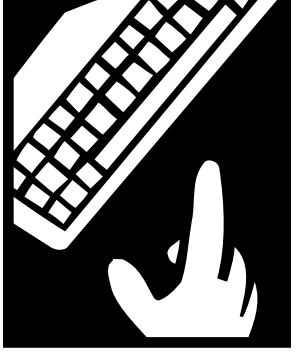

Designing for Web Accessibility: More Benefits than You May Imagine

You may soon be required—or at least expected—to make your Web site accessible to people with disabilities. Doing so will reap unexpected rewards.

BY MARY ELGES

Let's face it; there's a lot of inconsistency on the Web. One Web page is full of graphics and sound, while the next is bare bones. There haven't been any official guidelines on what type of content Web sites should have, but that may soon change. In fact, when it comes to designing Web pages for those of us with disabilities, standards have already been drafted.

Federal agencies are already required to design their Web sites to meet accessibility guidelines, under the Rehabilitation Act of 1973. Section 508 of this act, which was passed in 1998, mandates that all federal sites must be accessible. And as Web sites are designed for accessibility, we've found that they've become better sites overall.

While modifying your site may on the surface appear to help only visitors with physical, sensory, cognitive, or work-related constraints, others benefit, too. Users with older hardware, older browsers, text browsers, or computers set to view text-only to improve Internet download time also benefit. Visitors can find information faster, and your site is more appealing to a broader audience.

The Worldwide Web Consortium (W3C) has developed guidelines to make Web sites accessible. Those who follow these criteria will find that their sites are more optimized for search engines, are more readily available to more people, are easier to maintain, have improved efficiency, demonstrate social responsibility, and reduce legal liabilities. Here's a summary of accessibility guidelines:

Guideline 1: Provide alternatives to auditory and visual content. Not everyone can make use of images, multimedia, and audio on the Web. So be sure to supplement page elements with "equivalent" information—-alternative text, audio format, or a substitute page for the information.

All images should include alt tags. The alt tag is a descriptive text, added within the image's HTML tag. Since the alt tag contains text, it can be accessible to user agents, such as synthesized speech, Braille, and visually displayed text.

Alt tags should describe what purpose the image has as Web content. If the image is a photograph, then the alt image should describe the photo's content. If the image is decorative text, then the alt tag should read the same as the decorative text. If the image links to another page, the alt text should say, for example, "If you click on this image, it will take you to the following page, which will provide such-and-such information."

There's a bonus to adding alt tags to images, image maps, and multimedia: It helps with search engine optimization. Because alt tags are text content, they're indexed by many search engines and can be counted toward improved rankings.

Guideline 2: Don't rely on color alone. Pages must have enough contrast so that users with monochrome displays and people with color-viewing disabilities can view the information. For large amounts of readable content, use a white background with black text. To insure that pages have enough contrast, print them out in black and white and be sure you can read the detail.

Guideline 3: Use style sheets. Style sheets make Web development and maintenance much easier. A Web site with a Cascading Style Sheet uses only one file (a CSS file) to apply all the styles/formatting for text, paragraphs, images, margins, padding, list, and colors. You can thus make changes to a 200-page site by altering just one attribute on one style sheet. The use of a style sheet also decreases the time it takes for a Web page to download.

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The correct use of a style sheet is to include the color hex number rather than color name. Content developers should always specify "fall-back" fonts. Fall-backs insure that if the font that's listed isn't available on the users' computer, another font can be used as a default.

You should also use style sheets to control your font's attributes rather than embedding attributes in HTML code. The reason is that language synthesizers can have trouble translating pages with embedded attributes.

Guideline 4: Clarify natural language usage. Identify foreign-language changes in the content so that users with disabilities can have this content translated appropriately. Identify the primary language in the header tag. Be sure abbreviations and acronyms have the proper mark-up so that they will translate properly.

Guideline 5: Create tables that display correctly. Unless tables are properly marked up, accessibility agents such as screen readers and Braille displays can't read HTML tables properly. These agents have trouble adhering to table structure and often interpret table content in an unstructured order that can confuse a user. The solution is to provide checkpoints in the coding tables for improved accessibility. This additional code isn't displayed by the browser but is picked up by the agent and translated to the user correctly. This code also helps with search engine optimization.

To aid accessibility in tables, use the summary attribute placed within the table tag. This attribute clarifies the purpose of the table and briefly describes the table's content. Columns and rows are given identifiers within their tags so that user agents can recognize the table's content and index the content in a comprehendible order.

