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ABSTRACT

This paper provides guidance on the issue of universal Web accessibility for individuals with physical challenges, who need accommodations to fully participate in the electronic world. Four categories of information facilitate understanding the complexity of the issues. These categories are: U.S. legal mandates; international accessibility policy and legislation; resources and information; and Web site accessibility validation. These four categories are explored in depth and provide the tools for meeting today's challenges. As the Web evolves, new accessibility issues will emerge. (Contains 12 references.) (Author)

E-ACCESSIBILITY: UNITED STATES AND INTERNATIONAL

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Abstract

This presentation provides guidance on the issue of universal web accessibility for individuals with physical challenges who need accommodations to fully participate in the electronic world. Four categories of information facilitate understanding the complexity of the issues. These categories are:

- U.S. legal mandates;
- International accessibility policy and legislation;
- Resources and information; and
- Web site accessibility validation.

These four are explored in depth and provide the tools for meeting today's challenges. As the Web evolves, new accessibility issues will emerge. Once you think you have it figured out, it will change, requiring continual self-study to keep abreast of the how these changes effect your situation. Helpful resources can be accessed from the following site: Http://www.e-linkagesglobal.com

Introduction.

This presentation provides guidance on the issue of universal web accessibility. Lack of information concerning web accessibility not only contributes to the digital divide, but can lead to serious legal problems as well. Lawsuits can arise because of U.S. legislation that required all web sites receiving federal funds to meet accessibility directives by the spring of 2001. The goal of this paper is to provide clarification of the accessibility statutes and offer resources and information to assist in successfully developing accessible web sites.

The circular process of comparing and contrasting information from the Internet, expert testimony and personal expertise were the primary components fueling the engine of this qualitative inquiry. It goes without saying that constant and rapid change makes it extremely difficult to study any phenomenon on the Internet.

Many web developers are ignoring the accessibility issue or just do not know how to make their sites universally accessible. They are bewildered in the face of the vast amount of information available on applying accessibility techniques to the design of their web sites.

Four categories of information facilitate understanding the complexity of the issues. These categories are:

- U.S. legal mandates;
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- Resources and information; and
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These four areas provide the tools for meeting today's challenges. As the Web evolves, new accessibility issues will emerge. Once you think you have it figured out, it will change, requiring continual self-study to keep abreast of the how these changes effect your situation.

The Legal Mandates for Accessible Internet Sites

The Americans and Disability Act (ADA), which was signed in 1990, prohibits discrimination "on the basis of disability in employment, programs and services provided by state and local governments, goods and services provided by private companies and in commercial facilities." However, the ADA doesn't just apply to the physical world. Waddell

(1998) points out that according to the Justice Department, the ADA also applies to cyberspace. In an opinion letter dated September 9, 1996, The Justice Department stressed that covered entities under the ADA are required to provide effective communication, regardless of whether they generally communicate through print media, audio media or computerized media such as the Internet. Covered entities that use the Internet for communications regarding their programs, goods or services must be prepared to offer those communications through accessible means as well.

Section 508 of the Rehabilitation Act Amendments of 1999 (http://www.access-board.gov/sec508/nprm.htm) provided the basis for the Electronic and Information Technology Accessibility Standards, enacted August 7, 1998. "Effective (two) years after the date of enactment, any individual with a disability may file a complaint alleging that a federal agency fails to comply with section 508 in providing accessible electronic and information technology."

Carnevale (1999) notes: "As colleges and universities expand their distance-education programs, they are finding that they must include the virtual equivalent of ramps when building their website. Higher education institutions know they're obligated. "It's not that web site creators are ignoring the accessibility issue," says Jane Jarrows, president of Disability Access and Information. "It is that they don't always realize how important accessibility is." While the U.S. Department of Education's Office for Civil Rights (OCR) has specific guidelines for compliance on traditional campuses, the agency has not yet issued accessibility rules for online education.

United States Legal Cases Related to Education

According to Waddell:

> Not surprisingly, web accessibility issues are now being faced by educational institutions. Library reference services are being transformed by the efficiency of Internet access to information systems and search engines. Professors are teaching long distance learning courses over the Internet and even if a student is physically in class, homework assignments and resources are being posted on class homepages. Yet, even if a library terminal has assistive computer technology installed for students with disabilities, Internet research by students with disabilities is not possible with inaccessible web page design.

A blind student from Long Beach California filed a complaint to the Office of Civil Rights (OCR). The university provided OCR with a voluntary resolution plan, which resolved the issues raised in this case. The plan included the following commitments:

1.) Develop and implement a systematic method for ensuring that the issue of accessibility to persons with disabilities, particularly blind persons, is taken into account when colleges purchase computer software and hardware.

