be part of the talks</b>. McNerney said there have been <b>‘constructive’ discussions behind the scenes since the last face-to-face talks abruptly broke off</b> after only two days on Oct. 13. Since then, both sides have continued to talk with the federal mediator. <b>He decided earlier this week to call the parties back to try to end the strike</b> by about 27,000 Machinists in three states. The major issue has been <b>job security</b> and the company’s use of outside vendors to deliver parts directly to planes in its plants -- work traditionally done by Machinists. The union has said it must protect those jobs. <b>McNerney was asked if there were room for compromise</b>. <b>‘Yes,’ he said, adding, ‘There is a way to work with the union to meet some of their goals.’</b> He said both sides are approaching Thursday’s talks <b>‘with a constructive (mind set),</b> so maybe we can find a way forward.’ Although <b>McNerney is not expected at the talks</b>, Scott Carson, chief executive of <i>Boeing Commercial Airplanes</i>, will likely be there. Buffenbarger of the Machinists may also join the talks at some point. His office is in Washington, D.C. <b><i>Boeing</i> believes there is a better chance of resolving the strike with Buffenbarger part of the talks</b>, sources said. But <b>Buffenbarger, who indicated he thought McNerney should be at the talks, was quoted as saying, ‘I’m not going to make a deal until McNerney signs off on that.’ ‘I’m involved, deeply,’</b> McNerney said. <b>‘I’ve had a number of conversations with union leadership and I’m open to be a constructive force in this thing any way I</b></p>	On a modular enterprise architecture’s systematic problems.



					<p>can be.’ But, he said, Carson and the company’s labor chief, Doug Kight, are leading the negotiations for <i>Boeing</i>. The strike will be in its 48th day Thursday, which will match the third-longest strike by the union against <i>Boeing</i>, in 1989. James Bell, <i>Boeing</i> chief financial officer, said it might have to lay off workers who are not on strike, if the work stoppage lasts a lot longer, and some suppliers might have to shut down. ‘Right now,’ he said, ‘there are no plans to do that.’</p> <p>The consequences of the strike have been significant. <i>Boeing</i> lost about \$250 million in profits during September because of the strike, or 35 cents a share, Bell said, while supplier issues were responsible for another hit of about 25 cents a share. Until the strike ends, <i>Boeing</i> said, it will not provide financial guidance or outlooks. The strike has also delayed <i>Boeing’s</i> 787 Dreamliner, which was about 14 months late even before the strike. Each day the strike lasts results in at least a day’s delay in all <i>Boeing</i> airplane programs, including the 787, McNerney said. But even when the strike is over, it will take some time to get the company’s production system and its supply chain back up to speed, McNerney said. That will add to the delays caused by the strike. The longer the strike goes, the longer it will take to get the production system back to where it was before the strike, McNerney said. <i>Boeing</i> will update the status of the 787 program and its other airplane programs and delivery schedules once the strike is over.</p> <p>The biggest supplier issue involves a German company, <i>Sell</i>, whose galleys for <i>Boeing</i> widebody jets have been late. According to a striking Machinist on the Everett flight line, at the time of the strike about a dozen completed 777s were awaiting arrival of <i>Sell</i> galleys. McNerney said the galley problem has been pretty much resolved and should not be an issue after the strike.</p> <p><b>Airbus recently said that because of the financial crisis, it will not boost production rates as expected. But McNerney said <i>Boeing</i> production rates in place before the strike ‘look good’ for the near term.”</b></p>	
23 Oct. 2008	<i>Flight International</i> , “Cost Jump for 747 Frustrates <i>Boeing</i> ” (Stephe	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm	α	<p>“Higher costs reported by the 747-8 development program in the third quarter are causing frustration with <i>Boeing’s</i> corporate executives, but the widebody is continuing to make design progress despite the strike. <i>Boeing’s</i> third quarter earnings statement released yesterday contains two references to ‘additional 747 program costs’, but does not elaborate. Jim McNerney, <i>Boeing</i> chairman, president and CEO, noted executives are ‘frustrated by the incremental cost we’re</p>	On a Modular Enterprise Architecture’s systematic conspiracy of

	n Trimble )	ny			seeing' on the 747-8 during a conference call with reporters. <i>Boeing</i> spokesmen declined to detail neither the amount of nor the causes for the cost increases. 'We don't provide specific details on the issues the program is having from a cost perspective,' a spokesman tells <i>ATI</i> . <i>Boeing Commercial Airplanes</i> reported overall research and development costs at \$2.1 billion for the first nine months of 2008. The third quarter outlay amounted to \$705 million, or about 7% higher than the same period a year ago. As a derivative aimed at a 'niche' long-haul market, the 747-8 may be more sensitive to cost pressure than <i>Boeing's</i> new-build development programmes."	optimism "
29 Oct. 2008	<i>Seattle Post Intelligencer</i> , "Boeing Faces Talks With Second Unhappy Union" (James Wallace)	Ray Goforth, SPEEA Executive Director; Mike Denton, vice president of engineering for <i>Boeing Commercial Airplanes</i>	Firm-Labor	α	"Some 14 months late and still not flying, <i>The Boeing Co.'s</i> 787 Dreamliner will serve as a symbolic backdrop at the bargaining table starting Wednesday when the company and its 'other' big union start their final talks on a new labor accord. <i>Boeing's</i> engineers and technical workers in the Puget Sound area say the oft-delayed 787 represents everything that's wrong with outsourcing -- one of the key issues that will be on the table, just as it was for the Machinists union. The Machinists, who have been on strike for 53 days as of Tuesday, will vote on a new contract Saturday. If a majority approve <i>Boeing's</i> latest offer, which was announced Monday, the strike will be over and 27,000 Machinists could be back to building airplanes starting Sunday night. Regardless of what happens with that vote, <i>Boeing</i> now must try to make peace with its white-collar union known as SPEEA, which represents about 21,000 workers, mostly in the Puget Sound area. The union, which has had only one walkout of any length in its history, has not been shy in recent weeks about throwing around the 'strike' word. Its contract with <i>Boeing</i> ends Dec. 1. Talks with <i>Boeing</i> during various committee meetings since March have not gone well, according to SPEEA. 'I'm flabbergasted by how badly <i>Boeing</i> has bungled these negotiations so far,' said Ray Goforth, executive director of the Society of Professional Engineering Employees in Aerospace. While a SPEEA strike wouldn't shut down jet-making operations like the Machinists strike, it would disrupt plane deliveries, Goforth said, because engineers must sign off on those planes when they leave the factory. And, given the amount of engineering work needed to get the 787 ready to fly, that program would 'grind to a halt' if engineers and techs walk out. To be sure, bread and butter issues such as wages, pensions and medical will take center stage during the talks. But what has happened on the 787 program, and the 747-8 program, underscores the union's growing frustration, Goforth said. 'We want some kind of	On a modular enterprise architecture's adversarial relationship with its unions.

				<p>say in these future decisions (around outsourcing),’ Goforth said in a recent interview. ‘The company ignored the advice of its engineering and technical work force in establishing the 787 model. And every single disaster that has befallen that program was predicted by SPEEA. We are not saying we told you so, but if you listen to your professional work force upfront you can avoid these problems.’</p> <p>Mike Denton, vice president of engineering for <i>Boeing Commercial Airplanes</i>, will be among the company’s negotiators during the so-called ‘main table’ talks with SPEEA at the SeaTac DoubleTree Hotel. The company wants to present the union with its best and final offer Nov. 11. Denton, a former SPEEA member, <b>acknowledged in an interview that Boeing made mistakes with the 787 business model and will make changes when it’s time to develop the next all-new airplane. Boeing engineers will have more of the detailed design work and more oversight of engineering work done by partners, and Boeing will do more of the manufacturing,</b> he said. Jim McNerney, <i>Boeing’s</i> chairman and CEO, has said <b>the company went too far in awarding global partners so much responsibility for the 787.</b> On past programs, <i>Boeing</i> took the lead in manufacturing. But for the 787, <i>Boeing’s</i> partners in Japan, Italy, Kansas and South Carolina produce the large composite structures and <b><i>Boeing</i> workers assemble them in Everett. Boeing argues this business model will significantly reduce the cost of making airplanes.</b> But its partners quickly fell behind with the untested manufacturing and production system, and <i>Boeing</i> engineers and Machinists have been forced to play catch-up during final assembly of the first 787s. As a result, the Dreamliner’s maiden flight has slipped from August 2007 until late this year. The Machinists strike has probably delayed that until early 2009. Some customers have been told their planes will be up to three years late. Denton said he understands <b>SPEEA members’ frustration about the 787 partner model.</b> But Denton and Goforth see the mood of the SPEEA work force differently as the two head into the final round of talks. <b>Goforth said the engineers and tech people are fed up, especially with Chicago, Boeing’s corporate home.</b> ‘There is a sense that Chicago is ruining this company,’ he said. ‘They actually want to get to a place where <i>Boeing</i> doesn’t manufacture anything anymore. We only assemble parts created around the world and then they slap the <i>Boeing</i> logo on and call it a <i>Boeing</i> airplane. One side is celebrating this as the future; the other side is mourning it as the loss of one of the greatest manufacturing companies in the history of the United States.’ Goforth said he has no doubt the</p>	
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				<p><b>union membership is prepared to strike. Denton, however, is not so sure the picture is as bad as Goforth likes to paint. ‘There is a part of me that thinks Ray is just wrong and that he is exaggerating things to the advantage of the union,’ he said. ‘I get the sense of some anxiousness around the whole idea and prospects of a strike. ... For me in this process, the most important thing is that I want the engineers and technical staff to feel we respect them and we value them and that as a management team we have learned lessons from the things that have caused us some problems over the last couple of years.’</b> Unlike the blue-collar Machinists union, which has struck <i>Boeing</i> seven times since 1948, SPEEA has been much more mild- mannered. The union struck <i>Boeing</i> for 40 days in 2000. The union's only other walkout, for a day, was largely symbolic. Goforth said the mood today is similar to 2000. <b>‘A strike is a real possibility and for the very same reasons it happened in 2000,’ he said. ‘It was a sense that <i>Boeing</i> corporate was not listening to them, was not respecting them, was making decisions that were bad for the company.’</b> But Denton said <b>much has changed since 2000, when there was even speculation by outsiders that <i>Boeing</i> might exit the jet-making business. ‘Despite the challenges today, there is a huge future for <i>Boeing Commercial Airplanes,</i>’ he said. ‘It's not a question of if we build another new airplane after the 787. It's just a question of when.’</b> <i>Boeing's</i> engineering and technical work force is bigger today than at any point in the last three decades, Denton said. The 14,000 or so SPEEA engineers and other professional workers earn an average of about \$83,000 a year. Overtime and incentive pay can push that well above \$100,000. The nearly 7,000 technical workers earn about \$68,000 a year on average. With overtime and incentive pay, the average is about \$82,000. SPEEA isn't asking for a specific percentage pay raise. <b>Goforth said it wants ‘market leading’ wages, and Boeing is offering ‘market average’ wages.</b> Another big issue for SPEEA is <i>Boeing's</i> use of contract engineers. Denton put the number at around 2,300 in Puget Sound. <b>Goforth points to the 747-8 as an example of the problems of relying too much on non-<i>Boeing</i> engineers. ‘That program is falling apart,’ he said.</b> Last week, during a conference call to discuss <i>Boeing's</i> third-quarter earnings, <b>McNerney acknowledged cost and schedule pressure on the program. Goforth said he talked recently with a 747-8 engineer, and she had not had a day off in six months. She's been too busy fixing mistakes made by Russian engineers, he said. Denton said <i>Boeing</i> ran into problems because it had to keep many of its top engineers on the 787 and could not shift them to</b></p>	
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					<p>the 747-8. He defended the use of contract engineers. They allow <i>Boeing</i> to have a more stable work force, he said. In the past, <i>Boeing</i> has had to lay off thousands of engineers after major programs have ended and during down cycles. He also noted that <i>Boeing</i> has had a difficult time hiring seasoned aerospace engineers. There are too few for market demand, he said. ‘To find experience we have had to turn more to contract engineers and even then it has been very competitive,’ Denton said. But Denton is optimistic. ‘We have tried to underscore their (engineers and technical staff) importance to our long-term competitiveness and success as a company,’ he said. Goforth has a different feeling about the talks. ‘This is not that hard. It's not like building airplanes. It's not that complex. But they (<i>Boeing</i>) are not doing the basic things you need to do to advance this process.’”</p>	
30 Oct. 2008	<p><i>Seeking Alpha, “Boeing Heading the Way of GM?”</i> (Stephen Rosenman. Disclosure: Author holds a short position in BA)</p>		Firm-Investor	α	<p>“The market is celebrating the likely end of <i>Boeing's</i> strike by ramping up its share price from a low of \$40 to yesterday's closing price of \$49.80. Unfortunately, for <i>Boeing</i>, the bad news has just begun. <i>Boeing's</i> dismal Q3 earnings only captured the first three weeks of the strike. That leaves all of October without commercial aircraft work, a loss that is estimated to cost \$100 million in revenue every day. This amounts to another \$3 billion in lost revenues over October. If the proposed contract is ratified, machinists reap large pay increases, a promise of job security, and no relief for <i>Boeing's</i> burgeoning health care costs. Moreover, <i>Boeing</i> still faces difficult negotiations with its engineering and technician union. The company, already burned for a two month strike, is in a tough spot. Another strike would be devastating. The engineering union is in the driver's seat. Expect significant concessions which will hit <i>Boeing's</i> bottom line. <i>Boeing's</i> balance sheet in Q3 did not look robust. Its \$56 billion in assets includes \$3.5 billion in goodwill (nothing of use), \$2.2 billion in intangibles (ditto), and \$6.5 billion in pension plan over funding (not a good fall back). Take away those and you get \$44 billion. Meanwhile, their very real \$46 billion in liabilities should get steeper. Remember that they didn't solve their cost problems - health care costs, payroll - those get worse. At the same time, they bled cash this October. It's a very good thing that Q3 did not end October 31. I suspect a great deal of their \$4 billion stash reported on their Q3 balance sheet is gone. Before the strike, the financial community was worried about <i>Boeing</i>. Those problems still exist. The only change is that <i>Boeing</i> is in a worse position. The 787 is further delayed (2009? who knows). Every country is in crisis mode. Airlines may cancel orders or negotiate lower plane prices. How badly will <i>Boeing</i> suppliers</p>	On a modular enterprise architecture's under-investment.

					<p>be disrupted by the strike and delays? A new administration probably will cut their military orders. <b>Boeing, like GM and Ford, has been torched by its unions. Much as has happened to Ford and GM, Boeing is going down the path of increased payroll costs in the face of a deflationary economy. Boeing's balance sheet is eroding.</b> While nowhere near as bad as those of <i>Ford</i> and <i>GM</i>, it's starting to look weak. <b>Boeing's Q4 balance sheet should show further deterioration both on the asset and liability side, not a good thing to be going into a worldwide slowdown.</b>"</p>	
31 Oct. 2008	US District Court Western District of Washington, <i>Complaint for Retaliatory Discharge of a Whistleblower</i> , Nicholas P. Tides, Plaintiff		Firm-Employee	α	<p>"For the three fiscal years from 2004 through 2006, <i>Boeing</i> failed its internal Sarbanes-Oxley (SOX) audits for effective controls of its computer network and software systems. If it failed the internal audits in 2007, <i>Boeing</i> risked being required to report a <b>material weakness</b> in its annual audit as required by SOX section 404. To avoid this possibility, <i>Boeing</i> hired <i>PriceWaterhouseCoopers (PWC)</i> to supervise <i>Boeing's</i> independent internal auditors to ensure that <i>Boeing's</i> internal auditors did not report deficiencies sufficient to constitute a material weakness. <i>PWC</i> did not comply with internal auditing standards.</p> <p><b>Although the right to speak to the press when management fails to correct potentially illegal conduct is protected activity under the law, Boeing fired Tides.</b></p> <p>Plaintiff Tides attempted to report this inappropriate activity directly to <i>Boeing's</i> Audit Committee on an <b>anonymous basis using the Company's online form</b> on or about July 5, 2007. <b>Even though SOX requires Boeing to make this type of reporting available, the function was not working.</b> Vince Workman of <i>Boeing's</i> Ethics Office confirmed <b>Boeing knew the anonymous reporting did not function and said Boeing should look into fixing it someday.</b></p> <p>In mid-February of 2007, <i>Boeing</i> Vice President in charge of corporate audit, Robert Jouret, presented a PowerPoint to the entire corporate audit staff. In response to a question why <i>Boeing</i> only had 10 IT SOX auditors, Mr. Jouret said in essence, <b>'Mr. McNerney believes SOX will be repealed and so we are using PWC temporary auditors rather than permanent Boeing employees.'</b> <b>'PWC is in charge. Stop complaining. SOX is being repealed and you will be lucky to keep your jobs. He said he was expressing the viewpoint of CEO James McNerney.'</b></p> <p>On or about May 31, 2007, Plaintiff Tides was required to attend a mandatory meeting with Diane Kallunki, <i>Boeing</i> Director of Human Resources. At</p>	On a modular enterprise architecture's (alleged) low-trust and confrontational relationship with employees.

					<p>the meeting, Ms. Kallunki told Plaintiff Tides, <b>'We'd appreciate it if you'd just shut up.'</b>"</p> <p>"A fired <i>Boeing</i> employee struck back at his former employer Friday with a <b>federal lawsuit leveling serious charges</b> against the Chicago-based aerospace firm. Among other things, the lawsuit filed in the U.S. District Court in Seattle charges that <i>Boeing</i> was <b>disingenuous in its efforts to comply with the federal Sarbanes-Oxley Act of 2002</b>. In mid-2007, former <i>Boeing</i> information technology auditor Nicholas Tides raised concerns to several managers about <b>'potentially illegal conduct.'</b> <i>Boeing's</i> director of human resources told him, <b>'We'd appreciate it if you'd just shut up,'</b> the lawsuit says. <b>Such a comment would contradict <i>The Boeing Co.'s</i> public assurances that the company welcomes employees to raise ethics concerns. 'Instead of deciding to comply with SOx (the law) and avoid retaliation against employees who had engaged in protected activity, Boeing decided to hunt down employees who had assisted the P-I,'</b> the lawsuit charges. <b><i>Boeing</i> attempted to coerce plaintiff Tides into keeping silent by creating a hostile work environment including discipline and hostile interrogations,'</b> the lawsuit also says. <b>'Boeing caused plaintiff Tides to be followed to intimidate him.</b></p> <p>The lawsuit seeks <b>'exemplary damages as permitted by law in an amount sufficient to deter Boeing from future violations of law.</b></p> <p>The P-I spoke with dozens of employees. Many of them said they <b>feared losing their jobs, but they believed that Boeing's information technology department was mishandling its Sarbanes-Oxley compliance effort.</b> The lawsuit charges that, <b>'Boeing intentionally ignored audit results, fabricated audit results and harassed auditors in order to avoid' publicly disclosing problems to the Securities and Exchange Commission, which regulates companies such as Boeing that trade on the stock market. To escape paying damages, Boeing has to prove that it fired Tides for a nonretaliatory reason, [Tides' Seattle lawyer John Tollefsen] said."</b></p>	
<p>31 Oct. 2008</p>	<p><i>Seattle Post-Intelligencer</i>, "Fired Employee Sues Boeing in Whistle-Blower Case" (Andrea James)</p>		<p>Firm-Employee</p>	<p>α</p>	<p>On a modular enterprise architecture's (alleged) low-trust and confrontational relationship with employees.</p>	
<p>7 Nov. 2008</p>	<p><i>Seattle Post-Intelligencer</i>, 'James Wallace on Aerospace: McNerney's</p>	<p>James McNerney, Chairman &amp; CEO, <i>The Boeing Company</i></p>	<p>Firm-Labor</p>	<p>α</p>	<p>"Here is the message from McNerney:</p> <p>'I applaud the work done by the union and company negotiating teams to finally hammer out a deal both sides could live with. <b>However, the fact that it took 58 days to resolve the dispute-let alone the fact that we had a strike at all-reflects the failure of a process that company leaders and union leaders alike need to seriously address. The path to an agreement was longer and more torturous than any of us wanted. In retrospect, we all wish the</b></p>	<p>On a modular enterprise architect's ex-post discussion of a strike</p>

	Message to the Troops” (James Wallace)				<p>differences closed at the end could have been closed much sooner. And none of us want to go through this again next time around.</p> <p>Beyond the internal side of the strike, there's no doubt in my mind-and there should be none in yours-that this experience was nothing but a big disappointment to both our commercial and military customers. It also created hardships for our suppliers and our communities. While it may sound cliché, no side ever wins a strike, despite the efforts of analysts and the media to determine otherwise after the fact. The costs are more than just economic, and the reputations of all parties suffer significantly. For the sake of our customers, our company and our employees, we have to find a better way.</p> <p>Speaking of those times, the global economic realities that have emerged since the strike began pose significant new challenges for everyone, and they put particular pressure on us to achieve additional productivity improvements that will keep costs to our customers down and pay for our investment in growth programs. I know there are many efforts underway throughout the company to address these challenges, and we should leave no stone unturned as we seek new and better ways of doing our work.</p> <p>Thanks again for your efforts to make Boeing stronger and more successful each and every day.</p> <p>Jim”</p>	
10 Nov. 2008	Wall Street Journal “The 50 Women to Watch 2008” (J. Lynn Lunsford)	# 32 Carolyn Corvi, VP and GM of Airplane Programs, Boeing Commercial Airplanes	Firm	α	<p>“As one of <b>Boeing Co.'s top-ranking female executives</b>, Carolyn Corvi is known around the aerospace company as the <b>Queen of Lean</b>. Lean manufacturing, that is. The 57-year-old executive is widely credited with <b>adapting Toyota Motor Co.'s techniques for turning out large numbers of high-quality cars to the production of extremely complex airplanes</b>. Former <i>Boeing Commercial Airplanes</i> President Alan Mullally said during an interview in 2005 that <b>much of Ms. Corvi's early success in Boeing's plants was accomplished ‘sometimes through sheer willpower alone’ as she challenged reluctant managers and machinists to learn new ways</b>. She led the move to convert <i>Boeing's 737</i> factory into a moving production line, where as many as six of the twin-engine jetliners roll nose-to-tail through the plant in an aluminum conga line. Not only has <i>Boeing</i> cut the time it takes to turn out a 737 by more than half -- from 22 days in 1999 to 10 days in 2008 -- the company has generated record profits while simultaneously investing billions of dollars in new products such as the 787 Dreamliner. Now <b>in charge of Boeing's overall</b></p>	On an integral enterprise architect within a modular enterprise architecture.



					<p><b>production</b>, Ms. Corvi has the challenge of duplicating her 737 success on much larger jetliners, such as the widebody 777 and 747. <b>The results so far have been mixed</b> while engineers invent ergonomically friendly ways to do away with heavy tooling that holds these 200-ton behemoths in place while they are being pieced together. Because <i>Boeing</i> relies increasingly on suppliers to build larger sections of its airplanes, Ms. Corvi must also find ways to get them to buy into <i>Boeing's</i> successful manufacturing techniques. In an interview last year, <b>Ms. Corvi said the one thing she liked about her job is that it's never finished. 'No matter how efficient you are today, you can always do better,' she said.</b>"</p>	
14 Nov. 2008	<p><i>Seattle Post-Intelligencer</i> "Customers Waiting for Boeing to Deliver" (James Wallace)</p>		Firm	α	<p>"Back in 1995, <i>The Boeing Co.</i> delivered its first 777 on time – to <b>the very day</b> it was promised, in fact – to <i>United Airlines</i>. Those were the days. Today, some customers won't get <i>Boeing's</i> promised 787 Dreamliner for up to <b>three</b> years after they were supposed to. It is not the only new <i>Boeing</i> airplane in trouble. <i>Boeing</i> announced Friday that the first new 747-8 will be up to a year late. That's not all. First delivery of <i>Boeing's</i> new 777 freighter will be delayed about two months because of the recently ended 57-day Machinists strike. <i>Boeing</i> also has a problem with its popular 737. Before any more planes can be delivered from the Renton plant, workers must replace hundreds of fasteners in completed fuselage assemblies because they don't comply with specs.</p> <p><b>'I don't know if it's resources or poor execution or processes, but they have a problem, and they have to turn this around,'</b> said Richard Aboulafia, vice president of analysis for the <i>Teal Group</i>, a consulting business in Fairfax, Va. <b>'And it's spread to their military programs, too,'</b> he added, noting a series of problems with <i>Boeing's</i> satellite programs. <b>'It could be a mix of things, from bad planning to lack of engineering resources,'</b> he said. <b>'But it's something they have to work on. They either have to spend more or change the way they develop their products. There is some hubris involved, too. <i>Boeing</i> has overpromised. They had a very aggressive 787 schedule from the start.'</b>"</p>	On a modular enterprise architecture's systematic problems.
17 Nov. 2008	<p><i>Blotting Stocks</i>, "With 787, 747-8 Roll-outs Delayed"</p>		Firm-Investors	α	<p><b>"What <i>Boeing</i> will not be able to do is avoid a decidedly downward revision in company and stock performance expectations,</b> so says Stock Analyst C. Leonard Bauer. Bauer, not one to wax philosophic, nevertheless <b>takes a historian's like view of <i>Boeing's</i> actions</b> – and the actions of numerous other companies – in recent years. <b>'It's as if we decided as a nation to place all of the most idiotic, self-defeating, and economically-damaging business decisions in one decade,'</b> Bauer said. <b>'Its</b></p>	On a modular enterprise architecture's non-systemic approach; as well

	Runway Getting Bumpy for <i>Boeing</i> " (Joseph Lazzaro)				as if the whole business community attended the wrong business school.' <i>Boeing</i> may ultimately end up representing the most tragic figure, Bauer says, if lower sales ensue for the commercial aviation giant. 'The <i>Boeing</i> case can drive you up a wall. They had no serious competition, on a product and price basis, just <i>Airbus</i> , which had suffered repeated delays in key programs and numerous cost overruns. And <i>Boeing</i> had a weak dollar against a strong euro to make its products more price-competitive. All they had to do was deliver the 787 Dreamliner on time and cost-effectively roll-out the 747-8,' Bauer said. 'So what happens? First contractor parts delays, then design delays for the 787, a twomonth machinists strike, then roll-out delays for the 747-8. They're squandering any advantage they had.' So far, order delays and cancellations have not piled up, but if they do, Bauer said <i>Boeing</i> 'will not have to look very far to identify who to blame.'	as a systematic misunderstanding of the differences with an integral enterprise architecture (i.e. a focus on execution and not on enterprise architecture).
18 Nov. 2008	Testimony to U.S. Congress	Rick Wagoner, CEO, <i>General Motors</i>	Firm	$\alpha$	"Mr. Chairman, I do not agree with those who say we are not doing enough to position <i>GM</i> for success. What exposes us to failure now is not our product lineup, or our business plan, or our long-term strategy. What exposes us to failure now is the global financial crisis, which has severely restricted credit availability, and reduced industry sales to the lowest per-capita level since World War II. Our industry, needs a bridge to span the financial chasm that has opened before us."	On a modular enterprise architecture's focus on exogenous explanations for poor performance and its inability to change at an architectural level.
18 Nov. 2008	<i>CNN</i> , "Heated Debate Over Auto Bailout" (Steve Hargreaves)		Firm-Government-Investors	$\alpha$	"The case for a bailout of U.S. automakers came under sharp scrutiny on Tuesday at a congressional hearing that portrayed the Big Three as both shortsighted in their business strategies and central to the economy. 'Their board rooms in my view have been devoid of vision,' said Sen. Christopher Dodd, D-Conn. 'We have little evidence this \$25 billion will do anything to promote long-term success,' Sen. Michael Enzi, R-Wyoming, said. 'Why should we believe your firms are capable of restructuring now when you weren't able to do it under more benign conditions?' Republican Senator Richard Shelby of Alabama asked.	On modular enterprise architecture's sporadic relationship with government and general myopia.
19	<i>CNN</i> ,		Firm-	$\alpha$	"The top executives of <i>General Motors</i> , <i>Ford</i> and	On

Nov. 2008	“Motor Bosses Arrive for Bailout Talks – on Private Jets”		Government-Investors		<p><i>Chrysler</i> appeared in front of Congress for the second day in a row Tuesday, to make their case for an emergency government loan. <b>The three CEOs have said they don’t have the cash to operate next year without help</b> and warned that the failure of the industry would have dire consequences for the U.S. economy. <b>And yet GM CEO Rick Wagoner, Ford CEO Alan Mulally and Chrysler chief Bob Nardelli arrived for these historic hearings on private jets! That’s right: The men at the helm of an industry so crippled that it has to ask for taxpayer money to survive flew on private jets. And they wonder why the American public is so angry about these bailouts.</b> Their choice of transportation dominated Wednesday’s hearing. Representative Gary Ackerman, a Democrat from New York said: ‘...there is a message here – couldn’t you all have downgraded to first class or jet –pooled to get here? It would have at least sent a message that you do get it. If you’re gonna streamline your companies, where does it start? And it would seem to me as the chief executive officer of those companies you can’t set the standard of what that future is going to look like, that you are really going to be competitive, that you are going to trim the fat, that you don’t need all the luxuries and bells and whistles... it causes us to wonder.’”</p>	modular enterprise architecture’s inability to empathize with the needs of other stakeholders.
20 Nov. 2008	<p><i>Seattle Post-Intelligencer</i>, “Boeing: ‘Nothing Structural’ Caused Delays” (Susanna Ray)</p>	Scott Carson, President & CEO, Boeing Commercial Airplanes	Firm	α	<p>“<i>The Boeing Co.</i> said ‘nothing structural’ is to blame for production delays caused by a Machinists strike, plane design changes and problems with suppliers. ‘It sometimes feels you can wake up snake-bitten, and the last four or five months have felt that way to us,’ Scott Carson, the head of <i>Boeing’s</i> commercial aircraft unit, said Wednesday in a Webcast presentation from a Credit Suisse conference. ‘There isn’t anything fundamentally broken,’ and the company has ‘made huge strides’ by expanding profit margins amid the problems, he said. <i>Boeing</i> has been beset by delays since announcing the third setback to the 787 Dreamliner in April. The problems – parts shortages, suppliers not completing their work and a redesign – <b>trickled down</b>, forcing to postpone the new 747-8 last week.</p> <p>Carson said the ‘rather dramatic economic uncertainty around the globe’ hasn’t altered the company’s 20-year growth forecast.”</p>	On the non-systemic thinking of a leader of a modular enterprise architecture.
21 Nov. 2008	<p><i>Wall Street Journal</i> “Rival’s Strike Benefits Airbus” (Daniel</p>	Tom Williams, Executive Vice President for	Firm-Labor-Supplier	α & β	<p>“<i>Airbus</i> says it benefited from a recent strike by factory at rival <i>Boeing Co.</i> – <b>not by stealing jetliner orders, but by getting aircraft suppliers to work harder</b> for the European plane maker. During the 58-day walkout at <i>Boeing</i>, which ended earlier this month, <b>overstretched suppliers</b> that work for both companies were able to focus more on equipment for <i>Airbus</i>, such as galleys, seats and other cabin</p>	On a modular enterprise architecture’s

	Michael s)	Progra ms, <i>Airbus</i>			features. That <b>relieved some pressure</b> at <i>Airbus</i> , which in August warned that delays in receiving such equipent were holding up jetliner deliveries and risked reducing the number of planes completed this year. <i>Boeing missed its second-quarter earnings projections</i> in July partly because three big wide-body jetliners awaiting interior equipment couldn't be delivered on time. At <i>Airbus</i> , the <b>tight supply pressure has abated</b> , said its top production manager, Tom Williams, executive vice president for programs."	
25 Nov. 2008	<i>Wall Street Journal</i> , "Airbus May Cut Production Levels" (David Pearson )	Thoma s Enders , CEO, <i>Airbus</i>	Firm	β	<p>"European commercial aircraft maker <i>Airbus</i> isn't ruling our the possibility it will have to <b>slow production</b> if the economic situation continues to deteriorate, Chief Executive Thomas Enders said. Mr. Enders called on European governments to encourage their <b>export agencies to prvide more guarantees</b> for <i>Airbus</i>'s aircraft contracts and improve financing conditions. Governments should also provide funding for critical aerospace <b>suppliers</b> that are caught in the credit squeeze. <i>Airbus</i> decided a few weeks ago to freeze a planned ramp-up of its aircraft production rate '<b>at least temporarily</b>' in view of the quickly deteriorating outlook for economic activity, credit availability and airline profitability. The plane maker 'simply cannot exclude at this point' a possible cut in production levels, Mr. Enders said. 'Anything else would be irresponsible or not credible. But obviously the freeze that we have enacted right now is not enough,' he said. Speaking to French aerospace journalists late Monday, Mr. Enders stressed that the move to freeze the production ramp-up was a <b>protective measure</b>. If the situation changes for the better, he said, <b>the company can reverse the move next year</b>. But if it continues to deteriorate, he said, 'Certainly we would not exclude that we have to take further action.' <i>Airbus has seen industry downturns in the past, he noted. 'We know how to cope with it. We know what our flexibility is,'</i> he said. <i>Airbus</i> is in the middle of a cost-cutting program that will reduce its work force by 10,000, and Mr. Enders said the company has flexibility to slim down further by trimming temporary employees. 'That gives us some breathing space in a downturn scenario,' he said.</p> <p><b>'It has turned out to be an annus horribilis, but we'll have more order intake than we predicted,' he said. 'I'd call that not a bad year,'</b> he added. Mr. Enders indicated that <i>Airbus</i> will probably have to provide more financing to customer airlines that are having difficulty in obtaining credit from traditional sources. He noted, however, that the <b>company's exposure to customer financing at the end of September was at the lowest level in more than 20 years: \$1.2 billion, compared with \$6.1 billion in 1998 and \$4.8 billion in 2003, 'so we still</b></p>	On an integral enterprise architect ure's views of stability.

					<p><b>have some margin' to increase.</b></p> <p>Reflecting its Franco-German origins, <i>EADS</i> has two headquarters: in Paris and in Munich. Mr. Enders said he favors the creation of a single headquarters, preferably in Toulouse, France, where <i>Airbus</i> is based."</p>	
25 Nov. 2008	<p><i>Flight International</i>, "Boeing's Engineering Resources Are Stretched Too Thin" (Stephen Trimble)</p>		Firm	$\alpha$	<p>"Dealing with the latent issues created by last year's schedule reshuffling was only one of the causes for the recent delay announcement. As the 787-8 production crisis came to light from September 2007 to March 2008, senior <i>Boeing</i> executives consistently maintained that the company had enough engineering resources to solve that problem as well as keep other development efforts, such as the 747-8, on track. 'There's obviously engineering resources that have shown up late on the -8, but we found ways to work around that by accessing engineers throughout the company and external resources,' <i>Boeing</i> chairman and chief executive Jim McNerney said on 24 October 2007. That statement has been contradicted by more recent remarks from <i>Boeing</i> executives. For example, vice-president Randy Tinseth wrote on 14 November: 'The [747-8] programme has also been affected by limited engineering resources within <i>Boeing</i>.' As the 787-8 kept commercial aircraft engineers busy longer than expected last year, <i>Boeing</i> assigned engineers from its military aircraft division to the 747-8F. The process of releasing engineering drawings for the 747-8I is only now getting started. The company also signed deals with engineering firms in Asia, Europe and Russia and the USA to make up for the shortfall on the 747-8F. <b>But it did not take long for <i>Boeing</i> to realise that the distributed engineering strategy had partly backfired. It became a difficult chore for <i>Boeing</i> simply to keep track of all the work.</b> In April, Ross Bogue, <i>Boeing's</i> new vice-president and general manager for the 747-8 and Everett site leader, said the company would change its approach for the 747-8I variant. It would use as many external engineers, but they would be concentrated in a few key hubs rather scattered all over the globe, he said. Driving demand for more engineering resources were persistent and <b>self-perpetuating design changes</b> caused by the new, super-efficient airfoil.</p> <p>To meet <i>Boeing's</i> original performance targets for the 747-8, <i>Boeing</i> has had to move the centre of gravity on the airfoil from the aft section of the wing forward, but this has caused a variety of new problems. 'When we changed the wing airfoil and ultimately changed the centre of gravity, this fundamentally shifted how the whole aircraft balances loads', Michael Teal, the 747's chief engineer says. 'As the loads shifted back on the wing</p>	On a modular enterprise architecture's systemic problems

					the tail is the balancing load. So we changed more parts in the tail. But then the loads in the aftbody changed, so we have to change the aft body.’ <b>While the engineers struggled to make their sums add up, the 747-8 supply chain was left waiting to adjust tooling and place long-lead orders for new materials.</b> ‘We knew which suppliers were going to make what so getting that through is the same,’ Teal says. ‘It’s just a matter of estimating the amount of time required to get all the change in their factories.’	
25 Nov. 2008	<i>The Daily Herald</i> , “Boeing Finds Faulty Parts on 747, 767 and 777 Jets” (Michelle Dunlop)	Scott Carson, president of <i>Boeing Commercial Airplanes</i>	Firm-Supplier	α	<p>“The <i>Boeing Co.’s widebody jets, except the 787, need to be inspected for faulty parts similar to the problem the jetmaker recently had with its single-aisle 737.</i> <i>Boeing</i> partner <i>Spirit AeroSystems</i> discovered that nutplates from one of its three suppliers lacked an anti-corrosive coating. <i>Boeing</i> disclosed earlier this month that the nutplates, which work like fasteners, had affected its Renton-built 737 jet. <b>The company confirmed Tuesday that its widebody jets -- the 747, 767 and 777 -- also were affected by faulty plates.</b> ‘There’s a potential that every plane built since September 2007 could be affected, including all the planes in production,’ <i>Boeing’s</i> Bev Holland said. <i>Boeing</i> has delivered 19 747 jets, 12 767s and 82 of its 777 aircraft since September 2007.</p> <p>Earlier this month, Scott Carson, president of <i>Boeing Commercial Airplanes</i>, said that <i>Spirit</i> addressed the problem appropriately, bringing it to <i>Boeing’s</i> attention. <b>‘It shows the system is working,’ Carson said.</b> <i>Boeing</i> has seen several setbacks recently, including delaying the first deliveries of its 777 Freighter and 747-8 jumbo jet. The company also pushed back the first flight of its delayed 787 Dreamliner following the Machinist strike. <b>But Carson dismissed speculation of a larger structural problem at Boeing.</b> ‘There isn’t anything fundamentally broken, he said.</p> <p>Company spokesman Tim Healy declined on Tuesday to specify which airplane lines will remain open over the holidays for the extra work by volunteers. <i>Boeing</i> Machinists receive what amounts to <b>triple time</b> for each day worked during the holiday period. Work over the holidays is on a volunteer basis only, Healy said. The company is encouraging employees to take two out of the three major upcoming holidays off work, he added. ‘Employees should be able to take the time off,’ Healy said. <i>Boeing</i> engineers have been working a <b>‘tremendous’ amount of overtime</b>, particularly in Everett, said Bill Dugovich, communications director for the Society of Professional Engineering Employees in Aerospace. About 23 percent of SPEEA engineers have been logging in more than 144 hours of overtime per quarter. With delays on</p>	On a modular enterprise architecture’s systemic problems.

					the 787, 747-8 and 777 Freighter, 'I would expect that to be the case during the holidays,' Dugovich said."	
2 Dec. 2008	<i>Financial Times</i> , "EADS Rearranges Deckchairs Ahead of Gathering Storm" (Paul Betts)	Louis Gallois, EADS Chief Executive Officer	Firm	β	<p>"Last month, Louis Gallois, EADS chief executive, suggested it was perhaps <b>time to scrap the European aerospace group's dual headquarters in Paris and Munich. Far better to concentrate decision-making in one spot, and the obvious place was Toulouse - the Airbus headquarters.</b> Mr Gallois is now going further. He thinks it would be a good idea to <b>rename EADS simply Airbus.</b> After all, <i>Airbus</i> is not only the group's flagship and biggest revenue earner, but the name has become a globally recognised brand, far better known than the cumbersome <i>EADS</i> acronym - short for European Aeronautic Defence and Space company. He also wants to <b>reduce the number of divisions from five to three to rationalise its activities.</b> Indeed, many believe Mr Gallois would ultimately like to <b>cut EADS down to two divisions - civil and defence. This would transform its structure into a mirror image of its main rival, Boeing,</b> but without the US group's more even balance between civil and defence activities. For this reason, Mr Gallois is still keen to expand <i>EADS's</i> exposure to the defence sector to reduce his overall dependence on <i>Airbus.</i> But <b>the old Franco-German frictions that have dogged EADS from the beginning are again likely to frustrate</b> Mr Gallois. Integrating defence and space activities into a single unit is likely to be blocked by both his German and Spanish partners. The Spaniards are keen to gain a greater share of business and are expected to resist losing their role in the A400M military transport operations. The Germans would find it difficult to agree to a French executive running a new integrated defence division given that EADS is part of the Eurofighter programme competing with the French Dassault Rafale. And the French are bound to insist on leadership in the defence unit for strategic reasons, not least the highly sensitive role of some of these activities in the country's nuclear arsenal. <b>It is hard to see Mr Gallois persuading his French and German political masters to agree to such a reorganisation.</b> In any case, industry analysts seem to consider these proposals a side issue. <b>The real challenge facing the group is preparing for what many expect will be the deepest crisis that Airbus has faced in its 30-year history. As one expert warned: "It is a bit like rearranging the deckchairs when the Titanic is heading for the iceberg."</b> The big issue is how <i>Airbus</i> will weather the storm ahead. It still needs to sort out problems in its A380 jumbo. Its future <b>A350 project seems to be going nowhere fast.</b> The A400M has been delayed by about two years largely because of engine problems."</p>	On an integral enterprise architecture's proposed "rationalization"

2 Dec. 2008	<i>Seattle Post-Intelligencer</i> “A 2nd Former Boeing Employee Files Whistle-blower Complaint” (Andrea James)		Firm	α	<p>“Another former <i>Boeing</i> employee has filed a federal whistle-blower complaint against the firm, charging that <b>he was fired in retaliation for reporting ethics violations</b>. It is the <b>second lawsuit of its type in less than two months</b>. In a complaint filed Tuesday with the U.S. District Court in Seattle, former <i>Boeing</i> internal auditor <b>Matthew Neumann</b> charges that <b>company managers ignored his warnings about violations of auditing standards</b>. Neumann was an internal auditor on the company's Sarbanes-Oxley compliance team, which was created after the passage of the Sarbanes-Oxley Act of 2002. Neumann had worked for <i>The Boeing Co.</i> for 10 years until being fired late last year. He lives in Washington state and holds an engineering degree from the <i>Massachusetts Institute of Technology</i>, the complaint says. In August 2007, after <b>complaining to several managers that Boeing was ignoring audit results, fabricating audit results and harassing auditors</b>, a <i>Boeing</i> human resources director asked Neumann about his working conditions. Neumann says in the lawsuit that <b>he told the director about potential law violations. The director ‘pointed to a pillow in her office embroidered with the phrase, ‘Get Over It,’ the lawsuit says.</b>”</p>	On a modular enterprise architectur’s systematic control of systemic information.
3 Dec. 2008	<i>Flight International</i> , “Cut Single-Aisle Production by 10 Aircraft a Month Next Year: Hazy” (Niall O’Keefe)	Steven Udvar-Hazy, Chairman, <i>International Lease Finance Corporation</i>	Customer	α & β	<p>“<i>ILFC</i> boss urges <i>Airbus</i> and <i>Boeing</i> to remove 150 narrowbodies from 2009/10 deliveries <i>Airbus</i> and <i>Boeing</i> should cut single-aisle production by around 10 units a month next year to avoid a glut of airliners on the market, warns <i>International Lease Finance</i> chairman Steven Udvar-Hazy, who says the airframers are ‘starting to listen’ to his pleas to reduce output. ‘We are putting a lot of pressure on them to do something on production rates,’ he told <i>Flight’s Airline Business Daily</i> at the Latin Airline Leaders Forum in Cancun in November. ‘<b>From the June 2009 to June 2010 period, if they knock out 120-150 single-aisle aircraft [from the total] it would not hurt the industry,</b>’ says Hazy. ‘<b>This is only a total of five a month on each side. If they do nothing there’s going to be a surplus.</b>’</p> <p>Although <i>ILFC</i> has relatively low aircraft delivery commitments for the next two years, it is likely that there will be distressed airlines that are unable to fulfil their aircraft orders. ‘There could be opportunistic transactions for us to pick up some new and young used aircraft,’ says Hazy.</p> <p><i>Airbus</i> executive vice-president of programmes Tom Williams, who predicts that the airframer will achieve a net order total of 800 aircraft in 2008, says that while the <i>Airbus</i> order backlog is ‘significant’ at 3,700 aircraft, he is ‘under no illusions’ that the financial crisis will cause some of this to ‘disappear’. A review of the business situation conducted in September concluded that there was some <b>softening</b></p>	



					<p>in the ‘outer years’ of the backlog, says Williams, and that it was ‘<b>prudent to have a pause in the production ramp-up</b>’. <i>Airbus</i> chief executive Tom Enders told the <i>International Herald Tribune</i> last week the airframer does ‘not exclude further action if the situation deteriorates’. Williams describes recent the fuel price decline as ‘a doubled-edged sword’ as airlines could be tempted to ‘hang on to older aircraft for longer’. This contrasts with the situation that existed back in July at the Farnborough air show when Williams noted that although financing was a problem, the tendency to defer new aircraft and retire older, less-efficient types had been dampened by spiralling fuel prices. Now the trends in the finance market and fuel prices are incentivising deferrals, but Williams is confident that vacated delivery slots will be snapped up quickly, citing the interest in <i>Skybus</i>’ recent cancellations. There is still demand for fuel-efficient aircraft with lower maintenance costs, he says.</p> <p><b>While <i>Airbus</i> single-aisle production will rise from 34 a month to 36 by December, a plan to increase it to 38 in spring 2009 and 40 by the end of December has been deemed too aggressive, as it would stretch the supply chain. <i>Boeing 737</i> output had been averaging 30 a month in the period immediately before the machinists’ strike in September.”</b></p>	
3 Dec. 2008	<i>Flightbl ogger</i> “Exclusive: <i>Airbus</i> Dreamliner Dossier Revealed” (Jon Ostrower)	“ <i>Boeing 787 Lesson Learnt</i> .” Document was compiled by <i>Airbus</i> Head of Engineering Intelligence, Burkhard Domke and was presented internally on 20 October	Firm-Supplier-Competitor	$\alpha$ & $\beta$	<p><b>“PRODUCTION ISSUES</b></p> <p>Among the ‘lessons learnt’ by the European airframer, <i>Airbus</i> cites <i>Boeing’s</i> challenges with beginning 787 production across the whole of its supply chain. <i>Airbus</i> believes <i>Boeing’s</i> <b>early production issues fundamentally originated in a lack of oversight on both design and assembly integration for the high level of outsourcing. All of this was further exacerbated, according to <i>Airbus</i>, by ‘low-wage, trained-on-the-job workers that had no previous aerospace experience’ working at supplier partners. <i>Airbus</i> believes ‘inadequate supplier capability in design’ contributed further, citing as an example that ‘<i>Vought</i> had no engineering department when selected’ by <i>Boeing</i>. Combined with an ‘insufficient supply of frame, clips brackets and floor beams’ the result was a ‘loss of configuration’ control stemming from production records on ‘deferred work that were found to be incomplete or lost in transfer.’ In addition, parts that did arrive complete to final assembly were ‘found to be completed incorrectly’ requiring additional rework in Everett. In addition, <i>Airbus</i> cites a quality assurance cycle time that was not in line with the production rate demand, as well as a ‘lack of qualified non-destructive inspection / quality assurance personnel (NDI/QA) and equipment at Tier-2 and -3 suppliers.’ With the</b></p>	On a modular enterprise architecture’s low trust with employees and suppliers, revealing the systemic nature of the strategic errors.

		r 2008		<p>pressure to expedite pre-assembly growing, <i>Airbus</i> believes <i>Boeing</i> and its partners chose to defer ‘non-destructive inspection from its Tier-2 and -3 suppliers to Tier-1 partners.’ The situation was only made more complicated by the additional deferral of NDI from its tier-1 partners directly to Everett to rush major assembly. A shortage of fasteners has been a highly publicized challenge to the Dreamliner, yet <i>Airbus delves deeper into the cause</i>. The shortage, <i>Airbus</i> believes, was driven by a late redesign of a sleeved fastener for lightning strike protection that primarily impacted <i>Mitsubishi's</i> wing production. As a result, <i>Alcoa, Boeing's</i> fastener supplier was unable to meet demand in time. <i>Airbus</i> says that at the time the redesign was completed, production lead-time was approximately 60 weeks, leading to ‘limited availability of tailored-length fasteners.’ As a result, fasteners were installed with stacks of washers as a work around for the improper length, forcing <i>Boeing</i> to publicly concede that thousands had to be removed and replaced to incorporate the proper design. <i>Airbus</i> also believes that <i>Boeing's</i> fastener solution ‘infringes a <i>BAE</i> patent owned by <i>Airbus</i>,’ though it is not known if <i>Airbus</i> has acted upon this alleged breach of intellectual property.</p> <p><b>WEIGHT GAIN &amp; PERFORMANCE</b></p> <p><i>Boeing</i> has publicly acknowledged that the Dreamliner is over its initial targeted weight, but the airframer has never specified the extent of the weight issue. An intensive weight reduction program is underway to minimize the impact on aircraft performance. Using a <i>Boeing</i> proprietary chart with additional labelling, <i>Airbus</i> believes Dreamliner One has gained 21,050 lbs since firm configuration, which came in September 2005, three months later than initially planned. According to the chart, which appears to originate from a <i>Boeing Commercial Airplanes</i> update that took place in April of 2008, the significant weight growth originates from fuselage detail sizing and design, accounting for 4,300 lbs, as well as wiring and installation, accounting for 3,250 lbs. Based on its April 2008 assessment, <i>Airbus</i> expects the initial production 787s to have a maximum empty weight of 4.5 tonnes higher than the original firm configuration of 95.5 tonnes. As a result, <i>Airbus</i> estimates early 787 performance to be 6,370 nm with 248 passengers in a two-class configuration, significantly less than the 7,650 - 8,000 nm advertised by <i>Boeing</i>. Based on these <i>Airbus</i> estimates, this would impact launch customer <i>All Nippon Airways</i> and Chinese airlines primarily. In September, <i>Airbus</i> announced it would offer an A330-200 with a MTOW of 238 tonnes, an increase in five tonnes, to blunt the record 787 sales by</p>	
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				<p>offering an A330 with comparable range to the initial 787 deliveries. At the time, Derek Davies, Investor Marketing Director for <i>Airbus</i>, defined ‘initial deliveries’ as the first 20 787s that complete final assembly with a MTOW of 219.5 tonnes. Davies appeared to be quoting information used to create this intelligence briefing. <i>Airbus</i> speculates that a 227.9 tonne MTOW 787-8 <b>variant will be introduced beginning with LN20</b>. The report cites a photocopied <i>Boeing</i> proprietary document from a ‘<i>Boeing</i> source dated August 2008’ that shows ‘a revised airframe supporting this weight increase. This includes strengthening of the outboard wing, the center wing box, the wing leading edges, the MLG wheel well, and the center fuselage as well as enhancing manoeuvre load alleviation.’ <b>Though <i>Airbus</i> speculates that the increased MTOW ‘might also conceal a major impact of the center wing issue.’ In addition, <i>Airbus</i> believes that both the General Electric GENx-1B and Rolls-Royce Trent 1000 engines are rumoured to have missed specific fuel consumption targets by 2-3% and 3-4% respectively.</b> ‘We’ve continued to make tweaks to the engine and we will make fuel spec when we reach entry into service,’ <i>GE</i> said. <i>Rolls-Royce</i> did not return calls seeking comment. <i>Airbus</i> speculates that a rumoured design change to the Trent 1000 low-pressure turbine could require Dreamliner One to switch to GENx engines. Though, a 787 programme source confirms that <i>Rolls-Royce</i> compatible pylons had been recently reinstalled on Dreamliner One.</p> <p><b>RAMPUP FORECAST</b></p> <p>As far back as May 2003, <i>Airbus</i> had at its disposal the internal 787 (then 7E7) production guidance, when, according to the document, <i>Boeing</i> anticipated a peak production rate of <b>seven 787s per month by 2010</b>. However, by October 2005, <b>with the order book swelling, <i>Boeing</i> shifted to a more aggressive ramp up with greater than 10 787s being produced per month by 2011.</b> According to <i>Airbus</i>, <i>Boeing</i> upped its production guidance again in February 2007 as the 787 order book climbed towards 500 to meet a rate of <b>10 787s per month by the start of 2010</b>. With the 787 delays taking a toll on the projected ramp up, <i>Boeing</i> scaled back its delivery guidance in April 2008 to achieve rate <b>10 by 2012, two years later than planned.</b> <i>Airbus’</i> own estimate, dated September 2008, of <b>787 production does not have <i>Boeing</i> reaching rate 10 until 2015.</b> <i>Airbus</i> also cites one airline source that was, ‘Advised by <i>Boeing</i> that the production ramp-up would be patterned after what was achieved with the 777 program. This would mean that <b>only a rate of 7 would be achieved in 2012.</b>’ <i>Airbus</i> cites the <b>supply chain as the central constraint to achieving a higher production rate, even as <i>Boeing</i> is being</b></p>	
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				<p>encouraged by customers to build a second final assembly line. <i>Airbus</i> believes partners <i>Kawasaki, Alenia and Hawker de Havilland</i> are investing in new production equipment to support the ramp up, while <i>Spirit AeroSystems, Vought and Global Aeronautica</i> are preparing for a more gradual ramp up. Also detailed in the report is <i>Boeing's</i> relationship with wing producer <i>Mitsubishi Heavy Industries</i>, which <i>Airbus</i> believes has only committed to rate 7 for wing shipments with a factory sized for rate 10. The report adds that, 'Any plan to increase to rate 10 put on hold due to differences with <i>Boeing</i> over financing' and that 'MHI did have a preliminary order for additional tooling which was cancelled' with 'no intention to invest in production beyond rate 10.' <i>Airbus</i> speculates privately on the future of <i>Boeing's</i> San Antonio facility intended for refurbishment of the first 20 787s, pointing out that the 'Site is on seven year lease, what for?' Within this supply chain constraint is a central question of the fundamental material choices <i>Boeing</i> selected for the 787. The monolithic carbon fibre fuselage barrels are produced by tightly wrapping, or laying-down, uni-directional carbon tape around a mold. <i>Airbus</i> believes the tape lay-down rates are a central pacing item to a robust production ramp up. <i>Airbus</i> analyzed a public lecture given on 13 November 2007 by Al Miller, 787 Director of Technology Integration, regarding the Dreamliner at University of Washington. <i>Airbus</i> recreated a graph by Mr. Miller detailing the material lay-down rates. His chart assumed material could be laid-down with a 2006 demonstrated rate of <b>80 lbs/hour</b> with a single-head machine. However, <i>Airbus</i> competitive intelligence tells a different story. <i>Airbus</i> believes that <i>Boeing</i> suppliers were actually only able to lay-down <b>8-9 lbs/hour</b> at the time production began in 2007 and had gradually increased to <b>19 lbs/hour</b>. <i>Airbus</i> expects the rate to increase to <b>30 lbs/hour</b> once a dual-head machine arrives, well below the initial goal of <b>100 lbs/hour</b> with a single-head machine. <i>Airbus</i> cites <i>Spirit</i>, a tier-one structural partner on the 787, as the source of this actual lay-down rate data. <i>Spirit</i> is a major structural partner on the A350 XWB programme, responsible for the fabrication of Section 15, the central fuselage composite structure, at a new facility being built in Kinston, North Carolina. The A350 XWB competes directly with <i>Boeing's</i> 787 and 777 aircraft. When approached for comment, <i>Spirit</i> says it is unsure of how <i>Airbus</i> obtained this information and added that the company 'takes great measures to protect the intellectual property of our customers.' For the composite A350 XWB, <i>Airbus</i> selected a composite panel design rather than the 787s monolithic design for its fuselage sections.</p>	
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				<p><b>LOOKING AHEAD TO 787-9</b></p> <p><i>Airbus</i> completes its analysis of the 787 programme with a look at the future of the Dreamliner in the 787-9. The airframer examines the larger 787-9 variant that will follow the 787-8 with an entry into service in 2012. <i>Airbus</i> believes <i>Boeing</i> will design significant performance improvements into the -9 that will then be incorporated into a <b>major block point change around LN100 for the -8.</b></p> <p><i>Airbus</i> cites two <i>BOEING PROPRIETARY</i> presentation slides titled 787-9 Configuration Features which claims that a <b>revised aft-body join, new floor beams, seat tracks, composite wing ribs and structural fuel vent stringers, as well as a 'revised structural architecture' for the horizontal stabilizer will all find their way into the 787-8 and -9.</b> The combination of supply chain woes, design changes and production forecasts are all central to <i>what Airbus believes is</i> the 'conundrum' for <i>Boeing's 787 programme</i>: 'Either wait for the 787-9 design spin-offs to limit number of low-value 'wave one aircraft'...or ramp up fast to recover delay in deliveries to customers.' Yet, almost paradoxically, <i>Airbus concedes</i> that the '787-9 design [is] on hold pending availability of 787-8 ground and flight test data.' Adding, 'ground and flight loads data essential to calibrate [finite element method] models' and 'aero[dynamic] and engine performance data essential to determine need for additional weight savings.'"</p>		
3 Dec. 2008	Wired“ <i>Airbus</i> Dossier Dishes Dirt on <i>Boeing</i> 787 Program” (David Demerjian)		Firm-Supplier-Competitor	$\alpha$ & $\beta$	<p>“European aviation giant <i>Airbus</i> has compiled a surprisingly comprehensive dossier detailing every aspect of archival <i>Boeing's</i> work on the 787 Dreamliner, <b>using information gleaned from <i>Boeing's</i> own suppliers</b> and proprietary documentation to assemble a <b>candid critique of the ambitious but troubled aircraft.</b> The 46-page document titled <i>Boeing 787 Lessons Learnt</i> examines every part of the aircraft's development, including key design, certification and production issues, to a degree rarely seen and calls into question the European aerospace consortium's intelligence gathering methods. There's no question the document compiled by Burkhard Domke, head of engineering intelligence at <i>Airbus</i>, and presented internally on Oct. 20 digs deeply into <i>Boeing's</i> development process. It examines nearly every aspect of the 787 program, including the design of the aircraft's wings, fuselage and engines. It provides succinct summaries of the program's parts shortages, fastener issues, quality control concerns and other production woes. Even seemingly mundane issues like the plane's in flight entertainment system are chewed over.</p>	On a modular enterprise architecture's low trust with suppliers, and the media's perception of the 787.

					<p><i>Flightblogger</i> broke the story this afternoon after writer <b>Jon Ostrower</b>, who has made a name for himself reporting on the inner workings of <i>Boeing</i>, obtained a copy of the report from a source he declined to identify. Ostrower told us shortly after posting the dossier that it is unprecedented in scope. <b>‘To my knowledge, there has never been a comprehensive analysis of an airliner like this,’ he said. ‘It looks at every angle of the program, and analyzes it on a very granular level.’</b> What makes the breadth of the report so impressive is the fact <i>Boeing</i> is still developing the 787. How did <i>Airbus</i> get its hands on so much data about a plane relatively few have seen and no one's flown. <b>Ostrower says <i>Airbus</i> obtained proprietary data and quizzed sources throughout <i>Boeing's</i> global supply chain. ‘One page explicitly cites <i>Spirit Aerosystems</i>, which makes the 787 nose, as the source of information about material laydown rates,’ Ostrower told us, adding that <i>Spirit</i> claims to have no idea how <i>Airbus</i> got its hands on the information. Ostrower is even more intrigued by what appear to be seven slides marked ‘<i>Boeing</i> Proprietary” and written in a format used in <i>Boeing's</i> internal presentations. ‘How did they get those?’ he asks. "That's a big deal." <i>Boeing</i> is keeping mum until it sees the <i>Airbus</i> dossier, Ostrower writes in his post, and <i>Airbus</i> told him the presentation and its intelligence gathering methods are perfectly legal. Ostrower says the <i>Airbus</i> report will force <i>Boeing</i> to take a hard look at the non-disclosure agreements it has with suppliers and examine the security of its information networks. But in the grand scheme of things, he says, the <i>Airbus</i> report is good news for <i>Boeing</i>. ‘Sure, short term there are going to be some questions about how the information was obtained,’ he told us. <b>‘But take a look at the document. Nowhere does it say that the program isn't going to work or that the plane isn't going to fly. At the end of the day, the report is a vindication of the program.’</b></b></p>	
4 Dec. 2008	Reuters, “Boeing Set to Announce New 787 Delays” (Bill Rigby)		Firm	$\alpha$	<p>“<i>The Boeing Company</i> is expected to announce further delays to its new 787 Dreamliner next week, or shortly after, when it takes into account the damage of a <b>two-month strike</b> by its machinists and a number of production problems nagging at the program. The U.S. plane maker has already said the first 787 test flight won't happen until 2009, missing its end-of-year target, and most industry-watchers think first deliveries of the carbon-composite plane won't take place until well into 2010, about <b>two years after the original target</b>. The latest delay will be the <b>fourth major schedule slip</b> on the airplane, <b>severely testing the goodwill of <i>Boeing's</i> customers and the faith of Wall Street analysts, both of which championed the fuel-efficient plane early in its development.</b> But the main risk for</p>	On a modular enterprise architecture's systematic over-promise and under-deliver.

					<p><i>Boeing</i> is that a further delay will also seriously upset customer airlines, leading to deferrals of orders or outright cancellations. <b>A number of problems have beset the program, from shortages of bolts to hold the plane together, to software glitches and shoddy work from suppliers. But the real issue, according to industry experts, is that <i>Boeing's</i> plan to outsource almost all production of the plane's structure and components has backfired because suppliers without <i>Boeing's</i> long engineering experience simply could not do the job well enough, and rushed to meet deadlines. 'It was over-ambition from the word go,' said Richard Aboulafia, an analyst at consulting firm <i>Teal Group</i>. 'The problem with an unrealistic schedule is that it keeps creating its own horrible ripples.'</b> <i>Boeing</i> will likely <b>blame</b> the next delay partly on the <b>strike by its machinists</b> -- which recently shut down its Seattle area plants for 58 days -- and to continuing problems with <b>suppliers</b>, which seem to have multiplied. <b>'The more suppliers rush to meet an unrealistic schedule, the more difficult the remedial action needs to be to get things right,'</b> said Aboulafia. The plane is also <b>heavier</b> than it was designed to be, which poses a problem for <i>Boeing</i> hitting the market-changing range and fuel-efficiency <b>promises it made to customers, and could presage further delays. 'There remains a feeling among some within that <i>Boeing</i> still doesn't have its arms around the 787 program,'</b> said industry consultant Scott Hamilton in a recent commentary on the issue. <i>Boeing</i> said at the end of the machinists' strike in early November that it would update all its delivery schedules, but it hasn't said when that would happen. 'We are currently conducting an assessment of our program schedule and when it is complete, we will communicate it,' said the <i>Boeing</i> spokeswoman for the 787 program."</p>	
4 Dec. 2008	<i>Crosscut.com</i> , "Boeing is Going! <i>Boeing</i> is Going!!" (T.M. Sell)		Firm	α	<p><b>"This is a new <i>Boeing</i>, modeled less after the old <i>Boeing</i>, which played for the long term and thus outlasted most of its rivals, than on the <i>GE</i> model, where you can build anything anywhere — and everything but short-term profit be damned. Production is mobile; workers are irrelevant. The problem with this model is that it is not truly very efficient. Workers are not interchangeable parts; they have knowledge and skills that can create new products, solve problems, and go to the wall for you when you need it. It's no accident that most of <i>GE's</i> actual profit comes from its credit operations, not its manufacturing work. But the <i>GE</i> model prevails at <i>Boeing</i>, which means that worrying over short-term costs trumps <b>building for long-term survival.</b> Had previous CEO Harry Stonecipher been able to follow his own ethics rules, <i>Boeing</i> would now be a dying company. He once bragged to me that he had made <i>McDonnell-</i></b></p>	On a modular enterprise architecture's goal of exit.

					<p><b>Douglas profitable without selling any airplanes.</b> Not actually selling any of your product isn't a strategy, unless your <b>goal is to go out of business.</b> <b>Stonecipher has been replaced by another GE disciple, James McNerney,</b> who does at least seem to realize that you have to sell the product to stay in business. <b>He may not value his current employees any more than Boeing ever has, however. Boeing argues that it has to outsource work in order to sell planes, which doesn't actually explain sending work to South Carolina.</b> At the same time, the company effectively doesn't let its own workers bid on those jobs, and then often spends a lot of money paying its workers to fix others' mistakes. This isn't a new phenomena, and Boeing engineers' mistakes on 787 fasteners show its persistence. <b>Machinists' strikes routinely cost the company more money than simply meeting the Machinists' demands would have cost.</b> But unions force companies to actually manage, and too many executives dislike having to treat their employees like something more than automatons. The same is true with layoffs. The production write-downs in the mid-1990s cost the company far more than laying off fewer workers in the early 1990s would have cost them, since having more experienced workers on hand likely would have negated the production problems."</p>	
4 Dec. 2008	<i>The Street.com,</i> "Mad Money Lightning Round': Down on Boeing" (Jim Cramer)		Firm-Investors	$\alpha$	<p><b>"Boeing is the most worrisome stock in the Dow right now. I think they have nothing cooking over there, I say sell, sell, sell."</b></p>	On a stock market analyst's late perceptions of Boeing's problems
5 Dec. 2008	<i>247Wall St.com,</i> "A Good Time to Dump Boeing Management" (Douglas A. McIntyre)		Firm-Investors-Labor	$\alpha$	<p><b>"Boeing (BA) is moving up the list of worst managed US companies at lightning speed.</b> It went through a nice long strike with its machinists, which it settled after two months. Then it began to have labor trouble with other groups of its employees. <b>All this worker trouble is extraordinary because Boeing has a huge backlog of aircraft orders. It might have given a little more to the union to avoid delaying the delivery of those planes and the customer discontent which accompanies it. Boeing management took to the ramparts and fought the machinists. It may have saved some money over the three-year contract it cut, but it now seems certain that the incident and problems with parts will delay the delivery of its 787 Dreamliner again.</b> This may push the launch of the</p>	On a stock market analyst's late perceptions of Boeing's problems



					<p>first plane out another six months. The project had been delayed three times. Now, that will move up to four.</p> <p>According to <i>The Wall Street Journal</i>, In a recent interview, <i>Virgin Atlantic Airways Chief Executive Steve Ridgeway</i> voiced customers' growing frustration. 'We're pretty fed up,' he said. 'We've got no clarity from <i>Boeing</i>.' The 787 trouble could well force some of <i>Boeing's</i> revenue into later quarters, undermining its financial results. It could certainly put customers in a position to ask for very large penalties for the late deliveries. Flying their older planes costs them more in fuel and the opportunity to more efficiently configure their fleets. <i>Boeing's</i> shares have dropped from a 52-week high of over \$93 to \$39. That means they have <b>fallen by over 55% during a period that the DJIA is off 35%. Almost all of the plunge has been caused by poor labor relations and bad sourcing and controls of components. In other words, particularly poor management. Under most circumstances, trouble at these levels causes a board to make changes. At Boeing, now would be a good time.</b>"</p>	
11 Dec. 2008	<p><i>Bloomberg</i> "Boeing's 787 May Suffer Further Delay, <i>Japan Air Says</i>" (Susanna Ray and Chris Cooper)</p>		Firm	α	<p>"<i>Boeing Co.</i>, whose 787 Dreamliner has already been delayed three times, may postpone deliveries by a further six months as it struggles with production woes and the legacy of a strike, <i>Japan Airlines Corp.</i> said.</p> <p>'It's like deja vu, all these things coming back to haunt us -- fasteners, flight-testing concerns and further delivery delays,' Rob Stallard, an analyst at <i>Macquarie Research Equities</i> in New York, said in an interview yesterday. <b>The first Dreamliner was rolled out of the hangar in July 2007 and should have had its first flight a month later.</b> Boeing has said all its programs will face at least a day-for-day delay from the eight-week machinists' strike that ended Nov. 2 and kept the 787 from flying for the first time this quarter under a schedule revised after earlier delays.</p> <p>While <i>Airbus</i> has also suffered program delays, the Toulouse, France-based company's 525-seat <b>A380 superjumbo successfully completed a test flight three months after its roll-out and encountered problems only once it entered production.</b></p> <p><i>Boeing</i> is using new carbon composites instead of aluminum in much of the 787, adding complications to a new manufacturing process. Suppliers in the U.S., Italy and Japan are supposed to build 70 percent of the plane and to ship completed sections to Boeing's Everett, Washington, factory for final assembly. <b>The different languages and time zones</b></p>	<p>On a modular enterprise architecture's systemic problems</p>

					<p><b>involved hampered communication and stymied Boeing's ability to fix problems that cropped up,</b> Joseph Campbell, an analyst with <i>Barclay's Plc</i> in New York, said in an interview yesterday. <b>'This program now has reached a level of delays and things going wrong that are really frustrating and beyond expectations'</b> for both observers and long-time <i>Boeing</i> engineers, said Campbell, who has analyzed the company since the early 1980s. <b>'It's out of character for Boeing. Normally Boeing prides itself on being on-time and will overrun its budget in order to be on time.'</b>"</p>	
11 Dec. 2008	<p><i>Bloomberg</i> "Boeing Delays Dreamliner to 2010, Shuffles Managers" (Susanna Ray)</p>		Firm	α	<p>"The jet won't fly for the first time until next year's second quarter, in part because factories were idled for eight weeks by a machinists' strike and some fasteners had to be replaced, Chicago-based <i>Boeing</i> said today. The company also <b>shifted managers and created a new position to monitor operations by suppliers</b>, who were blamed for previous delays.</p> <p><b>'Not only is the timeline realistic, but the new organizational structure makes a lot of sense,'</b> said Howard Rubel, a New York-based analyst with <i>Jefferies &amp; Co.</i> who has a 'buy' rating on the stock. <b>'It's a little better than the worst case, and I think they know there's no more 'control-alt-deletes' allowed.'</b></p> <p><b>'It's like deja vu, all these things coming back to haunt us -- fasteners, flight-testing concerns and further delivery delays,'</b> Rob Stallard, an analyst at <i>Macquarie Research Equities</i> in New York, said in an interview. His research note today was titled the <b>'7 Late 7.'</b>"</p>	<p>On a modular enterprise architecture's systemic problems</p>
11 Dec. 2008	<p><i>Market Watch</i> "Boeing Again Delays 787 Shakes up Jet Division" (Christopher Hinton)</p>		Firm	α	<p><b>"Boeing Co.</b> restructured its commercial-airplanes division on Thursday, following an announcement that it would have to postpone the launch of its flagship 787 Dreamliner for a <b>fifth time</b> because of <b>problems within its supply chain</b> and the recent machinists' strike. <b>In November, the Chicago manufacturer also announced delays in its 747-8 deliveries for the same reasons. On her way out was Carolyn Corvi, 57, in charge of airplane programs and responsible for streamlining the commercial division's supply chain. Boeing said the 34-year veteran will retire at the end of the year.</b></p> <p>Effective immediately, <i>Boeing</i> said that commercial airplanes-supplier management, fabrication and propulsion systems, as well as the manufacturing and quality groups will be part of a new organization, called supply-chain management and operations. Ray Conner, 53, who recently was vice president of commercial sales, will lead the new group. Further, all current production and development programs will be brought under a new airplane-programs organization, headed by Pat Shanahan. The new</p>	<p>On a modular enterprise architecture's systemic problems, and apparent blame attributed to an integral enterprise architect.</p>

				<p>group includes the 787 program, previously run by Shanahan. <b>That looks like a well-deserved promotion for Shanahan, 46, who they credit for making progress with the 787's technical execution, analysts said. Shanahan brought to the program supply-chain management skills it needed, honed during his tenure at the company's missile defense unit.</b> 'The steps we are taking today will sharpen our management focus and bring our organizational structure to bear to improve execution in our supply chain, as well as on our development programs,' Scott Carson, president and chief executive of <i>Boeing Commercial Airplanes</i>, said in a statement. <b>The shakeup did little for Boeing's stock, however.</b> At last check it was down 1.3% to \$41.14. Year to date, <i>Boeing</i> stock is down more than 50%, pummeled by concerns over the troubled financial markets, slowing air traffic, a loss of defense revenue, the machinists' strike, and delays in its 787 program. <i>Boeing</i> said separately Thursday that the first deliveries for its 787 Dreamliner would now occur in the first quarter of 2010, postponed from its most recent target of third-quarter 2009 -- about two years behind its original schedule. <b>Industry analysts have been highly critical of the 787 delays, accusing the company of allowing sales and marketing for the aircraft run too far ahead of its development and technical execution, raising expectations it is now struggling to meet. Further, it has tarnished the company's reputation,</b> raising comparisons to its rival <i>Airbus</i>, which wrestled for years with delivery delays of jumbo jetliner, the A380. The development of any new aircraft can run into delays, said Jon Kutler, an industry analyst and chief executive of <i>Admiralty Partners</i>. <b>'But the A380 delays were so damaging to Airbus' reputation that you'd think Boeing would have taken every opportunity to do things differently,'</b> he said. Thursday's announcement marks the program's <b>fifth delay</b> and raises concern that customers will demand more penalty compensation, or even back out of their orders entirely, at a time with air traffic is weakening. But to date, only one order has been canceled due to the postponements. 'I don't expect airline customers to cancel their 787 orders,' <i>Macquarie Research</i> equities analyst Rob Stallard said in an interview. 'The soft demand environment at the moment is probably a helpful coincidence in some cases, though I suspect that the airlines would rather be making this decision on deferred capacity themselves, rather than it coming from <i>Boeing</i>.' Stallard added that <b>some of Boeing's early customers already have maxed out their contractual compensation,</b> and more recent customers are most likely to seek compensation in the form of an interim aircraft, such as a cheap 767. <i>Boeing</i> said it wasn't company policy to discuss the compensation. Douglas Harned, an aerospace</p>	
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					analyst with <i>Bernstein Research</i> , lowered his rating for <i>Boeing</i> on Thursday to market perform from outperform on anticipation that the delay could be pushed out to beyond mid-2010. <b>‘Management has set several timelines that have broken, and we do not yet see evidence that the next one will hold,’ Harned wrote to investors. ‘We are concerned that there is no longer a clear bound on program risk.’</b> Speculation that the 787 would see its fifth delay began soon after the machinists' strike came to an end in October, with <b>customers and suppliers saying they didn't think a first delivery could possibly happen on time.’</b>	
11 Dec. 2008	Internal <i>Boeing</i> Email	Scott Carson, CEO <i>Boeing Commercial Airplanes</i>	Firm	α	<p><b>“Restructuring and leadership changes:</b></p> <p>As you know, we currently have a <b>record jetliner backlog, while at the same time we have encountered challenges in our airplane development programs and within our supply chain.</b> The current economic slump is further compounding difficulties for our customers, who urgently need the newest and most efficient jetliners to help them succeed in today’s dynamic and competitive environment. Today we are announcing a series of leadership changes and a restructuring to <b>better align resources across development programs and strengthen our oversight of the global supply chain.</b></p> <ul style="list-style-type: none"> <li>· <b>Carolyn Corvi</b>, who previously led Airplane Programs, has <b>decided to retire</b> at the end of December after a 34-year <i>Boeing</i> career. Carolyn has been a <b>driving force behind the company’s successful implementation of lean production techniques.</b> On behalf of everyone at Commercial Airplanes and the entire <i>Boeing</i> enterprise, I want to thank Carolyn for her <b>outstanding vision and leadership in transforming our production system and dramatically improving our productivity throughout her career.</b></li> <li>· <b>Ray Conner</b> is named vice president and general manager of a <b>new organization, Supply Chain Management and Operations.</b> Ray reports directly to me, and his new organization <b>combines Supplier Management, Fabrication, Propulsion Systems and the Manufacturing and Quality functional organization.</b> Ray brings years of experience in sales, program management, manufacturing and supply chain management.</li> <li>· <b>Pat Shanahan</b> is named vice president and general manager of a <b>restructured Airplane Programs organization.</b> Pat reports directly to me, and his organization is <b>responsible for all current commercial airplane production and development programs,</b> including the 787 and 747-8. Pat has an</li> </ul>	On a modular enterprise architect’s loss of its integral architect.

