

Web Accessibility and the Older Population

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ABSTRACT

This paper introduces the “Web Accessibility Initiative: Ageing Education and Harmonisation” (WAI-AGE) project, a W3C Web Accessibility Initiative (WAI) project funded by the European Commission under its 6th Framework Programme (FP6) of the Information Society Technologies (IST). It briefly discusses some of the findings from the first stage of the project – a comprehensive review of the literature relating to this topic. It concludes with a discussion of some of the ways we intend to promote the needs of the older user to the Web development community.

Categories and Subject Descriptors

K.4.2 [Social Issues]: *Handicapped persons/special needs*

General Terms

Your general terms must be any of the following 16 designated terms: Design, Human Factors, Standardization.

Keywords

Ageing, elderly, accessibility, world wide web, WAI.

1. INTRODUCTION

The World Wide Web (Web) was invented in 1989 and by the turn of the century the Web had entered most aspects of our lives from communication to e-Government, e-Commerce and e-Learning, making it much more than just an information repository. By 2008, in addition to online services (banking, taxation, shopping, etc), we also saw the advent of web-based applications such as calendars, office-type applications, forums, chat, blogs, photo and video sharing, virtual communities, etc.

At the same time we are seeing an unparalleled growth in number of people soon to be elderly as compared with any other period in human history. The United Nations (UN) estimates that by 2050 one out of every five people will be over 60 years – in some countries the proportion will be much higher than this. And with increasing age, we often find an accompanying increase in functional and cognitive impairment.

Internationally, through the World Wide Web Consortium (W3C), there has been extensive development of guidelines for accessibility of the Web for people with disabilities. However, while these guidelines address many requirements needed by the ageing population, the relevance of these guidelines to the needs of the ageing population is not well understood by many

organizations representing and/or serving the needs of the ageing community nor by technology developers. There is a need to better understand the relationship and overlap of the requirements, and to develop educational resources to help developers provide Web sites that work better for people who experience changes in abilities due to ageing.

2. WAI-AGE PROJECT OBJECTIVES

The WAI-AGE project [1] has the goal of increasing accessibility of the Web for the ageing community, by researching and informing on the common needs for people with disabilities. It includes activities to:

- better understand the needs of the ageing community in the context of existing Web accessibility guidelines
- work with the ageing community to obtain more direct input and contribution into the development of solutions and strategies for Web accessibility
- revise existing and develop new educational materials to better reflect the accessibility needs of the ageing community on the Web
- pursue standards harmonisation and coordination to promote the adoption and implementation of a common set of Web accessibility guidelines

A significant early part of this work includes researching existing literature with regard to information technology access for the ageing community, and comparing the overlap with solutions provided by the W3C WAI.

Beyond analyzing these technical specifications, the educational resources developed by WAI will also be reviewed to determine overlapping needs. This includes resources to introduce the topic of Web accessibility, to introduce the guidelines, and to help manage or evaluate the accessibility of Web sites. The aim of this analysis is to provide input into the development of updated or new materials and resources that better explain the development of Web sites for people with disabilities and the ageing community to industry and users.

3. FINDINGS FROM THE LITERATURE REVIEW

The literature review [2] has identified a number of commonalities across much of the literature that has been collected and reviewed. Surprisingly, while some of the studies reviewed referenced the Guidelines from the W3C Web Accessibility Initiative or other resources on accessibility of the Web for people with disabilities, many seem to have been undertaken without awareness of this work. This observation is inline with the core assumption of the project that more education and outreach is needed to better communicate the relevance of Web accessibility guidelines for people with ageing related functional limitations.

Many of the studies identify the impairments that develop with age such as vision, dexterity, and hearing as important accessibility issues, while others identify the issue of cognitive overload as key to some older people’s ability to use Web

technologies. A compounding issue is that people with accessibility needs due to ageing are less likely to identify themselves as “disabled” compared with people who experience these changes earlier in life. As a result, they are less likely to learn of and to avail themselves of resources which can help address their needs. It is also important to note that some people may acquire more than a single impairment, and that a typical characteristic of these impairments is that they are progressive. Additionally, it would seem that their carers and those who may support them to get online, also do not identify them as ‘disabled’ and hence do not seem to look for adaptive strategies or assistive technologies as enablers for online access.

