Accessibility and Usability

IS&T

Customer Support

Accessibility & Usability Group

Mary Ziegler, IT Manager

Accessibility and Usability Areas and Staff

Mary Ziegler, Manager

ATIC – Assistive Technology Information Center, Bldg 7-143

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Accessibility – Bldg N42-240* and 7-143

Stephani Roberts, Rich Caloggero

Usability – Bldg N42-240*, including Usability Lab in Bldg N42-237

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*Moving to E19 in June

Accessibility and Usability
Why Engage us?

Accessibility – ensure all users can access Web sites and applications

- Supports MIT mission to promote a diverse and inclusive community
- Avoids expensive complaints or workarounds

Usability – ensure usable Web sites and applications

- Assist with research and evaluation throughout any and/or all parts of the project life cycle
- Makes IT easier, increases productivity and user satisfaction

Accessibility and Usability
How We Engage

- Consultant Role
  - Strive to understand the full scope of the project
  - Come into project at different points and times
  - Coordinate accessibility and usability needs
  - Make recommendations to support user goals
- Our services are free
- Work with the entire MIT community
- Prioritize community-wide and IS&T projects

Accessibility and Usability
When to Engage Us

- Early engagement saves time and effort – and allows us to schedule and plan better
- We work with you to select appropriate methods and services
- We strive to schedule our services within your timeline

ATIC (Assistive Technology) Services

ATIC helps MIT students and staff with disabilities or temporary injuries select and use assistive technologies such as:

- Screen reading (translates visuals into audio output)
- Speech recognition (speech to text)

- Keyboards and Pointing Devices
- Scanning and Reading (text to speech)
- Magnification Software

Accessibility Services

Research

Analyze code and software solutions for the most accessible outcome given a particular scenario.

Design Reviews

Evaluate visual surface elements: color choices, contrast, font sizes, text handling, consistency and clarity in navigation and labels.

Code Reviews

Evaluate and test code and structure with

- tools, assistive technology: screen readers, voice recognition
- other platforms: mobile, tablets, etc.

Accessibility Services

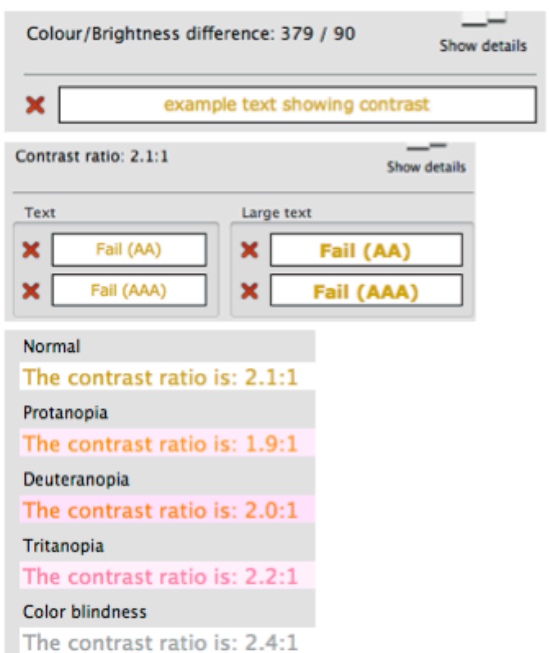
Information Services & Technology

Part I - The Visual Review

2. Low contrast text

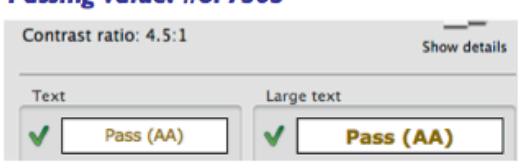
The yellow text on white in the navigation is low contrast and fails all three contrast tests. Consider using #8F7303, shown below right, it passes all tests.

Failed tests for contrast:



Download the Paciello Group's contrast analysis tool to text

Passing value: #8F7303



Accessibility Services

Information Services & Technology

Part I - The Visual Review

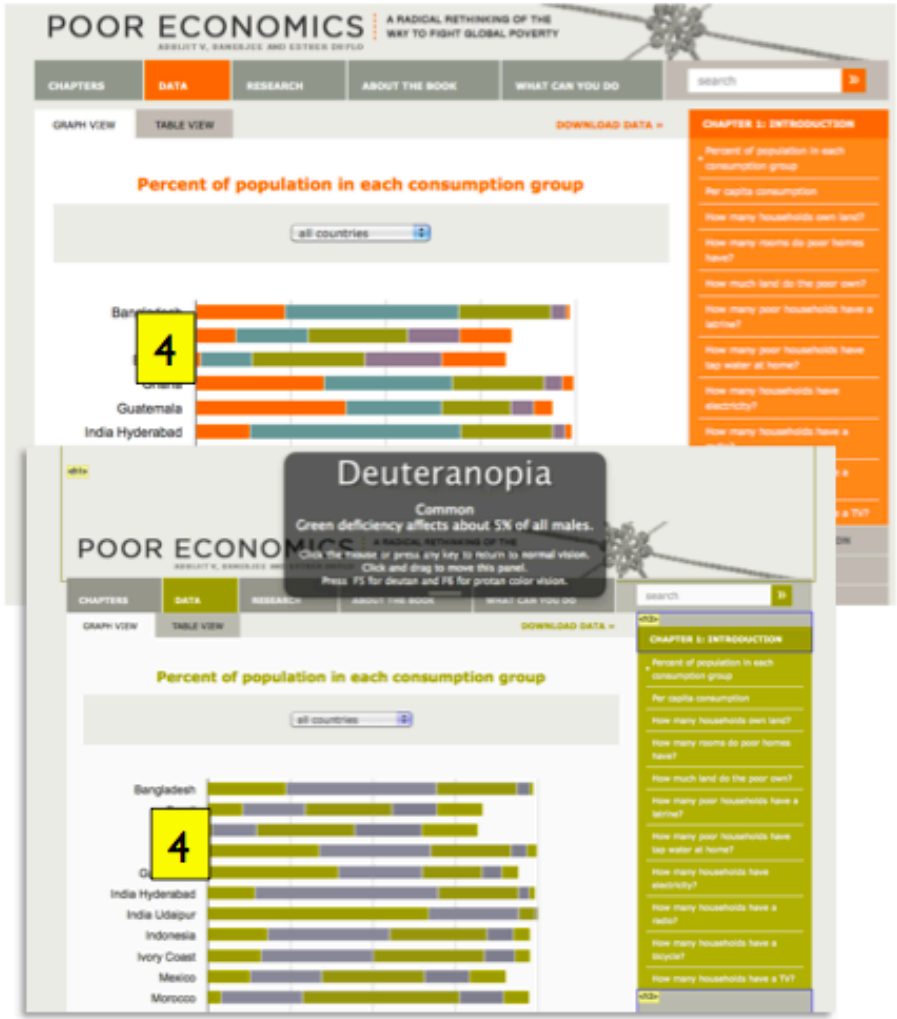
4. Color combinations difficult for color blind users

The adjacent colors are fine for users without any form of color blindness but for the 5%+ that have it these graphs are less meaningful. The simulation shown here "Deuteranopia" illustrates how similar some of the color bars appear to a person with traditional red/green color blindness. The color key you use to explain these color differences will not be helpful for this group of users.

We recommend Color Brewer, it's used for maps but it can help you choose colors that do not appear the same to a color blind user. Try this page to find colors that work well together (you'll need the Flash plugin):
http://www.personal.psu.edu/cab38/ColorBrewer/ColorBrewer.html

Color examples: standard vs red green color blind

On the left is a sample of the 5 diverging colors that should not appear the same for red green color blind users. On the right is what these same colors look like in a red green color blind simulation. (Created by ColorBrewer.)



Accessibility Services

Information Services & Technology

Part 2 – The Screen reader Review

14. Homepage animation too fast

http://www.pooreconomics.com/

I'd suggest either:

1. lowering refresh rate to between ten and fifteen seconds

2. provide a way to turn it off

In fact, maybe a link / button available to screen reader users only which says "Animation on this page may slow down your screen reader; click here to turn it off", or some such.

Hide the control from view with CSS:

```
.screenReaderOnly {

position: absolute;

overflow: hidden;

clip: rect(1px 1px 1px 1px);

clip: rect(1px, 1px, 1px, 1px);

}
```

Another approach might be to move the slideshow container to the end of the DOM. The issue for me is that I can stumble upon the slideshow content, and read it, but not know it is automatically updating. Next time I read the page in the same spot is has changed, which might cause me to assume I'm not where I thought I was on the page.

It might also be useful to use ARIA liveregion markup to cause the screen reader to speak the slideshow as it changes, but this may also prove extremely annoying, and should be accompanied by a button to disable the live region.

Accessibility Services

Information Services & Technology

Part 2 – The Screen reader Review

18. Data: add headings

* Use th cells for table headers

Introduce the page content with a heading. Use CSS to hide from view if it should not show on-screen:

- h2: Data for chapter 2
or some such...

It should be placed just before the controls to set the view to graph / table.