					<p><b>excellent track record as a program management executive</b> in both Commercial Airplanes and Integrated Defense Systems.</p> <p><b>The new Airplane Programs and Supply Chain Management and Operations organizations will work together closely to drive lean initiatives, productivity and execution throughout the entire global value chain.</b> The ultimate goal is to deliver value to our customers and protect our competitiveness in this challenging market environment. In addition, we're announcing the following leadership changes:</p> <ul style="list-style-type: none"> <li>· <b>Scott Fancher</b>, who previously was vice president and general manager of <b>IDS Missile Defense Systems, is named vice president and general manager of the 787 program</b>, reporting directly to Pat Shanahan. Scott brings demonstrated leadership in program management, systems integration and technology development to the 787 program.</li> <li>· <b>Marlin Dailey</b> is named vice president of <b>Sales for Commercial Airplanes</b>, replacing Ray Conner. Marlin, who most recently led the Commercial Airplanes Sales efforts in Europe, Russia and Central Asia, reports directly to me.</li> </ul> <p>All of these appointments reflect <b>great depth and strength in our management team</b> and position us for <b>continued success</b>. I look forward to the leadership of these individuals, and I'm counting on your support as we face the challenges and opportunities in the year ahead.</p> <p>Scott."</p>	
12 Dec. 2008	<i>Bloomberg</i> "Boeing's '7-Late-7' Dreamliner Takes As Long As Pioneering 707" (Susanna Ray)		Firm	α	<p>"Boeing Co.'s latest delay means the 787 Dreamliner will <b>take almost as long to develop as the planemaker's original model that ushered the U.S. into the Jet Age more than a half-century ago.</b> The schedule <i>Boeing</i> announced yesterday would start 787 shipments to airlines in 2010, almost <b>six years after the first order. That's about two years more than the average for other Boeing planes and rivals the six years and two months spent on the 707 in the 1950s.</b> That aircraft, which started out as the Dash 80, was the forerunner of the more than 16,000 commercial jets the company has built since. <b>Punsters have had their way with the 787 Dreamliner amid the four delays since October 2007: It's the '7-Late-7' and the 'Lateliner'</b> in reports by Rob Stallard, an analyst in New York with <i>Macquarie Research Equities</i>. Newspapers including London's <i>Daily Telegraph</i> quipped about the Dreamliner turning into a nightmare. Chicago-based <b>Boeing has lost 60</b></p>	On a modular enterprise architecture's systemic problems

					<p><b>percent of its market value since the first delay. ‘The 787 has seriously undermined the confidence that all stakeholders previously had in Boeing,’</b> Stallard said in an e- mail interview. <b>‘We think it will take a very long time to overcome the erosion to goodwill that has occurred.’</b></p> <p>The Dreamliner <b>‘will be a phenomenal leap, but not without its problems,’</b> said spokeswoman Liz Verdier in Seattle, where <i>Boeing</i> has built commercial aircraft for almost a century. The Dash 80 made its <b>first flight</b> from Renton Field, south of Seattle, <b>just two months after it rolled from the factory</b> in 1954. The Dreamliner, in contrast, now isn’t expected to have its first test flight until next year’s second quarter, <b>almost two years after it was unveiled to the public.</b></p> <p><i>Airbus</i> has also suffered program delays, with its 525-seat A380 needing <b>almost seven years before its first delivery last year.</b> The superjumbo jet completed a <b>test flight just three months after its roll-out, however,</b> and encountered setbacks only once it entered production. ‘The Dreamliner delays are likely to be as bad as the A380, or as some people called it, the A-3-Turkey,’ said Richard Aboulafia, an analyst with aviation consulting firm <i>Teal Group</i> in Fairfax, Virginia. <b>‘But it entered service successfully, and so will the 787.’”</b></p>	
12 Dec. 2008	<i>The Chicago Tribune</i> “More 787 Headaches for Boeing” (Julie Johnson)		Firm-Customer	α	<p>“<i>Boeing Co.</i> confirmed Thursday that its first 787 Dreamliner is again off course and won't be delivered to launch customer <i>All Nippon Airways</i> until the first quarter of 2010, nearly two years later than planned. <b>But some in aviation circles question whether Boeing is setting itself up for even more delays.</b> Chicago-based <i>Boeing</i> said the largely composite commercial jet won't make its first flight until the second quarter of 2009, a timetable that leaves it just nine months to complete flight-testing. <b>One major 787 supplier told the Tribune that Boeing is more likely to need 12 months to gain certification for the all-new jet and to fix any problems unearthed during the flight-test program. Boeing's last new line of jets, the 777, required 11 months of test flights. ‘It's going to take at least a year between first flight and first delivery,’</b> said Richard Aboulafia, aerospace analyst with <i>Teal Group</i>, a Virginia-based consulting and market research firm. <b>‘Of course, the production ramp-up schedule is going to suffer.’</b> <i>Boeing</i> spokeswoman Yvonne Leach said the flight plan <b>‘is aggressive,’</b> but added that <i>Boeing</i> planned to operate flights around the clock, employing a platoon of more than 34 pilots. <i>Boeing</i> also has been extensively testing the aircraft and its components as the first planes wind through production.</p>	On a modular enterprise architecture’s systemic problems.

					<p>The string of delays is turning the Dreamliner into a nightmare for customers like Japan-based <i>ANA</i>, which had been counting on the aircraft to spur growth and cut fuel costs. Like other customers, <i>ANA</i> assumed the first aircraft would miss the latest delivery deadline of mid-2009, given the strike that shuttered <i>Boeing's</i> production for nearly two months, the slow pace at which production has resumed and the discovery that thousands of fasteners on the first aircraft would have to be reinstalled. <b>The greater concern, Mineo Yamamoto, chief executive of <i>ANA</i>, told the Tribune on Thursday how badly delayed subsequent 787s will be.</b> <i>Boeing</i> has 895 of the planes on order, and <b>analysts expect its production to be disrupted well into the next decade.</b> <i>ANA</i> had planned on delivery of 50 Dreamliners by 2011 in order to take advantage of 50,000 landing slots that will become available at Tokyo's airports. <b>'This is going to have a major impact on our cost structure,'</b> Yamamoto said. <i>ANA</i> likely will have to revisit plans to order nine new 767s, the midsize plane being replaced by the 787, and has delayed plans to retire similar aircraft in its fleet, Yamamoto said. Also in question: How will <i>Boeing</i> compensate <i>ANA</i> for its difficulties? <b>The two sides had agreed on terms to help defray <i>ANA's</i> costs from the three previously announced delays. Because <i>Boeing</i> isn't contractually obligated to pay costs created by strike-related delays, <i>ANA</i> will have to figure out the penalties due as a result of a the fastener-related slowdown,</b> said <i>ANA</i> spokesman Rob Henderson."</p>	
15 Dec. 2008	<i>BusinessWeek</i> "Can Airbus Keep its Edge on Boeing?" (Carol Matlack)		Firm	$\alpha$ & $\beta$	<p><b>"It has been a rotten year for <i>Boeing's</i> (BA) commercial jet business.</b> Production glitches and a 58-day machinists' strike this fall have pushed its newest plane, the 787 Dreamliner, <b>a full two years behind schedule.</b> Archrival <i>Airbus</i> (EAD.PA) has <b>pulled ahead in the race for new orders,</b> logging 756 net sales this year, compared with only 640 for <i>Boeing</i>. At the same time, <i>Airbus</i> seems <b>finally to have untangled its A380 mega-jet's production mess.</b> And the strengthening of the dollar against the euro has boosted <i>Airbus'</i> bottom line and helped the European planemaker regain some of its competitive edge. All that, and yet the market for big planes looks worse than it has in years. Total orders this year are likely to be half the level in 2007, and some financially strapped airlines are canceling or delaying earlier orders. 'Traffic is collapsing,' says Nick Cunningham, a London aerospace analyst with <i>Evolution Securities</i>. It's a perilous time—but it could be even more dangerous for <i>Airbus</i> than for <i>Boeing</i>. <i>Airbus'</i> A350, its planned competitor to the Dreamliner, looks to be <b>falling behind schedule, too.</b> The company had expected to settle on a detailed design for the A350 by October, but now that timetable has slipped into 2009 as the</p>	On a Liberal Market Economy's misunderstanding and mischaracterization of an integral enterprise architecture.

					<p><b>planemaker negotiates with airlines over specific design features.</b> That makes it almost certain that the A350 won't enter service before 2014, at least 4 years behind the Dreamliner's delayed launch in early 2010. The danger for <i>Airbus</i> is that further slippage on the A350 will seal <i>Boeing's</i> dominance in the <b>high-volume, richly profitable market for midsize widebody jets.</b> '<i>Boeing</i> may be <b>guaranteed a permanent majority,</b>' says Doug McVitie, an analyst with <i>Arran Aerospace</i> in Dinan, France. Already, the Dreamliner has racked up nearly 900 orders, <b>almost twice</b> the 478 logged by the A350. The strengthening of the dollar, which has risen almost 20% against the euro since the summer, certainly offers short-term relief to <i>Airbus</i>. When the dollar was sinking, the company noted that every 10¢ rise in the euro would knock more than \$1.3 billion off its bottom line, because airplanes are priced in dollars but most of the manufacturing costs are in euros. <i>Airbus</i> has launched a series of cost-saving measures, known as Power 8, aimed at slashing more than \$4 billion in operating costs. But such savings will be much harder to achieve if <i>Airbus</i> has to <b>trim production in a downturn, because fixed costs such as buildings and equipment will account for a higher percentage of total expenses.</b> <i>Airbus</i> already has said it will postpone a planned increase in production rates, and CEO Tom Enders said last month the company could take 'further action if the situation deteriorates.' <i>Evolution's</i> Cunningham thinks production cuts are inevitable, as he predicts <b>annual aircraft deliveries worldwide will fall as much as 50% from 2009 to 2013.</b> What's more, the dollar is now weakening again."</p>	
17 Dec. 2008	<i>Airwise</i> , "Boeing", <i>Airbus</i> Seen Facing Mass Order Deferrals	Firm-Customer	α	<p>"<i>Boeing</i> and <i>Airbus</i> could see up to <b>70 percent of the planes in their order book pushed back</b> by struggling airlines as the global economic crisis puts a strangle hold on the recently booming travel industry, a leading analyst said this week. '<b>In terms of orders suddenly turning out to be firm as [jelly], that could be anywhere between 30 percent and 70 percent (of the backlog),</b>' Richard Aboulafia, an analyst at <i>Teal Group</i>, told the Reuters Aerospace and Defense Summit in Washington. '<b>We are seriously in uncharted territory.</b>' 'I'm not terribly worried about 2009; it's 2010 when we'll begin to see a shift,' said Aboulafia. '<b>Production cuts are inevitable after 2010,</b>' said Aboulafia, as it will not be possible for airlines to put into service the thousands of new planes scheduled to be delivered, in the face of falling traffic numbers. <b>Others in the industry -- who have a vested interest in the health of the plane production business -- have a more optimistic outlook.</b> '<b>Most pundits talk about a tougher year next year, with air traffic flat to down a little bit, calling into question some deliveries,</b>' Stephen Finger, president of jet engine</p>	<p>On temporal inconsistencies in analysts of modular enterprise architectures.</p> <p>(Compare with same analyst's statements in March 2008 and 2001.)</p>	



					<p><b>maker Pratt &amp; Whitney, told the summit. ‘I don’t think the delivery issue is as pronounced as some people worry it might be.’</b> Airlines could bounce back from the downturn quicker than some expect, said Finger, keeping demand for new planes relatively strong. <b>‘I don’t dispute the flat-to-tough marketplace, but the optimist in me says we might see something by the second half of next year, with low oil prices,’</b> said Finger. If airlines can get back into profit by next year, that would ‘shore up the basics of aircraft acquisition,’ Finger added, implying that deferrals and cancellations would not hit plane makers too hard. <b>The coming dip in travel will not drastically affect plane makers in the long term,</b> Tom Captain, leader of <i>Deloitte’s</i> Aerospace and Defense practice, told the summit. <b>‘The data says we are facing some rain clouds, but the longer term forecast is for 5 percent annual growth in air traffic over the next 20 years,’</b> Captain said. <b>That would exceed expected growth in global gross domestic product over the same time,</b> Captain said, and keep demand for new planes strong over the long term.”</p>	
Jan. 2009	<p>Comments on "Not Acceptable" - Boeing Programs Today</p> <p><a href="http://www.rbo.gash.com/boeing_comments.html">http://www.rbo.gash.com/boeing_comments.html</a></p> <p>(Robert A. Bogash)</p>		Firm-Employee	α	<p>“I have received a <b>very large number of comments - from every management level</b> - they have all been extremely positive and supportive. A sampling - <b>many from 90 Series. From all disciplines. Mostly from retirees, but some from folks still on the payroll.</b> The Expletives have not been deleted, nor the typos or misspellings corrected; but the ‘names have been changed to protect the innocent.’”</p> <p>“I am afraid you are right. Son Bill (working there) and I have talked about this. I think that all of the <b>off-loading we have done has resulted in the depletion of our technical skills and the scheduling expertise and knowledge that is demanded with it.</b> I too am embarrassed. I remember when Jaun Trippe asked us to build the 747. If he were around today, <b>I find it unimaginable that he would ask McNerney or Carson to build him a 797.”</b></p> <p>“<b>I too am amazed that the folks in charge of this program at the get go are still Boeing employees. I am also amazed that the current guys running the program are still employees.</b> McNerney is no idiot when it comes to technical matters, but he’s relying a guys running BAC who came up on the defense side and who have zero technical credentials. As you point out – <b>this is what you get when non-technical guys are trying to manage highly technical companies.</b>“</p> <p>“Aloha Bob, great job,I could not agree more, the whole <i>Boeing</i> situation is embarrassing, especially the 787 and tanker program. <b>I agree the whole</b></p>	<p>On the reflection of former employees of a more integral enterprise architecture, viewing the ongoing disintegration of their former enterprise.</p>

				<p><b>Boeing management structure should be replaced and moved back to Seattle, but how, count me in.”</b></p> <p>“I wonder if you sent an inquiry to the <b>90 series and company directors</b> on your mail list asking if they would sign or do they believe it would be wise to send a <b>letter of concern and embarrassment to each Boeing Corporate board member about the deteriorating Boeing competitive position and flawed management of programs and Company strategy and suggesting the need of management change. Carson is the wrong person, he is part of the problem, I have been in two or three meeting with him and both he and McNerney don't know squat on how to manage airplane projects.</b> Boy, the board really made a mistake when they let Malally get away. He is the only one left that has the experience and ability to manage a project. <b>Well I think the key is to communicate to the board member how bad the project and management situation is.</b> How many will agree to sign a communication? Count me in.”</p> <p>“Bogie, I finished reading your essay for the second time. I get more angry every time I think of the down hill slide of a once World Class touchstone. I would send your letter to all of the people you mentioned. Maybe it will cause someone to take some action. <b>I think most of us who have been involved in new programs keep assuming that certainly they will do the right thing, but they aren't going to. It is amazing how the culture at a company can change so dramatically in such a short time and never recover. What a case study for MBA schools.”</b></p> <p>“I don't know where you get the time to put something like this together but you hit the "nail on the head". I have great concern about the future of "our" <i>Boeing</i>, our state and our country. It looks like that generation of no failure, I am owed, and no fault has arrived. I pray that my grandkids are listening and learning their lessons well.”</p> <p>“Hello Robert,your recent summary of everything that has gone wrong in recent years is truly amazing,very well done,a real eye opener and heartbreaking all at the same time.<b>how could such a great company fall so far in such a relatively short time?</b>This current report is so ridiculous it's hard to understand how a general manager's concept of accomplishment could be so far off the mark.<b>Does boeing still have a core objective to design and build the best engineerred,manufactured and delivered airplanes in the world?</b>How do you think we would have faired if we had put out a report like</p>	
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				<p>that? Keep up the good work.”</p> <p>“Bob, when ready, <b>your documents have to get in McNerney hands.</b> It is powerful - much broader than mine. <b>He has got to know the rest of his programs are in trouble.</b> You started something- I am happy to participate - it is worthwhile. Do not give up”</p> <p>“Bob, As always, you’ve cut through the fog and BS and said it like it is – just like Blue, Wilson, Sutter, Paul Sandoz, Ev Webb and all the others taught us! You ought to get an Oscar for this one. In trying to think of a practical way we can be of help to the current crew, I can think of no better way of having a crowd of us <b>ex-90 series managers signing this and sending it to the BoD,</b> and the Company senior management. However, we have to be prepared to actually DO something if they acknowledge they need help. People like <b>Carolyn,</b> Mike Denton (now VP of Engineering) et al should still understand this stuff and, at least Mike, is really in a spot where he can take some action (if he and his colleagues <b>have the balls to make the decisions</b>). They will have to admit they’re in a bind and can use help – <b>even if we offer it for free! Will their egos let ‘em??</b> Great job,”</p> <p>“Hi Bob, You probably don't remember me but I was one of the Chief Engineers in Commercial under Omar and Wherman, Hammer and others... like you I retired years ago... I was one of those guys who they gave all the unusual jobs to that needed sorting out ..I had a pretty good record for under running budgets and getting things done on time. Gissing made me the program chief for the xxx I did the same with the xxx..I was deputy chief on that program. Anyway...I have just read your blast on the situation at <i>Boeing</i>. I received it via Jim V. Gee I couldn't agree more with all that you said. (But you did miss out the incredible work we did with the YC-14). <b>I too have suggested to others on numerous occasions they need to invite a few of us sharp minded retirees back to see if we can sort out the mess. I bet in a few months we could work wonders. I hope you send your message to those that matter ..all the board of directors need to see it.</b> Thanks again.”</p> <p>“Wow! Thanks Bob. I'm an ‘almost retired’ <i>Boeing</i> guy myself. You are unfortunately correct. Since I left your group many many years ago I have had quite a few really nice assignments. <b>I am now the xxx manager for all new airplanes and derivatives. We come up with..... designs for</b></p>	
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				<p>future products. A 'production' team then comes in and 'makes it happen'. That's where the problems really start. I was removed from my position on the 787 4 years ago by a new McD program manager brought in for the 787 for saying 'no' to him. They did not want to hear the truth. That happened to many of us. He got promoted when the 787 xxx programs started coming up in trouble. Sound familiar? Thanks again, keep talking and maybe the embarassments will eventually stop."</p> <p>"During our Sonic Cruiser days I was leading the xxx team. A 'new' person came in and was to lead a 'special study' where we investigated the value of xxx on the airplane's economics. This new guy called a team meeting of all the leaders and explained the study and it's schedule. It looked good, but would impact other studies already under way at that time. Since the other study leaders were not present and no upper management to place priorities, when the question and answer period began I asked, 'How do we phase this in with current studies and place priorities?' His response was a very curt, <b>'My program is the most important and anyone who doesn't understand this should write the name of his replacement on the whiteboard as he leaves the room.'</b> Fresh up from the farm at Long Beach! <b>He became 2nd level on 787.</b> There were many others."</p> <p>"I have just read it for the fourth time and wanted to tell you personally that it is exciting to know there are people that know how great <i>Boeing</i> was and where The Company is today. With all the real leaders you have known and worked with I have no misconception you will remember me. I was the XXX for the first 777 assembly. Remember ? Those were the days when we went to the Suppliers and made sure our products were completed with Quality built in and on time. I remember calling back to Seattle and saying there was no way the first section would ever make it on schedule. Within days we had an entire cadre of <i>Boeing</i> people on site helping. Sure do miss THAT <i>Boeing</i>. <b>I am still working so I would appreciate your not sharing my name with others. Every day is a challenge. The 'New Breed' has no conception on how to complete the task but they are really quick to get rid of anyone who is not a yes man.</b> Working Together - Reduce Flow Time - Eliminate Redundancy (meaning Inspection) have become the Mantra. <b>If you do not support that then you are destined to disappear.</b> It gets tougher each day because the Managers I grew up with are all retiring and I do not have much influence without them. <b>There are just too many who have come from the New Breed</b> and I don't stand much of a chance when it is me vs. them. <b>I will say that as</b></p>	
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				<p><b>long as I am able I will do The Right Stuff and NEVER drink the bath water that would compromise safety.</b> Oh well Just wanted to say Thanks.”</p> <p>“Bob, You and I first had contact 22 years ago when a letter I sent to Frank Shrontz was handed off to you. Your posting is making the rounds internal to <i>Boeing</i> and I’ve invited my managers have a read. I suggest that it may be uncomfortable, but necessary to look into the mirror that others are holding up. Whether as a retiree or someone recently returned to the company, it is very painful to realize where we are and try to figure out how we got here. <b>When Bair got up to pitch the 7e7 status and I saw all green squares with a couple of yellows, I waited for Alan to pounce. After all, there is no way that a project taking on so much technology and schedule risk could possibly be riding along with no critical issues at that stage in development. The pounce never came. I was stunned. I knew Alan had the experience to know better, but I guess maybe he had already checked out. My worries for our management culture and competence have grown since then. I’m not schooled in organizational development, but I believe that a culture of ‘yes men’ has taken hold over the past decade or so. Engineers who provided analysis pointing to problems now plaguing the 787 program were shooed out of the room and off the program. I looked at the RFQ for some of the avionics systems and I was mortified. System integration was not addressed. I was roundly criticized for carrying significant contingent risk in the out years of my proposed schedule because I predicted that we would have to provide significant resources in support of integration and test that was not in the scope of work. This has come to be true for many suppliers. Subsequent decisions such as shipping structural shells just to hold to the rollout date have no doubt cost us hundreds of millions of dollars, if not billions. That said, many of our supplier development efforts are chronically deficient.</b> Thank you for posting your observations on <i>Boeing</i> delays and facilitating dialog and comments. Sharing this can only help.”</p> <p>“A couple of years ago the chief engineer of xxx made a statement addressing a newly formed study team. He said, ‘We need to work hard to achieve our 50% share of this market’. I stood up and said in front of many leaders, including some VP's ‘What do you mean 50%? My <i>Boeing</i> has lived with 80%. Don't brainwash our youngsters into thinking 50% is ok.</p>	
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				<p>It's not ok with me'. Not a soul stirred. To me that was the day the music died.“</p> <p>“Sad but true. Is this the start of the book? <b>Sounds as if I should be buying puts instead of calls?</b>”</p> <p>“<b>I doubt you'll get many kudo's from the big boys at Boeing, but it does call a spade a spade.</b> It will be interesting to see how its rec'd.”</p> <p>“<b>Would you mind if I sent it to Carson? Answer: No. (Subsequently went to Carson.)</b>”</p> <p>“Bob, If you have a list of people you send your blog to, I would like to be on it. We met a couple of times over the years. I was in Flight Test from 1965 to 1998. Advanced to xxx, <b>got busted in 1997 for speaking out</b> about what you describe and retired in xxxx. I am hearing rumors about changes in flight test that disturb me. <b>Not only will they not make their pipe dream of a schedule,</b> but think that because of inexperience the chances of losing an airplane are greatly increased.”</p> <p>“TJ forwarded your article to me and it was a great pleasure and delicious treat to read another Bogash screed peeling hide from the guilty. After all these years, you probably don't even remember my name but I certainly remember yours from your days as our Tech-Rep in Montreal holding hands with the Nordair guys in the early days of our 737 gravel runway travails. How the mighty have fallen! Our once proud and venerated <i>Boeing Company</i> seems incapable of doing anything demanding these days such as bringing a program in on time and on budget. <b>Much of this failure I attribute to the products of that ill-advised Sloan Program which selected promising young guys very early in their careers, extruded them through the B-school die at a tender age, instilled perfect confidence in their immature judgment and assigned them rank and responsibility far beyond the merits of their wisdom and experience. These guys were rotated through the various chairs at warp speed and from my observation, many did not gain much real knowledge in the process. Most were definitely good guys, really smart, and several I counted as friends but most lacked the tempering which the fires of adversity forge. They needed more time as front-line grunts working night and day under some obstreperous airplane on the flight line to drive home the realization that there were NO small problems which kept the machine grounded.</b> If it did not dispatch on schedule, we had failed, period and excuses were small comfort; very small. During the early days of the 737 when we were plagued with trailing edge flap problems, I was absolutely delighted when Dick Ault of Western</p>	
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				<p>came to town to explain things to our leaders. Dick had a colorful way of clarifying the impact of an AOG in idiomatic English that our leaders could understand. He, John Borger, Frank Kolk and several others whose names elude me at the moment were real airplane guys who knew how to make things work. Unfortunately, <b>the wisdom accumulated during that era seems to have been displaced by quarterly results and political correctness; the precious legacy forfeit. Geezers have complained about subsequent generations for all of recorded history but in this case the objective results furnish solid basis for dissatisfaction. It isn't just a nostalgia trip.</b></p> <p>“Bob, well said and to my way of understanding, right on the mark. with your permission, I'd like to forward it to some of my pen-pals, but will wait until you give the ok. It seems ready to go to me.”</p> <p>“Hi Bob, long time no communicate. I feel fortunate to have received a copy of your 787 analysis and sincerely hope you have somehow gotten it to the attention of those people at the top who really need to see it. I too have been retired for several years now and I dismay every day at the conditions at the company today. I made my career in those certification plans and schedules and stand up meetings and know whereof you speak. Everyone I talk to today is extremely unhappy with the cavalier attitude that derives today to work statements, configuration control, schedule commitments, oversight, etc. I agree with some of the comments you have received however, specifically with <b>Mulally. He did a good job on the 777 but, in my view, somehow lost track of most of the core competencies at Boeing later in his career, specifically with the planning of the 787. I think you were too easy on him.</b> Anyway, congratulations on a well written piece. “</p> <p>“I never did meet you but having reviewed you web site I wish that I had. I spent 32 years of my life at <i>Boeing</i>, ended up as the chief engineer on the xxx retiring in 20xx. <b>I first thought that Boeing was going astray when we sat through poetry sessions under the sponsorship of Condit.</b> I don't know if you had to undergo these. I am a firm believer in the process of a master schedule, the war rooms that are a part of it, and with the responsibility that everyone has to ensure its completion. In all of my time at Boeing we never deviated from the belief that schedule was the most important (after safety) thing for Boeing. Our task was to deliver airplanes on time to our customers. No excuses. Keep up the good work.”</p>	
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				<p>“Bob, <b>I can’t believe the mess McNerney’s allowing to develop in Longacres. I haven’t been able to reach Carolyn, but I am dismayed to no end that she is leaving. What’s really missing is replacement of Carson and Albaugh – the two most recent disasters as CEOs.”</b></p> <p>“Bob, I've now read your piece a couple of times. There isn't a thing that I don't agree with. I believe you have put your finger exactly on what's wrong at <i>Boeing</i> presently - <b>a paucity of true leadership and management.</b> I wondered how some of the people currently in charge at <i>Boeing</i> might react to reading what you wrote.”</p> <p>“Hi Bob: Not sure you remember me, but I was the guy that your group hired to take over for xxx when he retired. I started the day you left. I just finished reading the whole page you wrote and cannot believe how much of it I have ranted about for 15 years. <b>The management that came in after you have all been poor, they all want to disengage the supply base and manage by MBA.</b> BO and MS were the worst managers I have encountered in my 35 years and they ran the quality group into the ground. I have been the lead of the xxx group for xx years and have dug in on the 747-8 and will not allow building and shipping hardware that does not conform. It has cost me raises and promotions, which just shows you the mentality of the leadership at <i>Boeing</i>. <b>The 787 leadership ran right over us technical experts and did what they wanted without regard to quality.</b> Even AS9100 proves their mentality as it is a washed out version if D1-9000. You will be happy to know that some of us are starting to hold leadership accountable, some of us have enough time that we do not care what they think and guys like me are on them daily when they make stupid decisions. <b>I have been kicked out of many offices over the last couple years, and proud of it! I keep telling them that after 35 years, it is my job to hold them accountable.</b> Thanks for saying it, just validates what some of us old timers have been saying for years. <b>We need that old management style back or we are doomed!”</b></p> <p>“Whoa...you really did blow a gasket! Not unjustifiable. ...but very sobering and as you say, embarrassing.”</p> <p>“One theory I believe in, is that <b>shortly before McD bought us with our money they went thru a cleansing with all managers being removed from their current positions and all having to re-apply. What this did was weed out the timid and reward</b></p>	
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				<p><b>agressiveness. It was that pack of wolves which survived to get introduced into the current flock of Boeing folks who had been hammered the past 5 years on 'Working together', 'team building', 'concensus decisions', ie, the sheep. The result was inevitable, the wolves dined famously on the sheep. We could always spot a McD transfer from other new folks by behavior. Middle management was taken over, not to mention many top spots."</b></p> <p>"Hi Bob, Good to see you are still your same old self. How "right" on you are - Quite insightful. I retired, but came back as a contractor. Believe it or not <b>the Quality Director in place when the 787 started up, at that time, (Now two Directors ago) decided that we, Boeing Supplier Quality, should not be part of the oversight on the 787 Program.</b> Didn't take too long to figure that was a wrong management decision. My little saying, which I have told our management: When I came to Boeing 40 years ago, it was 'Kick ass, take names, build planes', now it is 'Sit down, hold hands, build plans', Unfortunately all we do is build back -up plans for those we built in the first place ! !</p> <p><b>"Bob, I share many of your feelings. I can remember going to a 'team meeting' and asking the 'dumb' question, "who is in charge?" It turns out that no one was in charge. The team concept came from Toyota, who have a flat management. Dollars to doughnuts, the Boeing management is far from flat. I am surprised that the Board of Directors, if it has any technical people on it, hasn't taken firm steps. I read your essay, and agree with you! I am for sending your material to the BOD. (From a former Board member.)"</b></p> <p>"Yesterday, Dec. 12, marked 52 years since I hired into the Boeing Co. It has fed and clothed me and my family for all that time, or at least gave me the wherewithall to do it. I've been terribly disappointed in how a great company has been run, and thought I could just wash my hands of it. However, that just aint so. <b>I think they need to get some "corporate memory" back at the controls as the boys in charge just have no internal compass and/or the pride it takes to make schedule king.</b> Naturally, as an old Quality guy, King Schedule sometimes made me crazy, but when all was said and done, they product out the door was usually pretty damn good, and mostly on time. I believe those guys breathed a huge sigh of relief when those shanked fasteners were found on the 787 as it gave them another excuse to be late. <b>If you can call McNerney, you</b></p>	
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				<p><b>should. Just to be sure he sees the article. I would think his reaction to it would dictate where it goes from there.</b> Bob, I know your getting advice from all corners, but in the end its your call. And I know you didn't ask any advice from me. So whatever its worth, at least its free. If I can be of help just let me know.”</p> <p>“Bob, <b>It's an interesting tome. Have you thought of sending to Mr. McNerney</b> <b>‘as-is’?</b> What I'd really like to see is a national business writer do a post mortum on the <i>Boeing/McDonnell Douglas</i> merger (acquisition if you like). This is the one Condit can be hung with: Tell me Mr. Condit; what on earth were you thinking of when you hatched this dumb-ass move? You stayed at <i>Boeing</i> too long and Mr. Wilson was right: he promoted you over your head. <b>Bottom line? With MDD, Boeing acquired ZERO long term business base along with a MDD personnel culture of "me first" and ‘everything else is tied for last’. Sears goes to jail - no Boeing loyalty, Stonecipher gets fired for ethics issues - no Boeing loyalty, Albaugh tries hard for the CEO job at BAE Aerospace - no Boeing loyalty.</b> Reading this self-congratulatory, syrupy litany of trivia makes me feel like Alice in Wonderland. It's little wonder these guys can't produce airplanes; they are too busy sitting around in quality circles, holding hands and singing Kumbaya. Where in the world did the once mighty <i>Boeing Company</i> find this bunch pansies and what lunatic installed them in positions of power, power to make or break our beloved <i>Boeing</i> where we happily toiled for so many years? When I read pronouncements from the ‘company leadership’ occasionally, I never recognize a single name anymore and ask myself <b>‘who is this weenie, where did he come from and what has he ever accomplished’?</b> During my checkered career, I knew almost all of the ‘movers and shakers’ at Commercial Airplanes, even those who were still grunts in the trenches. <b>It wasn't hard to spot even new graduates who had the ‘right stuff’, but if any are still on active duty they have been suffocated by all the PC BS and will remain anonymous.</b> If any of the tough-fibered, old guard are still with us, they must be having an attack of the vapors. Guys like Sutter, Gissing, Tattersall and a hundred more whose names escape my feeble memory at the moment would be pulling their hair out by the roots. <b>What a pathetic mess!”</b></p> <p>“Bob, JM forwarded your 12/13/08 email to me. I just finished reading it with increasing sadness. Fascinating – great work. <b>In 1987, when we first started talking about what would become ‘World</b></p>	
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				<p><b>Class Competitiveness’, I knew that if <i>Boeing</i> stayed the course (not just the usual 6 months for another “yes we can” program), we would demolish the competition and dominate the industry for generations to come. We did stay the course quite a while. Alan Mulally embraced WCC and led the 777 to a smashing success. For the first and only time, I truly loved to come to work. It was fun and we knew we were finally doing it right. .... That really was a major reason that the 777 first flight was nearly flawless. We ran the SIL through every nasty failure we could dream up. We found stuff and stuff got fixed. When the 737NG was proposed, I suggested that it should be a new airplane, built as a miniature 777 with a common cockpit and systems. This would also be an excuse to miniaturize and improve the 777 systems package, which could then be offered as a retrofit to all previous <i>Boeing</i> jets, as well as <i>Airbus</i> and <i>Douglas</i> jets. The airlines could finally have “common” fleets of airplanes – that all looked like <i>Boeing 777</i>’s. <b>But no! We went cheap and built the 737NG. We pulled it off at great expense and effort, but it was the beginning of the end of WCC.</b> With the ‘early retirement’ of 1995 coupled with the demographic age bubble in engineering as well as our pilot office, I could see that if the company did not provide for our replacements in time for us to train them, there would be a two-thirds wipe out of experience in about 10 years. As you describe in the ‘Tome’, it happened. <b>I had great hopes for Phil. I knew him when I was a new aero engineer at Everett in 1972. But alas, he sold us out to MD. We should have waited until they went bankrupt and then picked up the pieces – sans their management. But no! We let them run us into the ground, just like they did with <i>Douglas</i> and then <i>MD</i>.</b> Then they move headquarters to Chicago with the rest of the mobsters. ‘You are known by the company you keep.’ Well, other than that, I don’t have strong feelings in the matter. I retired in 2002 and built a new house. There is life after <i>Boeing</i>, and it is good. Everyday is Saturday. I’m so busy now; I can’t imagine ever having had any time to go to work.”</b></p> <p><b>“If it were me, I would consider sending it to McNerney and others on the board and ask them if they cared to comment on it before you give it wider distribution, such as the times, etc. Once you let this cat out of the bag they are going to go into a defensive mode and will never listen. If the main goal is to right the ship, perhaps they need to give your piece a scrutinizing squint, before it falls on them like an A-bomb.”</b></p> <p><b>“This is typical ‘everything is just fine’</b></p>	
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				<p><b>attitude...We have gone way to far to the right in our approach to teaming and consensus decision making....and rewarding a 'didn't get it done' behavior in my opinion.</b></p> <p><b>There needs to be fatalities (not real) but people being told they don't have jobs based on their lack of managing a program, meeting costs, and deliverables on time, and oh, forgot about a quality product. Sometimes I think I am getting too old for this stuff....." (Current Director in Chicago)</b></p> <p>"Bob, I don't know how you do it -- I could never type fast enough to write that much no matter how much I knew. But I bet ol' Jim B. is rolling over and over. <b>Personally, I think things started going south about the time Boeing began trying to not recognize individuals as heroes and standouts. Instead, it was Working Together. For example we no longer put the names of the fight crew on the sides of the cockpit -- it was the WT term (777). I talked a lot to Jack Steiner. He bemoaned the fact that Boeing no longer had 'faces in the window' (his term) in the form of chief engineers, designers, etc. Instead, everything was WT and was being reduced to the LCD. The Sutters, Wygles and their ilk were pushed aside. But the result was there was no one for the employees to look up to and worship as examples."</b></p> <p>"I read the whole thing. Great. You hit it right on the head. <b>Touchy feely my ass. A sharp hard kick in the ass is what's needed. Boeing has become a company of wimps managed by incompetent wimps.</b> If this happened in China, a lot of people would be making small rocks out of big ones. And they would make schedule. <b>The triumph of bullshit over performance."</b></p> <p>"I read Bob's material from end to end and I learned a lot more than I knew. <b>The situation is much worse that I expected.</b> I am in full agreement in his analysis of the management problems. <b>It just seems there is no one in full control. Kind of like lost sheep.</b> Jim, I certainly don't want to sound like I am a sexist and biased, but I think a lot of the problems started by promoting a lot of people, women included, into positions they knew nothing about, just to fill quotas. Next, education and degrees are wonderful, but a degree does not guarantee the holder could organize and manage a goat roping contest. <b>It seems the company is now only reactive instead of proactive.</b>..When did they throw out source and receival inspections, along with onsite monitoring of the critical stuff? It may very well be that the suppliers are held up for late engineering</p>	
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				<p>data. We have seen that before. I remember going to LTV to rattle their cage and I did, but they asked when they might possibly expect the engineering for a small change that would have worked a big problem? They had been waiting about two years. I called Red McCallum and he got the ball rolling and that problem was solved in about a week, but authorization to proceed with the new change was instant. <b>That is where an onsite interface really pays off. It just seems that it is only a matter of time before we see a major collapse of the company. When that happens, the time will be ripe for Toyota to step in and take over, as they said they will become the transportation system of the world.</b> A retired <i>Douglas/Boeing</i> employee forwards the <i>Boeing</i> magazine to my dentist friend who is an aviation enthusiast. <b>My friend asked me why are there so many Vice Presidents at Boeing. I told him it wasn't always that way. Anyway, I want no part of it, except I want them to get their act together as I am still holding a lot of stock certificates.</b> will be interesting to see the results of the changes in the next six months. Better close. Stay warm out there, and stay healthy. My old knees are giving me fits, probably to many years on the hard concrete. I don't want any more surgeries.”</p> <p>“From my little knot hole I believe you're dead on. I felt the bull shit would sink us long before I retired and was sent to people skills class over and over to some how change my theory x way of thinking, It never worked and I'm glad it didn't. When I was young and fighting incompetent management I use to say to my self that's ok you bastards I'll out live ya. <b>Then when I got to a point and time to make a difference along comes political correctness and make everyone feel warm and fuzzy.</b></p> <p>They deserve what they've made and if it weren't for the fact that I still feel a sense of loyalty to <i>The Boeing Company</i> I grew up in I'd say fuck em all. <b>Truth of the matter is the people down there today couldn't handle the old ways of doing our day to day business. They've been made soft with all the bullshit programs and management that doesn't know how to call bullshit when these limp dicks get up and starts pumping out their excuses.</b> Time to remember ‘The initial objective is to build airplanes’”.</p> <p><b>“I think you're a little bit soft on the reasons for failures. (just kidding) I have said before (and you touched on it) that the educated idiots got control of the Company and started playing silly games instead of building airplanes.</b> People who don't have a clue about what it takes to actually build a product. I wonder how long before our retirement</p>	
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				<p>plan is canceled?”</p> <p><b>“Bob has compiled an outstanding analysis of the evolution of <i>Boeing</i> commercial airplanes. It is a very thought-provoking peice of work. The main issue as I see it is that the new leadership's view of all of this truth this would differ from yours or mine. While one would hope it would be received with the respect it is due and actually result in some sort of leadership "revival", I believe that the current leaders will not receive it well. As Bob stated at one point, ‘maybe <i>Boeing</i> is reflective of our society as a whole’, is something to think about. Take a look at the auto industry, banking, financial institutions, etc. Most of the major organizations seem to be performing similarly. They have well educated leaders who have bounced around other major organizations, built up thier resume's, and are able to put a ‘spin’ on just about any situation (like many of the spins Bob captured for this document). I'll bet a very similar document could be compiled for <i>Chrysler</i>, <i>General Motors</i> and others. As far as a solution goes, the new leaders have hit critical mass, so I don't now if turning back to basics is possible. I commend Bob for this magnificent effort, though I am not surprised. For a long time, I thought I would join Bob's team at some point. He was interested in hiring me just before I came to work for you and several times after. I believe he has always tried to make a big difference for <i>Boeing</i>.”</b></p> <p>“re the 787 and general demeanor it's all true. Several people my level thru out lots of orgs (I am on a lot of 787 teams) are all saying the same thing <b>nothing is getting passed on to the top. One really smart woman who was a ‘nay sayer’ was removed from her job for not shutting up!! We will see that she is right real soon. I also agree there are going to be more delays, and finacially I can tell you things (not on line) that will make your toes curl.</b> Thanks for all of the effort and blood,sweat and tears that went into your treatise. You are right on! <b>I fear that a solution is beyound the capability of anyone currently on the <i>Boeing</i> payroll.</b> I would like to think that this too shall pass, but I am afraidl that what will pass will be <i>Boeing</i>.”</p> <p>“OK my put. It will be concise. Bogash has given us a most insightful well researched, historical, account. J. has given us a more concentrated and good analysis. B., as usual, has put some balance into the discussion. I agree that we did not train the next generation or lost it by failing to transition. But, I think you have all missed a major dimension. To the extent that we are talking about the 787, we are not talking about the kind of program we participated in bringing to successful conclusion, relatively on time</p>	
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				<p>and within the money. This program gave away a large degree of engineering responsibility and asked for the delivery of complete assemblies. The 6 o'clock stand up meetings should have occurred in other corporation's plants. Their managements should have seen to comprehensive manufacturing and assembly plans and so on. And while we had earlier program participants living with our engineering and our engineers in a supervisory role at major subcontractors, coupled to experienced planning, tooling and manufacturing, people, we left these them to their own devices.”</p> <p>“I think that you've hit the nail on the head.. Straight forward and to the point. <b>But given Boeing's current management tree nobody is left that thinks the legacy way and I don't for see anything changing except our bottom line, going in the negative column.</b> And I have always said from the time that Stone Dicker took over, <b>Boeing was on a down fall because of his putting non aerospace personnel in high positions that new nothing about an airplane...</b> Still the practice today. Lots of educated people but most without any aerospace experience... I don't see things getting any better any time soon. <b>I think Boeing is in for some really tough times in the not to distant future.</b> Thanks for sharing.”</p> <p>“Excellent evaluation. We need to get this in the hands of the right people. But who is that? <b>The Board must be asleep.</b>”</p> <p>“I sent That Bogash article to my brother in law who was a <b>corp. director reporting to T Wilson</b> when he retired. His comments: Hi Ray - A rather lengthy study on <i>Boeing</i> management. I read it all and I substantially agree with it. Things have really changed at the old shop - I remember when Bill Allen ran things that the pressure to keep schedule was enormous (I believe we even bragged that <i>Boeing</i> had not missed schedules for 4 or 5 years. I seem to remember that heads of mfg and eng even lost their jobs when we missed schedules. There is no question that the 787 represents a great technical challenge, but so did the 747 and the article you forwarded referred to schedule slides on all kinds of programs. I don't know who the guy is that wrote that article, but it represented a lot of work. Pete”</p> <p>“Dear Bob, I worked for you from 1991 - your departure. I was in Chicago when you traveled there [for our midwest] staff meeting. You spoke frankly in that meeting and I shall never forget that heartfelt speech. Thank you. My name is T. I began with <i>Boeing</i>, fresh out of college, in 1978. Like most of us, I worked for some excellent managers and</p>	
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				<p>some poor managers. It's just the way it is. Further to your writings, it is my observation that the most essential <i>Boeing</i> 'paradigm shift' the past 30 years has been this: <b>In the 1970's and 1980's you could be damaged or fired for lying to executive management; more recently you can be damaged or fired for not lying to executive management.</b> I have seen this and experienced it first hand. Like you Bob, <b>I have many friends who remain in management at Boeing. Several were drafted into the 787 program. Their consensus of the program is that the problems are seldom technical in nature, but rather stem from management corruption - for lack of a better, or worse, term.</b> If I could pass along one management recommendation to Mr. McNerney it would be to simply reward 'functional correctness' (my word) instead of 'political correctness' which became so overwhelmingly prevalent during the 1990's. Best wishes to you Bob Bogash!"</p> <p>"Bob, I thought it is a well written article. I would have added a few comments like "Some how, <i>Boeing</i> must shed its <i>McDonnell</i> symbol, relocate its Headquarters back to Seattle, and shed its <i>McDonald &amp; McDonnell</i> executives within the Seattle area <i>Boeing</i> facilities. <i>Boeing</i> must return to a Quality Assurance plan that was introduced on the 777, and provide on site support in Engineering, Quality Assurance and Program Management at its major suppliers.' <b>The real problem is to convince any of them that a) there's a problem, b) it is fixable, and c) that you have the solutions.</b> These solutions would have to be cost effective and somehow be made palatable to the existing folks. That means acceptance at the highest levels and top down enforcement by edict. That's a big row to hoe -- maybe impossible."</p> <p><b>"If Wilson was still in charge we/they would not be in this mess. Maybe management should answer the question; WWWD, 'What Would Wilson Do?' After that they could go fouth and fire someone.."</b></p> <p>"Your piece was on target! Promotions while I was still there (end of 2000) seem to fulfill quotas rather than promoting personnel with the capability to get the job done. Sort of a quick dance through the chairs to higher levels. I would like to see a video of the 'Head Shed' reading your tome."</p> <p>"Thanks for the humor. I needed a lift. A friend of mine bumped into <b>Frank Schrontz</b> the other day and asked him what he thought of the program delays and the leadership in Chicago. <b>Frank just rolled his eyes.</b> It was Condit more than anyone who considered <i>Boeing</i> a fine place for his social</p>	
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				<p>experiments. What business does the company have diluting the workforce for all these warm and fuzzy programs. It's time to go back to basics, focus on airplanes, cut the meetings, do the work. Oh well, our days in the saddle were not perfect but surely it is more satisfying to struggle with an engineering or production problem than meeting environmental goals, etc.”</p> <p>“Jeez, what tripe. This guy couldn't find his ass with both hands....probably spend two hours every morning on their makeup. God, help <i>Boeing</i>. Do they even know how to spell priorities.”</p> <p><b>“Kind of makes me want to puke, he (Carson) should have been candid about problems. Total dribble.”</b></p> <p>“Bob, I have read your sixty some pages with interest, and have taken the liberty of sharing them with others. I also must say that I generally agree with the points you have made. Since you have not read my analysis, here it is. I have not read your latest draft, but I will. I have though, read your suggestions on what us old crocks can do. Some of us have been thinking along similar lines, and have come up with all the same suggestions, except the double box. And, Oh yes, we did not limit participation in any solution to retired <b>90 series</b>, or execs. Will comment further on your latest writing when I read it. But, I am on your side, and particularly agree with your post script.”</p> <p>“Bob, <b>In short, I think that all us old guys generally agree that the root cause of the 787 debacle, was the can do, results oriented culture the company used to have, going South and being replaced by a touchy feely, efforts count, team oriented, culture. And it took about 20 years for that change.</b> I don't see that any of the suggestions for a fix that any of us have come up with address that problem. <b>First, the guys in charge, starting with McNerney, have to agree that the culture has gone to Hell. I don't think that they will do that, partly because they don't have their ear to the ground, and partly because our general culture is tending to embrace those values which we think are causing the problem. They are apt to dismiss our concerns as merely rants of old time Hard Ass management types, out of touch with the times, who on principle, don't think the new team knows what they are doing. But let's say that a miracle occurs, they agree with us, and want to turn it around. How do you undo 20 years worth of ingrained programming overnight.”</b></p> <p>“To a geezer who has been ‘out of the loop’ for a</p>	
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				<p>very long time, much of this sounds like touchy-feely, PC bullshit. When did we cease responding to customers' urgent requests for assistance and when did our Training outfit cease to be 'customer-focused'? What genius decided that our business objective was demonstrating 'environmental leadership' rather than designing, building and supporting the finest transport category aircraft in the world? With such apparent confusion over a candid, unambiguous mission statement among the leadership, is it any wonder that the troops are confused and demoralized or that things aren't getting done on time? I'm almighty glad to be retired. <b>Indeed, neither of us would have fit comfortably into what that outfit has become; we were too much type A, let's get it done personalities."</b></p> <p>"Gee Bob, you're on a roll!! .... <b>I wouldn't have expected Carson or Bogue or any of our 'leaders' to highlight all the bad. I would like to think those responsible for the "bad", however, will be held accountable...but I doubt it."</b></p> <p>"I know the guy who wrote this quite well, Bob Bogash, have known him for probably 40 years and he has a unique window to see what is going on at the company today, and he tells it like it pretty much is. <b>It is worth the time to read it if you wonder what is happening with the 787 and more importantly, the culture at Boeing today.</b> Those of you with fond memories of <i>Boeing</i> will be saddened."</p> <p>"If you want to understand what has happened to <i>Boeing</i> in the last 20 years, (I retired in 1990 &amp; things were fine then) and have an hour of free time, (it's 20 pages long and I got to pg. 10 the first sitting), take a read of Bob's article below."</p> <p>"Read Bogash's attachment (its' overly long, but worth an hour of your time). I never knew the gentleman or where he was in the company, but he was somewhere where he really understood what it took to make a program a success. Supplier management really hits home - so do the schedules. So do placing technical types into top management positions, even planners, instead of finance types and humanitarians. But as to what can be done now - maybe all of those concerned should volunteer to go back and bail them out. Are you ready?"</p> <p>"The 777 program had a culture, as you say, of bringing ideas up from below, early in the program, to make adjustments upstream involving suppliers, customers, FAA and others. <b>The 787 has a culture of paralysis and indecision. Why is that? An engineer told me this story. He told his supervisor, 'The supplier I monitor will not make</b></p>	
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				<p><b>their delivery date.’ ‘How do you know?’ ‘I’ve worked on many programs. I know what to look for. I talk to them on the phone, I’ve been to their facility, I know their resources – they won’t make their delivery date.’ ‘Have they missed a date, yet?’ ‘No.’ ‘Tell me when they miss a date.’ The engineer was furious, but he acknowledged the cultural message inherent in his supervisor’s attitude. I told this story to senior 787 management. Their immediate reaction was, ‘Give me the name of the supervisor!’ I said, no partly because I had no idea who the supervisor was, but mostly because they had missed my point. <b>The supervisor did what he did because he was a smart guy. He knew that the engineer’s information was an invitation for career damage. Suppose the supervisor accepted the report. The business model has no structure for acting on that information. The business model assumes success. The business model is based on contractual commitments between Boeing and the supplier. In the 787 business model, the supervisor has no recourse, even if he accepts the advance warning from the engineer. Similarly, the second level supervisor has no recourse. Even the program leaders I was talking to had no recourse, in the 787 business model, to act on information about pending problems. The 787 business model has no room for coordination costs. That’s the whole point of the 787 business model. Write a contract. Give them their performance specifications. Snap the parts together. This will quickly create a culture of indecision and paralysis.</b> To this day, engineers express frustration that the changes required now fall to them at <i>Boeing</i>, requiring duplication of effort, rework, and redesign. Even so, the computer tracking systems, decision-making processes and lines of authority have never been shifted to <i>Boeing</i> – everything is done on an ad hoc basis, and takes many times the effort and expense that it should. The fundamental business model has never been changed, and the culture it breeds cannot change in isolation. <b>In the 777 program, change and authority and relationships were built into the program’s culture. The 777 business model put Boeing in a decision-making position, and the other stakeholders were involved in close coordination. The 777 business model said, ‘Let’s get all the coordination costs in, upstream, where they are manageable and cheap.’ That business model promoted a working together culture. The 787 business model assigned authority and responsibility to suppliers. We gave them inadequate direction, poor oversight, no feedback, and let them fail at great cost. Now, we are paying the coordination costs downstream where they are messy, expensive and slow. The business model determines the program’s culture.</b></b></p>	
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					<p><b>Outsourcing is not the issue, exactly. The program will work if it can do 3 things:</b></p> <ol style="list-style-type: none"> <li><b>1 Produce the best possible plan,</b></li> <li><b>2 Build in awareness of progress to the plan (meeting schedule, as you say) or timely awareness of deviation from the plan, and</b></li> <li><b>3 Reallocate resources to get back on plan.</b></li> </ol> <p><b>These conditions all require a capable and effective technical design and manufacturing community. The 787 business model failed in all three. Predictably. The 777 program succeeded in all three. Both had a lot of outsourcing, although the 787 has a lot more outsourcing. Personally, I think all three requirements represent vertical integration, and they argue for less outsourcing rather than more."</b></p>	
16 Jan. 2009	"Boeing to Rein in Dreamliner Outsourcing" <i>Business Week</i> (Joseph Weber)	James McNerney, Chairman and CEO, <i>The Boeing Company</i> . Scott Carson, CEO <i>Boeing Commercial Airplanes</i> .	Firm-Supplier	$\alpha$	<p>"Boeing (BA), beset by repeated snarls that have delayed commercial deliveries of its 787 Dreamliner into early 2010, is <b>rethinking the global outsourcing model that critics say has caused much of the nearly two-year holdup</b>. The company is making plans to bring more work back in-house.</p> <p><b>The Failed 'Hollywood' Model: Union officials say past executives at Boeing used Hollywood as a model as they developed their plans to outsource production on the 787. Moviemakers bring together independent contractors—actors, camera operators, publicists—on a project basis for many films, avoiding the expenses of having all such staffers constantly on the payroll. By treating planes as such projects, advocates of outsourcing figured they could do the same in producing aircraft. 'It turns out that we're not the motion picture industry,' quips Stan Sorscher, legislative director of the SPEEA. He says staffers and project teams are not easily interchangeable in manufacturing products as complex as jets.</b></p> <p>Chief Executive W. James McNerney Jr., who took the helm at <i>Boeing</i> in mid-2005, <b>inherited the aggressive outsourcing approach from prior CEOs. He appears to be amenable to dialing it back, if needed.</b> McNerney would not be available to discuss his plans, a company spokesman said. However, in his interview with <i>Aviation Week</i>, commercial planes unit chief Carson said <b>the CEO [McNerney] had 'concerns' about 'the deals we had done in the supply chain.'</b> Added Carson: <b>'The fact that we're struggling with it now verifies that his concern was valid.'</b>"</p>	On the "architectural logic" employed by a modular enterprise architecture for further modularization.
22 Jan. 2009	<i>Bloomberg</i> , "Toyota's Toyota"	Akio Toyoda, President,	Firm	$\beta$	<p><b>"Toyota Motor Corp., the world's largest automaker, will replace most of its top management later this year as incoming President Akio Toyoda aims to return the company to profit, people familiar with the matter said. Toyota,</b></p>	On an integral enterprise's slow modulari

	<p>Plans to Replace Most Top Managers” (Alan Ohnsman and Naoko Fujimura)</p>	<p><i>Toyota Motors Corporation.</i></p>		<p>who will succeed Katsuaki Watanabe in June, will <b>replace the company’s other four executive vice presidents and “many” of the 19 senior managing directors</b>, said the people, who asked not to be identified because the changes haven’t yet been announced. Watanabe will become vice chairman. <b>Toyoda, the 52-year-old grandson of founder Kiichiro Toyoda</b>, will have to stanch the carmaker’s sales slump as it forecasts the <b>first operating loss in 71 years. He may curb the expansion strategy</b> that allowed the company to top <i>General Motors Corp.</i> in sales for the first time last year. <b>‘This kind of move is rare for an old-line company like Toyota and very refreshing,’</b> said Koichi Ogawa, who helps oversee \$28 billion at <i>Daiwa SB Investments Ltd.</i> in Tokyo. <b>‘The new management is going to break the past hierarchies.’</b> <b>Honorary Chairman Shoichiro Toyoda, Akio’s 83-year-old father, and Adviser Hiroshi Okuda, 76, may step down from Toyota’s board, Chairman Fujio Cho said on Jan. 20.</b> Paul Nolasco, a <i>Toyota</i> spokesman, declined to comment on any changes in management. <i>Toyota’s</i> American depository receipts fell \$5.80, or 8.6 percent, to \$61.72 at 1:34 p.m. in New York Stock Exchange composite trading. The ADRs lost 32 percent of their value in the 12 months through yesterday.</p> <p><b>‘His Own Team’</b>  <b>‘It’s not that different than what would happen with a big company in the U.S.,’</b> said Maryann Keller, an independent auto analyst and consultant in Greenwich, Connecticut. <b>‘A new CEO wants to put together his own team.’</b>          Toyoda’s challenges include reversing last year’s 15 percent sales drop in the U.S., for decades the automaker’s main source of profit, even as companies and analysts cut their 2009 outlooks. Auto sales may fall to between 10 million and 10.5 million this year, the lowest level in 27 years, from 13.2 million in 2008, according to <i>IHS Global Insight</i>, a Lexington, Massachusetts-based market forecaster. <b>Toyota’s total sales last year fell for the first time in 10</b> as the global recession and tighter credit decimated vehicle demand worldwide. The economic slowdown has prompted the company and Japanese rivals including <i>Honda Motor Co.</i> and <i>Nissan Motor Co.</i> to cut jobs and production and driven Detroit automakers <i>GM and Chrysler LLC</i> to seek government aid to stay in business.</p> <p><b>Production Cuts</b>          Toyoda also must find ways to utilize plants opened in North America since 2006 that have given the company too much production capacity in the region as overseas sales declined 4 percent to 6.82 million last year. <b>Toyota last week announced broad production cuts affecting all U.S. and Canadian</b></p>	<p>zation in the face of exogenous crisis.</p>
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27 Jan. 2009	<p><i>Bloomberg</i>, "Boeing Recovery May be Stunted as Customers Clamor for Credit" (Susanna Ray)</p>		Firm	α	<p>"Boeing has been trying to put a rather upbeat face on the reality of the market, and I think they're behind the curve," said Jon Kutler, chairman of <i>Admiralty Partners Inc.</i>, a Los Angeles-based investment firm that focuses on closely held aerospace companies. 'It's going to be a tough year.'</p>	<p>On a modular enterprise architecture's non-systemic understanding of its problems.</p>
27 Jan. 2009	<p><i>Bloomberg</i>, "Boeing Recovery May be Stunted as Customers Clamor for Credit" (Susanna Ray)</p> <p>On a modular enterprise architecture</p>		Firm	α	<p>"Boeing has been trying to put a rather upbeat face on the reality of the market, and I think they're behind the curve," said Jon Kutler, chairman of <i>Admiralty Partners Inc.</i>, a Los Angeles-based investment firm that focuses on closely held aerospace companies. 'It's going to be a tough year.'</p> <p><b>'Operationally, 2009 will be a much better year than 2008,'</b> said William Alderman, president of <i>Alderman &amp; Co. Capital</i>, a broker dealer specializing in aerospace and defense in South Norwalk, Connecticut. <b>'But financially, we are in the midst of a deep global recession, and the financing sector is in pretty bad shape.'</b> Boeing shares still may be attractive if the company meets its development goals with the 787 and other delayed programs and ships as many or more planes than in 2008, Alderman said. The company's average 12-month target price is \$48.71 in a <i>Bloomberg</i> survey of 14 analysts. <b>'There are troubles on the horizon for Boeing, but they're not operational or</b></p>	<p>On a modular enterprise architecture's non-systemic understanding of its problems.</p>

	ture's non-systemic understanding of its problems.				<b>technological, they're purely financial,"</b> said Alderman, who doesn't own <i>Boeing</i> stock. <b>'Long-term, I'm wildly optimistic for <i>Boeing</i>.'</b> "	
28 Jan. 2008	<i>The Wichita Eagle</i> , "Boeing to Report on 787, More" (Molly McMillin)		Firm-Investor	$\alpha$	<p><i>"Boeing</i> is expected to give a status report on its much-delayed 787 and aircraft delivery outlook today as it releases its end-of-year earnings and hosts a conference call with analysts and reporters. It has been a tough year for <i>Boeing</i> stock, which closed Tuesday at \$43.22. <i>Boeing</i> shares have lost 45 percent of their value in the past year -- the Standard &amp; Poor's 500 index is down 39 percent in the same period -- and are <b>60 percent off their October 2007 high of \$106.65.</b></p> <p><b>Today's conference call needs to go beyond the norm, Barclays Capital analyst Joseph Campbell said in an analysts report. <i>Boeing</i> must make an extra effort to clarify what's happening with its financials, he said. The company suspended financial guidance during the Machinists strike last year. 'This hiatus has left the investment community in the dark about much more than the strike,' he said. Shareholders have more unanswered questions than any time in recent memory, Campbell said. The company typically gives guidance about the current year and the following year about this time, Campbell said. It should also provide insight on why the production and delivery rates are what they are, especially given lower demand for travel and requirements for aircraft, he said. Investors have numerous questions on the 787, which has had four schedule slips and a two-year delay, Campbell said. They want a road map of milestones that must be met on the 787's first flight, scheduled dates of delivery of each test aircraft to the flight test program and milestones for certification, he said. They also want details of the planned production ramp-up for the 787-8 and how the current schedule compares with the original one and with the last revised one, he said. That way, it is 'transparent whether and when <i>Boeing</i> is planning to recover to previous delivery commitments,' Campbell said. <i>Boeing</i> also has been quiet about the impact of the 787 program on its financials, he said. 'With the 787 program now two years late, it is clearly overrunning its cost targets, it has significant penalties to customers, and we feel it is time for <i>Boeing</i> to shed more light on what is going on with the 787 costs and how the 787 is affecting the</b></p>	On a modular enterprise architecture uneven information flow to investors.

28 Jan. 2009	<i>Forbes</i> , "Investors Look into <i>Boeing's</i> Future (Carl Gutierrez)		Firm-Investor	α	<p><b>overall <i>Boeing</i> financials,' he said."</b></p> <p><b>"Airplanes don't have rear-view mirrors, and neither, it seems to investors in aircraft makers. <i>Boeing</i> offered an expectedly weak fourth-quarter earnings report on Wednesday, but its shares rose after the company offered a reassuring view of its future. 'It was a relatively neutral performance compared to what was anticipated,' said Paul Nisbit of <i>JSA Research</i>, referring to the fourth quarter, 'but it's history now, and it looks like everything else is going to go along according to plan.'</b> The aerospace and defense firm's performance over the final three months of 2008 was defined by a labor strike, which the company said led to passenger and cargo jet deliveries falling by more than a half. <b>But even though Wall Street was fully aware of the strike, the Chicago-based company's 27.4% drop in sales was still short of analyst expectations.</b> In addition to crippling deliveries, <i>Boeing</i> also blamed the 58-day machinists strike, which ended in early November, for the quarter's loss, because of an estimated \$1.09 per share charge it produced. <b><i>Boeing</i> also had a hefty--and unexpected--61 cents per share charge because of changes it had to make to its 747 line after finding its structure wasn't strong enough. There were other charges too, <i>Boeing</i> said, like a legal reserve that cost nine cents per share. <i>Boeing's</i> 2009 outlook range of \$5.05 to \$5.35 per share was also well short of Wall Street's prediction of \$5.68 per share.</b> Its sales outlook of \$68.0 billion to \$69.0 billion is inline with expectations. Even though the outlook is well below expectations, the market was forgiving because the forecast includes \$1.10 per share worth of one-time items. <b>'There are added pension and retirement costs, as well as others, which no one expected six months ago,'</b> Nisbet said, who expects Wall Street to come down to <i>Boeing's</i> range."</p>	On the investors' systemic over-confidence in their investment.
28 Jan. 2009	<i>Seeking Alpha</i> , <i>The Boeing Company</i> 2008 Q4 Earnings Call Transcript (www SeekingAlpha.com)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i> ; James Bell, CFO, <i>The Boeing Company</i>	Firm-Investor	α	<p><b><u>"Jim McNerney (<i>Boeing</i>):</u></b></p> <p>Starting with slide two, 2008 was a challenging year for our company. While we made progress on many fronts, that progress was outweighed in our results by the <b>machinists' strike</b> during the fall, the impact of delays on key development programs, and the effects of the <b>unprecedented crisis in the financial markets.</b></p> <p>Across <i>Boeing</i>, the vast majority of our programs are healthy and performing well. However, in our business, <b>a small percentage of underperforming programs can have a big impact to overall results,</b> and we are addressing that reality in our plans for 2009.</p> <p>On the topic of development programs, let me first</p>	On a modular enterprise architecture's interaction with its investors, focusing on exogenous events.



				<p>talk about the <b>747-8</b>. The work statement on this airplane has expanded since the start of the program to meet performance commitments to our customers, and to recover from our original <b>underestimation of the scope of engineering work</b> that needed to be done on this airplane. The resulting <b>design changes, which have been substantial, coupled with limited availability of engineering resources</b> to do the work, drove the schedule change we announced in November. Since then, a full assessment of the supply chain impact of these and other additional design changes, along with <b>increased pension costs, resulted in the reach-forward loss</b> we recognized in the fourth quarter. James will talk more about this charge in a moment.</p> <p><b>I'm disappointed that we weren't able to provide you insight on this charge sooner, but our full assessment was only completed earlier this week. I'm also disappointed with the outcome.</b> But let me say one more thing. <b>Notwithstanding the challenges this program has presented us, we still believe the 747-8 is a very competitive airplane with a strong future in a significant market niche. It is worthy of investment and will provide great value for our customers.</b></p> <p>Turning to the <b>787</b>, that program made <b>notable progress in 2008, including Power On in June</b>, successful tests of the landing gear, horizontal stabilizers and wing box, and high pressurization of the static airframe. The FAA also approved the 787 maintenance program. In spite of that progress, however, we also endured challenges, including delays from the machinists' strike and the requirement to replace certain fasteners, all of which resulted in the revised schedule we announced in December.</p> <p>The fastener replacement activity is moving along and is largely behind us on the first two flight test airplanes. <b>We are on track for first flight in the second quarter.</b> Prior to that, we will be exercising a series of gauntlet tests during which we run the airplane systems on the ground as if it were flying. After those tests and the ground vibration test on airplane number two, it's all about getting airplanes in the air and successfully completing the flight test and certification process.</p> <p>We also continue to make progress with our 787 program partners to improve the condition of assembly of airplanes coming into our Everett factory. Our main focus now is working with the supply chain to get the production system into a rhythm and [rather] work back to normal levels. As we've mentioned before, our plans call for reaching a production rate of <b>ten airplanes per month in 2012</b>,</p>	
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				<p><b>and we will evaluate possibilities to increase and/or accelerate that rate.</b></p> <p>We are having ongoing discussions with our customers on how the delays and the current business environment are affecting their business models, and what steps we can take to constructively mitigate the impact. The 787 backlog remains high at about 900 airplanes. Although we booked 93 new orders in 2008, we do expect some puts and takes on 787 orders in 2009, with one customer's orders for 15 787s late in the next decade coming off the books this week. Despite a modest level of orders churn, we <b>are confident in the long-term value of the 787 for our customers.</b></p> <p><b>To address what has clearly been unsatisfactory development program performance at BCA, Scott Carson and I have undertaken a fundamental realignment and strengthening of the BCA organization, its processes and leadership. We are reintroducing rigorous functional discipline with clear lines of sight and accountability, and tighter integration of program, business unit and corporate decision making. We both believe it's time to end the era where development programs were stood up to operate as islands of their own.</b></p> <p><b>While this structure served a purpose to foster the kind of tremendous innovation like the 787, our recent experience has shown it to do so at the expense of execution and predictable performance. Our objective is to advance a new era and operating model characterized by seamless integration of business unit and corporate functions, reliable and disciplined execution, and responsible and accountable program leadership.</b></p> <p>More specifically, late last year we <b>substantially reorganized BCA to strengthen airplane programs and supply chain management. We put all airplane programs together in one organization under Pat Shanahan to allow for more disciplined and efficient management of program resources. Notwithstanding this change, Pat will continue to own the 787 until its introduction;</b> though we continue to add leadership to the program most notably Scott Fancher, the new program leader, who comes to us from managing some of the more difficult, technical and supply chain programs in IDS.</p> <p><b>We also elevated the supply chain management function and we consolidated within it management of both internal and external suppliers under Ray Conner. With Scott's leadership, Ray and Pat are working closely</b></p>	
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				<p><b>together to improve both development program performance, and overall operational performance and productivity at BCA.</b> We will be taking the results of their work and <b>additional measures to further strengthen the team</b> and the operating model will be critical to our success in 2009 and beyond.</p> <p>Now, despite the significant challenges we faced in 2008, there were many areas of the business that performed very well. Virtually all of our production and services programs in both defense and commercial are executing to plan or better. Programs like the FA-18, the 737, commercial services and defense support systems, to name just a few, are providing customer value and <b>delivering strong double digit margins.</b></p> <p>There are also many development programs, like GMD, FCS and the 777 freighter, that are achieving both technical and financial milestones according to plan. <b>As we begin 2009, a year that no doubt will test us again,</b> we are reassured by the fact that our fundamental product and services strategy and competitiveness remain intact.</p> <p><b>Fundamentally, this is a solid company with a strong growing core business.</b></p> <p>While it's hard for us to know the final impact of all of this, we can and must prepare for the continued market uncertainty, while ensuring our ability to fund our growth initiatives. In that regard, we have stepped up our drive to get more competitive and productive. We are being ever more aggressive in managing both costs and investments. Specific actions we are taking include streamlining organizational structures, reducing discretionary and capital spending, eliminating unnecessary work, and reviewing staffing levels, all to drive higher levels of productivity. Part of that, unfortunately, will mean reduced employment in certain areas of the company. <b>We are targeting these reductions to exceed 6% of our current workforce, or approximately 10,000 positions to support our productivity efforts</b> and infrastructure reduction. This will occur through a combination of attrition, retirements, reduction in some contract labor, and layoffs. While difficult decisions must be made, we will do as much as we can to assist our employees who are affected by them.</p> <p>Despite this challenging environment, our backlog is holding. In 2008, we had but six order cancellations at BCA and accommodated about 110 aircraft deferrals. The deferrals represent about 3% of our commercial backlog, which is not out of the norm. We do expect to see an increase in the numbers of</p>	
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				<p>deferral and cancellations in 2009. However, the size, diversity and quality of our backlog provides greater flexibility than we've had in the past to accommodate our customers.</p> <p>As you all know, the financing environment also remains challenging. Boeing Capital regularly examines overall financing capacity as well as specific financing sources for each aircraft to be delivered by BCA. In 2009, we believe financing sources are sufficient to meet expected requirements for our products. We are assuming in our guidance that BCC will need to do about \$1 billion of new financing in 2009. The actual amount could be more or less, but we feel will be in a range that's manageable.</p> <p>Let me summarize by reiterating that we are indeed facing one of the more difficult commercial and financing markets that most of us have ever seen. However, we have a solid foundation from which to work through this environment with half our business in defense, strong commercial products and a large backlog. Equally important is the fact that <b>the actions we are taking now are not business as usual.</b></p> <p>Looking forward this year, our 2009 EPS and cash flow guidance prudently balances pension and other cost headwinds with an <b>aggressive productivity plan</b>, while recognizing both operational and market uncertainties.</p> <p><b><u>James Bell (Boeing):</u></b></p> <p>Thank you, Jim, and good morning. I will begin with our 2008 results on slide four. Revenue for the year was \$60.9 billion, which was down 8% from a year ago. Results were impacted by the strike, which reduced commercial deliveries by about 105 airplanes and revenue by an estimated \$6.4 billion. Earnings per share was \$3.71, and was impacted by an estimated \$1.63 per share due to the strike. Operating cash flow for the year was a use of \$400 million, reflecting the strike impact of about 2.5 billion and planned inventory buildup on the 787.</p> <p>Now let's take a look at the fourth quarter performance on slide five. Revenue of \$12.7 billion was down 27% from the prior year. The strike reduced fourth quarter revenue by an estimated \$4.3 billion and commercial deliveries by about 70 airplanes, including the recovery of the galley-delayed deliveries from the third quarter.</p> <p>Earnings per share was a loss of \$0.08, driven by the strike impact of an estimated \$1.09 per share, the 747 charge of \$0.61 per share and a <b>litigation related</b></p>	
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				<p><b>reserve</b> of \$0.09 per share.</p> <p>Now let me talk about BCA in a little more detail on slide six. Commercial Airplanes fourth quarter revenue of \$4.6 billion reflects an estimated \$4.3 billion strike impact. Operating margins were significantly impacted by both the strike and the 747 charge. <b>The 747 reach-forward loss was \$685 million. Late maturity of the 747-8 design drove substantial changes for our supply partners. This coupled with the already existing schedule pressure caused significant disruption throughout the supply chain resulting in the charge we took this quarter.</b></p> <p>Now, about 50% of the charge is related to the late <b>maturity of wing design</b> driving new load requirements into the fuselage and statement of work changes for our suppliers, causing both schedule disruption and increased recurring production costs. Approximately 15% is related to <b>later than planned transition of component manufacturing to lower cost suppliers due to their production readiness.</b> Another 10% is due to design and load changes, which resulted in <b>reduced commonality with the 747-400</b> causing some of the procured components and systems inventory to be obsolete. 10% is the impact to our internal production process as a result of the issues facing our supply chain. The remaining 15% is due to, as Jim mentioned earlier, the <b>higher pension costs in our program accounting cost base.</b></p> <p>Earlier this week, we concluded our detailed analysis of these impacts and recorded the charge. For the year, BCA delivered 375 airplanes and captured 669 gross orders, ending the year with a backlog of \$279 billion. This backlog continues to reflect the strength in the market demand for our commercial product portfolio.</p> <p><b>For the year, IDS delivered a solid 10.1% margin on \$32 billion of revenue,</b> as all its business segments delivered outstanding performance that help offset the AEW&amp;C charge from second quarter. IDS continues to pursue growth opportunities through targeted acquisitions. During the quarter we completed the acquisition of Federated Software and Digital Receiver Technology.</p> <p>Now let's turn to slide eight and talk about our backlog. As Jim mentioned, our backlog is at unprecedented levels. In the current market environment, we expect some of the backlog will get deferred to a later date or canceled. But the size of our order book provides us much greater leverage and flexibility than we've had in prior economic downturns. If deliveries move out, we have more</p>	
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				<p>opportunities to move other deliveries forward. It also provides us a solid foundation to continue improving productivity and financial performance.</p> <p>Other and unallocated costs declined during the quarter, primarily due to lower pension and environmental expenses. Within the unallocated segment, we recorded a reserve of approximately <b>\$0.09 per share related to satellite litigation.</b></p> <p>Now let me turn to our pension plan performance in 2008. The overall <b>equity market performance significantly affected our pension plan funded status.</b> Our asset returns were down about 15% in 2008. The strategy we implemented last year to reduce volatility in our net pension obligations has paid off. Transitioning our assets from a high equity concentration to more fixed income assets matched with our liabilities, resulted in substantially better performance than the overall equity markets.</p> <p>Since the third quarter discount rates have turned down sharply which has increased our pension liability. Our discount rate at year end was 6.1%. The company's pension plans are now 83% funded on a financial accounting basis, down from 110% funding at the end of 2007. This resulted in an equity adjustment of approximately \$8 billion in the fourth quarter, which produced a negative book equity as of year-end. This accounting adjustment will not impact our ability to pay dividends or comply with our debt covenants.</p> <p>Now let's turn to slide ten and discuss cash flow. During 2008 we used \$400 million of operating cash flow reflecting the strike and planned working capital increases. During the year, we also paid down about \$700 million of debt at Boeing Capital, used about \$900 million for eight targeted acquisitions and used <b>\$2.9 billion to buy back 42 million shares.</b></p> <p>Now let's turn to slide 11. Despite the significant challenges we faced last year, our financial position remains solid. We ended the year with \$3.6 billion in cash and marketable securities, and we reduced our debt loads. However, <b>because of the strike and development program delays, we ended the year with a cash balance that was lower than in prior years.</b></p> <p>Turning to slide 12, our financial guidance reflects good performance at our businesses in an uncertain market environment. We're setting 2009 EPS guidance at \$5.05 to \$5.35 per share. <b>Our 2009 revenue guidance is \$68 billion to \$69 billion, and includes the 787 and the 747-8 schedules announced in fourth quarter.</b></p>	
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				<p><b>Our baseline assumption is that in-production commercial airplane programs remain at stable delivery levels over the next several years. However, our financial guidance does consider risk around operational performance and market uncertainties, including the risk of potentially having to take modest production cuts at BCA.</b></p> <p>We expect first quarter revenue, earnings per share and cash flow to be the lowest of this year based on timing of volume and deliveries. <b>Our 2009 commercial delivery forecast is between 480 and 485 airplanes. We expect higher levels in 2010 as we begin delivering our 787s.</b> Our 2009 operating cash flow guidance is greater than \$2.5 billion. This assumes continued inventory buildup on our development programs and an assumption that BCC will need to provide new aircraft financing of about \$1 billion.</p> <p>Now we will leverage our new aircraft financing with debt so the impact to our cash balance will be significantly less than the amount of airplane financing. For 2009, pension funding is assumed to be approximately \$500 million. Mandatory funding in 2009 and 2010 is expected to be less than \$100 million in each year. Future year's required funding will increase, unless markets rebound significantly. For example, in 2011 if markets don't recover, requirements could be in the range of a couple of billion dollars.</p> <p>Total company pension expense is expected to be about \$1 billion in 2009. Our forecast reflects the actual 2008 asset returns, a 6.1% discount rate and a long-term expected rate of return of 8%, which is 25 basis points lower than our assumption last year. The business units will be recognizing greater pension expense than they have in the past. Essentially all the \$1 billion of pension expense in 2009 will be recorded at the units. IDS will realize about half of the expense, and we expect a portion of that to be reimbursable under government contracts in 2009.</p> <p>We expect total unallocated expense to be approximately \$900 million in 2009, with other segment expense forecasted to be approximately \$300 million. R&amp;D expense is forecasted to be between \$3.6 billion and \$3.8 billion, reflecting the 787 and the 747 program delays announced in the fourth quarter. We're not forecasting any supplier cost sharing payments in 2009. We expect R&amp;D expense to decrease substantially in 2010.</p> <p><b>Share repurchase will decrease significantly in 2009 to approximately 200 million,</b> which will offset dilution from our compensation plans. We are</p>	
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				<p>forecasting total capital expenditures to be \$1.4 billion in 2009, which is nearly 20% lower than in recent years as we manage down discretionary spending.</p> <p>Now let me turn to slide 13 to discuss how we will bridge our 2008 performance to our 2009 guidance. <b>In 2008, we had significant impacts from the strike and charges that we don't expect to incur in 2009.</b> Overall, pension expense will be higher by about \$300 million. We realized deferred compensation income in 2008 due to lower stock prices. We expect to recognize expense this year as the markets improve. Because of lower cash balances and short-term interest rates that are close to zero, we are forecasting significantly less interest income in 2009.</p> <p><b>BCA is realizing greater cost absorption on existing programs because of the strike and development program delays offset by the business's aggressive pursuit of infrastructure cost reductions that Jim talked about earlier.</b> Our 2009 guidance also considers all of this, plus the operational and marketplace uncertainties. We plan to provide 2010 financial guidance later this year as we continue to evaluate the impact of market uncertainties on our business.</p> <p><b><u>Jim McNerney:</u></b></p> <p>Thank you, James. To close, let me simply say that despite progress and strong performance in many areas, we were not satisfied with our results in what was a very challenging 2008. For 2009 and beyond, our driving focus is on improving execution where we have been underperforming, bolstering productivity across our long list of programs that are performing well and preserving financial strength to deliver growth through this difficult economic climate.</p> <p>While recognizing the risks at hand, we do feel we are relatively well positioned with the fundamental competitive strength of our product and services, the size and diversity of our backlog, and the long-term outlook for the markets we serve. <b>I remain optimistic about this company's future and our ability to become the strongest, best and best integrated aerospace company in the world.</b></p> <p><b><u>Ron Epstein (Bank of America/Merrill Lynch):</u></b></p> <p>Jim, just a follow-up on your comments on how you are <b>changing the product development process. You suggested that the programs can't be islands any more.</b> Can you give us some more color on there? <b>Because it almost seems like what happened</b></p>	
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				<p>on 787 cascaded into 747-8, and in the past it doesn't seem like program development was as big an issue as it's become.</p> <p><b><u>Jim McNerney (Boeing):</u></b></p> <p>I think <i>Boeing</i> went through an era where creating islands in the name of innovation and entrepreneurship during a period, end of last decade, beginning of this where we needed entrepreneurship and innovation, was a very successful strategy. But I think as we look back on it, we waited too long to move as the requirement for execution around this innovation. We took too long to move back into a model that <b>integrated functions</b> that spanned the entire business that had disciplines, that allocated people most effectively, that shared best practices across programs. We waited too long to move back to that model.</p> <p>Now organizational, there are horses for courses and organizational models fit different times, different places. We are at a place where execution of supply chain and development are fundamental and we need to move to an organization that is single mindedly designed to do that. <b>That's the discussion we've had internally.</b> Those are the moves you began to see at the end of last year. There will be more to come. There are tighter processes, review and approval processes, around those. But it's all about execution and accountability, and leveraging the skills and size that we have as a company.</p> <p><b><u>Ron Epstein:</u></b></p> <p>So what do you have to change I guess?</p> <p><b><u>Jim McNerney:</u></b></p> <p>As I mentioned, we have -- to use an aerospace term, we have cored up our supply chain and development teams in BCA. <b>We have reintegrated the engineering function more tightly into both the supply chain and the development programs.</b> The supply chain and engineering were in the name of creating entrepreneurial programs which were somewhat isolated from other programs. Now they have to be <b>tightly integrated</b> and we also have review processes that are more, shall we say, more often and harder hitting.</p> <p><b><u>Doug Harned (Sanford Bernstein):</u></b></p> <p>On the 787, when you look at the flight test program that's planned, as it has been, it's a shorter flight test program than we've seen in the past. I know that's predicated on more integrated system testing and</p>	
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				<p>advanced and also more parallel flight test work. Could you talk about the timing of when you are likely to see flight test units two, three, four, and <b>what you need to have out there in order to make sure you can deliver on that timeframe?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b></p> <p>Doug, this is Jim. Obviously, getting the first two airplanes completed and into the program on the timing that we've talked about is step one and we are feeling comfortable with the timing around those. As we mentioned, some of the rework is largely -- the rework on those airplanes is largely completed. The software integration is moving I would characterize it as normally. We're integrating the systems with real pilots on real airplanes, and we're getting ready for the groundwork now. So we're feeling comfortable there.</p> <p>The next two airplanes are on schedule. You are right. It is a tight schedule on paper, although as you know we've been able to get a lot of work done. One of the benefits, I guess you would say of, the delay, a lot of the systems work done, and some certification work done earlier, which gives us a little bit of a tailwind. Just to specifically answer your question, the schedule has all six of the airplanes being in the air within four months of the first airplane being in the air, and it sort of comes out every few weeks from the first airplane. <b>We see no reason to say that that schedule is not on track.</b></p> <p><b><u>Cai von Rumohr (Cowan and Company):</u></b></p> <p>Yes, thank you very much. IATA is, as you probably know, forecasting a 3% traffic decline this year. What sort of risk do you see to your out-year delivery schedules? Could you explain a bit more -- you talked about the accrual rates assume the schedules are flat, but you have a risk provision for lower rates. Are you assuming it flat or lower rates? I guess I was a little confused by that.</p> <p><b><u>James Bell (Boeing):</u></b></p> <p>Cai, let me take a shot, and then Jim can jump in. So the baseline assumption in our operating plan is that <b>these rates will stay stable throughout the planning period</b>. The reason for that is obviously we're under contract to deliver airplanes that would require the <b>stable rates</b> in order to meet those obligations. Now, we also said in our guidance, we've taken in consideration operational and market uncertainty, and so we have tried to provide for this, although <b>we think '09 is pretty stable</b>, and I think you'd probably agree it is also, but the out years are less certain. There is no question about things which</p>	
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				<p>could happen as the backlog moves around, and so we've tried to provide in our '09 guidance the eventuality if some of that does happen. But it won't impact our ability to make this guidance, because we're not naive to the fact that even though we have it in the backlog and under contract that there can be some uncertainties out there that could cause that to move.</p> <p><b><u>Jim McNerney:</u></b></p> <p>I think the only thing I would add, Cai, because you'd probably want some more definition around that knowing you. <b>But it really is hard to predict.</b> We've made a modest assumption in here. But as you know, until you understand timing, model mix, derivative timing, it's very hard to come up with a specific kind of assessment. So we've made a general, modest, should we say, sort of provision in our guidance.</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b></p> <p>James, I know there are different ways to account for the 787 delay, and its costs. I am aware these can include discounts on 777s and zero margin 767, so I'm going to approach the question from a different tact. If I were a Board member of <i>Boeing</i> asking you for an estimate of the all-in costs of the 787 between R&amp;D, customer penalty payments, supplier support payments, discounts on other aircraft, everything, will the 787 cost to <i>Boeing</i>, does it range about \$15 billion, \$20 billion, \$25 billion? Can you help us just round to the nearest \$5 billion? Thanks.</p> <p><b><u>James Bell (Boeing):</u></b></p> <p>No, if you were a Board member you would be an insider, and we'd tell you exactly what the number is, Heidi, in terms of what our thinking and assumption is. But I think the best way to characterize it is we are working closely with our customers. We are doing better. I bet it's early yet than what we've assumed we would do using all of what you said as ways to come to a way that deals with the customer needs, while <b>maintaining a business case for <i>Boeing</i> that continues to have us believe this plane will bring value to the company and also deliver value to our customers. But you know we can't get into specific numbers.</b></p> <p><b><u>Heidi Wood:</u></b></p> <p>A range of \$5 billion is not specific. You can't give us any kind of a range just so we can have an outside sense as to what this could cost?</p>	
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				<p><b><u>James Bell:</u></b></p> <p>No, but let me just say this. When you think about the 87 and its introduction, as compared to other airplane models and other new introductions we've done in the past, we've sold almost a thousand of these airplanes, and obviously you know in terms of a profitability assessment of new products the most difficult assumption is that of market. Here even though this market has some risk, it's a lot lower than we've done in the past. The fact that we do have the stability of about a thousand units, we'll be able to work all these issues over time and be able to, I think, work them to a point that's satisfactory to both us and our customer sets. The same holds true with the productivity on the airplane being able to set the production rates for an extended period of time having sold so many planes that we still believe, and we do this assessment every quarter that this airplane is going to deliver value to our customers and to us. But I can't get into specifically the cost elements, Heidi.</p> <p><b><u>Heidi Wood:</u></b></p> <p>Okay. Then maybe one you can give us color on. Can you maybe then break us down the <b>\$2.5 billion cash drain on the strike? That was pretty remarkable. How does that compare versus prior strike cash impact, James?</b></p> <p><b><u>James Bell:</u></b></p> <p>I think that the strike had a lot to do with the amount of <b>advance payments we would've gotten on the 787</b>, so those moved. Also some of the development issues that moved the schedule caused that issue as well as the 747-8. But all the production models obviously moved. Now at the early stage of the strike, our customers were still paying advances, so we had to true that up.</p> <p><b><u>Joe Nadol (JPMorgan):</u></b></p> <p>I'd like to get just a clarification, and as well as question, James. To clarify, could you help us with what the <b>unit margin assumption that's baked into the BCA number for 2009 is relative to the 10% program?</b> On the question, Jim, just on the <b>47-8 can you walk us through the cost benefit analysis you went through looking at the program as to why you are still going forward with it</b> and all components of it? There's the \$685 million charge. There's obviously a lot of R&amp;D, and there's the cash that you are going to be out in the next couple of years that you are recovering at the end of the program. <b>So significant costs on this debt aren't</b></p>	
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				<p>sunk yet. <b>Just wondering why you are still going forward with the program.</b></p> <p><b><u>Jim McNerney (Boeing):</u></b></p> <p>Let me answer the second part while James gets set for the unit cost question. <b>Look, obviously, we have applied a judgment here that says we have a very competitive airplane here that has already got a good start on orders. If we didn't believe that the revenues would outweigh the costs, you are right, we wouldn't go forward with it. I suppose if the airplane didn't have the margin of competitiveness that we see on both the freighter and the passenger side right now, we would stop it. But we are committed to customers who value this plane highly, and when you add it all up we still see a viable business proposition here. Now, obviously, if we ever got to the point where we didn't, we'd have to work with our customers to come up with a different answer. But that's not what we see right now.</b></p> <p><b><u>Joe Nadol:</u></b></p> <p>Okay. <b>Did you bake in, in your cost benefit analysis significant orders in addition to the 114 that are in backlog that will be more profitable at the end?</b></p> <p><b><u>Jim McNerney:</u></b></p> <p>We did assume, like in most programs, where you've got 900 orders out of the chute. Most programs, if you look through our history, have many, many fewer orders, more are characterized sort of at the level of the 747-8. You typically assume an accounting quantity that reflects your view of reality, which is in general more than the actual bookings you have at that time, and it's that kind of thinking that we're applying to this 47-8 right now.</p> <p>But, Joe, the accounting quantity is relatively conservative, and we've contacted units outside of this current accounting quantity. <b>So we still think that this airplane is going to deliver value to us.</b></p> <p><b><u>Robert Stallard (Macquarie Research):</u></b></p> <p>Jim, just a quick question on the deferrals. You said we could expect deferrals to increase this year. Could give us an idea of the scale of these. <b>At what point you would start to be concerned that this would have a negative impact on your production forecast for 2010?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b></p>	
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				<p>As I mentioned, it's very hard to predict the deferrals we're going to see. I think our sense of it comes as we talk to our customers, who we talk to every day, is that they will be greater next year than they were this past year. <b>I don't think the noise level are such that we think it will impact production rates in the near term. If we did, we'd have a different assumption on production rates than we do.</b> So we see the deferrals being handled within the overbookings that we've got now or the ability to just to move things around to accommodate different airlines as they face their own business challenges. Remember these airlines have taken out huge amounts of capacity, most of them, largely older airplanes and so the airplanes they are buying from us and our competitor aren't net adds. In many cases they involve net decreases. So it's not inconceivable that the way we see it is the right way to see it.</p> <p><b><u>Dominic Gates (Seattle Times):</u></b></p> <p><b>On the 747, you've said that you're committed to the program and you don't see cancellation of it. But I want to ask about the passenger version. You were expecting an order on that. You haven't got it. Given that the airlines almost universally for this year ahead are saying no growth. Do you expect to get a passenger version order this year? Does going ahead with the program depend on the passenger version?</b></p> <p><b><u>Jim McNerney (Boeing):</u></b></p> <p>Obviously, orders in general are under pressure and we are assuming our orders will be down this year. We do have a number of discussions we're having on the passenger version of the 747-8. Exactly when they'll be converted in this environment, it's hard to predict. <b>Our assessment is that both the cargo and the pax versions will be buyable business propositions and add a lot of value to our customers.</b></p> <p>Obviously, we are in an environment now where the future is really hard to predict specifically. So our call now is that this is a terrific airplane that represents a good business for us and we are confident that it will come. We'll keep reading it with our customers as we go forward though.</p> <p><b><u>Lynn Lunsford (Wall Street Journal):</u></b></p> <p>Okay. I guess where I am getting is just trying to get a little more color on that given where you see kind of the overall economy, <b>I think people who don't follow aerospace may look at Boeing's plans to essentially keep your production rates at sort of where they were last year. Wow, how do they do</b></p>	
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				<p>that? Can you explain a little better what plays into this that makes aerospace different from virtually like every other manufacturing business?</p> <p><u><a href="#">Jim McNerney (Boeing):</a></u></p> <p>Lynn, we have <b>long-term order books</b> with financing arranged typically 12 to 18 months in advance. We have significant over-ordering. <b>So I think our business in some respects is different. But that doesn't mean that longer term we're immune from fundamental changes in demand or fundamental changes in the credit markets, and that's not what we're saying here today. What we're saying here today is, in this long cycle business that we're in,</b> we have visibility on the next ten to 12 months and we feel comfortable with it. We're not issuing guidance for 2010. We need to read and react and see what the impact will be longer term. But we are different in the sense that we do have a little more visibility over the medium term than a lot of other companies do.</p> <p><u><a href="#">Lynn Lunsford:</a></u></p> <p>Great. <b>One last question with regard to the 787, where do you see the [long pole] at this point that did somehow threaten the schedule that you are already working on?</b></p> <p><u><a href="#">Jim McNerney:</a></u></p> <p>I think <b>the only thing that would concern me now,</b> just answering your question, would be <b>something unexpected that comes up in flight test.</b> Some anomaly or some operating characteristics of plane that we would have to deal with. Now I don't worry that we couldn't deal with it, but it could impact the schedule. There is a lot more modeling done these days before these airplanes get in the air, so you have a higher degree of confidence. But that the unknown in flight test is a possible long pole in the tent.</p> <p><u><a href="#">Susanna Ray (Bloomberg News):</a></u></p> <p>A <i>UBS</i> survey last week was suggesting that <b>almost a third of airlines are likely to defer their orders this year. I think just a few minutes before you were talking about anticipating a cancellation or deferral impact of just 2% to 3%. So I am wondering what makes you so much more optimistic.</b></p> <p><u><a href="#">Jim McNerney (Boeing):</a></u></p> <p>All I can say is that we're talking to every airline every day, and we are working through it. As I said, I</p>	
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					think we had modest amount last year, and I think the numbers you just quoted were last year. We think there will be more this year and we're comfortable that we can deal with it. If it's worse than our assumption, we'll be back to you."	
29 Jan. 2009	<i>Market Watch</i> , "Boeing's '09 Outlook 'Too Positive' for Macquarie Research" (Christopher Hinton)		Firm-Investor	$\alpha$	"Macquarie Research lowered its rating for <i>Boeing Co.</i> to neutral from outperform on Thursday, saying <b>the aerospace giant's outlook is too positive. 'We are concerned that Boeing is underestimating the potential for lower airline demand in this downcycle,'</b> said Rob Stallard, an analyst with <i>Macquarie</i> . <i>Boeing's</i> commercial customers are facing a fall-off in air-traffic growth and tighter credit markets, potentially leading to order cancellations or deferments. <b>So far the Chicago company has said it's confident that its five-year backlog will provide plenty of work despite an expected increase in deferments for 2009.</b> <i>Macquarie</i> lowered its full-year earnings outlook for the company to \$5.11 from \$5.67 a share, while the company anticipates earnings of \$5.05 to \$5.35 a share."	On a modular enterprise architecture's overpromise and underdeliver.
29 Jan. 2009	<i>Bloggin gStocks</i> , "Boeing : Another Airline Loser" (Jamie Dlugosc h)		Firm-Investor	$\alpha$	"A consequence of a weakening airline sector is the pain it will cause plane-maker <i>Boeing</i> . With capacity tightening, the need for aircrafts is diminishing. Fortunately for investors, that vision will take time to play out. In the meantime, <i>Boeing</i> gets a free pass as they work through years of order backlog that built up during the last business cycle. <b>If you take a look at Boeing during the last few months, it is clear that investors have yet to catch on to a world of lower revenues going forward. Shares of Boeing did drop in tandem with the credit crisis, but there has yet to be the washout one would expect from a business environment that will be very difficult for Boeing going forward. Shares of Boeing hit a floor of \$40 per share during the October/November stock market collapse. That was before the carnage in the airline industry became apparent.</b> Since that time, conditions have only become worse for the group. The way to survive in such an environment is to cut capacity. <b>That is not a good thing for Boeing, and why I made it one of my Top 10 Stocks to Avoid in 2009.</b> Thus far, I have been dead on with my list that included <i>Delta Air Lines (NYSE: DAL)</i> and <i>United Airlines (NYSE: UAA)</i> . Both of those stocks are down big in 2009. <b>Boeing, on the other hand, has traded flat.</b> In my opinion, the market is missing something here. <i>Boeing</i> should be down in tandem with these giant carriers. The fact that it is not, <b>provides investors an opportunity to sell before the market catches on to the weakness.</b> Wednesday <i>Boeing</i> announced poor fourth-quarter results. The company posted a loss of \$56 million, or 8 cents per share in the period. Analysts had expected the company to make a profit of 78 cents	On a modular enterprise architecture's overpromise and underdeliver.