2.) Develop and implement a systematic method for informing campus employees who design/select web pages for use by students to make sure the web pages are in accordance with principles known to maximize accessibility to users with disabilities, including visual impairments

Waddell, 1998, provides more information about this case by citing Brummel's 1994 white paper, " The Information Infrastructure: Reaching Society's Goals Report of the Information Infrastructure Task Force Committee on Applications and Technology Published by: U.S. Department of Commerce."

"...(T)he issue is not whether the student with the disability is merely provided access, but the issue is rather the extent to which the communication is actually as effective as that provided to others. Title II (of the Americans with Disabilities Act of 1990) also strongly affirms the important role that computer technology is expected to play as an auxiliary aid by which communication is made effective for persons with disabilities" (Pages 1-2, 1996 Letter; 28 C.F.R. 35.160(a)) (Waddell, 1998 citing Brummel, 1994).

In further clarifying what is meant by "effective communication," OCR has held that the three basic components of effective communication are "timeliness of delivery, accuracy of the translation and provision in a manner and medium appropriate to the significance of the message and the abilities of the individual with the disability" (Page 1, 1997 Letter) (Waddell, 1998, citing Brummel, 1994).

On June 25, 2001, the accessibility requirements for U.S. electronic and information technology took effect under Section 508. This law mandates that this technology be accessible according to standards developed by the Access Board, which are now part of the federal government's procurement regulations.

Section 508 and its enforcement provisions apply to products procured by U.S. federal agencies after June 25, 2001. This law relies heavily on the procurement process to make sure there is compliance with the new standards. Compliance with the standards is required unless it would pose an "undue burden"—as defined in the standards—or if no complying product is commercially available. The law permits individuals with disabilities to file a complaint with the appropriate federal agency concerning access to products procured after the effective date.

International Accessibility Policy and Legislation

Accessibility issues are considered to be one of the "target areas for equal participation" at an international level. Late in 1993—at the infancy of the World Wide Web—the United Nations General Assembly adopted the Standard Rules on the Equalization of Opportunities of Persons with Disabilities [1]. Rule 5 of the Standard Rules addresses accessibility in terms of the physical environment and with reference to information and communications services. Among other points, Rule 5 recommends: 'States ... develop strategies to make information services and documentation accessible for different groups of persons with disabilities."

Although not a legally binding instrument, the Standard Rules represent a strong moral and political commitment of governments to take action to attain equalization of opportunities for persons with disabilities. The rules serve as an instrument for policy making and as a basis for technical and economic cooperation. In the past few years, a special rapporteur appointed by the U.N. Secretary General to monitor the implementation of the Standard Rules has encouraged governments to consider accessibility of information and communications services within their country's social development policies.

The unique governance structure of the Internet makes it difficult, if not impossible, for a country to impose accessibility legislation on its own citizens. For example, it is not easy for one government to impose penalties for poor accessibility in a web site of one of its own citizens if the web site is hosted in another country. Governments have used either policy or limited legislation in an effort to ensure that public information is an accessible public good.

Policies that encourage accessibility—stating its benefits to the producers and consumers of information—are used by most of the early adopters of the importance of information accessibility. These policy/guidelines can only implement minor penalties such as the notoriety

of non-conformance. Australia, Canada and Portugal have issued policy statements, and have mostly limited policy application to their own federal governments.

A good example of a clear and concise policy statement comes from the "Guide to the Internet" of the Government of Canada. It states:

> "Since the end user cannot count on either standard technology or helping devices to ensure access to information on the [World Wide] Web, the onus is on the web page developer to deliver the message in a way that allows everyone to benefit.
>
> "It is every Canadian's right to receive Government information or service in a form that can be used, and it is Government of Canada's obligation to provide it."

Only the U.S. has, so far, turned information accessibility into legislation. It does so using both "push" and "pull" regulations. "Push" regulations—such as Section 255 of the Telecommunications Act of 1996—require industry to consider accessibility. This type of regulation is, however, only effective in production of accessible products such as kneeling buses and accessible teller machines. It is difficult to regulate delivery of online information using "push" regulation because World Wide Web information is available globally, and there are many countries that do not consider information accessibility an issue.

Section 508 of the Rehabilitation Act is an example of "pull" legislation because it requires that the government purchase accessible products, but does not require that industry produce them. This provides a market *pull* to industry. Obviously, industry prefers pull regulations to push regulations. In practice, Section 508 may also be more effective because suppliers stand to lose major federal contracts if they are perceived not to adopt corporate accessibility policies. By imposing accessibility regulation on its own ranks, the U.S. federal government is hoping that corporations will adopt accessibility policies as a matter of example and as a sign of good corporate citizenship.

