

THE WORLD WIDE WEB FOR ALL INFORMATION SEEKERS

Imagine a sign on the library door announcing "Left-handed people must use their right hands in this facility," or a notice on the library Web site that states, "To access this Web site, you must remove your eyewear, take three deep knee bends, and touch your toes." For the general public, these messages would be ludicrous and unacceptable. Likewise, when library Web sites do not follow certain accessibility guidelines, people using adaptive technology to access the library's Web site encounter access barriers that are just as ludicrous and unacceptable.

The Web has emerged as an important information technology. Many information seekers and providers are using information found on the Web as primary resources. International Data Corp. estimated that in 1999 about 11 million Internet access devices were sold and predicted that by 2002 this number would increase to 89 million units. Simply put, the number of people on the Internet is increasing, and using the Internet has become an accepted form of information retrieval for the masses. It has not, however, seen equal access by people with disabilities who need alternate access. This is changing as the world's population ages. Combining the total number of people who currently have a disability with the potential for the aging population to develop a disability, Web site designers should make the sites accessible to avoid disenfranchising a growing minority user group.

Additionally, with changing laws and an ever-growing litigious society, inaccessible Web sites could become a liability. The National Federation of the Blind (NFB) sued AOL for being inaccessible to users with visual impairments. Curtis Chong of the NFB said the organization brought suit because their complaints were ignored. The suit was later dropped when AOL agreed to a financial settlement and to make the network more accessible. Chong indicated the organization is considering suits against other Web sites.

The Americans With Disabilities Act (ADA) and other world-wide laws encourage developers and designers to add accessibility accommodations such as wheelchair ramps, Braille location signage, closed captioning of telecasts, and video. However, for the most part, needed accommodations are not found in the Web world.

Judy Heim, columnist for *PC World* magazine, conducted a survey of 30 major shopping, search, auction, news, and financial Web sites and found them all inaccessible. Furthermore, when contacted, only a few expressed remorse or indicated that they intended to remedy the situation. Even more regrettable were the Web sites that said they were aware of the access technologies, but did not plan to pursue "that segment of the population."

Judy Heim reported that PC World's Web site was not designed to facilitate easy access, but the company has since made modifications.

Perhaps Section 508 of the Rehabilitation Act will encourage Web site designers to make the same accommodations as the last decade has seen since the passage of the ADA. Libraries and information resources need to

www.PCWorld.com

rise above the general population's outlook and lead the way to providing everyone with information access.

Designing an accessible Web site isn't difficult

Although the task of designing an accessible Web site may seem daunting, it really is only a matter of practicing good rules. The question is often posed, "Since there are a myriad of disabilities, how can I design a site that is pleasing for those without disabilities and accessible to those who have a hearing impairment and to those who have a vision impairment?"

Judy Brewer of the Web Accessibility Initiative (WAI), a segment of the World Wide Web Consortium (W3C), admits that Web accessibility is a cross-disability issue. She stated that, "The Web can present barriers to people with different kinds of disabilities." Below are her accessibility concerns:

For people with visual disabilities:

- Unlabeled graphics such as pictures of the library, library staff, and speakers.
- Poorly marked-up tables or frames.
- Navigation dependent on mouse tracking without keyboard support or screen reader compatibility.

For people with hearing disabilities:

- Lack of captioning for audio presentations. Perhaps the library director or a board member wishes to record a short "Welcome to our Web site" message. It would need to be captioned.
- Proliferation of text without visual signposts.

For people with physical disabilities:

- Lack of keyboard or single-switch support for menu commands.

For people with learning, cognitive, or neurological disabilities:

- Lack of consistent navigation structure.
- Overly complex presentation or language.
- Lack of illustrative nontext materials.
- Flickering, scrolling, or strobing designs on pages.

—From a talk entitled, "Web Accessibility is a Cross-Disability Issue"

Keeping all these concerns in mind, how does the library design a Web site that is accessible to all?