					per share. <b>This is a big miss made worse with a weak forecast for 2009.</b> The company now expects to make \$5.05 to \$5.35 per share in 2009. That is less than the \$5.68 per share analysts now estimate. <b>Go figure. But the stock was up \$1 per share on the news. Can you say inefficient? I can and I will. I would have expected shares to be down 10% or more on this type of performance.</b> The real kicker for me is that 2009 is baked into the cake due to the advance time for orders. The fact that they are reducing that number is telling and does not bode well for 2010.”	
5 Feb. 2009	<i>The Street.com, “Boeing Mulls Production Cuts”</i>	James Bell, CFO, <i>The Boeing Company</i>	Firm	α	<p>“<b>Despite its bulging current order book, Boeing showed more signs Thursday that it is being impacted by the global recession.</b> The company said its orders fell 72% in January and also disclosed that it may slow production in 2010. <b>‘Our 2009 financial guidance considers the risk that we might have to make modest production cuts starting in 2010,’</b> CFO James Bell told an investor conference. It was the first time that <i>Boeing</i> has acknowledged the possibility of production cuts, said Scott Hamilton, publisher of an online newsletter that monitors aircraft manufacturers. <b>‘At last week’s earnings call, Boeing was more ambiguous about this,’</b> Hamilton said. As for January orders, <i>Boeing</i> said it received just 18, down from 65 a year earlier, according to a posting on its Web site. In his presentation, Bell said that the ‘weakening global economy (is) adversely affecting air traffic growth’ and that <i>Boeing</i> is taking steps to address the problem, including its plan, announced last week, to reduce its workforce by 6% or 10,000 positions during 2009. <i>Boeing</i> has a backlog of \$352 billion, or five times its annual revenue, including \$279 billion in commercial aircraft orders. When the previous slowdown occurred, following the Sept. 11 terrorist attacks, the commercial-aircraft backlog was \$83 billion, Bell said. However, deferrals are increasing after eight cancellations and 110 deferrals in 2008, he said. While most of the 2008 deferrals were from U.S. carriers, who were quick to scale back growth in the face of high fuel costs, <i>Boeing</i> expects to see more foreign carriers scale back this year. As an example of what is happening at airlines, even cargo airlines, <i>UPS</i> said Tuesday that it is reviewing whether to defer its aircraft deliveries. <i>UPS</i> is scheduled to take delivery this year of five aircraft -- three 747-400s and two 767-300s, including a 747 it agreed to defer from late 2008 due to the strike against <i>Boeing</i> by the International Association of Machinists. (<i>UPS</i> also agreed to defer a 767 delivery from 2009 to 2010.) Asked whether <i>UPS</i> might push back aircraft deliveries, CFO Kurt C. Kuehn responded: ‘If it makes sense to defer out, we’ll certainly talk with <i>Boeing</i> and other providers.’ However, Kuehn also noted that <i>UPS</i></p>	On a modular enterprise architectur’s focus on short-term-pressures, resulting in unstable long-term growth.

					wants to replace its aging DC-8 fleet and that it has sufficient cash to pay for new airplanes.”	
5 Feb. 2009	<i>Seattle Post-Intelligencer</i> , “Boeing Commercial Jet Orders Tumble” (James Wallace)	James Bell, CFO, <i>The Boeing Company</i>	Firm	α	<p>“<b>With the cancellation of another 16 orders for its 787 Dreamliner, which is two years late, <i>The Boeing Co.</i> has started out 2009 losing more orders than it has won.</b> <i>Boeing</i> has won 18 orders and lost 31 through cancellations. A Russian airline backed away from its order for 15 Dreamliners a week ago. The latest 787 order cancellation came from a Dubai leasing company. Underscoring just how difficult the current industry downturn will be, <i>Boeing</i> Chief Financial Officer James Bell told an industry conference Thursday that <b><i>Boeing</i> might have to lower production rates in 2010.</b> Bell did not say so, but if fewer planes are built the company could trim or reassign some of the people who assemble its jets in Renton and in Everett. Speaking at a <i>Cowen &amp; Co.</i> investors conference, Bell said <b>it takes roughly 12 to 18 months to lower production rates in an orderly manner. <i>Boeing</i> can reduce production more quickly, which happened after the 9/11 attacks in 2001, but Bell said <i>Boeing's</i> backlog gives the company more time to keep rates at current levels.</b> ‘More of the pressure is on deferrals,’ Bell said. ‘<b>Now we are starting to quote some open positions in 2010.</b>’ In the past, <i>Boeing</i> has said it has more than enough customers who want to get planes faster to take earlier delivery positions when they become available through an order cancellation or deferral. Now, there are open delivery slots in 2010. If those can’t be filled, rates would have to be cut. Bell said there is a ‘risk that we might have to make modest production cuts.’ <i>Boeing</i> is currently running its 737 production lines in Renton at record rates -- more than 31 planes a month are assembled there. But Bell said <b>there is more pressure on single-aisle deferrals (the 737) than widebody planes</b>, which are assembled in Everett.</p> <p><b>The 787 is about two years late because of various supplier and production issues, and many customers like LCAL would have already received some of their planes if not for the delay.</b> <i>Boeing</i> is getting the first 787 ready to fly in the second quarter -- a key milestone that was supposed to have happened in August or September 2007. Bell said because the LCAL deliveries would be toward the front of the delivery schedule, <i>Boeing</i> has ‘more latitude to work in moving other planes up and offset schedule delays for other customers.’”</p>	On a modular enterprise architectur’s decision-making process about growth rates.
5 Feb. 2009	<i>Cowen and Company Aerospace/Defe</i>	James Bell, CFO, <i>The Boeing Company</i>	Firm	α	<p><b><u>Cai von Rumohr:</u></b> [Regarding the 787] “I think you said on your Q2 call when you still had it in the forecast that you were assuming break-even but actually still hoped that the revenues would exceed the costs...how do you feel today, <b>is this going to be like a very low</b></p>	On a modular enterprise architectur’s

	<i>nse Conference</i>	<i>ny</i>			<p><b>margin plane for a long period of time?"</b></p> <p><b>James Bell:</b> (laughing) <b>"No, obviously we're not going to expect that... but right now, given what we know, this early on we're still guiding to zero margin on the initial deliveries and we're going to grow that over time,</b> and for us to grow it there are a number of thing we're going to have to do. We're really going to work to get the productivity accelerated and a lot of that will be in the supply chain, and so we have plans in work to make that happen, and then obviously we're going to have to do a good job in negotiating with our customers on the delay penalties. So I think with those two things and the fact that we've sold a thousand of these airplanes... it gives you the production level predictability over time that you need to go work those longer-term productivity issues. <b>So we're still optimistic that this airplane is going to provide good value not only for our customers but for our shareholders."</b></p> <p><b>Cai von Rumohr:</b> "Terrific".</p>	over-promise and under-delivery.
6 Feb. 2009	<i>Seattle Post-Intelligencer, "Virgin Group Founder Blasts Boeing"</i> (Dan Richman)	Richard Branson, founder of the <i>Virgin Group</i>	Firm-Customer	$\alpha$	<p><b>"Sir Richard Branson, founder of the <i>Virgin Group</i>, blasted <i>The Boeing Co.</i> at a celebration of a new <i>Virgin</i> airline, held Friday morning on <i>Boeing's</i> own turf. <b>'If people in Seattle build our planes and deliver them on time and, to be frank, don't go on strike, then we'll continue to work with <i>Boeing</i>. If we have our airline completely messed up, with tremendous damage done to our own work force, then we'll go to <i>Embraer</i> or <i>Airbus</i>.'</b> <b>'The delay on the 787 has been an absolute nightmare, and it's cost us a fortune. It really does make us think, 'Do we want to take a risk on <i>Boeing</i> in the future?'"</b> Branson said.</b></p> <p><b>'The strike hurt hundreds of thousands of our passengers,'</b> Branson told reporters. <b>'It messed up <i>Virgin Atlantic</i>, it messed up <i>Virgin Blue</i> in Australia, it ruined people's Christmas holidays. It was absolutely and utterly ghastly.'</b> He continued, <b>'If union leaders and management can't get their act together to avoid strikes, we're not going to come back here again. We're already thinking, 'Would we ever risk putting another order with <i>Boeing</i>?' It's that serious.'</b></p> <p><i>Boeing</i> spokesman Jim Proulx said later Friday in an e-mail, <b>'We never want to disappoint our customers to such an extent. We are committed to doing everything we can in the future to satisfy our customers in the manner they deserve.'</b>"</p>	On the further disintegration of firm-customer link in a modular enterprise architecture.
6 Feb. 2009	<i>Seattle Post-Intelligencer</i>	Steven Udvar-Hazy,	Firm-Customer	$\alpha$	<p><b>"At the same event, the CEO of <i>International Lease Finance Corp.</i> said <i>Boeing</i> and rival <i>Airbus</i> could see production drop as much as 35 percent in two</b></p>	On the perception of

	<p>ner, "Virgin Group Founder Blasts Boeing" (Dan Richman)</p>	<p>CEO of International Lease Finance Corp.</p>			<p>years. <b>'It will come down in steps until it reaches equilibrium,'</b> Steven Udvar-Hazy told <i>Bloomberg News</i>. <b>'It wouldn't surprise me if in 18 to 24 months there were cuts of as much as 30 to 35 percent at both Boeing and Airbus. Airlines are focused on survival, not ordering planes.'</b> Both companies have predicted a drop in orders this year. Udvar-Hazy said the slump will be longer than the decline after the 2001 terrorist attacks. <b>'This could be a year where the number of net cancellations and deferrals actually exceed genuine new orders,'</b> Hazy told reporters at the event. While Hazy said he's not predicting that, 'certainly the elements are out there for that to happen.' Indeed, Boeing has started 2009 losing more orders than it has won. Boeing said Thursday it won 18 orders in January and lost 31 through cancellations."</p>	<p>homogeneity of enterprise architectures among competitors.</p>
<p>8 Feb. 2009</p>	<p>The Seattle Times, "FAA to loosen fuel- tank safety rules, benefiting Boeing's 787" (Dominic Gates)</p>		<p>Firm- Regulators</p>	<p><math>\alpha</math></p>	<p><b>"The Federal Aviation Administration (FAA) has quietly decided to loosen stringent fuel-tank safety regulations written after the 1996 fuel-tank explosion that destroyed flight TWA 800 off the coast of New York state. The FAA proposes to relax the safeguards for preventing sparks inside the fuel tank during a lightning strike, standards the agency now calls 'impractical' and Boeing says its soon-to-fly 787 Dreamliner cannot meet. Boeing has worked closely with the FAA to make the change in time for the 787 Dreamliner, whose airframe built of composite plastic makes lightning protection a special challenge. But the move has stirred intense opposition inside the local FAA office from the technical specialists — most of them former Boeing engineers — responsible for certifying new airplane designs. The national union representing about 190 Seattle-based FAA engineers this past Tuesday submitted a formal critique to the agency, calling the new policy 'an unjustified step backward in safety.'</b> In a lightning storm, the critique said, the less stringent rules could leave a commercial airliner <b>'one failure away from catastrophe.'</b> <b>FAA management, contradicting its own technical staff,</b> argues that relaxing the spark-prevention standard is balanced by new technology to reduce fuel-tank flammability that will increase safety overall. <b>Jim Hall, the former National Transportation Safety Board (NTSB) chairman who oversaw the TWA 800 investigation, said he's disappointed in the FAA but not surprised. 'It appears that management has overruled the judgment of the people that have day-to-day responsibility for the safety of aircraft,'</b> Hall said. The rules the FAA is now reinterpreting have been in place since 2001 after the investigation into the TWA 800 fuel-tank explosion that killed all 230 people on board the 747 jumbo jet. In a detailed briefing on the 787's protection systems, <b>two high-level Boeing lightning experts — who spoke on condition that</b></p>	<p>On a modular enterprise architecture's integral relationship with its government regulator.</p>

				<p><b>they not be named — said the Dreamliner cannot meet the requirement. ‘Boeing spent years trying to develop triple layers of structural lightning protection for every 787 fuel-tank fastener and joint, but we were unable to identify the technical means at many locations in the wings,’ one said. The FAA will accept formal comments on the policy change through Feb. 13. The critique submitted by the FAA certification engineers’ union, the National Air Traffic Controllers Association union (NATCA), acknowledges that the existing regulation is strict. It may have to be revised in some way, said one FAA certification specialist, who, like other agency engineers interviewed for this story, asked not to be named to avoid retribution. ‘A bunch of us are in agreement as to how we can do that and maintain safety,’ he said. ‘But it’s not what our management is trying to do in allowing catastrophic single failures.’</b></p> <p>By all accounts, the 787’s inerting system is very effective. But there’s a catch: <b>The FAA is not requiring that it be ‘full time.’</b> If a 787’s inerting system breaks down, to save the expense of grounding the plane, an airline will be free to continue to operate it for 10 days while waiting for replacement parts. <b>That’s despite an internal recommendation from one of Boeing’s own safety-engineering team leaders in November 2005 that the 787’s inerting system should be required to be working before takeoff.</b> ‘This inerting system, if it was full time, it would definitely be an acceptable level of safety,’ said a second FAA engineer who has worked on the 787’s certification. But without that assurance, he said, to fly on a Dreamliner out of a lightning-prone airport in the summer is a risk he’s not prepared to take. ‘I wouldn’t put my family on a 787 out of Miami,’ said the engineer, who formerly worked for <i>Boeing</i>.</p> <p><b>FAA, Boeing too close?</b> Tomaso DiPaolo, NATCA’s aircraft-certification national representative, charges that <b>when FAA engineers raised their safety concerns internally management simply removed them from the team developing the new policy. The FAA ignored its own technical people, he said, while making sure Boeing agreed with the policy change.</b> ‘It’s another example of the FAA getting too close to industry,’ said DiPaolo. ‘It appears that whatever Boeing wants, Boeing gets.’ A <i>Boeing</i> internal document reviewed by <i>The Seattle Times</i> shows the company had a ‘team to assist FAA in wording of interpretation’ of the lightning rule for the 787 as far back as August 2004, just eight months after the new jet program launched.”</p>	
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10 Feb. 2009	<i>Barclay's Capital 2009 Industrial Select Conference</i>	Scott Carson, CEO, Boeing Commercial Airplanes	Firm-Investors	α	<p>“So as you can see from this chart, the environment is both challenging... but at the same time presents great opportunities <b>for those that have the courage to stand tall and move forward.</b></p> <p>The team <b>continues to work successfully</b> towards the second quarter flight milestone and the challenges that the flight test program will bring. <b>We continue to be confident</b> that we will deliver those airplanes to those customers that want them so badly in the first quarter of 2010.</p> <p>But behind that lies a <b>production system that continues to operate and improve itself at incredible rates.</b> We began what we call our ‘Lean journey’ on the 737 product about eight years ago. During the ensuing years, we have reduced factory flow on the product by 50%, and we have reduced our cost of quality by some 31% and <b>continue our relentless pursuit to drive even more cost out.</b> Our fundamental factories are running well and <b>have not been adversely affected by the challenges we face on the two development programs.</b></p> <p><b>We are absolutely focused on continuing the journey of driving productivity through our factories on the current products. And this journey of Lean is a journey that will continue forever.</b></p> <p>Joe Campbell: The company has said that the 787 – whatever the production quantities that you calculate your profits over – we should plan on the initial quantities being zero.</p> <p>Scott Carson: <b>Correct.</b></p> <p>Joseph Campbell: But that means that - for example on the 747, you’ve taken a forward charge so presumably any cushion that was on the 747 has been stripped out and you really are operating right at zero – but in the 787 you don’t have that and so the question really gets to whether or not for the entire block of 500 airplanes or whatever the number turns out to be – you haven’t disclosed – whether you really think that we should as an investor group be thinking – however long it takes you to ship 500 airplanes – you’ll have zero margins.”</p> <p>Scott Carson: <b>No. You shouldn’t be thinking that.</b> So this is the initial launch of the program, the initial deliveries and we’ve guided you in that direction, specifically for the initial series of aircraft.”</p>	On a modular enterprise architect noting that “courage” is required to lead the enterprise.
10 Feb. 2009	<i>Reuters, “Boeing 787 on Track</i>	Scott Carson, CEO, Boeing	Firm-Investors	α	<p><b>Boeing Co’s delayed 787 Dreamliner remains on track for its first deliveries in the first quarter of 2010, Scott Carson, chief executive of Boeing Commercial Airplanes, said on Tuesday.”</b></p>	On a modular enterprise

	for Q1 2010 Delivery - Executive”	<i>Commercial Airplanes</i>				architecture’s overpromise and underdelivery to the investors.
10 Feb. 2009	<i>The Boeing Company Website</i>		Firm	$\alpha$	<p>“<i>Boeing</i> today announced a series of personnel moves within its corporate and business unit Finance organizations that will leverage the capabilities and expand the experience of leaders in several key roles. <i>Commercial Airplanes</i> Chief Financial Officer <b>Rob Pasterick</b>, 53, has been named vice president of Finance and corporate controller, reporting to <i>Boeing Corporate</i> President and Chief Financial Officer James Bell. He succeeds <b>Harry McGee</b>, 59, who becomes vice president of strategy integration for internal services, a new position created to drive long-term efficiencies and greater productivity across the company’s internal business support services. <b>Ray Ferrari</b>, 54, a 30-year <i>Boeing</i> veteran with broad experience across the company’s defense and commercial businesses, succeeds Pasterick as <i>Commercial Airplanes</i> chief financial officer. <b>Craig Saddler</b>, 49, now president of <i>Boeing</i> Australia and the South Pacific, will replace Ferrari. <i>Boeing</i> also named <b>Jon Emery</b>, 51, vice president and controller of the <i>Commercial Airplanes</i> unit. ‘These rotations and reassignments will broaden the skills and experiences of our senior team, strengthen our core finance capabilities, and improve the support we provide to our business units,’ said Bell. ‘Each of these leaders’ demonstrated experience with, and understanding of, our businesses will ensure our continued focus on execution, functional excellence and seamless integration across the <i>Boeing</i> enterprise.’ The changes are effective immediately.”</p>	On a modular enterprise architecture’s movement of top financial managers amidst financial reporting problems (announced that day)
10 Feb. 2009	<i>Puget Sound Business Journal, “Boeing Shakes Up Commercial Airplanes Finance Division”</i>		Firm	$\alpha$	<p>“<i>The Boeing Co.</i> made major leadership changes Tuesday at the finance unit in its Seattle-based Commercial Airplanes division.</p> <p>The division’s chief financial officer, Rob Pasterick, has been named vice president of the Chicago-based company’s finance and corporate controller, and will move to Chicago. He’s being replaced by Ray Ferrari, currently the vice president of finance for network and space systems at <i>Boeing Integrated Defense Systems in Washington, D.C.</i> <i>Boeing</i> also named Jon Emery its new vice president and controller for the Commercial Airplanes division. He’ll move to Seattle from his previous job as leader of the company’s program risk assessment group and internal services productivity initiatives in Chicago. <i>Boeing</i> also said Harry</p>	On a modular enterprise architecture’s movement of non SBU finance managers into the SBU.

					McGee, the company's former vice president of finance and corporate controller in Chicago, <b>will move to Seattle to become vice president of strategy integration for internal services, a new position.</b> "	
11 Feb. 2009	<i>Seeking Alpha</i> , "Boeing's Bad Balance Sheet May Doom It" (Stephen Rosenman. Disclosure: Author holds a short position in BA)		Firm-Investor	α	<p>"Much has been written about <i>Boeing's</i> murky future. Will its customers cancel orders? Will the 787 ever be delivered? What new production snafu will happen next? However, little has been mentioned about its <b>crumbling balance sheet</b>. In two previous articles, I wrote about <i>Boeing's</i> weakening financials (<i>Boeing Can't Afford Another Strike</i> and <i>Boeing Headed The Way Of GM?</i>) and predicted a miserable Q4. <i>Boeing</i> did not disappoint. Its balance sheet saw tremendous asset destruction this quarter. Cash and cash equivalents were more than halved from Q4 2007 to Q4 2008. Short term investments went from \$2.3 billion to practically zero. Pension plan assets tumbled from \$5.9 billion to nothing. In the meantime, inventory climbed from \$9.6 to \$15.6 billion on the halt in commercial plane production....while goodwill and other intangibles rose from \$5.2 to \$6.3 billion (not much to hold onto).</p> <p>The liability side grew. Pension plan liabilities soared from \$1.2 to \$8.4 billion. Ouch! All in all, tangible equity dropped from \$2.7 to a minus \$6.8 billion, a sad \$9.5 billion loss. <i>Boeing</i> goes into 2009 with a weak balance sheet. It needed its cash, investments, and pension plan assets, all victims of strikes, production mistakes, and a falling stock market. Those cushions are now gone. It faces a large \$7 billion debt. Moreover, it now faces a whole new problem in the form of an \$8.4 billion pension liability that dwarfs its debt. So far this year, <i>Boeing</i> has lost \$9.5 billion in tangible equity. That's not how you want to enter one of the most trying times in our nation's economic history."</p> <p>◦ <u>Jake Berzon</u> "Oh, who cares about fundamentals. Surely, US government will rescue BA when its time comes - they are a major government contractor, a huge employer and our nation's pride and joy! :)"</p> <p>◦ <u>Marcap</u> "I agree with the author. <i>Boeing</i> is indeed in very bad shape. With a negative book value for its shares, and virtually no inside shareholders (less than 1/2 of 1%), it absolutely amazes me that their shares are still trading at roughly \$40. Very scary indeed! But perhaps the</p>	On a modular enterprise architecture's systematic underinvestment.



					<p>scariest of all, is just how much they are cutting costs in the production of new aircraft. It's certainly not a time that I would want to be placing an order for any.”</p> <p>◦ <u>Stephen Rosenman</u> “Tatertot: I wanted to dramatize the collapse of BA's assets in one year. The market totally ignored the balance sheet. It will take a herculean effort to repair the balance sheet. Also the investing public ignored the looming problem BA faces with its new pension plan problems: pension plan assets went from \$5.9 billion to a \$8.4 billion liability. Someone needs to fire the guy in charge of the pension plan. Note above remark is a swing of \$13 billion in the pension plan.”</p> <p>◦ <u>opa-opa</u> “Good article, but sort of useless for those of us who wants to know what will happen in the future, instead of what has already happened. But I guess it's easy to throw in words like ‘doomed’ these days and short everything to heck. Hope you shorts enjoy it while it lasts. The night is always darkest before the dawn.”</p> <p>◦ <u>Stephen Rosenman</u> “Opa-opa: ‘Doom’ title was chosen by <i>Seeking Alpha</i>, not me. The future for BA is dimmer in great part because it has lost a vast amount of its assets. For those of us who have followed this company, it's pretty sad. Back, in 2005, tangible equity was \$8.5 billion. Now it's in the hole \$6.8 billion. That's \$15.3 billion in damages in 4 years! Who else could wreck so much equity and prosper? As to the future? Negative free cash flow, currency issues, higher salaries and health costs (from strike), customers walking or renegotiating contracts after BA's failure to deliver, decreased air travel, quality issues with fasteners, likely more 787 delays, pension plan pressure, all should create more than their share of problems for BA.”</p> <p>◦ <u>lbrtkng</u> “Some smart account out there, please correct me if I have this wrong, but isn't the pension data presented here somewhat apples and oranges? Isn't the over-funded portion of the pension plan what is shown as a net asset on the balance sheet? And isn't the pension liability the actual long term pension obligation? As far as the cash situation, didn't <i>Boeing</i> make several acquisitions in the last quarter, thus using up some of their stash of cash? And wouldn't those acquisitions have just shown</p>	
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				<p>up as other assets on the balance sheet instead of cash? This piece comes across as not too well researched or insightful. And from a serious analyst perspective, the author's use of only two data points is just plain silly.”</p> <p>◦ <u>Stephen Rosenman</u> “To lbrtkng: Per SEC 10K, BA has incurred an \$8.4 billion pension liability, largely owing to over a \$7 billion loss (read sour investments). Its pension overfunding has disappeared, a \$5.9 billion gone. Therefore, the apples, oranges, together become one big tomato of a \$13 billion + drop in equity. Where are those acquisitions on the balance sheet? More goodwill, intangibles, and plants. As to 2 points, the market usually compares year over year earnings. This is a comparison to year over year equity, its breakdown into components of the asset and balance sheet.”</p> <p>◦ <u>Stephen Rosenman</u> “To lbrtkng: The balance sheet pension asset or liability is equal to the difference between pension assets and the actuary’s estimate of pension liability plus or minus the unrecognized (unamortized) portions of past and prior service costs, actuarial/experience gains or losses. In other words, pension assets - liabilities are apples to apples.”</p> <p>◦ <u>Tatertot</u> “I understand that desire, but none-the-less, it would be useful to see whether these are one-time events or indicative of a trend. <i>Boeing</i> has already dropped from \$104 (peak) to about \$40, so I'm wondering how much this information has already been incorporated into the stock price. If we have a trend down, it may be worth going short side, but two data points don't allow for that kind of analysis. Like I said, I like the article, but I'd need more before really acting on it.”</p> <p>◦ <u>opa-opa</u> “Why don't you make a 2-point chart of BA's airplane order backlog from 2005 to 2009?”</p> <p>◦ <u>Stephen Rosenman</u> “Tatertot: Tangible equity for 2004 was \$8.5 billion, 2005 dropped to \$8.2 billion, 2006 went to zero, 2007 \$2.7 billion. Now we are at minus \$6.8 billion. That's a 5 year trend, almost a \$4 billion dollar a year loss in tangible equity on average a year. The trend is worrisome. Opa-opa: This is a discussion about the balance sheet. However, looking at the above drops in tangible equity, it seems</p>	
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					<p>clear that BA has not been able to use its sales to keep its balance sheet in order.”</p> <p>◦ <u>PeteK</u> “You bet <i>Boeing</i> is following <i>GM's</i> footsteps. The union is exactly the same as UAW or worse. They never LEARN. The STRIKE last year was a deadly BLOW to <i>Boeing</i>. What a timing to have a strike. They have to pay for their stupidity for sure.”</p> <p>◦ <u>TEG</u> “Yeah, blame it on the strike. Disconnected and short sighted management has absolutely nothing to do with it. Abandoning business and production systems that have worked for 75+ years, simply because arrogance demands it, is not to blame either.”</p>	
13 Feb. 2009	CNN, “Toyota Unveils New Efforts to Trim Production” (Ben Rooney)		Firm-Employees	β	<p>“<i>Toyota Motor Corp.</i> is taking additional steps to <b>scale back production</b> at its North American plants, the automaker said Thursday, in anticipation of worsening auto sales. <i>Toyota</i> said it will schedule additional ‘<b>non-production days</b>’ in April at certain plants. The company has production facilities in Kentucky, California, Indiana and Texas. Additionally, there is a ‘strong possibility’ that <i>Toyota</i> will <b>shorten work weeks at certain plants to 72 hours from 80 hours, a program the company calls ‘work sharing.’</b> ‘This philosophy of shared sacrifice is the best approach for us, and hopefully will make us a stronger company in the long term,’ said Jim Wiseman, a <i>Toyota</i> spokesman, in a statement. <i>Toyota</i> also said it will <b>eliminate executive bonuses and trim some executive salaries, while bonuses for production workers will be reduced.</b> The company will offer ‘<b>no wage increases for the foreseeable future</b>’ and a ‘<b>voluntary exit program</b>’ will be set up for employees who wish to pursue other opportunities. <i>Toyota</i> said <b>the new actions ‘are consistent with the company's philosophy of making every effort to protect jobs during the sales downturn.’</b> The new measures come after <i>Toyota</i> had previously established a <b>hiring freeze, eliminated overtime and suspended capital spending.</b> David Cole, chairman of the <i>Center for Automotive Research</i>, said years of over-production in the auto industry make scaling back output a necessity now that demand for new cars has dried up. ‘There's no alternative,’ he said. ‘They have to balance production with capacity.’ <i>Toyota</i>, like most automakers, has high fixed costs that make it hard to absorb a sharp drop in sales, and the credit crunch has made it difficult for willing buyers to finance a new car, Cole said. ‘<i>Toyota</i> is a very smart company, but they acknowledge now that they overbuilt, and when you do that, you pay a price.’</p>	On an integral enterprise architectur's value of employment stability.

					he said. Last week, <i>Toyota</i> lowered its sales forecast for the current fiscal year to 7.08 million vehicles from an earlier projection of 8.87 million. It also said it expects to <b>suffer a net loss this year for the first time since 1950.</b> "	
17 Feb. 2009	<i>Seattle Post-Intelligencer</i> , "Aerospace Notebook: McNerney: Wage Freeze Won't Work" (James Wallace)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm-Investors-Labor	α	<p><b>"Boeing Chairman and Chief Executive Jim McNerney has told company employees in an e-mail that a suggestion by some of them to freeze wages across the company instead of cutting about 10,000 positions this year is not the best way to weather the ongoing industry downturn. 'More than a few of you have written to me asking whether we could avoid layoffs altogether by not paying incentive awards this year or by freezing wages across the board,' McNerney wrote Tuesday in a companywide memo. 'While these actions would preserve some cash during the year and lessen the immediate impact on people, our judgment (and one shared by most major companies) is that they would put us at a competitive disadvantage when it comes to attracting and retaining the high-performing people we need to consistently perform for our customers.'</b> The incentive awards that McNerney referred to in his memo is <i>Boeing's</i> Employee Incentive Plan, which is a cash bonus paid to eligible workers each year and is linked to how well <i>Boeing</i> did in meeting certain financial targets the previous year. The payout can be for up to 20 days' extra pay. Nonunion workers at <i>Boeing</i>, but not executives, are eligible for the incentive plan bonus, as are most engineers and technical workers represented by the engineers' union known as SPEEA. But members of <i>Boeing's</i> Machinists union are not part of the employee incentive plan. <b><i>Boeing</i> announced last month that it met enough of its 2008 financial targets for the plan to pay out six extra days. In Washington state, about 48,120 eligible employees will receive an estimated payout of \$96.5 million this month. Companywide, 110,000 eligible recipients will receive an estimated \$220 million."</b></p>	On a modular enterprise architecture's non-integrated approach to the factors of production.
17 Feb. 2009	<i>Seattle Post-Intelligencer</i> , "James Wallace on Aerospace: Boeing Won't Freeze Wages" (James Wallace)	Jim McNerney, Chairman, President and CEO, <i>The Boeing Company</i>	Firm-Investors-Labor	α	<p>McNerney memo:  Jim McNerney Chairman, President and Chief Executive Officer</p> <p><b>"History tells us that the quicker a company acts to counter adverse economic conditions, the better able it will be to work its way through a downturn and emerge stronger when the economy recovers. That's why we began last fall to stress even more the importance of improving productivity and finding new ways to operate more efficiently. As we suspected then, the economy has continued to struggle mightily, putting even greater pressure on our commercial customers and potentially further straining defense budgets. We have compounded</b></p>	On a modular enterprise architecture's non-integrated approach to the factors of production.

				<p><b>the situation ourselves with the setbacks we had last year with the machinists' strike and our performance issues on key development programs.</b> As I told shareholders and analysts on our quarterly earnings call last month, our strategy for weathering this storm is to improve execution on our underperforming programs, maintain strong performance on the vast majority of our programs that are performing well, and preserve our financial strength to enable continued investment in our business and our employees, including our pension and benefits plans. With that in mind, we have been taking decisive action:</p> <p>* To improve programs that have not been performing to plan: <b>We have bolstered program-management processes, increased functional discipline and oversight, applied additional resources and technical expertise, and made leadership changes where we believed it was necessary to improve the team's performance.</b> As part of that, we have also <b>rebalanced our program-review schedule to place greater time and attention on underperforming programs.</b> Reliable, disciplined execution across all programs is not merely an aspiration for us; it's an imperative. Our customers have choices, and disappointing them has consequences for our business and relationships.</p> <p>* To maintain strong performance where it exists: We are asking all employees to redouble their efforts to focus on sustained, strong execution and to leverage our growth and productivity initiatives to drive even higher levels of efficiency and competitiveness. Sharing and replicating best practices, ensuring functional discipline and excellence, and raising issues and concerns early are all key to keeping the hundreds of healthy, successful programs inside our company healthy and successful.</p> <p>* <b>To preserve our financial strength: We have put a spotlight on cash and asset management. In prior years, we generated substantially more cash than we needed for daily operations.</b> Despite strong performance across most of our programs, last year's strike, delays on development programs, and lower returns on our investments (due to the financial crisis) changed that. <b>In response, we have reduced discretionary and capital-spending budgets.</b> We have centralized and consolidated organizational structures to both slim and strengthen them.</p> <p>We are eliminating work that doesn't add value to our customers, and we are reducing staffing levels to support a trimmed-down infrastructure.</p> <p>None of these actions are easy, especially those that affect employment of our people. But they are all</p>	
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				<p>necessary elements of our strategy to support our customers during uncertain times and <b>to ensure our competitiveness and growth over the long haul.</b> They require stepped-up responsibility and accountability by leadership as well as the involvement of every employee. As we work through them, it's also vital that we stay fully engaged with our customers. We cannot let our attention to internal efforts distract us from serving them, nor can we leave any impression that our focus on them has waned. Regarding 2009 employment plans: When we looked at it last fall, we said we expected reductions in excess of our normal attrition rate of 4 to 5 percent by the end of this year. Our current estimate of 6 percent, or about 10,000 jobs, is consistent with that initial expectation and the business assumptions behind it. It's important to note that while the planned reductions include some layoffs, they also rely on attrition, retirements, not filling some open positions, and cutbacks in contract labor. The mix of these elements varies by business area and geography, and the reductions, while weighted heavily in the first half, will be spread over the course of the year. We're keeping close watch on the dynamics of our business environment and the factors that affect employment. We will be sure to keep you informed should anything in our outlook change. <b>More than a few of you have written to me asking whether we could avoid layoffs altogether by not paying incentive awards this year or by freezing wages across the board. While these actions would preserve some cash during the year and lessen the immediate impact on people, our judgment (and one shared by most major companies) is that they would put us at a competitive disadvantage when it comes to attracting and retaining the high-performing people we need to consistently perform for our customers.</b> Having said that, I want to assure you that we have taken (and will continue to take) steps to mitigate the impact to our team. For example, we are consciously restraining salary growth this year in order to lessen the number of job cuts we need to make while retaining flexibility to fund growth projects and preserve key skills across the enterprise. We also continue to provide the best transition assistance we can to laid-off employees. The next 12 to 18 months promise us a steady flow of tough business challenges and increased opportunities to support our customers. Many experts believe the economic news could get worse before it gets better, and we've tried to anticipate some of that in our plans. While it's hard to know the final impact, we must be prepared should conditions worsen beyond the already difficult environment we have assumed. But, as I've mentioned above, we have a plan to deal with the situation and it is a good one. We know what we need to do to navigate this turbulence. If we</p>	
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				<p>execute well -- with integrity and always consistently with our values -- we will prevail through even the most difficult of times -- and emerge stronger when the economic tide turns. Thank you for all you are doing to support <i>Boeing</i> and our customers. Jim”</p> <p><u>Posted by <i>unregistered user</i> at 2/17/09 4:46 p.m.</u></p> <p>“After all these statements in this memo, <b><i>Boeing</i> will still see its shares drop to new lows and this time you will have no one to blame but your so called top performers.</b>”</p> <p><u>Posted by <i>unregistered user</i> at 2/17/09 5:12 p.m.</u></p> <p>“Corporate Greed!”</p> <p><u>Posted by <i>unregistered user</i> at 2/17/09 5:33 p.m.</u></p> <p>“I hate to say it but from what I've seen <i>Boeing's</i> productiivity has to be the lowest of any coporation! Mechanics goof off most of their day!”</p> <p><u>Posted by <i>unregistered user</i> at 2/17/09 5:40 p.m.</u></p> <p>“<b>And nothing says come work for us like layoffs!</b>”</p> <p><u>Posted by <i>unregistered user</i> at 2/17/09 7:35 p.m.</u></p> <p>“<b>As thus the dysfunctional relationship between <i>Boeing</i> Mgmt and it's employees continues. <i>Boeing</i> mgmt views it's employees as a cost to be minimized, and will always default to layoffs rather than recognize their own mismanagement. And the employees (union and non-union) will always default to the get what you can while you can mindset because there will be hirings and layoffs every few years. And yes, the unions will strike for the short term gains knowing the hire - layoff cycle will continue. It is a self perpetuating cycle and it can be endlessly debated about who's to blame. But the results are clear for all to see.</b>”</p> <p><u>Posted by <i>ikkeman</i> at 2/17/09 11:31 p.m.</u></p> <p>“what a blowhole. spouting it high and far without any direction or intention”</p> <p><u>Posted by <i>unregistered user</i> at 2/18/09 1:39 a.m.</u></p> <p>“<b><i>General Electric</i> Chief Executive Jeff Immelt has waived his right to a bonus and performance-based pay that would have netted him more than \$12 million in cash. So Jim McNerney we are waiting.</b>”</p> <p><u>Posted by <i>unregistered user</i> at 2/18/09 4:42 a.m.</u></p>	
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					<p>“Anyone else who leads a large corporation which has had such a poor record in creating a new product would have been sacked long ago. Where does the buck stop? This guy should be paying <i>Boeing</i> to employ him with his record.”</p> <p>Posted by <i>Leelaw</i> at 2/18/09 6:08 a.m.</p> <p>“If for whatever reason it's not possible for <i>Boeing's</i> board of directors to remove a failed CEO like Mr. McNerney from office, can't they at least muzzle him a la Mike Bair?”</p>	
18 Feb. 2009	<i>Forbes</i> , “ <i>Boeing</i> CEO Says Pay Freeze Counterproductive” (Tim Klass)	Jim McNerney, Chairman, President and CEO, <i>The Boeing Company</i>	Firm-Investors-Employees	α	<p>“Freezing wages and eliminating bonuses to avoid layoffs would be counterproductive for the <i>Boeing Co.</i> and other big employers, the aerospace company's chief executive said. In an e-mail Tuesday to <i>Boeing</i> employees, printed in full on the Web site of the <i>Seattle Post-Intelligencer</i> newspaper Wednesday, CEO Jim McNerney wrote that <b>such moves would hurt the company's ability to attract and retain high-performing employees. The memo is one of the first responses by a major corporate chief executive to proposals for layoff alternatives. Such requests have gained force in the deepening recession since President Barack Obama praised ‘the selflessness of workers who would rather cut their hours than see a friend lose their job’ in his inaugural address last month.</b>”</p>	On a modular enterprise architecture's views of incentives for employees.
18 Feb. 2009	<i>Flight blogger</i> , “ <i>Crane Co.</i> Reopens 787 Brake Software Problems” (Jon Ostrower)	Eric Fast, CEO <i>Crane Co.</i>	Firm-Supplier	α	<p>“As far back as May of last year, <i>Boeing</i> publicly discussed that the brake control system was a key pacing item for the 787 program. Tracing the evolution of this issue, which <i>Crane</i> and <i>Boeing</i> have stated is resolved, <b>today we find <i>Crane</i> announcing they need to develop a new version of the software, potentially for the 787-9, later blockpoint 787-8s, or even an additional evolution for initial certification.</b> The recipient of the new software is unclear at this point, but it certainly something to be aware of moving forward.</p> <p><u><i>Aviation Week</i> - May 23, 2008:</u> While <i>Boeing</i> VP and 787 General Manager Pat Shanahan says most systems are ready to go, the airplane's brake control monitoring system supplied by <i>Crane Aerospace</i> to the former <i>Smiths Aerospace</i> division of <i>GE Aviation</i> <b>has fallen behind schedule and remains a threat to first flight in the fourth quarter this year.</b> Design concerns about the brake monitors arose during build and test reviews by <i>GE</i> and <i>Crane</i>. As those issues were being worked out, power supply issues also cropped up. A <i>GE</i> manager says the team is making ‘good progress’ toward supporting <i>Boeing's</i> flight test schedule. <b>‘They are later than we want, but they will support first flight,’</b> the manager said.</p>	On a modular enterprise architecture's inability to manage a modular supply chain for an integral product architecture.



					<p><u>FlightBlogger - August 5, 2008:</u> <i>Boeing</i> expects to have all of the hardware on Dreamliner One qualified by the second or third week of August, <b>'with the exception of the brakes.'</b></p> <p><u>Boeing - October 31, 2008:</u> <b>'The issues with the brake software are behind us, functionality required for flight test is in the labs and is working well.</b> (The final 'blue label' version -- for flight test -- is in the lab and is undergoing tests, all known software problems are resolved. The formal 'red label' version will follow in two weeks. We plan on a service-ready update during flight test that adds some additional functionality including tire pressure, operator initiated test, and dataload),' said 787 spokeswoman Yvonne Leach.</p> <p><u>Crane Co. CEO Eric Fast - February 18, 2009:</u> <b>'The Company expects to complete development of the brake control system for the Boeing 787 that meets the originally specified requirements during the second quarter of 2009 although engineering efforts at reduced levels will be needed to support test flights.</b> However, <i>Boeing</i> has communicated certain <b>changed aircraft requirements</b> that affect the brake control system, and we have recently entered into discussions with our customer, <i>GE Aviation Systems</i>, regarding development of a <b>new version of the 787 brake control system</b>, including whether this additional development work will be funded by the customer. It is the Company's position <b>that it is not required to undertake this additional development work without customer funding, and the costs of such work, which could be material, are not included in our guidance.'</b>"</p>	
19 Feb. 2009	<i>The Seattle Times</i> , "Crane says it must develop new 787 brake system as <i>Boeing</i> changes requirements"		Firm-Supplier	$\alpha$	<p>"<i>Crane Aerospace</i>, a subcontractor to <i>GE Aviation</i> that supplies the brake control system for the <i>Boeing 787</i> Dreamliner, said today that <b>it has to develop a new version of the brake control system because Boeing has changed requirements.</b> In advance of an investors conference Friday, <i>Crane</i> said it is in a <b>dispute with Boeing and GE over who will pay for the extra development work.</b> Last summer, <i>Boeing</i> had identified the <i>Crane</i> brake control system as <b>being behind schedule.</b> <i>Crane</i> said today that the <b>original version of the brake control system is complete, delivered to Boeing, and ready to fly on the first test aircraft.'</b>"</p>	On a modular enterprise architecture's inability to manage a modular supply chain for an integral product architecture.
19 Feb. 2009	<i>Seattle Post-Intelligencer</i> ,	Tom Enders, CEO, <i>Airbus</i>	Firm-Customer	$\alpha$ & $\beta$	<p>"Underscoring the difficult state of the industry, and the implications for the two biggest makers of commercial jets, <b><i>Airbus</i> announced Thursday it will cut production of its single-aisle A320 family</b></p>	On a modular enterprise

	<p>"Boeing Delivers 777 Freighter", (James Wallace)</p>			<p><b>of jets as worldwide demand weakens. And it will not go ahead with a production rate increase for its biggest planes. The development came four months after Airbus said it would not boost rates as planned of the single-aisle jets to 40 a month from 36. The rate is coming down to 34 a month starting in October. 'Many airlines are taking capacity out of the market. I do not exclude further production cuts if the need arises,' Airbus Chief Executive Tom Enders said in a statement.</b></p> <p><i>Boeing</i> does not publicly reveal its production rates, but it is known to be building about <b>31 of its single-aisle 737s a month</b> at its Renton plant. Although <i>Boeing</i> has said it expects to maintain production rates of all its planes at current levels this year, <i>Boeing</i> commercial boss <b>Scott Carson recently said production in 2010 could be cut by about 10 percent</b>, depending on how many orders are deferred or canceled. <b>Any significant cut in production could result in job losses.</b> <i>Boeing</i> already has said it will reduce its work force companywide by about 10,000 positions this year, including 4,500 commercial jobs in the Puget Sound area. But most of those commercial jobs are not in jet production. <b>Some industry experts believe Boeing's outlook is much too rosy."</b></p>	<p>architecture's unrealistic and an integral enterprise architecture's realistic and early announcement of modest capacity cuts.</p>
<p>23 Feb. 2009</p>	<p><i>Flight Global</i> "Forecasting the Long-term Demand for Airliners" (Max Kingsley-Jones)</p>		Firm	<p><math>\alpha</math> &amp; <math>\beta</math></p> <p><b>"While there are some areas where Airbus and Boeing concur on how the demand dynamics will play out over the next 20 years - such as in the twin-aisle category - these forecasts are ultimately an arm of their marketing programmes so are driven by each airframer's product strategy and throw up some significant differences in opinion. A good example of this is the forecast for large airliner demand, where Airbus, with the all-new 500-seat A380 in its product line, has always been extremely bullish. The airframer's latest global market forecast predicts demand for 1,700 aircraft. Boeing, on the other hand - ever since it dropped plans for a major stretch of the 747 around a decade ago - has consistently put demand at fewer than 1,000 aircraft. Boeing first delivered its current market outlook in 1964 and has been updating its forecast annually ever since. Airbus began publishing 20 year market studies in 1988 - which crystallised as its 'global market forecast' in 1995 - but has not stuck to the annual publishing schedule of its rival. While short-term shocks such as 9/11, last year's oil price escalation dramas or the current global financial crisis have some bearing on demand in the near term, the tendency is to assume, backed by historic prerogatives, that any impact will be ironed out and will not influence long-term trends. For example, Boeing says in its latest current market outlook, produced amid the high fuel prices in 2008, that 'the forecast has been</b></p>	<p>On the differences between modular and integral enterprise architecture's in projecting customer demand.</p>

					<p>developed in a manner that considers today's market environment, but takes a long-term view of the market and the fundamentals that drive commercial aviation. These include economic growth, world trade and new aircraft capabilities.'</p> <p>So how close have forecasts come to matching reality? Comparing <i>Boeing's</i> 10-year outlook published in its 1998 current market outlook for fleet growth from 1997-2007 with the actual fleet data included in its 2008 current market outlook indicates that <b>its demand forecast was optimistic</b>. The fleet (excluding regional jets) was expected to grow to 17,700 airliners in 2007, but the data in <i>Boeing's</i> 2008 current market outlook shows that the 2007 fleet was 15,840 units. However, in 1998, <i>Boeing's</i> current market outlook did not include regional jets - the boom was still in its infancy then. This category is now included, putting the total airliner fleet in 2007 at 19,000 units. <b>Significantly, back in 1998 when Boeing was still toying with ideas for a 500-seat airliner, it predicted that the fleet in this category would grow to 1,240 units, whereas in reality it would contract over the 10 years from 1,016 units to 910. Airbus has traditionally stuck to taking only a long-term, 20-year view in its global market forecast</b>, meaning that it is not yet possible to compare its 1997 view of the market with reality. However, it is worth pointing out that its 2003 global market forecast failed to predict the size of demand for the A380 from Emirates as it did not include the airline's Dubai base among its forecast of the top 10 large-aircraft hubs. In the wake of Emirates boosting its A380 orders to more than 50 aircraft, <i>Airbus</i> quickly remedied this omission in its next global market forecast and now has Dubai placed third in the rankings behind London Heathrow and Hong Kong."</p>	
23 Feb. 2009	<i>Wall Street Journal</i> , "A Scion Drives Toyota Back to Basics" (Norihiro Shirouzu and John Murphy)	Shoichi Toyoda former President, <i>Toyota Motors Corporation</i> ; Katsuki Watanabe, outgoing President, <i>Toyota</i>	Firm	β	<p>"<i>Toyota Motor Corp.'s</i> incoming president, Akio Toyoda, has a sobering message for the giant company founded by his grandfather: <b>It has gotten too fancy for its own good</b>. On Monday, three top executives who helped lead <i>Toyota</i> the past four years -- including Mitsuo Kinoshita, <b>one of the primary architects of the company's global expansion -- announced their retirement</b>. The departures clear the way for Mr. Toyoda's <b>planned makeover of the world's biggest auto maker</b>. He is expected to focus, most of all, on <b>abandoning kakushin, or 'revolutionary change,'</b> current president Katsuaki Watanabe's <b>term for changing the way Toyota designed its cars and factories. It spawned technological advances, but led to cars that were often costlier to produce</b>. The 52-year-old Mr. Toyoda is also working to <b>fix a pricing strategy that put the company at odds with some U.S. dealers, who felt its cars were getting too expensive</b>, according to people familiar with the</p>	In the reintegration of a gently disintegrating integral enterprise architecture.

		<p><i>Motors Corporation;</i> Akio Toyoda, incoming President, <i>Toyota Motors Corporation</i></p>	<p>situation. Auto makers world-wide are in pain, and <b>Toyota is much stronger than rivals such as General Motors Corp., which is flirting with a bankruptcy filing. Still, Toyota is expecting its first annual net loss in 59 years.</b> Mr. Toyoda may shutter factories in North America and Japan, where <i>Toyota</i> bulked up in recent years and is now stuck with <b>too much manufacturing capacity. It might also be faced with its first layoffs in Japan since 1950, when 3,000 workers were let go. Mr. Toyoda blames more than the recession,</b> according to people familiar with the matter. He is sending the message that <b>his predecessors worsened the problem by straying from core ideas of thrift and efficiency.</b> Among other things, there's a <b>move away from technologically sophisticated in-car gizmos</b> like a solar-powered cooling system designed for the new Prius. In addition, an expensive new assembly-line technique of dipping car bodies into a vat of paint and swirling them around -- nicknamed shabu shabu, after a popular Japanese hotpot dish -- is under the microscope. <i>Toyota</i> said in a statement that it feels its management decisions made in the past were appropriate for their time. Mr. Toyoda is the first member of <i>Toyota's</i> founding family to take the helm in 14 years. <b>'I think Toyota probably over-expanded a little bit in order to compete with the American auto makers,'</b> said his father, Shoichiro Toyoda, 83, who himself was the auto maker's president during the 1980s. 'There are a lot of things that we have to review.' The younger Mr. Toyoda's appointment as president is pending shareholder approval in June. Mr. Watanabe, whose appointment as vice chairman was announced along with Mr. Toyoda's promotion, had been president since June 2005. <b>The shakeup reflects the sense of crisis within Toyota</b> as it navigates one of the toughest periods in its 70-year history. <b>For the past decade, it expanded at breakneck pace.</b> Under Mr. Watanabe, 67, <i>Toyota</i> posted record net profit 1.72 trillion yen in the ended March 2008. Last year it unseated rival <i>GM</i> as the world's biggest auto maker in terms of unit sales. Now, it is forecasting a 350 billion yen net loss for the current fiscal year, ending March 31. And not only are sales plummeting, but earnings are getting further hurt by the strong yen, which means money earned abroad isn't worth as much when converted into Japan's currency. In a recent sign of the distress, at a meeting late last year <b>Mr. Watanabe appealed to mid-level managers to 'share the pain' -- code for a salary cut -- then made them wince by asking them to also consider buying a new car to help shore up sales,</b> according to people who attended the meeting. <b>An unprecedented number of unsold cars in Japan has forced Toyota to stockpile them in the parking lots of Fuji Speedway,</b> a company-owned track near Mount Fuji. Koichi Shimokawa, a professor of</p>
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				<p>business administration at Tokai Gakuin University in Nagoya, says <i>Toyota</i> was so focused on becoming the world's largest auto maker that it failed to cut production quickly enough last year as economic crisis struck the U.S., its largest market. '<i>Toyota</i> was overconfident in its competitiveness and they just kept pressing the accelerator,' he says. Until late last year, it appeared to be a horse race for the presidency between Mr. Toyoda and Mr. Kinoshita, 63, the righthand man to Mr. Watanabe, the current president. As recently as late last year, when <i>Toyota's</i> powerful elders huddled to discuss who should succeed Mr. Watanabe at the end of his two-year term, some worried Akio Toyoda was too young. Others felt that a large, publicly traded company like <i>Toyota</i> shouldn't pick a family member for the top job, even though Mr. Toyoda is a veteran who oversaw rapid growth in China, among other things. A turning point came in a meeting in November at the company's global headquarters in Toyota City. Akio's father, Shoichiro Toyoda, made a subtle remark to the assembled group, according to people familiar with the matter. 'Why are all the key decisions these days made by Watanabe-kun and Kinoshita-kun?' the elder Mr. Toyoda said, using a standard honorific for the two men. According to those people, Shoichiro Toyoda seemed annoyed that Messrs. Watanabe and Kinoshita had broken with <i>Toyota</i> protocol last year by singlehandedly deciding what vehicles would be built at a factory under construction in Mississippi. They had switched to the Prius, a gasoline-electric hybrid, from the Highlander, a sport-utility vehicle, without first consulting other key executives. The language was subdued. But the comment, along with additional criticisms from other executives in other meetings, ultimately tipped the scale in Akio Toyoda's favor, the people say. Shoichiro Toyoda says he doesn't recall the meeting. <i>Toyota</i> said in its statement that it decided a new management team was needed to tackle the tough situation it faces. It's not clear if a back-to-basics approach will be enough to revive growth at the sprawling firm, particularly amid the weakening global economy. Other auto makers have promoted founding-family members, with limited success. <i>Ford Motor Co.'s</i> own founding-family scion, Bill Ford, took over from Jacques Nasser in 2001. But Ford failed to launch popular models, while sales of its profitable SUVs wilted as gasoline prices rose. In 2006, Mr. Ford handed over the CEO position to a nonfamily executive, Alan Mulally, a former <i>Boeing</i> executive, who is still struggling to right the ship. Asked whether the family name influenced the choice of top executive, Shoichiro Toyoda said: 'We never know who is going to be president. The current president made the best decision about who is</p>	
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				<p>appropriate for the next president, and it just happened to be my son.’ <b>The family controls roughly 2% of Toyota stock.</b> Akio Toyoda himself, as one of five executive vice-presidents, isn't entirely free of blame for the company's recent woes. Since June 2007, he has overseen the Japanese market, where sales and market share continue to fall. <b>Toyota now aims to generate ‘reasonable profits’ even if is global sales</b> (excluding sales of its two main affiliates, car maker <i>Daihatsu</i> and truck company <i>Hino</i>) <b>slump to seven million, down from an all-time high of 8.4 million it sold in 2007. Toyota currently has capacity to produce about 9.7 million vehicles,</b> according to an estimate by consulting firm <i>CSM Worldwide</i>. <b>Akio Toyoda has long preached a traditional Toyota practice called genchi genbutsu, a leadership maxim that boils down to get out of your office and visit the source of the problem.</b> For the past year, Mr. Toyoda has been practicing genchi genbutsu to <b>quietly collect evidence that the company had strayed,</b> according to people familiar with the situation. <b>They say he was particularly concerned that Messrs. Watanabe and Kinoshita placed strong emphasis on achieving two trillion yen in annual operating profit,</b> a level it passed in the year ended March 2007. <b>Driven by that profit objective, Toyota executives reasoned American consumers would be willing to pay a premium for a Toyota -- a change from a long-held strategy of pricing cars at a value.</b> Two years ago, <i>Toyota</i> started raising prices on an array of models including the redesigned <i>Corolla</i>, one of its most prominent vehicles, launched in early 2008. <i>Toyota's</i> U.S. sales arm had tried to price the <i>Corolla</i> about \$1,000 to \$1,500 above what its U.S. dealers thought people would pay for a basic family car, according to U.S. dealers. Not surprisingly, sales were weak. <i>Toyota</i> sold 21,000 <i>Corollas</i> in February 2008 down 25% from a year earlier. When Mr. Toyoda got wind of the slow <i>Corolla</i> sales, he flew to the U.S. to meet with dealers and investigate for himself. Cliff Cummings, a veteran southern California dealer, warned Mr. Toyoda over a steak dinner with a dozen other dealers last March that <b>premium pricing was the wrong way to go. Toyota had built an image of sturdy affordability, ‘but now they were wrecking it,’ Mr. Cummings says he told Mr. Toyoda.</b> Based on subsequent conversations with the younger Mr. Toyoda and other executives, Mr. Cummings says he <b>expects the company to overhaul its pricing strategy. The company is also reining in its engineers, who have been designing new features that occasionally appear to be out of character with the company's utilitarian roots.</b> For example, the new <i>Prius</i>, launching this year, has an option for a solar-powered ventilation system designed to keep the interior cool when parked.</p>	
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					<p>Gizmos like these helped lift the car's retail price to an estimated \$28,000, according to analysts, compared with the \$22,000 currently. 'Frankly, that does worry me,' says Earl Stewart, one of the top <i>Prius</i> dealers in the U.S., based in North Palm Beach, Fla., He anticipates stiff competition from <i>Honda's</i> new low-priced hybrid, Insight. <b>'I am already drastically discounting my Priuses to maintain my sales rate,'</b> Mr. Stewart says. Then there's the shabu shabu paint system. <i>Toyota's</i> manufacturing division is one of the company's proudest operations, having developed a highly efficient 'lean manufacturing' philosophy that has been emulated over the years by everyone from <i>GM</i> and <i>Hewlett-Packard</i> to hospitals and supermarkets seeking greater efficiency. Mr. Watanabe, the current president, had backed the new technology as he encouraged his engineers to <b>radically shorten the painting process.</b> To replace the traditional system of slowly dragging a car through a 115foot-long bath of anticorrosion undercoating, <i>Toyota</i> engineers came up with a new process in which a car body gets picked up by a robot arm, then swished around in a pool of paint, cutting the length of the line. Engineers compare it to shabu-shabu, which involves picking up slices of meat and swishing it around in a hotpot to cook it. <b>However, the new system costs roughly four times as much to set up as the traditional process,</b> while producing what Mr. Toyoda felt were minimal improvements in the quality of the paint job and its efficiency, according to people familiar with the situation Also likely to be axed: A new 'ecological plastic' that emits less carbon dioxide over the course of its life than more traditional alternatives, but which is <b>costlier to produce.</b> Another tough area Mr. Toyoda must tackle promptly is the excess manufacturing capacity in Japan. In the late 1990s, when a strong yen made Japan a costly place to make cars, <i>Toyota</i> slashed capacity at home and added production overseas. But the yen reversed its direction, weakening to as low as 120 to the dollar between 2005 to 2007. <i>Toyota</i> decided to take advantage and do more of its manufacturing at home, since a weak yen has the effect of making exports more profitable. By 2007, it was producing 4.23 million vehicles in Japan -- a million more than it made just eight years before. <b>That move was directly at odds with <i>Toyota's</i> long-held philosophy not to make long-term decisions on where to put factories, based on shortterm currency-exchange rates, which can swing rapidly.</b> "We are not gods, we are not infallible," says Shoichiro Toyoda, speaking of the company's management team. 'Sometimes even Tiger Woods misses a shot.'"</p>	
6 Mar.	<i>Financial</i>	Jim McNer	Firm-Investo	α	"Back in December, <i>Boeing</i> announced that its board of directors approved a 14 percent increase in the	On a modular

2009	News, "Boeing Hits a New Low" (Eric Chesler)	ney, CEO, The Boeing Company	rs		company's dividend. <i>Boeing's</i> quarterly dividend will now be 40 cents per share, up from 35 cents, while the annual dividend will be \$1.60 per share. This is the fifth dividend increase in the past five years. CEO Jim McNerney said, "This dividend increase reflects our strong financial performance, record backlog and significant liquidity."	enterprise architecture's non-systemic financial strategy.
9 Mar. 2009	Flight International, "Boeing Gears Up for 787 Series Production" (Jon Ostrower)		Firm-Suppliers	$\alpha$	"After incurring two years of costly delays to its flagship programme, <i>Boeing is set to begin final assembly of the sixth and final 787 flight-test airframe, paving the way for the first production Dreamliner.</i> Major supplier partners have delivered the majority of key structural and systems components to final assembly, with the forward and centre fuselage expected to be delivered around the second week of March. With these parts delivered, structural partners are, for the first time, able to focus resources solely on preparing production aircraft. Centre fuselage integrator <i>Global Aeronautica</i> , for example, will have the first six production shipsets in its Charleston, South Carolina facility by mid-March. <i>Aircraft seven, which is due for delivery to All Nippon Airways in February 2010, will be the first major engineering blockpoint for the 787 programme, bringing significant weight savings for overall performance enhancement, although the first block one production aircraft are expected to be delivered over the target weight. The second blockpoint for additional design changes and weight savings are expected for Aircraft 20. It is believed that Boeing will gain significant weight savings by introducing structural changes to the wing and a revised electric architecture. Suppliers have described the preparation of aircraft seven for delivery to Boeing as more challenging because of the significant design revisions expected to be required for the production standard 787s. Much of the additional work stems from revisions in the original engineering as a result of late design changes for production aircraft that will be incorporated at the first-tier supplier level, rather than further down the supply chain, where they otherwise would originate. For example, a programme source told Flight International that the production aft fuselage sections fabricated by Vought Aircraft Industries is as much as 30% different from the first six flight-test aircraft delivered. Several such changes will originate in the centre wing box and wing tank fabricated by Kawasaki and Fuji Heavy Industries in Japan. Boeing revealed in March 2008 that it would have to strengthen internal structural spars due to premature buckling. Boeing said at the time that aircraft seven would be the first 787 to have that change incorporated at the supplier level, whereas</i>	On a modular enterprise architecture's attempts to re-integrate its modular supply chain.



