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Pre-print: Brunschwyler, C. & Kuber, R., 2012. Determining the Accessibility of Social Networking Sites. In proceedings of the Grace Hopper Celebration of Computing Conference, Baltimore,USA.

2012 Grace Hopper Celebration of Women in Computing: "Are we there yet?"

Determining the Accessibility of Social Networking Websites

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Problem and Motivation

Social networking web sites have achieved phenomenal growth within a short period of time. While many of us have accounts to maintain contact with friends and family, social networking sites are also used for purposes of work and education. While the benefits and constraints of these sites, along with their effect on society and technology, have been clearly identified by sociologists, one issue yet to be resolved relates to the accessibility of these interfaces [1,2,4]. Research suggests that individuals who are blind specifically encounter difficulties accessing social networking sites using text-to-speech synthesizers, impacting tasks which are taken for granted by their sighted counterparts. According to [2], the challenges can be attributed to inappropriate use of HTML or scripting code and changes in presentation of content or information structure, which can cause confusion to users. We have conducted a data gathering study to identify the day-to-day challenges experienced when accessing social networking sites, with the aim of working towards the development of design guidelines to aid interface designers who are aiming to develop inclusive social networking interfaces.

Background and Related Work

Recommendations such as the WCAG 2.0 [3] have been developed to aid interface designers to develop web sites (including social networking sites), which are accessible to users of diverse abilities. However, research indicates that these guidelines are not always adhered to [2]. Aesthetics are often prioritized over usability and accessibility, which can impact the subjective user experience for individuals with disabilities. Studies have shown that blind users have identified workarounds to access social networking sites. Mobile versions of sites are accessed via PCs [4], as these interfaces are less cluttered, and therefore easier to navigate using a screen reader. However, inconsistencies have been identified between both mobile and desktop sites [4], which can cause frustration among screen reader users. A need has been identified to determine the challenges faced by blind screen reader users, with a view to bridging the disability divide when accessing social networking sites.

Approach and Results

A pilot study was conducted with twelve blind screen reader users (aged 24-67), recruited from a range of forums. All twelve had accounts with social networking sites. Telephone interviews were conducted, where participants were presented with a range of semi-structured and open-ended questions, relating to social networking patterns, difficulties faced when performing online tasks, followed by a discussion on future improvements for both desktop and mobile versions of social networking web sites.

While all twelve participants were able to interact with social networking sites, the majority were able to agree that accessibility issues were easy to find, but difficult to overcome using their existing assistive technologies. MySpace[1] was found to be the least popular of social networking sites by five participants, due to the number of unlabeled graphics, and variations in layout between user profiles, which caused confusion when navigating through content. The process of targeting items of interest could be time-consuming, due to the cluttered nature of information present on the site. In contrast, specific features from Facebook[2] were praised by eight participants. For example, it's compatibility with third-party programs, such as an external chat services (e.g. AOL[3]), allowing for a simpler method of maintaining real-time communication than the chat experience offered

[1] MySpace – http://www.myspace.com
[2] Facebook – http://www.facebook.com
[3] AOL – http://www.aol.com

through Facebook itself. Conversely, applications such as games could be challenging to access, due the graphically-oriented method of presentation. It seemed apparent that screen reader users would like to access these games, to interact more with their geographically-distributed peers. Two participants attempted to play games such as Farmville[4], with the assistance of sighted friends describing the graphical objects on the interface.

Four participants suggested that the greatest hurdle encountered, related to the process of signing-up with social networking sites, due to difficulties resolving visual CAPTCHAs. While auditory equivalents exist, speech content within these alternative versions, was found to be difficult to understand. This often resulted in individuals attempting the task more than once, and if unsuccessful, asking sighted peers for assistance to resolve the original visual CAPTCHA. Participants expressed a strong need to perform tasks independently from sighted users. Similar challenges were identified when searching through contacts listed on social networking sites such as Facebook. To identify the contact, sighted users often examine a photograph presented alongside the contact name. However, for blind users, the process of identification is more complex, as the photographs are inaccessible. As dynamic updates to content are difficult to detect using a screen reader, anxiety was detected among participants that key information would be missed, or errors would be made. A need was identified for more positional feedback of objects on the interface.

Five participants expressed difficulties determining the role of each individual security setting on sites, such as Facebook, due to the inappropriate labeling of functions. It was also difficult for these participants to gauge using a screen reader, whether information posted on profiles, could be accessed by unauthorized parties, even when levels of security were heightened. As a result, these participants suggested that they would not post information, to reduce the likelihood of putting themselves in a position of risk. Findings from our interviews revealed that greater measures should be taken to enable screen reader users to identify whether content is restricted among contacts, or whether it is publically available.

Contributions and Future Work

The findings from our pilot study have highlighted the need for additional feedback to inform users when content is updated, to provide alternatives to information currently presented through graphical means, and to develop methods of improving perceptions of security. It was clear from our findings, that even with heightened awareness regarding the importance of accessibility in interface design, and continual modifications to social networking sites, the 'disability divide' continues to exist. To further this research, we intend to perform follow-up interviews to determine the impact of accessibility challenges when performing work and education-based tasks using social networking sites, and assess whether these vary from leisure-based usage. Using the data collected, we aim to design targeted design guidance to developers to address the needs of blind screen reader users when interacting with social networking sites.

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Acknowledgements

We thank Jefreena Packianathan for her assistance with this research.

[4] Farmville - http://www.farmville.com