Also add these headings:
- h3: Data Sources:
- h3: Methodology:
- h2: CHAPTER 2

19. Data: Reorganize the DOM

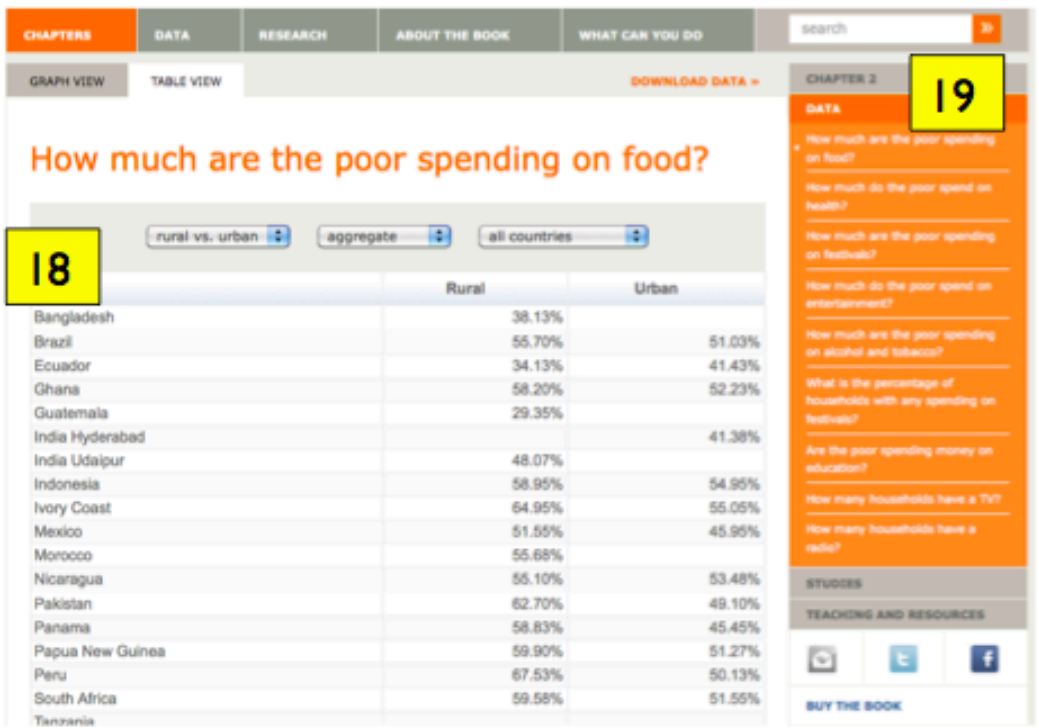
When one clicks "data" or "studies" links from a chapter's page, the DOM is organized as follows:

- h1 (book title)
- main nav list (chapters, data, research, etc)
- searchbox and search button
- main content
- chapter title
- list of subsections for that chapter (data, studies, teaching and resources)

I suggest reordering the DOM so that the chapter title and list of sections always follows the search area, and always begins with a heading:

```
<h2> chapter 2</h2>
<ul>
<li>Data</li>
<li>Teaching and Resources</li>
</ul>
```

follow this with a heading wrapping the currently showing section:



Usability Services

Usability Basics

- Concept existed forever – how users can most easily learn and use a product to achieve their goals in the most quick and efficient way
- The field has grown tremendously the last twenty years
- Field is continuing to evolve, especially with new methods and within many professions
- Our group is known for usability testing, but we do much more!

Research & Evaluation: Our Core Strengths

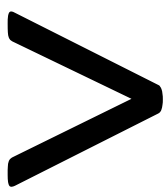
Usability Services

Research: Understanding User Needs & Goals

Early research saves time and resources as issues are uncovered earlier and fewer issues to fix later

Common Methods:

- User Interviews
- User Surveys
- User Observations
- Competitive Analysis
- Focus Groups



Helps Answer these Questions:

- Assists creating business requirements and functional specifications
- Helps understand user's real workflow, workarounds, and 'pain points'
- Helps with creation of user profiles, personas, and prototypes

Usability Services

Evaluation: Reviewing & Analyzing Products

Reviewing and testing projects help uncover user issues with project

Common Methods:

- Usability Testing
- Reviews
  (Expert & Heuristic)