					<p>the first six test-flight aircraft required a retrofit to be added on the final assembly line in Everett. In addition, to better enable the forthcoming production ramp-up and to speed up final assembly time, a terminal fitting has been relocated from the wing to the integrated centre fuselage section, although this change presented a unique challenge to the 787 supply chain. By relocating the fitting for its first incorporation with aircraft seven, <i>Boeing</i> found that the width of the centre fuselage had increased, causing a ‘slight interference’ with a damage indicator panel within the 747 LCF Dreamlifter’s cargo bay, preventing optimal loading. The interference was enough to warrant a simple retrofit to the Dreamlifter that will be prepared in time for the first delivery, which is expected in the second quarter. <i>Boeing</i> plans a service bulletin to address this issue across the LCF fleet.”</p>	
10 Mar. 2009	<i>Forbes</i> , “ <i>Boeing</i> says 787 Remains on Schedule”	Scott Carson, President, <i>Boeing Commercial Airplanes</i>	Firm-Investors	$\alpha$	<p>“<i>Boeing Co.</i> said Tuesday <b>the initial test flight and delivery of its long-awaited 787 jetliner remain on schedule.</b> The Chicago-based aerospace company has postponed the introduction of the next-generation aircraft, built for fuel efficiency from carbon composite parts, four times due to production glitches and a two-month strike last fall. <b>The delays have cost <i>Boeing</i> credibility and billions of dollars in anticipated costs and penalties.</b> Scott Carson, president and chief executive of <i>Boeing’s</i> commercial aircraft division, said <i>Boeing</i> continues to work toward the inaugural 787 test flight in the second quarter of this year and the first delivery in the first quarter of 2010. ‘The progress on a daily basis is gratifying,’ he said at an investor conference in New York. ‘We have now cleared all the equipment on the airplane for first flight and are continuing to work through the integrated software and hardware testing.’”</p>	On a modular enterprise architecture’s optimism.
10 Mar. 2009	<i>CNN</i> , “ <i>EADS</i> Profits Take off Despite Downturn”	Louis Gallois, CEO, <i>EADS</i>	Firm-Investors	$\beta$	<p>“European aerospace group <i>EADS</i> has announced ‘satisfying’ results for 2008, posting a net profit of €1.572 billion (\$1.987 billion), despite the economic downturn. <i>EADS</i> CEO Louis Gallois announces the 2008 results during a press conference in Munich. In a statement on its Web site, the company revealed earnings before interest and taxes (EBIT) for the period amounted to €2.8 billion (\$3.55 billion). This compared to a €446 million net loss in 2007. The Munich and Paris-based company attributed the results to its excellent underlying performance and significant positive foreign currency effects. ‘We made significant headway in reshaping the company,’ Louis Gallois, chief executive of <i>EADS</i>, said.”</p>	On a modular enterprise architecture’s “reshaping” efforts to become more efficient.
10 Mar. 2009	<i>Wall Street Journal</i> ,		Firm-Investors	$\alpha$	<p>“The corporate bond market has been strong in March, as companies with high credit ratings and solid balance sheets take advantage of investors’</p>	On a modular enterpris

	“Corporate Bond Supply Remains Strong in March” (Kellie Geressy)				<p>appetite for yield. Energy and utility companies have favored smaller issues -- usually averaging \$300 million -- <b>to refinance maturing debt. Investors see those sectors as much less risky than others, including banks and finance companies.</b></p> <p><i>Boeing Co.</i> is also in the market with a \$1.85 billion offering which will include five-, 10- and 30-year pieces. <b>The aerospace company is taking advantage of historically low interest rate levels combined with investor demand for high-quality names,</b> according to Todd Blecher, a spokesman for <i>Boeing</i>. <b>The proceeds will be used to support the company's general liquidity position, which may include debt repayment, repurchase of common stock, acquisitions, capital expenditures and pension funding,</b> he said. <i>Boeing is an infrequent issuer in the corporate bond market,</i> having last been seen in the U.S. market on Dec. 22, 2003, when it sold a miniscule \$11 million medium-term note. <b>‘Now is a good time to take a step in building our liquidity, given our overall debt structure. It seems a prudent step to have a cushion in place on our balance sheet, given what's happened in the economic spectrum,’</b> Mr. Blecher said.”</p>	<p>e architect ure’s financing strategies</p>
13 Mar. 2009	“Boeing’s McNerney was Paid \$14.8 million in 2008” (Dominic Gates)		Firm	α	<p><b>“With Boeing’s poor 2008 performance, especially in the commercial airplane division, the compensation of its top executives was lower than it could have been. But somehow, despite the stock’s dive and the depressed profits, pay still rose for three out of the top four. Chief executive Jim McNerney earned 14 percent more than the previous year. Only Commercial Airplanes chief executive Scott Carson took a real hit. His total compensation fell 19 percent from the previous year. Adjusting figures reported Friday to reflect true 2008 compensation, McNerney got \$14.8 million in salary, bonuses and perks. That compares to \$12.9 million in 2007. Carson’s total compensation was \$3.2 million, down from \$3.9 million in 2007. The pay for top company executives was detailed in a filing Friday with the Securities and Exchange Commission. Boeing’s filing noted ‘below target’ economic performance in 2008 largely due to ‘product development delays.’</b> The company’s 787 Dreamliner program was further delayed to almost two years behind schedule, and the 747-8 was pushed out by nine months. <b>However, the Boeing board’s compensation committee did not let another problem — the two-month Machinist strike in 2008 — factor into its executive pay awards. The compensation measure that factors in the company’s economic performance was specifically adjusted ‘to eliminate the impact of the IAM strike’ to ensure that the awards ‘reflected underlying growth and performance,’</b> the filing said. <b>McNerney requested cuts to his annual and long-term incentive plan bonuses to</b></p>	<p>On a modular enterprise architect’s executive compensation, based on the labor strike and firm performance.</p>

					<p>reflect the depressed profits, and the company board accordingly shrunk each by 25 percent, knocking about \$2.2 million off his compensation. His 2008 annual bonus was 65 percent lower than in 2007. But that was more than made up for by the long-term incentive plan bonus, which is based on a three-year performance from 2006 through 2008 and was buoyed by good results in the first two years. The perks McNerney received in 2008 included \$287,000 worth of personal use of <i>Boeing</i> private jets, \$67,000 in personal legal services, and \$60,000 for personal use of a company car and driver. Top <i>Boeing</i> executives receive individual performance scores annually that are one factor in calculating their bonuses. McNerney's and Carson's individual scores came in below target. The head of the defense unit, Jim Albaugh, and chief financial officer James Bell both received individual scores above target. Albaugh got \$5.1 million in 2008 salary, bonuses and perks, compared to \$4.1 million in 2007. Bell's total compensation was \$4.6 million, compared to \$3.7 million in 2007. Both men were up 23 percent on the previous year."</p>	
16 Mar. 2009	<p><i>Flight Global</i>, "Future Aircraft and Engines : When Will they Hit the Market?" (Max Kingsley-Jones)</p>		Firms-Suppliers	$\alpha$ & $\beta$	<p>"After sluggish sales in 2008 the ultra-large airliner models face even bleaker prospects for new orders in 2009. But of more immediate concern to <i>Airbus</i> and <i>Boeing</i> is the need to get to grips with production issues that have dogged both their programmes. <i>Boeing</i>, which has accumulated orders for 106 747-8s (78 -8F freighters and 28 -8I passenger models) since launching the <i>General Electric</i> GENx-powered family three years ago, should now be flight-testing its 747-400 successor. But after a series of schedule delays - and <b>two changes of programme leadership within 18 months</b> - assembly of the first 747-8F (the lead variant) is still not complete and first flight is at least three to four months away. Deliveries to launch customer <i>Cargolux</i>, which were due to begin late this year, will now start no earlier than mid-2010. <i>Boeing</i> blamed the slip on a combination of issues including supply chain problems, engineering requirements (including the need for revisions to the wing design), the 787 crisis and its machinists' strike. 'After we got to the 90% release milestone of engineering drawings in early third quarter of 2008 and started to begin production we realised we weren't getting the parts in on time. A lot of [the issues] came home at that point,' said 747 chief engineer Michael Teal when the slip was announced last year. <i>Airbus</i>, meanwhile, has just reached the 200-order threshold for the A380 and has delivered 13 aircraft since the first went to <i>Singapore Airlines</i> in October 2007. But it is still battling with the overspill from production issues that have dogged the programme. <b>'Production is not fully under control, we've still got a bit of work to do,'</b> says <i>Airbus</i> executive vice-president programmes Tom</p>	<p>On the future rate of technological (quality) innovation in the ecosystem and its supply ecosystem.</p>

				<p>Williams. Output was due to rise from 12 aircraft in 2008 to 21 this year (having been reduced last year from the earlier target of 25) and this has since been revised further downwards to 18 as assembly lines struggle to transition from the almost hand-built process used for early aircraft to series production, dubbed 'Wave 2'. This year the bulk of A380 deliveries will go to existing operators <i>Emirates</i>, <i>Qantas</i> and <i>Singapore Airlines</i>, with <i>Air France</i> due to become the fourth customer to receive the giant, at year-end. The near-term commercial prospects for both the A380 and 747-8 look difficult, with few if any new customers on the horizon. Indeed <i>Airbus'</i> chief salesman John Leahy predicted in January that A380 sales would be flat this year - in the order of 10 aircraft. Until recently <i>All Nippon Airways</i> had been the most serious new-customer prospect for an ultra-large airliner deal. However, in December last year the airline 'suspended' the actions of its large aircraft selection committee and said that any deal would have to wait 'until the market conditions look right'. <b>The lack of any serious new sales campaigns might be a pain for the A380 sales team, but it could be far more serious for the 747-8, which accrued just three orders in 2008. To make matters worse, Boeing has managed to land only one airline customer for the -8I passenger version - Lufthansa - which became launch customer for the 450-seater in 2006. Like the freighter, the -8I has been subject to schedule slips with Lufthansa's first delivery sliding from mid-2010 to the second quarter of 2011. In the meantime, the market for the freighter version - which is by far the stronger of the two variants commercially - has disappeared as the cargo industry faces a crisis of rapidly declining demand. In the wake of the 747-8 delay - and the related \$685 million charge - Boeing chief executive Jim McNerney hinted in January that continuation of the programme should not be seen as a foregone conclusion: 'We still see a viable business proposition here,' he said. 'Now obviously if we ever got to a point where we didn't, we'd have to work with our customers to come up with another answer.'</b> Faced with these development and commercial issues, <i>Boeing</i> is understood to have privately studied various options for the programme, including <b>terminating the 747-8I and running the 747-8F as a standalone. In contrast to the current woes at Boeing, Airbus has enjoyed a period of good publicity as the A380 launch airlines have experienced a relatively trouble-free introduction and expanded their networks with little drama.</b></p> <p><b>787/A350: The composite twins</b> (<i>Jon Ostrower in Washington</i>) The commercial aerospace industry is finding that a <b>technology bottleneck</b> runs through the mid-size long-range widebody aircraft market. <i>For Boeing,</i></p>	
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				<p>two years of production and design problems have plagued its flagship 787 programme resulting in expansion disruptions for airlines. Yet <b>on a deeper level, development of both larger and smaller aircraft is eagerly awaiting the answers that will come out of the Dreamliner's experience.</b> The lessons learned by airlines operating the 787, which is expected to fly in the second quarter of this year and enter service with Japan's <i>All Nippon Airways</i> in February 2010, will <b>validate or condemn the extensive use of composite technology.</b> <i>Boeing</i> has attempted to answer all these questions in advance to the best of its ability, but real-world operation will invariably reveal unanticipated strengths and weaknesses in the technology. <b>With significant financial and engineering resources occupied on preparing the 787 for its first flight, certification and entry into service, the airframer has neither significant staff nor capital to devote to the future of the large-twin and narrowbody markets. As a result, Airbus is waiting on the 787 to fly to inform its own ongoing design and planning for its slightly larger composite A350 XWB,</b> which is expected to make its first flight in late 2011 followed by a 2013 entry into service with <i>Qatar Airways</i>. The cyclical planning logic then returns to <i>Boeing's</i> doorstep as it waits for the larger 350-seat A350-1000 and 314-seat A350-900 performance expectations to firm up so the US airframer can decide how to proceed with its 301 to 365-seat 777 programme. On the smaller end of the aircraft spectrum, narrowbody replacement appears to be pushed out beyond the next decade as <b>robust build rates and backlogs</b> on the <i>Airbus A320</i> and <i>Boeing 737</i> continue, though the material of such a replacement for <i>Airbus</i> and <i>Boeing</i> remains undefined. <b>The manufacturers have each discussed openly that the benefits of composite technology in low-cycle long-haul operations may not carry over to high-cycle short-haul operations.</b> In the near-term, the question for <i>Boeing</i> is whether or not it can deliver the high performance expectations it has set for itself with the 787. <b><i>Boeing</i> has always touted a 10% better cash mile cost over the 767,</b> 20% improvement in fuel efficiency and 30% savings in maintenance costs. <b>Many of these ambitious performance considerations have been hit by reductions in the projected range of the aircraft from between 8,000nm and 8,500nm to between 7,650nm and 8,200nm, stemming from unanticipated weight gain and speculation regarding lagging fuel burn targets.</b> Both <i>Boeing</i> and the 787's engine suppliers, <i>General Electric</i> and <i>Rolls-Royce</i>, are undertaking aggressive weight reduction and engine performance improvement that will be incorporated by entry into service as well as later block-point improvements. <b>Some airlines have begun to publicly speculate as</b></p>	
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				<p>back in the late 1980s,' says Klapproth, referencing prior research into unducted rotor efficiency. Among airlines, the open rotor concept has a vocal supporter in the shape of <i>easyJet</i>, which in June 2007 proposed an open rotor-powered 'ecoJet' as a solution to aviation's impact on the environment. <b>'If you're going to spend \$10-\$15 billion dollars on a new plane, it's got to be considerably better,'</b> says <i>easyJet</i> strategic planning manager Hal Calamvokis. 'If you don't go open rotor you don't really deliver those significant benefits.' By this reasoning, the required performance gap simply cannot be bridged with crew productivity and maintenance cost improvements alone. The potential fuel savings steer Calamvokis toward open rotors. 'The price of jet fuel is not going to go down in the long term and in the long term carbon will be priced in some way, shape or form,' he says. 'For this generation of aircraft, it's fuel burn that we should be solving for.'</p> <p>On the noise issue, Calamvokis predicts that open rotor-powered narrowbodies will be quieter than the aircraft they replace. He cites the investigative work of the <i>Institute of Sound and Vibration Research</i> at the UK's University of Southampton. Even the lower speed of open rotor-powered aircraft (Mach 0.75 against the current narrowbodies' Mach 0.78) is not, in Calamvokis' opinion, a major drawback. 'As the price of fuel goes up we spot rational airlines, who are incentivising their crews correctly, flying slower,' he says, adding that some of the time lost in cruise can be clawed back through faster climb-out and descent. But enthusiasm for open rotor designs is not shared by all. <b>'Initial hopes that open rotors would be as fast as turbofans and have better fuel consumption have proven unfounded,'</b> argues Alan Epstein, vice-president of technology and environment at <i>Pratt &amp; Whitney</i>, which plans to develop a version of its geared turbofan (GTF) engine for the next generation of narrowbodies. 'Open rotors' specific fuel consumption per pound of thrust might be lower, but this is misleading,' says Epstein. 'The fuel burn required to push the airplane is what's important Open rotors will add tonnes of extra weight.' He insists that the GTF represents a 'faster and enormously quieter' option. <i>CFM's</i> Klapproth offers a very different assessment. <b>'We see no real advantage to a geared turbofan configuration, but we see some real headwinds in terms of operational reliability, particularly,'</b> he says. <i>Rolls-Royce</i> has kept its cards close to its chest, but battle lines are clearly being drawn in the race to power future narrowbodies. It is now the task of <i>Boeing</i> and <i>Airbus</i> to decide which option is best placed to deliver a bold leap forward. 'It's actually possibly quite fortunate that given the 787, A350, etc, they're just not physically capable of doing anything quickly, which gives us time to think radically," says <i>easyJet's</i> Calamvokis.</p>	
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				<p><b><u>Narrowbody replacement: Receding pressure</u></b> (<i>Mary Kirby in Philadelphia</i>)</p> <p>Less than two years ago, airlines seemed largely united in their demand that <i>Airbus</i> and <i>Boeing</i> accelerate plans to develop single-aisle replacement aircraft. But the pressure on airframers has subsided, for now, as carriers focus on the task of weathering a global economic crisis of epic proportions. <b>Airlines ended 2008 with a \$5 billion loss, and expect a further \$2.5 billion loss this year.</b> ‘To better illustrate what this means, the industry-wide top line revenues will fall by \$35 billion, or 6.5%. <b>The industry is getting smaller. Airlines are cutting capacity,</b>’ says IATA director general Giovanni Bisignani. With capacity reduction comes delivery delays and order cancellations. Indeed, <i>Airbus</i> and <i>Boeing</i> started the year with net orders in deficit after a raft of cancellations. As such, the clout wielded by airlines has diminished. ‘The only way airlines can get that <b>leverage</b> back is if the <i>Bombardier</i> CSeries becomes a big success,’ says <i>Teal Group</i> vice-president, analysis Richard Aboulafia. The <i>Pratt &amp; Whitney</i> geared turbofan (GTF)-powered CSeries has just received a key boost after <i>Lufthansa’s</i> board in March approved an order for 30 of the type, firming its 2008 initial commitment for up to 60 of the new jet. But other firm deals for the aircraft have not yet surfaced. ‘Airlines still need to replace aircraft in 2013 – that’s the year CSeries enters service. What we are finding, understandably, is that given the current financial situation many airlines are focused on short-term issues rather than completing their fleet negotiations for the long term,’ says <i>Bombardier</i>.</p> <p>If <i>Airbus</i> and <i>Boeing</i> feel threatened by the 110/130-seat CSeries, they are not showing it. Neither of the two firms has defined replacement plans for the A320 and 737. The lack of clarity has not slowed interest from engine makers, which are working to introduce significantly more efficient products. But, as it stands today, no new airframe is expected to appear until at least the last few years of the next decade. <i>Airbus</i> has been clear on this point. While remaining closed-mouthed as to how it aims to keep its A320 family competitive in the interim, the European firm’s chief operating officer John Leahy says he does not expect a replacement aircraft to come available before 2020. That gives <i>Bombardier</i> ‘a competitive advantage to be sure, particularly as CSeries is the only current family of aircraft designed specifically for the low-end, single-aisle market’, says <i>Bombardier</i>. The company estimates the needs of the 100- to 140-seat commercial aircraft market to be 6,300 aircraft, representing more than \$250 billion over the next 20 years. Should the CSeries fail to gain traction, however, the industry ‘should probably mourn rather than cheer’, says</p>	
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					<p>Aboulafia, as it will give airframers little incentive to move forward their timelines for replacement narrowbodies, especially in light of today's 'major impediments' to such development – slack passenger demand, cheap fuel and pressured research and development budgets. <b>This is going to have a damaging impact on the arrival of new technology,</b>' he says. <i>Air France-KLM has been trying to persuade Airbus and Boeing to launch a new narrowbody for years. KLM senior vice-president for fleet development and aircraft trading Jan Witsenboer late last year urged for quicker progress in their narrowbody replacement projects, saying: We wouldn't use an interim solution. We want a definite solution, preferably much earlier.'</i></p>	
17 Mar. 2009	<i>The Seattle Times</i> , "Jet Financiers See Production Cuts Coming Through 2011" (Dominic Gates)	Bertrand Grabowski, managing director of Germany's <i>DVB Bank</i>	Firm-Customers-Customer's Investors	$\alpha$ & $\beta$	<p>"PHOENIX — Airplane makers <i>Airbus</i> and <i>Boeing</i> remain bullish about 2009 jet-production rates. But their views are starkly at odds with the outlook of many financiers of the airplane business. At a major aviation-industry conference here, <i>Airbus</i> joined <i>Boeing</i> in insisting upon a forecast that at least in the short term is rosy, saying commercial-airliner production can hold steady this year. But the audience — <b>people who buy, sell or lease jet aircraft and the bankers who finance them — was mostly not persuaded.</b> Many at the annual conference of the International Society of Transport Aircraft Traders (ISTAT) were <b>skeptical the money can be found to pay for the roughly 965 jets Boeing and Airbus have scheduled for delivery in 2009.</b> Bertrand Grabowski, a managing director of Germany's <i>DVB Bank</i>, a major European financier of airplanes, said that with the airlines facing rapidly falling demand, <b>the only question is how much and how soon both Airbus and Boeing will cut production for 2009 through 2011. 'They will have to do it. It's a matter of fact,'</b> said Grabowski in an interview. <b>'How would you like to see your client bleeding by taking delivery of aircraft they don't need?' He expects production cuts starting later this year, and worse to come in 2010 and 2011.</b> That assessment, in line with those of other analysts who asked not to be named, <b>contrasted with the presentation by Mark Pearman-Wright, head of leasing and investor marketing at Airbus.</b> Pearman-Wright insisted funding for this year's <i>Airbus</i> deliveries is secure and that <b>the plane maker will flatten rather than cut production in 2010 and 2011. 'We don't see a problem in funding the deliveries until the end of the year,'</b> he said, echoing the message of <i>Boeing Commercial Airplanes</i> Chief Executive Scott Carson to a Wall Street audience last week. <b>'I've noticed the manufacturer mindset is more bullish,'</b> said Pearman-Wright. <b>'It's not so much Airbus versus</b></p>	On modular and integral enterprise architectural approaches to managing capacity.

					<p><b>Boeing. It's the manufacturers versus the financiers.'</b> In a sobering assessment to kick off the conference Monday morning, respected industry economist Adam Pilarski, of <i>Avitas</i>, at least agreed with the manufacturers that this year's deliveries are relatively safe. But Pilarski went on to forecast that <b>production will 'fall off a cliff' in 2011. 'The crash has to happen and it will be severe,'</b> said Pilarski. <b>His prediction of combined Airbus and Boeing production for that year is an ominous 666 airplanes, a 30 percent drop from today. Pearman-Wright protested: 'We don't see that at all.'</b> Yet across the conference, the complaint is that credit is frozen and money is not available. <b>Leasing companies in recent years have had ready access to debt to finance the bulk of their purchases of new airplanes.</b> They have sold either older airplanes or stock to raise the cash for the roughly 20 percent equity they must put up with such purchases. Now, they have access to neither cash nor credit. 'Raising equity and debt has become more than a challenge,' said ISTAT President Mike Platt, chief investment officer with jet-leasing company <i>Aircastle</i>. Pilarski ended his presentation grasping for optimism. He agreed that eventually air traffic will return to its historic upward climb and the industry will recover. 'The long-term future of aviation is still solid,' said Pilarski. But as <i>DVB Bank's</i> Grabowski put it: <b>'The problem is 2009, 2010 and 2011.'</b></p>	
17 Mar. 2009	<p><i>BusinessWeek</i>, "Emirates Slams Airbus on A380 Defects" (Dinah Deckstein) – translated from <i>Der Spiegel</i> online</p>		Customer	β	<p>"Executives who are able to produce halfway decent business figures have become a rarity in the current financial crisis. Thus it comes as no surprise that Louis Gallois, 65, visibly enjoyed his appearance at a press conference held in an aircraft hangar belonging to an aviation museum near Munich on Tuesday of last week. Gallois, who is CEO of the European aerospace and defense giant <i>EADS</i>, was clearly in high spirits as he reported on the group's successes from the previous year. Sales rose by 11 percent and profits increased to about €1.6 billion (\$2.1 billion). <i>EADS</i> even exceeded its internal cost-cutting targets. But Gallois became significantly more subdued when he was asked about the coming months. He said that he had no idea how many—if any—aircraft orders will be cancelled by customers in the near future. The A400M, a military transport plane which has been <b>delayed for more than four years</b>, also apparently poses a considerable potential threat to <i>Airbus</i> and its parent company, <i>EADS</i>. Gallois conceded that if the buyer countries pulled out of the prestigious project, the group would have to repay close to €6 billion (\$7.8 billion) to their governments. This would put an enormous dent in <i>EADS's</i> <b>ample financial cushion of around €9 billion (\$11.7 billion).</b></p>	<p>On an integral enterprise architecture's disintegration.</p>

				<p>There is another, even more pressing problem, one that the head of <i>EADS</i> preferred not to even mention. And yet it has triggered consternation at its most important subsidiary, <i>Airbus</i>. In mid-February, senior executives from <i>Airbus</i> and the airline <i>Emirates</i>, the biggest customer for <i>Airbus's</i> A380, attended a crisis meeting in Toulouse to discuss the super-jumbo. Last summer, after a roughly two-year delay, the Arab airline took delivery on the first of 58 A380s it had ordered. The airline currently operates four jets in this series. Nine others are in use at <i>Singapore Airlines</i> and the Australian airline <i>Qantas</i>. The <i>Airbus</i> executives could not have liked what they were told and shown by the <i>Emirates</i> representatives. In a <b>46-slide presentation</b>, the aviation experts painstakingly listed what they viewed as the giant jet's serious growing pains. To illustrate their points, they included snapshots of <b>singed power cables, partially torn-off sections of paneling and defective parts of thrust nozzles in the engines as evidence of what they described as a shoddy work ethic at <i>Airbus</i> and its suppliers.</b> The confidential manufacturer's information has since been leaked to employees, <b>triggering a mood of panic.</b> <b>'Many good people have resigned and are trying to move to other projects,'</b> reports a concerned insider. <i>Airbus</i> is doing its best to calm the waves. 'We take our customer <i>Emirates'</i> criticism very seriously and are doing everything in our power to correct any reports of deficiencies as quickly as possible,' says an <i>Airbus</i> spokesman. He also confirms a <b>'number of individual incidents that have impaired the operation but not the safety of the aircraft.'</b> Crisis meeting? Cable problems? These words are reminiscent of a humiliating chapter in the company's more recent history, one that <i>Airbus</i> managers and their CEO, Tom Enders, would rather see stricken from the annals of the company. Because of production problems and labor disputes in recent years, the mega-plane, celebrated by experts and aviation fans alike, has been the cause of vast amounts of additional work and a significant loss for its producers in the past few years. Some senior executives are even suspected of having lined their pockets through stock deals and of having concealed the true extent of the A380 debacle from outside shareholders for far too long. Through a massive effort, the group did manage to deliver 12 of its flagship jets last year. It expects to build another 18 this year and hand them over to customers. <b>The problems seemed to have been corrected, and the company recently began a gradual shift from the costly and time-consuming manual assembly of the A380 to the long-planned commercial series production.</b> <i>Airbus</i> seemed to have cleaned up its act, only to be confronted by the incendiary information from the Middle East. The list of defects</p>	
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				<p>was long on clear language and short on diplomatic niceties. On one of the slides, the experts provide a detailed list of the prestigious plane's various breakdowns. They say that the A380 has already been grounded nine times, which represented a loss of close to 500 operating hours. In 23 cases, say the <i>Emirates</i> managers, replacement aircraft had to be obtained at short notice. Minor glitches, the critique continues, happen in <i>Emirates'</i> A380 fleet about once every two days. In the medium term, the <i>Emirates</i> experts write, the airline could face the <b>'threat of a loss of confidence in the aircraft and the brand image of the <i>Emirates</i> A380.'</b> The <i>Airbus</i> managers want to make sure that this doesn't happen. They have sold only about 200 of their flagship jets to date. According to industry estimates, <i>Airbus</i> will have to sell about twice as many A380s to recoup its costs. Enders and his staff are now doing everything possible to placate angry customers. Each individual problem report is analyzed and simulated. <b>'Defects are traced back to their origin and corrected,'</b> explains an <i>Airbus</i> spokesman. 'We have already made great progress in this respect in recent weeks.'</p> <p>Both <i>Airbus</i> and <i>Emirates</i> have reacted to this story since it was released on Saturday ahead of publication in Monday's edition of <i>Der Spiegel</i>. <i>Airbus</i> said Sunday it was taking <i>Emirates'</i> criticism of the A380 'very seriously.' 'We are doing everything we can to overcome the issues,' an <i>Airbus</i> spokeswoman told <i>Reuters</i>. <b><i>Emirates</i> for its part told the news agency that it has a 'good relationship with <i>Airbus</i>' and that it would 'continue to work closely with them to address these technical matters.'</b> The <i>Emirates</i> spokeswoman said that the airline remained confident in the A380 and had no plans to cancel orders. In addition, the aircraft manufacturer is storing additional replacement parts directly on-site in places where the super-jumbo is now in use, so as to be able to respond more quickly to problems as they arise. <i>Airbus</i> also plans to expand the rapid response team it created specifically to address A380 concerns. It is even considering making some changes to individual components. In private, <i>Airbus</i> executives point out that problems are also encountered with other new aircraft models when they are used in commercial aviation. Some 23,000 individual parts are used in the cabin area alone, managers say, meaning that teething problems cannot be ruled out completely. After all, they say, the reliability of all parts and systems can only be proved once the aircraft is in operation. Whether these and other explanations will convince <i>Emirates</i> remains to be seen. In its damning presentation, the company also sharply criticizes the production processes at <i>Airbus</i>. For example, <b>the <i>Emirates</i></b></p>	
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					<p><b>report concludes, the A380 models were not sufficiently tested before being delivered to customers.</b> Experts, on the other hand, note that no other jet has ever been as thoroughly tested as the giant <i>Airbus</i>. Nevertheless, they say, not all conceivable scenarios involving every single part could have been simulated in the dry runs. Some of the problems could hardly have been foreseen, such as one involving the plane's shower facilities. So far <i>Emirates</i> is the only A380 customer to provide two showers in first class. A determined female passenger who was unable to operate the showerhead promptly tore out the entire fixture—and flooded the shower room. <b>The <i>Emirates</i> experts believe that <i>Airbus</i> should choose its suppliers more carefully and limit their numbers. They also say that the constant transport of parts and employees among <i>Airbus</i>'s locations throughout Europe makes it more difficult to comply with prescribed quality standards.</b> ‘Our work is well organized and properly inspected,’ counters an <i>Airbus</i> spokesman. He also points out that <b>A380 production is becoming more and more normalized.</b> It is still not clear how the spat between the aircraft maker and its dissatisfied customer will end. Competitors <i>Singapore Airlines</i> and <i>Qantas</i> have also had to ground their A380 jets several times in recent weeks and months. The Asians have had trouble with the fuel pumps and the on-board electronics. The Australians noticed that the highly sensitive measuring sensors in the tank were not working properly, although it is still unclear whether the problem was attributable to the devices themselves or was caused by impurities in the fuel. <b>Unlike <i>Emirates</i>, <i>Singapore Airlines</i> and <i>Qantas</i> have taken a more relaxed approach to the problems.</b> However they, unlike the Arabs, have not just ordered dozens of new A380s. <b>Since the end of last week, the Dubai-based airline has however tried to defuse the conflict. ‘Technical problems are to be expected in a new aircraft, especially one in which so many new technologies are used,’ says an <i>Emirates</i> spokesman. He is also quick to point out that order cancellations are not planned. The A380, he says, is an ‘outstanding airplane.’”</b></p> <p><u>(Reader Comment from “Handsome”):</u>  “‘These growing pains will be overcome - the B747 had a bunch of them also - back in the day! <i>Airbus</i> will solve these issues - <b>I have found <i>Airbus</i> to be more agile and aggressive in solving new product development problems than their brethren in Chicago/Seattle/DC - based on my experience with the two supply chains!!”</b>”</p>	
18 Mar. 2009	<i>Seattle Times</i> , “Money’s Short	Bob Genise, chief executive	Firm-Customer-Custo	$\alpha$ & $\beta$	“The leading players in the world of aviation financing said Tuesday there is a multibillion-dollar ‘funding gap’ between all the <i>Boeing</i> and <i>Airbus</i> jets due for delivery this year and the money to pay for	On modular and integral

	<p>to Pay for <i>Boeing</i>, <i>Airbus</i> Jets, Experts Warn” (Dominic Gates)</p>	<p>ve of Dubai-based airplane lessor <i>DAE</i>; Stephen Udvar-Hazy, chief executive of <i>International Lease Finance Corp.</i>; Bertrand Grabowski, managing director of Germany's <i>DVB Bank</i></p>	<p>mer's Investors</p>	<p>them. Bob Genise, the chief executive of Dubai-based airplane lessor <i>DAE</i>, provided a stark image of what that means to <i>Boeing</i>. Genise, who maintains a home in Seattle, said he'll be surprised if he doesn't see <b>'white tails'</b> parked alongside <i>Boeing</i> Field when he's driving on Interstate 5 toward the end of the year. That's aviation slang for completed jets whose buyers don't have the money to take possession. <b>There haven't been any white tails at Boeing for years.</b> Walt Skowronski, president of <i>Boeing Capital</i>, the company's jet-financing unit, conceded that a gap exists, pegging it at somewhere between zero and \$5 billion. Yet he offered assurances that <i>Boeing</i> can manage its scheduled deliveries through the problem. Stephen Udvar-Hazy, chief executive of <i>International Lease Finance Corp.</i> (ILFC), the world's largest aircraft lessor and the biggest customer of both <i>Boeing</i> and <i>Airbus</i>, wasn't reassured. His company is owned by <i>AIG</i>, the giant insurer that's still struggling despite billions of dollars in federal bailout money. <b>'When a bomb explodes, the light flash travels a lot faster than the sound,'</b> said Udvar-Hazy. <b>'The flash occurred in September. But the sound hasn't reached Seattle and (Airbus headquarters in) Toulouse yet.'</b> He and other leading airplane-financing experts spoke at the annual conference of the International Society of Transport Aircraft Traders (ISTAT). They suggested the funding gap caused by the virtual freezing of bank lending is much bigger than Skowronski's estimate, anywhere from \$10 to \$20 billion, and that <i>Boeing</i> would face severe consequences, such as:</p> <ul style="list-style-type: none"> <li>• Cutting production rates as early as the fourth quarter, eventually reducing <b>output by as much as a third — which inevitably would mean slashing jobs.</b></li> <li>• Having to <b>finance airplanes itself</b>, putting in up to three times the \$1 billion it anticipates, yet still not closing the funding gap.</li> </ul> <p>Robert Morin, vice president of the federal <i>Export-Import Bank</i>, said the government is ready to offer as much as \$10 billion in guarantees to help finance U.S. airplane sales going overseas, mostly for <i>Boeing</i> jets. But that likely won't be enough to close the gap, said the experts at ISTAT. <i>Boeing</i> executives offered repeated assurances that all deliveries for this year are financed. But Bertrand Grabowski, managing director of Germany's <i>DVB Bank</i>, called that an 'act of faith.' In an interview, he said troubled banks have made soft commitments to both <i>Boeing</i> and <i>Airbus</i> customers that they may not be able to keep. <b>'Some of the Boeing deliveries are not secure ... for the last quarter of this year,'</b> Grabowski said. Some recently European nationalized banks "have absolutely no clue if they can deliver what they signed term sheets for," he said. <b>European banks</b></p>	<p>enterprise architectural approaches to managing capacity.</p>
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					<p><b>have dominated aviation financing in the last decade.</b> Udvar-Hazy said at least half of those that used to be in aviation are now ‘totally shut out’ of the market. Grabowski forecast that \$5 to \$7 billion of deliveries scheduled for 2009 — mostly for <i>Boeing</i> and <i>Airbus</i> and with a few for Brazilian jet maker <i>Embraer</i> — will ‘evaporate’ by year-end. <i>Boeing</i> and <i>Airbus</i> would then have two choices, said Robert Martin, chief executive of <i>BOC Aviation</i>, a Singapore-based leasing company owned by Bank of China: <b>‘They either fund those deliveries themselves or cut back production.’</b> <i>Boeing Capital’s</i> Skowronski said the company expects to have to provide about \$1 billion in financing to its customers this year, but is ready to give more. ‘If it were to go to \$2 billion or \$3 billion, that’s generally not going to be a problem,’ he said. The U.S. government, represented by the <i>Export-Import bank</i>, will close part of the gap by increasing its loan guarantees from a typical \$4 billion to \$5 billion a year, to \$9 billion or \$10 billion. Ex-Im’s Morin said <b>2009 could be the toughest year of the down cycle.</b> He expects to finance 150 to 170 airplane deliveries in 2009, <b>mostly Boeing wide-bodies.</b> <i>The European Export Credit Agencies</i> will offer a similar dollar amount in loan guarantees to support between 200 and 300 <i>Airbus</i> deliveries, <b>mostly less expensive narrow-bodies.</b> <b>‘This is making 9/11 look like a speed bump,’ said DAE’s Genise.</b> ‘The liquidity crisis is not turning around in three months,’ he said. ‘It’s not turning around in six months. <b>It’s a major disaster for the global economy and it will be a major disaster for the airline industry and the manufacturers.’</b>”</p>	
18 Mar. 2009	<i>Air Transport Intelligence news</i> , “ <i>ILFC</i> Chief Recommends <i>Airbus</i> and <i>Boeing</i> Slash Production 25%” (Mary Kirby)	Steven Udvar-Hazy, CEO <i>ILFC</i>	Firm-Customer-Customer’s Investors	α & β	<p>“Leasing companies today recommended that <i>Airbus</i> and <i>Boeing</i> should slash production by about 25 percent due to the current difficulties faced by operators and lessors in financing aircraft in today’s economic environment. <i>ILFC</i> chief Steven Udvar-Hazy believes a 25-to-30 percent cut makes sense, while others on a leasing panel today at ISTAT suggested ‘similar’ reductions, albeit at a slightly lesser range. <b>Whatever the amount, Udvar-Hazy believes it is ‘inevitable’ there is going to be production cuts, ‘it’s just a matter of when and to what degree’.</b> Most speakers this week at ISTAT have identified a significant funding gap in aircraft ordered and those that will be financed.</p> <p>Responding to these comments, a <i>Boeing</i> executive in the audience said <b>aircraft are committed to production in 2009 and if an airline can’t finance it, ‘we’ll have whitetails’.</b> But in 2010 and beyond <i>Boeing</i> ‘will be looking very carefully at supply and demand so that we don’t overproduce’, he says. <i>An Airbus executive in the audience also</i></p>	On modular and integral enterprise architectural approaches to managing capacity.

					<p>chimed in, noting that <i>Airbus</i> is currently producing 34 A320s per month, down from a previous rate of 40 per month. ‘We continue to monitor it’ and <i>Airbus</i> is being ‘<b>realistic and proactive</b>’, he says.”</p>	
18 Mar. 2009	<p><i>Air Transport Intelligence</i> news, “<i>ILFC</i>’s Hazy: <i>Boeing</i>’s Initial 787s will be Overweight” (Mary Kirby)</p>	<p>Steven Udvar-Hazy, CEO <i>ILFC</i></p>	<p>Firm-Customer</p>	<p><math>\alpha</math> &amp; <math>\beta</math></p>	<p>“<i>Boeing</i>’s initial batch of 787s will be delivered overweight, despite <i>Boeing</i>’s strong efforts to rectify the problem, <i>ILFC</i> chief Steven Udvar-Hazy said today at the ISTAT conference in Phoenix. ‘<b>Rest assured that the first batch of 787s will be overweight,</b>’ said Udvar-Hazy in response to a question posed by ATI. The <i>ILFC</i> chief notes that <i>Boeing</i> is injecting a lot of resources ‘into rectifying that problem’ and rectifying the additional ‘empty weight’ on the first 787s.</p> <p>‘<b>In the long run, this will be an excellent aircraft. But I pity the airlines that get the first ones.</b> Obviously those aircraft will not be the same standard as those 787s later on.’”</p>	<p>On a modular enterprise architecture’s over-promise and under-delivery.</p>
19 Mar. 2009	<p><i>Schaeffers Research</i>, “<i>Wall Street Sentiment Sours on The Boeing Company</i>” (Joeyln Drake)</p>		<p>Firm-Investor</p>	<p><math>\alpha</math></p>	<p>“<i>The Boeing Company</i> is struggling to climb into the black this morning after some negative brokerage comments hit the Street. Falling freight demand is likely to bring about more delivery deferrals for <i>Boeing</i>’s popular 777 jet plane, <i>JPMorgan</i> stated in a note. Before the open, the brokerage firm slashed its earnings-per-share estimate for <i>Boeing</i>, <i>Precision Castparts Corp.</i>, and <i>Spirit Aerosystems Inc.</i>. The brokerage firm cut its delivery expectations for the 777 this year to 80 from 82, and to 70 deliveries next year from 80. ‘The correction of global economic imbalances, particularly the credit-fueled bubble of American consumer demand, has significant implications for the 777 perhaps more than any other aircraft,’ <i>JPMorgan</i> said. ‘<b>We believe the announcement of a production cut could be in the cards in the coming weeks.</b>’ Sentiment on Wall Street has somewhat bearish leanings at the moment. <i>Zacks</i> reports that the security has earned 7 "buy" ratings, 10 "holds," and 2 "sells." <b>Considering the stock’s weak technical performance, there is still room for potential downgrades, which could pressure the security lower.</b> What’s more, the average 12-month price target for BA stands at \$49.37, according to <i>Thomson Reuters</i>. This estimate implies that <b>analysts are expecting the shares to skyrocket more than 46% during the next 12 months.</b> Any price-target cuts from this group could also have negative implications for the shares. Technically speaking, the security has rolled higher from its March low and is currently sitting on support at its 10-day moving average. However, the stock is still below staunch resistance at its declining 10-week and 20-week moving averages. <b>These intermediate-term trendlines have guided the shares lower since mid-October 2007, resulting in a loss of more than 67%. Not surprisingly, this</b></p>	<p>On the mental models of investors of a modular enterprise architecture.</p>



					<p><b>negative price action has garnered the stock some pessimism from options players.</b> The Schaeffer's put/call open interest ratio for BA comes in at 1.14, as put open interest outnumbers call open interest among near-term options. This reading is higher than 93% of all those taken during the past year, indicating that <b>options players have been more pessimistically aligned toward the shares just 7% of the time during the past year.</b> This preference for puts can also be seen in the action on the International Securities Exchange. During the past 10 trading sessions, 5 puts have been purchased to open for every 1 call purchased to open. This ratio of puts to calls is higher than 98.8% of all those taken during the past 12 months, <b>pointing to extreme pessimism among options players.</b> Digging into the stock's open interest configuration, we find that peak put open interest in the March series sits at the 30 strike, with nearly 4,500 contracts. The April 30 put also has open interest of nearly 4,500 contracts. Meanwhile, the bulk of the stock's put open interest sits in the May series. The May 50 put has open interest of 21,400 contracts, the May 35 put has open interest of 18,700 contracts, and the May 30 put has open interest of 10,100 contracts. On the other hand, peak March call open interest sits at the 35 strike and numbers fewer than 4,100 contracts. The April 35 call has open interest of 8,800 contracts. Meanwhile, peak May call open interest sits at the 35 strike, with 15,200 contracts. The overall preference for puts over calls indicates that <b>investors have low expectations for the shares during the near term.</b> However, considering the stock's weak technical performance, this pessimism is to be expected. <b>One group hasn't jumped on the bearish bandwagon. Short sellers have avoided this stock, as less than 2% of the company's total float has been sold short. If the equity continues its downtrend, it's likely to attract some of these bears. An increase in short selling could pressure the security lower."</b></p>	
26 Mar. 2009	USA Today, "Boeing Says It's Flying High Despite Recession" (Dan Reed)	Scott Carson, CEO, Boeing Commercial Airplanes	Firm-Customers	$\alpha$	<p>"The biggest sales boom in <i>Boeing's</i> cyclical history of making commercial passenger jets has come to a screeching halt. After selling 4,134 planes the past four years, <i>Boeing Commercial Airplanes</i>, the company's jetliner division, is racking up more cancellations than orders for new planes this year. Industry analysts warn that more cancellations may be in the offing as people are flying less in the global recession. <b>But top executives at Boeing, the USA's largest exporter by value of goods sold abroad, remain publicly confident. They've announced only 4,500 job cuts so far — far fewer than the roughly 30,000 laid off after the downturn in travel following the Sept. 11 terror attacks. And none of the cuts are on the assembly line.</b> They're betting on two things to keep production humming for years: the company's staggering \$270 billion</p>	On a modular enterprise architecture's attempts at output stability like an integral enterprise architecture.

				<p>backlog of orders; and belief that the 30-year trend of growing demand for air travel will continue beyond the current downturn. At current production rates, it will take seven to eight years for <i>Boeing</i> to deliver the nearly 3,700 jetliners on backlog, says Randy Tinseth, the company's marketing vice president. <b>'We've clearly got a much larger backlog than we've ever had in previous cycles,'</b> Tinseth says. <b>'That gives us flexibility as we go through this downturn.'</b></p> <p><b><u>DREAMLINER: Boeing's long-awaited 787 may finally take to air</u></b></p> <p>Scott Carson, CEO of the commercial airplanes division, told investors at the <i>JPMorgan Chase</i> conference in New York earlier this month that over the next 20 years the market 'is a rich opportunity for us,' whether the ultimate demand for commercial jets is 29,000 planes, as <i>Boeing</i> projects, or just 27,000 if cancellations continue. 'We're playing from a position of strength,' he said. <b>Are Boeing's leaders just whistling past the graveyard by believing that economic forces that have engulfed many large and successful companies in the past six months won't ensnare the manufacturing giant?</b> Richard Aboulafia thinks so. <b>'Yes, Boeing has a record backlog, but only a fool would believe in it,'</b> says Aboulafia, an aircraft manufacturing analyst at <i>Teal Group</i> in Fairfax, Va. If airlines in the USA and around the world are flattened financially by severe recession and deeply diminished demand, they will not hesitate to forfeit down payments and walk away from so-called firm orders for new planes, he says. Even if carriers negotiate delivery deferrals rather than cancellations, <i>Boeing</i> won't get hundreds of millions of dollars in the next few years that it expects to be paid upon completion of those planes, he says. <i>Boeing</i> will start feeling the pinch in 2010, Aboulafia predicts. He says financing is available for all the planes that <i>Boeing</i> and its chief rival, Europe's <i>Airbus</i>, plan to deliver to the airlines this year. 'But after that,' he says, 'all bets are off. <b>In a serious downturn — and this certainly is one — production typically falls by about a third. I can't see why in this downturn it would be different.'</b></p> <p><b><u>Others much less confident</u></b></p> <p><b>Others are more pessimistic. Robert Stallard at Macquarie Research in New York lowered his rating on Boeing in January, warning that the company 'is underestimating the potential for lower airline demand.'</b> Joseph Nadol at <i>JPMorgan</i> last week cut his earnings estimates for <i>Boeing</i> and <i>Airbus</i> for this year and next. In addition to rapidly weakening demand for passenger planes, Nadol said, the cargo version of <i>Boeing's</i> 777 is in particular</p>	
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					<p>\$7 billion to \$9 billion in loan guarantees issued to foreign carriers and leasing companies. About 90% of the planes <i>Boeing</i> expects to deliver this year are destined for companies outside the USA. Morin says he's hopeful that bank-supported aircraft leasing will decline next year and beyond as commercial lenders warm back up to the market. Though it's too early to call it a trend, Morin says, commercial lending on airplanes picked up a bit in the current quarter after extraordinarily tight lending at the end of last year driven by the global liquidity crisis."</p>	
31 Mar. 2009	<p><i>Financial Times</i> "EADS Reassures Customers Over Future of A400M" (Peggy Hollinger and Sylvia Pfeifer)</p>	<p>Louis Gallois, CEO, EADS</p>	Firm	β	<p>"EADS is prepared to accept a limited cut in orders for the A400M military transport plane, in a bid to keep Europe's biggest defence contract alive as government clients grow restless over rising costs and long delays. Louis Gallois, EADS chief executive, speaking in an interview with the <i>FT</i>, said for the first time that a limited reduction in orders would be 'manageable' for the Franco-German aerospace group. However, he said any significant cut would have 'an impact on the price of the planes' - a clear signal to the seven governments that launched the troublesome €20bn (\$26.3bn) project in 2003 that they should not push too hard for concessions. Mr Gallois' comments came as EADS sought to reassure customers and the market that it remained committed to the A400M programme, already €2bn over budget and three years late. Doubts over EADS's determination to continue with the programme were raised at the weekend by Tom Enders, head of the group's aircraft arm <i>Airbus</i>, who suggested in an interview with <i>Der Spiegel</i> magazine that he would rather scrap the programme than continue under the current contract. Cancellation could force EADS to pay back €5.7bn in advance payments, more than half its net cash. <i>Occar</i>, the pan-European procurement agency that placed the original order for 180 aircraft, is preparing to launch official negotiations with EADS over the terms of the contract. This month, the governments agreed a three-month moratorium on cancellations from today to allow the talks to go on. But talks come as the enthusiasm of some of the original customers - notably Germany and the UK - for the aircraft may be waning. Mr Gallois said yesterday he was confident a solution would be found. The EADS chief appears to be betting that politicians will put pressure on defence ministries to resolve the disagreements over penalties in order to preserve jobs in a highly sensitive sector. <b>'This programme is going to fly because the defence and industrial challenges are considerable,' he said. 'They need this plane and it is also about 40,000 highly qualified jobs in Europe. We have to find a solution together.'</b> Nonetheless, the UK government, which ordered 25 aircraft and urgently needs a new transport aircraft for operations in</p>	<p>On the leadership of an integral enterprise architecture.</p>

					Afghanistan, increased pressure on <i>EADS</i> yesterday, warning it would ‘not be content with a gap in capability’. John Hutton, secretary of state for defence, told MPs the delays were a ‘matter of extreme regret’ that posed ‘very serious questions’ about the future of the UK’s military logistics capabilities. He said the government would decide whether to go ahead with the programme at the beginning of July but warned: ‘We will not be content with a gap in capability.’ The UK is considering alternative options to bridge the delivery gap, including extending the out-of-service dates of the ageing C-130 Hercules aircraft, and buying more C-17s from <i>Boeing</i> , the US jetmaker. Mr Gallois said he expected <i>Airbus</i> to deliver a new timetable to customers after agreeing a delivery date for the propulsion system software, known as <i>Fadec</i> .”	
31 Mar. 2009	<i>Aviation International News</i> “Humbled Boeing Prepares to Fly 787” (Gregory Polek)	Scott Carson, CEO, <i>Boeing Commercial Airplanes</i>	Firm	$\alpha$	“Demonstrating a degree of public humility many feel has been all too absent among the bankers collectively responsible for the global financial crisis, <i>Boeing Commercial Airplanes</i> CEO <b>Scott Carson offered no further excuses for the delays that have plagued the 787 and 747-8</b> this month during the <i>J.P. Morgan</i> Aviation and Transportation Conference in New York. ‘The stumbles we have made have been embarrassing for us,’ Carson said. ‘They’ve been embarrassing for our customers, who were counting on us to have the right product in place at the right time.’ <b>To avoid further embarrassment ‘will require us to be humble,’ continued Carson. ‘This will require us to not be taken at our word, but to be [judged] by our actions.’</b> Meanwhile, said Carson, <i>Boeing</i> continues to make ‘solid progress’ toward a <b>third-quarter 2010 first delivery of the 747-8</b> , the first wing for which was ready to come out of its jig and be placed into the so-called lay-down position in preparation for attachment to the fuselage.”	On a modular enterprise architecture’s overpromise and under-delivery.
3 Apr. 2009	<i>Wall Street Journal</i> , “Boeing Shuffles 787 Order Book; No Takers for First Six” (Ann Keeton)		Firm	$\alpha$	“ <i>Boeing Co.</i> has reshuffled the customers for initial deliveries of its delayed 787 and <b>set aside plans to send the first six aircraft into commercial use</b> , according to a published report. The move would see launch customer <i>All Nippon Airways</i> take 11 of the first 30 aircraft, while Chinese carriers appear to have slipped from the first deliveries scheduled for next year, according to flightblogger.com published by U.K.-based <i>Flight International</i> . <i>Boeing</i> declined comment on the report, which comes ahead of the first test flight scheduled for June. The 787 is more than two years behind schedule, with its launch delayed several times by supply and design problems. According to flightblogger, <i>Boeing</i> is switching some aircraft to <i>ANA</i> that had been destined for <b>Chinese airlines, who originally hoped to have the 787 in time for last year’s Beijing Olympics</b> . The Japanese carrier declined comment.”	On the additional costs associated with an overly-aggressive design and production schedule of a modular enterprise architecture.
6	<i>The</i>	Tom	Firm-	$\beta$	“ <i>Airbus</i> production boss Tom Williams has <b>spent</b>	On an

<p>Apr. 2009</p>	<p><i>Wall Street Journal</i>, "Airbus Aims to Pull Back Without Stalling"  (Daniel Michaels)</p>	<p>Williams, Airbus VP of Operations</p>	<p>Suppliers</p>	<p><b>the past five years raising the European plane maker's output.</b> Now, as airlines defer deliveries and cancel orders, he faces a <b>difficult balancing act: downshifting factories without killing prospects for a recovery.</b> <i>Airbus</i> said Friday that it booked orders for just 16 planes in March, compared with 54 orders in March 2008 and 37 orders the previous year. The company has said it may capture only between 300 and 400 new orders this year, down from 777 orders minus cancellations last year. <b>Building jetliners is so complex that slamming on the brakes can be almost as tough as hitting the gas.</b> Factories that Mr. Williams had recently optimized for fast production by adding equipment and staff must pull back without letting the fixed expense per plane rise painfully. <i>Airbus's</i> dozens of suppliers, which provide components ranging from tiny rivets to massive landing gear, can't get stuck with warehouses full of unsold parts or idle factories, or they will be too weak when demand returns. And laying off skilled workers could cause a brain drain that slows an eventual recovery. 'It takes a long time for us to train our folks who design and assemble planes, so we've got to be careful,' said Mr. Williams, <i>Airbus's</i> executive vice president for programs, in an interview at the company's headquarters here. Since 2003 <i>Airbus</i> has increased production of its planes by 60%, to a record 483 deliveries last year. But in October the unit of <i>European Aeronautic Defence &amp; Space Co.</i> shelved plans for further increases, and in February said it would reduce deliveries of its popular single-aisle models to 34 a month from 36 and consider further cuts. <b><i>Airbus</i> is trying to trim output without hurting chances for a recovery.</b> <i>Airbus</i>, and U.S. rival <i>Boeing Co.</i>, which said it would lay off 4,500 workers but keep output steady this year, are reacting much more cautiously than other major industrial companies to the global economic slowdown. <i>United Technologies Corp.</i>, which makes aerospace equipment, air conditioners and elevators, in March said it will cut 5% of its work force, or 11,600 jobs. <i>Caterpillar Inc.</i>, which makes construction equipment, has announced some 24,000 layoffs as it slashes output and mothballs production lines. <b>Airlines and industry officials predict <i>Airbus</i> and <i>Boeing</i> will have to cut output more drastically to avoid producing planes that customers can't take.</b> Douglas Harned, aviation analyst at <i>Sanford C. Bernstein &amp; Co.</i> in New York, predicted in a report published last month that <i>Airbus</i> and <i>Boeing</i> will have to cut deliveries next year by 20% from current plans. Aircraft lessors recently called on both plane makers to cut production to avoid glutting the market and undermining the value of planes on their balance sheets. <b><i>Airbus</i> and <i>Boeing</i> officials say building</b></p>	<p>integral enterprise architecture's approach to stable growth.</p>
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					<p>he talks with other contractors to judge the market. <b>'Of course we'd like to have more robust information, but it's very difficult for Airbus themselves to have an accurate forecast,'</b> Mr. Bolette said. <b>In France, the government has said it can now help small aerospace companies that hit trouble by tapping a special fund of up to [euro]100 million (\$136 million) that was established last year. Dubbed <i>Aerofund</i> and financed partly by <i>EADS</i>, the kitty was initially envisioned to help suppliers grapple with the strong euro and the challenges of investing for expansion. Mr. Gallois at <i>EADS</i> recently urged other European governments to follow the model. Even as <i>Airbus</i> and its suppliers throttle back, Mr. Williams is planning for an eventual upturn. From the day <i>Airbus</i> decides to boost or cut output, its supply chain needs around a year to react through steps such as hiring staff, buying machine tools and sourcing raw materials. To shorten that period, Mr. Williams' team has violated a key tenet of lean manufacturing -- keeping parts inventories to a minimum -- and squirreled away extra supplies of components that take particularly long to prepare, such as the metal forgings inside landing gear. 'With a limited investment, we'll buy strategic components with very long lead times and carry them ourselves,' Mr. Williams said. 'It gives us more flexibility.'</b></p>	
10 April 2009	<i>The Seattle Times</i> , "Job Cuts Will Follow Boeing's Jet-Assembly Slowdown" (Dominic Gates)	Scott Carson, CEO, <i>Boeing Commercial Airplanes</i>	Firm-Suppliers-Labor	α	<p>"Hit by the global trade downturn that has left airlines struggling, <b><i>Boeing</i> finally conceded Thursday it will slash production at its widebody jet-assembly plant in the middle of next year. The move will hit employment in 2010 at the Everett plant, which has some 28,000 workers, and could cause layoffs at <i>Boeing</i> suppliers even this year. It also triggers accounting changes that will cut back company profits starting this quarter. <i>Boeing</i> spokesman Jim Proulx said the company anticipates the work slowdown will bring 'employment reductions beyond those already announced.'</b> Earlier this year, <i>Boeing</i> said it would reduce its commercial-airplane work force by 4,500 by the end of 2009, but said it planned no slowdown in output. In the most significant production change, <b><i>Boeing</i> will slow monthly output of its large 777s in June 2010 from seven planes a month to five — a 28 percent cut.</b> The planemaker also said it will delay previous plans to modestly increase production of its 747-8 and 767, each currently at about one per month. Some cuts to jet production were widely anticipated. Last month, <b><i>Boeing Commercial Airplanes</i> Chief Executive Scott Carson said a 10 percent production-rate cut was possible next year. But the company has downplayed industry observers' predictions of wider slowdowns. <i>Boeing's</i> airline customers, especially those buying</b></p>	On a modular enterprise architecture's delayed response to cutting production.

					<p>cargo jets, have been postponing scheduled deliveries. World air-cargo traffic declined by almost a quarter in 2008, according to Seattle-based consultancy <i>Air Cargo Management Group</i>. The production cut's effect on Everett employment may be offset somewhat when assembly of the new 787 Dreamliner ramps up at the plant. But that will take some time. <b>An executive at a Boeing supplier said the 787 program is no longer planning for a furious buildup, as many customers are likely to defer their Dreamliner deliveries, too. 'Rather than ramping up, the (787 suppliers) are really slowing things down,' the executive said.</b> If the global economic crisis continues and air travel doesn't recover, further cuts are likely at other local <i>Boeing</i> plants. <b>Though Boeing said that 'at this time' it intends to hold production steady at its single-aisle 737 assembly plant in Renton, aviation experts believe a slowdown will occur there, too. Rob Stallard, a financial analyst with Macquarie Research, cited 'a widespread expectation that this is just the first of several cuts for this downcycle, with the 737 rate likely to be the next that goes down.'</b> Because of the shorter lead time needed to build parts for the much smaller 737, Stallard said <i>Boeing</i> still has a couple of months before it has to finalize the narrowbody production rate for 2010. <b>He predicted a cut from 31 per month this year down to 25 per month in 2010.</b> In a note to clients, Stallard also warned that because some parts for the large 777 have longer lead times, 'The impact of the cut to the 777 rate will likely be seen in the aerospace supply chain before the end of this year.' That <b>could trigger some layoffs at suppliers. Boeing warned that the production decisions and unfavorable pricing trends will reduce its first-quarter earnings 'by approximately \$0.38 per share.'</b> That's a hit of about \$275 million, or about 30 percent of Wall Street analysts' average first-quarter profit estimate of \$1.24 per share. <b>With reduced deliveries, Boeing has to spread its production costs over fewer airplanes, resulting in higher costs per plane and lower profits. 'These are extremely difficult economic times for our customers,' Carson said in a statement. 'It's necessary to adjust our production plans to align supply with these tough market conditions.'</b> <i>Boeing</i> insisted that the production slowdown is purely a result of deferrals and not outright cancellations. Airlines have canceled 32 orders for the 787 so far this year, but no 767, 747 or 777 orders have been canceled."</p>	
13 Apr. 2009	<i>Market Watch</i> , "Boeing Lowered to		Firm	$\alpha$	<p>"<i>Boeing Co.</i>'s announcement last week it would cut commercial aircraft production is likely just the beginning of a long downturn, said <i>Cowen &amp; Co.</i> in a Monday research note that <b>downgraded the aerospace giant to underperform from neutral.</b>"</p>	On a modular enterprise architect

	Underperform at <i>Cowen</i> " (Christopher Hinton)				<p><b>'The last three delivery declines averaged four years with 14% average annual drops,' said analyst Cai von Rumohr. 'But this cycle's early [airline] traffic dip is worse, and lower oil prices and limited airline credit availability will restrain replacement when the cycle turns.'</b> <i>Boeing</i> shares were down about 5% in premarket trading to \$37.12"</p>	ure's value in a downturn.
16 April 2009	<i>Business Week</i> , "Southwest's Red Ink and Baggage Fees" (Justin Bachman)	Gary Kelly, CEO, <i>Southwest Airlines</i>	Firm-Customers-Investors	β	<p><b>"Would Southwest Airlines have turned a profit the past quarter if it had charged checked-baggage fees? That was the interesting question posed during the company's conference call to discuss its \$91 million first-quarter loss, which was a penny per share worse than Wall Street had expected. A year ago, Southwest (LUV) earned \$34 million. Operating revenue dropped 7% to \$2.4 billion from \$2.5 billion. The company's vaunted oil-hedging strategy turned sour late last year when oil prices collapsed, and caused another \$65 million hit in the most recent quarter.</b> Moreover, the airline anticipates second-quarter revenue to fall short of the same quarter of 2008, although CEO Gary Kelly said weekly sales declines that accelerated throughout March have stabilized. <i>Southwest</i> is offering all employees but senior management a buyout package to leave, but says it has no targets on how many of its 35,500 workers it wants to shed. <i>Southwest</i> is working to align staffing to capacity reductions. 'Honestly, we don't know how many people will take this offer in this environment,' chief financial officer Laura Wright said. 'We think that whatever number takes it will be good.' <b>But it is the bag fee issue that cuts to the heart of why Southwest will succeed or, if the lousy economy turns truly draconian, becomes yet another ailing airline where the revenues don't match the costs.</b> The question was proffered by <i>Morgan Stanley</i> airline analyst William Green and spurred a somewhat spirited discussion (by the relative standard of a Wall Street earnings call). In the aggregate, \$91 million is not a large sum for a huge airline like <i>Southwest</i> to amass across its system and a \$15 fee certainly could have yielded more than that in the first quarter. If one figures that only half of <i>Southwest's</i> 19.7 million revenue-producing passengers had checked a bag, the take totals \$148 million. "Why not put those in place?" Green asked.</p> <p>Save for <i>JetBlue</i> (JBLU), every other major carrier has imposed a fee -- and they have been pleased greatly by the new revenue. So why won't <i>Southwest</i> do it? <b>'I'm not at all convinced it would be revenue positive and it would certainly be disruptive to all the things we're trying to do on behalf of the brand,'</b> Kelly said. 'It is a very competitive environment out there. We know that for a fact.' <b>What's more, Southwest operates firmly</b></p>	On an integral enterprise architecture's maintenance of customer loyalty and lock-in

					<p><b>committed to the belief that it stands alone in the airline industry with a unique relationship to its customers, who are extraordinarily price sensitive – Southwest’s average one-way fare is under \$114 – but fiercely loyal. ‘If you lose one customer ... that’s the equivalent of a handful, if not ten or 12, bag fees,’ Kelly said. Southwest also thinks its ubiquitous ‘No Hidden Fees’ campaign is taking hold among consumers and reaping positive business results.</b> Mike Linenberg, a <i>Bank of America</i> analyst, further suggested that bag fees could help <i>Southwest</i> maintain its financial lead over the rest of the industry. <b>As many others restructured in bankruptcy, the cost advantages Southwest once enjoyed have eroded, and its once-stellar revenue performance is no longer remarkable.</b> Kelly bristled at that line of argument. <b>‘The bottom line ... is that we don’t believe it would be revenue positive anymore than we could argue that we could push through a \$10 fare increase in this environment,’</b> he said. ‘There’s just so much that can be done there.’ The airline stressed repeatedly that it has no plans to charge bag check fees. But if 2009 continues along the same dismal path in terms of traffic, revenues and red ink, Kelly can expect the chorus calling for a checked bag fee to grow increasingly persistent.”</p>	
17 April 2009	<p><i>Wall Street Journal</i> “Airbus Says Governments Should Assist Plane Sales” (Adam Cohen)</p>	<p>Thomas Enders, CEO, <i>Airbus</i></p>	<p>Firm-Governments-Customers-Suppliers</p>	β	<p><b>“Governments should help provide financing for airlines to buy planes, stepping in where credit channels are blocked,</b> <i>Airbus</i> Chief Executive Thomas Enders said Thursday. Speaking to journalists after a meeting of European aeronautics companies, <b>Mr. Enders said aircraft makers don’t need a direct government bailout but want state support for their customers and the smaller companies that supply parts. He warned that aircraft manufacturers could cut production if the economic situation worsens.</b> Aircraft makers are struggling as airlines around the world cut routes and postpone orders amid a steep decline in passenger traffic. In addition, low fuel prices give airlines little incentive to upgrade their aging fleets with more fuel-efficient planes, according to industry analysis. <i>Airbus</i>, a unit of <i>European Aeronautic Defence &amp; Space Co.</i>, earlier this year said it would trim production of its single-aisle A320 planes. The company’s U.S. rival, <i>Boeing Co.</i>, this week said it would cut the number of wide-body 777 planes it produces next year by 29%. Mr. Enders declined to say whether <i>Airbus</i> is planning further production cuts. ‘Every one of us has contingency plans,’ he said. The industry estimates a \$10 billion-to-\$20 billion shortfall in the funding needed to support 950 to 1,000 <i>Airbus</i> and <i>Boeing</i> deliveries this year, according to a presentation delivered at Thursday’s meeting of the <i>AeroSpace and Defence Industries Association</i> of Europe, an umbrella organization</p>	<p>On an integral enterprise architecture’s damping of the value chain.</p>

				representing 17 companies and 30 national associations. <b>Earlier this year, the French government offered €5 billion (\$6.6 billion) in loans to help airlines buy Airbus jetliners. However, this facility hasn't been used yet, said Mr. Enders.</b> "	
18 April 2009	<i>The Seattle Times</i> , "Boeing Parking Jets Around Puget Sound, the Desert As Buyers Struggle" (Dominic Gates)		Firm-Customers	" <b>They look like ghost airplanes and they are a bad \$300 million omen for the airplane business.</b> Two brand new Boeing wide-body freighter jets painted all white are parked at Paine Field outside the Everett assembly plant. <b>Two more freighters freshly painted in the colors of China Southern and worth another \$300 million flew this week not to Asia, but to a jet parking lot in the Arizona desert.</b> Meanwhile at Boeing Field, three 737 single-aisle jets have been parked outside for many weeks awaiting delivery to Arik Air, of Nigeria. Next to them is a completed but idle AirTran 737. And in Renton, outside Boeing's single-aisle assembly plant, two 737s originally ordered for a Chinese airline are now repainted in the livery of a Dubai-based airline that doesn't start service until June. Because of a global downturn in air traffic, with the airfreight sector particularly hard-hit, many airlines don't need new jets. In some cases, they can't use the planes they have committed to take from Boeing. <b>Boeing insisted Friday that even the all-white airplanes are not technically 'white tails,' industry jargon for planes that have been built but don't have a customer to take them. 'We have no white tails,' said Boeing spokesman Jim Proulx. 'We have not built any airplanes that are not designated for delivery to customers.'</b> What Boeing clearly does have is customers in distress and some airplanes sitting as expensive excess inventory far longer than the plane maker would like. <b>The idle 777s are a major reason why Boeing announced last week it will cut production of the jet from seven to five per month from the middle of next year.</b> One of the ghostly white-painted jets in Everett is a 777 freighter owned by Air France. The list price is \$256 million, though according to data from airplane valuation firm Avitas, after discounts it has a value of \$150 million. The second is a 747-400ERF cargo jet ordered by LoadAir, a Kuwaiti airfreight company. Its list price is \$253 million, worth about \$147 million after discounts. A second LoadAir 747 freighter, the last 747-400 that will ever be built, rolled out of the Everett factory Thursday and will join its all-white twin. 'Those 747s for LoadAir are on target for delivery in September,' Proulx said. In February, Air France took delivery of the first 777 freighter off the line and a second one days later. The carrier has yet to decide whether to store the third 777, an Air France spokeswoman who asked not to be identified told Bloomberg News. <b>Painting the plane white perhaps is to leave open the</b>	On a modular enterprise architecture's dealing with capacity problems upon entering a downturn.

					<p><b>option of leasing it to someone else.</b> The airline said in February it will defer delivery of two more 777 freighters to sometime between 2010 and 2012. As for the two <i>China Southern 777s</i> now in Arizona, the airline hasn't yet accepted delivery of the 777s. They were stored by <i>Boeing</i>, an airline executive told <i>Bloomberg News</i> on Friday from Guangzhou. <i>Boeing</i> declined to comment on whether the aircraft have been put in storage.</p> <p><i>China Southern</i>, the nation's biggest carrier, said this week <b>it will save \$1 billion this year by delaying aircraft deliveries.</b> It will delay delivery of the two 777s until the end of this year or early 2010 and is discussing the timing of two more planes now in production, the airline executive said. 'We're working with them on their delivery schedule,' said <i>Boeing's</i> Proulx. <b>'The fact that two of the largest cargo operators in the world are parking brand-new freighters is a sign of just how awful the global airfreight numbers are,'</b> said Douglas Runte, managing director at <i>Piper Jaffray Cos.</i> in New York, in an interview with <i>Bloomberg</i>. Global air-cargo volumes will probably fall 5 percent this year, outpacing a 3 percent decline in passenger traffic, the <i>International Air Transport Association</i> said last month. The 737 jets at <i>Boeing Field</i> and Renton are passenger jets.</p> <p>When asked about <i>Arik Air's</i> parked 737s last month, the airline's managing director, Michael McTigue, said they were being phased in and would be delivered by the end of this month. He insisted that Nigerian aviation is not as affected as elsewhere and 'Arik Air is set for major expansion throughout West and Central Africa.' But at least two of the planes have been parked at <i>Boeing Field</i> for more than two months, creating a financial holdup for <i>Boeing</i>. <b>Airlines generally make down payments when they sign purchase agreements and then pay the rest to Boeing upon delivery.</b> The <i>AirTran</i> jet parked beside the <i>Arik Air</i> jets may also be slow to deliver. <i>AirTran</i> has cut back its fleet plans and either deferred or sold 47 of the <i>Boeing</i> jets it ordered. That includes two 737s it sold to <i>Arik</i> in 2007. And <i>Boeing</i> was forced to look for a new customer for two 737s in Renton originally destined for delivery to <i>OK Airways</i>, a private Chinese airline. The Chinese government suspended <i>OK's</i> service in December. The two jets are painted in the colors of <i>FlyDubai</i>, which doesn't begin operating until June. <i>Boeing</i> said the two airplanes are parked waiting for refitted interiors."</p>	
20 April 2009	<i>ATW Daily News</i>	Gary Kelly, CEO, <i>Southw</i>	Firm-Customer	β	<p><b>"Southwest Airlines Chairman and CEO Gary Kelly last week strongly rejected Wall Street advice that the LCC begin charging for checked baggage to generate more revenue. During a</b></p>	On an integral enterprise

		<i>est Airline s</i>			conference call to discuss SWA's <b>third consecutive quarterly loss</b> , multiple analysts pushed Kelly to follow other US carriers and implement baggage fees. But he insisted the move would drive away customers. <b>'The bottom line assessment is we believe we're having a meaningful impact [telling consumers] that we are alone in not charging bag fees and that [impression] is increasing our demand,'</b> Kelly explained. <b>'Southwest is a very well-known value brand. . . and it would be disruptive to all of the things we're doing to build the brand. You just risk losing customers.'</b> He continued: <b>'I don't see there's any reason for us to panic based on the first-quarter results. [Not charging bag fees is] no different from us not charging \$400 Minneapolis-to-Chicago one-way. We don't want to be another airline that nickles and dimes customers. We don't believe it would be revenue positive any more than we could argue imposing a [large] fare increase right now would generate more revenue compared to the customers we'd lose.'</b>	architecture's maintenance of customer loyalty and lock-in
21 April 2009	<i>Bloomberg</i> , "Boeing Profit Buffeted by Production Slump that May Reach 737" (Susanna Ray)		Firm-Investor	$\alpha$	"It's 'increasingly possible' that the Dreamliner's maiden flight could be delayed again, slipping into July rather than taking to the air this quarter, <i>JPMorgan's</i> Nadol wrote in an April 15 note. <b>'The first-delivery target of February 2010 is highly ambitious,'</b> he wrote. <b>'We are still looking for a late second- quarter first delivery, and even there, our confidence level is not high.'</b>	On a modular enterprise architecture's expected overpromise & underdelivery.
21 April 2009	<i>Financial Times</i> , "Airbus and Boeing's Plans Fly in the Face of Recession" (Paul Betts and Kathrin Hille)		Firm	$\alpha$ & $\beta$	<b>"Airbus and Boeing seem to be in denial. The two civil aircraft makers are not fully facing up to the worst recession in decades, which has sent air traffic into a tailspin and many airlines into the red.</b> The <i>International Air Transport Association</i> expects the industry to lose about \$4.7bn this year as revenues fall by \$62bn, or 12 per cent compared with last year. It is not only the weaker airlines that are suffering. <b>Last week Air France-KLM, Europe's largest carrier, said it was planning to cut 2,500 to 3,000 jobs by 2011. The week before, it warned that for its fiscal year ending March 2009 it would be reporting its first operating loss since the merger of the French and Dutch airlines six years ago.</b> It warned that it was unlikely to return into the black this fiscal year. It is not surprising to see more and more airlines deferring or cancelling orders for new aircraft placed during the boom years. <b>As in previous cycles, the first sector to suffer is demand for more expensive wide-body airliners.</b>	On the modular enterprise architecture of the media.

				<p><i>Qantas, China Southern and Cathay Pacific</i> have all in recent days announced plans to delay delivery of some 93 mainly long-range aircraft including nine A380 super jumbos. <i>Air France-KLM</i> a couple of weeks ago said it was planning to delay delivery of two A380s. This is bad news for European aircraft manufacturer, <i>Airbus</i>, since delays in the delivery of its flagship jumbo will put pressure on the financial viability of its programme. But its US rival <i>Boeing</i> is in the same boat and is cutting production of its 777 wide-body aircraft. <b>Both <i>Airbus</i> and <i>Boeing</i> expect to deliver the same amount of aircraft this year as last, largely because airlines are unlikely to cancel or push back orders for aircraft due for delivery this year given that they have paid about half the cost of these airliners with their downpayments and progress payments.</b> The problem the two manufacturers face is with deliveries next year and beyond. Cash-strapped customers will increasingly seek either to delay or cancel orders for aircraft they can no longer afford, or negotiate more favourable terms with the manufacturers. The current cycle is proving more challenging than previous ones largely because of the credit crunch. Industry analysts estimate a \$10bn to \$30bn shortfall in funding needed to support 950 to 1,000 <i>Airbus</i> and <i>Boeing</i> deliveries. Yet the two big makers are insisting the shortfall will only involve \$4bn to \$5bn. <b>France, for example, has offered €5bn (\$6.5bn) in loans to help airlines buy <i>Airbus</i> aircraft. Both manufacturers admit that the big test will come next year and they are bracing for more customer deferrals and cancellations. But they remain relatively optimistic that the cycle will turn and pick up in 2011, hence their resistance to making sweeping production cuts in 2010.</b> They have so far only announced 5-10 per cent production cuts in their various aircraft ranges next year. Most industry watchers believe this is wishful thinking. <b>Cycles in the boom-and-bust civil aircraft business are long and the manufacturers will probably be forced to cut production by 20 per cent to 30 per cent, if not by as much as 40 per cent, according to a UBS study.”</b></p>		
21 April 2009	<i>China Daily</i> , “Crisis not Dampening <i>Airbus</i> China Assembly Target”		Firm	β	<p>“<i>Airbus</i>, the world's major aircraft producer, plans to cut its monthly global production of A320 in October, but its assembly target in China will not change, a senior <i>Airbus</i> official said Tuesday. <b>Due to the global financial crisis, <i>Airbus</i> will cut the monthly production of A320 passenger planes from 36 to 34, but its target to produce 11 planes this year in China will not change,</b> Marc Bertiaux, vice president of <i>Airbus Cooperation and Partnership with China</i> told Xinhua. By the end of 2011, the <i>Airbus</i> Final Assembly Line in north China's Tianjin City will produce four A320 aircraft per month, mainly for the Chinese clients, he said.</p>	On an integral enterprise architecture's stability in output, despite negative exogenous shock.



					Since China was not as badly impacted as some other countries by the financial crisis, the country's economic growth has been maintaining a sound momentum, he said. <b>‘The stable and fast economic growth of China has also strengthened our confidence to stabilize our aircraft production.’</b> ”	
21 April 2009	<i>Edubou rse, “Airbus /EADS Sign a Titanium Supply Agreement with VSMPO - AVISMA, Integratt ed Structure of the Russian Technol ogies State Corpor ation”</i>	Tom Enders , CEO, <i>Airbus</i>	Firm-Suppli er-Gover nment	β	<p><b>“Airbus/EADS and VSMPO-AVISMA boost their long-term relationship.</b> <i>Airbus</i>, the world's leading aircraft manufacturer, its parent company <i>EADS</i>, a global leader in aerospace, defence and related services and the Russian Technologies State Corporation's integrated structure <i>VSMPO-AVISMA Corporation</i>, the Russian Titanium manufacturer, <b>have signed the biggest and longest-term contract in the history of Airbus/EADS cooperation with Russian industry.</b> The agreement was signed today in Moscow by Sergey Chemezov, General Director of the Russian Technologies State Corporation and Tom Enders, President and CEO of <i>Airbus</i> in the presence of Vladimir Putin, Russian Prime-Minister, Walter Jürgen Schmid, German Ambassador to Russia, Jean de Gliniasty, French Ambassador to Russia and Juan Antonio March Pujol, Spanish Ambassador to Russia. <b>The agreement covers the supply of Titanium to Airbus and other EADS Divisions until 2020.</b> The scope of the contract includes the supply of Titanium and covers die forging parts for all existing Airbus aircraft, including new programmes such as the A350XWB. <i>VSMPO-AVISMA Corporation</i> may also machine Titanium products in order to develop a vertically integrated Titanium supply chain, starting from raw materials to finished products. The contract comes as a confirmation of the framework agreement signed in July 2008 at Farnborough Airshow. <b>The new agreement further boosts the relationship between the companies, which dates back to the early 1990s. It also enlarges Airbus' cooperation with the Russian aviation industry,</b> which currently includes production of components for <i>Airbus</i> at Russian plants, passenger to freighter aircraft conversions (P2F) and joint Research &amp; Technology (R&amp;T) projects. <i>VSMPO-AVISMA Corporation</i> strengthens its role as a leading supplier of Titanium to <i>Airbus/EADS</i>, covering major Titanium requirements. The benefits of Titanium include strength and low weight properties that are in high demand in the aerospace industry. On aircraft, it is used in particular for landing gear systems, pylons and structural parts of the fuselage and wings. <b>‘Airbus is preparing for long-term growth. This agreement is an important pillar of our internationalisation and especially our strategic relationship with Russian industry,’ says Tom Enders, President and CEO of Airbus.</b> <i>VSMPO-AVISMA Corporation</i>, integrated structure of the Russian Technologies State Corporation, is <b>the</b></p>	On an integral enterpris e architect ure’s develop ment of long-term supply contracts in the midst of a global recession .

