

3 Questions: Removing barriers to the Web

October 22 2012, by Larry Hardesty



Judy Brewer, a principal research scientist at MIT's Computer Science and Artificial Intelligence Laboratory

During the opening ceremonies of this summer's Olympic games in London, a musical performance culminated with a stage-set house rising into the rafters to reveal Tim Berners-Lee, the inventor of the World Wide Web, sitting at a computer and typing the words "This is for everyone."

That message was not idly chosen. The [World Wide Web Consortium](#) (W3C)—the organization, headed by Berners-Lee, that develops technological standards for the Web—is committed to the idea that the benefits of the Web should be available, not only to people in different

countries with different technological resources, but to people with disabilities. According to some estimates, that's a billion people worldwide.

In 2008, W3C released the second version of its Web Content Accessibility Guidelines (WCAG) 2.0. This week, the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC) announced their endorsement of those guidelines.

Judy Brewer, a principal research scientist at MIT's Computer Science and Artificial Intelligence Laboratory, directs W3C's Web Accessibility Initiative (WAI), which developed both the first and second versions of the WCAG standards. MIT News met with her to discuss the importance of the ISO/IEC endorsement.

Q. What does ISO/IEC endorsement mean for the WCAG 2.0 standard?

A. In order to meet the obligations that many national governments have, that people should be able to use the Web without barriers regardless of disability, they may put in place policies that require accessibility. Some governments have particular requirements about the kinds of technical standards they can adopt in policies; for instance, they may require standards to have an ISO status.

In particular, a recent U.N. treaty—the U.N. Convention on the Rights of Persons with Disabilities—requires governments that are signatories to the treaty to take measures to ensure accessibility of information technology. With regard to accessibility of the Web, WCAG 2.0 is a broadly accepted solution that's ready and waiting for them to take up.

For the information-technology industry, it's extremely important to

have a consistent set of requirements. If one jurisdiction or organization is requiring accessibility, a lot of businesses hope that it's the same set of requirements as in other places. It's extremely difficult to have different requirements across all the areas in which they do business.

A unified standard for Web accessibility also accelerates support for production of accessible content. The more organizations adopt a unified standard, the more software developers—authoring-tool developers, in particular—realize, "Ah, if I build support for production of WCAG-2.0-conformant content into my authoring tools, more customers will be interested in buying those new tools." And when more authoring tools support production of accessible Web content, it becomes easier for Web developers to make accessible websites.

Q. What does the standard consist of?

A. WCAG 2.0 explains how to use any Web technology to support access to the Web by users with disabilities. For instance, if somebody is deaf or hard of hearing, they need captions. If somebody has a photosensitive seizure disorder, they need the page not to flash at them. If somebody has a visual disability, they may need alternative text for the images on a page or may need to be able to smoothly enlarge the page. For someone with a disability that affects their hands, they may need to smoothly navigate through the page using voice recognition, or a head mouse, or an eye-gaze system. For someone with a cognitive disability, they may benefit from consistent navigation within a website, which actually benefits many users, regardless of disability, as do many accessibility provisions.

Support for all of these requirements is covered in the guidelines and success criteria of WCAG 2.0, and the techniques for implementing WCAG 2.0 provisions in different technologies are also available. There are WCAG 2.0 techniques for HTML, XML, Cascading Style Sheets,

Scalable Vector Graphics—and also for non-W3C technologies such as Flash, PDF and Silverlight.

For Web developers, we have "How to Meet WCAG 2.0," which is a customizable quick reference that lists hundreds of techniques. Or if you come up with a good technique for fulfilling an accessibility requirement in WCAG 2.0, you can submit it to the WCAG Working Group, which publishes updated sets of techniques once or twice a year.

WAI has all of these implementation-support resources available, as well as educational documents. There are training modules that people can take from our site and repurpose, and so forth. We have extensive amounts of material that help people use the standard.

Q. There are so many different ways that the Web could throw up barriers to people with disabilities. How do you know you've covered all the bases?

A. From when the [Web](#) Accessibility Initiative started in 1997, we very much wanted it to be a multistakeholder, consensus-based effort. So we have gotten input from hundreds of organizations and individuals over the years.

When W3C works on a particular standard, we're essentially creating a platform where people can come together from all over the world. A working group may start with an initial set of requirements. Then it develops a first public working draft, then iterates through repeated working drafts, publicly exposing the comments received and how those are being addressed.

Then the draft goes into the candidate-recommendation stage. The whole focus of the candidate-recommendation stage is implementation testing,

which may last for six months or more. For WCAG 2.0, we said "We want to prove that this can be implemented in an online-learning site, a financial site, other commercial sites, a very small site, a large government site, a media-rich site, and we want to make sure it's implementable in multiple languages"—and we came up with a spreadsheet of different types of implementations to test.

Sometimes we found that a particular provision wasn't clear enough or had a feasibility issue. We addressed all those issues before WCAG 2.0 became a Proposed Recommendation, which the W3C membership reviews, before it finally became a W3C standard in 2008. And in recognition of its broad acceptance, it has now also been recognized as an ISO/IEC standard, which we welcome. We now hope that will lead to further adoption of WCAG 2.0.

More information: www.w3.org/WAI/intro/wcag

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