The 10 HTML commandments

Dena Shumil is Vision Technology Consultant at the University of Toronto and a specialist in identifying software specifications for a World Wide Web browser and an HTML authoring package. She has developed what she calls the 10 HTML Commandments with the objective of increasing Web access for people with visual disabilities.

www.w3.org/TALKS/WAI-Intro/slide5-0.html

1. Hypertext links should be descriptive and should make sense when they are read one at a time or out of context. It helps to read data aloud.
2. Provide alternate text descriptions [ALT-Text] for all graphics. Alphanumeric characters contained within an image do not qualify as [ALT-Text].
3. Provide text-only alternate pages or sites in the following cases:
 - To translate graphic and text information into a text only version.
 - To describe a movie by providing an audio description of visual components, such as facial expressions and environment.
 - To describe a movie by providing captioning or a transcript of audio components, such as sounds and words.
4. Make forms accessible by:
 - Providing a form that can be downloaded then mailed or e-mailed.
 - Providing a phone number someone can call to supply the requested information.
 - Using exclusively text-based input.
 - Avoiding horizontal line breaks.
 - Avoiding default text entry, and clarifying where text entry fields occur and which information is being requested.
5. Avoid tables whenever possible. Place information contained within a table in a more linear format. Make line-by-line reading sensible.
 - Read the table aloud to determine if it will make sense when visual access is not possible.
 - Summarize the table using text.
6. Background patterns and color should contrast well with the lettering to maintain readability.
7. Include outlines at the beginning of documents.
 - Outlines identify the relevant features of a document, such as a general description of its structure, function, or content.
8. Make lists accessible by:
 - Announcing the occurrence of the list, and announcing the number of available choices before the list begins.
 - Labeling list items numerically.
 - Labeling sublist items alphabetically.
 - Putting a line break between each list item.
9. Make buttons and Image Maps accessible by:
 - Including a text anchor from an Image Map to a page describing the graphic as a whole.
 - Providing text anchors for all Image Links or Hotspots accessible through an Image Map.

- Giving the URLs associated with Image Links descriptive names, rather than names like "pic1", "pic2"... Descriptive names will enable users who are studying the source code of a document to determine the general contents of the page that the Image Link will take them to if it is selected.

10. Follow general design tips.

- Avoid nonstandard HTML formats.
- Avoid special tags.
- Avoid uncommon typographical characters or constructions.
- Avoid providing information that does not enhance the user's exploration or understanding of the page.

Following these commandments gives the Web site good accessibility; adding a few more guidelines from the Web Accessibility Initiative makes it even better:

11. Use consistent page organization.

- Use heading, lists, and consistent structure. Use [CSS] for layout and style where possible.

12. Use the client-side [map] and text for hotspots.

13. Use the [noframes] element and meaningful titles.

The entire set of Web Content Accessibility Guidelines, HTML guidelines, as well as XHTML, XML information, information on Cascade Style Sheets, and most importantly a curriculum on how to use the guidelines, can be found at www.w3.org

Remember to check all Web pages for accuracy and adherence to the Web Content Accessibility Guidelines. One of the most common errors found is the omission of some of the [alt] description tags for visuals displayed within a site.

The Web designer followed the rules—Is the site accessible?

By applying accessibility do's and don't's, an inaccessible Web site can be readily spotted. Look at a site and knowing it's accessible is difficult. The quiz below helps to make accessibility more obvious.

A Quick Quiz

Answering "yes" to the following questions is a good indicator that the Web site in question is accessible.

1. Does the library's Web site have similar headers on each page and use consistent and large logos or buttons?
2. Do all the images and pictures on the library's Web site have [ALT] tags on them describing the images using descriptive text?
3. If the library's Web site uses frames, does it offer alternatives to a

frames version?

4. If the library's Web site has text presented in columns, is it presented in a manner that makes sense to screen readers?
5. Does the library refrain from using HTML tags such as MARQUEE, ABSMIDDLE or MARGINHEIGHT?
6. If the library uses Java or Dynamic HTML coding languages, does it offer alternate links to accessible versions of the information?
7. If the library offers Web visitors the option to download documents, does it offer non-HTML formats, such as PDF?
8. Does the library offer text navigational links as well as image links?
9. Does the library avoid the use of an opening screen that is composed of images only, or, if it is purely images, does it link to a text home page?
10. Does the library avoid the use of wallpaper or background images?
11. If the library uses audio or video clips, are text descriptions of the clips provided?
12. Does the library's Web site avoid specifying text, background displays, and font size, allowing users to change these viewing options?