One important finding is the inter-relationship between the issues of technical and non-technical accessibility and the overlap with general usability when addressing issues for older users with functional impairments. As older people often experience multiple impairments that develop incrementally with age, and can develop simultaneously, it becomes even more important to avoid assumptions of single-disability issues. For example, is confusion with a Web site caused by inexperience with ICT and the Web, a lack of hand-eye coordination exacerbated by arthritis, or the onset of mild cognitive impairment? Another finding is that there are a multitude of interacting barriers to older people getting online, ranging from access and social issues to comprehension and understanding, and including the wide range of accessibility and usability issues.

Existing guidelines for accommodating the needs of older users on the Web were reviewed as part of the literature review. Commonly cited aspects of accessibility in support of access by older Web users include:

- Clear presentation and writing
- Clarity of navigational elements and links
- Avoidance and correction of form errors
- Colour and contrast
- Link and heading clarity
- Augmentation with images

Many guidelines for older Web users also contain recommendations regarding readable fonts and text size & alignment, design and layout, and other general usability issues.

4. PROMOTING OLDER USERS NEEDS

The intended outcomes from this project are increased awareness of the needs of older Web users and better inclusion of their needs in Web design and development. To this end we are planning a number of outreach resources that will incorporate or address the findings from the literature review. These outreach documents will target the Web development industry, but also empower end-users and their representatives through an awareness of the existence of solutions addressing the needs of older users.

Our plans include the revision of existing, and the development of new, technical and educational resources to better reflect the requirements of people with accessibility needs due to ageing. These resources will discuss the overlapping needs of older users with functional impairments due to ageing with needs of people with disabilities and look for synergies in promoting the needs of both groups. These resources will then be used to promote awareness of the need for Web accessibility for older people; the resources and technical solutions available; and the business case for implementing accessibility solutions that support the requirements of the ageing market.

Many of the studies reviewed emphasised the needs to involve older users more in the design process. In keeping with the theme of this Workshop, we are considering as part of the outreach materials, resources that might describe how to engage older users in the processes of Web design and development and/or in the Web accessibility evaluation process.

Many of the studies we have reviewed also emphasized the importance of usability for older users, often without differentiating between accessibility and usability. Good usability is also vitally important for people with disabilities. An accessibility-usability resource that explores the gray areas and emphasizes the importance of usability for both groups may be appropriate and allow us to highlight some aspects of usability that are particularly important for the older user.

A significant number of the recommendations to accommodate older users’ needs are addressed by the techniques being published with WCAG 2.0 [3]. Thus, we are also considering a resource that would describe how to use existing Web accessibility guidelines to create Web sites and Web applications more suitable for older users. It could highlight the relationship between the accessibility needs of older users and the needs of people with disabilities, and guide readers to more in-depth resources such as the various WAI Guidelines [4], especially those for Web Content [5].

In addition to outreach documents targeted at the Web development community, a number of documents targeting older Web users themselves, or organizations working with older users, are planned. For example, it was observed that very few studies reporting on training older people to use the Web used adaptive strategies or assistive technologies to make the browser or Web site easier to use. One of the outreach resources we might consider for older users and trainers of older users could be a descriptive database of alternative browsers and assistive technologies that can be used by older adults with functional limitations, or by people with disabilities. An accompanying document that describes the process for modifying the browser environment to be more accommodating of the needs of older users may also be relevant for users who don’t yet need any assistive technologies. This resource could also explore a path from minor browser changes to the adoption of more traditional assistive technology solutions.

5. CONCLUSION

We hope to learn from participants at this workshop about how they consider and include older people in the design process for computer interaction, and from older people themselves about how they would like to be included. This workshop will inform our own documents that we hope will encourage more consideration of the needs of older adults in Web page design and Web application development.

6. REFERENCES

- [1] <http://www.w3.org/WAI/WAI-AGE/>
- [2] Arch, A. *Web Accessibility for Older Users: A Literature Review. W3C Working Draft*. 2008. <http://www.w3.org/TR/wai-age-literature/>
- [3] <http://www.w3.org/WAI/WCAG20/quickref/>
- [4] Henry S.L. (Ed) *Essential Components of Web Accessibility, W3C*. <http://www.w3.org/WAI/intro/components.php>
- [5] <http://www.w3.org/WAI/intro/wcag20>