

Web Assess Guideline for Blind Internet Surfers

The World Wide Web has become a powerful Internet tool that allows users to access various types of resources since its invention. With the development of the Web design technique, the information conveyed by the World Wide Web is not limited by pure text. Instead, it presents information in a variety of formats such as images, animations, sound samples, or movies. As a result, people with disabilities such as individuals with hearing impairments, visual impairments, and learning disabilities etc. may encounter great difficulties to access the information from the Web. Recognizing the fact that many Internet surfers cannot use the full range of resources provided by this powerful tool, Congress has passed law to protect the right of accessing Internet resources of individuals with disabilities (American with Disabilities Act, 1990). Since it is regulated that World Wide Web should provide all people with access to information, it is Web designers' responsibility to make sure that all users have equal access to Internet resources. As a result, many organizations have developed the common protocols that can be followed to ensure that the Web is universally accessible. In this paper, some of these basic accessible design guidelines will be reviewed. I will mainly focus on the design guidelines that can promote the accessibility for the blind users because most serious accessibility problems may relate to this population giving the multimedia nature or the Web- highly rely on visual presentation. Besides the guideline, the assistive technology, such as screen reader and Braille display, that most commonly used by blind Web surfers will also be introduced since some features of the assistive technology may be the causality of the guidelines. The evaluation tool that can be used to test the Web accessibility, Bobby, will also be briefly introduced.

Screen Access Software and Hardware

Screen Reader

A screen reader is voice output technology that uses hardware and software to produce synthesized voice output. With its internal software speech synthesizer and the computer's sound card, information from the screen is read aloud. Screen reader allows blind users to navigate around the screen and hear the information being read to them. Screen reader reads a Web page one line at a time horizontally across the whole page.

Braille Display

Some blind users use Braille display rather than screen reader. A Braille display is a device that can convert the text displayed on the screen into Braille. A Braille display is usually placed near or under the keyboard. The user then place his or her fingers on the display and reads the information in Braille when information shows up on the screen. Braille output device does not understand tables.

Accessible Design

Text

Screen access software can only work with ASCII (American Standard Code for Information Interchange) text. Therefore, bit-map text should be avoided and make sure that ASCII text is used wherever it is possible so that the screen access software can produce speech or Braille. For screen reader working easily, the organization of the text

should also need to be considered. Content designers should maintain a simple and consistent design throughout the site. A large blocks of information should also be divided into more logical and manageable groups so that screen access software can provide the information in a meaningful way. As a result, the complex pages or elements can be understood more easily. Several things should be avoided include scrolling (moving) text and conveying information with color alone. Scrolling or moving text is the technique that is commonly used in the web pages where constant information updating is required. However, screen readers are unable to read moving text. If moving content is used, designers should provide a mechanism within a script or applet to allow users to freeze motion or updates. Using color to catch users attention is commonly seen. However, this emphasis is lost on the blind users. It is recommended to use text format to add emphasis such as adding “*” or using quotation.

Image

Images, pictures, or graphs not only can increase the visual effect of the page but also, from time to time, can enhance understanding. However, blind users can't be benefited from this graphical presentation. Therefore, it is necessary to provide text equivalent information as alternative text to the images. The text equivalent information is alternative text attribute of the image. It should provide a textual representation of the image. When using text-equivalent information, text can be readily output to speech synthesizers and braille displays. If image is used as a link to other page, the alternative text should indicate the link's destination or function. If the image is informational such

as charts or diagrams, the full descriptions for the image should be provided. On the other hand, the decoration image should allow screen reader to skip over it.

Link and navigation

It is important to provide clear and consistent navigation system to increase the likelihood for the blind users to find what they are looking for at a site. Screen reader users often move between links with the tab key or they adjust their software to read only the links on the page. Thus all links should contain enough useful information about their destination without words around it. It is suggested not to use link text like “click here” or “more” because the link text as such does not provide enough information for navigation. It is also suggested that links should not be presented directly next to each other nor use repetitive navigation links. Since some screen readers may interpret a group of links as one single link, important information can be omitted if a chunk of links are presented together. It is recommend not to use repetitive navigation links because it can be time-consuming for screen reader users to wait for the assistive technology to work through and announce each of the navigational links before getting to the intended location. In order to avoid this problem, some mechanism for users to skip repetitive navigational links should be provided when the repetitive navigational links are used.

It is good to provide information about the general layout of a site such as site map or table of contents. Site map allow blind users to get overall understanding of the site layout quickly. Therefore, it makes easier for blind users to navigate.

Frame and table

Some people have difficulty navigating within frames or tables when they are using screen readers, either because the frames and tables are confusing or because the software that is used simply cannot read frames and tables. When screen readers do identify the individual frames, it identifies the individual frames in a page by calling out the frame's name and title. Therefore, giving these elements meaningful values will allow users of screen readers to access the particular frame they want more easily. Generally, it is not recommended to use frame because it usually causes time consumption and frustration for blind readers. If a frame contains no proper content such as used as margins or borders, it is recommended eliminating it. If a frame has to be used, a no-frame alternative should be provided.

Screen reader may have problems to read table as well. Most screen reader programs read from left to right. Thus, they may jumble the meaning of information in tables. Therefore, it is suggested use tables only for tabular information, but not to use table to position graphics and text. When tables are used, it is good to have an alternative or summary for tables.

Plug-in

Plug-Ins , (eg, Shockwave, Adobe PDF, QuickTime, RealAudio) are commonly used to extend the capabilities of browsers in a specific way, such as the ability to play audio samples or view video movies from within the browsers. It is suggested that whenever possible, use content which does not require a plug-in. If plug-ins are used, the site should still be navigable and should not lose any content when the plug-ins are turned off or not supported. For example, if a Flash movie or a PDF document is used on the

homepage, ensure that meaningful equivalent content is available to users who can't access Flash or Acrobat reader, and do ensure that a plain text link is available to enable users to access subsequent pages of this site.

Dynamic page

Sites may contain forms to be completed on-line or databases to accomplish on-line search. However, some screen readers encounter errors or have difficulty identifying the edit boxes in forms. Therefore, it is important for form elements, such as text input fields, to be clearly labelled so that assistive technologies can present the web author's intention. Some forms are designed in such way that users need to complete the form within a certain amount of time otherwise the form will “time out” automatically and then delete all data that has been entered. As a result, blinder users may not be able to complete the form. Given that blind users may encounter many difficulties when using on-line forms, it is suggested to have an email address and other contact information for those who cannot use forms or database.

Web Accessibility Testing Tool-Bobby

Bobby is a famous tool that designed to help expose and repair barriers to accessibility and encourage compliance with existing accessibility guidelines. Web developers enter the URLs to be analyzed on the Bobby Web site, and they quickly receive feedback about the site's usefulness for disabled people. Bobby tests web pages using the guidelines established by the World Wide Web Consortium's (W3C), Web Access Initiative (WAI) ,as well as Section 508 guidelines of the U.S. Federal

Government. Therefore, if the website is Bobby-approved, it means that this site meets the accessibility requirements of Section 508 of the Rehabilitation Act, and is accessible by people with disabilities.

Conclusion

A lot of Web pages are closed to the blind users because they take too much advantage of visual presentation. However, it is all users' right to have equal access to the Web regardless disabilities. Many organizations have developed guidelines to increase the accessibilities for people with visual impairments or other disabilities. The accessible design guidelines for blind users do cover almost every aspects of Web design. Since Web should open to all people, a Web designer should take those guidelines into considers when he or she develops a Web sits.

Reference:

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