

Web Accessibility

Overview

Creating an accessible web site need not be difficult nor extremely time-consuming. With some forethought prior to beginning the design, accessible elements can be implemented as the site is built. To develop an accessible web site, one does not need to be an expert on adaptive equipment—although a familiarity can be helpful. When developing your web site, thinking in terms of usability can help guide your efforts.

"Usability problems impact all users equally, regardless of ability. That is, a person with a disability is not disadvantaged to a greater extent by usability issues than a person without a disability.

Accessibility problems hinder access to a web site by people with disabilities. When a person with a disability is at a disadvantage relative to a person without a disability, that is an accessibility issue.

Some commonly used assistive technology include screen readers and screen magnification. While there are several manufacturers of each type of technology, the basic functions are similar.

Screen reading programs are typically used by people who are blind, have low vision, or have learning disabilities. These programs read information displayed upon the computer screen and provide an output in the form of Braille or speech via a sound card. Thus, the two-dimensional information seen on the computer screen is provided in a linear format.

Screen magnification programs, typically used by people who have low vision or other visual disabilities, increase the size of information - graphics as well as text - displayed on the computer screen. Depending upon the program itself, not only can the information be magnified, but aspects such as color contrasts can also be adjusted. Some programs provide a split screen in which one portion is magnified while the other portion remains non-magnified.

When you begin to consider developing your web site, accessibility considerations should include both content and navigation.

Accessible Content

- ***Provide text equivalents for all information represented in a non-textual format.*** Information that may be represented in a non-textual format may include images, image buttons, and image maps.

- Alternate text tags (alt tags) should be provided for images and image buttons.
- For more complex graphics, such as tables or charts, provide an alternate text tag as well as a long description. Or, provide the table or chart in a text-only format.
- Images used for decoration or formatting can have a null alt tag rather than descriptive information.
- "Hot spots" should be included in image maps.
- Use client-side image maps rather than server-side image maps.
- ***Provide text equivalents for any audio used on the web site including audio files and multimedia files containing audio and video.***
 - For audio files, provide a transcript of the information provided in the audio portion.
 - For multimedia files, provide either a transcript or, better yet, captions within the video.
- ***Use color and contrast with care.***
 - Don't use color alone to convey information on your web site.
 - Use colors that have high contrast for foreground and background.
- ***Be sure to code any tables used for formatting/layout or data appropriately.***
 - For all tables, be sure to include a descriptive table summary.
 - Build tables so that the information can be read left to right (linear) from cell to cell. This is how a screen reader will read the information.
 - When you must build a table with multiple columns and rows, place the row and column headers in the first row and first column.
 - If header information is not in the first row or first column, use the table header element, <th>, or scope="row" or scope="col" on all header cells.
- ***Avoid flickering and flashing objects and text.***
 - Web pages that contain flashing, blinking or rapidly changing graphics should be avoided. While these flashy additions may catch the eye of some users, they can cause seizures in individuals who are susceptible. Also, some browsers allow the user to turn off these animations, thus it could be time wasted in building these graphics.
- ***When possible, avoid using javascript.***
 - Javascripts are not accessible to those using older screen reading software. If you must use javascript, provide an alternative access to the information.

Accessible Navigation

- ***Provide a means for skipping navigation.***
 - By providing a means of skipping the navigation section of your web page, those using screen readers do not have to repeatedly listen to the navigation information before reaching the content of your page. (While a first-time visitor will find the navigation helpful, one who uses your site multiple times could be irritated at having to listen to this information every time they visit.)
 - *Skip navigation links can be provided in several ways:*
 - The link can be placed in normal text ("Skip to main content").
 - The link text can be an image that is the same color as the background color to blend in to the background.
 - The link can be provided via a decorative image with the alt tag set as "skip to content".
- ***Avoid using frames.***
 - While once a popular way to set up web pages, frames are becoming less popular as they make it more difficult to bookmark a web site. They also pose significant accessibility problems.
- ***Use heading tags, <h1>, <h2>, to designate headings on the page.***
 - When setting up heading tags, think of the headings in a book. Level one might be the page title chapter, <h1>, level two might be the main section headings, <h2>, level three might be subheadings, <h3>, etc. However, do not use these heading tags for formatting text that is not in a heading.
- ***Page layout can improve page navigation.***
 - Keep all navigation links located together. Avoid putting some navigation at the top, some at a side, and some at the bottom of the page. By grouping navigation links together, usability is increased for all users. Screen reading programs will read all links together, and those using screen magnification programs will be less likely to miss an important link.
 - A simple layout table can also enhance the navigation. With the title at the top of the page, then a two-column table for page content and navigation, navigation can be placed either on the left side of the page or the right side. If placing navigation in the right column, skip navigation need not be included.
- ***Ensure that links are accessible.***
 - While you may typically use a mouse, be aware that the tab key can be used to move through the active elements of a web page. The current element is designated by a dotted enclosing polygon called a focus rectangle.
 - Ensure that each link clearly identifies the target link. Avoid using "Click here" or "Learn more".

The Accessibility Test

Once your site is built, you may ask yourself, "How do I know my site really is accessible?"

- Web sites and downloadable programs currently exist that can analyze your web page. These are called *validators*. Refer to the Resources list below for current information
- Test your page using your browser by turning off graphics. The alternative text (alt tags) should be displayed. However, there are specific considerations depending on which browser you use.

Resources

A-Prompt

<http://aprompt.snow.utoronto.ca/>

Americans with Disabilities Act of 1990

<http://www.usdoj.gov/crt/ada/adahom1.htm>

Bobby, CAST (Center for Applied Special Technology)

<http://www.cast.org/bobby/>

Disabilities, Opportunities, Internetworking, and Technology (DO-IT) - Technology and Universal Design

<http://www.washington.edu/doi/Brochures/Technology/>

EASI (Equal Access to Software and Information)

<http://www.rit.edu/~easi>

International Center for Disability Resources on the Internet

<http://www.icdri.org/>

National Center on Accessible Information Technology in Education (AccessIT)

<http://www.washington.edu/accessit/>

National Center for Accessible Media (NCAM) resources

<http://ncam.wgbh.org/>

Section 508 Standards of the Access Board

<http://www.access-board.gov/sec508/508standards.htm>

Trace Research and Development Center

<http://www.trace.wisc.edu/>

W3C's Web Accessibility Initiative (WAI)

<http://www.w3.org/WAI/>

Web Accessibility in Mind (WebAIM)

<http://www.webaim.org/>

Web Accessibility Versatile Evaluator (WAVE)

<http://www.wave.webaim.org/>