					<p><b>world's largest Titanium producer.</b> At present the Company exports 70 per cent of its products, 30 per cent are sold in the domestic market. Major customers of <i>VSMPO-AVISMA</i> are the world's leading aircraft-building companies. <b>The Company is fully vertically integrated and employs over 20 000 people."</b></p>	
22 April 2009	<p><i>Seeking Alpha, "The Boeing Company, Q1 2009 Earnings Call Transcript" (www.SeekingAlpha.com)</i></p>	<p>Jim McNerney, Chairman and CEO; James Bell, CFO, <i>The Boeing Company</i></p>	Firm-Investor	$\alpha$	<p><b>"Jim McNerney (<i>The Boeing Company</i>):</b> Thank you, Diana, and good morning everyone. Let me start today by discussing our first quarter performance and the <b>unprecedented market environment</b> that we're currently facing. As part of that I will talk about the things we're doing to respond to those challenges. After that James will walk you through our results and then we'll take your questions. I will start with Slide 2 please.</p> <p>Our first quarter results reflect the impact of the steep global economic downturn on the commercial airplane market, which overshadowed the <b>otherwise good performance in our Commercial Airplanes business</b> and continued strong performance of our Defense business. As announced earlier this month we had decided to bring 777 production rates down from seven to five airplanes per month, affecting deliveries beginning in June 2010. We are also delaying plans to modestly increase our 747-8 and 767 production rates. In addition, <b>the weak global economy has driven significant declines in the indices that are the basis of our price escalation forecast for commercial airplane deliveries.</b> Together the production decisions and the lower escalation forecasts reduced our first quarter earnings per share by approximately \$0.38 most of which represented a charge on the 747 program. Commercial market factors aside, <b>our underlying business performance remained solid in the quarter. BCA production programs continued to execute well and improve cost performance.</b> Our Commercial Services business generated strong earnings in margins even with softening revenue from spares and passenger to freighter conversions. We're making progress on the 747-8 program with fuselage and wing assembly continuing on the freighter airplane. The first freighter is scheduled to deliver in the third quarter of 2010. We are also working on the detailed design of the 747-8 Intercontinental, however with the softening freighter market and the resulting decision to delay a planned increase in 747 production first delivery of the Intercontinental is now expected to move from second quarter 2011 to fourth quarter 2011. This is consistent with discussions we've had with our Intercontinental customers and was factored into the first quarter production decision financial impacts we shared with you earlier. <b>On 787 we are on schedule for first flight later this quarter.</b> All the airplane</p>	<p>On a modular Enterprise Architecture's defense of its financial performance</p>

				<p>systems, including engines, are cleared for first flight. We've also completed the structural testing on the static airframe that is required for first flight. Final analysis is underway, but the results are positive. Earlier this week we completed a full simulation of the first flight using the actual airplane. The simulation exercised all flight controls, hardware, and software. In the coming days airplane #1 will move out of the factory to the flight line. There it will be fueled and its engines operated prior to doing a final systems check and the high-speed taxi tests that lead to first flight. We are also making excellent progress on airplane #2 on which ground vibration tests need to be completed before first flight. Those tests are expected to begin later this week. The 787 backlog remains strong with 886 orders from 57 customers around the world. This includes previously disclosed cancellations of 32 airplanes and the order for eight 787s finalized with Gulf Air last week. As mentioned last quarter, we expect a modest level of orders churn on the 787 during the year. Even so, <b>the backlog is unprecedented for a new airplane and we are confident in the long-term value of the 787 for our customers.</b> Our total company backlog remains large at \$339 billion. While that number is down from last quarter due to current period deliveries, modest cancellations, and price adjustments from lower escalation it still represents nearly 5x our current and annual revenues. New orders include the U.S. Air Force contract for 15 C-17s that were previously funded under the fiscal 2008 budget, as well as integrated logistics and support contracts. <b>Fundamentally, this is a solid company with strong core businesses.</b> We are of course, like all companies, facing a very challenging market environment which I will address on Slide 3.</p> <p>The global economy has further deteriorated and we are facing economic times that are more difficult than many of us have ever seen. This, of course, is impacting our commercial customers in the form of lower air traffic growth and challenging financing conditions. These pressures, which are being addressed by various governments' economic recovery packages, are also putting pressure on defense budgets. Because of the commercial and defense market uncertainties, we continue to <b>step up our drive to become more competitive and productive.</b> As discussed last quarter, <b>we are aggressively managing both costs and investments. Unfortunately part of this means a reduction in employment in certain areas of the company.</b> We are on track towards the estimated 10,000 position reductions we expect by years end. We will continue to evaluate the appropriate infrastructure levels at the Company, especially in light of our recent decision to reduce commercial</p>	
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				<p>production in 2010, as we get more clarity on the U.S. Defense budgets. Despite the challenging environment our backlog is holding strong. The only commercial airplane cancellations so far this year have been the 32 787s I mentioned earlier. We have, however, been working with customers to defer airplanes in response to the unprecedented economic environment. In the first quarter we accommodated about 60 airplane deferrals from 2010 and 2011 into future periods. We are in the process of working on more deferrals beyond that all of which were factored into our production decisions made earlier this month. Deferrals are occurring across all regions and all models. I should point out that <b>our decision at this time to hold 737 production rates reflects our practice of over committing 737 deliveries along the way</b>, which have so far offset the current and anticipated deferrals. <b>Now I have just a word on production decisions. I want to emphasize that these are big business decisions for the Company and are not simply a reaction to today's view of the market. The market is certainly a factor. It is obviously a factor. But, we also consider customer contracts, significant cost elements and major employment implications. While we monitor it all regularly, the scope, and impact of these calls are significant and need to be made deliberately. As you all know, the financing environment continues to be challenging. Boeing Capital conducts a bottoms up as well as top down analysis of financing requirements by tracking the status of each commercial delivery while at the same time evaluating the sources of global capital availability. Currently we still believe financing sources are sufficient to meet expected requirements for our products in 2009. Part of this includes an assumption that BCC will need to provide about \$1 billion of new financing this year. However, we recognize the financial markets are fragile and can change quickly. We believe we are in a good position to handle any resulting outcomes this year. Let me summarize by saying, again, that we are in unprecedented times right now, but I believe we have a solid foundation from which to work through this environment with strong products and services and a large backlog. Importantly, <b>we are aggressively managing our infrastructure, costs, and investments.</b></b></p> <p><b><u>James A. Bell (The Boeing Company):</u></b> Thank you, Jim, and good morning. I will begin with our first quarter results on Slide 4. Revenue for the quarter was \$16.5 billion which was up 3% from a year ago. Earnings per share were \$0.86 per share which includes the \$0.38 reduction from Twin-Isle reduction rate decisions and lower price escalation forecasts; <b>\$0.31 of the impact is a charge on the 747 program. Because this program is in a loss position, the production rate and the escalation</b></p>	
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				<p><b>impact are recorded in the current period for all units in the accounting quantity as opposed to recording the impact over time as the units are delivered.</b></p> <p>Now let me discuss BCA in a little more detail on Slide 5. Commercial Airplanes recorded <b>first quarter revenue of \$8.6 billion which is 5% greater than the prior year. The increase was driven by higher airplane deliveries offset by lower commercial service revenues. Operating margins of 4.9%, seven points lower than last year, were significantly impacted by the \$347 million charge driven by production rate decisions and lower escalation forecasts. Our Commercial Airplane contracts have escalation provisions which state prices in current year dollars at time of contract signing and allow for economic adjustments to be paid by customers at the time of delivery. These adjustments are determined from broad price indices. During the first quarter the global recessions impact on commodity and retail prices, coupled with moderating wage growth, significantly reduced these indices. This change does not affect current year commercial revenues since pricing is fixed approximately 11 months before delivery, but it does impact our forecast of future revenues. Lower revenue forecasts reduced program accounting gross margins during the quarter for our profitable programs and increased the loss recorded on our 747 program. The first quarter impact of escalation was approximately \$235 million, \$180 million of which were increased the 747 reach forward loss. The Twin-Isle production decisions, which impact production rates beginning in 2010, also affect current period gross margins. <b>Rate change disruption costs and redistribution of hard to vary costs over fewer units in the accounting quantity are the principle drivers.</b> The impact recorded in the first quarter reduced earnings by approximately \$200 million, \$175 million of which was included in the 747 charge. This impact was net of a favorable adjustment to our prior 747 cost estimates. <b>The BCA team is focused on right sizing its infrastructure and the associated costs to address the current market challenges.</b></b></p> <p>Now let's turn to Slide 7. <i>Boeing Capital</i> delivered another solid quarter with pre-tax earnings of \$37 million on revenue of \$163 million. BCC had modest new aircraft financing in the quarter of approximately \$135 million which was offset by portfolio run-off. Our guidance still assumes that we will finance about \$1 billion of new aircraft sales during the year. Now I want to remind you that as <b>BCC reduced its portfolio from a high of \$12</b></p>	
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				<p><b>billion to the current level of \$6 billion we have been preparing for this time of reentering the financing markets. We are well positioned and are entering the markets in a disciplined and a prudent manner.</b></p> <p>Now let's turn to Slide 8 and discuss cash flow. We generated \$200 million of operating cash flow in the quarter reflecting cash from earnings and liquidation of inventory that we paid for during the strike last year. This was offset by continued planned working capital build up on our development programs, lower cash advances, and timings of receivables. During the quarter we paid approximately \$300 million in dividends and <b>used \$50 million to buy back 1.2 million shares. We have significantly reduced our share repurchases in light of the current business realities.</b></p> <p>Now let's turn to Slide 9. <b>Our financial strength remains solid. We ended the quarter with \$4.7 billion of cash and marketable securities including proceeds from the \$1.8 billion of new debt issued in March. After our announcement to reduce commercial production rates S&amp;P put our A+ long-term credit rating on watch, but confirmed our short-term rating.</b> Moody's reaffirmed our A2 long-term rating and our overall credit ratings remain among the strongest in the industry.</p> <p>Now I will turn to Slide 10. We are upgrading our financial guidance to include the lower price escalation forecast and the resulting charge on the 747 program. Earnings per share for the year are now expected to be \$4.70 to \$5.00 per share. Now, <b>we expect second and third quarter earnings to be lower than fourth quarter earnings reflecting revenue and R&amp;D profiles.</b> 2009 revenue guidance is unchanged at \$868 to \$869 billion. <b>The 2009 commercial delivery forecast also remains between 480 and 485 airplanes.</b> 2009 operating cash flow guidance remains at greater than \$2.5 billion. We are diligently managing our cash and have action plans in place to preserve our strong financial position. Having said that, there are risks to our cash flow due to market uncertainties and in particular its potential impact on advances for commercial airplanes. We continue to assume pension funding this year of about \$500 million. Total company pension expense is expected to be about \$900 million in 2009 with slightly more than that recorded at the business unit and a small offset in the unallocated segment. The R&amp;D expense forecast is unchanged at \$3.6 to \$3.8 billion and <b>we continue to expect R&amp;D expense to decrease substantially in 2010.</b></p>	
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				<p>Now let me turn to Slide 11 and discuss our change in our earnings guidance in more detail. As we mentioned last quarter, our guidance at the time considered the potential impact of modest production rate cuts. Had the Twin-Isle production decision has been the only impact this quarter, we would have maintained our earnings per share guidance. However, the lower escalation forecast had a sizable impact on our results, which is the principle driver of our reduced EPS guidance. We're expecting somewhat lower pension expense since last quarter, but <b>higher interest expense from the new debt issued in March</b>. We plan to provide 2010 financial guidance towards the end of the year.</p> <p><b><u>Jim McNerney:</u></b> Thank you, James. To close let me simply say that we are <b>diligently working on improving productivity, right sizing our infrastructure, and preserving our financial strength</b> given the current uncertainties in both our commercial and defense markets. While recognizing the risks at hand, we continue to feel that we are relatively well positioned with the fundamental strength of our products and services, the size and diversity of our backlog and the long-term outlook for the markets we serve.</p> <p><b><u>Ronald Epstein (BAS-ML):</u></b> I have a question on the <b>787 program</b>. As we start to think beyond kind of the flight test program and into the ramp-up, what I have heard is <b>Global Aeronautica is still a bit of a long tent pole that the center fuselage integration is taking over what 300 days per section</b>. How do you work through that and how should we think about the ramp of the program?</p> <p><b><u>Jim McNerney:</u></b> Well I think the <b>Global Aeronautica bottleneck, as you characterized it, is something that is not unusual. I mean the main body join is typically a challenge. But, there is nothing we see, as we work through it, that will prevent us from meeting our ramp schedule. As you know, after the ownership change awhile back we have taken more direct control of that factory, which I think has moved along process improvements significantly and we're making good progress there. While it has represented a bottleneck we are confident that it won't as we meet our production schedule.</b></p> <p><b><u>Ronald Epstein (BAS-ML):</u></b> Okay and if I can I have a follow up question on 78. <b>When you look at the suppliers, and different suppliers are developing either parts or subsystems for the program, you have seen multiples of their original R&amp;D budget that they thought they</b></p>	
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				<p>would be investing. When we think about the <i>Boeing</i> investment on 787 can you just broadly say, I mean, how many times is it what you thought it was originally going to cost the company?</p> <p><u>Jim McNerney:</u> Well there is not an integer involved in the multiple, okay? There has certainly been some pressure on research and development, as you know, on some non-recurring costs and there have been some cost pressures that both we and our supplier partners have born. But, it remains a very economic proposition over time. I think this is a very innovative product that did cost more and take longer, but the market has recognized it as an innovative product by ordering many multiples times any commercial airplane that's ever been ordered before. So, we have a base over which to spread some of these increased costs, but I wouldn't characterize it quite as direly as your question implied. We have been wrestling with pressures and they're slowly getting back into the box. I mean the condition of assembly by our partners from airplane 7, which is the first production airplane, on out has improved dramatically. We are in very good shape and quite frankly, I'm heartened by what I'm seeing in the ramp-up right now.</p> <p><u>Howard Rubel (Jefferies &amp; Co.):</u> If I did the math right you did about 8.5% to 9% margins in commercial and about 17.2 per R&amp;D and that compares with 19.8 a year ago. There are two parts to this question. What are you going to do to recover part of the loss of deflation? I mean the index works against you, but there should be a lot of opportunities with the rest of the industrial commodities being down to get some of that back. The second part of this is <b>cash is clearly a challenge. Could you be a little more specific in terms of what you're doing to try to improve the balance sheet fund, but could you make it even better?</b></p> <p><u>James Bell:</u> Let me try to answer that. As you know, on the escalation side, particularly in the commercial airplane where this impact has been felt, every quarter we get different escalation forecasts and we basically have two commodities, one is the CPI index and the other is for, which is the consumer index, and the other is more commodities related. They do change over time, so we will naturally see some of that happen. As it deals with the costs associated with that, the timing is different. As you know we have long-term contracts which are fixed price with our subcontract community, so to the</p>	
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				<p>extent that some of those costs are going down we will have an opportunity to renegotiate future contracts at lower prices and then there are some contracts that we do have that see an immediate impact, but it's minor. You will see some of that and some of that is already into the impact you saw on that escalation provision. But, over time it generally balances it out. If we go into an inflationary period you could see that change pretty rapidly. <b>On the cash side, clearly we're looking at a number of things relative to how we manage our cash and be more disciplined relative to inventory turns. Be more efficient with just in time. We're looking at making sure as we move the schedules on production rates and on the deliveries out that we also align that as perfectly as we can with the subcontract community so that we're not getting inventory before we need it. We've cut back on capital expenditures. We are really looking at everywhere that we spend money that doesn't affect or go into the product. We're cutting back on all things that we would call non-essential. We're having daily cash calls where we're making sure we're monitoring advance pays and we're monitoring our disbursements to make sure that we're paying just in time in accords with our contract terms and that we are aggressively pursuing our payments as they are required by contract. We think the combination of all of that is going to make a strong balance sheet even stronger.</b></p> <p><b><u>Robert Spingarn (Credit Suisse):</u></b> James, could you walk through your cash flow guidance? You know with a flattish quarter here in the first quarter, you talked to some of the pressures and things that are going on in the beginning of the call, but <b>how do you get to generate operating cash of \$2.5 billion in an environment where we would suspect your building 787 inventory the advances are drying up from the absence of orders and you'll be increasing financing through out the year.</b></p> <p><b><u>James Bell:</u></b> There are a couple of things. <b>First of all, the advances really aren't drying up as a result of the orders.</b> We are not expecting a lot relative to cash receipts on the orders. In fact it is a relatively modest number because the deliveries are so far. The orders that we would write today are for deliveries so far out in the future. The real issue is we do have quite a bit of receipts that are associated with deliveries after 2009 and those are the PDPs that are set on the payment schedules and the inventory; so clearly, we're looking at making sure we stay on track and we are able to collect those. The financing, as you know, is going to be leveraged, so even though it is</p>	
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				<p>included in the total in cash in the cash balance, it is not going to have a major impact, but we have included the billion dollars already in that guidance. Again, we've only done \$135 million so far this quarter, but we think we'll do the whole billion over the course of the year. We think we're in pretty good shape and with the run rate in terms of what we'll deliver this year, and with the other initiative that we put in place to manage cash we think we're going to be in pretty good shape.</p> <p><b><u>Joe Campbell (Barclays Capital):</u></b> I have a question about the numbers, which I think Jim gave us, on the 60 deferrals from 2010 and 2011 that you saw in Q1 that moved to the out years. Now, I think that the number, I don't know, we probably guessed it or triangulated, that the number of wide bodies that moved was something a little over 50. So, it sort of suggested there really wasn't much movement in all the other airplanes. I was wondering if that is about right. I mean, <b>I would have thought that there was a lot of in and outs and that that was what you were trying to convey. If you could give us a sense of even if the 73s, which are apparently so far okay, can you give us some sense of how many moved out</b> and somebody else moved in so that we can get a sense for the fluidity of the 73?</p> <p><b><u>Jim McNerney:</u></b> Yes. <b>The number is more like half-and-half narrow body and wide body deferrals.</b> As I also said in my comments, we're working others beyond the [interposing].</p> <p><b><u>Joe Campbell (Barclays Capital):</u></b> But Jim you moved, I mean if you cut the production of seven 77s from seven to five than that is going to be more than 30 airplanes, <b>so how could it be half-and-half?</b> I mean we cut the wide bodies by almost that much, I would have thought.</p> <p><b><u>Jim McNerney:</u></b> I'm sorry, would you say it again Joe? I mean, we're talking about 60 airplanes, a little more than half of which were narrow bodies, a little less than half of which were wide bodies, and we're working some additional deferrals right now, as I commented on; when you add that all up that does roughly true up to the production decision. Remember, we are taking into account some things we're working now beyond just the 60.</p> <p><b><u>Joe Campbell (Barclays Capital):</u></b> Yes, okay, but <b>what I really wanted to talk about was what is actually going on in the narrow bodies? Presumably there is movement even though it nets out, apparently, to a number that's</b></p>	
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				<p>consistent with production. I just want some sense of whether it is 100 guys moved out and 100 guys moved forward or whether it's five guys moved out and five guys moved forward.</p> <p><u>Jim McNerney:</u> There is more moving out than moving forward, but what you have to remember, I think, Joe is that remember we restrained production rates. <b>The big picture is that Airbus and us had roughly the same number of narrow body orders over the last few years. They ramp up much more aggressively on production rates and we were restrained. Remember they were in the high 30s we were in the low 30s, so we had a lot more over ordering in our backlog, anticipating that someday there may be a softening, which is what we're seeing right now.</b> So, we are working through the over ordered portion of the backlog and when you look at what we deferred within the 60 plus the other ones we're working now and are estimating based on that experience, we still think we're in good shape on the production rates. <b>And, it is because we had a much larger margin of unslotted orders that we took, okay?</b></p> <p><u>Heidi Wood (Morgan Stanley):</u> I want to take a step back for a moment. In the first quarter of '08 the 747-8 was described as on track, and over the span of four quarters things went so awry that you took over \$1 billion in charges. Even as recently as the January call you described the -8 as a viable business and adding a lot of value to customers. While acknowledging that the 787 is likewise going to deliver value and is a viable business can you describe the key under pinnings that anchor why the 787 won't be susceptible to reach forward loss kind of four quarters from now?</p> <p><u>Jim McNerney:</u> There is a specific accounting calculation, Heidi that I know you are aware of, but I think <b>the big picture is a large accounting quantity when the time comes to make that decision, which will be when we deliver the first airplanes.</b> Having worked through a lot of the non-recurring up front costs and having a much better handle now on the cost curve that is in front of us, when you make the assessment it trues up to where we are. <b>There is not a loss on the program right now. Could things change, yes, but there just isn't. It is largely driven by the market acceptance of this product.</b></p> <p><u>James Bell:</u> Heidi, let me just add one comment. <b>Traditionally when you look at us on a new airplane development program, at this stage in the</b></p>	
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				<p>program we've only sold 100. So, the major risk is the risk to market and the pricing associated with that. The fact that we've sold so many has given us a lot more cushion on this particular airplane in terms of a forward loss, because we really, having sold them we have the market and we have the pricing pretty much set. Then obviously there are a lot of moving parts on the cost side, but as Jim mentioned, as we move through time we're getting a better handle on that. Now, could something happen in four years and four months? I mean unless it was dramatic, I think something coming out of the flight test program that would cause a major new cost element obviously that is always a potential because it is a development program, but generally I would say to you we are in much better shape on this program to avoid that than we have been on any prior program.</p> <p><b><u>Heidi Wood (Morgan Stanley):</u></b> That's excellent and James, how do cancellations flow through to relieve the presumed costs on customer penalty payments? I mean <b>doesn't early cancellations relieve the entire skyline and presumably save you quite a bit of money?</b></p> <p><b><u>James Bell:</u></b> Obviously if a customer cancels you have more space to work with. The space was crowded otherwise so it does provide you more opportunities to move airplanes up and back depending on what the customer needs are. But, as you know, <b>cancellations are not what we're looking to achieve in order to deal with our penalties. We would rather just go ahead and get this program back on track, but obviously you get some relief, but that is not what we're aiming for.</b></p> <p><b><u>Myles Walton (Oppenheimer &amp; Co.):</u></b> The \$787 deposits on the 880 aircraft or so, are those at this point, are those refundable deposits or are they both still nonrefundable deposits?</p> <p><b><u>James Bell:</u></b> They are non-refundable.</p> <p><b><u>Joseph Nadol (J.P. Morgan):</u></b> Back on the 747 program, I am just wondering if we could get sort of a bigger picture update, Jim, on where we are there. <b>I mean freighter demand is part of the reason you cut the 777 rate and that's where if it's only part of the backlog for 777 it's most of the backlog for the 47.</b> You have this delay in the Intercontinental by a couple quarters which may have not been disclosed previously, but you decided that a number of months ago. In any case, anytime anything goes wrong anywhere in the commercial business whether there is a 37 cut, an 87</p>	
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				<p>slide, anything. Are you going to have another 47 charge? I am just wondering what your comfort level is here with the backlog, the freighter demand, and that we're not going to have significant more problems down the road.</p> <p><u>Jim McNerney:</u> Well listen, the economic situation is uncertain and it has had significant impact on the freighter market, as you have seen. We can't predict with absolute certainty that our current read of the market will hold forever, so <b>adjusting production rates is part of this business. We think we've got it right now, but we'll have to keep reading and reacting.</b> Now that is a separate question from do we have a good business. You have to live through some ups and downs. Unfortunately we're getting a down here in the midst of the development phase of the program. But, we have seen very few signs that customers are running away. We see signs that customers want deferrals and in fact want to hold onto the business and are willing to keep making the progress payments required to have it. It is more of a story of an adjustment to a very difficult economic environment than it is a story about a program that doesn't make sense to customers. These new airplanes, the 87 and the 47-8 that you're talking about are very productive airplanes and very productive alternatives to what they're flying now. I mean the 47-8 is the only airplane now in the, sort of the, 390 to 500 passenger airplane, which translates to a freighter size that is also extremely efficient. We have to live through some ups and downs here, but these are long term, good businesses.</p> <p><u>Joseph Nadol (J.P. Morgan):</u> I think where I'm going, Jim, with this is the 87, I think we can all agree, has unprecedented demand and it's going to be a great platform for airlines over the very long term. The 47 just seems to me much, much ore in doubt. The basis of it is freighter demand and we're in a loss position now. I guess I am trying to get my arms around how much worse things can get on the 47. I mean what's the number?</p> <p><u>Jim McNerney:</u> Well, I mean the number is the number we've given you now, is what we think it is. Again, customers are not running away. There are a number of discussions for other orders that, admittedly, are doing slow in the current economic environment. We think this is a good niche airplane. I mean, this is not a brand new innovation like the 87 is to your point, but this is an airplane that fills a good, solid niche and we typically launch airplanes with 100 orders. This is</p>	
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				<p>more like the normal airplane we launch. Everything isn't the 87. Could it get worse? Sure. I mean if the market, the economic environment continues to tank for another three or four years I think the impact of deferrals and production rate changes could put additional economic pressure on it. Is it enough to kill the program? I don't think so. I think this is a good product that serves a good market.</p> <p><b><u>Joseph Nadol (J.P. Morgan):</u></b> Are we past the point where you could kill the program, or is that still a potential?</p> <p><b><u>Jim McNerney:</u></b> We don't intend to kill the program.</p> <p><b><u>Cai von Rumohr (Cowen and Company):</u></b> In terms of opportunities, your commercial R&amp;D was down sequentially in the quarter despite a lot of activity on the 787; should we expect it to continue on down sequentially in the second?</p> <p><b><u>James Bell:</u></b> No. We will be, it was sort of the timing that really impacted this quarter. You will probably see it a little higher in the second. Third quarter will probably be pretty stable and then we will come down in the fourth quarter. We should be down year-over-year, but don't take away from the first quarter. That is going to do down second and third, but it will go down in fourth.</p> <p><b><u>Cai von Rumohr (Cowen and Company):</u></b> Excellent, thank you very much and good quarter.</p> <p><b><u>Itay Michaeli (Citi):</u></b> I wanted to dig in a little bit more on the two-year cash flow picture. Do you think you can get back to the cash flow power that would enable you to have the flexibility back into a billion plus in share buybacks in the next couple of year? How should we think about that playing out in the next two years?</p> <p><b><u>James Bell:</u></b> Relative to the buy back program, we'll look at what that looks like in the next year. Obviously we're going to minimize it this year given what we see as pressure on cash, but going into 2010 we'll take a look at and see where we are then and see whether or not we have the cash to continue to get back up to the buying levels we've experienced in the past. We obviously have the authority from our board to buy the shares, so that is not the issue. The issue is the priorities that put demands on cash and then how we address those with the</p>	
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				<p><b>current cash flow in the current environment.</b></p> <p><b><u>Itay Michaeli (Citi):</u></b> That's helpful. You did raise some debt opportunistically in Q1. Is there a minimum cash balance you like to have at this part of the cycle that we should be thinking about? You know, for you to maybe tap the market again if cash flow comes under some more pressure. How should we think about where you like to have your baseline fall?</p> <p><b><u>James Bell:</u></b> Well we need about \$2 billion for operation cash, so that's kind of it. Then in this environment you surely want a safety net, given the fact that we have two major development programs that haven't gotten through their flight certification programs yet; so you would want that. So we could possibly do more, it just depends on what the circumstances are as we view the opportunity in the market pricing wise and other factors.</p> <p><b><u>Dominic Gates (The Seattle Times):</u></b> I have a very specific question about the 787 flight test plans. First, I just want to clarify my own understanding of a response you gave earlier to Ron Epstein, when he asked about <b>the multiple in terms of the spending on the 787, you said no integer involved. I am taking it that means it is less than two, correct?</b></p> <p><b><u>Jim McNerney:</u></b> Yes. Dominic, I was being somewhat facetious in response to a question that implied that it was some egregious multiple. I think, as you know, there have been some cost pressures that both us and our suppliers have faced and we're dealing with it.</p> <p><b><u>Dominic Gates (The Seattle Times):</u></b> <b>But it hasn't doubled from what you originally expected in '03? From that response you gave, is it right of me to make that assumption?</b></p> <p><b><u>Jim McNerney:</u></b> <b>I think that's true, Dominic.</b></p> <p><b><u>Dominic Gates (The Seattle Times):</u></b> All right and to my own question, the first six tester planes are apparently now unallocated after you refigured your customer delivery schedule. <b>Are there concerns about selling those planes, getting those planes placed, given the weight problems that they have and where do we stand on weight with the ones that follow on?</b></p> <p><b><u>Jim McNerney:</u></b></p>	
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					Listen, the first production airplane that will be delivered is airplane #7 as I mentioned today. <b>We will find homes for the first six airplanes.</b> We have discussions ongoing with people and I am confident that they will end up placed.”	
23 April 2009	<i>Conde Nast Portfolio</i> , “Boeing and Dreamliner Trouble: Bumpy Ride” (Jeffrey Rothfeder)	Jim McNerney, CEO, <i>The Boeing Company</i>	Firm-Investors-Suppliers	α	<p>“Two years late, <i>Boeing’s</i> Dreamliner jet makes its maiden test flight this spring—straight into the turbulence of the financial crisis. <b><i>Boeing is losing billions in canceled Dreamliner orders and has been repeatedly passed over for Pentagon contracts. Can it break its losing streak?</i></b></p> <p>Even when it races, nose up, into the sky, <b>the initial test version of the Dreamliner will go aloft with temporary fasteners—and missing some less critical parts, such as those for lighting and bathrooms. One reason is that <i>Boeing</i> has redesigned 30 percent of the plane to reduce weight, an unprecedented degree of change for an aircraft this late in development. As one of many grim jokes making the rounds on <i>Boeing’s</i> factory floor goes, ‘Maybe they meant a bad dream.’</b></p> <p><b>The Dreamliner’s delays are expected to cost <i>Boeing</i> as much as \$10 billion in canceled orders and compensation to airlines. The fiasco has become an object lesson for manufacturers in how not to do global outsourcing and has eroded <i>Boeing’s</i> reputation for efficiency and innovation.</b></p> <p>Now, on the eve of its big launch, the Dreamliner carries the company’s hopes of recapturing lost revenue and repairing the damage to its image. <b>If the plane passes the rigorous yearlong series of flight tests that begin this spring, it could lead <i>Boeing</i> out of the financial crisis. But if the Dreamliner fails, <i>Boeing</i> could become the <i>General Motors</i> of the skies, with enormous repercussions for the U.S. economy and the U.S. manufacturing base. Although <i>Boeing</i> announced in January that it was laying off 10,000 workers, it still employs more than 150,000 people in the U.S. and is the nation’s No. 1 exporter. <b>About 70 percent of <i>Boeing</i> shares are held by institutions, including all of the major mutual funds and <i>Bank of America Corp.</i>, its biggest shareholder.</b></b></p> <p>Indeed, a machinists strike last fall crippled <i>Boeing’s</i> production and contributed to a 6.2 percent decline in the U.S. gross domestic product in the fourth quarter. <b><i>Boeing</i> is so vital to a recovery that if it sputters, the federal government may be forced to bail it out, as it has automakers <i>GM</i> and <i>Chrysler LLC.</i></b></p> <p><b>The plane fell victim to infighting between <i>Boeing’s</i> bean counters and engineers, who had to gamble on a low-cost—but unrealistic—</b></p>	On the systematic problems with a modular enterprise architecture.



				<p><b>manufacturing strategy. ‘We may have gone a little too far, too fast’ with the technology and materials and in outsourcing production, <i>Boeing</i> chief executive James McNerney told <i>Condé Nast Portfolio</i>. ‘The program was more than we could handle.’</b></p> <p>The Dreamliner debacle would be bad news in good times, but it is a nightmare for <i>Boeing</i> in this global economic crisis. <i>Boeing</i> has received about 900 advance orders for the Dreamliner, the most of any new plane, at about \$200 million apiece. But with air traffic down from last year, carriers have begun to cancel orders. ‘I’d have concerns about every customer right now,’ says Richard Aboulafia, a vice president at <i>Teal Group Corp.</i>, a consulting firm that follows the aerospace and defense industries. Aboulafia estimates that between 30 and 70 percent of all orders for jets industrywide will be at least deferred, if not canceled. In his worst-case scenario, 630 orders would be postponed or dropped outright, a potential loss of \$126 billion in revenue.</p> <p>Airlines could seek as much as \$4 billion in compensation for losses linked to delays, and <i>Boeing</i> is not expected to make any money on the first 100 or so Dreamliners it delivers. Some carriers, weary of waiting for the Dreamliner, bought or leased planes from <i>Boeing’s</i> biggest rival, <i>Airbus SAS</i>, a European consortium. ‘We’re pretty fed up,’ says the chief executive of one major carrier that ordered 15 Dreamliners. ‘We’ve gotten no clarity from <i>Boeing</i>.’</p> <p>Perhaps worst of all, <i>Boeing</i> has forfeited a significant revenue stream—from Dreamliners that would have been delivered and paid for—that could have propped up the company through the downturn. <b><i>Boeing’s</i> cash reserves plummeted during 2008 from \$7 billion to \$3 billion, which will make it difficult to develop new planes.</b></p> <p>While conceding that the next few years will be tough, CEO McNerney dismisses the notion that the Dreamliner’s moment has passed. Because of the long lead time from conception to delivery, he says, it’s not unusual for a new plane to bump up against a recession. And since <i>Boeing</i> can make fewer than 100 Dreamliners a year, the company would have a five-year backlog even if half of the 900 orders were canceled. ‘The fact is that 95 percent of the pipeline for the Dreamliner would have been exposed to this financial crisis even if we delivered on time,’ says McNerney.</p> <p><b>The Dreamliner’s problems have exacerbated the broader decline of <i>Boeing</i>, once one of the world’s</b></p>	
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				<p><b>most admired manufacturers.</b> In the past year, <i>Boeing's</i> stock price has lost about 60 percent of its value, more than the Dow Jones industrial average. <b>In trying to fix the 787, <i>Boeing</i> shifted engineers away from other projects, causing a lag in developing freighters and other passenger planes.</b> <i>Boeing's</i> revenue dropped 8 percent, and its operating income fell 32 percent from 2007 to 2008. The latest results offer no comfort. In early April, <i>Boeing</i> reduced expectations by 38 cents a share for first-quarter earnings, which will be announced April 22, and said production of the 777 will be trimmed from seven to five aircraft per month starting in June 2010. In response, <b>a number of top analysts downgraded <i>Boeing's</i> stock and <i>Standard &amp; Poor's Rating Services</i> began a review of the company's debt for a possible downgrade.</b> And after dominating jet manufacturing for decades, in 2008 <i>Boeing</i> fell behind <i>Airbus</i> in orders and shipments by more than 100 planes.</p> <p><i>Boeing's</i> slide can be traced to the company's ill-fated \$13 billion purchase of <i>McDonnell Douglas Corp.</i> Under chairman John McDonnell and chief executive Harry Stonecipher, <i>McDonnell Douglas</i> starved its design and engineering operations and became little more than a sales organization, barely surviving on offshoots of its aging DC-9 and DC-10 models. The 1997 acquisition infected <i>Boeing's</i> forward-thinking culture, emphasizing cost-cutting at the expense of innovation.</p> <p>McDonnell and Stonecipher, both of whom joined <i>Boeing's</i> board, successfully argued for improving profit margins on existing lines instead of introducing new commercial jets. <i>Boeing</i> cut its annual research-and-development budget for commercial aviation from more than 4.5 percent of airplane sales in 1997 to slightly more than 3 percent in 2003. <b>At the same time, <i>Airbus's</i> R&amp;D budget topped 8 percent of sales.</b></p> <p>But by 2003, Alan Mulally, who headed <i>Boeing's</i> commercial-airplane division, was convinced that <i>Boeing</i> needed a fresh plane. <b>Inspired by <i>Toyota's</i> combination of technological prowess and lean efficiency,</b> Mulally had spearheaded development of the 777 in the early 1990s, transforming <i>Boeing</i> into a world-class manufacturer. Now he believed that to preserve its eroding market-share leadership, <i>Boeing</i> had to produce a jet that would capture the imagination of the airlines and the attention of Wall Street. Originally called the 7E7, Mulally's baby was renamed in a public contest that drew 500,000 online voters. By a large majority, they dubbed it the Dreamliner.</p> <p><b>Mulally's ambitions collided with the frugality of</b></p>	
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				<p>the former <i>McDonnell Douglas</i> executives. Conceptual drawings showed that the Dreamliner's cost would at least match the \$10 billion-plus price tag of the 777. After becoming chief executive in 2003, Stonecipher said he intended to seek board approval for the Dreamliner. However, the unspoken message was 'but not at the current price,' says Jon Ostrower, an aviation insider who writes for Flightglobal.com. Mulally was told that the plane's projected development costs would have to be 50 percent or more below the 777's.</p> <p>To meet this demand, Mulally came up with a wildly unorthodox plan: He would farm out the design, engineering, and manufacturing of the 787—virtually everything except final assembly—to suppliers that would shoulder more than \$9 billion of the project's \$13 billion cost, in exchange for lucrative, multiyear guaranteed contracts and a slice of the plane's sales. These outside companies would coordinate with one another to produce whole sections of the plane, stuffed with assembled components, systems, ducting, insulation, and wiring. <i>Boeing</i> workers in Everett would merely have to connect the major parts of the aircraft.</p> <p>No large manufacturer had ever before so audaciously turned over control of the entire process—from concept to shipment—to outside firms. In a critical oversight, no provision was made for monitoring the suppliers. Mike Denton, vice president of engineering for <i>Boeing's</i> commercial-airplanes division, recalls that the vision for the Dreamliner was 'not to encumber the partners with the <i>Boeing</i> way of doing everything. So we erred on the side of giving them more free rein than in retrospect we should have.'</p> <p>By the end of 2003, the company had greenlighted the Dreamliner. Moving quickly, <i>Boeing</i> signed up dozens of suppliers. Japan's <i>Mitsubishi Corp.</i> agreed to make the wings; France's <i>Messier-Dowty SA</i> took on the main landing gear; and Italy's <i>Alenia Aeronautica SpA</i> would build the 64-foot-wide horizontal stabilizer. The vertical fin, the sole piece of the airframe slated to be made in the Seattle area, would connect to a rudder from Chengdu, China, and a front-facing edge from Shenyang, China.</p> <p>In 2005, Stonecipher was fired for having an inappropriate relationship with a female executive. After McNerney was chosen as chief executive, Mulally left <i>Boeing</i> in 2006. Whether Mulally could have made a success of the outsourcing strategy, had he stayed, is one of the great what-ifs of the Dreamliner saga. He became chief executive of <i>Ford</i></p>	
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				<p><i>Motor Co.</i>, where he introduced more efficient techniques in the automaker's factories. In part because of Mulally's streamlining, <i>Ford</i> has been able to wave off government bailout money taken by its rivals.</p> <p>The suppliers were expected to deliver their completed parts in early 2007, giving <i>Boeing</i> enough time to assemble the initial Dreamliner for its first public display on July 8, 2007—or 7/8/07—a date chosen to match the plane's model number. Under pressure from <i>Boeing</i>, the suppliers sent to Everett as much as they had finished. Sections arrived in an incomplete or defective state, or failed to fit adjacent parts made by other suppliers. The Dreamliner that <i>Boeing</i> rolled out to the applause of 15,000 workers and their families and friends resembled a mismatched model airplane.</p> <p>Unbeknownst to <i>Boeing</i>, one important supplier was being pared down by a prominent private equity firm. <i>Vought Aircraft Industries Inc.</i> was supposed to build the two aft barrels of the fuselage in a new factory in Charleston, South Carolina. Once completed, these parts were to be sent next door to another new factory—a joint venture between <i>Vought</i> and <i>Alenia Aeronautica</i>—to be connected to fuselage sections, wiring boxes, and the main landing gear.</p> <p>But <i>Boeing</i> didn't realize that the <i>Carlyle Group</i>, which had acquired <i>Vought</i> in 2000, was starving it of resources while making a few cosmetic improvements to attract potential buyers—a once-common private equity tactic. By early 2006, <i>Vought</i> was facing a severe 'liquidity crisis' and nearly went bankrupt, chief executive Elmer Doty told analysts. It couldn't afford the new plants, employee training, and fuselage design and assembly and had to 'reconstitute' its engineering department. 'We are among the riskiest, if not the riskiest' of the Dreamliner suppliers, Doty acknowledged.</p> <p>When <i>Vought</i> sent empty fuselage barrels that were short of vital fasteners, <i>Boeing</i> finally took notice. The company compelled <i>Vought</i> to fire the executive in charge of operations in Charleston and then acquired <i>Vought's</i> 50 percent stake in the joint venture with <i>Alenia</i>. After having spent almost \$300 million on the Dreamliner project in 2008, <i>Vought</i> had to borrow \$200 million more last year, when it finally shipped the first of its fully completed fuselage sets. <i>Vought</i> has asked <i>Boeing</i> to redraw its contract to cover more up-front expenses. So have other hard-pressed suppliers, potentially costing <i>Boeing</i> hundreds of</p>	
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				<p><b>millions of dollars.</b></p> <p>McNerney says <i>Boeing</i> has learned from its mistakes and now monitors suppliers closely. Hundreds of <i>Boeing</i> employees were dispatched to suppliers to implement the ‘Boeing way,’ and McNerney has visited many of the factories, sometimes unannounced. <b>‘We overwhelmed the suppliers with <i>Boeing</i> folks in reaction to not having enough early on,’</b> he says.</p> <p>Across from the Dreamliner’s placid bunker, on the opposite side of the vast barnlike plant, <i>Boeing’s</i> storied past and manufacturing prowess are impressively on display. <b>A platoon of 777s is under construction on a production line superior to any other in the aerospace industry—one <i>Boeing</i> decided not to use for the Dreamliner because outsourcing was cheaper.</b> Rather than assembling 777s one by one, parked side by side—the traditional approach for jet builders—<i>Boeing</i> has coupled its famed wide-body to a continuously moving platform that creeps along at a scarcely noticeable 1.8 inches per minute. <i>Boeing</i> does its utmost to avoid assembly delays of even a few minutes. <i>Boeing</i> workers monitor each 777’s exact coordinates on the factory floor from the time the jet ambles in from the plant’s rear gate, with just its aft fuselage joined to its main body, to the time it reaches the 300-foot-wide hangar doors as a completed plane. <i>Boeing</i> consistently makes about seven “triple sevens” a month and boasts a backlog of about 350 orders for the \$250 million plane. <b>In the first two months of this year, the 777 had a net gain of three orders while the Dreamliner lost 32. The moving assembly line in the 777 plant in Everett—and another in Renton, Washington, where the 737 is built—has produced impressive results that the Dreamliner program can only, well, dream about. Assembly time is down 21 percent, time spent in the factory has been reduced from 26 days to 17, and 20 percent of mistakes have been eliminated. By these measures, <i>Boeing</i> is at least four years ahead of <i>Airbus</i>.</b></p> <p>Despite <i>Boeing’s</i> recent failures, its innovative spirit—reflected in the 777 and in the Dreamliner’s design—remains praise worthy. If the economy rebounds by the time the Dreamliner makes its first commercial flight next year, the plane could still become the blockbuster <i>Boeing</i> envisioned. But so far, it’s just a cautionary tale. <b>‘The lesson is that manufacturing programs cannot operate as islands,’</b> McNerney says, but must meet companywide standards. ‘I think we are centered on that now,’ he notes ruefully. <b>‘A little later than we needed to be for the 787.’”</b></p>	
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28 Apr. 2009	<i>The Olympian</i> (Associated Press), "Boss Sees Upswing After recent Slump" (David Carpenter)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm-Investors	$\alpha$	<p>"CHICAGO – <i>The Boeing Co.</i> Chairman and Chief Executive Jim McNerney assured shareholders Monday that the company is in strong shape to ride out the <b>'once-in-a-lifetime' downturn</b> that has walloped its profits, jetliner orders and stock price. <b>Putting an upbeat spin</b> on a slump that has hit both the aerospace company and its customers hard, he cited as reasons for optimism: <i>Boeing's</i> huge backlog of orders, diversification between commercial airplanes and defense, and its continued, albeit halting, progress on the 787. McNerney also reiterated that that oft-delayed new passenger jet will take to the air before the end of June. <b>'We are on track to fly this quarter,' he said, without giving a more specific date on its first flight.</b> A week after <i>Boeing</i> posted a sharp drop in quarterly earnings, McNerney acknowledged that the company still is going through 'a tough patch.' He noted that <b>the world's airlines are expected to see a 12 percent decline in revenue this year, or about twice the drop they experienced after the terrorist attacks of 2001.</b> 'Almost overnight, we have gone from flying with the wind at our backs to flying into the teeth of a strong headwind,' he said at <i>Boeing's</i> annual meeting at a museum in Chicago. Nevertheless, he maintained that the current downturn is <b>'a once-in-a-lifetime storm and not a permanent condition.'</b> The company, he said, believes that the recession will inevitably give way to a new era of economic growth and prosperity."</p>	On a modular enterprise architecture's exogenous explanations
28 Apr. 2009	<i>Forbes</i> , "Boeing CEO: Current Downturn an 'Aberration'" (Kyle Peterson)	Jim McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm-Investors	$\alpha$	<p><b>"We have to run the place tight from a cash viewpoint,"</b> added McNerney, who spent more than four years at the helm of <i>3M Co.</i> and 19 years at <i>General Electric Co.</i> before arriving at <i>Boeing.</i>"</p>	On a modular enterprise architecture's strategy of efficiency.
May 2009	<i>(Transcript of ethics training video).</i>	Executive Council, <i>The Boeing Company</i> : James McNerney, Chairman & CEO; James Bell, CFO;	Firm	$\alpha$	<p><b>Wanda Denson-Low:</b> "We need leaders, <b>talking about the decisions that they make every day. They need to discuss how they solve the ethical dilemmas that occur in the workplace.</b> All leaders are <b>responsible for ethics &amp; compliance, not just Ethics Advisors.</b>"</p> <p><b>James McNerney:</b> "A workplace <b>culture</b> guides the way we behave. It has our <b>values and principles</b> embedded in it, it has patterns of behavior that are acceptable. It has things we do that are valued. We have to have <b>accountability</b> for our culture."</p> <p><b>James Bell:</b> "<b>Open culture</b> allows you to have that real</p>	On a modular enterprise architecture's stated views on ethics, trust and open culture.

		<p>Scott Carson, President &amp; CEO, Boeing Commercial Airplanes; James Albaugh, President &amp; CEO, Integrated Defense Systems; Wanda Denso n-Low, Senior Vice President, Office of Internal Governance; Mike Cave, Senior Vice President, Business Development &amp; Strategy; Shephard Hill, President, Boeing International; John Tracy,</p>		<p>discussion because when you talk about <b>trust</b>, you're really basically saying 'can I rely on somebody else for my success?'"</p> <p><b>James Bell:</b> "People are going to be hesitant to speak up in groups, they're going to be hesitant to talk about issues that are controversial. You have to create <b>trust</b>, you have to set an environment where people feel it's <b>safe</b>."</p> <p><b>James Albaugh:</b> "<b>Trust</b> at every level of the organization. <b>Trust</b> between management and employees, and between employees and management."</p> <p><b>Scott Carson:</b> "People feel <b>trusted</b> when their opinions are sought, and received."</p> <p><b>Shephard Hill:</b> "Do we <b>trust</b> each other, do we <b>trust</b> the organizations and the motivations that we have—we do we have a sense of <b>shared objectives</b>?"</p> <p>"As a company develops its business strategy it has to assume <b>ethics</b>, it has to assume <b>integrity</b>."</p> <p><b>John Tracy:</b> "If you don't have a <b>supportive culture</b> then no matter how good the strategy is, it won't succeed. Not only is it beneficial for the ethics world but this culture also will allow us to bring ideas together to better solve our customer's problems."</p> <p><b>James McNerney:</b> "That's a great example of an <b>open culture</b> supporting business performance as well as inclusiveness and ethics because the more ideas we get on the table, the better the result is going to be, particularly in a tough environment like we have now."</p> <p><b>Thomas Downey:</b> "<b>We value the courage that it takes for people to speak up, to offer ideas in an open environment.</b>"</p> <p><b>Richard Stephens:</b> "<b>I think that's going to be the real test in the current economic environment, and people have to make decisions, and will they have the courage to make the right decision or not?</b>"</p> <p><b>James Albaugh:</b> "The decisions that you're going to make are going to be the right ones for the customer, for the employees, and <b>they're not going to be ones that are driven by, you know, what's good necessarily</b></p>	
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					<p><b>Michael Luttig:</b> “We are defining the <i>Boeing culture</i> and the <i>Boeing values</i>, each and every one of us as we go along everyday. In an <b>open culture</b>, the likelihood of unethical conduct is reduced.”</p> <p><b>Michael Cave:</b> “A culture where people are not afraid to raise issues, and not afraid to admit that they don’t have all the answers is probably a culture where people are going to ask the right questions and bring the right resources to bear.”</p> <p><b>James Bell:</b> “The end result of that is going to be <b>ethical behavior</b> in everything you do.”</p> <p><b>Shepherd Hill:</b> “There can’t be any question about what motivates us, other than doing the right thing.”</p> <p><b>Scott Carson:</b> “It’s my expectation that we all be part of <b>owning and perpetuating the culture that we value</b> that has led to our success.”</p> <p><b>James McNerney:</b> “By living within the values that produce the culture, and by interacting and setting examples for others, it’s a big deal.”</p>	
1 May 2009	Seeking Alpha, “Spirit Aerosystems Holdings, Q1 2009 Earnings Call Transcript” (www.SeekingAlpha.com)	Jeff Turner, CEO Spirit Aerosystems	Firm-Investor	$\alpha$	<p><b>Jeff Turner (Spirit Aerosystems):</b> Overall, we executed our core business well during the first quarter of '09. Our results reflect solid performance across the company as we return to full rate production on <i>Boeing</i> programs following the machinist's strike at <i>Boeing</i> which occurred late last year. Despite that strike at <i>Boeing</i> we achieved first quarter sales of \$887 million, <b>operating margins of 11%</b> and fully diluted earnings per share of \$0.45. Financially, the impact of the strike at <i>Boeing</i> reduced the first quarter earnings by \$0.18 per share. During the quarter the primary end market for <i>Spirit's</i> core business continued to soften as demand for commercial air travel declined. We've been taking the appropriate actions over the past several months as we focus on meeting our customer requirements and <b>managing through the business cycle</b>. I'll discuss several of those actions we have taken in more detail in a few minutes. During this quarter, we opened our new <i>Spirit Malaysia</i> manufacturing facility as planned. Our <i>Spirit Europe</i> team and Wings segment leadership did an outstanding job of bringing the new facility online and the new Malaysian team is doing a great job. <b>As you know, <i>Spirit Malaysia's</i> initial focus will be on <i>Airbus</i> products</b>, but over time, we'll provide value to products across the company. The new operation is</p>	On a modular Enterprise Architecture’s defense of its financial performance

				<p>adding value immediately in 2009. I continue to be pleased with our performance on 787 program. Our team continues to work well with the customer and our suppliers regarding change management, flight test preparation and production plans. We look forward to making solid process on the 787 program through the remainder of 2009. Now let me turn to slide six and give you a brief update on the 787. We delivered aircraft number six in March, and aircraft number seven, the entry into service airplane is progressing through systems installation process.</p> <p><b>Overall, product quality remained high and we continue to work with the supply base to enable a smooth production ramp up.</b> We are continuing to work closely with our customer as we incorporate the necessary engineering changes on the initial end-service airplanes. <b>Our internal efforts remained focused on productivity improvement and increased utilization of the capability we have in place.</b> We expect to restart forward fuselage production later in 2009. Now let me turn to slide seven, and provide you my thoughts on the business environment. Clearly these are challenging times. The global economy continues to impact air travel across regions of the world. In the face of these challenges, we are seeing our customers work to match supply with demand. We've seen our customers announce plans to delay development programs, to reduce production rates on certain products, to forego previously planned production rate increases on other products and indicate caution yet continued solid demand for other products. <b>This tailored response by our customers due to current market conditions from my view is a direct result of the more measured increase in production rates undertaken since 2006. The more measured and tailored response is to market demand with the goal of reducing the magnitude of cyclical swings to the extent possible benefits stakeholders across the industry.</b> We know that the airplanes business go through cycles. And we've learned much from the past that positions us well for the future. We've structured business arrangements to share upfront development costs for new programs. We've maintained a continuous focus on cost and inventory management as well as productivity improvement. We've been prudently conservative in estimating future demand for products, and we've taken aggressive proactive action freezing executive management and some non-management salaries, and are hiring only to revised (ph) critical skills. At <i>Spirit</i> we've shown that our team can respond effectively to changing business requirements in difficult situations, and do so in innovative ways that keep our company positioned to support our customers and to <b>create long-term value.</b> We believe we are well positioned to accomplish this at <i>Spirit</i>. Now let me turn it over to Rick who will</p>	
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				<p>provide more details on our financial results and outlook. Rick.</p> <p><b><u>Rick Schmidt (Spirit Aerosystems):</u></b> Thanks Jeff, and good morning everyone. Slide nine, summarizes <b>our financial results for the first quarter which continue to be influenced by the residual impact of the strike at Boeing.</b></p> <p><b>Operating income margins were 11% in the quarter, about a 160 basis points below the prior year period largely due to the lower revenues from the strike</b> and the small negative cum-catch adjustment. Sequentially margins were up significantly from the fourth quarter due to higher sales volume in the absence of a \$27 million negative cum-catch adjustment booked in the prior quarter.</p> <p><b><u>Jeff Turner:</u></b> Thank you, Rick. And I will wrap up on slide 18, with just a few brief comments. Our core business is performing well. <b>We are conservatively capitalized,</b> and remain financially strong. While are passed the challenges posed by the strike, we are taking the necessary steps to successfully manage through this cycle, and our core businesses, and meet customer requirements on new programs. There is no question these are challenging times across the commercial aviation and aerospace industry. And we are well-positioned to manage through them. I believe that the current difficult economic time will pass, and when it does, Spirit is well-positioned to take advantage of future growth opportunities and to create value. We'll now be glad to take your questions.</p> <p><b><u>Howard Rubel (Jefferies &amp; Co.):</u></b> I want to talk about gross margin a little bit. I mean, it's significantly better than the fourth, but not quite as good as you've done. Could you put it in context of what you'd like to see for the balance of the year. And I mean, there are a number of offsetting items you have at some point of 320 rate change of 737, you might want to be preparing for some change there. And then, <b>the 787 obviously becomes a greater part of the mix.</b> So how should we think about what you're going to do with them, what you can do with gross margin to improve it from where it is and deal with some of the challenges?</p> <p><b><u>Jeff Turner:</u></b> Well I think Howard. First of all clearly margins do come under pressure in reducing volume environment. Also I'd remind you of <b>the difference in margins as we shift to newer products, specifically the 787,</b> we've talked about that in the past. Clearly, we remained focused on working margins and productivity in our processes and so on.</p>	
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				<p><b>But I do think we're in a period of time where margin expansion is going to be difficult,</b> and managing it to the right balance is appropriate for us, as we look to manage effectively through whatever downturn happens to be here, and prepare our self for the upside. Rick, you have anything to add to that?</p> <p><b><u>Rick Schmidt:</u></b> Yeah, I would add to that Jeff. If you just look at margins for the remainder of 2009, and I got you saw from <b>the margin percentage standpoint in the first quarter is pretty much what you'll see for the rest of the year.</b> Now right now, all of our current contract locks largely extend through the end of this year. So, we're approaching to end of these locks and usually at the end of the blocks you don't have a lot in away of the prices or adjustments in your contract profitability, because most of it is driven by actual costs it's behind you. So, pretty consistent margins in the second half, Jeff mentioned mix, certainly, <b>787 as we've talked about in prior calls has lower margin on a base business. So that picks up, that will generate some downward pressure on margins.</b> But offsetting that is some revenue recognition and profit recognition on some of our newer programs, which have somewhat better margins than our legacy programs, and also our aftermarket business continues to do well. And it has somewhat better margins than our legacy business. Well, for the near term, we those largely offsetting margins and being fairly consistent over the next three quarters.</p> <p><b><u>Doug Harned (Sanford C. Bernstein):</u></b> I am interested and wondering on the 787. And <b>when you look at the design changes that you've tried, and seems like there have been a pretty consistent flow of design changes.</b> How are you looking at now the sort of scale and the timing of when you might get reimbursed from <i>Boeing</i> on this?</p> <p><b><u>Jeff Turner:</u></b> Well again I think we've talked about that in previous calls. There is a long term program, and a number of, the number of pieces to that puzzle. I think it's sufficient for us to say that we're making process with our conversations with <i>Boeing</i> and we continue to work through the issues.</p> <p><b><u>Doug Harned (Sanford C. Bernstein):</u></b> But you can't -- you don't know whether this will be something that is likely part of the pricing that you have when you deliver as opposed to something that you will receive in advance?</p> <p><b><u>Jeff Turner:</u></b> Well, we've had some advances and Rick talked</p>	
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				<p>about that from the impact on the finance of this quarter. And those will continue in the future. But, I don't have anything to announce there in what we have -- other than the fact that we continue to make progress. And we continue to have discussions on a number of fronts. Rick, you want to add anything to that?</p> <p><b><u>Rick Schmidt:</u></b> No I would just -- I think Doug, you'll probably see a combination of both, as these issues get resolved. Although I would say, given the kind of the current state of discussions. <b>It would gravitate much more towards future price changes on products.</b> Would be reflected over our contract lock and influence of the margins that we've recognized in that lock.</p> <p><b><u>Doug Harned (Sanford C. Bernstein):</u></b> Okay. And than second question on <b>labor</b>, as you look to the miscellaneous (ph) contract ending in 2010, <b>how are you approaching that today in terms of the way you are thinking about discussions in advance</b>, any kind of a timeline you may have for looking at those?</p> <p><b><u>Jeff Turner:</u></b> Sure. Let me just say, <b>we've been approaching that for three and half years now. So, we see the relationship with our employees, and their representatives as a partnership that we have to work all the time.</b> And clearly, we have a contract point mid-next year. But, you can rest assure that conversations are underway, have been. <b>Clearly, we expect to reach agreements that are meet to needs our employees that are market based that clearly support the long-term viability of our company and achieve goals. It's in certainly, in the interest of the company and clearly in the interest of the employees that have a viable, vibrant spirit. So, I think we've approached that whole partnership from day one, as something that we need to keep in front of us all the time.</b></p> <p><b><u>Carter Copeland (Barclays Capital):</u></b> Okay. And one more on the 787, the inventory build in the quarter, how much of that was related to excess over average, relative to other?</p> <p><b><u>Rick Schmidt:</u></b> I don't have that in front of me Carter. But certainly, <b>continuing to complete the units that are here, attracts costs. So, I would say the deferred costs certainly is a large component of the increase in the quarter.</b></p> <p>Well certainly, <b>as we start to get a more normal drumbeat of production, starting back up here on the 787 program, you're going to see the average</b></p>	
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				<p><b>cost per unit is going to come down dramatically.</b> And then the units that we have in inventory today, both those that are nearing completion and those that are further back behind in our manufacturing process is been these units have been there now for a couple of years. <b>Things continues to be build up, they continue to attract costs which makes the early units much more expensive than what we'll see going forward.</b></p> <p><b><u>Carter Copeland (Barclays Capital):</u></b> But presumably, the benefits come from the units that are produced once you restart production, because all of the ones that are sitting there now are shouldering a lot of that cost over the past couple of years. So, you'll need to get through those units before you start seeing better excess over average performance.</p> <p><b><u>Rick Schmidt:</u></b> That that's absolutely right. But as you look at that graph though, the breakpoint, happens probably quicker than those people realize is. <b>Again, this program has been in the stop and start mode for an extended period of time now.</b> Now, once we really get going, I think you'll see that the play at which we hit the average. So right now, obviously our actual costs are over the average. But, the play that which we hit the average and start in effect eating into that deferred, I think will happen fairly quickly. <b>It will happen within the first, 100 to 125 units.</b></p> <p><b><u>Robert Spingarn (Credit Suisse):</u></b> Rick, your guidance range is \$0.20. Could you talk about some of the major swing variables that are in there?</p> <p><b><u>Rick Schmidt:</u></b> Well I'm sure. <b>Probably one big one that we've talked about in the past is in the R&amp;D area that the one variable that we still have in R&amp;D are the 787 derivatives.</b> We have factored into our guidance some spending, R&amp;D spending for the derivatives. Now, how much we actually spend this year is going to be based on the schedule for <i>Boeing</i> schedule basically, for us supporting them and bringing those derivatives to markets. So, that is somewhat of an unknown yet, as to how much will fall into this calendar year. I think at this point, we have been probably on the conservative side for how much we think we'll spend this year. So, I think that's a variable yeah certainly, revenues are always a variable. Right now I think we have got a pretty good line of sight on what we think revenues are going to be the rest of the year. And there is, the big variables would be how many 787 units do we actually ship this year, how much revenue do we generate from</p>	
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				<p>some of our new programs. And some of those aren't based on shipping units. They are based on completing engineering work and on milestones. So, I would say those are the big ones. Gross profit obviously follows the revenue. So, I think the gross profit absent some surprise that we can't foresee at this point, gross profit will be in the range that we saw in the first quarter. SG&amp;A tends to be fairly predictable. We seen a fairly constant level of SG&amp;A over the course of the last year, year and a half. So, I don't expect that to change much. But I think its revenues R&amp;D expense maybe a little bit in interest expense, obviously, with the draws on our revolver that we've experienced in the first quarter, it carries some interest expense with it. So, the timing when we are going to be able repay those will have some influence. But I'd say those are the big factors.</p> <p><b><u>Robert Spingarn (Credit Suisse):</u></b> Okay. And then the other thing I wanted to ask about you may have touched on this earlier, but how should we think about <b>787 cash flow</b>, as you start to ramp up deliveries. And I am asking this in context of the advances that you've gotten from <i>Boeing</i>. So, can you walk us through how those dynamics will evolve and then ultimately change?</p> <p><b><u>Jeff Turner:</u></b> Well, what will happen is you might recall, we signed an MoA last year, first quarter of last year. That provided additional advances in 2008. And the repayment obligations for those units were that for those advances, were that -- they basically, <b>those advances basically covered the first 45 to 50 units that we would deliver. So, in effect, Boeing has already paid us for the first 45 to 50 units that we will deliver.</b> So, as we deliver those units, that will -- that value of that delivery will apply a 100% to liquidate the advanced payment. <b>So, the 396 million that we got in 2008 that will be repaid fairly quickly over the rest of 2009.</b> And then we'll start to ramp up in 2010 and 2011. <b>But once we have that behind us then we're back to the old schedule which was the original 700 million that we got, that was repaid 1.4 million a unit.</b> So, once we get past this initial block of units, then we'll kind of revert to the schedule that we have before.</p> <p><b><u>Carter Leake (Davenport &amp; Company Llc):</u></b> And then any update on North Carolina facility. Is that still as far as timing, is that still on track as you mentioned on the last call?</p> <p><b><u>Jeff Turner:</u></b> Yeah, it is still on track. Progress being made if you stop by Kingston, you will facility come in up out of the ground as it should, <b>as you would expect and appreciate, we are being very prudent. It's</b></p>	
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				<p><b>frankly a good time in the environment to build. So, we are watching those contracts closely. And clearly being prudent as we know how to be the timing of those expenditures. That project is coming along very well.</b></p> <p><b><u>Joseph Nadol (J.P. Morgan):</u></b> On the 787, can you update us on where you are in terms of your margin accruals there? And you noted in your slides mentioned that you are trying to get the perspective profits up there, what exactly are you doing?</p> <p><b><u>Jeff Turner:</u></b> Well right now Joe, we are doing is preparing to speed up production. We have done a lot of work, if you will, analyzing the processes, and looking for a list of <b>improvement options</b> and opportunities, ones we get it running. The real key here for us to make improvements is get some <b>production momentum. Once we do that then it comes off the drawing board to the reality of what's happening in the processes. And that's when we can really go to work, make any real improvements. So the most important thing for us is to get too drumbeat on that program and then make the in place improvements.</b></p> <p><b><u>Joseph Nadol (J.P. Morgan):</u></b> And so we're still in a <b>positive margin situation here in sort of a low single-digits, is that accurate?</b></p> <p><b><u>Jeff Turner:</u></b> <b>We are. We're in a small positive net margin for the three packages that we have on the 787.</b></p> <p><b><u>Cai Rumohr (Cowen &amp; Company):</u></b> Yes, thank you gentlemen. On its call, <b>Boeing described the pressures they're having from lower inflation escalations which they are unable to pass on to their suppliers and intimated they might make efforts to pass some of that pressure on.</b> How are you positioned regarding inflation escalation and how far do your contracts are your contracts priced looking out on the legacy <i>Boeing</i> programs?</p> <p><b><u>Jeff Turner:</u></b> Legacy <i>Boeing</i> programs are priced through 2012. And I would just say parenthetically that all customers have price pressure on suppliers all the time.</p> <p><b><u>Robert Stallard (Macquarie Research Equities):</u></b> First on the 787, Jeff is there anything you could tell us in which month you expect to start delivering again and whether the monthly rate will be ramping up for a fairly consistent rate per month?</p>	
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					<p><b>Jeff Turner:</b> Well, a couple of volumes Rob, one is that we are delivering, now in fact we delivered unit number six in the first quarter. We have unit number seven in the final installation -- systems installation area and it will soon be ready for it poll. So, clearly the numbers that Rick gave, we're going to have to speed up production deliveries if you will to meet the demand for the rest of the year. The point that I made is that <b>we have had the winding on the barrels the fabrication process shut down for quiet a while now</b> and we will resume that later this year. The exact -- I did not mention and don't at this point intend to give the specific time when we start that back up. It will be very much dependant on the post signals that we get for the product. But we will be ramping up that airplane per the plan later on this year.</p> <p><b>Robert Stallard (Macquarie Research Equities):</b> So if you look at the forward fuselage, it's still a little bit (inaudible) when exactly it's going to start and just something it sounds like its also a little bit time (ph) for what the exact rate will be per month as well?</p> <p><b>Jeff Turner:</b> But again, we've got a number of units in the process now. We've shipped through line unit six. <b>I think we've told you before we wound through line unit 22.</b> So, it's just a question of timing of as those pulls start and that pulls us back through our line when we fire up the winding process again.</p> <p><b>Rick Schmidt:</b> So I mean those are -- <b>we were still on short work week for part of the quarter. Its -- when you have that kind of environment in your manufacturing facilities I mean that always creates certain amounts of inefficiencies which end up showing up in deferred cost.</b> So, I mean those will be unwound over the remainder of the contract lock."</p>	
13 May 2009	Seattle Post-Intelligencer, "Boeing Worker Sues over Violated Ethics, Wrongful Termination"		Firm	α	<p>"<b>An attorney who worked in Boeing's ethics policing division says that he was demoted to being an administrative assistant and then fired after raising concerns about violation of government regulations.</b> Joseph Sicilia, who lives in Spokane, filed a lawsuit against <i>The Boeing Co.</i> with the King County Superior Court in April. A <i>Boeing</i> spokesman said Wednesday that the case has no merit. Sicilia worked for <i>Boeing</i> from 2001 until his firing in November 2007. For most of his time at <i>Boeing</i>, <b>Sicilia worked in the Office of Internal Governance, which is the company's ethics department</b> based at Chicago headquarters. He reported to supervisors in Seattle, the complaint says.</p>	On allegations of a modular enterprise architecture's central trust mechanisms.

	tion.” (Andrea James)				<p><b>One of Sicilia's responsibilities was to ensure that <i>Boeing</i> complied with promises it had made to the federal government to maintain its ability to bid on government contracts. In 2005, Sicilia perceived that certain policies enacted by his supervisor ‘would result in the misrepresentation of compliance, thus equating to fraud,’ the complaint says. Later on, other program changes made within <i>Boeing</i> further reduced corporate compliance with federal acquisition regulations, Sicilia believed. He reported his concerns up the management chain several times, but the lawsuit states that his complaints were never investigated.</b></p> <p><b>"<i>Boeing's</i> got a strong compliance monitoring system and effective mechanisms for reporting potential wrongdoing," <i>Boeing</i> spokesman Chaz Bickers said. "The suit is clearly without merit and <i>Boeing</i> will defend it accordingly."</b></p> <p>Sicilia's lawyer, reached by phone on Wednesday, says she intends to seek a jury trial. <b>'<i>Boeing</i> takes a scorched Earth litigation philosophy,'</b> Spokane trial attorney Mary Schultz said. <b>'Never admit. Never acknowledge. Never say you're sorry.'</b> <b>'This is one of these areas that the American public is very concerned about these days,'</b> Schultz said, referring to the government contracting process. <b>'People like Joe Sicilia are very important for the integrity of the system.'</b></p> <p>The lawsuit is filed in state court. <i>Boeing</i> faces at least two other wrongful termination suits in federal court."</p>	
14 May 2009	<i>Flight International</i> , "Airbus Single-Aisle Output Could Revive Next Year" (Max Kingsley-Jones)	Tom Williams, EVP Programs, <i>Airbus</i> ; John Leahy, COO, <i>Airbus</i>	Firm	β	<p><b>"<i>Airbus</i> remains resolute that it sees no need for further single-aisle output cuts and could begin ramping up again by the end of next year. A320 family production, running at 36 aircraft a month, will be reduced to 34 a month (at the start of final assembly) by October. <b>Despite pressure from some corners for further single-aisle cuts, executive vice-president programmes Tom Williams says <i>Airbus</i> is 'pretty comfortable' with the adjustments it has already made,</b> based on its 'watchtower process' that monitors each customer and delivery two years ahead. 'Our visibility over the next six months is pretty good, but beyond that it gets a bit tougher,' he says. 'Into next year, <b>we've kept our cushion</b> with overbooking [of slots], more in the second half of the year.'</b></p> <p>Chief salesman John Leahy says <b><i>Airbus</i> aims to get through the downturn with flat production rates rather than a boom/bust realignment of output.</b> 'We can get through this crisis if airlines just do aircraft retirements a little bit faster during the 2009-10 period,' he adds. Leahy says that although single-</p>	On an integral enterprise architectur's views on production stability.