The European Union seems convinced that "pull" regulation and standardizing on WAI is their best option. In its Europe Action Plan, the E.U. provides a special section titled "e-accessibility: Participation for all in the knowledge-based economy." This action plan optimistically targets the year 2002 as the deadline for all member countries to make their federal websites follow the WAI Content Accessibility Guidelines.

In Canada, federal websites have mostly complied with the Treasury Board Secretariat's Common Look and Feel (CLF) Guidelines. The successful implementation probably makes Canada's web sites the most accessible among industrialized nations. But the Treasury Board is not satisfied. The CLF Guidelines are currently being used in the formulation of legislation similar to Section 508, and with a compliance date of December 31, 2002. The difference between U.S. regulations and the Canadian and E.U. regulations is that Canada and the E.U. are adopting the W3C Web Accessibility Initiative as a reference material to keep with new technologies and developments. This move will likely be the same approach as other countries determine how, if ever, they formulate information accessibility policy.

Unfortunately, many countries may never have to deal with web accessibility for mostly economic reasons. One reason is that country priorities for information and communication services will naturally begin with the telecommunications infrastructure and the cost/benefit analysis of various platforms. For example, the e-Mexico project concentrates on making telecommunications facilities available to the rural areas, and the term *accessibility* is used to refer to the access of these facilities.

Another reason web accessibility might not be adopted is that in countries where labor costs are low, care giving for persons with disabilities is the norm, and independent living is not common. Caregivers can be asked to provide other services such as reading books and online information.

Verification of Web Site as Universally Accessible and Related Services

Web pages need to be validated to ensure they meet the minimum requirements for universal accessibility. There are two major validation services—available free online—which evaluate web pages and help identify potential accessibility problems to correct. The first is Bobby, which is part of the Center for Applied Special Technology (CAST), a non-profit organization, whose mission is to expand opportunities for individuals with disabilities through the development of innovative technology. The Bobby validation system is simple to use to validate a web site. The web site URL is submitted by entering the information onto the web page and then clicking a submit button. Http://www.Cast.org/

The process for obtaining the report is easy. Copy and paste the URL to insert into the verification program. Copying and pasting keeps from making a typing error. Tip: If a Windows-based computer is used, select/highlight the URL and use "Ctrl" and "C" keys to copy the URL and then "Ctrl" and "V" keys to paste the URL to the address box. Then submit.

Web sites should have at least a *Priority One Accessible* rating. When users get feedback from the site, they will be able to see the entire page. Tiny question marks by the images means for users to check their information manually—this will not stop those from getting validated. If major problems are experienced, a question mark appears by each image.

W3C Validation. The second major validation site is W3C's HTML validation service, a free service that checks documents like HTML and XHTML for conformance to W3C recommendations and other standards. http://validator.w3.org/

Approval Icon. The NCAM accessibility icon was selected from 17 symbols as a Web Access Symbol for people with disabilities. Web masters can use this to denote their site contains accessibility features for disabled users. The symbol should always be accompanied by its description—a globe, marked with a grid, tilts at an angle; a keyhole is cut into its surface—and alt-text tag,. This image was created by Stromship Studios of Boston. There is no charge to use this symbol, and it may be used in electronic or printed form. It can be copied from the NCAM web site and pasted it into a document. http://ncam.wgbh.org/accessncam.html

Conclusions

"The difficulties of studying the Internet can only be described in the present moment due to the constant state of change on the Internet" (Rizia, 1999). The future will hold many exciting technological innovations, making computers adapt to individuals rather than the reverse. Technology that allows access to computer resources for a person with disabilities is known as adaptive technology. These "electronic curb-cuts" are a combination of hardware and software. The challenge is making adaptive technology part of any base configuration and making all components work in a seamless fashion. This will increase the access to computers and applications without making major modifications.

When designing for the Internet, a global approach needs to be considered. As of now, the U.S. is the only country that mandates accessibility for anyone doing business with the government. Of course, that includes most higher education institutions. Meeting accessibility guidelines for most situations means adding descriptive tags to any image and text links for audio or video files. Anyone, anywhere can use the Bobby site to check for these simple things. Having

accessibility sites makes good economic sense as the number of individuals with disabilities on the Net—who could emerge as consumers of vast numbers of products—continues to increase.

Resources and Information

Helpful resources can be accessed from the following site: Http://www.e-linkagesglobal.com

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