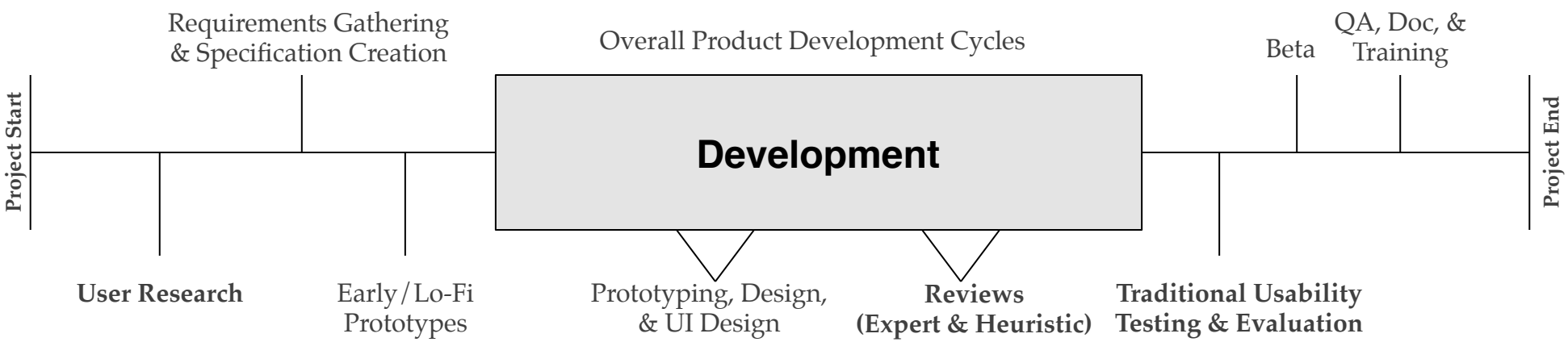
>

Helps Answer these Questions:

- Uncover issues found by real users
- Understand user 'pain points'
- Earlier issues are found – quicker and cheaper to fix in the process
- Reviews uncover issues that might not be found until testing or release
- Improves the product overall

Accessibility & Usability Team

Ideal Development Timeline

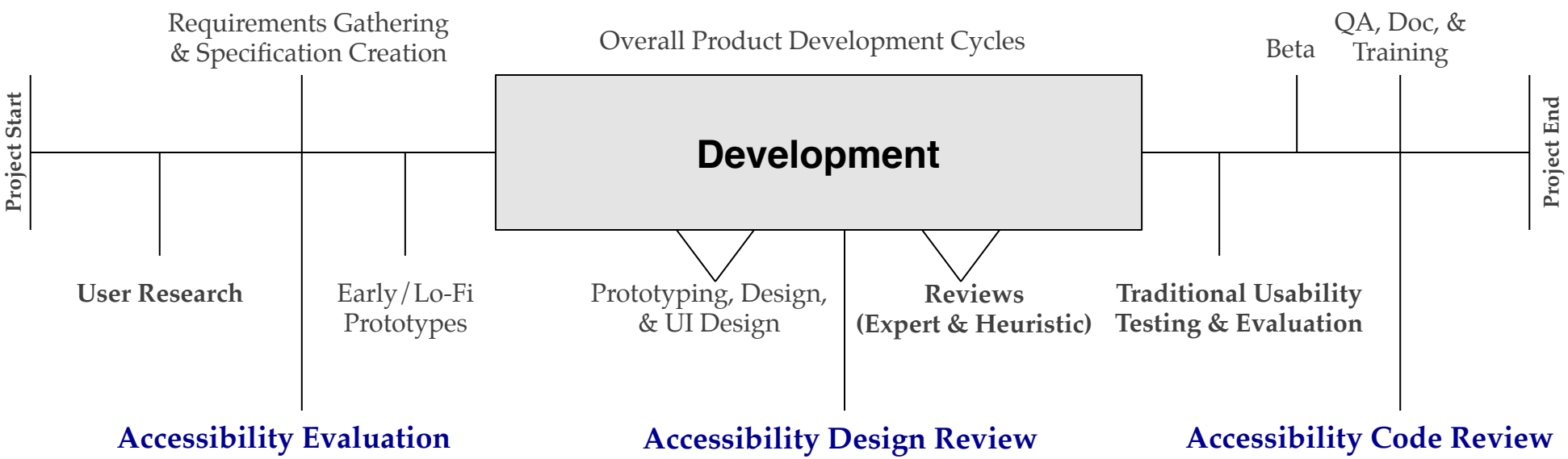


Ideal Usability Timeline

These methods can be used at different points in the development process, but this is the most traditional (and efficient) time to use this framework.

Accessibility & Usability Team

Ideal Development Timeline



Ideal Usability Timeline

These methods can be used at different points in the development process, but this is the most traditional (and efficient) time to use this framework.

Project Examples

Accessibility

- Open CourseWare (OCW)
- Poor Economics*
- MIT 150
- Blossoms*
- Raising Teens*

Usability

- Open Courseware (OCW)
- Blossoms*
- Star Bio-Chem
- AARA*
- Online Registration*

Accessibility and Usability
Contact us

Contact us for additional information/requests:

Accessibility — accessibility@mit.edu

Usability — usability@mit.edu

Accessibility and Usability

Questions?