					<p>aisle output is declining, it could soon be heading up again. ‘We had planned to go to 40 a month, and I think that by late 2010 or 2011, you’ll see us back at 40 again.’ Williams agrees, saying that <i>Airbus</i> is ‘looking at scenarios’ to take the rate back up.”</p>	
15 May 2009	<p><i>The Australian</i>, “<i>Airbus</i> Upbeat on the A350 Schedule” (Steve Creedy)</p>	<p>Tom Enders, CEO of <i>Airbus</i></p>	Firm	β	<p>“<i>Airbus</i> chief executive Tom Enders is confident the new A350 XWB aircraft will not run into the problems experienced by its A380 superjumbo or the <i>Boeing</i> 787 Dreamliner. The 787 is almost two years late and there are rumours of further delays despite <i>Boeing’s</i> insistence it will fly by the end of this quarter. ‘What makes me confident is that we took as many lessons as we could away from the A380,’ Enders told <i>The Australian</i> this week. ‘But a lot still has to happen -- particularly as far as <b>training skilled workers</b> is concerned.’ Enders said the two-year delay in the A380 because of wiring and IT compatibility problems occurred mainly because of <b>people who were not skilled enough. They included management and blue-collar workers. ‘And I think in most cases it was more management than blue-collar workers,’</b> Enders said. <i>Airbus</i> is planning to launch three variants of the A350 in quick succession and has gained <b>483 firm orders from 30 customers since the program’s launch in 2006, a figure it says puts it 100 firm orders ahead of the 787 at the equivalent point in its program.</b></p> <p><b>Enders said the manufacturer had looked to its most experienced staff from the 380 program to staff the 350 project.</b> ‘I always say, I readily admit, that lessons learnt is perhaps less than 50 per cent of the equation,’ he said. ‘The other half is anticipating new problems. This is where we are usually not very good, all of us.’ Enders said <i>Airbus</i> had also been looking at the problems experienced by <i>Boeing</i>, including the <b>huge supply chain problems the Americans had faced with outside suppliers in its extended enterprise. It seemed <i>Boeing</i> had been too lenient with its suppliers and risk-sharing partners. Enders said <i>Airbus</i> intended to have close contact with its partners, rather than trust they would be on time and deliver the desired quality to discover problems close to the delivery date. ‘It’s one of the things that doesn’t happen automatically,’ he said. ‘It’s part of our extended enterprise concept.’ <i>Airbus</i> was also not intending to give suppliers as much responsibility for design and engineering as <i>Boeing</i> did. ‘While <i>Boeing’s</i> concept for the 787 was pretty revolutionary, ours is only evolutionary in terms of risk-taking -- I hope it is,’ Enders said. ‘But, hey, the jury is out, it will be out for a few years. Every new launch means we take a risk.’</b></p> <p>Earlier, A350 XWB program head Didier Evrard told</p>	<p>On an integral enterprise architecture’s relatively incremental approach to new product development</p>

					journalists attending the manufacturer's Innovation Days technical briefing in Hamburg the program was developing as planned and would be in service by 2012. 'It's not a risk-free or challenge-free program,' Evrard said. 'But we are on time, we are progressing along where we are meant to be with the maturity gates (milestones). We met the first important one on time and we are ready for the second one.' He said <b>Airbus was standardising its processes to make sure suppliers used the same tools, the same methods and processes and that it reinforced a collaborative mindset.</b> He pointed to a composites demonstrator program which built fuselage mock-ups as an example. Evrard said <b>it was important to have the designers and manufacturing people working together on the platform from the beginning.</b> Designers are also looking at <b>simple and efficient aircraft systems aimed at improving reliability.</b> These include opting for just three fuel tanks so there are pumps, a two-circuit hydraulic system, simpler air system architecture and design in the landing gear. <i>Airbus</i> estimates maintenance should be a 'base visit' every 36 months, with a structural overhaul required only every 12 years. It says this equates to about a 10 per cent reduction in maintenance costs on an A350-900 compared with the 787-9."	
27 May 2009	<i>Wall Street Journal</i> , "Boeing CEO Confident in 787 Schedule, Long-Term Success" (Ann Keeton)	James McNerney, Chairman and CEO, <i>The Boeing Company</i>	Firm	$\alpha$	" <b>Boeing Co is confident that its new 787 aircraft will hit near-term milestones, including first flight in June and first delivery early next year, but it won't make money for a while, Jim McNerney, Boeing's chairman and chief executive, said Wednesday.</b> 'The good news is that we have what I'm confident will be the best-selling airplane of all time, which gives us time to work on profitability,' McNerney said during the <i>Sanford Bernstein</i> Strategic Decision Conference. It is typical that new aircraft don't make money during the development stage, but the 787 experienced costly and unexpected manufacturing-related delays of nearly two years. <b>Down the road, Boeing can improve profitability of the program by further tweaking the manufacturing process, as well as modifying the plane itself, he said.</b> 'We can streamline supply chain and take more weight out of the airplane,' McNerney said. The 787 is <i>Boeing's</i> best-selling aircraft ever, garnering more than 800 orders prior to its first test flight. At the same time, though, the global market for commercial aircraft has slowed as airlines cope with a worldwide recession."	On a modular enterprise architecture's long-term views.
4 June 2009	<i>BusinessWeek</i> "Boeing's Dreamliner	James McNerney, Chairman and CEO,	Firm	$\alpha$	"When the long-delayed <i>Boeing</i> 787 Dreamliner finally takes wing above Washington State in its first test flight later this month, much will be riding on its sleek, carbon-fiber back. Some 56 buyers, ranging from <i>Etihad Airways</i> in the United Arab Emirates to <i>Northwest Airlines</i> , have ordered 866 of the planes—	On the non-systemic strategies of a modular

	<p>Nears Takeoff ” (Joseph Weber)</p>	<p><i>The Boeing Company</i></p>		<p>enough to keep <i>Boeing</i> busy for more than a decade. This state-of-the-art plane, slated to make its first commercial flights with Japan's <i>All Nippon Airways</i> early next year, will set the Chicago-based manufacturer apart from <i>Airbus</i> and other rivals for years to come. <b>But one thing the plane won't do is give <i>Boeing</i> much of a financial lift—at least not for several years. First, <i>Boeing</i> will need to recover its research-and-development costs, estimated at \$3.5 billion to \$4.5 billion. What's more, initial customers are expected to pay a discounted price of \$130 million to \$170 million per plane.</b> That's far less than what <i>Boeing</i> pulls in on such tried-and-true models as the 747, a bigger plane that can retail for more than \$300 million. <b>At first, a <i>Boeing</i> spokesman says, the new plane will be a "zero-margin" affair.</b></p> <p>The air travel slowdown, which is punishing carriers around the world, looks likely to keep the number of new planes in the skies down for a while. <b>'This looks like a three-year downturn,'</b> says Richard Aboulafia, a vice-president at aerospace consultant the <i>Teal Group</i>. <i>Boeing</i> reported on June 4 that it received just 20 orders for all of its commercial jets in May, down from 67 in May 2008. <b>Commercial plane sales are likely to account for as much as \$33.7 billion out of <i>Boeing's</i> expected \$68.2 billion sales in 2009, <i>BernsteinResearch</i> analysts estimate. But next year the commercial unit's sales will probably slip to \$29.7 billion, they add, dragging down <i>Boeing's</i> overall tally to \$64.6 billion. And net income could slide from an expected \$3.3 billion this year to \$3 billion in 2010. Nonetheless, investors appear to be excited about the Dreamliner's prospects—as well as by reports that <i>United Airlines</i> may order as many as 150 planes from either <i>Boeing</i> or <i>Airbus</i> this fall. <b>Investors have bid <i>Boeing's</i> share price up to about 50, the highest it has traded since last fall</b> and up sharply from about 29 in March. Of course, <i>Boeing</i> shares fetched more than 107 in the fall of 2007.</b></p> <p>The company expects to roll out just a half-dozen of the Dreamliners this year for testing. Then, once it is cleared to fly commercially, <i>Boeing</i> is expected to deliver about 15 to carriers next year. The company says it will ramp up manufacturing to produce as many as 10 planes a month by the end of 2012, though analysts are skeptical of that aggressive timetable. <i>Bernstein</i> analyst Douglas Harned suggests the 10-per-month rate is more likely by mid-2013; he expects only about 60 of the planes to leave factories in 2012. Says Harned: 'The manufacturing processes used to produce these aircraft are new, and the ability to reach 2012 production rates has not yet been demonstrated.' <b><i>Boeing</i> management contends it can meet the</b></p>	<p>enterprise architecture.</p>
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7 June 2009	<i>The Washington Post</i> , “Behind GM’s Attempt to Change its Image is Ambivalence about its Car of the Future” (Michael Leahy)	Bob Lutz, Vice Chairman, <i>General Motors</i>	Firm	α	<p><b>“Even now, as <i>General Motors</i> fights for survival, there is something ambivalent about its prescription for saving itself,</b> a conflict implicit in a bit of symbolism that recently greeted arrivals to the Detroit Metropolitan Airport even before they reached baggage claim. One of <i>GM’s</i> touted new automobiles sat on display in the center of the automaker’s airport gift shop. It was not the coming electric car, the 2011 Chevrolet Volt, championed by Bob Lutz, the <i>GM</i> executive most identified with the Hail Mary that the vehicle represents for the bankrupt company, which faces the immediate future as a ward of the federal government. It was not one of the relatively new GM hybrids. It was not even a mid-level sedan called the Chevy Malibu, which has received flattering reviews and awards, in part for its better-than-average fuel economy. It was instead a car that flies in the face of all the worries about the American automotive industry, all the calls to make it more environmentally responsible and therefore more viable: the 2010 Chevrolet Camaro SS with a V-8 engine, <i>General Motors’</i> version of the fast and powerful model that automobile enthusiasts commonly call a muscle car. With an estimated 25 miles per gallon on the highway, the 400-plus-horsepower Camaro SS is not a car renowned for being fuel-efficient. <b>It is another Bob Lutz car, a monument to Lutz’s and GM’s enduring hope that even as the company struggles to escape</b></p>	On a modular enterprise architect’s view of its integral competitor

				<p><b>bankruptcy as a smaller, leaner producer of fuel-efficient vehicles, the glory days can somehow be resurrected. ‘Sexy with charisma,’ is how Lutz recently described the Camaro while in his office on a square-mile expanse known as the GM Technical Center, the nucleus of the company’s research and development efforts. It is the kind of Detroit-speak he favors. ‘Some people don’t care for those kinds of descriptions today -- it’s a different time,’ says Lutz, who drives a gas-thirsty 2009 Corvette, a dream car of muscle lovers. ‘But we have new vehicles, too. We have the Volt. We are committed to the electrification of the automobile. We know this is the time.’ If you were to believe that Lutz commissioned the Volt because he thinks the environment needs to be saved from carbon dioxide emissions, or that the United States has a moral obligation to lead a greening of the planet, you would be wrong. ‘If you look at most of the mainstream media, you get the impression that 95 percent of Americans today want a vehicle like the Chevrolet Volt or a [hybrid such as the] Toyota Prius,’ says Lutz, until recently the former head of GM’s global product development and nowadays the company’s vice chairman and senior adviser. ‘And that, by God, the reason General Motors is in trouble, is that we have not offered a vehicle like that. But when you look at the reality, at today’s fuel prices, most Americans still want a conventional car.’ Why the Volt then? ‘Because it is an important symbol. We need it. It has a chance to change our image,’ he says. As GM’s situation has become increasingly dire, and interested parties from President Obama to shareholders have demanded that the company start making more fuel-efficient cars, GM has pointed to the Volt as evidence of its changing ways. But the values that have long shaped this iconic company are deeply held, especially the passion for pushing the envelope of automobile performance and power. In many ways, the Volt, and GM’s subtle shift from old design priorities, represent a contradiction of those values. Meanwhile, some industry observers are unconvinced that the Volt, even if it runs flawlessly, can be the company’s savior, and view it as a miscalculated effort to woo back customers by awkwardly trying to demonstrate a new cutting-edge bent. ‘I just think GM is focusing on the wrong thing,’ says Daniel Roos, an engineering professor at the Massachusetts Institute of Technology who studies the automobile industry. ‘The quality of its cars was horrible in the ‘70s and ‘80s, but it’s much better now. It has world-class vehicles: the Malibu and the Cadillac CTS. They should be [promoting] those and capitalizing on their strengths.’ While regarding the Volt as a sign of modest progress within GM, some critics see the</b></p>	
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				<p><b>car as basically another half-step in a company prone to half-steps.</b> They point to the Volt's internal-combustion gasoline engine -- dubbed by <i>GM</i> as a 'range extender,' meant to supply electricity to the motor after the vehicle has exhausted its 40-mile range on battery power alone -- as an indication that the plug-in electric car is not quite what it purports to be. <b>To these critics, the Volt neatly reflects long-standing problems in GM's corporate culture: a propensity for knee-jerk responses, an inbred caution even in the midst of reform and a lingering preference for comfort over efficiency.</b> Lutz vociferously rejects such characterizations. Not only does <b>the Volt demonstrate GM's 'commitment to changing,'</b> he says, but also the car is simply 'the first generation of an electric vehicle from <i>GM</i> that will produce successive generations of enhanced Volts, ultimately leading to a car running entirely on electric power in excess of 150 miles. <b>Producing a car that does not scare away the customer with its technology or cost must be GM's mission for now, he says.</b> The Volt has staunch supporters, too. A school of automotive analysts thinks that the car represents one of the last opportunities for <i>GM</i> to distinguish itself, to lure environmentally conscious buyers, in particular. Admirers and detractors alike largely agree on one point: that, if <i>GM</i> is to recover, the Volt must be part of a broader effort to reform the company's culture and push it toward acquiring new automotive passions. <b>The question remains how GM executives, so proud of their company's history, so in love with the cars of an earlier generation, will cope with their own ambivalence to change. And no one in the corporation embodies that ambivalence more than Bob Lutz.</b> Lutz strikes some observers as an unlikely figure for launching an electric-car program. The 77-year-old silver-haired, tanned and gregarious former Marine aviator rides motorcycles, pilots a helicopter that his <i>GM</i> colleagues say he lands on his driveway, <b>once called global warming 'a crock,'</b> and appeared on David Letterman's and Stephen Colbert's shows to banter about <i>GM</i>'s hopes for the Volt. <b>Just the new language associated with environmentalism irks him. He momentarily looks bewildered when asked whether the place of the modern vehicle is undergoing a change in the culture, whether in time Americans might chiefly appreciate a GM car simply for its 'utilitarian' value, a reliable conveyor of riders from point A to B. Lutz raises his eyebrows.'Utilitarian?'</b> A car is not an appliance, he says. A car is not a washing machine -- the proof of which is that people do not lust after their washing machines. They lust after a beautiful car, he says. If you want reliable, go get yourself a refrigerator. A gorgeous car, he says, is an expression of power and yearning, especially</p>	
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				<p><b>for owners who hope the vehicles will inject excitement and romance into their otherwise mundane lives. ‘Show me a washing machine that can do that,’ he says.</b></p> <p>For years, Lutz worked under <i>GM</i> chief executive Rick Wagoner, a longtime company finance chieftain who green-lighted the Volt but was preoccupied in the last years of his tenure with issues of <i>GM's</i> crushing debt and how to keep the company from collapsing. Last November, when Wagoner made the public relations mistake of flying to Washington on a corporate jet to ask congressional officials for government bailout loans, his image was irrevocably damaged. A month later, in one of his last high-profile appearances, Wagoner rode in a Volt prototype along Washington streets before the second round of hearings on the nation's crippled auto industry, part of his effort to trumpet <i>GM's</i> evolving environmental focus. But by then the executive's fate was sealed, a consequence of the belief that he was linked with an out-of-touch company. Pushed out by the Obama administration, Wagoner gave way to new chief executive Fritz Henderson, who quickly reaffirmed the company's commitment to the Volt. During the tumult, Lutz went on working, a self-described car man ensconced at a safe remove from the finance men's woes and budget-slashing, and <b>happiest when he is talking about horsepower, speed and performance.</b> His office at the Technical Center here in Warren sits amid a research-and-development behemoth. Security is tight; visitors are screened for camera equipment and anything else that might procure trade secrets about prospective vehicles. Near Lutz's office is a reflecting pool -- immense enough to be a large pond. Farther down is a building called Design North, where for decades, in a special showroom, executives unveiled new <i>GM</i> automobiles for the brand's dealers and other VIPs in a venue that once doubled as a theater of sorts for entertainment luminaries flown to Detroit to perform for the dealers, a roster that included Lucille Ball and the Beach Boys. <b><i>GM's</i> only real competition at the time came from <i>Ford Motor Co.</i> and <i>Chrysler Corp.</i>, backyard rivals with nearly identical union-negotiated labor costs and roughly similar product lines. It was an era of near absolute power for the Big Three in the American auto market: They could set a car's retail price at virtually any amount, certain that consumers somewhere would buy it. Prodigious profits led in time to prodigious costs. Pressure and the threat of strikes from the United Auto Workers union, wanting its share of the Big Three's bounty, guaranteed not only rising wages that served as workers' ladder to the middle class but also lifetime health care and growing pensions. In</b></p>	
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				<p>time, <i>GM</i> was responsible for funding more than 1 percent of all the health-care costs in the United States. While smaller and fledgling auto companies in Japan and Europe were disciples of lean operations during the 1960s, in preparation for one day becoming viable competitors, <i>GM</i> preached expansion in the name of more product brands and winning vehicles, shying away from no expense if it might mean producing a more artful, powerful and extravagantly appointed car. 'A lot of waste in the glory days,' observes Lutz, who remembers former <i>GM</i> design chief Bill Mitchell authorizing the purchase of a new Ferrari V-12 engine just so he could demonstrate to subordinate engineers what he wanted the engine of another <i>GM</i> car, the 12-cylinder Pontiac Firebird, to sound like. 'He spent what today would be like \$75,000 to get the engine,' a laughing Lutz says. 'He could have done the same things with a recording or he could have rented a Ferrari for a day. It's hysterical when you think about it, crazy. It was a flamboyant era.' That is all gone now. <i>GM</i> long ago stopped bringing famous entertainers to Design North. In late March, the car being shown off there is the four-door Volt, its metallic aquamarine paint job twinkling preternaturally under track lighting. Powered by lithium-ion batteries and scheduled for sale in November 2010, the Volt will be able to transport a driver as many as 40 miles on battery power alone before it needs to be recharged, a task as simple as plugging into an available outlet. The Volt was Lutz's idea, part of his goal to remake <i>GM</i>'s image from that of a corporate dinosaur mocked for creating the kind of gas guzzlers he tends to favor personally into a cutting-edge 21st-century technological force capable of besting any of its Japanese competitors. No rival occupies so much of his attention as the company that has supplanted <i>GM</i> as the world's chief auto seller, <i>Toyota</i>. Lutz sees several reasons for <i>Toyota</i>'s ascendancy, none more important than becoming the darling of media analysts and environmentalists in the wake of its seminal hybrid, the Prius. By early this decade, the Prius had become a genuine phenomenon, envied by competing auto executives less for its sometimes pallid sales numbers than for how the hybrid with the funny-looking sloped roof had stamped <i>Toyota</i> in consumers' minds as the industry's leader in technology, fuel-efficiency, reliability and forward-thinking environmentalism. In early 2006 -- 'much too late,' he acknowledges now -- a troubled Lutz saw that driving a Prius constituted nothing less than a values statement for many of its owners, a means to bask in the perception of their own enlightenment. Even more alarming, thought Lutz, was that some consumers not enamored of the Prius itself</p>	
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				<p>nonetheless saw its existence as proof of <i>Toyota's</i> wisdom. The Prius's presence alone was drawing people to <i>Toyota</i> lots, where the curious bought everything from bigger sedans to sport-utility vehicles and trucks with about the same gas mileage as their <i>GM</i> counterparts, groused Lutz. Part of what he called the 'halo effect.' <b>One sporadically selling hybrid, he realized, had greened an entire company and catapulted nearly every vehicle in its product line. It was a disturbing sea change for <i>GM</i> executives.</b> What the 1920s Model-T had been for <i>Ford</i> -- a transformational vehicle cementing the impression of the company's dynamism -- the Prius was proving to be for <i>Toyota</i>. Meanwhile, American automakers, including <i>GM</i>, suffered under the perception that they were stuck in yesteryear and saddled with cars of inferior quality. <b>Personally, Lutz was scornful of much about the Prius. He thought it 'pretty ugly,' he says, and technologically unexceptional. But he could not deny the shrewdness of <i>Toyota's</i> long-range strategy.</b> He came to see a benefit in what he regarded as the Prius's homely features, particularly the sloped roof. 'That's where <i>Toyota</i> did a very clever thing: The Prius had its own unique appearance,' he says. 'Just like the <i>Volkswagen</i> Beetle was ugly in the '50s, the Prius had a certain ugly chic about it that appealed to a lot of people, the same kind of trendsetters who'd bought the Beetles long ago because to do it was cool and showed you were not part of a materialistic society.' If any moment presented <i>GM</i> executives with an opportunity to overcome the unfavorable perception of the corporation, Lutz thinks, it came on the eve of the Prius's arrival in the American marketplace. The Prius was already a moderate success in Japan, where <i>Toyota</i> had introduced it in 1997, and <i>GM</i> executives had to decide how, if at all, to respond to a competitor's hybrid in the United States: <b>Should they enter the hybrid competition, too? Lutz and other <i>GM</i> executives met at the company headquarters in Detroit to ponder the matter.</b> 'Somebody said, 'Do we have [hybrid] technology?' 'Lutz remembers. " 'Oh, yeah,' was the answer. 'Oh, yeah, we got the technology. We've been building hybrid prototypes since the late '60s.' Another executive asked what the cost of the hybrid investment would be." 'Well, we're probably talking about \$600 [million] to \$700 million,' " someone answered, as Lutz recalls. Finally an executive asked, 'What would we sell this thing for?' 'Well, the answer was: No matter how we twist the numbers, we were going to lose a couple of hundred million dollars a year,' Lutz recalls. 'And Rick Wagoner quite rightly, along with the finance people, said, 'We can't do that. We can't go to the board of directors and come up with a program [for hybrids] costing the bigger</p>	
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				<p>portion of a billion dollars and when the board of directors [asks] why are we doing this, we say, 'Well, we're going to lose money on it, but, well, we're doing it to show that <i>General Motors</i> is technologically advanced and environmentally aware.' You know, back then, that wasn't going to receive a very warm welcome.' The decision was made not to go forward with a hybrid program. For a while, nothing that Lutz and other <i>GM</i> executives saw in the Prius's sales number made them think they had made the wrong decision, Lutz says. <b>But within a couple of years of the Prius's release into the American market, he began wondering whether <i>GM</i> had made a serious mistake. The halo effect had created the perception that all <i>Toyota</i> cars and trucks, regardless of size, were imbued with the company's famed fuel efficiency. Meanwhile, Lutz noticed that the attention paid the Prius had not diminished <i>Toyota's</i> eagerness to produce big profitable trucks and SUVs. The rival was climbing in every category.</b> In early 2006, Lutz decided that <i>GM</i> could no longer afford to be without a dramatic response to the Prius and other competitors' models. He walked into the office of Jon Lauckner, vice president of global program management and director of the corporation's advance design, and said he wanted a 'game-changing car' capable of reestablishing <i>GM</i> as the worldwide technological leader. Determined to leapfrog the Prius and all other hybrids, Lutz proposed a purely electric car, powered by lithium-ion batteries, which would have a range of 150 miles or so before needing to be recharged. He was an ardent believer in battery technology, following a three-year stint as the chief executive of a battery company during the 1990s. It was not the first time someone at <i>GM</i> had said he wanted an electric car. The last such effort at the Technical Center had not ended well: During the '90s, the automaker spent more than \$1 billion developing a small two-seat electric vehicle known as the EV1, using heavy nickel-lead batteries before concluding that it was cost-prohibitive for consumers and scrapping it to the disgust of fervent EV1 fans and environmentalists. Lauckner, who had carefully studied the EV1 and thought that the car would have been wholly impractical with nickel-lead batteries, saw similar problems with Lutz's vision of a car intended to go far on lithium-ion batteries. 'Too expensive,' said Lauckner, who made clear that with all the batteries needed for a vehicle to travel about 150 miles, Lutz would merely be making another battery-heavy, cost-prohibitive car. Known in <i>GM</i> corridors as 'The Wizard,' Lauckner immediately had two suggestions: a smaller battery pack that would at once make the car affordable while guaranteeing the typical American worker a ride long</p>	
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				<p>enough for a round-trip commute each day; and a modest gasoline engine that would kick in only if and when a driver ran down the battery power. The engine would have an entirely different use from the standard internal-combustion engine, generating electricity to power the electric motor and, in the process, extending the vehicle's range. Then Lauckner removed a fountain pen from his pocket and started furiously scribbling calculations that in time proved prescient about everything from the necessary battery size to the dimensions of the little gasoline engine. Later, with <i>GM</i> surveys indicating that 78 percent of U.S. workers had daily round-trip commutes of 40 miles or fewer, Lutz posited that the vast majority of Americans who drove their electric cars would ordinarily never need a drop of gas. Forty miles became what Lutz and Lauckner called the 'sweet spot' for their new battery's range, the distance at which they surmised that most buyers would feel comfortable with their electric car's capabilities, knowing they had the backup of a gasoline engine capable of taking them more than 300 miles. What made the 40-mile battery range so ideal, Lauckner said, was that the distance did not necessitate a mammoth-sized battery pack that would put the car out of the financial reach of all but the rich. For the first time, Lutz thought he saw a viable plan. And while the presence of a gasoline engine meant that <i>GM</i> could not call it a purely electric vehicle, Lutz and the marketing people finally settled on an alternative description that struck Lauckner as just right: 'extended-range electric vehicle.' Not every <i>GM</i> official has always shared the Volt team's confidence or agreed with the timetables of Lutz, who by early 2008 openly talked about the Volt coming out on the market in late 2010. Noting the ongoing questions about battery issues, Wagoner publicly indicated then that he was not so sure, saying only that a release date for the electric vehicle was 'fluid.' But in the summer of 2008, at a forum attended by other auto executives and then-presidential candidate Barack Obama, Wagoner recalibrated his position. Under increasing pressure from government officials to demonstrate <i>GM's</i> broad commitment to more fuel-efficient vehicles, the beleaguered chief executive confidently restated <i>GM's</i> goal to bring out the Volt in 2010. After Wagoner's resignation this year, the newly installed Henderson and his lieutenants reiterated the company's support of the Volt, despite indications, he said, that <b>the car would lose money in its early years.</b> For all the bold talk, the Volt project exudes caution. Only about 10,000 of the vehicles will be built in the first year, a limited production run that, with the considerable cost of the lithium-ion batteries, virtually guarantees a high market price, probably about \$40,000. Lutz is not worried: He expects the 10,000 cars to be purchased quickly by</p>	
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				<p>well-heeled electric-vehicle diehards who will receive a federal tax credit of \$7,500. While acknowledging that the price is a lot to ask of middle-income consumers, Lutz stresses that he sees the Volt falling to \$25,000 or \$30,000 in future generations as technological advances and economies of scale cut the cost of batteries. But no matter the vehicle's cost or loss in the early years, he thinks the Volt must be built for his desperate company to have any chance of displaying its competence and new attitude. Failure now would be a public relations disaster, he insists. 'We're talking about our image here -- about remaking <i>GM</i>; it is essential to get this done,' he says. Just the same, he would like to see more help from the federal government, perhaps a boost of the \$7,500 consumer tax credit for the Volt, arguing that with the considerable support that Asian and European auto companies have received from their governments that such a subsidy is richly warranted. The Obama administration, however, has projected its own concern at times about the Volt, an ambivalence that in moments has resembled that of skeptics. While administration officials have offered flattering descriptions of the Volt's potential, Obama's auto task force noted the persistent questions about the car's expected losses and whether its high price tag might limit its appeal. Lutz senses the government's surprise over how much it will cost to realize its vision of a remade auto industry. Recalling a visit to the Technical Center by Obama task force leaders Steven Rattner and Ron Bloom, he says, 'We took them through a lot of our advanced technology plants. And I will tell you that when they saw the cost of some of these solutions' and technologies such as batteries and hydrogen fuel cells 'they were stunned. These are very intelligent and well-informed people, but they, Bloom and Rattner, were just amazed about what a lot of this stuff is going to cost.' Despite the seeming worries, Lutz sees important social forces working in the Volt's favor, notably the passionate desire of influential environmentalists and the intellectual establishment to have electric cars succeed, he says, a movement that strikes him as already creating an artificial marketplace, a rigged game of sorts. His cynicism seeps out when he ponders whether a single vehicle can restore <i>GM's</i> charisma and consumers' confidence. <b>'Yes, it can, because sex and charisma are to a certain extent redefined today, especially by the media and especially by the government,'</b> he says. <b>'The focus now is on conservation, the lowering of CO2s, sustainable energy and so forth. So today, to be frank, we've got two markets.'</b> Lutz thinks something else is working on his side and that of the Volt: <b>'Obama has said that he wants a million plug-in vehicles on the market by 2015.'</b> The federal government, which</p>	
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				<p>for the [Prius] hybrid system in fuel economy,' he adds. <b>Lutz is of two minds when talking about the auto industry's evolution. The executive in him trumpets the Volt as a key to the company's future. The romantic in him wishes the government, the media and the critics would leave the big, powerful cars alone. He is already mourning what he sees as an inevitability: the slow, painful death of the dazzling machines.</b> 'In time, the government is going to legislate out of existence cars like the Camaro, the Corvette, the Cadillac CTS -- all these acclaimed vehicles that have lately gotten rave reviews from the automotive press around the world,' he predicts. 'So, ultimately, we are driven by legislation into the kind of excitement provided by the Volt.' He says this without a scintilla of sarcasm. At his core, as he frequently tells people, he is a car guy, drawn to the technological challenge the Volt presents, fascinated by the potential of batteries, understanding that whoever prevails in the electric-vehicle competition may be immortalized along with his car. <b>It is just that he cannot shake his conviction that, in the name of change, Americans are being asked to give up something that defines them and their culture, a beauty and roar to which no monetary value can be attached. Few things in his existence give him more pleasure than driving his Corvette for the hour it takes him to get to his home in Ann Arbor.</b> He smiles while talking about the 2010 Camaro, the car still sitting at that moment in the GM airport gift shop. 'Given the tough economic times and the high priority of fuel economy, we were almost wishing we hadn't done the Camaro,' he says. 'We looked at it as something radically mistimed.' But he says the high number of advance orders for the car has justified his skepticism about just how deep the public's love for green cars will ever be. <b>'When you get out into the marketplace, it's probably just 5 percent of the public that desperately wants something environmentally sound and is willing to pay a premium for it,'</b> he says. 'I would say the East and West Coast intellectual establishment kind of lives in its own world. When you get to the broad American marketplace, excitement is still kind of defined in the way it used to be.' <b>He is finished for the day. His career is winding down, he says; retirement will come later this year.</b> 'Nice afternoon for a drive,' he says, ready to head out for the 60-mile ride back to Ann Arbor, a university town, the kind of town in which GM cars are not very popular, he says. The closer he gets to home, the fewer GM vehicles he will see, especially the big kind, the ones that college towns typically deplore, the sexy kind, he says. It is what he most yearns to drive, even as he pushes on behalf of the small electric car back at Design North, the one he hopes represents the</p>	
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					company's salvation, glittering under the showy lights. The conflict in him mirrors the history of GM's and a country's ambivalence, just another reason why any green transformation of the industry will be fitful, he suspects. Driving to Ann Arbor reminds Lutz that GM's survival hinges on a successful fight for the souls of American auto buyers. It just so happens that, all along, his soul has been one of them."	
12 June 2009	Bloomberg, "Airbus, Boeing Duel to Save Jet Orders as Airlines Park Planes" (Andrea Rothman & Susanna Ray)	Tom Enders, Airbus CEO; John Leahy, Airbus COO; Louis Chenevert, CEO United Technologies Corp.	Firm-Customers Firm-Suppliers Firm-Investors	$\alpha$ & $\beta$	<p>"Airbus SAS and Boeing Co. typically trumpet new jetliner orders at the Paris Air Show. This year it's hard enough just keeping the ones they already have. 'The priority is not to get new orders but to maintain those we have and turn them into deliveries,' Airbus Chief Executive Officer Tom Enders said yesterday in an interview in London. Airlines are grounding planes faster than they are taking deliveries for the first time in at least 10 years, said Randy Tinseth, commercial marketing chief at Boeing.</p> <p>The Paris show will be a proving ground for whether Airbus, the world's biggest commercial airplane maker, and No. 2 Boeing can maintain production at the rates they have pledged to investors even after air travel slumped and credit tightened, causing carriers to cancel or defer orders. The performance of the manufacturers sets the pace for builders of engines, aerospace parts and other aircraft, whose executives will descend on the French capital for the biennial event, which starts June 15. 'The background is a decline in airline traffic at least three times worse than any 12-month period, potentially compounded by an unprecedented financing crisis,' said Nick Cunningham, an analyst at Evolution Securities Inc. 'Production will have to drop sharply to avoid a drastic oversupply of airline capacity.' For 2009, Toulouse, France-based Airbus still plans 480 deliveries, only three less than 2008, a record year. Boeing plans 480 to 485, returning to a growth trajectory intended before a strike cut 2008 deliveries to 375. Many planes being shipped this year were financed before the credit crunch. For 2010, the outlook is less clear, with suppliers less optimistic than planemakers. 'I expect recovery to 2008 levels could take several years,' United Technologies Corp. CEO Louis Chenevert said May 28 at a conference with analysts in New York. His company builds Pratt &amp; Whitney jet engines and owns Hamilton Sundstrand, which makes electric systems for planes.</p> <p>Evolution's Cunningham is advising investors to bet against planemaker stocks now, rather than a few days into the Paris show, when short-selling after the hoopla of order announcements has been a common strategy. The collapse in orders will be</p>	On modular and integral enterprise architectures' responses to environmental changes.

				<p>followed by a ‘deep decline’ in deliveries spread over three to four years, the analyst said. He favors selling shares of <i>European Aeronautic, Defence &amp; Space Co.</i>, the parent of <i>Airbus</i>, and also shuns engine manufacturer <i>Rolls-Royce Group Plc.</i> <b>John Leahy, Airbus’s chief operating officer, predicts that output won’t change much in 2010.</b> <i>Boeing</i> hasn’t given a forecast. The manufacturers plan limited production cuts, even as airline traffic falls. <b><i>Singapore Airlines Ltd. says it will mothball planes if it can’t sell or lease them. British Airways Plc is grounding aircraft and cutting winter seating by 4 percent. Southwest Airlines Co., the world’s largest discount carrier, will reduce capacity by 6 percent this year.</i></b> Global airline losses may total \$9 billion in 2009 as revenue drops 15 percent, the International Air Transport Association said June 8, doubling a three-month-old forecast. IATA Chief Executive Officer Giovanni Bisignani said planemakers may deliver 30 percent fewer planes in 2010 and must trim production accordingly. The forecast is close to that made in February by the biggest <i>Boeing</i> and <i>Airbus</i> customer, Steven Udvar-Hazy, CEO of <i>International Lease Finance Corp.</i> He predicted that planemakers will cut as much as 35 percent, starting in the fourth quarter. The manufacturers reject that contention, yet a number of suppliers are making contingency plans for drastic rate changes. ‘There’s considerable skepticism in the supply base that <i>Boeing</i> will be able to hold production rates level on the narrowbody line, in spite of their insistence that they’ve overbooked production slots enough,’ said JB Groh, an analyst at <i>D.A. Davidson &amp; Co.</i> in Lake Oswego, Oregon. <b><i>GKN Plc, Britain’s biggest maker of airliner parts, predicted in January that demand for single-aisle planes would plummet by midyear.</i></b> Narrowbody planes include <i>Boeing’s 737</i> and <i>Airbus’s A320 series</i>, and represent two-thirds of deliveries. ‘Narrowbodies is probably an area that will get hit,’ with reductions of as much as 25 percent in 2010 and 2011, said Zafar Kahn, an analyst at <i>Societe Generale</i> in London. <b><i>Airbus intends to reduce monthly output of A320-series planes to 34 from 36, starting in October. It also will freeze output of widebody A330s and A340s. Boeing is slashing production of the 777 by 29 percent to five a month, starting midyear 2010, and postponing rate increases on 767s and 747s. The U.S. company said in a May 21 meeting with investors that it won’t need to revise narrowbody plans. Analysts say otherwise, with at least five predicting the next day that Boeing will announce a 737 rate cut this year.</i></b> <i>Boeing</i> reduced its 20-year growth forecast for commercial- jet deliveries yesterday, saying there will be a market for 29,000 new planes, or 1.4 percent less than the number predicted a year ago. <b>The company had increased the forecast by a</b></p>	
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14 June 2009	<p><i>Telegraph</i>, “Aviation Industry Faces Year of Gloom, Warns Boeing Head” (Amy Wilson)</p>	<p>Scott Carson, CEO Boeing Commercial Airplanes; Tom Enders, CEO Airbus</p>	Firm	$\alpha$ & $\beta$	<p>“Speaking ahead of the opening of the Paris Air Show on Monday, <b>Scott Carson admitted he was ‘a little more pessimistic’ than the plane maker’s in-house economists, but said he sees no sign of a recovery in the industry until the second half of 2010. The market is now at the bottom, he said.</b> Mr Carson also dashed hopes that <i>Boeing’s</i> much-delayed 787 ‘Dreamliner’ would make its test flight this week to coincide with the air show, which celebrates its centenary this year. The 787 is still on course to make a test flight in June, as <i>Boeing</i> had forecast, but it will be later in the month.</p> <p>Tom Enders, chief executive of European rival <i>Airbus</i>, said this weekend <b>it could withstand as many as 1,000 cancellations because it has an order book of 3,500 planes, which will ensure it can keep going at ‘maximum production’ for the next five years.”</b></p>	<p>On modular and integral enterprise architects’ views on growth.</p>
14 June 2009	<p><i>New York Times</i> “Airbus Warns Output could Drop as Much as 25% in 2010 and 2011.” (Nicola Clark)</p>	<p>Louis Gallois, EADS CEO; Thomas Enders, Airbus CEO</p>	Firm-Labor	$\alpha$ & $\beta$	<p>“<i>Airbus</i> executives warned over the weekend that output at their European factories could fall by as much as one-fourth over the next two years as the aircraft maker and its suppliers adjust to the sharp drop in air traffic and widening losses at the world’s airlines. <b>But the company insisted that it could absorb those cuts without resorting to large-scale layoffs</b> — at least for now. Earlier this year, <i>Airbus</i> said that it planned to slow production of its A320 single-aisle passenger planes to 34 per month from a previous plan of 40, while output of its wide-body A330 was frozen at a rate of 8.5 per month, down from 10 per month. Deliveries of the double-decker A380 are being limited to 14, compared with an initial target of 18 per month. But those cuts, which amount to a slowdown of about 15 percent, may not be sufficient to meet the slide in demand from airlines, Louis Gallois, chief executive of <i>EADS</i>, the parent of <i>Airbus</i>, said Saturday. <b>‘We have the flexibility to go further if needed,’</b> Mr. Gallois said. ‘We are very sensitive to what will happen in the second half of the year, to see if we reach the bottom of the swimming pool,’ Mr. Gallois said. ‘We have no capacity now to see what will be the depth of the</p>	<p>On integral and modular enterprises’ views on managing negative growth.</p>

					<p>crisis.’ Thomas O. Enders, the <i>Airbus</i> chief executive, said management could envisage production cuts ‘somewhere in the range of between 15 and 25 percent’ in the years 2010 and 2011 if the slump in air travel continues.</p> <p><i>Boeing</i> has said it planned to keep production steady in 2009 while laying off 4,500 workers. So far, <i>Boeing</i> foresees slowing output on one of its assembly lines — for the long-range, widebody 777 — by 28 percent in 2010. Both <i>Airbus</i> and <i>Boeing</i> say they expect to deliver about the same number of planes to customers this year as in 2008. ‘There’s a little bit of unreality,’ said Nick Cunningham, an aerospace analyst at <i>Evolution Securities</i> in London. <b>‘Things are very, very bad. It’s just that some people aren’t feeling it yet.’ Mr. Gallois and Mr. Enders said <i>Airbus</i> expected to be able to manage its production slowdown without any job cuts. ‘But of course this has a limit,’ Mr. Gallois said. ‘We need to be careful in the way we manage our manpower,’ Mr. Gallois said. ‘We have to be able to increase production again when it is needed.’ <i>Airbus</i> is eager to avoid fresh layoffs in the current economic environment and after eliminating 10,000 jobs in 2007 and 2008 as part of a painful restructuring aimed at reducing its euro-denominated cost base. ‘<i>Airbus</i> will not countenance any large-scale layoffs for social and political reasons,’ said Doug McVitie, managing director of <i>Arran Aerospace</i> in Dinan, France. During the last downturn for the aviation industry, after the terrorist attacks in 2001, <i>Airbus</i> avoided layoffs and instead eliminated 6,000 jobs through early retirements and termination of temporary work contracts. <i>Boeing</i> cut its work force by 30,000 and drastically cut back production rates. ‘<i>Boeing</i> and <i>Airbus</i> do exactly the same thing commercially — they build airplanes,’ Mr. McVitie said. ‘It’s just easier to hire and fire in the U.S.’”</b></p>	
15 June 2009		Scott Carson, CEO <i>Boeing Commercial Airplanes</i>	Firm	$\alpha$	"If you were expecting the 787 to fly during Paris you're going to be disappointed, but <b>it will fly within the next two weeks. We forecast it would fly before the end of the second quarter 2009 and if you count the way I do that means two weeks. It will fly when it's ready and it will be ready by the end of this month.</b> "	On a modular enterprise architect's knowledge of (transparency about) his system.
16 June 2009	<i>Wall Street Journal</i> ,	Tom Enders, CEO	Firm-Supplier-	$\alpha$ & $\beta$	<b>"Aircraft maker <i>Airbus</i> needs state loans to help finance development of its future A350 airliner in order to compete on even terms with rival <i>Boeing</i></b>	On an integral and

	<p>“Airbus Needs State Aid To Compete Equitably Vs Boeing”, (Stefania Bianchi, Nathalie Boschat and David Pearson)</p>	<p>Airbus</p>	<p>Government</p>		<p><b>Co.'s 787 Dreamliner, Airbus Chief Executive Tom Enders said Tuesday.</b> Speaking at a press conference at the Paris Air Show, Enders said: <b>‘We have a competitor which has the most highly subsidized commercial airplane. We want to level the playing field; this is what the reimbursable aids are about,’</b> he continued. <i>Airbus</i> has long complained that <i>Boeing</i> receives indirect subsidies to fund new product development from U.S. government contracts and from its suppliers.</p> <p>On Monday, France and Germany said they are prepared to contribute up to EUR2.5 billion in repayable loans toward the EUR11 billion cost of developing the A350. Spain and the U.K., which historically have industrial interests in <i>Airbus</i>, are expected to advance smaller amounts of cash in the coming weeks. <i>Boeing</i> has complained that fresh European state aid to <i>Airbus</i> would violate a long-standing 1992 bilateral agreement limiting the amount of state aid that each company can receive to develop new products. It also complains that the loans <i>Airbus</i> receives are at below-market rates, something that <i>Airbus</i> denies. ‘Such financing would violate the member states’ international obligations to abide by the rules of the World Trade Organization,’ <i>Boeing</i> said in a statement e-mailed to news agencies. <b>‘We are disappointed by reports that the Airbus member states intend to provide - and Airbus to accept - billions of dollars of launch aid for the A350 just as the WTO is to rule on the WTO consistency of such financing,’ Boeing said. ‘I’m not surprised that Boeing has complained. What else could you expect? If I were them, I would want to keep my advantage,’ Enders commented Tuesday. ‘So far we have repaid governments 40% more than what we have received. The U.K. government has been on the record saying it’s good business,’ he added.</b> <i>Airbus</i> and ministers from France, Germany and the U.K. met Monday but couldn't agree on funding of the A350 development. Ministers pointed to the absence of the Spanish minister for transport as the main reason for a lack of agreement. That led to speculation that Spain is unhappy with its share of the A350 project. However, Enders stated that <i>Airbus</i> has no conflict with the Spanish government over the A350. In relative terms, he said, Spain has benefited more than the other <i>Airbus</i> partners.”</p>	<p>modular enterprise architectur’s views of government support.</p>
<p>17 June 2009</p>	<p><i>Seattle Post Intelligencer</i>, “Emotionless Boeing Consider</p>	<p>Pat Shanahan, VP Airplane Programs, Boeing</p>	<p>Firm-Labor</p>	<p>α</p>	<p>“Chicago-based <i>The Boeing Co.</i> says that when it decides where to put a <b>second 787 line</b>, it will do so without emotion and will take labor stability into account. This isn't exactly a surprise. A 57-day machinist strike last fall reportedly cost the company more than \$2 billion in lost revenue. <i>Boeing</i> had searched the entire country for possible sites to build its first 787 assembly line. Ultimately, the company</p>	<p>On a modular enterprise architecture’s need /decision</p>

	ring Labor Stability for 2 <sup>nd</sup> 787 Line” (Andrea James)	<i>Commercial Airplanes</i>			settled on its existing aircraft factory in Everett. But analysts have predicted -- and state officials are worrying -- that future 787 production will not occur in Washington. A new report by FlightBlogger Jon Ostrower sheds some light on <i>Boeing's</i> thinking and process for ramping up 787 production. <i>Boeing's</i> vice president of airplane programs, Pat Shanahan, said that <b>the decision on where to put a second 787 assembly line will not take a long time.</b>  ‘The sooner you make a decision, the better. We won't be pressed into making a decision. [It will be] very measured. It won't be emotionally based,’ said Shanahan. Shanahan declined to specify what locations were on the "short list" for a second 787 production line, but said there are ‘lots of geographical options...the real options are around <b>'how do you secure assurance of delivery?'</b> And I think that's been a discussion topic around some of the disruption we've realized...at <i>Boeing.</i> ’ ‘There are opportunities that we need to assess and I've worked there for 24 years, I like the people in Seattle, I grew up in Seattle, It's a great community, but when you have the customer telling you you're making it really hard to choose your product because when we buy it you can't give it to us,’ said Shanahan.”	to grow production capacity and resulting means of ensuring labor stability, which is orthogonal to an integral enterprise architecture.
17 June 2009	<i>Seattle Times</i> , “787 Ramp-up Won't Be Easy Boeing Partners Say” (Dominic Gates)	Kiyotaka Ichimaru, executive at <i>Mitsubishi Heavy Industries</i> ; Jeff Turner, CEO of <i>Spirit AeroSystems</i>	Firm-Suppliers	α	“Executives with two of <i>Boeing's</i> major partners on the 787 Dreamliner said Wednesday that ramping up the current snail's pace production of the hot-selling plane <b>will cost big money and involve tricky contract negotiations with <i>Boeing.</i></b> <i>Boeing</i> has an ambitious target of rolling out 10 Dreamliners per month by the end of 2012, which would likely require a second Dreamliner production line. Even as <i>Boeing</i> dropped a hint such a line wouldn't necessarily be in Everett, the partner executives made clear at the Paris Air Show that <b>getting the supply chain up to that speed will be difficult.</b> Kiyotaka Ichimaru, an executive at <i>Mitsubishi Heavy Industries</i> (MHI), which makes the 787's plastic-composite wings in Japan, said reaching 10 Dreamliners a month <b>will require substantial new investment as well as a revamp of the assembly methods at the MHI wing plant in Nagoya.</b> ‘Just a speeding up of what we are doing’ won't be sufficient, said Ichimaru, general manager of the civil aircraft and aero-engine department. ‘We need a drastic change in how we make some portions’ of the wings. Jeff Turner, CEO of <i>Boeing</i> partner <i>Spirit AeroSystems</i> , said there's space in his plant to make 10 a month, <b>but the existing equipment and tooling can make only seven a month.</b> So he, too, has to make investment decisions and reach a contract extension with <i>Boeing.</i> ‘We think we understand the demands of that buildup,’ said Turner. ‘We have to negotiate	On a modular enterprise architecture's need /decision to grow production capacity.

				<p>what that higher level of production would be.’ <i>Spirit</i>, which makes the 40-foot-long front end of the Dreamliner fuselage in Wichita, Kan., is regarded as the most successful of the 787’s first-tier partners. <i>MHI</i> and <i>Spirit</i> would have to ramp up production correspondingly if <i>Boeing</i> built a second assembly line. <b>The first line in Everett was designed to roll out only seven Dreamliners a month, and that’s the production rate all the partners originally signed on for when they joined the jet program.</b> In an interview published on <i>Flight International</i> magazine’s Flightblogger Web site, Pat Shanahan, <i>Boeing’s</i> chief of airplane production, said in Paris that management is studying possible locations for a second 787 assembly line. There are ‘lots of geographical options,’ he said. Ominously for the Puget Sound region, <b>he implied that the Machinist strike at <i>Boeing</i> last fall will weigh against the Everett site.</b> The real options are around ‘How do you secure assurance of delivery?’” he told <i>Flightblogger</i>. ‘That’s been a discussion topic around some of the disruption we’ve realized ... at <i>Boeing</i>.’ But <i>Boeing</i> spokeswoman Mary Hanson said there’s no time frame yet for making a second 787 line decision and a decision is not imminent. The comments of the two top 787 supplier executives suggest it may take awhile. <i>MHI’s</i> Ichimaru said he expects serious discussion with <i>Boeing</i> ‘in the very near future’ of the full cost of substantially raising production rates. <b>Complicating the situation, he said, <i>MHI</i> has started detailed design on the wing for a second, bigger Dreamliner variant, the 787-9, with significant changes from the first 787-8 wing.</b> And even though the final 787-8 design was set long ago, Ichimaru said, <i>Boeing</i> still sends in changes. The major cause for that was <i>Boeing’s</i> effort to win Federal Aviation Administration certification of the wing’s lightning protection. To avoid electrical sparks inside the wing fuel tanks, fasteners had to be removed and turned around, and seals had to be applied. On the production line, work that had been completed had to be undone. <b>The lightning protection changes, the new 787-9 design, the plan to increase the rate — all of this is expensive even as little money comes in because <i>MHI</i> has made so few deliveries.</b> Expanding production would mean ‘we have to accumulate more investment on top of the investment we have already done,’ Ichimaru said. ‘We need to think of some way to recover that.’ He said <i>Boeing</i> is being ‘creative’ in interpreting the contract and trying to help. <i>MHI</i> could produce two wings sets a month right now, but <i>Boeing</i> Everett is not ready for that pace and the current requirement is much less. <b>With the bottleneck at the final-assembly plant in Everett, <i>MHI</i> has so far shipped only nine wing sets since the first arrived in May 2007. The next ship set</b></p>	
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17 June 2009	<i>Wall Street Journal</i> “ <i>Qatar Air</i> May Become Exclusive <i>Airbus</i> Customer -	Akbar Al Baker, CEO, <i>Qatar Airways</i>	Firm-Customer	α	“ <i>Qatar Airways</i> may become an exclusive <i>Airbus</i> customer and may pull its <i>Boeing Co. 787 Dreamliner</i> and 777 orders after the U.S. plane maker has failed to deliver on the long-delayed program, the carrier’s chief executive told Dow Jones Newswires Wednesday. <b>‘The writing is in the wall for <i>Boeing</i> and they don’t care,’</b> Akbar Al Baker said in an interview on the sidelines of the Paris Air Show. <b>‘They’re too busy having lunches and dinners.’</b> <i>Qatar Airways</i> , based in the gas-rich Gulf state of Qatar, previously said it was	On a modular enterprise architecture’s lack of transparency with its customer



	CEO” (Stefani a Bianchi )				<p>seeking compensation for delays in the delivery of the Dreamliners, but Al Baker said the issue ‘has gone way beyond that’ because the delivery delay is starting to affect the carrier's aggressive expansion drive. ‘Boeing doesn't realize how much they're hurting their customers' plans,’ he said. ‘They're very much mistaken if they think we're going to give them much more time on the issue.’ Qatar currently has 60 Boeing 787 aircraft on order, including options, and 24 777 jets, including freighters and options. Al Baker said Qatar Airways is also considering pulling its order of 777 aircraft, which the airline had planned to bring forward. ‘Then Boeing will be left with a load of parked planes,’ he said. Al Baker said he will have to ‘seriously think’ before doing any further business with Boeing and said that the lack of communication on the issue has eroded his confidence in the manufacturer. ‘It may be that we become an exclusive Airbus customer,’ he said. Boeing said it is aware of the issues raised by Qatar Airways and is working with the airline to resolve the problem. ‘We know that our customers are very concerned by the delays,’ Marty Bentratt, Boeing's vice president of sales for the Middle East and Africa, told Dow Jones Newswires. ‘Qatar Airways is a very important customer to us and we're optimistic that we'll be able to work through it.’”</p>	s.
18 June 2009	Flight International, “Boeing ’s A350 Counter -attack Too Smart or Too Late” ()	Scott Carson , CEO , Boeing Commercial Airplanes; Akbar Al Baker, CEO Qatar Airways; John Leahy, COO Airbus	Firm- custom er	α	<p>“Boeing's top brass have finally come clean about the options under evaluation for a counter attack against Airbus's A350-1000, but a key customer - Qatar Airways - questions whether the airframer may have already missed the boat. Boeing Commercial Airplanes chief executive Scott Carson says that the double stretch 787-10, a rewinged 777 or an all-new design are ‘potentially competing alternatives’ to meet future customer needs. However, Qatar Airways, which is the A350 launch customer and has 20 -1000s on order but is also a key Boeing widebody client, is not impressed with the timing. The airline has orders and options for 60 787s and also has a large 777 backlog, and chief executive Akbar Al Baker says the airframer ‘is doing things too late. Unfortunately Boeing is not run by commercially minded people, it is being run by bean counters and lawyers and if they continue to go this way they will give an even bigger advantage to Airbus.’ ‘We look at studies of all nature,’ says Carson. ‘Some studies could even include such things in the future as potentially rewinging the airplane. And while no commitments have been made, each study has become a vital part of how we extend the utility and increase the value of [the 777].’ ‘Both the -10 and a rewinged, upgraded, improved 777 can offer great utility for customers. The trick is to find the one that addresses the needs most broadly so we can</p>	On a modular enterprise architecture's product strategy

					<p>have broad-based market success,' says Carson. Carson also said that a third option, a clean sheet design, is being considered as well if the 777 rewing and 787-10 are deemed to be lacking. <b>'The history of rewinging is unblemished by success,'</b> Aboulafia says sceptically, believing that a clean-sheet 777 replacement may be the likeliest option for <i>Boeing</i>, while a <b>787-10 might not be a technically viable fuselage stretch.</b> <b><i>Airbus sales chief John Leahy describes his rival's response as 'confirmation of the winner [Airbus has] in the A350 XWB. They clearly need to do something to update the 777'.</i></b> Carson declines to specify either a proposed cost for a rewinged 777 or a timeline to achieve such a goal, although he confirmed that the development and definition of the A350 would be a key factor in the decision-making. 'Certainly we pay attention to the capability of that airplane, and not only the capability which will be demonstrated as the airplane goes into flight test and the way the airplane is being marketed because that creates marketing expectations and allows people to think outside the box about what the world will look like in the future,' says Carson. <i>Airbus</i> plans to have the A350-900, which competes directly with the 777-200ER, flying by 2012, with an entry into service the following year. Carson also declines to say whether, if the green light is given to the 787-10, it would be the second or third 787 derivative after the stretched -9 or the short range -3."</p>	
19 June 2009	<p><i>Bloomberg</i>, "Boeing Faces \$15 billion Dilemma as Airbus Racks up A350 Orders" (Andrea Rothman and Susanna Ray)</p>	<p>Scott Carson, CEO <i>Boeing Commercial Airplanes</i>; John Leahy, COO <i>Airbus</i>; Tim Clark, CEO <i>Emirates</i></p>	Firm-Customers	<p><math>\alpha</math> &amp; <math>\beta</math></p>	<p>"<i>Boeing Co.</i>'s 787 Dreamliner, absent from the Paris Air Show this week after two years of delays, may not be the jetmaker's biggest problem. <b><i>Airbus SAS's bigger A350 has won almost 500 orders, 10 of them at the show, forcing Boeing to turn its attention to the market for bigger planes with more than 300 seats.</i></b> The Chicago-based company is considering an upgrade of its 15-year-old 777. <b><i>Airlines say it should spend billions on a new aircraft instead.</i></b> 'What <i>Boeing</i> makes next is the big question,' said Doug Runte, a New York-based analyst at <i>Piper Jaffray &amp; Co.</i> who estimates the U.S. company would need to spend \$15 billion to develop a new model. 'Airplanes require a huge investment of money and effort. If you get it wrong, the consequences are enormous and you have to live with it for a very long time.' <b><i>Boeing, which said it had 'bet the company' in the 1960s when spending twice its market value on the 747 jumbo jet,</i></b> faces a conundrum after adopting a rival strategy to Toulouse, France-based for the long-haul plane market. <b><i>Airbus</i> opted to build its 555-seat A380 superjumbo on the basis that surging economic growth would spur demand for bigger planes.</b> <i>Boeing</i> argued that the increasing complexity of global business travel required smaller aircraft flying direct to a greater number of cities. It came up with the</p>	<p>On modular and integral approaches to product development, as well as the modular media's coverage.</p>

				<p>260-seat 787, which is due to make its first flight this month. While both planes have proved popular, the Dreamliner has the edge in sales, ranking as the world's fastest-selling aircraft with 865 contracts worth about \$138 billion at list price compared with the A380's 200 valued at \$65.4 billion. <i>Boeing</i>, though, may become a victim of its own success. <b>The Dreamliner proved so popular that when <i>Airbus</i> offered a similar plane its airline customers said they didn't need one and lobbied for a bigger aircraft altogether. That resulted in the <b>A350, a model that has attracted 483 orders worth \$115 billion.</b> 'The 787 had considerable early sales success, which forced <i>Airbus</i> to respond,' Raymond Jaworowski, senior aircraft analyst at <i>Forecast International</i>, said in a note from the Paris show. <b>'However, the A350 is more than simply a 787 competitor. <i>Airbus</i> has positioned it to cover a broad spectrum of the widebody market.'</b> The A350 is scheduled to enter service in 2013, giving <i>Airbus</i> two 300-plus seat models less than six years old to range against the 777, which debuted in 1995, the 767, dating from 1982, and the 747 jumbo, an aircraft that was delivered to airlines the year after man first landed on the moon. <i>Boeing's</i> Scott Carson, who runs the commercial airplanes unit, said this week in Paris he's concerned that the 'maturing' A350 'will create some market expectations' as it gets closer to flying and <i>Airbus</i> develops new versions. Carson said <i>Boeing</i> will respond with either a 777 incorporating a new wing design that would improve efficiency and bring down operating costs, an enlarged Dreamliner, or a completely new aircraft. <i>Airbus</i> Chief Operating Officer John Leahy said <i>Boeing</i> has been forced to review its strategy because the A350 will be 25 percent cheaper to fly than the older 777. He spoke after the company <b>announced 58 firm orders at the Paris show</b>, including an A350 contract from AirAsia X of Malaysia. <b><i>Boeing</i> won two orders.</b> 'Scott didn't just wake up one morning at the air show and decide that he had \$5 billion burning a hole in his pocket, so let's just re-wing the 777,' Leahy said today in an interview in Paris. <b>'It's only when being faced with a threat that you want to spend money like that. He's going to lose the market if he doesn't do something.'</b> <i>Boeing</i> will evaluate additions to its aircraft lineup for the next decade in terms of customer demand, competing products, available technology and the resources available, Seattle-based spokesman Jim Proulx said by e-mail. <b>Tim Clark, CEO of Gulf carrier <i>Emirates</i>, which will become the biggest 777 operator later this year, has little interest in a larger-winged version of a plane with a fuselage made from metal rather than the light-weight composites used in modern designs,</b> he said June 16 at the air show. <b>Clark, who has also dismissed <i>Boeing's</i> proposed 310-seat 787-10 as likely to be</b></b></p>	
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					<p><b>underpowered</b>, said in Paris that <b>a clean-paper design is the only way for the U.S. company to go. Even then, Boeing needs to act before Airbus offers a stretched A350 to narrow the capacity gap with the A380, a move that would leave Boeing with little room for maneuver.</b> ‘Given the challenging economic environment, the sector will be forced to set priorities and make difficult trade-offs about what programs they can really afford,’ David Raistrick, a manufacturing specialist at <i>Deloitte LLP</i>, said in a note.</p> <p>Standing in the way of a new widebody is the multi-billion dollar bill that could harm the company if the plane doesn’t sell. <b>Boeing must also decide whether pouring its energies into building a successor to the 777 will diminish its ability to compete with Airbus when the pair come to design a new generation of single-aisle planes.</b> Both companies say they plan to replace their A320 and 737 short-haul jetliners in a little over 10 years, suggesting they will need to ramp up spending on research and development from the middle of the next decade. That may overlap with construction of a new <i>Boeing</i> widebody. <b>‘That’s part of the problem,’ said Airbus’s Leahy. ‘That’s the tough call they’ve got and I guess it’s why a 777 derivative is tempting. You’ve got all these other things you need to do and you say, if I could just get away with five or six billion and come up with a good derivative that would hold my place against the A350, that would be the ideal solution. But history has shown that rarely ever works.’</b> Should <i>Boeing</i> opt for a re-winged 777 <b>it could be first to the market with a single-aisle replacement</b>, though any new plane will require a ‘vast improvement’ in fuel efficiency based around new engine technology, <i>Morgan Stanley</i> analyst Rupinder Vig said. ‘If <i>Boeing</i> suddenly decides to come out with something earlier, in around 2015, <i>Airbus</i> has told us they’d have to do something very quickly,’ he said. ‘But I think both of them now are comfortable with a later date as they’re grappling with their own problems in the bigger-plane category.’”</p>	
19 June 2009	<i>Bloomberg</i> , “ <i>Airbus</i> , <i>Boeing</i> Battle ‘Raging Skepticism’ Over Output” (Andrea Rothman and	Clay Jones, CEO <i>Rockwell Collins</i> ; Fabric Bregier, COO <i>Airbus</i>	Firm-Suppliers	$\alpha$ & $\beta$	<p><b>“Airbus SAS and Boeing Co. spent much of this week’s Paris Air Show urging suppliers to keep their assembly lines ready to respond quickly when the recession ends and orders pick up. Partsmakers aren’t yet convinced. ‘There is raging skepticism because there is no historical precedent for the ability to do what they’re suggesting to do,’ Rockwell Collins Inc. Chief Executive Officer Clay Jones said in an interview in Paris. His Cedar Rapids, Iowa-based company builds avionics and parts for most Boeing and Airbus models. The world’s two biggest commercial-plane builders together expect to deliver about 960 aircraft</b></p>	On modular and integral enterprise’s view of downturn.

	Susanna Ray)	; Jeff Turner, CEO Spirit AeroSystems Holdings Inc.; John Leahy, COO Airbus; Scott Carson, CEO, Boeing Commercial Airplanes; Rob Gillette, CEO, Honeywell Aerospace; Alain Bellemare, President Hamilton Sundstrand		<p>this year, unchanged from earlier projections. <b>And neither Boeing nor Airbus has made a big cut to its production plan for next year, insisting that suppliers can trust the strength of their backlogs and shouldn't make rogue decisions to scale back.</b> Carriers continue to drop and push back deliveries because of the recession, and orders for planes have plummeted. Chicago-based Boeing announced just one order for two narrowbody 737s at the Paris event, and Airbus, based in Toulouse, France, has sold 60 jets. The value of the transactions for the big two is expected to be far less than the \$64 billion in orders at last year's show in Farnborough, England. That's led partsmakers to speculate that demand for their products is bound to decrease. The world's airlines lost \$10.4 billion last year, and the industry will lose another \$9 billion this year as traffic plunges, according to the International Air Transport Association. <b>In the last slump, deliveries at Boeing and Airbus dropped 31 percent from 2001 to 2003. 'The retention of the narrowbody rates appears to be inconsistent with historical perspective,'</b> Jones said of Airbus' and Boeing's intentions not to lop output in the largest segment of the market. 'That's the nature of the conundrum we're in. So now we have to use our judgment.'</p> <p><b>Airbus 'can't blame' its suppliers for mistrusting the company's forecasts, said Chief Operating Officer Fabrice Bregier. After all, he said, they've been burned by big, sudden cutbacks in the past eight months at regional-jet builders such as Embraer and Bombardier Inc., and business-jet makers Cessna and Gulfstream.</b> Many also make parts for the automotive industry, where sales tumbled 18 percent last year and 37 percent this year through May. Boeing has said it will hold steady on its expected monthly manufacturing rate of 31.5 of the world's best-selling plane, the 737. Airbus is only scaling back production of the A320 by two a month to 34. <b>'For Airbus so far, the situation is stabilized,'</b> Bregier said. <b>'We're taking every opportunity to explain to them that when we say we'll deliver in 2009 as many aircraft as in 2008, we have that not only in the order book but airline by airline, we have the customers, we have the financing and we know we'll do it.'</b> Boeing and Airbus were cautious in ramping up output amid a record three years of orders through 2007 that produced a combined backlog of more than 7,000 planes, or more than seven years worth of work. That means that now they don't have to scale back as much as they did in previous down-cycles, the companies said. The suppliers say they don't get much advance warning when planemakers decide to slow down, and lead times for some parts, such as landing gear, can be up to 18 months. Some companies don't get paid until the planes are</p>	
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					<p>delivered. To protect themselves, the partsmakers say they are doing their own research to forecast demand. <b>'I've seen at this show a great deal of energy by both Boeing and Airbus to assure the supply-base community that their forecast, particularly for single-aisle product, is robust,'</b> said Jeff Turner, CEO of <i>Spirit AeroSystems Holdings Inc.</i>, Boeing's biggest supplier. The Wichita, Kansas-based company builds the aluminum fuselage for the 737. <b>'It's my job as head of Spirit to forecast what I think will happen in the market.'</b> Turner didn't say what his latest predictions are. <b>Airbus tries to supply accurate forecasts to help suppliers keep production steady and to ensure the planemaker has parts when it needs them, John Leahy, chief operating officer of Airbus, said today in an interview. 'You can only make changes at a gradual rate,' Leahy said. 'The longest lead time item is somewhere around two years. It's not just that you call up today and they instantly have it. If you're trying to ramp up or ramp down, you want to have some lead time up to your deadline to smoothly do it.'</b> Companies such as <i>Spirit</i> and <i>Rockwell Collins</i> have said they will hold to their contracts and deliver the parts <i>Airbus</i> and <i>Boeing</i> order. <b>The question is whether they will be ready to ramp up again quickly when the planemakers want. Many of the big suppliers have already cut jobs or reduced hours. Scott Carson, the head of Boeing Commercial Airplanes, said in an interview this week that he's telling suppliers they need to be ready for a 10 percent production swing in either direction, depending on the economy and the status of active order campaigns. Ryanair Holdings Plc and UAL Corp.'s United Airlines have said they want to take advantage of the recession to seek discounts on hundreds of new planes, which could compel a higher output rate, Carson said. Some suppliers hope to hold steady through aftermarket business. 'You're still flying airplanes, you have to do repairs,' and those will pick up in the second half after the busy summer season of air travel, said Honeywell Aerospace CEO Rob Gillette. Still, the work won't be as much as it was before because airlines have canceled routes and grounded planes amid the slump. 'Obviously the aftermarket has been impacted by much lower revenue passenger miles than we were working with when we did our planning,' said Alain Bellemare, president of <i>Hamilton Sundstrand, United Technologies Corp.'s</i> aerospace systems unit. <b>'We took some very aggressive cost actions and right now we are waiting to see what could be the outcome.'</b>"</b></p>	
19 June 2009	<i>Wall Street Journal,</i>	Scott Carson, CEO	Firm	α	<p><i>Boeing Co.</i>, attempting to maneuver its 787 Dreamliner through the turbulence it has encountered so far, is expected to conduct the plane's maiden</p>	On a modular enterpris

	<p>“Dream liner Still Far From Reality ” (Peter Sanders )</p>	<p><i>Boeing Commercial Airplanes</i></p>		<p>flight in coming days. <b>But even after the plane is airborne, the aerospace company will still be under pressure to complete an ambitious schedule of test flights and government certifications.</b> Any additional glitches could force it to again delay delivery to its launch customer, <i>All Nippon Airways Co.</i>, set for March 2010. <b>‘We’ve got to get it up and flying, [and] we’ll all take a deep sigh,’</b> said Marlin Dailey, vice president of sales for <i>Boeing Commercial Airplanes</i>. ‘We’re looking forward to that milestone, but it’s just another step in the journey.’ The test flight, which <i>Boeing</i> has said will occur by June 30, will open a new chapter for the Chicago-based company. The Dreamliner, which was supposed to enter service in May 2008, <b>is considered the most technologically sophisticated commercial aircraft ever built, but its complexity has led to production problems and postponed launch and delivery dates. Boeing has had to provide concessions to its airline customers because it has missed promised deadlines. The company has seen a spate of cancellations, while its credibility with investors also has suffered. Boeing’s shares have risen about 45% since mid-March. According to a research note last month from Morgan Stanley aerospace analyst Heidi Wood, customers’ financing concerns have eased and investors are confident in the company’s order backlog. The shares could get a further boost once the Dreamliner makes its first flight but could suffer if the program hits new snags.</b> After the plane’s inaugural flight, <i>Boeing</i> will embark on a compressed test-flight schedule expected to last roughly <b>eight to nine months.</b> Previous <i>Boeing</i> test-flight programs usually have taken about a year to receive the necessary certifications from the Federal Aviation Administration. Scott Carson, president and chief executive of <i>Boeing Commercial Airplanes</i>, in an interview this week said <b>‘one concern is the sheer volume of reports we’ll be giving the FAA and their ability to process them [for certification].’</b> <i>Boeing</i> plans to use six planes during the testing phase. <b>As of now, only two of the aircraft have moved from production to the flight line. The other four are in various stages of final production.</b> The accelerated testing program will put the planes through hundreds of scenarios, including extreme climates and simulations of various emergencies, according to company officials. <b>Test pilots will fly the planes during the day, while hundreds of engineers and mechanics will review the results by night and prepare for the next day’s tests.</b> The last time <i>Boeing</i> launched a brand-new commercial aircraft, the 777 in 1994, the <b>11-month testing phase included nine planes that flew a combined 70 to 80 flight hours a month. The 787 testing phase could be three months shorter, and the six planes are expected to fly</b></p>	<p>e architect ure’s product / productio n system strategy.</p>
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					<p><b>about 120 hours a month.</b> In manufacturing the 787, <i>Boeing</i> essentially invented a new way to assemble a commercial airplane. Unlike the company's previous wide-body aircraft, which are largely assembled at the <i>Boeing</i> factory in Everett, Wash., major portions of the 787 are fabricated by contractors as far away as Italy and Japan, and then shipped to the factory for final assembly. <b>While <i>Boeing</i> initially believed the process would reduce costs and streamline manufacturing, the company and its vendors struggled to manage the complexities. The program was further plagued by a two-month walkout by <i>Boeing</i> machinists last fall and bugs in the plane's software.</b> The 787's problems, and the global recession, have rippled through other commercial-airplane programs at <i>Boeing</i>. The new 747-8, an update to the venerable two-deck jumbo jet that competes with <i>Airbus</i>'s double-decker A380 aircraft, also has been delayed. Beyond the test flight, <b>questions remain about how quickly <i>Boeing</i> can accelerate production of the Dreamliner to its goal of 10 airplanes a month by 2012.</b> The company and its suppliers have cautioned that there remain potentially significant kinks in the manufacturing system that must be worked out before the plane's production rate can increase significantly."</p>	
19 June 2009	<p><i>BusinessWeek</i> "It Wasn't a Blowout, But <i>Airbus</i> Beat <i>Boeing</i>" (<i>Carol Matlack</i>)</p>	<p>Tom Enders, CEO <i>Airbus</i></p>	<p>Firm-Customers</p>	<p><math>\alpha</math> &amp; <math>\beta</math></p>	<p>"Even if the <i>Boeing</i> guys shrugged it off, you have to admit <b><i>Airbus</i> pulled off quite a feat by logging 112 aircraft orders worth \$11.8 billion, during the most-downbeat Paris Air Show in many years.</b> On June 18, <i>Airbus</i> snagged a deal for 50 of its A320 narrowbody planes, worth \$3.8 billion, from Hungarian discount carrier <i>Wizz Air</i>. A Hungarian discount airline? Don't snicker. <i>Wizz</i>, founded by a former CEO of Hungarian flag carrier <i>Malev</i>, is <b>thriving by attracting budget-conscious travelers during the economic crisis.</b> Its traffic was up 30% from January through May. <b>It already has an all-<i>Airbus</i> fleet,</b> so buying from the same source makes sense – especially now, when <i>Airbus</i> is doubtless offering great deals to win scarce orders. <b>In fact, many of <i>Airbus</i>'s sales this week were to ambitious discount or regional airlines looking to take advantage of a buyer's market to build their fleets.</b> Others included Malaysian carrier <i>Air Asia</i>, which ordered 10 of <i>Airbus</i>'s new A350 widebody jets, and <i>Cebu Pacific</i> of the Philippines, which is taking at least 15 narrowbody planes. <b>'There are some rays of sunshine in the market, especially in the low-cost sector,' <i>Airbus</i> CEO Tom Enders said</b> at a signing ceremony for the <i>Air Asia</i> deal.</p> <p><i>Boeing</i> sought to downplay competition for orders at the show – probably just as well, since it booked only two, a pair of 737 narrowbodies sold to Japanese leasing group <i>MC Aviation Partners</i></p>	<p>On proof which niche an integral enterprise architecture competes in. And a modular media's reporting of modular enterprise architecture ("It Wasn't a Blow-out", referring to <i>Airbus</i>' 56-fold order intake over <i>Boeing</i>)</p>



					<p>Scott Carson, <i>Boeing's</i> commercial aircraft chief, told reporters that the company had decided several years ago to disclose orders as soon as they were placed, rather than saving up big deals to announce at air shows. Trouble is, <i>Boeing</i> this year has had almost as many cancellations as sales. It has logged 76 orders, including 53 for the 737, 10 for its 777 widebody and 13 for its forthcoming 787 Dreamliner. But airlines have cancelled 66 previous orders, including 58 for the 787, leaving <b><i>Boeing with a net order tally of only 10.</i></b> <i>Airbus</i> has had cancellations, too, though not as many as <i>Boeing</i>. As the air show opened, its net order tally stood at 11, including 21 cancellations. Orders booked during the show should boost <b>the net tally to more than 100.</b> True, there doesn't seem to be much chance that <i>Airbus</i> will meet its goal of 300 orders this year. But so far no customers have cancelled orders for its A380 mega jet – a fact that CEO Enders told me is 'quite a miracle, considering what that program has gone through.' (On the other hand, several airlines have delayed taking delivery of their A380s.) <b>And the order tally for the A350 now stands at a solid 493, well behind the 866 logged by the <i>Boeing 787</i>, but enough to get <i>Boeing's</i> attention.</b> In fact, <i>Boeing</i> said at the air show that it may upgrade or even totally redesign the 777, in response to the A350. The first version of the <i>Airbus</i> plane, scheduled to enter service in 2013, is bigger than the Dreamliner and competes directly against the 777. <b>Since July 2006, when <i>Airbus</i> began selling the A350 as currently configured, the two models in the same size range as the 777 have racked up 311 orders, while the 777 has gotten only 259. No one could call this air show a stunning commercial success for either <i>Airbus</i> or <i>Boeing</i>. But as they head back to Toulouse, the guys from <i>Airbus</i> have a bit more reason to smile than their U.S. rivals do.."</b></p>	
19 June 2009	<i>Bloomberg</i> "Boeing Dreamliner A No-Show" (Susanna Ray)	Scott Carson, CEO <i>Boeing Commercial Airplanes</i>	Firm	α	<p>"The most talked-about plane at the Paris Air Show will be the one that missed the flight. <b><i>Boeing Co.'s 787 Dreamliner would be delivered 'bang on schedule' in 2008, commercial-planes chief Scott Carson said in June 2007 at the industry's last Paris gathering. Instead, a date hasn't even been set for its maiden flight after production and development delays put the model back two years. Investor confidence in <i>Boeing</i>, whose stock has lost half its value since the first delay in October 2007, won't be restored until the 787 takes to the skies, said Bill Alderman of <i>Alderman &amp; Co. Capital</i>, a broker specializing in aerospace. That should be in the next two weeks, Carson said in Paris last week, without being specific. Even then the plane has hurdles to clear, according to Craig Fraser, a <i>Fitch Ratings</i> analyst in New York. 'The first flight is an important event, but there are still a</i></b></p>	On a modular enterprise architecture's systematic over-promise and under-delivery.

					<p>few years of potential risk with this program,' Fraser said 'Flight testing may uncover some other issues that could set back the program, and production ramp-up is always a risk.' <b>Four delays to the 787</b> have also ceded ground to <i>Airbus SAS</i>, Chicago-based <i>Boeing's</i> only bigger rival. Committed to building the larger A380, the European company initially stalled in its response to the Dreamliner, <i>Boeing's</i> fastest-selling model with 865 orders. <b><i>Airbus has since begun to close the gap, racking up 483 orders for the competing A350, which will now enter service three years behind the Dreamliner.</i></b> The 787 has lost 58 orders so far this year as airlines cut capacity and trim spending to stem losses in a global recession. While the Dreamliner will 'fly when it's ready,' <i>Boeing</i> is 'absolutely committed' to getting it off the ground within the next two weeks, Carson said in a briefing with journalists last week. The executive said that while it would have been "great" to have flown the aircraft in time for the Paris show, <b>the company chose not to be driven by any particular event.</b> <i>Boeing</i> plans to complete the certification process by the beginning of next year. Japan's <i>All Nippon Airways Co.</i> says it has been told it will get the first 787 in February. 'There's a confidence factor that's important,' Alderman said. 'The first flight matters in terms of market perception regarding <i>Boeing</i> having its house in order.' 'The good news is that it seems to be coming together at this point,' said Wolfgang Demisch, a partner at <i>Demisch Associates</i>, a financial consultant that focuses on aerospace and technology companies. 'The teething troubles have been just brutal, but they don't seem to have done mortal damage to the project and the customers are still excited about it.'"</p>	
19 June 2009	24/7 Wall St., "Paris Air Show: Boeing Loses, Airbus Wins" (Douglas A McIntyre)		Firm	α	<p>'The head of <i>Airbus</i> left the Paris Air Show in a pretty good mood. His company succeeded in picking up a relatively large number of new orders, although none of them was a blockbuster. According to <i>The New York Times</i>, '<i>Airbus</i> was expected to walk away from the air show with about 110 orders and commitments worth about \$6.5 billion.' At <i>Airbus</i> rival <i>Boeing</i>, things are a little tougher. The company is still a long way off from being able to actually deliver its Dreamliner to clients. According to <i>The Wall Street Journal</i>, '<i>Boeing</i> has had to provide concessions to its airline customers because it has missed promised deadlines.' <b>Some carriers have canceled orders. What a difference a couple of years makes. Not so long ago, <i>Airbus</i> was struggling with schedules to launch its super-jumbo plane and was slow to market with its latest mid-range offering. At the same time, <i>Boeing</i> was quickly gathering orders for its 787 and new stretch versions of the 747. In late 2007, the firm's stock traded at \$106. It is now less than half of that.</b></p>	On probable causes of modular enterprise architecture's underperformance

					<p><b>What happened? Horrible management at Boeing.</b> It had to delay the 787 because of problems in delivery of critical parts and other production snafus. Then it broke off negotiations with key manufacturing employees, which caused them to strike. That caused delays in the process of getting the 787 out the door. The maiden flight of the plane was delayed four times. <b>When the history of Boeing is written, the move from industry leader to troubled company will be blamed on the executives running the company in 2006, 2007, and 2008 -- and it should be.'</b></p>	
20 June 2009	<i>The Economist</i> , "Hard Pounding"	Jim McNERNEY, CEO, <i>The Boeing Company</i> ; Louis Gallois, CEO <i>EADS</i> , Tom Enders, CEO <i>Airbus</i>	Firm-Government	$\alpha$ & $\beta$	<p>"The two aviation giants agree on one other thing: the industry will not get a successor to its ubiquitous short-haul workhorses, the 737 and the A320, for more than a decade. That is partly because the 15-20% efficiency gain that airlines say they want from the next generation is, says Mr McNERNEY, '<b>a bar that keeps moving north</b>' thanks to the continuous improvements of 1-2% a year that the manufacturers are making to existing planes.</p> <p>Louis Gallois, the chief executive of <i>EADS</i>, the parent company of <i>Airbus</i>, denied there was anything odd about the timing: '<b>We do not plead guilty</b>,' he said. 'Our support is much more transparent than <i>Boeing's</i>. We have fully repaid with interest the support we received for the A320 and A330 and we are already paying back on the A380 [super-jumbo].' Tom Enders, the chief executive of <i>Airbus</i>, added that the aid was aimed only at '<b>levelling the playing field</b>' and that the European Union had described the <b>787 as the most subsidised commercial aircraft in history.</b>"</p>	On the difference between modular and integral enterprise architectures approach toward the stakeholder of government
22 June 2009	<i>Bloomberg</i> , "Toyota Asks How Many Times Toyota Errs Emulating GM Failures" (John Lippert, Alan Ohnsman and Kae Inoue)	Shoichiro Toyoda, Honorary Chairman <i>Toyota Motor Corporation</i> ; Takeo Fukui, CEO <i>Honda</i>	Firm	$\beta$	<p>"On a mild day in February, <i>Toyota Motor Corp.'s</i> honorary chairman, Shoichiro Toyoda, summoned 400 executives to the redbrick factory in Nagoya, Japan, where his grandfather had built weaving looms a century ago. The managers filed in for one of the customary updates from <i>Toyota's</i> gray-haired, 84-year-old patriarch. What they got was anything but ordinary. Two months earlier, <b>Toyota had forecast its first operating loss since Shoichiro's father began making cars in the same factory, now turned museum, in 1937.</b> Then in January, about three months earlier than planned, the company announced that Shoichiro's son, Akio, would replace Katsuaki Watanabe as president. Akio is scheduled to assume his new job at a shareholder meeting Tuesday in Toyota City. Even with these signals, the managers were ill prepared for the normally reserved Shoichiro's litany of the carmaker's missteps and his dressing-down of Watanabe. '<b>How many times have you made a mistake?</b>' Shoichiro grilled Watanabe, who sat silently among stunned audience members,</p>	On an integral enterprise architecture? quest to maintain its integrality.