*—Survey adapted from
"Is Your Site Accessible?"
Complete Media Group*

Regardless of the answers to the preceding questions, you can receive quick, free appraisals of the accessibility of the library's Web site.

Section 508 Web Accessibility Checklist: The WebAim (Web Assessibility In Mind) organization has recently released a Section 508 Web Accessibility Checklist. The listing directly quotes mandates of the Rehabilitation Act 1194.22. The Accessibility Checklist also includes helpful guidelines to comply with Section 508.

CAST and Bobby

The Center for Applied Special Technology (CAST) developed and supports a software program called "Bobby." By entering the Universal Resource Locator (URL) for the Web site in question, the library receives an overview of the tagging in the document and receives an annotated description of the problems Bobby encountered when examining the Web site. Although the report may appear overwhelming, take the time to read through the suggestions. Most are possible and take little time or money to implement as specifics for remedying the problems are also offered.

Bobby looks for a number of infractions to good accessibility. Some of the infractions include:

- Missing [ALT] description tags for images and maps.
- Descriptions that are too long.
- Adjacent links that aren't separated.
- Text links that are too long.

www.Enableyoursite.com

See checklist at:
[www.webaim.org/
standards/508/checklist](http://www.webaim.org/standards/508/checklist)

www.cast.org/bobby

- Confusing links, such as “click here.”
- Frames without alternative texts.

Bobby ranks the infractions in order of importance and gives the site an accessibility ranking of one, two, three, or four stars, coinciding with priority levels. Four stars entitles the Web site to add the Bobby-Approved symbol to its Web site signifying that access is possible. Note: only a few libraries in North America have added the Bobby-Approved symbol to their Web sites.

Another of Bobby’s problems relates to its “user-agent” checkpoints. For example, a Web page may fulfill all the Priority 1 rules set forth by the World Wide Web Consortium, but it may suggest that developers look into features that may cause problems for users with disabilities or interfere with some adaptive technologies. Essentially, these user-agent checkpoints ask the Web developer to make a judgment call on about questionable features that could be troublesome for people with disabilities. In some instances, the potential user-agent conflicts recognized by Bobby or the World Wide Web Consortium are valid, but Web masters can dismiss them and still post an accessible seal of approval.

Additionally, Bobby cannot determine if the descriptions a designer used are as helpful as they can be. As an example, if a picture of an oak tree is on the gardening page, saying “ALT Text = Picture of Oak Tree” is helpful.

In spite of Bobby’s limitations, it’s still the best access evaluation tool available because it’s easy to use, takes little time, and is free.

Web Accessibility Versatile Evaluator (WAVE)

WAVE is a Web-based service that helps users evaluate accessibility and repair Web sites according to the W3C guidelines. WAVE is being upgraded to help judge adherence to the mandates of Section 508. WAVE adds icons and text to the Web site the user wants evaluated. WAVE does not determine if there is an error; instead, it gives the user enough information to apply the human judgment needed to determine Web accessibility.

WAVE provides a tutorial on using the tool, which is an indicator that it is not as simplistic as Bobby. The tool offers the user possible acceptable access solutions to problem areas such as frames, applets, and tables.

Need help to understand the suggestions?

A wealth of information is on the Web to help make a library’s Web site accessible to people with disabilities. With few exceptions most sites are written in an accessible language that can be easily understood by the amateur Web designer and yet contain enough detail to be taken seriously by those proficient in HTML.

Designing more usable documents

Trace R&D Center

If there are breakthroughs in the field of access to information, the folks at the Trace R&D Center likely had a hand in them. Staff members at

[www.temple.edu/
inst_disabilities/piat/wave](http://www.temple.edu/inst_disabilities/piat/wave)

www.trace.wisc.edu

Trace are involved in all aspects of access and support a Web site on the subject. The Web site provides links to the user and authoring tools that are being developed worldwide to increase Web access.

Trace periodically offers online course on the subject of creating an accessible Web site.