Guideline 6: Make certain that pages featuring new technologies transform gracefully. Having a page that utilizes new technologies and displays correctly in all browsers has been a problem plaguing content developers for some time. For maximum accessibility, pages need to render correctly in all browsers, or an equivalent alternative needs to be provided so that users can still access the Web page's information. This means creating pages that can render in older browsers or for users with scripting features turned off.

Avoid using blinking text, which can trigger seizures in some people.

How can this be done? The answer is to provide alternative accessible pages or ensure that the event handlers are input-device independent. Web pages that utilize frames should use the "NOFRAMES" tag at the end of the frameset, and pages should be developed so that they will be readable even when style sheets aren't used by older browsers.

Guideline 7: Give users control of time-sensitive content. Users must be able to control animated text. People with accessibility issues often can't read rapidly moving text, nor can screen readers decipher animated text. So be sure to add controls that let users pause animations. Also, provide alternative ways to display information. Avoid using blinking text, which can trigger seizures in some people. Let users control auto-refresh features, and rely on the server to perform redirects.

Guideline 8: Ensure accessibility of embedded interfaces. Many Web-page objects, such as Flash or Java applets, have their own interfaces and thus aren't readily accessible to those using accessibility agents. Since these objects aren't controlled by HTML, another way must be found to display the same information. One way is to provide alt tags or a "longdesc" (an alternative page that provides a longer description of the element). Another solution is to design the objects with accessibility features within their own interface. Macromedia Flash MX has innovative features that help make its output accessible to all.

Guideline 9: Design for input-device independence. Be sure all Web-page elements are accessible by means of a variety of input devices, such as the user's mouse or keyboard shortcuts. If possible, have scripts specify logical event handlers. If that's not possible, use two input-device event handlers, such as "onKeydown" and "onClick."

Create Web pages using the indexing attribute, and take advantage of the "tab index" attribute so that people can use the keyboard to tab through links and form elements. If someone can't use a mouse to navigate through the page, tab indexes will help.

Guideline 10: Use interim solutions. It's important for assistive solutions and older browsers to work together. A wonderful thing about this guideline is that one of its checkpoints regulates the opening of new windows without informing the user. This could mean the end of uncontrollable pop-up windows! This guideline also covers the positioning, naming, and placement of form-field descriptions inside label tags. Form-labels should precede the form-element they describe. Form-elements should use tab indexing so that users can navigate through the form without the aid of a mouse.

Guideline 11: Furnish context and orientation information. Be sure to give information and orientation on grouped elements such as navigational items and content in tables. Provide a structural orientation of information within the page's content, to help users

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access information and to aid in navigation. Use the title attribute within the frameset so that frames can be identified appropriately. Associate form-elements with labels. Create table summary attributes, and identify rows and cells in tables for user-agent accessibility.

Guideline 12: Provide clear navigation mechanisms. Use text that describes where users will go when they click on a link. Provide alt tags when a graphic is used to navigate. Link title attributes with text links to clarify destinations. For larger sites, provide a page with the site's layout structure, such as a site map or site-searching function.

Clear navigation elements give users confidence that, when they click on a link, they'll get where they want to go. Having good navigation also helps with search engine optimization, because the spiders have a distinct path to follow, and the alt tags provide another opportunity to convey key words related to the linked page.

Guideline 13: Make documents simple. Use a consistent page layout, graphics that are clearly recognizable, and content that is written clearly and concisely. Stay away from tricky interfaces and wording.

Guideline 14: Use W3C technologies and guidelines. In addition to accessibility criteria, the W3C site (http://www.w3c.org) provides other guidelines and technologies for Web design. Using these standards will make your site easier for everyone to use.

For additional information about Web accessibility, visit the HTML Writers Guild's AWARE (Accessible Web Authoring Resources and Education) Center at http://aware.hwg.org. AWARE's mission is to serve as a central resource for Web authors who want to learn about Web accessibility.

The main rule to follow when trying to keep your site accessible is to keep it simple and clear. If you do this, not only will you please people with accessibility requirements, but you'll make all your Web site users happy. ■

Resources

Bogosian, John, "Internet Content Management: What's Next for Nonprofits?", *Nonprofit World*, Vol. 19, No. 6.

Elges, Mary, "Driving Traffic to Your Web Site," *Nonprofit World*, Vol. 20, No. 6.

Hoffman, Leslie & J.P. Frenza, "Building Your Web Site: HTML Basics," *Nonprofit World*, Vol. 16, No. 3.

Roufa, Mike, "Marketing Your Web Site with Search Engines," *Nonprofit World*, Vol. 17, No. 2.

These resources are available from the Society's Resource Center, www.snpo.org.

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