				<p>according to a person familiar with the meeting. Shoichiro scolded the president for being so anxious to boost sales and profits that he'd let <i>Toyota</i> emulate now bankrupt <i>General Motors Corp.</i> and <i>Chrysler LLC</i>. <i>Toyota</i> had become addicted to big, expensive cars and trucks and had forgotten the customers' need to save money, Shoichiro said, according to the person's account. <b>Shoichiro wasn't just lashing out at Watanabe. He was railing against the threat to everything his family had struggled to create. The Toyodas built their first car when Henry Ford was turning out almost 1 million a year in the U.S. During World War II, the family opened dry cleaning stores to get by. They adopted kaizen, the making of small and continuous improvements, to fine-tune manufacturing. They enhanced quality and squeezed costs to become one of the world's most admired companies. Across the Pacific, Ford Motor Co., Chrysler and GM were gorging on Americans' car lust. They failed to heed sky rocketing gasoline prices, declining workmanship and escalating pay. Last year, with help from its gas-electric Prius hybrid, Toyota pushed General Motors from its perch as the planet's biggest carmaker. In its June 1 bankruptcy filing, GM reported \$172.81 billion of debt, more proof of the U.S. industry's descent. Toyota's work isn't done. To avoid the four-decade decline that humbled GM, the Japanese company must fend off rising competitors and adapt to the global reality of slowing sales growth and shrinking profits,</b> says John Casesa, managing partner of auto industry consulting firm <i>Casesa Shapiro Group LLC</i> in New York. 'If <i>Toyota</i> is unable to react to a changing world, it will risk its very existence over time,' says Casesa, who's covered the industry for two decades. 'If the company internalizes the <i>GM</i> lessons, it can maintain its leadership.' <b>Akio's challenge is to cut Toyota's dependence on luxury cars and branch out from U.S. markets destabilized by easy credit.</b> In its race to top <i>GM</i>, <i>Toyota</i> splurged on enough new factories to make 2 million additional cars a year. South Korea's <i>Hyundai Motor Co.</i> targeted small-car buyers in China, India and other emerging countries, where it sold 55 percent of its vehicles last year compared with 31 percent for <i>Toyota</i>. <b>Toyota went from being a scrappy newcomer to becoming convinced the market was just there for them to take,</b> says Maryann Keller, an auto analyst and president of <i>Maryann Keller &amp; Associates</i> in Stamford, Connecticut. <b>Toyota wrote the playbook and Hyundai read it: Build great cars with great value, and people will come.</b> <i>Toyota</i> investors won't see a quick revival, says Christian Takushi, a portfolio manager in Zurich for <i>Swisscanto Asset Management AG</i>, which owns 1.7 million <i>Toyota</i> shares. After reporting record net income of \$17.7</p>	
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				<p>billion for the fiscal year ended on March 31, 2008, earnings took a \$22.2 billion nose dive. <b>Toyota ended fiscal 2009 with a \$4.5 billion net loss and the company says it expects to lose \$5.7 billion more in fiscal 2010.</b> Earnings won't recover for three years, even if sales rebound, since <i>Toyota</i> is still paying for its expansion, Takushi says. <b>'Toyota has overdone itself with capital spending because they really wanted to be No. 1,' he says. 'They're paying a high price.'</b> Not all investors are so pessimistic. <i>'Toyota</i> is among the best,' says Wendy Trevisani, fund manager for Santa Fe, New Mexico-based <i>Thornburg Investment Management Inc.</i>, which held 17 million <i>Toyota</i> shares in March. <b>'They make every effort to address problems as seen by current initiatives including management shifts. Their balance sheet remains strong.'</b> <i>Toyota's</i> \$52 billion in cash and marketable securities give it a comfortable cushion, according to <i>Moody's Investors Service</i>. And it will get some relief in the U.S. from the misfortunes of bankrupt rivals, says Kota Yuzawa, a <i>Goldman Sachs Group Inc.</i> analyst in Tokyo. <b>The Japanese automaker may be able to boost American market share by a third to 21.3 percent by 2011 as GM and Chrysler shut plants and dealerships. This prospect, which would make Toyota the top-selling carmaker in the U.S., helped send Toyota's shares up 29 percent this year, to 3,690 yen on June 19. That's still 56 percent below their 2007 peak of 8,390 yen. 'Toyota should emerge from the downturn in an even stronger position relative to competitors,'</b> says James Hunt, who helps oversee \$6 billion at <i>Tocqueville Asset Management LP</i> in New York, including 37,000 <i>Toyota</i> shares. <i>Hyundai's</i> shares surged 84 percent this year to 72,500 won on June 19. <b>Inside Toyota, some chalk up the recent stumble to the recession that's sent global car sales down 20 percent since 2007. Shoichiro wasn't buying that excuse. He told employees at the February meeting that Toyota fell victim to hubris, according to the person familiar with the gathering. Beginning in 2003, Toyota pushed to expand manufacturing capacity by 25 percent to build 10 million cars a year. When Watanabe became president in 2005, he backed the growth plans and championed a \$1.3 billion pickup truck plant in San Antonio, Texas, calling it 'a dynamic symbol of our bright future.'</b> <b>Watanabe, 67, sealed his fate by failing to predict that sales would plunge last year and not acting fast enough to recover,</b> people familiar with the situation say. In October, 2 1/2 weeks after <i>Lehman Brothers Holdings Inc.'s</i> bankruptcy deepened the global credit freeze, a key <i>Toyota</i> lieutenant, Executive Vice President Mitsuo Kinoshita, said sales could rise to 9.7 million vehicles this year. In May, the company predicted it will sell just 6.5 million</p>	
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				<p>vehicles in the fiscal year ending in March 2010. <b>‘If Toyota can’t adjust to a market that will be smaller, with less-expensive cars, then somebody else will be heralded as the next great automaker,’</b> Keller says. It’s up to Akio Toyoda, 53, the first Toyoda in 14 years to run the company, to ensure that that prediction doesn’t come true. First, he’ll have to guide <i>Toyota</i> through unfamiliar times. <b>‘We’re facing a once-in-a-century crisis,’</b> Akio said, referring to the recession, in a January press conference after his appointment as president. In a nod to <i>Toyota</i>’s new austerity, Akio, wearing a dark-gray suit with a pale-pink tie, spoke in the lobby of the company’s Tokyo office instead of at the Palace Hotel or one of the other upscale venues of previous years. ‘I’ll try to make changes without being tied down by the past,’ he said, reading carefully from a script. <b>‘I will consider measures quickly.’</b> Akio has been huddling in Japan with 11 department heads to discuss ways to <b>slow Toyota’s expansion without completely killing it,</b> people familiar with the meetings say. He’s planning to appoint five executive vice presidents in key regions such as North America. They’ll handle product development, manufacturing and sales locally. <b>The heads of these departments currently report to executives in Japan, which slows decision making. ‘Toyota has been addicted to U.S. profits these last five years,’</b> says John Shook, a University of Michigan management instructor and former <i>Toyota</i> engineer. ‘They’ve been slow everywhere else, particularly in China, where the growth is. <i>Hyundai</i> could be the big winner.’ The reorganization is just part of Akio’s makeover attempt. On May 18, he unveiled the latest Prius to the Tokyo media. The newest version of the hybrid boosts fuel economy by 8.6 percent, to 50 miles (80 kilometers) per gallon. Akio said he hopes to quadruple hybrid sales to 1 million annually during the decade starting next year. ‘Our answer to how a car should be in the future is the new Prius,’ he said. Then on May 23, he traveled to Germany to drive a 500-horsepower black-and-white <i>Lexus</i> sports car in a 24-hour endurance race, finishing 87th in the 170-car field. Two years earlier, in a blog he writes for <i>Toyota</i>’s racing unit, Akio said he admired Ulrich Bez, chief executive officer of <i>Aston Martin Lagonda Ltd.</i>, maker of fictional spy James Bond’s preferred car. He praised Bez for competing in contests that underlings called too dangerous. ‘Because such a CEO leads the company, <i>Aston Martin</i> is able to offer an emotional sports car,’ he wrote. <b>After another race, Akio described a beer party with fans. ‘We were shaking hands, waving hands as if our arms would be torn apart,’ he wrote. ‘It felt like it was the best moment of my life!’</b> Cliff Cummings, who owns two <i>Toyota</i> dealerships in the foothills of the San Gabriel Mountains near San Bernardino, California, says</p>	
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				<p>president. Watanabe opened the newest factory in Woodstock, Ontario, on Dec. 4. Three weeks later, he delivered <i>Toyota's</i> second major profit warning and even then avoided acknowledging that he'd made a strategic mistake. <b>'We should have arranged a little bit more kaizen when we were on a growth path,'</b> he told reporters. 'On the other hand, many customers bought our cars, so it's really a difficult judgment.' Akio's quest to fix <i>Toyota</i> will take him to the scene of one of its biggest setbacks: a former cattle ranch in San Antonio where 600-pound (270-kilogram) wild pigs roam the underbrush. Back in 2003, <i>Toyota</i> announced the factory in an effort to undermine Detroit's last great profit bastion: pickup trucks. The Texas plant opened in November 2006, just months before cracks emerged in the U.S. subprime mortgage market and gasoline prices began their rise. Timing was just one issue. <b>'There was a lot of non-<i>Toyota</i> thinking,'</b> says Shook, the former <i>Toyota</i> engineer. 'San Antonio seemed kind of crazy.' Starting with its first U.S. factory in 1988, <i>Toyota</i> built the Camry midsize sedan and others that had first proved their popularity in Japan, Shook says. It designed each assembly line to accommodate many models. <b>In Texas, <i>Toyota</i> broke these rules by dedicating a whole plant to the largest pickup the company had ever conceived,</b> the Tundra. <i>Toyota</i> wanted to attract new buyers on their home turf, Shook says. Watanabe authorized \$3 billion for the effort, a person familiar with the situation says. He planned to turn out 250,000 Tundras a year in San Antonio and Princeton, Indiana. Today, <i>Toyota</i> builds 100,000 annually, only in Texas. <i>Toyota</i> was challenging Detroit where it was strongest, says Eric Noble, president of research firm <i>Car Lab</i> in Orange, California. As <i>Toyota</i> was learning the truck-building ropes, <i>Ford</i> redesigned its F-150 pickup. The new regular-cab F-150, with its 3,030-pound payload and 20 highway miles per gallon for the midsize engine, was an exemplary achievement in the same way that the Prius is <i>Toyota's</i> best, Noble says. By comparison, the Tundra had a 1,990-pound payload and got 17 mpg. Even better for <i>Ford</i>, the F-150 won a five-star safety rating from the <i>National Highway Traffic Safety Administration</i> compared with Tundra's four stars. U.S. carmakers are catching up in quality too. <i>Chevrolet</i> customers reported 113 quality complaints per 100 vehicles in 2008, compared with 104 for <i>Toyota</i>, according to J.D. Power &amp; Associates, which tracks consumer satisfaction. <b>In 1981, GM had seven times the complaints of <i>Toyota</i>.</b> On the luxury end, <i>Hyundai</i> is chasing <i>Toyota's</i> Lexus GS with its Genesis, a premium sedan that sells for \$10,000 less. <i>Hyundai</i> also is preparing to bring its top-end Equus to the U.S. <b>For the Tundra pickup, the killer was price, dealer Cummings says. <i>Toyota</i> charged \$29,568 for a typical Tundra in 2007. That was \$4,000 too</b></p>	
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				<p><b>much based on what potential buyers told him,</b> Cummings says. <b>‘By charging too much, we forced customers to look elsewhere,’</b> he says.</p> <p>When <i>Honda’s</i> retiring CEO Takeo Fukui looks at San Antonio, he says he sees a clear difference between <i>Toyota</i> and Japan’s No. 2 automaker. <i>Honda</i> builds factories in stages, adding the capacity to make 50,000 vehicles at a time, instead of 250,000 at once. <b>‘Toyota makes big investments,’</b> Fukui, 64, said in Detroit, where he was attending an April engineering conference. <b>‘Our idea is to start small and grow. We consider ourselves a small company, and the idea of having extra capacity is very scary.’</b> A foggy March Tuesday in San Antonio proves Fukui’s point about idle space -- and shows <i>Toyota’s</i> determination to learn from its miscues. Dozens of <i>Toyota</i> workers, wearing green or orange vests that signify they’re on temporary assignment, inspect unfinished trucks. These same workers cleaned parks and enjoyed yoga and Pilates on company time when a 15.6 percent sales drop forced <i>Toyota</i> to shut the plant for three months starting in August and then cut a second shift. <b>Ray Tanguay, executive vice president for manufacturing in North America, sees a silver lining in the downtime. The company is using its kaizen process to build vehicles with fewer workers, aiming for more profit when sales pick up. ‘We have to go back to our core values,’ he says. ‘This might well make us stronger.’</b> Kaizen-sparked improvements are taking root in San Antonio. Production manager Dan Antis says employees studied everything from workplace diversity to how to hold a screwdriver. <b>‘When you’re chasing volume, you don’t have time to teach people,’</b> Antis says. <b>‘The kaizen we’re capable of doing after the shutdown is endless.’</b> Standing near the assembly line’s end, team leader William Steubing says he wanted a better way to handle a 20-pound plastic box that carries parts alongside unfinished trucks. Initially, Steubing’s team attached the box to metal frames holding the trucks. As the <i>Tundras</i> moved along the line, workers reached into the box for headlights and other parts. When they emptied the box, they’d lift it off the carrier and carry it back for refilling. During the shutdown, workers designed a conveyor to do that job. Now, as a truck moves forward, the conveyor tilts up a corner of the empty box and snaps it off the carrier. The box falls onto the conveyor and rolls back for refilling. The change saves 11 seconds of walking per truck. Steubing and his co-workers also got training in welding and metal cutting. Then they recycled old conveyors, spending \$2,000 compared with \$90,000 that <i>Toyota</i> engineers had planned for a motorized conveyor. These and more than 400 kaizen projects are making an impact. Defects that</p>	
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				<p>workers reported in an internal audit fell to 0.2 per truck from 1.2, comparable with <i>Toyota's</i> best worldwide. Productivity measured by trucks made per worker per day, not including temporary laborers, rose to 0.91 from 0.73. <b><i>Toyota's North American factories need to run at 70 percent to 75 percent of capacity to break even,</i></b> Tanguay says. They were at 60 percent in March. He says he's cutting hundreds of millions of dollars per year in costs. Starting in September, the North American factories will break even, he says. 'If the market comes back, we're going to be in a very good position,' Tanguay says. While money-saving kaizen improvements may help Akio on the factory floor, the recession has made strategic planning harder, U.S. sales chief Jim Lentz says. In his office in Torrance, California, adjacent to the I- 405 freeway and its crush of thousands of cars, Lentz says he can't predict with certainty how many vehicles Americans will buy in coming years. Nor can he tell what kind of cars people will want or which technologies governments will allow. Lentz takes out a black-and-gray chart based on <i>Toyota's</i> economic and consumer research. <b>It shows that U.S. auto sales may rebound from an annualized rate of 9.6 million this year to 17.4 million by 2015.</b> He draws a line with a blue pen showing that, conversely, sales could total 11.5 million in 2015 if the recession lingers. <b>If that happens, Toyota may lay off full-time workers, not just temporaries.</b> Even with President Obama's push to lift fuel efficiency for new vehicles to a nationwide average of 35.5 mpg by 2016, environmental challenges are hard to plan for. California's zero-emission-vehicle mandate means <i>Toyota</i> and other automakers must build tens of thousands of electric cars, fuel-cell vehicles and plug-in hybrids starting in 2012. 'Product planning is riskier than ever,' says Bill Reinert, <i>Toyota's</i> U.S. manager for advanced technology. <b>'You're betting five years out on whether the public will adopt very different forms of transportation.'</b> Amid the upheaval, <i>Toyota</i> is making concrete strategic shifts. It's building more compact cars and setting up factories in emerging markets and countries with large reserves of resources like oil, Watanabe told reporters in May. It doesn't have much choice. Sales at the Lexus luxury unit had generated more than half of U.S. earnings, with 12 percent of sales, in the middle of the decade. Consumers' lust cooled when the average U.S. price for regular gasoline topped \$4 a gallon in July 2008. During the first quarter of 2009, <i>Toyota's</i> U.S. pickup, minivan and SUV sales plunged 40 percent. Lexus sales dropped 37 percent. <b>The danger is that Toyota's moves toward smaller vehicles may cut earnings in half,</b> even after the recession ends, says Koji Endo, an analyst at <i>Credit Suisse Group AG</i> in Tokyo. And nobody's sure how the price of gas,</p>	
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					<p>which has fluctuated by more than \$2 a gallon in the past year, will affect consumer desires. Even so, <i>Toyota</i> is banking on such cars as the iQ. At the New York Auto Show in April, a lime-green model of the micro- compact descended from the ceiling amid strobe lights and techno music. The iQ fits sideways in a normal parking spot, travels 65 miles per gallon and has nine air bags. <i>Toyota</i> sells the iQ in the U.K. for \$15,000. Such premium small cars will help maintain profits as fuel prices rise, Lentz says. <i>Hyundai</i> has already claimed some turf that <i>Toyota</i> is targeting with smaller cars. Along with affiliate <i>Kia Motors Corp.</i>, <i>Hyundai</i> sold 4.2 million vehicles last year, more than half of them in emerging markets. <i>Hyundai</i> and <i>Kia's</i> combined profit dropped 7.9 percent to 1.56 trillion won (\$1.2 billion) in 2008, partly because the South Korean currency fell 26 percent against the dollar. Combined sales rose 0.5 percent in the U.S. during the January-March quarter and 50 percent in China. <b><i>Toyota faces an identity crisis,</i></b> <i>Casesa</i> says. <b><i>Their spectacularly successful business model is not working, and they are undergoing profound internal change with the new president.</i></b> Shoichiro's retirement from <i>Toyota's</i> board in June means Akio may be the next Toyoda to speak to managers in the redbrick Nagoya factory. <b><i>By then, investors will have more signs of how quickly -- and how thoroughly -- Akio has acted on Shoichiro's February warning about the dangers of emulating Detroit.</i></b></p>	
23 June 2009	Internal Boeing Memo., posted on forums.jetphotos.net	Scott Carson, CEO Boeing Commercial Airplanes	Firm	α	<p>“***This message is being sent by Scott Carson, president and CEO of Commercial Airplanes, to all Commercial Airplanes employees.***</p> <p><b><u>Postponing 787 flight testing</u></b>  <b>There are times when making the prudent and right choice is the only choice. That's what we have done today</b> with our announcement that we will take the time to reinforce an area within the side-of-body section of the 787 before we begin flight testing.</p> <p>Based on our preliminary analysis, and as recently as last week, we believed we could work through this issue and still begin flight test this month. Subsequent analysis over the last few days led us to conclude that a modification must be made before flight test. As we have stated in the past, we will fly only when our team is convinced that we are ready to fly and can conduct a productive flight test program.</p> <p>Our testing process is designed to identify these issues, and experience tells us that structural modifications are not uncommon for development programs. We gave consideration to a temporary solution that would allow us to fly as scheduled, but we ultimately concluded that the right thing was to</p>	On a modular enterprise architect's views on choice.

					<p>develop, design, test and incorporate a permanent modification to the localized area requiring reinforcement.</p> <p>Now, it is important that our team has the time and resources to develop a solution, conduct the appropriate testing to validate the solution and incorporate the modification prior to first flight. First flight and first delivery will be rescheduled after we determine the required modification and testing plan.</p> <p>The emotions we feel today should not take away from <b>the 787 team's incredible progress in recent months. We have had strong results from our engine tests, our systems tests and, with this exception, our structural tests.</b> We believe in the technologies, the design and the systems that <b>will make the 787 a revolutionary airplane for our customers and their passengers.</b></p> <p>As a team, we have worked through many challenges in bringing this <b>breakthrough airplane</b> to life. I am confident that as a team, we will work through this issue as well. We will stay focused on executing the best solution as quickly as possible, while keeping up the progress on the other areas of the program.</p> <p>I thank everyone on the team and everyone at Commercial Airplanes for the hard work, dedication and perseverance as we continue on this journey together.</p> <p>Scott"</p>	
23 June 2009	<i>Wall Street Journal</i> , "Boeing Delays First Flight of 787" (Ann Keeton)	Scott Carson, CEO Boeing Commercial Airplanes	Firm	$\alpha$	<p><b>"Boeing Co. delayed the first flight and initial delivery of its new 787 Dreamliner, saying wing-bending tests showed a structural weakness where the wings join the body of the aircraft. The Chicago company indicated Tuesday it plans to take some second-quarter charges related to the delay. It will be several weeks before the plane maker releases a new flight and delivery schedule, Scott Carson, head of Boeing's commercial airplanes unit, said during a conference call Tuesday. Financial impact to Boeing's second-quarter results will be disclosed when the company releases earnings data next month, the company said. Carson said it was premature to discuss the dollar impact of the delay, but that the cost of small parts to reinforce the aircraft structure would be 'immaterial' to the program. Boeing shares recently fell \$4.17, or 8.9%, to \$42.70 Tuesday as investors expressed disappointment over trouble with the 787, which is expected to help fuel Boeing's earnings in coming decades. Carson said fixing the aircraft won't slow the 787 production line, as already-assembled aircraft can be modified with a number of small 'hand-sized' parts that can be</b></p>	On a modular enterprise architectur's continued, systematic and accelerating over-promise and under-delivery.

					<p><b>added wherever the planes are now in the assembly process.</b> With more than 800 orders for the 787, <i>Boeing</i> expects in its initial production plan to finish two planes per month, and has said it may add a second production line to ramp up production in 2012. The news Tuesday is <b>another blow to Boeing, which had steadfastly maintained the first flight would take place by the end of June. The 787 is already two years behind schedule, suffering a total of five delays on manufacturing glitches.</b> First customer <i>All Nippon Airways</i> had expected to receive the first 787 aircraft in the first quarter of 2010. Carson said <i>Boeing</i> began talking to customers about the latest delay late Monday evening. It's not clear yet whether the delivery delay will match 'day for day' the holdup at the factory since <i>Boeing</i> will continue with other tests as it reinforces the wing joints. <i>Boeing</i> said Tuesday the problem was discovered during recent, regularly scheduled tests on the first test aircraft. While preliminary analysis indicated that flight test could proceed this month as planned, <b><i>Boeing</i> decided late last week to delay the first flight,</b> a key milestone in any new aircraft development. <b>Scott Fancher, head of 787 production, said <i>Boeing</i> found unexpected stress points about one-to-two square inches in size, at 18 locations on the joint between the upper side of each wing and the body of the aircraft. He said a computer model didn't show that stress, and the model will need to be changed to reflect results from physical tests that sharply bent the wing of the aircraft. 'Consideration was given to a temporary solution that would allow us to fly as scheduled,' Carson said, 'but we ultimately concluded that the right thing was to make a permanent change. <i>Boeing</i> will work on structure reinforcement with parts suppliers <i>Fuji</i> and <i>Mitsubishi</i>. 'Structural modifications like these are not uncommon in the development of new airplanes, and this is not an issue related to our choice of materials or the assembly and installation work of our team,' he added. He said the structural weakness occurred where materials including titanium and aluminum were used, along with new composite materials that have made <b>the 787's design a game-changer for the industry.</b> The lighter weight of the aircraft is expected to save some 20% on fuel and harmful emissions. <b>Early last week, Carson addressed reporters at the Paris Air Show, assuring them the first flight was on schedule for as early as Wednesday of this week.</b> He said Tuesday the first flight could have occurred as scheduled, but <i>Boeing</i> thought it prudent to delay the 787 schedule, which had become extremely tight."</b></p>	
23 June 2009	<i>Flightbl ogger.c om</i>		Firm- Media	α	<p><a href="#">By Raoul on June 23, 2009 10:05 AM</a> "John, I enjoy your blog but I hope you and all the other writers (I consider you better than a mere</p>	On questioni ng data

	<p>“BREA KING: <i>Boeing</i> Postpon es 787 First Flight” (Jon Ostrowe r)</p>				<p>blogger) will learn something from this. Especiall the so called 'Aviation industry analysts' <b>Don't become so starstruck by <i>Boeing</i> and it's handlers that it impairs the facts.</b> <i>Boing</i> might give you data, it might toss out some swag and some shiney, but facts? You have to get those for yourself. Yes, I know, 'WTH is this guy talking about?'. Think about it John, <b>you have been expertly stroked and groomed by one of the best PR machines in the world.</b> You aren't writing about the hype, you have become part of it. <i>Boeing</i> is a very troubled company, and has been for a dozen years now. As shareholders lick their wounds over the past few days of sell-down, incurring massive losses(again) we again wonder where the truth begins and ends with <i>Boeing</i>, and particularly where managerial and executive competence is or is not present. It's our fault too. If we didn't choose to believe them we thought maybe, just maybe they couldn't blow it again at this late stage. Yes, I know, the focus of this blog is on the technical/commercial aspects of aerospace, it's not an investors symposium. <b>But real damage has and is being done, not just to us, but to the company.</b> This is not just another routine development difficulty. <b>This smacks of a deep, deep flaw in <i>Boeing's</i> current methodologies and philosophy of doing business.</b> The sort of 'Go Fever' exhibited and egged on by <i>Boeing</i> itself is bad mode of thinking to be in. It cannot turn out well. I'm sorry, but it just cannot. Focusing on every minute detail right down to every engine start or the most meaningless movement of the aircraft on the ramp misses the point entirely. The bloggers, the aerospace press, et-al, just consistently give <i>Boeing</i> a pass. Nobody is digging, nobody is asking tough questions. <b>It's my opinion that <i>Boeing</i> never had control of this program to lose it.</b> The test program is rushed. Boing management and the media are infected with GO FEVER. And that is a very, very dangerous thing to have.”</p> <p><u>By Roger Fields on June 23, 2009 11:49 AM</u>  <b>“<i>Boeing</i> says that they delayed first flight because the flight envelope would be to small for productive flight testing. Sorry, don't buy that. Why getting all this negative publicity if a first flight would have been possible? Why not performing first flight by June 30 while they were thinking about a fix? Believe me, the problem is bigger then <i>Boeing</i> admids, otherwise, they would have gone for first flight by June 30 regardless of the smaller flight envelope.”</b></p>	<p>fidelity and rival hypotheses for underdelivery in a modular enterprise architectue's products.</p>
<p>23 June 2009</p>	<p><i>New York Times</i>, “<i>Boeing</i></p>	<p>Scott Carson, CEO <i>Boeing</i></p>	<p>Firm</p>	<p><math>\alpha</math></p>	<p>“<i>The Boeing Company</i> said on Tuesday that it would again delay the first flight of its new jet, the 787, the latest setback in a program that is considered <b>crucial to the plane maker's future.</b> Boeing</p>	<p>On a modular enterprise</p>

	Delays 1 <sup>st</sup> Flight of Dreamliner” (Christopher Drew)	<i>Commercial Airplanes</i>			<p>executives said that they had found additional stress where the wings attach to the sides of the plane. Minor modifications should fix the problem, they said. But they also said it could be weeks before the flight testing could resume. And stock analysts said that it would mean a delay in the delivery schedule, a concern that caused the company’s stock to drop as much as 9 percent Tuesday morning. The problems were the latest in a series of delays for what promises to be the world’s most sophisticated passenger plane and a <b>key to Boeing’s future</b>. The company has more than 850 orders for the plane, which is known as the Dreamliner and is supposed to be lighter and more fuel-efficient than other commercial aircraft. <b>Analysts said the company’s flight test schedule was so tight that the delay of several weeks would clearly push back plans to deliver the first 787 by next March.</b> “<b>There’s no way that will hold,</b>” Richard Aboulaflia, an analyst at the <i>Teal Group</i>, said. <b>‘This is a pretty late stage in the preflight test schedule to be finding structural showstoppers.’</b> And that only heightens concerns that <i>Boeing</i> could find more problems once the test flights begin. <b>‘This removes any hope that they’d gotten a handle around the likely risks of things they could find during the flight test program,’</b> Mr. Aboulaflia said. <b>‘It doesn’t help the company’s credibility,’</b> said Howard Rubel, an analyst at <i>Jefferies &amp; Company</i>. ‘There’s a sense of frustration that they were 90 percent at the finish line, and they’re still at 90 percent of the finish line.’ <b>Company executives said they discovered the structural weakness last month. They said they initially thought that it would not delay having the first flight by June 30, an idea that they continued to promote at the Paris Air Show last week.</b> But in a conference call with reporters and investment analysts on Tuesday, Scott Carson, the chief executive of <i>Boeing’s</i> commercial airplane operations, said <b>‘it became apparent by Friday that the problem would limit how rigorous the flight could be.’”</b></p>	architect ure’s over-promise and under-delivery
23 June 2009	<i>Forbes</i> , “History of the Boeing 787”		Firm	$\alpha$	<p><b>“The delay of the first flight test of the best-selling, new-technology 787 announced Tuesday by Boeing Co. executives is the fifth in years of setbacks for the program.</b> Here is a summary of the effort to build the first passenger plane made from lightweight carbon composite parts rather than metal:</p> <p><u>ORIGINS</u> - On <b>Dec. 20, 2002</b>, <i>Boeing</i> officially drops plans for the Sonic Cruiser, which would have traveled near the speed of sound, and on <b>Jan. 29, 2003</b>, the company establishes a leadership team for the 7E7, its first all-new airplane since the 777 in 1990. Composites are chosen as the primary material the next June.</p>	On the chronical ling of the under delivery of a modular enterprise architect ure.

				<p><u>STARTUP</u> - <i>All Nippon Airways</i> of Japan orders 50 of the planes, and <i>Boeing's</i> board of directors approves the launch of the 7E7 program on <b>April 26, 2004</b>. In January 2005 the model name is changed to the 787, and at the end of the year the first deliveries are set for <b>early summer 2008</b>.</p> <p><u>FIRST GLITCHES</u> - <i>Boeing</i> announces on <b>June 9, 2006</b>, that bubbles have been found in the composites used in a 33-foot prototype of a section of the fuselage. On <b>Nov. 6, 2006</b>, <i>Boeing</i> says it's confident the plane can be lightened by about 2.5 tons, enough to make it the most fuel efficient commercial jet in the air.</p> <p><u>SALES</u> - Sales exceed 500 planes by <b>April 3, 2007</b>, and <i>Boeing</i> begins looking for ways to accelerate production.</p> <p><u>MORE GLITCHES</u> - <i>Boeing</i> reveals production snags on <b>June 12, 2007</b>, including a gap where the left side of the nose-and-cockpit section is out of alignment with the fuselage. Another problem is an industrywide shortage of fasteners that hold the plane together.</p> <p><u>FIRST DELAYS</u> - On <b>Sept. 5, 2007</b>, <i>Boeing</i> says the 787 will begin flight testing in mid-November or mid-December, months later than originally planned. On <b>Oct. 10, 2007</b>, <i>Boeing</i> delays first deliveries by six months.</p> <p><u>PERSONNEL CHANGE</u> - <i>Boeing</i> announces on <b>Oct. 16, 2007</b>, that Michael B. Bair, vice president and general manager of the 787 program for the past three years, has been replaced by Patrick M. Shanahan, previously head of <i>Boeing's</i> missile defense systems in Wichita, Kan. Bair is named vice president of business strategy and marketing and, on <b>Oct. 31, 2007</b>, says some suppliers of major components for the 787 have fallen short of <i>Boeing's</i> expectations.</p> <p><u>PROMISES, PROMISES</u> - On <b>Dec. 11, 2007</b>, <i>Boeing Commercial Airplanes</i> CEO Scott E. Carson says there will be <b>no further delay in 787 development, but a three-month delay is announced on Jan. 16, 2008, and an additional six-month stall is announced on April 9, 2008</b>, postponing the projected debut of commercial service to the third quarter of 2009 - the third revision to the delivery schedule and the fourth change in plans for first test flight.</p> <p><u>LABOR DISPUTE</u> - An eight-week strike by the Machinists union that began <b>Sept. 6, 2008</b>, and lingering production problems, including installation</p>	
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					<p>of improper fasteners, pushes the first test flight into the second quarter of 2009 and first deliveries into the first quarter of 2010 - the fourth schedule shift, making the first 787 nearly two years late. The top issue in the strike is job security as union members maintain that if more of the blue production had been in-house instead of by subcontractors, the 787 would have been completed before the walkout.</p> <p><u>LATEST HANGUP</u> - On <b>June 23, 2009</b>, <i>Boeing</i> announces that flight tests will be delayed an undetermined number of weeks for the design and installation of reinforcements along the upper part of the place where the wings join the fuselage. Carson says deliveries also will be pushed back.”</p>	
23 June 2009	<i>The Herald .net</i> “What <i>Boeing</i> did Right – and Wrong on the 787” (Michelle Dunlop)	Mike Bair, VP Strategy, <i>Boeing Commercial Airplanes</i>	Firm	α	<p>“On a sunny day in July 2007, the <i>Boeing Co.</i> welcomed its 787 Dreamliner into the aviation world with a lavish rollout party in Everett. <i>Boeing’s</i> Mike Bair, then the 787 program vice president, stood outside the factory’s immense doors smiling like a proud papa alongside retired ‘NBC Nightly News’ anchor Tom Brokaw, who emceed the event. Bair had told the thousands of workers, customers and suppliers who watched the rollout either in person or on satellite about <b>the importance of incorporating the latest technology when bringing a new aircraft to market.</b> ‘You’ve got to get it right,’ Bair said. <b>From a technology perspective, <i>Boeing</i> got its new 787 right. From a preliminary execution standpoint, <i>Boeing</i> got its 787 wrong.</b> Standing there next to their Dreamliner on 07-08-07, <i>Boeing</i> executives surely had concerns about the aggressive schedule in front of them. <b>Even then, Bair and other company leaders knew their first 787 was filled with temporary parts and lacked the wiring and systems it needed for first flight, scheduled for late August 2007.</b> But no one imagined it would take <i>Boeing</i> not two months, but nearly two years to put its 787 Dreamliner into flight. Within two weeks of that day in July 2007, a series of schedule slides began for the mostly composite jet. By early September, the company had pushed the 787’s first flight to December <b>but maintained the original May 2008 delivery date.</b> ‘Right now we don’t see this translating into delays,’ Bair said. ‘The most important thing is to deliver the airplane on time.’ In early October, <i>Boeing</i> marketing guru Randy Tinseth gave assurances the 787 was on track. Less than 24 hours later, Scott Carson, president of commercial airplanes, admitted that <b><i>Boeing</i> would not deliver the first 787 on time.</b> Over the next 14 months, the delays dribbled in, soiling <i>Boeing’s</i> reputation and spoiling a potentially wide lead <i>Boeing</i> could have held over rival <i>Airbus</i>. <b>Analysts and bloggers often broke news of 787 setbacks before <i>Boeing</i>.</b> And problems -- underperforming partners, incorrectly installed parts</p>	On a modular enterprise architecture’s focus on product innovation.

					<p>-- piled up, pouring over into other jet programs. After the Machinists strike last fall, <i>Boeing</i> announced delays to its 777 Freighter and 747-8 programs, blaming the 57-day work stoppage, design changes and a shortage of engineering resources for the setbacks. <b>The problems on the 787 forced Boeing to keep engineers on the Dreamliner longer than anticipated, the company said. Therefore, the engineers were late transferring over to the other programs. Meanwhile, as Boeing pushed the 787's first delivery date further, its rival Airbus picked up more orders for its A330. The European jet maker saw a surge in orders for its A330 since Boeing first announced delays to its 787 in 2007. Airbus received 198 net A330 orders in 2007 and another 142 in 2008. Boeing's gift to Airbus also meant the European jet maker's new A350 jet, also made mostly of composite materials, won't be far behind the 787 into service. The A350 is sized more to compete with Boeing's 777. Still, the Dreamliner will be delivered just three years before the A350. The 787's delays and extra costs give Boeing less time and cash to dream up a competitor to the A350. But Boeing's chief executive, Jim McNerney, sees some silver lining in the 787's delays and is confident in the Dreamliner's future, he said at the <i>Sanford C. Bernstein</i> strategic decisions conference in late May. <b>The technology that Boeing is using on the Dreamliner will be used on aircraft for decades, he said. 'We've figured out how to build airplanes for the next 75 years,' McNerney said. Boeing is using a spun composite barrel for its 787. Airbus plans to use composite panels instead. McNerney isn't sure Airbus' strategy will pay off. Although Boeing's suppliers have struggled on the 787, the delays have allowed them to smooth out the process - an advantage in the long run, McNerney said. 'I think that's a huge advantage,' he said of the 787's technology. 'Innovation is the key to us getting the lion's share of the market.'</b></b></p>	
23 June 2009	Seattle Post-Intelligencer "Boeing 787 Flight Delay: Technical Details and Q&A Transcript" (Andrea	Scott Carson, CEO Boeing Commercial Airplanes; Pat Shanahan, VP and GM Airplane Program	Firm- Investor	α	<p><b>Question: Joseph Campbell - Barclays Capital - Analyst</b>          "Just again back on the nature of the problem and where it is, can you -- is this problem isolated to a single structure? So like is it -- I mean is it the <i>Alenia</i> piece? Is it the wing box from <i>Fuji</i>? Or does it involve stresses on several supplier components? Is it both starboard and port so that this is something that's symmetrical around the aircraft? Or is it a single sided kind of issue?"</p> <p><b>Pat Shanahan - The Boeing Company - Airplane Programs VP and General Manager</b>          "I will jump in first and Scott can provide additional color. So it's multiple structures and it's an integrated design. So it's both the wing out of</p>	On a modular enterprise architecture's explanation for under-performance

	James)	ms <i>Boeing Commercial Airplanes</i> ; Scott Fancher, VP 787 Program		<p><i>Mitsubishi</i> and the side-of-body, which is part of the center section out of <i>Fuji</i>. And the design and the models are developed concurrently by <i>Boeing</i>, <i>Fuji</i> and <i>Mitsubishi</i>. <b>That is the nature of this integrated structure.</b> So as we work through the solution, we will involve <i>Fuji</i>, <i>Mitsubishi</i>, and <i>Boeing</i>, in developing a comprehensive long-term answer. Scott?"</p> <p><b><u>Joseph Campbell - Barclays Capital - Analyst</u></b> "And it's both sides, but not the <i>Alenia</i> structure?"</p> <p><b><u>Scott Fancher - The Boeing Company - 787 Vice President and General Manager</u></b> "Correct, and it is symmetric. As Pat mentioned, every -- all of our partners that have structure in this area and participated in the design are on the team to determine what the modifications are for this area."</p> <p><b><u>Joseph Campbell - Barclays Capital - Analyst</u></b> "So just to not -- hopefully this can be the end of this. Somebody asks before it was along the entire wing, so it's -- if you were to describe from the aft to tail or under the belly or wherever these are located, is it possible to take the multiple several inch -- one or two square inch places and identify how many of them are there and from the furthest point away, how big is the section affected?"</p> <p><b><u>Scott Fancher - The Boeing Company - 787 Vice President and General Manager</u></b> "This is Scott Fancher. Let me try and take a crack at that. As we mentioned earlier, we are talking on a one or two square inch area. It is along the side-of-body join between the wing and the side-of-body and particularly -- and specifically limited to the upper portion of where the wing and side-of-body join. And about 18 locations on either side of the aircraft for a total of 36 locations. The exact number may change a little bit as we analyze it, but that's approximately the number. <b>And I really want to emphasize we are talking about a one or two square inch area</b> along that upper wing join area in multiple locations. <b>This is not a problem that extends out the wings or down into -- it is into the aircraft. It's a very limited area that needs structural reinforcement.</b> The modifications, again to emphasize, we are talking about a handful of parts at each location and <b>each one of those parts you could literally hold in your hand. They will be about the size of your hand or smaller. So not complicated by any means.</b>"</p> <p><b><u>Paul Merrion - Crain's Capital Business - Media</u></b> "Hi. I just wanted to go to the issue of the <b>credibility in the company's schedule and predictions of schedule. You knew about this as of late last month, you said. Why wait until now to say</b></p>	
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				<p>anything at all about it? Including when the world's attention was on <i>Boeing</i> last week at the Paris Air Show.”</p> <p><u><a href="#">Scott Carson - The Boeing Company - President and CEO</a></u> “Paul, this is Scott Carson. When we were at Paris last week we had been through the preliminary analysis of the data and were of a mind that the airplane could enter flight test with a credible flight test envelope as we worked relatively minor modifications. The work done by the team through the week last week narrowed the envelope to the point where on Friday we determined that to fly would be such a small envelope for us that it would be an interesting exercise in having the airplane in the air but not particularly useful in terms of preparing the airplane for certification. So at that point is when we made the call to delay the process, identify the fix, test the fix, install the fix, and then enter a flight test program that is fully robust.”</p> <p><u><a href="#">Paul Merrion - Crain's Chicago Business - Media</a></u> “So what would have been the worst case if you had flown? Are we talking about cracks in the fuselage or the wings falling off or what -- if you hadn't made this fix before flying?”</p> <p><u><a href="#">Scott Fancher - The Boeing Company - 787 Vice President and General Manager</a></u> “The answer is our assessment is likely nothing would have happened. This is an issue where stress concentrations departed from the model. Absent being able to anchor those two pieces of data together with confidence based upon our design process, we would have had to reduce the flight envelope we were willing to fly and that gets you into the line of logic that Scott just outlined for you. So it really isn't a matter of yes and no. It is gee, because we've seen this departure and haven't been able to anchor the data back to the model with sufficient confidence, we need to narrow our margins and that led us down the path that Scott described.”</p> <p><u><a href="#">Pat Shanahan - The Boeing Company - Airplane Programs VP and General Manager</a></u> “And we are always staying in process. And when the process says stop, we stop.”</p> <p><u><a href="#">Scott Carson - The Boeing Company - President and CEO</a></u> “Absolutely, absolutely.”</p> <p><u><a href="#">Howard Rubel - Jefferies &amp; Co. - Analyst</a></u> “Thank you very much. I mean you are talking about a number of parts that sound like you could put them in a grocery bag but maybe 50 pounds,</p>	
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				<p><b>60 pounds. But can you talk a little bit about the dollar outcome, Scott, that we are seeing here? Are we talking hundreds of millions of dollars or are we talking just a few million to get this started and fixed?</b></p> <p><u><a href="#">Scott Carson - The Boeing Company - President and CEO</a></u> “Howard, I think it is premature to forecast where we are in dollars. We understand the nature of the fix and I would say the nature, not the specifics of the fix yet, because we have to complete the models, run those models, and then test the solution. As we get through those steps, I think we will be in a better place to talk about the magnitude of the dollars. <b>The fix itself does not appear to be a big dollar item.</b> Obviously we need to understand the implications of the flight test program and first deliveries to assess that.”</p> <p><u><a href="#">Howard Rubel - Jefferies &amp; Co. - Analyst</a></u> “Are we going to see though a day-for-day delay with this and the whole schedule or are there some other items that you might want to also incorporate to increase the margin for discovering additional unknowns?”</p> <p><u><a href="#">Scott Carson - The Boeing Company - President and CEO</a></u> “We are going to continue to exercise the test program as Scott Fancher described in his comments. So whether it is day-for-day, I think again hard for us to call at this moment. We do believe we will be using the time productively however.”</p> <p><u><a href="#">Howard Rubel - Jefferies &amp; Co. - Analyst</a></u> “So I just want to go back though the dollar amount. <b>The fix itself just the titanium parts that you are talking about, is immaterial to the price of the airplane.</b>”</p> <p><u><a href="#">Scott Carson - The Boeing Company - President and CEO</a></u> “Correct.”</p> <p>Posted by <b>unregistered user</b> at 6/24/09 1:45 a.m.</p> <p>“Can you smell the BS in that conference call or what? They kept emphasizing that the mods would be insignificant as both planes 001 and 002 would not have to go back to the floor, yet they will require weeks to provide a fix and more weeks to provide new time table. I wish I was on that call and called them out on it. But then again, these media types have no spine. I hate to say this, but <b>I believe Boeing is crunching the numbers as to how much it would set them back to pay penalties and loss of future revenue to just scrap this 7 Late 7</b></p>	
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					<p><b>program. Mark my words. This is the end of Boeing.”</b></p> <p><u>posted by <b>fisquid</b> at 6/24/09 9:34 a.m.</u></p> <p>“The dollar amount is immaterial?? Customers are fuming to the point that they're canceling their orders, net 787 orders for the year is less than zero (!), and for the last two years they were supposed to be producing a plane a week or more, at \$150 million each, and the dollar amount of the delay is immaterial? <b>Make no mistake. This delay is phenomenally expensive.</b> No one is willing to admit it, but massive amounts of money are lost when you've got a product you can't sell. There's only a small window of time before the competition has similar planes to sell. The delay means MANY lost sales. Profits should have been in the millions on each plane. Instead, they sit on their hands through a time they should have been selling lots of planes at \$150M a pop. <b>And Scott Carson is talking about the price of the bolts, like that's the cost of the delay! Sheesh! It's astonishing that the shareholders are willing to tolerate this level of incompetence.</b> Immaterial, my foot.”</p>	
24 June 2009	<i>Forbes.com</i> “Ahead of the Bell: Boeing Downgraded” ()		Firm-Investor	α	<p><b>“Boeing Co.'s most recent delay of its first test flight of its long-awaited 787 jetliner prompted at least two analysts Wednesday to cut their earnings estimates and ratings</b> for the aerospace manufacturer. Deliveries of the long-range widebody have been delayed repeatedly.</p> <p>Analyst Myles Walton of <i>Oppenheimer &amp; Co.</i> said in a note to investors that he is concerned about <b>‘the likely downward pressure in new aircraft deliveries coupled with product development risk continuing for the next couple of years.’</b> He reduced his rating on the stock to ‘Underperform’ from ‘Perform.’ He cut his estimate for 787 deliveries next year to 18 from 30, and reduced his 2009 estimate to \$4.35 per share from \$4.54. He reduced his 2010 profit forecast for the company to \$4 per share from \$4.08 per share and cut his price target to \$40 from \$42.</p> <p><i>Morgan Stanley</i> analyst Heidi Wood cut her 2009 profit estimate for <i>Boeing</i> to \$4.75 per share from \$4.86 per share and reduced her 2010 estimate to \$4.50 per share from \$5.25 per share. She cut her rating to ‘Equal Weight’ from ‘Overweight.’ <b>‘Based on the program's track record for continual negative discovery, we don't see the wisdom in assuming yesterday's revelation represents the very last setback,’</b> she said in a note to investors.”</p>	On the investor's evaluation of a modular enterprise architecture's over-promise and under-delivery.
24 June 2009	<i>24/7 Wall St.</i> “Boeing		Firm-Investors	α	<p>“The federal government has set up a number of systems to effectively control the financial and credit systems along with most of the major firms that</p>	On a systemic analysis

	<p>: Proof That Management Incompetence Needs Regulation” (Douglas McIntyre)</p>			<p>operate in the sector. <b>The most aggressive, and perhaps most prudent step, the Administration has taken is to force the most poorly managed banks to restructure their boards.</b> The Treasury put proposals before Congress to substantially increase the power of the Fed, in essence giving it life or death power over banks that become, in its judgment, irreparably crippled. The auto industry has fallen under the same government thumb. <i>Ford</i> may have dodged the unprecedented interference that comes with bailout dollars. <i>GM</i> and <i>Chrysler</i> are essentially wards of the state. The auto parts companies could end up in the same position if the government is forced to nationalize some of them to keep the car industry from running low on parts. <b>What the government has failed to do is mandate that stupidity be pushed out of the executive suites of America’s largest companies. Incompetence has always been the enemy of employees, shareholders, and customers.</b> Each of these is much more evident in a recession when the margin for error for creating profits often falls to zero. <i>Boeing</i> delayed the launch of its 787 Dreamliner again today, for the fifth time. This disaster will cost the company sales in upcoming quarters and will force airlines which are flying old and inefficient planes to pay more to operate them than they would have if the new aircraft were delivered on time. <b>The pressure on Boeing’s margins may well lead to layoffs.</b> Shareholders watched the value of the company’s shares drop 6% yesterday. <b>The first of the five product setbacks came in October 2007. Boeing’s stock traded at just above \$100 then. It changes hands at \$44 now. Boeing management made a number of mistakes that contributed to the delays. It did a poor job of managing the construction of the 787. Sets of fasteners were installed incorrectly. The company announced it would have to replace some of them last November. Boeing was greedy with labor, particularly when labor was critical to company product release timetables. The International Association of Machinists and Aerospace Workers walked out on the company last fall. According to MSNBC, ‘Boeing lost about \$100 million in revenue a day from the Machinists strike.’</b></p> <p><b>The most stunning aspect of the 787 delays is that they have all happened under James McNerney, a losing contender for the GE CEO job, and the aircraft company’s chief since 2005. This is almost as amazing as the fact that all of Boeing’s board members have served since before the first delay of the Dreamliner. No one has been held accountable. The board has not even had the good sense to replace McNerney with a more competent manager. McNerney is as much to</b></p>	<p>of a modular enterprise architecture.</p>
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					<p><b>blame if not more so than bank executives such as Vikram Pandit of Citigroup and Ken Lewis at Bank of America are for the trouble at their companies.</b> Pandit can argue that most of the collapse of Citi was underway when he moved to the corner office. Lewis can blame Henry Paulson and Ben Bernanke for shoving the Merrill Lynch acquisition down his bank's throat and undermining its balance sheet. <b>The best McNerney can claim is that he has been unlucky. Unlucky CEOs are even more dangerous than incompetent ones. Luck lacks the logical pattern that poor management has.</b> The Administration is leaning toward giving shareholders more say in the selection and compensation of executives at public companies. It is too early to tell how this will turn out. Corporations may effectively lobby that their boards are competent to handle the matter of hiring and paying senior managers. <b>Boeing is proof that the case for an entrenched board is hardly compelling. A sixth delay of the 787 launch may even earn McNerney a raise."</b></p>	
24 June 2009	<p><i>FlightBlogger.com, "Understanding the 787 Structural Reinforcement"</i> (Jon Ostrower)</p>	<p>Scott, Carson, CEO Boeing Commercial Airplanes; Scott Fancher, VP/GM Boeing Commercial Airplanes 787 Program</p>	Firm	α	<p>"Boeing yesterday announced it was postponing first flight of the 787 citing the need to reinforce structure where the wing box meets the center wing box at the side of body of the aircraft. <i>FlightBlogger</i> takes a closer look at exactly what the problem is and how Boeing came to yesterday's announcement. <b>Because of the need to go back into the detailed design phase for this fix, combined with the need to fabricate, install and test at component and at full scale levels, several sources with a direct familiarity to the situation estimate that the fix will take 'months not weeks.'</b></p> <p><b>Boeing confirms that the stringer cap separated or 'disbonded' from the wing skin. Sources directly familiar with the situation say the shifting tension load from the stringer to fastener head also caused damage on the structure.</b></p> <p><b>It took 63 days for Boeing to decide to postpone first flight of 787.</b></p> <p><b>April 21:</b> <b>Boeing experiences the first signs of trouble on the static airframe.</b> During that test, the wings of ZY997 were flexed to a deflection of over 17-feet and an equivalent of <b>120-130%</b> of maximum load. During this test, which was the limit load test, the strain measurements on the stringer caps were reading higher than predicted. <b>Boeing's official announcement yesterday said the company first discovered the problems in late May, but several sources indicate it occurred during testing on the static airframe in late April. 'We went in and did some inspections and saw a number of things</b></p>	<p>On a modular enterprise architecture's potential understatement of its problems.</p>



				<p><b>indicative of what the strain gauges were saying,' said Scott Fancher, vice president and general manager of the 787 program, said on yesterday's teleconference, implying that the test had left visible damage to the structure.</b></p> <p><i>[Real-time revision (30 minutes later) to above statement:]</i></p> <p><b><u>Late May:</u></b> <b>Boeing experiences the first signs of trouble on the static airframe.</b> During that test, the wings of ZY997 were flexed and the strain measurements on the stringer caps were reading higher than predicted.</p> <p>Previously, on April 21st, <i>Boeing</i> conducted the limit load test which saw the wings deflected over 17-feet and an equivalent of 120-130% of maximum load.</p> <p><b><u>Early June:</u></b> Preliminary analysis showed that the aircraft was still cleared for first flight, though with a reduced flight envelope. Sources indicate that the original plan was to fly ZA001 and ZA002 on their respective maiden flights to BFI as planned then park the aircraft while a fix was developed that would allow an expanded flight test envelope. <b>Scott Carson, CEO of <i>Boeing Commercial Airplanes</i>, confirmed this plan saying that 'the airplane could enter flight test with a credible flight test envelope as we worked relatively minor modifications.'</b></p> <p><b><u>June 23:</u></b> <i>Boeing</i> makes a formal announcement of the first flight postponement. <b>The change in first flight was unknown to many of those closest to the airplane. As late as the evening of Monday, June 22, internal schedules indicated first flight had shifted to July 2nd at 10 am after holding at June 30th for more than a week before and during the Paris Air Show.</b></p> <p><b><u>By Gorbi on June 24, 2009 6:38 PM</u></b> "Well, I don't know what to say. First off, THANK YOU Jon for the extremely detailed analysis of the situation. <b>Coming from a former structural design engineer</b> here in the San Diego area, and <b>having designed aircraft structures from traditional aluminum materials, I can appreciate the complexity of the problem.</b> Although it sounds like a simple fix in layman's terms, it never is. The reason it is more complicated is because we're dealing with composites (plastics), and it's a much more difficult material to predict than that of aluminum. <b>I'm not so sure that I would have gone with composite wing structures, at least at the critical junctions such as the center wing</b></p>	
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					<p><b>box/wing interface.</b> Just like you're not going to build composite landing gear structures, you might compromise weight factors slightly, but you are assured of functional reliability which gives you proven confidence. <b>Hopefully I am wrong, and overly alarmed, but I think this plane may be overly 'plastic' in some areas, and I do believe Boeing may have been overly ambitious in their scheme to build the 787 in such a manner.</b></p> <p><b><u>By CBI on June 24, 2009 7:08 PM</u></b> "Congratulations for this post. <b>If this is true the fix will be far from being trivial. This is a major problem if it did happen at less than 130% weight load! I would not be surprised that the first flight not takes place before Q2 2010, at the earliest."</b></p> <p><b><u>By Wes on June 25, 2009 9:13 AM</u></b> "This airplane has been consistently plagued with problems since inception. <b>The timeline in this indicates to me that the people at Boeing have been hiding a few things from the general public, shareholders, and the airlines. This story reveals, more than anything else, that they knew they had a problem with the wing more than 2 months ago.</b> How big of a problem perhaps required a little more time to understand, but the problem was concealed none the less. I recall the frequent, public, <b>'It will fly in June' comments from Boeings top leadership. Boeing has damaged it's credibility and it is going to take a long time to fix it.</b> I believe there will be a severe and lasting backlash from the customer base to the tune of several hundred cancellations, perhaps as high as 50%. <i>Airbus</i> will reap a huge benefit from this with an increase in A-330 sales. <b>In short, Boeing blew it bigtime. As of today, I will no longer be a shareholder in Boeing."</b></p>	
24 June 2009	<i>Motley Fool.com</i> "Boeing's Nightmare Liner" (Rich Smith)		Firm- Investors- Suppliers- Customers	α	<p><b>"Enough is enough, Boeing.</b> Two years ago, when its maiden flight was supposed to usher in a new era of high-speed, low fuel-consumption aircraft for the world's airlines -- and a new era of profits for <b>Boeing shareholders</b> -- the <i>'Boeing Dreamliner'</i> name was apropos. <b>But now you need to make it official: The 787 is now and forevermore to be designated the Boeing Nightmare Liner.</b> Yesterday, <i>Boeing</i> announced its latest delay in the maiden voyage of 'ZA001,' <i>Boeing's</i> code for the first prototype 787. The stock promptly crashed -- down 6.5% on the day -- and has continued to burn today -- down another 6% as of this writing. <b>Which brings Boeing to a total of over 60% worth of market cap destroyed since the company first began announcing delays in the project.</b></p> <p><b><u>Misery loves company</u></b> Nor does the damage end there. A whole string of suppliers -- from <i>Honeywell</i> to <i>United Tech</i> to <i>Spirit</i></p>	On the investor community's assessment of a modular enterprise architecture's overpromise and underdelivery.

				<p><i>Aerosystems</i> -- depend on <i>Boeing</i> getting its act together so that they can bring parts operations up to speed. Meanwhile, customers such as <i>Continental</i> and <i>AMR</i>, parent company of <i>American Airlines</i>, who have ordered large batches of 787s, need the plane desperately in order to cut their fuel costs.</p> <p><b><u>The ‘SODDI’ defense: Some other dude did it</u></b> <i>Boeing</i> blames its woes on a series of unfortunate coincidences that have slowed development: parts shortages and assembly issues with its suppliers, redesigns, and of course, the crippling IAM labor strike late last year. <b>But the truth is that this is a disaster of <i>Boeing’s</i> own doing.</b></p> <p>Once upon a time, I urged <i>Boeing</i> not to make promises it could not fulfill (<b>‘underpromise, overdeliver,’</b> I believe is how the saying goes). Yet, since that April 2008 delay (according to <i>The Wall Street Journal</i>, the fourth in what is now a series of six and counting), <i>Boeing</i> pushed back the 787’s arrival date in December in addition to the newest delay.</p> <p><b>Worse still, <i>Boeing</i> admits that it was aware of the 787’s structural defect</b> -- the weakness in the plane’s side-of-body near where the wings attach -- as far back as last month. <b>Yet as recently as last week, <i>Commercial Airplanes</i> CEO Scott Carson was still telling investors that his bird ‘could fly today.’ A <i>Boeing</i> spokesperson averred by saying <i>Boeing</i> ‘truly believed’ that ZA001 would fly in June,</b> but that after failing to fix the defect in time, Carson became convinced that canceling the test flight was ‘while difficult, the prudent step for us to take.’</p> <p><b><u>Red ink, and red herrings</u></b> No one’s disputing that, Mr. Carson. Certainly, your stock would have suffered far worse had you proceeded with the test only to have the ZA001’s wings fall off in midair. I shudder to think of the legal liabilities, even lengthier delays in production, and lost sales that such a disaster would have caused. But that’s not the point. Nor is the exact severity of the problem.</p> <p><b>The <i>real</i> point is that you should never have promised us that the plane would be ready by X date in the first place if you were uncertain that you could deliver. The old saw: ‘Fool me once, shame on me. Fool me twice, shame on you’ comes to mind. And it gets this Fool to wondering what consequence ‘Fool us six times in a row’ should entail ...</b></p> <p><b><u>Foolish takeaway</u></b> <i>Boeing’s</i> latest snafu has so far cost its investors \$4</p>	
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					<p>billion in market cap in two days' time, and I for one think it's about time we stopped the bleeding. Does anybody have Alan Mulally's phone number over at <i>Ford</i> ? I hear he's got some small experience building airplanes. Maybe when he's done fixing <i>Ford</i>, he could be enticed back to <i>Boeing</i>? I can see the job ad now: <b>Wanted: Veteran manufacturing exec needed to pull blue chip plane builder out of a tailspin. Aerospace experience desired. Ability to think before speaking essential.'</b> ”</p>	
25 June 2009	<p><i>PlaneTalk</i>, “Dream liner ‘Neverliner’ Bonanza for <i>Airbus</i> - up to 12 more A330s for <i>Jetstar</i>” (Ben Sandilands)</p>		Firm-Customer	$\alpha$	<p>“<b>The numbers vary, but the hot tip this morning is that up to 12 <i>Airbus</i> A330s will be added to the <i>Jetstar</i> fleet by late 2010 or early 2011 to replace the 787 capacity <i>Boeing</i> has failed to deliver according to any of its past broken promises. One thing that has emerged from various sources is that in its review of the state of the 787 program <i>Qantas</i> doesn't see a jet that will be competitive against the A330s until perhaps 2013, and that could be either a 787 which has benefited from essential improvements over the current indications of Dreamliner capabilities or the all new <i>Airbus</i> A350. <i>Qantas</i> is moving fast on securing more A330s. <i>Virgin Atlantic</i> snapped up 10 of the A330-300 model earlier this week to cover its position after assessing that the <i>Boeing</i> 787-9, the stretched and improved version of the 787-8 that suffered premature wing join failure in April, was never going to be delivered as promised in 2011 and 2012. <i>Boeing</i>, meanwhile, has set itself a task of coming clean within a few weeks on how, and when, it will fix the side-of-plane, oops, wing delamination issue it finally admitted to earlier this week when it cancelled the intended first flight of the 787 prototype only days after its senior management insisted at the Paris Air Show that it was going ahead as planned.</b>”</p>	<p>On the repercussions of a modular enterprise architect's over-promise and under-delivery.</p>
25 June 2009	<p><i>Forbes.com</i> “New <i>Toyota</i> President Expects Challenges to Continue”</p>	<p>Akio Toyoda, President, <i>Toyota Motors Corporation</i></p>	Firm	$\beta$	<p>“The new president of <i>Toyota Motor</i> on Thursday warned that the auto industry faced two more tough years, as he sketched out a roadmap to return the carmaker to profit. <b>'The new <i>Toyota</i> sets sail in very stormy waters,'</b> Toyoda said at a news conference. <b>'But right now we're working at full speed to cut costs and jump-start sales with the support of various government incentives being rolled out.'</b> <b>'We want to do everything possible to avoid a third consecutive year of losses,'</b> he said, <b>adding he would take a 30 percent pay cut for the first year.</b>”</p>	<p>On an integral enterprise architect's plans to navigate through a challenging environment.</p>
25 June 2009	<p><i>Seattle Post-Intelligencer</i> “Fallout : <i>Boeing</i> 787 Flight</p>		Firm-Investor	$\alpha$	<p>“Well, you've got to hand it to <i>Boeing</i> management for being consistent. Two <i>J.P. Morgan</i> analysts said in a research note that multiple members of <i>Boeing</i> management assured them in private conversations that 787 Dreamliner would meet its first flight deadline. So when <i>Boeing</i> said on Tuesday that first flight would slip -- again -- because the plane's body needs</p>	<p>On a modular enterprise architect's low clarity of communi</p>

	<p>Delay Not Even Disclosed Privately”(Andre a James)</p>			<p>reinforcement at the wing, the analysts were surprised. “We consider ourselves relatively steeled to disappointments on this program, but given everything we had heard recently, including in private conversations with multiple members of management just last week, we were shocked by this news,” wrote analysts Joseph Nadol and Seth Seifman in a research note dated June 23. They titled the note, ‘Oh no, not again’ and concluded that information dissemination is a ‘major problem’ at <i>Boeing</i>. ‘The structural issue that has caused the latest delay cropped up several weeks ago, but there was not a hint of concern about it as management continually highlighted the impending first flight, including last week at the Paris Air Show both in public and in private,’ they wrote. ‘Management acknowledged on the conference call that it discovered this issue last month but noted it only determined last Friday that it would cause a delay to first flight. We believe that had management been more up-front about this situation, perhaps the modest level of credibility on this topic it had started to re-establish over the past several months could have been sustained.’ Later, they add, ‘We had expected further problems with the 787 to materialize, but we were thinking about Q4, and this press release came as quite a shock.’ They also mention that ‘<i>Boeing’s</i> need to cancel first flight so close to the deadline also raises questions about what other issues might crop up, particularly since static testing is not yet complete.’ Dreamliner issues aside, the analysts also predict that <i>Boeing’s</i> 2009 and 2010 earnings should take a hit. <i>Boeing</i> has said that the cost of reinforcing the 787 is negligible. But the analysts expect further costs related to <i>Boeing’s</i> money losing 747-8 program and slimmer margins on <i>Boeing’s</i> other airplane programs. The <i>J.P. Morgan</i> report prompted a story in <i>The Wall Street Journal</i> about <i>Boeing’s</i> ‘communications woes.’ The delay ‘exposed flaws not only in the plane’s design, but also in the company’s lines of communication -- internally and with business partners, investors and the public,’ Peter Sanders, of the <i>Wall Street Journal</i>, said. Doug Harned, aerospace analyst at <i>Bernstein Research</i>, is quoted in the story as saying, ‘During the last two years . . . some investors described optimistic statements by management as misleading. On the contrary, we saw the answers as honest, which is the heart of the problem. Management appears to have been operating without adequate visibility into the details of program performance in the 787 organization and at suppliers.’</p> <p><u>Stock fallout</u> <i>J.P. Morgan</i> did not downgrade its evaluation of</p>	<p>cation.</p>
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					<p><i>Boeing's</i> stock, instead it kept it at 'neutral.' But two other firms downgraded their expectations for <i>Boeing</i> shares. Analyst Myles Walton of <i>Oppenheimer &amp; Co.</i> downgraded the stock to 'underperform.' He said in an investor note that he is concerned about falling demand for new aircraft and product development risk. And <i>Morgan Stanley</i> analyst Heidi Wood reduced her profit estimate for <i>Boeing</i> and cut her rating on <i>Boeing's</i> stock to 'equal weight' from 'overweight.' <b>'We believe first flight is three to six months further out . . . which at a minimum pushes out a 787 relief rally we thought possible by the same time frame,'</b> <i>Morgan Stanley</i> said in a research note. <b><i>Morgan Stanley</i> expects 787 first delivery to be pushed to 2011.</b>"</p>	
25 June 2009	<p><i>The Guardian</i>, "Dream liner Delay adds to <i>Boeing's</i> Long-term Woes" (Kyle Peterson)</p>		Firm	α	<p><b>"<i>Boeing Co</i> has been pummeled this year by economic weakness and Pentagon budget cuts -- factors well outside the company's control -- but <i>Boeing</i> has no one to blame but itself for the biggest threat to its long-term outlook.</b> The world's No. 2 planemaker this week said it would delay the first test flight of its 787 Dreamliner, the carbon-composite plane that promises to usher in an era of lighter, more fuel-efficient planes. Unlike previous delays that put the aircraft two years behind its original schedule, <b>this one results from a structural flaw and not from supply-chain or labor problems.</b> 'There's a whole bunch of setbacks, concerns and unfortunate events, and then one very big area of focus that kind of puts the others in the shadows,' said Richard Aboulafia, an aerospace expert at the <i>Teal Group</i>. <b>'It really is about the 787,'</b> he said. <b>'This is something they're doing, and not something that's being done to them.'</b> Customers with Dreamliner orders were disappointed by the latest delay. And experts wondered if cancellations might follow. Such a turn of events could take a toll on the company, which already has suffered its share of bad luck. <b>'We have been anticipating the 787 delivery, so it really is disappointing if our delivery schedule will be pushed back,'</b> said a spokesman for <i>Japan Airlines Corp</i> on Tuesday. 'Someone could definitely make the argument that we're at the trough,' said Alex Hamilton, aerospace analyst at <i>Jesup &amp; Lamont Securities</i>. 'The orders were so abysmal (this year) it's going to be pretty hard for them to get worse.'</p> <p><i>Boeing</i> shares have fallen 5 percent since Tuesday, when <i>Boeing</i> announced the 787 delay. But the stock has dropped some 60 percent since October 2007, the year in which <i>Boeing</i> saw a record number of net orders -- 1,413. The number fell to 662 in 2008. Hamilton said that because <b>the stock tends to track aircraft orders</b>, investors are looking for signs of improvement in the financing markets and signs of stability in the order book. <b>'This is a stock you</b></p>	<p>On the media's perception of endogenous vs. exogenous factors in the performance in a modular enterprise architecture.</p>

					want to buy in mid-2010,' Hamilton said. 'They're just going to have a turbulent year. There's a lot that needs to be figured out.'	
26 June 2009	<i>The Wall Street Journal</i> , "Communications Woes Show at Boeing" (Peter Sanders)	Scott Carson, CEO, Boeing Commercial Airplanes	Firm-Investor	α	<p><b>"Boeing Co.'s disclosure Tuesday of the latest in a string of delays of its 787 Dreamliner exposed flaws not only in the plane's design, but also in the company's lines of communication -- internally and with business partners, investors and the public. The week before Boeing announced the Dreamliner program's sixth delay in six years, its executives were at the Paris Air Show affirming that the new jet was on track to make its maiden flight by the end of the month. This week, however, Boeing said its engineers and senior executives alike had known since May of the structural problem that will keep the jet grounded, possibly for months. It said it decided late Friday to scrub the first flight, which was to take place by June 30. Without any revised timetable for test flights or deliveries, investors have been left with few clues as to when the company's marquee product might get back on track. The uncertainty has contributed to a 12% drop in Boeing's share price over the past two days. For Boeing's management, the latest delay creates a pressing need to regain the trust of customers and investors. 'We believe that had management been more upfront about this situation, perhaps the modest level of credibility on this topic it had started to re-establish over the past several months could have been sustained,' wrote J.P. Morgan aerospace analyst Joseph Nadol, in a research note Wednesday. Boeing spokesmen said neither Jim McNerney, Boeing's chairman and chief executive, nor Scott Carson, CEO of its Commercial Airplane unit, were available to comment. The Chicago aerospace giant has been dogged by communications glitches since it rolled out the first Dreamliner test plane two years ago. Indeed, Boeing has staked much of its credibility on promises it hasn't met. Both Messrs. McNerney and Carson have touted efforts to be forthcoming with customers about the plane's development, which began in 2003. And, by all accounts, Boeing was unusually open in the first four years. Mr. Carson, who took charge of the Commercial Airplanes unit in 2006, said in a Wall Street Journal article in September 2007 that 'the whole issue of transparency is key' to Boeing's ability to maintain the confidence of investors and customers. But that fall, plagued by communications and supply problems with vendors scattered from Italy to South Carolina to Japan, Boeing delayed the test flight and first delivery of the jet, originally slated for May 2008. Company officials say Mr. McNerney has been closely involved in the 787's progress since the supply problems began, but some analysts think internal</b></p>	On a modular enterprise architecture's low clarity of communication.

					<p><b>communication remains a key element in the Dreamliner's woes. 'During the last two years...some investors described optimistic statements by management as misleading,' wrote Doug Harned, aerospace analyst at <i>Bernstein Research</i>, in a note to investors Tuesday. 'On the contrary, we saw the answers as honest, which is the heart of the problem. Management appears to have been operating without adequate visibility into the details of program performance in the 787 organization and at suppliers.'"</b></p>	
26 June 2009	<p><i>The Wall Street Journal</i>, "Boeing Delay Upends Plans of Leasing Firms" (Daniel Michaels)</p>	<p>Frank Pray, chief executive of <i>AWAS Aviation Capital Ltd</i></p>	Firm-Customer	α	<p>"The latest delay in the launch of <i>Boeing Co.'s 787 Dreamliner</i>, which has <b>riled airlines</b> waiting for the new fuel-efficient jet, <b>is also upending the business plans of aircraft-leasing companies</b>, which are already struggling with the global credit crunch. Those companies, which offer airlines a way to add to their fleets without the investment required to buy new planes, <b>own about a third of the world's 16,000 jetliners</b> and account for a sixth of <i>Boeing's</i> 851 orders for the Dreamliner. They have already landed leasing deals for scores of the new planes. The leasing firms that were among the first to order the Dreamliner, which lists for around <b>\$175 million</b>, had counted on the planes to give them an edge with their airline customers. They now fear that edge is slipping away. Those with later delivery schedules said the latest hold-up, announced Tuesday, has forced them to postpone planning. <b>'It is a big problem for us,'</b> said Frank Pray, chief executive of <i>AWAS Aviation Capital Ltd.</i>, a big leasing company in Dublin that has six 787s on order and had expected its first deliveries next year. 'As a lessor, we are highly reliant on being able to place the plane.' The Dreamliner-related disruptions, meanwhile, are helping lift the market value of a rival: the <i>Airbus A330</i>. <b>Lessors holding A330s, made by European Aeronautic Defence &amp; Space Co.'s Airbus unit, are benefiting from firm demand, even as a slump in air travel has eroded the overall market.</b> Aircraft lessors make their money primarily by buying large numbers of planes at far below list prices, and then renting them out to carriers at profitable rates. <b>Until recently, leasing companies that placed early orders for Dreamliners were positioned to charge airlines premium rents for the sought-after planes.</b> <i>Boeing</i> says the Dreamliner will be <b>20% less expensive to operate</b> than existing models like the <i>Airbus A330</i>. The Dreamliner was originally slated to be delivered in May 2008. As recently as last week, <i>Boeing</i> said that the plane would start test flights by June 30, and that the first commercial delivery, to Japan's <i>All Nippon Airways Co.</i>, would take place by April 2010. But on Tuesday, <i>Boeing</i> said it wouldn't meet that timetable due to structural problems discovered during ground testing. <b>That</b></p>	<p>On a modular enterprise architecture's lack of integration between customer and supplier goals.</p>



					<p><b>marked the sixth delay in the Dreamliner program's six-year history.</b> <i>Boeing</i> said it would announce a new schedule in coming weeks, but the delay has put existing lease contracts for the new jet into question and interrupted lease negotiations with airlines, lessors say. 'It is hurting our planning and talks with potential customers,' said an official at a small leasing company. 'It's all getting terribly complicated.' Another lessor, <i>Aviation Capital Group</i>, a subsidiary of <i>Pacific LifeCorp</i>, has five Dreamliners slated for delivery far into the production run. Partly due to uncertainty around delivery dates, it has 'deliberately held off any advanced discussions with potential lessees,' said Executive Vice President Richard Cherney. He said <i>ACG</i> will probably keep waiting 'until we have a better understanding of when to expect our aircraft.' Still, Mr. Cherney said, he is '<b>fully confident there will be solid demand</b>' for 787s when they do arrive. Though <i>Boeing's</i> contracts call for it to <b>compensate buyers of the Dreamliner for delivery delays</b>, the hold-ups are taking some of the shine off the model. This year, buyers have canceled at least 73 Dreamliner orders. Gary Liebowitz, an equity analyst at <i>Wachovia Capital Markets</i> in New York, who tracks the aircraft-leasing industry, said <b>787 prices and lease rates also are likely to have slipped.</b> 'The 787 was generating a premium price 12 to 18 months ago, but that's probably gone now,' he said.</p> <p><b>One relatively bright spot for lessors has been the Airbus A330.</b> Lease rates for the A330, which first flew in 1993, have fallen as much as 15% over the past year due to the decline in air travel, said Mr. Liebowitz at <i>Wachovia</i>. Their asset value on lessors' balance sheets has declined as much as 20%. But, said Mr. Liebowitz, '<b>They would have dropped more if the 787 had been delivered on time.</b>' <i>Virgin Atlantic Airways Ltd.</i>, which ordered 15 Dreamliners in 2007, said Monday that to tide it over until it starts receiving them, it will take 10 A330s for delivery over the next two years. Dutch lessor <i>AerCap Holdings NV</i> will provide financing for the six A330s the airline is buying from <i>Airbus</i> and will lease the other four to the carrier."</p>	
28 June 2009	<i>Seattle Post-Intelligencer</i> , "Prediction: First Delivery of Boeing 787 will	Heidi Wood, analyst, <i>Morgan Stanley</i>	Firm-Investor; Firm-Government	α	"Last week, <i>Boeing</i> said that it would push back first flight of the 787 for an unknown amount of time, which shed doubts on whether <i>Boeing</i> would be able deliver the 787 in the second quarter of 2010 as promised. At least one analyst says that the first customers may have to wait yet another year for <i>Boeing's</i> all new 787 Dreamliner, which is already two years late. <b>First delivery of the 787 could be as late as 2011, Morgan Stanley analyst Heidi Wood said in her most recent research note to investors.</b> She predicts that the 'earliest feasible	On the investors relatively late, yet systematic concerns of a modular enterprise

	<p>Push Until 2011” (Andrea James)</p>			<p>time’ that first flight could occur would be the last quarter of 2009. Then, more time will be needed to get the plane tested and certified. <b>What is particularly worrisome, Hood says, is that <i>Boeing’s</i> computer models did not predict the stress. But in order to get its new plane legally certified, <i>Boeing</i> must prove to the Federal Aviation Administration that its predictive modeling works,</b> Wood said. ‘Based on the program’s track-record for continual negative discovery, we don’t see the wisdom in assuming (last week’s) revelation represents the very last setback,’ Wood said. ‘In fact, what worries us is the potential for more negative insights through the certification phase. Failure of the predictive models to anticipate the stress points that suspended first flight presents real risk the FAA will now insist on more data, slowing certification, hence our assumption for 2011 first delivery.”</p> <p><b><u>Posted by unregistered user at 6/28/09 5:52 p.m.</u></b>  <b>“<i>Boeing</i> got a free pass from Wall St for a long time. That pass has now been withdrawn under the crushing weight of missteps, misstatements, evasiveness and now, outright lies. No amount of slick PR will overcome the sentiment, though I’m sure <i>Boeing</i> PR will give it herculean effort at McNerney’s direction. <i>Boeing</i> can now look forward to a lot of completely justified cynicism from the financial community. A house cleaning is way past due, and shows no sign happening any time soon. The board of directors has utterly failed in it’s duties, preferring to leave execution of the business plan to those with a proven track record of failure to perform. If MS is correct, there will be little to no revenues coming in from 787 before the bulk of <i>Boeing’s</i> corporate debt comes due, forcing them to re-finance it at soon to be higher interest rates, and most likely having to engage in more bond sales, taking out new credit lines, and eliminating the dividend. The buyback is already gone, after years of <i>Boeing</i> having repurchased it’s own stock at vastly over valued prices. The company need fresh executive talent, and sooner than later.”</b></p> <p><b><u>Posted by unregistered user at 6/28/09 5:56 p.m.</u></b>  <b>“It light of yet another snafu by management. I propose an employee buy out of <i>Boeing</i> and sacking of those Bolsheviks that run the company. I have no doubt whatsoever that an ESOP is the only way for <i>Boeing</i> to survive as an independent company.”</b></p> <p><b><u>Posted by gimmeabreak at 6/28/09 11:03 p.m.</u></b>  <b>“McNerney is a fraud who is real good at artificially inflating stock values for awhile</b></p>	<p>architect ure’s executio n</p>
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				<p>without adding any value to the underlying company itself (see 3M). Who else but McNerney could have the market handed to them on a silver platter by such an inept competitor as <i>Airbus</i> and <i>STILL</i> manage to screw up so spectacularly?”</p> <p><u>Posted by unregistered user at 6/29/09 3:50 a.m.</u> “I’ve said tis before and I will say it again. <i>Boeing’s</i> 787 will not fly and will not ever. <i>Boeing</i> will end up scrapping this program which will trigger <i>Boeing’s</i> demise.”</p> <p><u>Posted by J3 at 6/29/09 5:49 a.m.</u> “To me the question for historians now and in the future is, How in detail, by what process, did <i>Boeing</i> management actually make its initial 787 decisions that have now proved so disastrous? Those decisions were to make an all-composite plane constructed using autoclaves to defeat the A332, with major parts designed and produced by partners around world, without active supervision by <i>Boeing</i>, so that <i>Boeing</i> did not even know in advance that the first fuselage sections it would get would be short about 30,000 parts not the 1200 it anticipated (last according to Mike (where is he now) Bair). It is now clear that this business plan was fundamentally flawed in virtually every way, including perhaps most importantly the unverified assumptions that composites would substantially reduce weight and that new engines would produce fuel savings that <i>GE</i> and <i>RR</i> so far have not achieved. The 787 is now so overweight that it is unlikely that <i>Boeing</i> will ever be able to achieve the weights it promised to customers, so that there may in the end be no advantage to the composite construction after all. <i>Airbus</i> is now beginning to suggest that its new higher MTOW 332 (which <i>Turkish Air Lines</i> just bought), will perform about as well as the overweight 787-8. <i>Airbus</i> has wisely kept production rates high to meet the cascading demand to fill the delivery gap for the 787-8, or, increasingly likely, replace it. If the 332 is about as good and the 787-8, airlines will line up to buy it because it is cheaper and they will get it on time. There are real signs the <i>Boeing Comm. ‘Planes</i> is collapsing under the pressure of not being able to build the 787. <i>AB</i> got \$6B and \$6B Mous at Paris and <i>Boeing</i> got almost nothing. No new 777 orders, no new 787 orders. Just a couple of 737s. Who could have predicted this at Farnborough a year ago? <i>Qantas</i> has cancelled -8s and <i>Branson</i> has excoriated <i>Boeing</i> and its unions for not delivering on time. Flightblogger reports <i>Branson</i> is negotiating for 50 A350s. If that happens, <i>Boeing</i> loses its fifteen 787-9s. At Paris, <i>Qatar’s</i> chief raged against <i>Boeing</i>. If he dumps his 60 787s, many will follow and the plane will be the <i>Boeing Com ‘Planes</i> because <i>AB</i> will dominate the most lucrative</p>	
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					<p><b>markets, wide body 200-350 seats, with the 332 and 333 and the A350-800-1000, and Boeing will have no money to build a new competitor in the 200-300 seat range or a new plane to replace the the 737. Regarding Alan Mullaly, it is way to early to canonize him because he was deeply involved in making the fundamentally flawed decisions that are now destroying the 787, and possilby Boeing as a commercial plane producer. Perhaps he did not leave Boeing because he lost its presidency. Maybe Mullaly foresaw all these problems and used McInterney's appointment as a great chance to get out of Boeing while the getting was good."</b></p>	
29 June 2009	<p><i>Wall Street Journal</i>, "Boeing Feels New Pressure to Placate its 787 Buyers" (Peter Sander, Daniel Michael s)</p>		Firm-Customer	α	<p>"The latest delay to hit <i>Boeing Co.'s 787 Dreamliner</i> has complicated an intricate set of negotiations, giving airlines a chance to wrangle concessions from the plane maker on delivery dates, installment payments and even the final purchase price. Delivery delays can wreak havoc on an airline's ability to plan its routes and schedules. But they also can provide an opening to renegotiate complicated contracts that govern airplane purchases. <i>Boeing</i> is coming under pressure from its customers to offer fresh concessions. Industry officials say that <i>Boeing</i> has recently stopped discussing compensation terms for delays to the 787 and they speculate the company is waiting until its actual delivery schedule is clear. 'We want to discuss compensation, but <i>Boeing</i> hasn't opened the books,' said an official at one Dreamliner customer. <b>Already, the delays have cost Boeing millions of dollars in penalties and concessions to customers. 'Our focus is always on our customers and as we've done throughout the development program, we will work closely with them regarding the program and the impact of this issue,'</b> says a <i>Boeing</i> spokesman. Even before the recent delays, some airlines were getting frustrated with <i>Boeing's</i> frequent schedule changes. Akbar Al Baker, chief executive of <i>Qatar Airways</i>, threatened to cancel orders for both 787s and larger 777s, which are now in production, because of disruption caused by problems at <i>Boeing</i>. <b>'Boeing doesn't realize how much they're hurting their customers' plans,'</b> Mr. Al Baker said at the recent Paris Air Show. <i>Qatar Airways</i> has firm orders for 30 787s and options for 30 more. The first were due for delivery in 2011 but that arrival date is now uncertain. <b>Actual cancellations are rare, but last week Australia's Qantas Airways Ltd. said it scratched orders for 15 787s and delayed deliveries on 15 others slated to arrive in 2014-15. Qantas -- which remains the largest Dreamliner airline customer with 50 planes still on the books -- had some leverage to cancel because of its large number of orders, industry observers say. For Boeing, the cancellations have a silver lining. The jet maker</b></p>	<p>On customer-firm relationship in a modular enterprise architecture.</p>

					<p>now has a little more breathing room it can use to fill remaining orders more quickly, thereby avoiding some penalties. 'From <i>Boeing's</i> perspective, that's not necessarily bad news when you have a rollout going this poorly,' says Peter Barlow, an aviation attorney with <i>Smith, Gambrell &amp; Russell LLP</i>. 'The way purchase agreements are drafted, a savvy purchaser will obtain daily damages, and if a plane isn't delivered on time, the customer receives a daily penalty [from the manufacturer] that can be a very big number.' Though the 787's list price is roughly \$178 million, customers typically receive discounts. The price negotiated at the time of the order is rarely the price paid when the plane is delivered years later. Typically, customers make 'pre-delivery payments' every six months, beginning about 18 months prior to delivery, that amount to around 30% of the total purchase price. Payments often escalate as the delivery date approaches, says Mr. Barlow. Everything in that process is negotiable, Mr. Barlow says.</p> <p>Several carriers, including <i>Air New Zealand Ltd.</i>, <i>British Airways PLC</i> and <i>Virgin Atlantic Airways Ltd.</i>, are coping with 787 delays by ordering current-model planes from either <i>Boeing</i> or <i>Airbus</i>, a unit of <i>European Aeronautic Defence &amp; Space Co.</i> <i>Virgin</i>, for example, last Monday announced an order for 10 <i>Airbus</i> A330s, which are slightly larger than Dreamliners and not as cutting-edge, but are available next year and in 2011. 'We weren't prepared to have six years of no new aircraft being delivered,' said <i>Virgin</i> spokesman Paul Charles. He said <i>Virgin</i> is still talking to <i>Boeing</i> about compensation. 'We would like to see the compensation reflect the ongoing delays,' Mr. Charles said."</p>	
29 June 2009	<p><i>Seattle Post-Intelligencer</i>, "Could <i>Boeing's</i> 787 Cancellations be Good News? Actually, Yes" (Andrea James)</p>		Firm	α	<p>"Last week, <i>Boeing</i> lost an order for 15 of its 787 Dreamliners -- an order worth \$3 billion. This is decidedly <i>not</i> good news. And there you have it. <i>Boeing</i> has somehow managed to engineer two pieces of bad news into a sliver of relief with the following equation: (development delays) + (canceled orders) = (reduced penalties)."</p> <p><u>Posted by <b>unregistered user</b> at 6/29/09 9:42 p.m.</u> "What would be 'more effective' Public Relations and Executives? Hmmm....<b>don't know how <i>Boeing</i> could lie even more, mislead and misrepresent more to the shareholders and the public? Guess they can shoot for BERNIE MADOFF Ponzi scheme, get more investors and the public based on lies while the big shots live the high life? OH WAIT, THEY ARE DOING THAT. SEC Needs to get on top while <i>Boeing</i> is heading to become just another <i>Enron</i> and</b></p>	On non-systemic logic of a modular enterprise architecture.

