uPortal Accessibility

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Introduction

The purpose of this document is to frame the issue of providing accessibility in uPortal. It is not an exhaustive study of the area but rather an overview of the key issues and references that can help direct our efforts.

Types of Disabilities

The following disabilities are typically referenced in regard to Web accessibility
(http://eserver.org/courses/w01/tc510/edgar/Colin/access5.htm):

- Visual Impairments
    - Blindness
    - Color-blindness
    - Far-sighted or Near-sighted
    - Tunnel Vision
- Mobility Impairments
    - Broken arm
    - Paraplegic or Quadraplegic
    - Weak muscles
- Hearing Impairments
    - Deafness
    - Selective hearing (low sounds vs high sounds)
- Cognitive and Language Impairments
    - Dyslexia
    - concentration problems
    - difficulties with memory or sensory perception
- Seizure Disorders

While this list is daunting, many of these impairments can be accommodated through the browser or will an issue for the channel writer, not the framework writer:

1. Color is only an issue if it used as the only way to classify information.
2. Relative font sizes in CSS allow the user to adjust the font size through the browser.
3. Mobility impairments can be accommodated by providing keyboard equivalents for mouse movements.
4. Hearing impairments are only an issue if the channel delivers audio. It will have to be the channel writer's responsibility to supply the accompanying text.
5. Seizure disorders can be accommodated by avoiding flashing.

Blindness and cognitive disorders can best be addressed through a special profile. Blindness can be accommodated by generating a version of the portal that is optimized

for screen reader navigation, although there is a debate about whether one page should meet all needs. Cognitive impairments can be accommodated by reducing the information available at any one time.

It seems that a screen reader profile would meet most accessibility needs, especially if it generated a simplified output that was also useful for users with cognitive disabilities. For example, one version might generate a menu of tabs. Selecting the tab would list a menu of channels in the tab. Selecting a channel would display the channel content. This type of organization speeds navigation for the blind user and reduces cognitive load. It is intriguing that PDA output may have similar requirements although the markup language may be different. There may be some synergy in developing the profiles in parallel.

Accessibility Guidelines

All the documents I read about web accessibility ultimately referred to http://www.w3.org/WAI/. Even the government Section 508 standards (http://webaim.org/standards/508/checklist) refer to WAI and are really a subset WAI. If we focus on meeting Conformance Level AAA of WAI, we will have met the most stringent requirements.

Many of the WAI requirements have to do with HTML markup: completing alt tags, using headings when "real" tables are displayed, etc. Many of the requirements can be met by avoiding certain constructs like using tables for positioning, flashing text, graphics in place of text, Javascript navigation, applets and Flash, etc. We should able to boil down all the guidelines by a selective use of markup.

There are many good checklists and suggestions available:
- http://www.w3.org/TR/WCAG10/full-checklist.html
- http://webaim.org/standards/508/checklist
- http://www.nfb.org/tech/webacc.htm

In addition, I can write a Channel Writers Guide to Accessibility to summarize ways to develop a stylesheet that generates accessible content (once we figure out what that is!).

Conclusion

We should be able to meet the accessibility guidelines by developing a screen reader profile and selectively choosing the markup to be generated. I will try to get in touch with some experts on screen reader technology to see what tips they have about optimally using this technology. However, I am also open and interested in other approaches like VoiceXML. Providing accessibility for uPortal appears to be a tractable problem and something definitely worth pursuing.