Bells, Whistles, and Alarms: HCI Lessons Using AJAX for a Page-turning Web Application

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Outline

- CHI and the case study
- METS Navigator background
- Usability issues
- Accessibility issues
- What to do?
- CHI Madness
CHI and the Case Study

• CHI (Computer Human Interaction) part of ACM (Association of Computing Machinery)
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CHI and the Case Study

- Case study offered opportunity to share experience
- AJAX and usability/accessibility problems
- aka, let me tell you about my FAIL
- CHI said OK, I said holy cow!
- <20 minutes to talk at CHI
A Bit About METS Navigator

- Page-turning web application
- Uses METS to navigate structure of multi-part digital objects
- Started in 2004
- Each click refreshed browser page
- Separate web app used by many collections but only available via DLP
General Suggestions of Subjects Which Might Be Included in Alumni Talks

1. Introduction -- happy to be with you.

2. Feel that I am here to give you a report on your state university.
   (a) The University's customers are, after all, the entire population of the state, with particular reference to its present students, and its alumni, and it is supported by the taxpayers. There are among you representatives of all three of these groups. Therefore you should expect a report.

3. However, I am really here to obtain ideas from you, to take back to the University.

Here is where the alumni come in with their great contribution. Notwithstanding Robert Raymond Hutchins and others who by their words try to put the alumni in the "doghouse" (Feb. Indiana Alumni Magazine, last page editorial), I definitely feel that they are a vital and important force and should be made even more so.
   (a) Inviting alumni to write in, etc.

(Page 77, Silver Anniversary number of the American Alumni Council publications)
METS Navigator and AJAX

• Serve content anyone can use
• Within document and across collection browsing
• Search text of digitized items
• New version uses AJAX library
  – User Interface (UI) components
A Bit About AJAX

• Asynchronous JavaScript and XML (AJAX)
• Allows calls to web server to reload portions of web page without requiring entire page refresh
• Lots of AJAX libraries/toolkits out there
  – User Interface (UI) components found here
METS Navigator – AJAX version
AJAX: Known Issues

- Bookmarks
- Back button
- Search engines
AJAX: Surprise Issues

• Customizing HTML/CSS
• Accessibility
• Mobile Devices
Customizing HTML/CSS

- Can’t “view source”
- Tools like Firebug will show dynamic HTML, but can’t validate
- Dynamic HTML produced via “minified” JavaScript files (not meant for editing)
- Dynamic HTML complicated by UI combos from AJAX library (not semantic)
- Inline styles - Incomplete separation of content from style
Customizing HTML/CSS: What to do?

- Use the AJAX library to customize
- Contribute to library if you can (we haven’t been able to, but boy would I like to!)
Accessibility

- Screen reader users cannot access page-turner content or controls
- Tree menu and search are minimally accessible
- Keyboard users can’t find their way through columns and tabs or the search results
METS Navigator – AJAX version

Indoor Indiana. [Indianapolis, IN: Indiana Dept. of Natural Resources], February 1934.

Outdoor Indiana. [Indianapolis, IN: Indiana Dept. of Natural Resources], February 1934.
Props to ATAC
http://www.indiana.edu/~iuadapts/services/web-accessibility/
Accessibility:
What to do?

• Enhance keyboard access with :focus style on links and buttons
• AJAX library offers key mapping
• Watch for/Ask for improvements in future releases of AJAX library
Mobile Devices

• METS Navigator on iPhone
  (this is my sad face 😞)
Mobile Devices: What to do?

• Not sure yet
  – Use media queries to change banner and footer areas via stylesheet (css)
  – Change size of controls/layout of page-turner components using stylesheet
    • Remind me to tell why this is !important
  – Develop separate interface for mobile devices
Current METS Navigator Work

• Embedded page-turner (Finding Aids)
  – Continuing with current AJAX library
  – Content currently shown in METS Navigator is only page images (.tiff, .jpg, .gif)
    • Limited accessibility
Future METS Navigator Work

• Want to expand capabilities to show other kinds of content (full text, audio, video)
• Full text will require major overhaul to create a fully accessible page-turning web app
  – Either contribute to current AJAX library or consider rewriting using different AJAX library
Questions? Comments!
Kittens >^..^<

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CHI Madness

• 20 seconds to hock my talk
• Can I practice on you? OK, thanks!