					<p><i>Worldcom.</i>"</p> <p>Posted by <u>unregistered user</u> at 6/30/09 2:45 p.m.  <b>"What exactly is the difference between BERNIE MADOFF and BOEING'S EXECUTIVES AND BOARD MEMBERS?"</b></p> <p>Posted by <u>unregistered user</u> at 6/30/09 4:35 p.m.  <b>"What's the difference ? 151 years of jail time, that's the difference....."</b></p> <p>Posted by <u>unregistered user</u> at 7/2/09 4:06 p.m.  <b>"Making a potential disaster a Censored media response. Brilliant! Is Boeing intent on following GM, Chrysler, ABC news, the banks, and newspapers into 'the bold new frontier of future 'Amerika'?"</b></p>	
7 July 2009	Press Release, <i>The Boeing Company</i>	Scott Carson, CEO, <i>Boeing Commercial Airplanes</i> ; Elmer Doty, president and CEO of <i>Vought Aircraft Industries</i>	Firm-Supplier	α	<p><b>"Boeing announced today that it has agreed to acquire the business and operations conducted by Vought Aircraft Industries at its South Carolina facility, where Vought builds a key structure for Boeing's 787 Dreamliner airplane. The Vought facility, located in North Charleston, performs fabrication and assembly of structures and systems installation of 787 aft fuselage sections, which are made primarily of composite materials. After the transaction, Vought will continue its work on many Boeing programs, including other components of the 787, as well as structures and components on the 737, 747, 767, 777, C-17 and V-22 through operations located elsewhere. 'Integrating this facility and its talented employees into Boeing will strengthen the 787 program by enabling us to accelerate productivity and efficiency improvements as we move toward production ramp-up,' said Scott Carson, president and CEO of Boeing Commercial Airplanes. 'In addition, it will bolster our capability to develop and produce large composite structures that will contribute to the advancement of this critical technology.'</b></p> <p><b>'We take great pride knowing that we have been able to satisfy the technological and physical demands of the 787 program alongside much larger companies,' said Elmer Doty, president and CEO of Vought Aircraft Industries. 'However, the financial demands of this program are clearly growing beyond what a company our size can support. We are pleased that we will continue our 787 involvement at a component manufacturing level, as well as provide ongoing technical capabilities that have helped make Charleston a world-class composite facility.'</b></p> <p>Through the agreement, <i>Boeing</i> will acquire the North Charleston facility, its assets and inventory and will assume operation of the site, and the parties</p>	On a modular enterprise architecture's reversal of its modular supply chain strategy, it its purchase of an underperforming supplier.

					will resolve all matters related to <i>Vought's</i> prior work on the 787 program. <b>The cash consideration to be paid to <i>Vought</i> at closing is approximately \$580 million. In addition, <i>Boeing</i> will release <i>Vought</i> from its obligations to repay amounts previously advanced by <i>Boeing</i>.</b> This transaction is anticipated to close in the third quarter following satisfaction of customary closing conditions, including consent from <i>Vought's</i> lenders. Once acquired, the North Charleston facility will be managed by the 787 program. <b>'We look forward to welcoming the South Carolina team to <i>Boeing</i> and continuing our relationship with <i>Vought</i> to bring the most value to the 787 and our other programs,'</b> said Carson."	
8 July 2009	<i>Chicago Tribune, "Boeing's Dreamliner Costs Growing" (Julie Johnson)</i>		Firm-Supplier	α	<b>"Add another \$1 billion to the tab that <i>Boeing Co.</i> must pay to fix production problems with its troubled 787 Dreamliner jet. That's the cost to Chicago-based <i>Boeing</i> of acquiring a source of the jet's persistent supply-chain snarls: the South Carolina production facility built for the 787 by Dallas-based <i>Vought Aircraft Industries Inc.</i> <i>Boeing</i> announced Tuesday that it was paying \$580 million for <i>Vought's</i> 787 business in North Charleston, which constructs the rear fuselage and tail-cone sections of the jet from super-hardened plastics. <i>Boeing</i> also will forgo \$422 million it had advanced to cash-strapped <i>Vought</i> to help cover its manufacturing costs, said <i>Boeing</i> spokesman Jim Proulx. 'We believe our ability to accelerate production and efficiency at the South Carolina [plant] will generate a quicker return on that \$400 million investment than staying on the path we were on with <i>Vought</i>,' Proulx said. The acquisition, rumored for months, gives <i>Boeing</i> full control over a weak link in a global supply chain stretching from Japan to Italy that the aerospace giant assembled to design and construct the new plane -- and to lower its development costs. Once the deal closes during the third quarter, <i>Boeing</i> will take over plant operations with an eye to speeding production. It had aimed to churn out 10 Dreamliners per month by 2012. But after a series of delays, most recently for structural problems disclosed in June, <i>Boeing</i> almost certainly has to form a second production line for the 787, which is assembled at its giant plant in Everett, Wash. 'Before, [a second production line] would have been nice. Now it's mandatory,' said Paul Nisbet, aerospace analyst with <i>JSA Research</i>. The <i>Vought</i> factory could serve as an assembly line for the 787-9, the next version of the plane, far removed from the Everett plant, where worker-friendly laws and the deep-rooted labor tensions have contributed to a series of strikes, most recently last fall. 'A purchase of the facility could kill three birds with one stone,' aerospace analyst Joseph Nadol of</b>	On a modular enterprise architecture's systematic constraint in achieving relative cost-leadership over an inetegral enterprise architecture.

					<p><i>JPMorgan</i> said Monday in a research report, ‘enabling <i>Boeing</i> to reduce 787 supply chain risk, giving it a head start on some of the investment required for a second 787 line, and providing it with the opportunity to diversify its commercial aircraft assembly operations outside of Seattle.’ Proulx said <i>Boeing</i> hadn't decided whether it would open a second assembly line. <b>But <i>Boeing</i> appears to have paid a large premium to gain the factory from <i>Vought</i> and its private-equity owner, <i>Carlyle Group</i>, at a time when the planemaker's cash reserves are shrinking. <i>Boeing</i> held \$4.24 billion in cash as of March 31, down 45 percent from year-earlier levels, and faces penalties from angry 787 customers and demands for cash advances from suppliers.</b> In 2008, <i>Boeing</i> paid \$55 million to acquire <i>Vought's</i> 50 percent stake in <i>Global Aeronautica LLC</i>, a joint venture that joins fuselage sections on the new jets. <b>And <i>Boeing</i> would have faced pressure to pump more money into <i>Vought</i> had the two remained partners, Securities and Exchange Commission filings show.</b> Like most major <i>Boeing</i> suppliers, <i>Vought</i> wouldn't have fully recouped its costs for materials and production until the 787s are delivered to airlines. The first Dreamliner was supposed to be given to <i>All Nippon Airways</i> in May 2008, but may not arrive until 2011, analysts predict. <i>Vought</i> had \$165.4 million in cash as of March 29 and warned in its quarterly financial statement that it anticipated it would need more funding from <i>Boeing</i> or other sources ‘to continue our participation in the 787 program.’ From the outset, <i>Vought</i> had struggled to keep pace with <i>Boeing's</i> aggressive production schedule for the 787 and to meet its exacting standards. Aviation analyst Richard Aboulafia said <i>Vought</i> had the engineering know-how, but lacked the resources of the aerospace conglomerates anchoring <i>Boeing's</i> supply chain to resolve the design and production problems that come with a ground-breaking aircraft. ‘The chain broke pretty much where you'd expect it to break,’ Aboulafia said.”</p>	
8 July 2009	<i>The Seattle Times</i> , “Key Lawmakers Warn of <i>Boeing</i> No-strike Ultimatum” (Dominic Gates)	Norm Dicks, U.S. Washington State Representative; Jay Inslee, US Washington State	Firm-Employees	α	<p>“Members of the state's congressional delegation said Tuesday that <i>Boeing</i> is laying down an ultimatum to its biggest union: Unless a long-term agreement barring strikes by the Machinists is reached by this fall, <i>Boeing</i> will build a second production line for the 787 someplace outside Washington. ‘The whole thing comes down to, can they get a long-term agreement with the union, with a no-strike clause,’ influential U.S. Rep. Norm Dicks, D-Bremerton, said in an interview Tuesday. ‘That's what ultimately has to happen here in the next two or three or four months — or they are going to go elsewhere.’ ‘I think if they get this agreement, they would stay.’ In a separate</p>	On a modular enterprise architecture's contractual (not relational) interactions with labor.



		<p>Representative; Chris Gregoire, Washington Governor; Scott Carson, CEO Boeing Commercial Airplanes; Jim McNerney, Chairman and CEO, The Boeing Company; Tom Wroblewski, IAM district President; Tom Buffenbarger, IAM international president</p>		<p>interview, Gov. Chris Gregoire said <i>Boeing Commercial Airplanes</i> CEO <b>Scott Carson told her recently the company is seeking a long-term no-strike agreement with the Machinists union.</b> Carson also said <i>Boeing</i> will likely make its decision on the location of a second 787 production line this fall, though Gregoire said he did not specifically link the two elements as an ultimatum. <b>What the politicians seem to envision is some kind of ‘social contract’ with the union in which Boeing would publicly commit to stay in this region in exchange for labor peace.</b> Concern about the location of a second 787 line has intensified with news that <i>Boeing</i> is buying the Charleston, S.C., plant of 787 supplier <i>Vought Aircraft Industries</i>. <b>Dicks, the third-ranking member of the House Appropriations Committee, is an aggressive lobbyist for Boeing on issues such as its bid for the Air Force refueling-tanker contract and is close to the company's leadership.</b> He said the ultimatum was laid out for him and other members of the congressional delegation by ‘high-ranking people in the Boeing Company’ whom he declined to name. Dicks also said that at a March meeting with <i>Boeing</i> CEO Jim McNerney, arranged by Gregoire and held in the Washington, D.C., office of Sen. Patty Murray, ‘McNerney was very candid.’ ‘The message was that we need to get a resolution of this (strike) problem. We can't live with this.’ Both of Washington's U.S. senators and most of its representatives were present, Dicks said, as McNerney laid out how <i>Boeing</i> plans to do a detailed assessment of where to put a second 787 assembly line in an open competition, with Everett as only one option among several. Rep. Jay Inslee, D-Bainbridge Island, said McNerney made clear that ‘the relationship with the labor community,’ particularly the question of strikes, ‘was a major component of the decision.’ The International Association of Machinists (IAM) has struck the company four times in seven sets of contract talks over the past 20 years, most recently for two months last fall. Its contract expires in 2012. <i>Boeing</i> spokesman Jim Proulx said the company ‘can't comment on any conversations our senior executives may or may not have with government officials.’ Gregoire said the time frame offered by <i>Boeing</i> for a decision on a second 787 line has moved around somewhat this year. Initially it had been set for the spring, then shifted to early 2010, before moving again to ‘sometime this fall.’ Before the decision is made, she intends to go to Chicago to make the case for the Puget Sound region before <i>Boeing's</i> board. <b>Gregoire described Boeing's goal of a no-strike agreement with its union as ambitious, noting that it's something politicians cannot achieve by legislation. It's up to the two sides to negotiate it, she said. ‘This is such a huge ask of the</b></p>	
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8 July 2009	<i>Fool.com</i> "Banker Calls		Firm-Investors-Customer	$\alpha$	<p>"<i>Boeing</i> investors are finding it harder and harder to get a good night's sleep -- which is my clever way of saying that additional delays seem in store for the airplane maker's already-much-delayed 787</p>	On a systemic market valuation

	‘Shenanigans’ on <i>Boeing</i> ” (Rich Smith)		Suppliers		<p>Dreamliner. <b>To hear <i>Boeing</i> tell it, multiple complications with getting the new plane airborne will not prevent deliveries beginning in Q1 2010. Such assurance may please customers like <i>AMR</i> (NYSE: AMR), <i>Delta</i> (NYSE: DAL), and <i>Continental</i> (NYSE: CAL), and prevent their cancelling orders as <i>Qantas</i> did earlier this month. It may even incline investors to sigh with relief that the worst is over. It isn't. According to a report just out of <i>Broadpoint AmTech</i>, <i>Boeing's</i> Q1 2010 deadline is a pipe dream.</b> Whereas the aerospace giant believes it can rush its 787 through FAA certification in as little as eight months, <i>Broadpoint</i> believes the FAA will still be poking around the 787's innards a year from now. This, plus continued supply-chain difficulties (which I believe necessitated this week's purchase of subcontractor <i>Vought</i> Aircraft's South Carolina facility), will continue pushing back the delivery schedule. Result: <i>Broadpoint</i> predicts <i>Boeing</i> won't see dollar one from 787 deliveries before late 2010 at the earliest -- and maybe not even by then. <i>Broadpoint's</i> best-case scenario envisions no more than eight 787's delivered over the course of 2010, and perhaps three dozen more in 2011. <b>If correct, this suggests we could see more cancellations of orders for the oft-delayed aircraft, rather than less.</b> (Logically, this would entail consequences not just for <i>Boeing</i>, but for suppliers <i>Honeywell</i> (NYSE: HON), <i>United Tech</i> (NYSE: UTX), <i>Spirit AeroSystems</i> (NYSE: SPR), and others -- all of whom depend in part on the 787 sticking to its schedule in order that they may sell the parts needed to build it. <b>So investors in these companies, beware.</b>)</p> <p><b><u>What's a <i>Boeing</i> investor to do?</u></b>  <b>In the short term, the prospect of more bad <i>Boeing</i> news suggests only one course of action: Sell <i>Boeing</i>.</b> Longer-term, however, my Foolish colleague Rich Duprey believes that all of <i>Boeing's</i> missteps add up to little more than shifting 787 sales into the future. <b>The profit potential is still there; we just have to wait a little longer to get it. To which I respond: But what if frustrated customers don't wait? What if they cancel their 787 orders and buy <i>Airbus</i> planes instead? In that case, the logical decision for long-term investors is... exactly the same: Ditch <i>Boeing</i>.”</b></p>	of a non-systemic modular enterprise architecture.
9 July 2009	<i>Flightblagger.com</i> “Commentary: Its Time for <i>Boeing</i> to Talk.	Mike Bair, VP 787 Program, <i>Boeing Commercial</i>	Firm	α	<p>“<b>On July 9, 2007, ZA001, or what was later to become ZA001 wrapped up one final photo op for the morning television news shows. The aircraft sat at the head of the 747 line gleaming brand new. Once the camera lights dimmed, the 787 was rolled back to Building 40-26 and the real work to prepare for flight had begun, a task that continues two years later. White plastic decals were removed from the wings, painted foil</b></p>	On a modular enterprise architecture's flow of low quality

	<p>To Itself” (Jon Ostrowe r)</p>	<p><i>Airpla nes;</i> Scott Carson , CEO <i>Boeing Comm ercial Airpla nes;</i> John Leahy, COO, <i>Airbus</i></p>		<p>covering unfilled fastener holes were removed, the full extent of the show N787BA had been prepared for the day prior could no longer remain unreconciled against the work that would be required to make it fly. Those working directly with the airplane knew full well that the first 787 was far from its maiden sortie, but why pronouncements like this from program vice president Mike Bair at the Paris Air Show in June 2007? ‘The aircraft will be structurally complete at rollout but will still have systems, ducting, wiring and similar work to be done before first flight. When those tasks are completed, it will be powered up and proceed to ground test before it flies.’ <i>Vought</i> would confirm publicly a year later that the first aft fuselage barrel was only 16% structurally complete at the time of shipment to Everett. At the time the roll out festivities came to a close, August 27th was the target for first flight, one month and 18 days later. What followed is well documented. Almost exactly two years later, <i>Boeing Commercial Airplanes</i> CEO Scott Carson said assuredly to the gathered crowd of reporters at the Paris Air Show: ‘We remain absolutely committed to our forecast that it will fly in the second quarter of this year. If you count the way I do, that means within the next two weeks roughly.’ Carson would also later tell <i>CNN</i> at the show, ‘The technical issues are largely all behind us.’ Just over a week later, <i>Boeing</i> revealed the extent of the weakness in the wing to body join. Yet, in that statement, there lies a question of how it got to that point? How could an executive near the head of a <i>Fortune 50</i> company make such a statement? Was it just a breakdown in communication? Or something more telling about the state of the program? The information, or the gravity of the information, didn't flow where and when it needed to. Mr. Carson, in responding to questions on the delay announcement said: ‘When we were at Paris last week we had been through the preliminary analysis of the data and were of a mind that the airplane could enter flight test with a credible flight test envelope as we worked relatively minor modifications. The work done by the team through the week last week narrowed the envelope to the point where on Friday we determined that to fly would be such a small envelope for us that it would be an interesting exercise in having the airplane in the air but not particularly useful in terms of preparing the airplane for certification. So at that point is when we made the call to delay the process, identify the fix, test the fix, install the fix, and then enter a flight test program that is fully robust.’ A program built on global transparency did not live up to its own early expectation and the lessons continue to be manifested in changes like the 50% acquisition of <i>Global Aeronautica</i> in March 2008 and the</p>	<p>informati on between stakehold er “chunks” ; and on the media’s assumpti on of the infallibili ty of “the architect ” and the fallibility of the system below it.</p>
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				<p><b>report of information being disseminated from the top down may lack the credibility that the leadership needs to motivate employees to solve the challenges facing the program.</b> A 2006 speech by <i>Boeing</i> CEO James McNerney given in the wake of the US Air Force tanker scandal tackled this culture head on: <b>‘So then we had to ask ourselves some really tough questions: Were these lapses symptomatic of a larger issue with our corporate culture?...Did our people feel confident enough to speak up about ethical concerns without fear of retaliation?’</b> McNerney discussed the solution to the problem: <b>‘To make sure everyone understands this, I think that you have to create a work environment that encourages people to talk about the tough issues--business- or ethics-related--and to make the right decisions when they find themselves at the crossroads between hitting their numbers for the quarter and stepping forward when there’s a problem.’</b> <i>Boeing</i> should ask itself if McNerney's vision has yet to become a reality.”</p> <p><b><u>By Trapperpk on July 9, 2009 6:31 PM</u></b> “Jon, <b>By the way, ‘the emperor has no clothes’ is common condition in corporate America. A Corporation's communication flow tends to filter critical data upward to protect programs and its leadership from the appearance of (actual)incompetance. The emperor is last to know about the naked truth</b> and its embarishment. Usually this discovery is accomplished after speaking to large crowds in bold tones. Somebodies gettin wacked! Ouch!”</p> <p><b><u>By Jery1t on July 9, 2009 7:14 PM</u></b> “Jon, This is an excellent and appropriate commentary.and It is written with balance and thoughtfulness. I am very pleased that you made these thoughts public as they are expressed in many blogging forums with more anger and criticism. I was outraged at the way <i>Boeing</i> handled this cancellation. These last minute problems may well be a part of the process but <i>Boeing's</i> record has been so blemished from the past that this call just seems to be a continuation of poor communication and credibility. There is something flawed in the reasoning that two days before the call , there was still a possibility of it flying. It indicates a rushed finish, an incomplete total diagnosis and promises that should never have been made.. <b>One wonders whether Scott Carson and Jim McNearny are capable of changing the way this Company communicates and whether they are capable of being the leaders they are hired to be. They are now trapped by their own lack of credibility and have brought another cloud over this Company”</b></p>	
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				<p><b><u>By The Big Question on July 10, 2009 3:05 AM</u></b> “I would love for someone to ask Mr. Carson if he is <b>incompetent or a liar</b>. Based on the happenings of the last month, he has to be, in my eyes, either one or the other.”</p> <p><b><u>By Pointman on July 10, 2009 3:46 AM</u></b> “My question is' ‘What is so different with the 787 as compared with other new technical marvels <i>Boeing</i> has achieved in the past- delivered on time with the 707/737/747/777 models?’ <b>From it's creation the 787 program has gone out of it's way to be 180 degrees opposite to every successful <i>Boeing</i> legacy manufacturing process. The ‘New Breed’ at <i>Boeing</i> expecting to put a revenue aircraft into the air using untested materials, partners, technology, drawings, managers, all at once was fantasy at best. This is the only program I know of where management failure is rewarded by promotion and bonus. Now we are 2 years and counting....and the excuses keep coming.”</b></p> <p><b><u>By JR on July 10, 2009 10:00 AM</u></b> “<i>Boeing</i> upper management is still running around in their little glass bubble oblivious to what happens down on the shop floor. Hiding in an office disconnected from 787 reality is nuts! It's time to leave your over stuffed suits in the closet. get down on the floor, out on the flightline and get to know every engineer, inspector, supply clerk, mechanic, truck driver right down to the janitors. It's ‘OK’ to reach out and put a finger on the pulse and yes it's ‘OK’ to listen! All the 787 problems just didn't pop up over night... <i>Boeing</i> Upper management preaches one type of culture for the employees but yet there is a whole different culture that exists in the upper management structure. I keep hearing upper management running their lips tell the customers, press and the share holders the ship is finally sailing into smooth waters. The truth of the matter (and they know it) is, while they run their lips, the ship is sinking under them! It's time for a change....UN-STUFF THE SUITS!”</p> <p><b><u>By eddietsunami on July 10, 2009 1:00 PM</u></b> “Unfortunately, I have to agree with the poster who said that <b>people in management (if they are indeed that out of the loop), have to be clownishly incompetent or huckster/liars</b>. I am afraid it is the latter. The fact the first plane was a Disney-prop of incompleteness points this out. In my opinion this was un-ethical and stock manipulation to roll-out something so phony and misrepresented. It gave people the false hope that the scattered-all-over-with-no-control supply chain would actually work. With the purchase of <i>Vought</i> it becomes clear now, even from Scott Carson’s own mouth,</p>	
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				<p>talking about ‘efficiencies’, that the outsourcing at all cost model is a historic failure. Even if the plane flies tomorrow the billions that have been lost, the lost deliveries, the time and technological advantage over <i>Airbus</i> that has been squandered, will never be able to be replaced. The purchase of suppliers now is damage control. The person who spoke of the ‘emperor with no clothes’, yes, that is exactly the nick name the moving line has been given. The purchase of <i>Douglas</i> (<i>Boeing</i> lost billions), the moving line (no one will speak on the record of the real cost), and now the great albatross of the 787. Sadly, the only way for someone above the level of the hundreds of vice presidents at <i>Boeing</i> can lose their job is to screw their secretaries. Simply doing a really, really poor job is not enough to be fired. Incompetence is sometimes transferred and usually covered up, and somehow described as a retroactive success (as buying <i>Vought</i> is now). There is no accountability at the top. The only people who truly care about the companies’ long term success are those most personally invested in it, the longtime employees. Not the Johnny come latelies like McNerney that have no ties to the community or the company or its grand history.”</p> <p><u>By iloj on July 10, 2009 1:15 PM</u> “It comes down to two pssibilities: 1) <i>Boeing’s</i> leadership is lieing, or 2) <i>Boeing’s</i> culture does not promote truthful communications to leadership. The bottom line is that the company leadership sets the culture! Either way, the credibility and responsibility belong with <i>Boeing Commercial Airplanes</i> CEO, Mr. Scott Carson. Changing 787 program leadership (again) is not the solution - the responsibility is solely Mr. Carsons.”</p> <p><u>By Mel on July 10, 2009 1:24 PM</u> “As a supplier to the 787 program, I see a problem that hasn’t gotten a lot of press. The partner model is seriously flawed. In the perfect world, each parner performs their tasks in lockstep with the others - analogous to a rowing team. The reality is that each partner is lashed to its own suppliers in a sort of three legged race against the other partners. The problem is that no one wants to win - everyone wants to come in second to last. Losing, or being the one holding up the schedule, draws international embarrassment, so no one wants to lose. But, completing the assigned task more than a week or so before the slowest partner means holding very expensive (\$millions) inventory. This has created a stage for all sorts of theatrics. The partners can see, often more easily than <i>Boeing</i> managers, who is going to be holding up the program (keeping in mind that this race is like the Tour de France, where there are dozens</p>	
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				<p>of race segments.) But no partner is going to tell <i>Boeing</i>, 'We aren't going to hit our promise dates because we know that the spoilers will be late.' Instead, they brick wall over a 'spec change.' Or, they tacitly conspire to tangle fastener procurement to the point of non-functionality (FUBAR might be better used here.) Or, they find a <i>Boeing</i> selected single source supplier in their ranks and hobble that supplier so that a delay in the partner schedule is traceable back to <i>Boeing</i>. (The way they do it is like a kid tripping his little brother every time mom looks away and then claiming the little brother can't walk.) <i>Boeing</i> managers have dismissed the theory because they do not believe that the partners are sufficiently clever to perpetrate such schemes. But the partners had schedules requiring them to build hundreds of millions of dollars worth of assemblies yet they knew they wouldn't be paid for months, even years. The partners had to figure a way out of that trap. The partners resorted to all sorts of shenanigans at the level of the minute details with the ultimate effect of deliberately misleading <i>Boeing</i> at all levels. The latest side body joint problem may be entirely encompassed by <i>Boeing's</i> internal communication loop. But, the entire program has been rife with deceptions vigorously advanced from low levels at the partners to low levels at <i>Boeing</i> over small details. This creates context for senior partner managers to rationalize delays to senior <i>Boeing</i> managers. The delays appear fixable to <i>Boeing</i> management because they are presented as quantifiable technical or commercial problems. <i>Boeing</i> still hasn't realized that those problems were created and have been nurtured as the partners means of controlling the schedule and thus, their cash flow. The problems won't get solved until the partners decide to let them be solved (or <i>Boeing</i> decides to take and pay for each deliverable on each partner's schedule.) The thing about airplanes is that they don't fly until the last bolt is torqued down and the last i is dotted. The devil really is in the details. <i>Boeing's</i> internal communications are based almost exclusively, because of the partner model, on communications from the partners. Who knows? <i>Boeing</i> may not be able to avoid making garbage out of good information. I do know that <i>Boeing</i> is not clever enough to make good information of the garbage that is coming in."</p> <p><u>By Outsider on July 10, 2009 1:27 PM</u> Take it from a former <i>Boeing</i> employee, the culture does not let 'truth' rise; rather, what those silly ones at the top get is what they deserve, crap. Now, are all companies in the military-industrial complex of this type (I know, the concept ages me)?</p>	
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				<p>Well, I have worked for several. For some reason, <b>Boeing is different; I could never put my finger on it.</b> But, there was a Tech Excel program developed to allow a way to ascend career-wise without going into the monkey-ish stuff (yea, you, Scott C). That is, it was a double ladder with supposedly those higher up on the rungs of the TE ladder having as much authority (over matters, not employees) as did those who dance that silly dance the managers are so noted for (when will they wake up to the fact that raking in 10s of millions (Turner, you, too) doesn't make them successful in any but a superficial sense?). Too, one would think that a motivation for the program was to allow some people (who did not feel it an insult to deal with facts and data) actually look at things with proper eyes (not that mind-set from the back-slapping hordes - yes, so many of them as to be very heavy organizationally). We have not heard from the TEs on the 787, that I can remember. So, was the program trashed? Anyway, we have something that we can toast to every year, even when the thing flies. We need LeeLaw to coin something new for us. 'potemkin' is old hat."</p> <p><b><u>By Uwe on July 10, 2009 2:01 PM</u></b> "But why does this hit <i>Boeing</i> so much harder than <i>Airbus</i> <u>the</u> long time distributed manufacturer Beyond the basic mechanism is it inability to span differnt cultures or the predominance of 'dumb' non engineering types in middle and upper management? <b>What about the potentially overreaching contract arrangements pressed through by <i>Boeing</i>?</b>"</p> <p><b><u>By Ray on July 10, 2009 2:04 PM</u></b> "Pay attention kids. This comment: 'By Mel on July 10, 2009 1:24 PM' has more truth in it than a decade of statements by Scott Carson or Jim McNerney. <b>Here's a poli-sci view:</b> <i>Boeing's</i> business model for the 787 was based upon <b>colonial logic</b>. The idea was that the partners and vendors would <b>behave mechanically</b>....doing precisely what <i>Boeing</i> wanted when <i>Boeing</i> wanted it. <b>However, the colonial model only works if you have the ability to project force and impose your will upon the colonists. If you don't, those pesky colonists will start acting in ways that maximize their self-interest rather than the interests of the colonial masters.</b> We've seen that from A to Z in this program....and <b>anyone who spoke the truth to <i>Boeign</i> corporate was punished.</b> Now, there is a bureaucratic battle within <i>Boeing</i> between the McNerney camp who argue that their business model is fine but the execution was bad....and the experienced technical workforce (including those now in management) who believe the business model is fatally flawed."</p> <p><b><u>By Uwe on July 10, 2009 2:46 PM</u></b></p>	
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				<p>“For a change reader comments are a fount of insight. <b>Describing <i>Boeing</i> as colonial is an interesting insight that jibes with my (tentative) assumption of overreach by <i>Boeing</i> in partner interaction.</b> Essentially risksharing partners then are limited to taking a share of <i>Boeings</i> risk plus having to bear their own risk as well. <b>This would explain why the japanese partners have been extremely reluctant to expand production capabilities beyond the initial commitments and why others have an unblemished manufacturing relationship with <i>Airbus</i>.</b> Hubris then lies in placing blame on the partners. Does <i>Boeing</i> have a chance to understand this short term and work succesfully with equal partners on top of the engineering problems (systemic and technical) they are encountering (not only) in the 787 project?”</p> <p><b><u>By Yann on July 10, 2009 3:55 PM</u></b></p> <p>“Hi Uwe, <i>AIRBUS</i> distributed model was different of what <i>Boeing</i> made. National companies building parts or assembling aircraft were the owner of the 'economic interest group' named <i>AIRBUS</i>. This organization built A300, A320 and 330/340. The 'integrated' <i>AIRBUS</i> compagny - in EADS - built the A380, and surprisingly had to face management problems... One old <i>AIRBUS</i> chairman - very angry - explained that such problem would have not appear with the old <i>AIRBUS</i> structure, as the one faulty for the delay was supporting the biggest part of associated finacial penalties. This rule dissapeared in the integrated company.</p> <p>No, <i>Boeing</i> was in fact opening creating its own path. More funny, <i>AIRBUS</i> is engaged in the same way of masssive partnerization, with more and more fear in the tech teams, coming with the same kind of dissatisfaction. People are/were engaged on work and product but feel more and more that it does not pay. Last, their job are transferred offshore...”</p> <p><b><u>By mel on July 10, 2009 6:10 PM</u></b></p> <p>“Ray and Uwe, Great comments. In my view, another issue with the 787 has been, ironically, its success. <i>Boeing</i> fretted at the cost of a new airplane but also at the cost of inaction. <b>Someone at <i>Boeing</i> knew how badly aerospace material and component suppliers want to be on new programs because of the annuity value of being the incumbent. So, they decided to ‘sell’ partner slots. The buy-in was putting up the money for engineering, facilities, tooling and inventory. Each of the partners have put up tens to many hundreds of millions of dollars to be on the team. No one was supposed to be paid until the first delivery although some ‘progress payments’ have been made. So, each company had a picture of</b></p>	
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				<p>what they were going to put in, and then set their pricing to affect a break even at several hundred shipsets (each partners' break even point is different and a guarded secret.) At the start of the program, each partner maximizes their individual chance of success by pulling whatever levers they can to make the program successful - meaning they do the work that was assigned to them. When the program had only sold the launch customer 50 planes, I am sure all those fellas were up at 6 and hard at it. But sales quickly flew past 400. By then, all the partners were past break even in their models. And, importantly, with 400 plus planes sold, everyone, especially the partners, knew that <i>Boeing</i> would turn heaven and earth (as in pay any cost) to put this bird in the air. So now it is in each partner's individual interest to raise prices and reduce cost. On the price side, each partner was given a sole source contract and by this point was too deep into the program to be replaced (if <i>Boeing</i> doesn't like their performance, the only real option is to buy the partner.) Accordingly, the program bogs down with claims by the partners of changes to the specs or in the scope of work that require a 'reset' in the contract (a price increase.) I would wager that this cost <i>Boeing</i> tens of thousands of management hours, effectively distracting them from issues related to building the airplane. On the cost side, not only would partners make themselves someone's victim to the effect that their deliveries would be delayed and thus preserve their cash, but also they would 'engineer' shortages of something (engineering, materials, tooling, etc.) to the end of becoming a pacing item in the schedule. Of course, it would be made to look like someone else's (preferably <i>Boeing's</i>) fault but the inevitable result was that <i>Boeing</i> would show up with a suitcase full of cash and a bus load of people to resolve the issue. This approach has saved the partners millions on elements of the program that they had budgeted for at the program's outset. And, as stated above, this all made it impossible for <i>Boeing</i>, management and otherwise, to know what actually was going on. Personally, I have never met a dumb <i>Boeing</i> or partner employee. More than other large companies, <i>Boeing</i> people are remarkably bright, honest, forthcoming and diligent. And, while there were cultural challenges, I think <i>Boeing</i> embraced and met the challenges to the effect of creating an important step toward global harmony. (It doesn't make airplanes fly, but they deserve credit for it.)</p> <p>Net, I think the partner model is flawed logically - the only fix would be to scrap it and try something different. That said, given the partner model, I think the program would be farther</p>	
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				<p>along if the program had made its first few deliveries with less than 200 airplanes sold.”</p> <p><u>By 787 Accountant on July 10, 2009 7:39 PM</u> “I have seen several versions of ‘the emperor has no clothes’ or the leadership is just incompetent discussion lines. <b>Maybe the best approach would be to ask how could Carson and McNerney not know? Is there any way possible that they could not know? Brand new employees have visited the 787 line one time and have been able to figure it out. Both Scott and Jim visited the lines many times. For a time Carson was visiting the line weekly. They know the problems and have crafted exactly the system of fear needed to keep the problems hidden, not from them but from the shareholders and valued customers. Every morning our emperors look at their naked bodies (one pasty and saggy, the other artificially tanned) in the mirror and go to work trying to convince people they are clothed.”</b></p> <p><u>By Bull-of-the Woods on July 10, 2009 11:19 PM</u> “With 5-1/2 years of exposure to the 787 program, watching all of the leadership changes (which are many), no one is currently accountable for the current state of the program. All of the people who set-up the failed business plan and program strategy are gone. None are still associated with the 787 program and most are no longer at <i>Boeing</i>. See the list below: Alan Mulally (now at <i>Ford</i>) sold the 787 design and business plan when the Sonic Cruiser flopped. Harry Stonecipher (now discredited) was CEO who guided Mulally’s plans and concepts to get board approval. Frank Statkus (retired after many senior management roles at Boeing) was VP of Tools, Technology, and Processes. Walt Gillette (retired after many Senior Engineering Management assignments at Boeing) was 7E7 chief Engineer and VP of Airplane Development, 787 Program. Mike Bair (still with <i>Boeing</i>) was 7E7/787 Program Manager then VP and General Manager, 787 Program. Scott Strode (still with <i>Boeing</i>) was 787 VP Production. Thus, you can’t hang any of the current managers/Senior Executives with the core problems caused by the fouled-up program structure. Now you may be justified accusing any of the current management of being unable to make the current program structure function successfully. But, as others have stated earlier, this form of outsourcing may well be flawed-beyond-all-ability-to-recover (FUBAR). <b>In regard to the most recent program slide, I can assure you that much of the workforce in Everett knew about the wing structure problem in general terms within a week of the tests being run. The fact that the Senior Executives ‘didn’t know</b></p>	
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				<p>about them’ is intentional. If they know of matters of material information that can affect investment value (stock price) they are obliged to make it known to all – to the public. Thus, these senior executives don’t want to know about big problems until they are fully understood and what the impacts may be. Thus, this information is closely managed and finessed right to its disclosure. Incidentally, that’s why <i>FlightBlogger</i> is the key source of information for <i>Boeing</i> employees. It’s a rumor until it’s confirmed by <i>FlightBlogger</i>. <i>Boeing</i> Management doesn’t communicate any better to the workforce than they do with the Senior Executives – by design I assert. Senior Management has known since day one that the Partners were in big trouble in late 2005. I saw their status charts showing every partner with problems and no plan to correct them – a red ‘meatball’ as overall status. <i>Boeing</i> people were already on site at their facilities propping them up to get them started on production. This was common knowledge along with the lack of cooperation and communication of the partners that had been well established by this time. Do you suppose that’s why everyone that build this business model retired before the fat-went-into-the-fire? Hummmmmmmmmmmmmmmmmmm. So, please blame the right people for the mess we have. There is plenty of blame to go around to those from the past as well those that are currently responsible. It seems that today’s management model, the so called matrix management model (you have two or more bosses) along with the rotational management concept, means that there is no one that is responsible for anything. The day of the ‘Buck-stops-here’ is long gone – along with real leadership. And that’s the real issue, with <i>Boeing</i>, Jon – no Leadership.”</p> <p><u>By BlueJ on July 12, 2009 4:22 PM</u>      Jon, Great commentary and blog. As an insider I do not see all the parts of this problem just my immediate area. The worst is for all those working directly at <i>Boeing</i> this is extremely depressing and all the cheer leading does not go very far. We have wasted so much effort going through panic slides one month at a time over a 2 year period that even the newbys do not trust the schedule. To all those that have retired, this is a different environment. And to think we used to joke about peter principle, and now we are living it. So with the new management training, where in this country of ours do we have good technical leadership? I also have compassion for those I have worked with that have retired from management for ‘health’ reasons, translate that as stress. The 787 will fly and it will be a great airplane in service, but not out of the box.”</p>	
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					<p>planning to get you to the the delivery date for the customer. But it can't come down to 'a miracle happens!' You have to have the facts and data to know you can do it. To get the facts and data, you have to spend the money developing the processes ahead of time. The program looked doomed to me from the start. The program management for the 787 was wrong from the get go. The guy in charge couldn't hit a bull in the butt with a banjo and to put him in charge of the most complex program that <i>Boeing</i> ever undertook in commercial airplane development was a plum wrong decision. When the Chief Engineer retired in the middle of the development, it was my first tip off from the outside that Program was going South. It seems like it's gone down hill from there. I guess maybe Ol' Alan took the <i>Ford</i> job to get away from what started on his watch. He sold the plan to the Board probably under a great deal of pressure from Harry Stonecipher who was CEO by then. As I said, I hate to watch all this happen but it seemed so predictable from the start. <i>Boeing</i> needs to get back to what made them the dominant player in commercial airplane development and manufacturing for over 40 years. They need senior management to be ethical and technically capable people who understand the airplane business. Eliminate management by fear. Tolerate different points of view when it's backed by facts and data. Audit and monitor subcontractors or partners or whatever the buzzword is for those guys that make the major subcomponents. And honor your commitments both internally and to the end user. <i>Boeing</i> was on the right track with the 777 and they got derailed on the 787. I hope they can get the train back on the track and running in the right direction again. They have the working people to do it but their management leaves some thing to be desired. Thanks for letting me ramble."</p>	
9 July 2009	<p><i>Seattle Post-Intelligencer</i>, "Boeing Culture: Kill The Messenger vs. Speak Truth To Power" (Andrea James)</p>	<p>Scott Carson, CEO <i>Boeing Commercial Airplanes</i></p>	Firm	α	<p>'How does a quote like this happen? 'I personally believe the airplane could fly today.' -- <i>Boeing Commercial Airplanes</i> CEO Scott Carson, Paris Air Show, June 16, according to Bloomberg News <i>Boeing</i> is a big company with about 160,000 workers spread across the world and a corporate culture that varies from division to division. Flightblogger Jon Ostrower presents an interesting debate on corporate culture within the 787 program. In Ostrower's latest commentary, "It's time for Boeing to talk. To itself," he goes over some of the internal communication problems that plague the 787 Dreamliner program. The story suggests that communicating program delays upward to management is a challenge, even while rumor rampantly flies sideways and out of the corporate borders."</p> <p>Posted by <a href="#">unregistered user</a> at 7/9/09 5:04 p.m.</p>	<p>On the culture of modular enterprise architectures in mature environments.</p>

					<p>“As a 20 year <i>Boeing</i> veteran, I can tell you that communicating bad news is a career hazard. There is no such thing as constructive criticism. Any sort of criticism, negative analysis, or attempts to foresee problems are viewed as contrarian negativism, (Being ANTI <i>BOEING</i>) and are dealt with accordingly. Then you find yourself suddenly passed over for raises, promotions, If you are forthright, strident, or try to argue your point, you can find yourself escorted out the gate under armed guard. Being wrong is not negative, as long as you are cheerful and dismissive.”</p> <p><u>Posted by <b>unregistered user</b> at 7/9/09 5:43 p.m.</u> “I personally believe the airplane could fly today.” -- <i>Boeing Commercial Airplanes</i> CEO Scott Carson, Paris Air Show, June 16 and this is part of the <i>Boeing</i> ethics policy that I think Scott Carson should revisit. ‘<b>Employees must not engage in conduct or activity that may raise questions as to the company's honesty, impartiality, or reputation or otherwise cause embarrassment to the company.</b>’ In this regard I believe that many top leaders in the <i>Boeing Company</i> have broken their own ethics policy.”</p>	
10 July 2009	<i>The Seattle Post-Intelligencer</i> “Say it Ain’t So: The 787 Possibly Just a ‘Mediocre Aircraft’” (Andrea James)		Firm	α	<p>“A prominent aerospace analyst has floated a worst-case scenario that two years ago wouldn't have been thought plausible. <b>The 787 could easily get mired down in more delays. And ‘there's also an unlikely but not impossible worst-case scenario: a 787 that's simply a mediocre aircraft,’</b> writes Richard Aboulafia, an aerospace analyst with the <i>Teal Group Corp.</i> And if that is the case, he adds, <b><i>Boeing</i> can thank its merger with <i>McDonnell Douglas</i>, which replaced leadership with people who cared most about money.</b> <i>Boeing's</i> all new 787 Dreamliner program has been delayed by two years, which has made the company ripe for criticism and analysis.</p> <p>From Aboulafia's most recent aircraft letter: ‘<b>The proven <i>Boeing</i> track record (‘We're ten for ten!’) has been replaced by the unpleasant memory of <i>McDonnell Douglas's</i> checkered past. The nickel and dimed MD-11 mediocrity, the useless MD JSF competitor, the out-of-control cost overruns of the C-17, and worst of all, the scandalous MD/GD A-12 carrier stealth attack plane. The likely (or at least hopeful) scenario is that the 787 winds up like the C-17, a nightmare development program followed by an impressive technical achievement and a profitable production phase. But we can't rule anything out. The A-12 is the most haunting extreme outlier: a mere Potemkin Village plane. Those of us at the 7-8-07 rollout wouldn't have dreamt of that</b></p>	On modular (non-systemic) analyst's late (and revised) evaluation of a modular enterprise architecture's systemic problems.

				<p><b>comparison at the time. But who knows what to believe anymore?</b> In short, the 787 has become less of an adrenaline rush of optimism, and more of an await-and-see story. <i>Boeing's</i> latest delay -- its fifth -- and purchase of supplier <i>Vought</i> combine to prove that the company's strategy of saving money from outsourcing work to suppliers 'has been dwarfed by the cost of remedying the damage wrought by that strategy.' 'This is all seriously bad,' Aboulafia said. 'As we digested the news, I paused to reflect on just what a tremendous drug-like rush the 787 program once was, and just what a ghastly let down it has become.' <b>What was supposed to be a category killer has turned out to be even worse than the 'commercially irrelevant' Airbus A380,</b> Aboulafia said. <b>Because, at least the A380 flies.</b> Finally, Aboulafia brings a sense of history to the present: To understand how this happened, you need to look back in time. A grossly oversimplified recent history of <i>Boeing</i>: Twelve years ago <i>McDonnell Douglas</i> effectively used <i>Boeing's</i> money to buy <i>Boeing</i>. This resulted in a struggle between a faction that wanted to invest in <i>Boeing's</i> future (basically the legacy <i>Boeing</i> crowd) and a faction that wanted to invest in <i>Boeing's</i> shareholders (basically the <i>McDonnell Douglas</i> leadership). The future investment faction won, but at a price: <b>the <i>McDonnell Douglas</i> zombie bit them before it died. To sell the new plane to the board and to investors, they needed to get as much cost and risk as possible off <i>Boeing's</i> books. This resulted in a short-sighted decision to trust enormous parts of the 787's development and integration work to partners, without due diligence to ensure that these partners were up to the job. (Disclosure: I was a big fan of this approach at the time, and I still think production work outsourcing is a good idea.) . . . Finally, the new <i>Boeing</i> also disempowered the company's engineers, turning its back on a decades-old management culture that didn't always produce profits but did always produce great planes. Instead, it embraced <i>McDonnell Douglas's</i> culture of leadership by money people."</b></p> <p><u>Posted by halfshaft at 7/10/09 4:01 p.m.</u> "I have said it here before and I will say it again; 'We told you so!!!' Legacy <i>Boeing</i> employees realized 10 years ago what Aboulafia is realizing now. 'Twelve years ago <i>McDonnell Douglas</i> effectively used <i>Boeing's</i> money to buy <i>Boeing</i>.' We were saying the same thing a decade ago. <b>Harry Stonecipher famously declared that <i>Boeing</i>, 'was no longer an engineering company', right before SPEEA went on strike for more than 40 days. SPEEA rightfully declared that they were trying to save Boeing from its own mis-management. It looks like ultimately, they were unsuccessful. And</b></p>	
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				<p>again; I wish someone would track down those truly responsible for this mess and bit*h slap both of them; Phil Condit and Harry Stonecipher. I guess at least Phil can be blamed for setting the groundwork for the failure of only one aircraft manufacturing giant. Harry was responsible for destroying two companies. At least current management is still following Harry's lead--blame a two week strike by the evil union for 5 different delays over two years. Talking about covering your incompetent as*!"</p> <p><u>Posted by keepreadinifithurts at 7/10/09 5:57 p.m.</u> "I'm hearing a lot of SNIVELING, here, these miserable union SOB's cut their OWN throats, JUST like at <i>GM</i>, demanded too much revenue out of the whole process of building an aircraft, and the health insurance companies used the union people to get what THEY wanted too, is there anyone left at <i>Boeing</i> that enjoys building and flying airplanes, or are they all just a bunch of corporatized, bureaucratized, pampered, spoiled, overweight, whiny, money-grubbing stooges? It bears keeping in mind that cloth-and-wire really aren't that far back in history, maybe this whole glut-thing with overpriced passenger aircraft is a hidden godsend, <b>Airbus with their glued-together garbage will end up doing it to themselves, so why try to win the race to the bottom? Build 10 EXCELLENT aircraft per year, and stop trying to be a global mega-mega like GM did, which was a 'zing' on their management and their inability to keep their profit hubris in their pants.</b> I think <i>Boeing</i> should harken back to the days of radial engines and manual levers and so forth, and see if they can sort of re-ignite the spark that took the aviation world on its' century-long whirlwind development spree, figure out what went right, what went wrong, and what their future's going to look like. Maybe <i>McDonnell-Douglas</i> and whatever else the <i>Boeing</i> whale ate should be regurgitated within swimming distance of shore...<i>Boeing</i> IS a global mega-mega...and most of those people that run the place probably couldn't identify a wheel chock if you pointed it out to em, so they're just people riding the train, so to speak. <b>Downsize!</b>"</p> <p><u>Posted by unregistered user at 7/10/09 8:24 p.m.</u> "It's a pity because <i>Boeing</i> has gone from a <b>product focussed organization to a share holder value org. Merger with McDonnell Douglas started the rot.</b> We only have to look at Harry Stonecipher's record or lack of during his tenure."</p> <p><u>Posted by Tenochtitlan at 7/10/09 10:25 p.m.</u> "I hate to see great American corporations brought to their knees because of Wall Street's predominant culture of 'Immediate profits at any cost!' I hate to see workers who took such pride in</p>	
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				<p><b>the fruit of their labors forced to watch their legacy looted and scuttled by the modern-day robber barons. And I hate to see clueless 'right to work'-ers blame the dedicated, loyal employees, who made the company great, for the abuses and negligence of the management.</b> "I'm hopeful that the 787 will become everything it's hoped to be, and that <i>Boeing</i> will learn a lesson about the costs of outsourcing manufacture and assembly: because what's in the future for an airplane company that doesn't build its own airplanes and abandons its own employees, and all their knowledge?"</p> <p><b><u>Posted by mojojojo at 7/10/09 10:52 p.m.</u></b> "The relation of men of wealth to the flying problem presents many points of similarity to that of North Pole hunting. It would be folly to back such attempts as business propositions, or at least it could be considered nothing better than the very rashest speculation... If wealth is to be interested on a mixed basis of benevolence and hope of pecuniary return, it ought to be made sufficiently clear that the latter could hardly be considered a satisfactory insurance against finally resting in a pauper's grave..." -Wilbur Wright to Octave Chanute Jan. 5, 1902</p> <p>True then. Still true today. <b>Bill Boeing made his fortune in the timber business. He didn't start an airplane company to get rich. He started an airplane company because he liked airplanes and figured he could make a good one. But being a good capitalist and entrepreneur, he also succeeded at growing it into a (mostly) healthy business. He struck a balance between passion and profitability. This is why <i>Boeing</i> has now started down the path to failure. If the only thing you want to make is money, you are definitely in the wrong business. That's not some sense of misguided nostalgia. That's just the way it is."</b></p> <p><b><u>Posted by IanMost at 7/10/09 11:39 p.m.</u></b> <b>Aboulafia is an idiot!!! He writes about how <i>Boeing</i> has had to spend billions buying back its failed outsourcing strategy but his disclaims that he agrees with the concept. Well HELLOOOOO!!!! Richie, it isn't working!!!"</b></p> <p><b><u>Posted by unregistered user at 7/11/09 12:32 a.m.</u></b> "Why do you give this guy the time of day, he cosistently talks out of his ****, I listen to what he says and it's never praise. Who the hell are <i>Teal</i> in some backdrop and who is this guy who just seems to slag off Both <i>Boeing</i> and <i>Airbus</i> all the time. Anytime there's some aviation news why get this guys comment or opinion, i don't understand? From the rubbish he spouts he should just be ignored, but then half the rubbish he spouts wouldn't be news I</p>	
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				<p>guess!!”</p> <p><u>Posted by rightwingrick at 7/11/09 8:11 a.m.</u> “This (<i>Boeing</i> history recently) is a perfect description of what has gone wrong with much of American business. <b>It's not the unions; it's short-sited leadership that has taken its eye off the long-term ball (quality product to serve your customer better than anyone)</b> and instead focused on short-term money (how much can we get to our stockholders next quarter by nickel and diming the company to death). Want another local example? Take a look at <i>Weyerhaeuser</i>.”</p> <p><u>Posted by barney48 at 7/11/09 9:12 a.m.</u> “Way late and over budget on the 787, a NONGOVERNMENT project?? Clearly something's wrong with this picture. Why aren't the beancounters and lawyers, that supposedly run the company now, lowering the boom? Maybe they're as incompetent as the ones who seem to ruin company after company because they don't know squat about their company's product, or for that matter don't know squat about anything other than the current year's bottom line (if even that).”</p> <p><u>Posted by Lookitsme at 7/11/09 9:40 a.m.</u> “Another great company being brought to it's knees by stunning corporate mis-management. Naturally, the higher level management types that have created the problems will continue to reap their absurdly high salaries, bonuses, and stock options while the folks who actually do the work take it in the shorts...”</p> <p><u>Posted by unregistered user at 7/11/09 4:21 p.m.</u> “When I heard that <i>Boeing</i> bought <i>McDonnald Douglass</i>, I imediately sold <i>Boeing</i>. The only good AC that <i>Douglass</i> made was the DC-3 and that was 75 years ago. <i>MCDonald</i> AC were not so good. Now <i>Boeing</i> is going to pay, pay, pay for it's greed. What in the heck ever happend to the Taft-Hartley Act? That law was passed especially to stop American Companies from becoming monopolies. It's just like the Auto Business, we too will loose our AC industry to Asia and now y'all want to USG to run health care? Good luck!”</p> <p><u>Posted by The Unrepentant Lib at 7/11/09 4:22 p.m.</u> “Another great company, ruined by the corporate mentality of short term profit over all other concerns. To them their is no God but the Almighty dollar.”</p> <p><u>Posted by unregistered user at 7/11/09 4:31 p.m.</u> “<i>Boeing</i> arrogantly tried to surpass <i>Airbus</i> with</p>	
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					<p>the 787, but is is far behind the A350 on the technology front. Once the structural redesign has taken place all that extra weight will put the 787 on a par with the A330, leaving the A350 to clean up. 787 cancellations have yet to flow, there are many customers with itchy trigger fingers.”</p> <p><u>Posted by Shoreline50 at 7/11/09 8:25 p.m.</u> “Unfortunately, <i>Boeing</i> has the worst of all worlds--terrible management combined with terrible unions. They need to:</p> <ol style="list-style-type: none"> <li>1. Get the <i>McDonnell Douglas</i> symbol out of their logo.</li> <li>2. Move their headquarters back to Seattle.</li> <li>3. <b>Purge the management of the failed <i>McDonnell Douglas</i> people and get back to the <i>Boeing</i> management style.</b></li> <li>4. <b>End strikes either through agreement</b> or by having additional production facilities elsewhere.”</li> </ol> <p><u>Posted by unregistered user at 7/12/09 4:01 a.m.</u> “Ahhhhhh, the unions. <b>Once a good idea, now a dinosaur.</b> A rather self-destructive one too. Just keep asking for more more more and walk with a sign. Then badger your company until they have to give in. Next, they go broke paying a "union man" ten times his due. Next, Union Man whines when his company goes bankrupt and be blames his company instead of his Union. Pretty simple. Greedy unions get exactly what they deserve. Always have and always will.”</p>	
11 July 2009	<i>The Wall Street Journal</i> , “GM Takes New Direction” (John Stoll & Sharon Terlep)	Frederick “Fritz” Henderson, CEO, <i>General Motors</i> ; Edward E. Whitacre Jr., Chairman, <i>General Motors</i>	Firm	α	<p>“<i>General Motors Co.</i> kicked off a new era following its exit from bankruptcy protection on Friday, with Chief Executive Frederick "Fritz" Henderson promising to transform the auto maker into a leaner and more customer-focused company. The new company will put a premium on speed, accountability and risk taking, and root out the layers of management that had hobbled decision making, he said at a news conference. ‘Business as usual is over at GM,’ Mr. Henderson said. ‘Everyone at GM must realize this and be prepared to change, and fast.’ In a preview of a broader management shakeup to come, Mr. Henderson said the company was scrapping a number of senior posts and has disbanded two committees of top executives that made key decisions for the company's automotive operations. Mr. Henderson expects hundreds of middle managers to be let go in the weeks ahead, and the company's sales and marketing operation will be reorganized. ‘Our culture to this point has been an impediment,’ Mr. Henderson, a 25-year GM veteran, said. ‘This is all about flattening the management structure.’ Mr. Henderson said he is adopting some techniques used by the alliance of <i>Renault SA</i> and <i>Nissan Motor Co.</i>, led by Carlos</p>	On a modular enterprise architecture’s focus on short-term speed.

				<p>Ghosn. Several of <i>GM's</i> highest-ranking executives studied Mr. Ghosn's approach in 2006 while <i>GM's</i> board weighed a potential merger with <i>Nissan-Renault</i>. Mr. Henderson and his top lieutenants also are planning to hit the road in August to talk to dealers and consumers to gain insight into the U.S. market. In the past, <i>GM</i> based much of its decision making on market-research studies, focus groups and strategy meetings among executives. Dealers said the company needs to reconnect with consumers. Mr. Henderson also plans to engage in Web chats and to field criticism and suggestions on an 'Ask Fritz' Web site. <b><i>GM filed for bankruptcy protection June 1. Friday morning, General Motors Corp.'s best assets, such as its Chevrolet and Cadillac brands, were sold to a new company -- General Motors Co. The 40-day stay in bankruptcy reorganization left the company with lower costs, a lighter debt load and four automotive brands instead of eight. The new GM is also getting several new directors appointed by the U.S. government, which now owns 60% of the company thanks to \$50 billion it committed to invest in the auto maker. 'We all want to win, and we are going to win,' said Edward E. Whitacre Jr., the former AT&amp;T chief executive selected to serve as chairman by the Obama administration's auto task force. 'I know most Americans want this company to succeed [and] we certainly have the fundamentals'</i></b> to do so, Mr. Whitacre said. Mr. Henderson has been leading <i>GM</i> since the late-March ouster of former CEO Rick Wagoner. From his first day, the 50-year-old Mr. Henderson has set a <b>tone of urgency</b>, first by embracing the possibility of a bankruptcy filing and then <b>taking tougher actions than Mr. Wagoner when it came to downsizing. The government made his task easier in recent weeks when it decided to convert nearly all of the money it provided GM into a 60% equity stake. The United Auto Workers union, bondholders and the Canadian government followed suit, converting billions into sizable minority stakes in the new GM.</b> Mr. Henderson said he plans to repay the government loans before the 2015 due date. In an interview Friday, <i>GM</i> Chief Financial Officer Ray Young said the company will spend the next few weeks forecasting whether it needs as much as the government has offered and trying to accelerate repayment of the government loans. Among the first moves Mr. Henderson will make will be moving longtime product czar Bob Lutz, who planned to retire at year's end, from the design studio to the marketing department. After building a career on creating automotive hits ranging from the <i>Ford Explorer</i> to <i>Dodge Viper</i>, Mr. Lutz, 77 years old, will return to his professional roots and run marketing and communications."</p>	
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13 Juy 2009	<i>Seattle Post-Intelligencer</i> , “Instructor Pilots Sue Boeing Over Possible Layoffs” (Andrea James)		Firm- Emplo yees	α	<b>"Periodic mass layoffs are an expected fact of life for almost all Boeing employees, particularly early in their Boeing careers, when their seniority is relatively low," the company said, citing the cyclical nature of the commercial aircraft business."</b>	On a modular enterprise architecture's exogenous views of the cyclical nature of their business, and its effects on labor.

## I. Feedback on Research

The following appendix summarizes the written (not spoken) feedback that the author has received from participants involved in critiquing and co-developing the theory. The participants have included executives in organizations comprising the primary sample, professors, graduate students and other executives who challenged the theory's internal validity (by proposing plausible rival hypotheses), external validity or generalizability and parsimony. Having taken into account their feedback over the past seven years, and continuously iterating and updating the theory, the following comments summarize the level of "fit" with their empirical experience.

### *Custom Executive Education at Fortune Global 100 Companies* Executive Feedback

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*"Ted, thank you again for your time with us and our leadership team. The breadth of your talents continues to amaze me. You are helping guide us down a path that represents the most significant (and most difficult) transformation this company has been through. This is shaping up to be one for the history books and you are playing a pivotal role. I imagine it won't be long before Porter is replaced by Piepenbrock in business schools. Cheers..."*

Director of Business Strategy  
Fortune Global 100 Company

- *"You may be in some ways... bigger and more important than our [leadership] team... based on your many achievements."* (Chairman, President & CEO)
- *"Ted, thank you... I learned a lot. We need to find a way to have more time as these are important issues for us to grapple with."* (President & CEO)
- *'[Because of 'Red-Blue'] we are going to re-evaluate our whole business, our understanding of the industry, what our competitor does and what it takes to be successful.'* (President & CEO)
- *'Tremendous.' 'Fascinating.' 'Meaningful and impacting.' 'This is our future.'* (President, CEO; VP Business Strategy & Marketing; VP, CFO)
- *'Ted was among the best speakers we have ever had, and his topic was extremely relevant to us.'* (President, CEO)
- *'Ted's 100,000 foot view of our industry allowed me to see for the first time a 100-year history of where we've been and where we're headed. It helped me so much to move forward with new understanding and conviction.'* (Chairman of the Board)

- *“Your presentation and subsequent questions reflect a deep understanding of our markets and competitive environment. Your expertise, enthusiasm and energy are refreshing and very welcomed. I shared several of your top-level observations with [our Chairman and CEO] who was intrigued. Thank you again.”* (SVP, Business Development & Strategy)
- *“Expanding our comfort zones is what it will take to win. Count me in.”* (SVP, Business Development & Strategy)
- *“Ted, enjoyed the meeting and conversation. Look forward to future meetings.”* (SVP, COO)
- *“Our leadership team values the time we spent with you and the learning that has taken place. You have challenged our thinking, and encouraged us to mature our strategies. I am looking forward to seeing you again very soon.”* (VP/GM)
- *“i can’t tell you how much I enjoy the time we are able to spend together. it really helps remove the cobwebs from my brain and to re-energize me. i hope we are able to continue our learning together and to continue expanding the size of the circle.”* (VP/GM)
- *“I can’t thank you enough for your active involvement and encouragement. It really does help to know you are working so hard to bring new thinking (and action) into the place.”* (VP/GM)
- *“i really enjoy our meetings because i leave thinking about a lot more important, and complex, issues than i did when i arrived.”* (VP/GM)
- *“Great learning today... you are a very good teacher.”* (VP/GM)
- *“Thanks ted. As always, it was good to see you and to get the old brain engaged.”* (VP/GM)
- *“i’d say the outcome was a major opportunity for us to move forward. it gave me hope. ted....thanks for helping us learn.”* (VP/GM)
- *“ted, thanks for staying in touch. i miss our discussions and the learning that has gone along with those sessions.”* (VP/GM)
- *“as usual, our time together was too short. i always learn a lot and our discussions provide a welcomed time for me to think about our future.”* (VP/GM)
- *“I wanted to let you know how much I enjoyed our lean enterprise discussions. I look forward to continuing the conversation.”* (VP/GM)
- *“I think the world of Ted and the work he has been doing.”* (VP/GM)

- *“Everybody [on the Leadership Team] thinks it’s beneficial to continue to use Ted.”* (VP Business Strategy & Marketing)
- *‘Many thanks for taking the time with us to share your thoughts and insights. I hope there are opportunities going forward for us to continue to share and learn.’* (VP, CFO)
- *“I think we’re in for several interesting sessions Ted and hopefully some real progress. Thanks!”* (VP, CFO)
- *“Great perspective and review. Thanks.”* (VP, CFO)
- *“Ted, our "red v. blue" strategy is number one on our strategic agenda for 08. We need to pull the team together to discuss how we’ll rollout the discussions/data for the leadership team--time is of the essence. Thanks for your support!”* (VP, HR)
- *“Thanks, Ted – always a pleasure. We’re making progress – look forward to our next session.”* (VP, HR)
- *“Ted – really enjoyed the time with you and the team. Look forward to future discussions!”* (VP, HR)
- *“We had a good session with our Leadership Team, and Ted... is critical to our efforts.”* (VP, HR)
- *“Nice to meet you. Very thought-provoking stuff.”* (VP, Strategic Management)
- *“Ted has a gift, passion and provocative vision that reaches people. We are privileged to learn and partner with him.”* (VP, Strategic Management)
- *“Ted, thanks for staying close to us, believing in us... and pushing us. You are making a difference!”* (VP, Strategic Management)
- *“It warms my heart to see the team finally get the traction we needed. You told us from the very beginning to go slowly and that it would take a long time. I wasn't sure if the team was going to have the emotional resilience they needed to be successful, but they did and I love them for it. I cannot thank you enough for believing in us and believing that a little strategy team could help drive such significant change. Now you have senior leadership to drive and lead this. Wow. Don't ever give up on us. We just might surprise you :)”* (VP, Strategic Management)
- *“I always enjoy the dialog and exchange of thoughts, ideas and concepts. Sure hope we can get this moving...”* (VP, Finance)
- *“Ted - I thought we had a rich conversation during the meeting and I look forward to working with you in the future.”* (VP, Finance)
- *“Thank you for your years of contribution to [our company] and myself. I know how much you have helped me grow as a person and hopefully as a leader.”* (VP/GM)

- *“Thank you Ted. Inspiring to learn from you a usual. The whole team, even those who were quiet received a lot of energy from the dialog. I look forward to the next engagement.”* (VP/GM)
- *“Your presentation was outstanding and it really got me thinking.”* (VP)
- *“Ted, the magic you add to the equation for the leadership team, renewed my confidence that we can pull this off. To see that same spark of confidence energized among those who are leading was fantastic.”* (Director, Business Strategy)
- *“You are an integral part of this team and I cannot envision us pulling this off without your continued participation.”* (Director, Business Strategy)
- *“Ted, the level of your commitment to help us succeed is astounding.”* (Director, Business Strategy)
- *“Thank you for your tireless efforts - continuously nudging the system in the right direction.”* (Director, Business Strategy)
- *“Ted, thanks again for your tireless support of the team and [the company].”* (Director, Business Strategy)
- *“It was really helpful, as usual, to have your insight and guidance during such tense times.”* (Director, Business Strategy)
- *“Your help in growing our understanding of the system and how to facilitate change is incredible for me. My head is in the game and I'm enthused. I don't think I ever thought we'd get to this day, this soon. I totally understand we have a long way to go, but still... It's impressive. I've mentally recommitted to this, knowing it will continue to be hard but that we can be agents of change. Thanks again. We couldn't do this without you.”* (Strategy Analyst)
- *“Ted, i would like to thank you again for all the time and effort you have invested in me. i hope you can see the immense impact it has had... and i'll always be grateful. i've had so many kind words from the team regarding my leadership and support and i know that wouldn't be possible without all that you have invested in me. With the deepest gratitude...’* (Strategy Analyst)
- *“I want to thank you for your leadership. You have always helped me to find my True North and have been the one leader who has never let us down.”* (Strategy Analyst)
- *“I am so grateful for your guidance and leadership and for supporting me in my toughest times.”* (Strategy Analyst)
- *“Thanks again for your guidance and leadership.”* (Strategy Analyst)

- *“Ted, I wanted to thank you for everything you have done for me and the team. You have had and continue to have a profound impact on my life and the way I see things – and I am grateful for that. Thank you again for continuing to help me personally. You are truly extraordinary and I am grateful to have the opportunity to work with you.”* (Strategy Analyst)
- *“You have this extraordinary ability to turn every situation, no matter how difficult, into an opportunity. You truly embody this notion of finding the potential in all things. It is a rare and beautiful thing to see.”* (Strategy Analyst)
- *“I want to say thank you. Thank you for your continued support as a part of our team. Thank you for always helping us become better leaders. I hope you know that we consider you part of the our family.”* (Strategy Analyst)
- *“Thank you for continuing to coach us in the learning process. Your contributions to the team are appreciated. Also, thank you for your commitment to us. I look forward to continued engagements.”* (Strategy Analyst)
- *“Thank you for the privilege to work and be a part of a team with you.”* (Strategy Analyst)
- *“Your work on enterprise architecture is right on!”* (Strategy Analyst)
- *“Your work /research has been inspirational, and I highly value both the substance/content as well as the way you approach to have meaningful dialog.”* (Strategy Analyst)
- *“This is a major change in our strategic direction. Your ingenuity, articulate presentation, teamwork, and patience have paid off after years of steady approach in sharing the enterprise architecture. Congratulations and thank you! Hope you'll be back here soon and we can discuss more in depth!”* (Strategy Analyst)
- *“It was a very thought-provoking session. Thanks for taking the time and look forward to further discussions.”* (Strategy Analyst)
- *“I attended your presentation at the Lean conference. My one word evaluation – ‘Brilliant.’ Thank you for your 100K ft level analysis!”* (Analyst)
- *“As always, you have stretched my thinking and I think have set the stage for our continued discussions. Ted, thanks for helping us to see clearer and for your passion on the subject. Its contagious!”* (Director, Strategic Initiatives)
- *“I found our discussion fascinating and feel your knowledge of [our company] incredibly valuable. I would like to keep a dialog open between us and work towards establishing opportunities for you to share your wisdom with us.”* (Director, Career Development)

**Custom Executive Education at *The University of Oxford***  
Executive Feedback

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*“We appreciate the thinking and originality of your research and the energy you bring to the world of executive learning. Thank you for the time that you spend with us, Ted.”*

Gay Haskins  
Dean, Executive Education  
*Saïd Business School*, University of Oxford

*“Ted’s lecture at our executive education programme went over splendidly.”*

Prof. Rafael Ramirez  
Professor of Management, *HEC School of Management*, Paris  
Fellow in Strategic Management, *Saïd Business School*, University of Oxford

- *“Subject matter was outstanding. I found the subject matter a key element of our mission success.”*
- *“Data was dynamite, great story for us to learn. Very knowledgeable presenter, he mentioned lots of things from Wharton.”*
- *“A fascinating insight into what may lie behind successful companies. It made me consider own business strategy & question our approach to short & long term gain.”*
- *“Astoundingly compelling thesis and seductively presented. Sampling this work in, say, another two or three years would be interesting to get a better view of ‘Redness’ and ‘Blueness’ and perhaps taking ‘Red’ attributes into a ‘Blue market’.”*
- *“Very thought provoking. Lots to think about and learn.”*
- *“Main points:*
  - *good ‘out-of-the-box’ analysis of underlying long term performance.*
  - *high energy impact.*
  - *knowledgeable of subject matter with good real world examples.”*
- *“Good connection to our company- very relevant and great discussion over dinner. Would like to do more with the rest of our company on the ‘Red – Blue’ debate.”*
- *“Ted’s material was excellent. The ‘Red vs. Blue’ contest is very relevant to our business environment.”*
- *“Provided a set of strong concepts that challenge the way things may be viewed. My thought is how in an established organisation can you achieve the ‘Red’ outcomes?”*

- *“Provocative: this tension of ‘Blue’ vs. ‘Red’ companies is worth further exploration. And is the best state being both?”*
- *“The red/blue concept is awesome and should continue as part of this course.”*
- *“We needed a whole day on this to get the benefit.”*
- *“Very interesting.”*
- *“Lots of information; extremely interesting. Good session, and overall enjoyment.”*
- *“Enjoyed the content and delivery.”*
- *“Wish we had more time on this.”*
- *“Very good although ‘very fast’ presentation. ‘Red vs. Blue’ comparison quite revealing. Needed quiet reflection to understand what had actually been presented.”*
- *“Very stimulating. Excellent content.”*
- *“Excellent material. Great value.”*
- *“Very interesting – need more time.”*
- *“Very thought provoking. Many lessons here.”*
- *“Very thought provoking analysis. Completely different perspective from anything I have seen before. It will be interesting to see how we evolve, knowing this data exists.”*
- *“Obviously extremely knowledgeable.”*
- *“Very interesting concepts, though provoking. I would have enjoyed spending more time on this and understanding the ‘integral’ business type further.”*
- *“Very provocative. Good energy. Very lively and engaging discussion.”*
- *“Good material which stimulated thought. Could have debated for hours!”*
- *“Super speed!!”*
- *“A little quick – needed to spend much more time on this. Red/Blue interesting concept – but requires more time.”*
- *“Massive amount of material.”*
- *“Outstanding!”*



- *“Ted was incredibly able to think at pace, however it needed more time and slower pace to review the outcome and the impact to [our company].”*
- *“Excellent model and concept which is very relevant to us.”*
- *“Excellent topic.”*
- *“I really enjoyed the fast paced, in-depth and interactive module.”*
- *“Unbelievable – real food for thought – we are blue. A high speed journey, could have spent all day.”*
- *“Content was excellent. I would have liked the session to be extended.”*
- *“Very interesting.”*
- *“Overall I found Ted’s session incredibly mentally stimulating; however, it may have been useful to dedicate more time to this session.”*
- *“Very eye-opening discussion with some useful links to what we do. Ted discussed his subject with passion!”*
- *“Ted has a massive knowledge on the subject.”*
- *“An eye-opener of a session! A longer session could have been beneficial.”*
- *“Great content and discussion.”*
- *“Very intriguing subject, rich in content and discussion and energetically put across!”*
- *“Very thought provoking.”*
- *“High velocity information transfer! Red and Blue meta-models will allow me to advance a critical debate within the business relating to entering a new market.”*
- *“Much learning and interesting subject matter.”*
- *“Thought-provoking.”*
- *“Very interesting, we could have spent longer on this topic.”*
- *“Fascinating stuff.”*
- *“Red/blue concept was illuminating.”*
- *“Very bright individual with a good story to tell.”*
- *“Very interesting proposition.”*

- *“Thought provoking presentation.”*
- *“Ted had some incredible information.”*
- *“The red/blue concept was good.”*
- *“Very good concepts.”*
- *“Very good material.”*
- *“The ‘blue’ and ‘red’ models were interesting.”*
- *“Worth hearing for longer.”*
- *“It really challenged us to think differently about what we are doing.”*
- *“A lot to take in!”*
- *“Top notch!”*
- *“Good message.”*
- *“Very compelling – opens up the aperture.”*
- *“Brilliant mind.”*
- *“Great content.”*
- *“Fascinating. Ted is always thinking. For me more time is required on this!”*

## ***Open Enrollment Executive Education at MIT*** Executive Feedback

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*“Congratulations on the excellent presentation you made. I’m so thankful that I was invited to attend your session. You could hear a pin drop...we were spellbound, hanging on every word. Listening to you was like being in the presence of a great ‘business prophet’. You will be known as a da Vinci of the 21st century. You have the ability to engage an audience around a very challenging and compelling subject, even inviting others to participate in the process of discovery and debate. Your sincerity, humility, and competence were so refreshing.”*

Dr. Rita Murray  
CEO, Performance Consulting Group, LLC

- *“Mr. Piepenbrock has a masterful understanding of a very complex business model and is able to present this information in an understandable manner.”*
- *“Ted Piepenbrock shared a wealth of information that inspired excellent questions, discussions and hopefully actions from all of us. I feel very privileged to have been in the company of respected members of the leading industries in the country. It was an affirmation to me that leaders of industries really do care, respect and seek out each other to exchange ideas and knowledge to work toward a common goal of succeeding.”*
- *“I was fortunate to attend your event. I was very impressed with the depth of information you shared. I have a burning desire in me to understand why there is such a difference from companies like Toyota, Airbus and Southwest to all the rest. Your presentation was very enlightening and inspiring; and presented with such passion that I feel very privileged to have been able to partake in this type of forum. Thank you for sharing your years of experience and knowledge gathering.”*
- *“Very well done and researched. Ted has a high level of energy and was very engaging.”*
- *“Excellent content. Thought provoking. Immediately started dissecting my own company based on these values and criteria.”*
- *“Nice job, Ted! Clearly knowledgeable and passionate on the subject.”*
- *“Wonderful work. The delivery was exceptional.”*
- *“This is my first experience with MIT and I thoroughly enjoyed it. I would welcome the opportunity to partake in future events.”*
- *“I enjoyed the day very much. Ted is an outstanding speaker!”*

- *“So much info. - so little time! Interesting, interesting, interesting stuff!”*
- *“Love the concepts.”*
- *“Good data.”*
- *“Very good material being shared – fact based.”*
- *“Very good session. I learned a lot of strategy for future opportunity.”*
- *“Presenter was nimble and able to bring up slides to support the emerging conversation.”*
- *“Would look to schedule a presentation of this material for Senior Leadership.”*
- *“The content was informative and was a positive learning experience, somewhat different than what was expected.”*
- *“First time I have seen this concept.”*

## Graduate Teaching at MIT Faculty & Student Feedback

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*“This is either the work of a madman or a genius –  
and at this point, I am inclined to think that it is the latter.”*

Dr. Michael Hammer  
Author: *Reengineering the Corporation*  
*Time Magazine’s “25 most influential individuals”*  
Professor, MIT; Associate Fellow, University of Oxford, *Saïd Business School*

- *“Things went GREAT with Ted today! Where can I start???? I have been blown away with Ted’s class today. It was meant to stop at 4 but it went on up until 6.30pm with at least 10 hardcore listeners until the end. I have been blown away. A really good presentation.. and it was nice to see how his research has evolved in two years.”*
- *“I think the speaker series is a great addition to the content of the course. This was especially the case with Michael Hammer and Ted Piepenbrock’s talk.”*
- *“Other concepts I found particularly interesting were Hammer’s Process Enterprise and Piepenbrock’s Modular versus Integrative.”*
- *“Ted Piepenbrock’s lectures on integrated and modular enterprises helped me build on the principles that Prof. Charles Fine introduced in his book, Clockspeed.”*
- *“One speaker that I found particularly interesting was Ted Piepenbrock. I found that he gave a fresh perspective on different types of enterprises.”*
- *“I also thought that Ted Piepenbrock’s presentation was a fascinating study in modular versus integral enterprises and how that underlying structure of the enterprises slates it for making or taking the market. Though I am taking a strategy course this semester at the Sloan School, Ted’s spin on strategy was thought provoking and challenging to the simple frameworks that we use on the Strategy course. I realized that in many of my courses at Sloan, we do not take into account all aspects of the enterprise but instead focus on various sections. Ted’s research opened me to the idea of how organizations may be forced to significantly reinvent or die due to the company architectures and the state of the industry. It is tempting to continuously improve when a serious re-architecture is needed as Ted Piepenbrock pointed out.”*
- *“To understand architecture and its impact one needs to understand the political and cultural dimensions of leadership and architecting, as Ted Piepenbrock described. And to facilitate a process of reflection and organizational development, one must be able to diagnose the larger structural forces generating interpersonal challenges, as well as contribute intelligently to visioning and rearchitecting conversations. Within academia, the process orientation has fallen by the wayside with the conclusion of Argyris, Schon, and Schein’s academic careers, and the structural orientation is resurgent. The class,*

*with the possible exception of Ted Piepenbrock's presentations, swung too far in this structural direction."*

- *"With Ted Piepenbrock's research/executive education efforts at [Fortune 100 company], the audience is the Board of Directors, who are trying to make architectural decisions about their enterprise. Ted's role is not to be an outside architect; rather he is operating as a kind of facilitator in the board's own thinking about its architecture. He does, however, carry out his own research in the firm – this gives him credibility with that audience and helps him elucidate the key choices and consequences facing them in their architecting (i.e., modular versus integral enterprise). It is, I would argue, more sophisticated in its understanding of enterprises as enacted systems and enterprise architecture as a practice that requires embedding. This isn't to say that implementation will be successful – Ted himself thinks it will be near impossible for a modular enterprise to become integral. But he is putting the possibility of implementation at the center by locating architects and audience in the same, very powerful people and using himself and his expertise as provocation and facilitator."*
- *"I attended your lecture on Boeing and Airbus I and found your presentation fascinating. This is a fascinating topic for me and it will be great to become more educated in the concepts."*
- *"I find your research on Red and Blue companies fascinating."*
- *"You have done an outstanding job at the symposium, since I've heard several people mention your work."*

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