

# Agency and Information Costs in the Intra-Firm Diffusion of Practice

by

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Submitted to the Dean of Graduate Studies  
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DOCTOR OF PHILOSOPHY IN TECHNOLOGY MANAGEMENT & POLICY

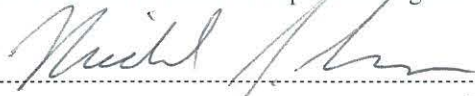
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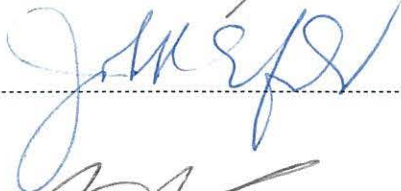
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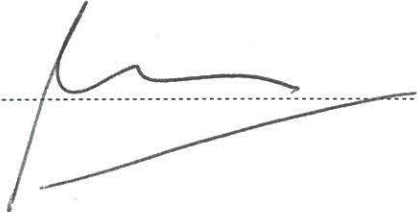
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## Abstract

The capacity to diffuse valuable practices and technologies within an organization is of great importance to the competitive success of firms. In this dissertation, I explore barriers to internal diffusion and how managers may overcome these barriers. Two primary impediments to intra-firm diffusion may be discerned from the literature: (1) a set of agency-based factors that influence the motivation of organizational actors to transfer and adopt innovations, and (2) a set of information-based factors that influence the degree to which two willing organizational agents can communicate effectively.

In this dissertation, I identify how managers design management structures in response to these barriers. I propose that expectations play an important role in determining intra-firm diffusion. Agents fail to adopt practices not only because they act with guile or because it is too costly to do so, but also because they do not accurately perceive the value of the practice. In the presence of such heterogeneous expectations, managers may choose to provide information that reveals the value of the new practice and consequently lowers internal resistance.

To explore which mechanisms are most efficient under various conditions, I develop a mathematical model of the relationship between managerial action and the adoption of practices among organizational sub-units. To test theory related to the model, I study the internal diffusion of Design for Environment practice across facilities in the information and communications technologies industry. Longitudinal data are collected for both the corporate level and the establishment level.

Through two separate analyses, I find that managers do in fact encourage diffusion and that their actions impact adoption. More specifically, I find that firms who engage in complementary knowledge generating activities such as corporate R&D are more likely to pursue an information strategy as opposed to a compensation strategy. In addition, small resource-constrained firms are found to favor an information strategy suggesting that information may represent a low-cost way to encourage adoption in the presence of heterogeneous expectations. Further, I find evidence that providing information may be a powerful strategy and, at least in the phenomena studied, more effective than compensatory measures for solving the heterogeneous expectations problem.

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