The W3C Accessibility Guidelines

Another excellent source for learning more about Web access issues is the home site of the World Wide Web Consortium (W3C). The Consortium is an international, vendor-neutral organization with 400 members. It promotes "evolution and interoperability of the Web," focusing on four domains:

Architecture, user interface, technology and society, and the Web Accessibility Initiative (WAI)

As part of the overall W3C mission WAI seeks to "develop strategies and materials to increase awareness among the Web community of the need for Web accessibility, and educate the Web community regarding solutions to Web accessibility." WAI supports five focus groups:

- One group ensures Web technologies support accessibility. This group provides the latest information on HTML style sheets, CSS2 accessibility features, SML accessibility features, and MathML.
- One group ensures guidelines for accessibility are developed by explaining how to use Web technologies to create accessible Web sites, browsers, or authoring tools. This group provides additional support documents and resources for each guideline.
- One group develops tools to evaluate and facilitate accessibility. This group had input to developing tools such as Bobby and retrofitting tools to make inaccessible site accessible.
- One group develops education & outreach materials and activities to promote Web accessibility. This group provides practical information for Web designers, such as Quick Tips, one-page project descriptions, policy references, sample style sheets, online curriculum, a gallery of accessible Web sites, and access to the video "Web Sites That Work."
- One group coordinates research and development. This group hosts an online forum to exchange information and ideas, trends, and developments relating to Web accessibility.

The WAI also supports a logo, WCAG, that can be used to announce a library's Web site adheres to the W3C, Web Content Accessibility Guidelines.

Web Content Accessibility Guidelines explains accessible use of Web technologies for page authors and site developers. There are 14 guidelines, and more than 60 checkpoints, assigned three priority and conformance levels ranked in importance of access relevancy. There are also supporting resources for WCAG such as translations, logos, browser support, and techniques.

www.w3.org

www.washington.edu/doit

www.wgbh.org/wgbh/pages/ncam

www.webaim.org/tutorials

DO-IT (Disabilities, Opportunities, Internetworking, &Technology)

The University of Washington is the parent agency of DO-IT, a center dedicated to helping people with disabilities achieve their goals through accessible computer technology. Staff realizes that although each person faces a unique challenge, there are devices available to help everyone overcome barriers.

The Web site addresses Web access for people with disabilities and offers visitors tutorials.

Staff of DO-IT has also developed a kit entitled, "Universal Access: Electronic Resources in Libraries," that helps the novice library staff understand the need.

WGBH offers Web validation

WGBH has been a pioneer in the field of accessibility to media such as television and movies for people who are visually impaired and blind. The organization again assumed the leadership mantle when it noted the World Wide Web had the potential for being an equalizer to information access for people with disabilities. WGBH owns a logo that can be used by entities that maintain accessible Web sites. The logo is an illustration of a keyhole in the center of the world. The Web site has tips on developing accessible Web sites, links to sites that give additional help, links to sites using the WGBH access logo, and a library of full-text articles on access to the Internet.

Web Accessibility In Mind (WebAim)

WebAim partners include the Center for People with Disabilities, Utah State University, TLT Group, and Blackboard.Com. WebAim offers tutorials on many subjects, including designing accessible tables. WebAim's site gives visitors the opportunity to visit a mock Web site for the University of Antarctica, using a screen reader simulator. The simulator wants the visitor to access the information as a blind person would, thus the visitor cannot use a mouse, only keystrokes.

WebAim also offers courses on the subject of access, as well as offering training services.

Commercial services to fix Web sites

A growing number of companies are willing to interpret and fix Web sites. Many of these companies also offer tutorials and conduct training workshops on the subject of accessibility. Most of these companies are headed by people who are dedicated to the goal of access for all; but be mindful some corporations who foresee a boon in the Web access market may try to exploit it.

Here are a few tips on picking a Web fix-it company:

- Does it mention that it employs people with disabilities?
- What is the background of the company? Has it ever worked with the W3C?
- Is its home page accessible, and does the site display the Bobby, W3C, or WGBH logos?
- Does the company present a good overview on the subject of disabilities and accessibility?
- Does the company link to organizations such as CAST, W3C, or Trace?

A good Web site is accessible to all

A good Web site is not one that uses every HTML tool available to catch a visitor's attention; rather it is one that's accessible to all. The September 2000 issue of *American Demographics* identified consumers with disabilities as the hottest growth market. It advised retailers to heed the findings of the U.S. Census Bureau that indicate the population is aging (realizing that with aging comes disabilities, such as vision, hearing, and dexterity loss) and to actively seek their patronage. Likewise, libraries seeking to increase usage of their Web site should seek to reach out to those whose life and lifestyle could be changed by access to information.

