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CHARITY BEGINS AT THE HOMEPAGE: PROVIDING ACCESS TO THE WEB FOR PEOPLE WITH DISABILITIES

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ABSTRACT

The Web transformed the environment in which Nonprofit Organizations (NPOs) work. NPOs can now reach donors and recipients inexpensively through cyberspace. They may, however, be missing, a large, untapped clientele—people with disabilities who want to donate, volunteer, or access services of a NPO. If NPO homepages are not accessible to the growing population of people with disabilities, they may not be doing their job. This study assesses 100 NPO homepages to determine how accessible they are. The overall results show that only 10% of all NPO homepages examined are truly accessible.

Keywords: accessibility, web accessibility, nonprofit organizations

I. INTRODUCTION

Nonprofit Organizations (NPOs), like many for-profit organizations, are developing websites as a way to reach both their donors and their recipients. Websites help build awareness, recruit volunteers, disseminate information [Kaplan, 2000 and Bogosian, 2001] and raise funds. In 2001, large charities raised \$96 million online [Bradley et al., 2003].

Since the Web is a relatively inexpensive means for stakeholder communication, organizations can save postage and labor costs associated with more traditional forms of communications, such as direct mail or telemarketing. According to one study, the cost of fundraising for NPOs is 18 percent of their total contributions; one dollar for every five raised [Bradley et al, 2003]. A major reason for this high cost is the time and labor required to solicit large numbers of tiny contributions. Web-based solicitations cost significantly less than traditional forms. In fact, it costs 20 cents per solicitation compared to a dollar or more for direct mailing or telemarketing [Bradley, et al., 2003]. By using online fund-raising management software tools that link to websites, organizations can also keep track of donors, customize appeals, and measure the results of their campaigns more effectively [Allen, 2003 and Bradley, et al., 2003]. NPOs often consider ways to drive traffic to their website, such as being “search engine friendly” [Elges, 2002]; however, they

neglect a critical aspect of web design: website accessibility [Berliss, et al., 1996. Sidebar 1 presents examples of representative accessibility issues for people with disabilities.

As NPOs rely more heavily on their websites to attract and manage their donors and recipients, they also face the challenge of making their websites accessible to untapped donors and recipients. People with disabilities are often forgotten in the rush to make a website “flashy” and “cutting-edge.” Software improvements that enhance the visual and interactive appeal of a website may be pleasing to a person without a disability, but frustrating and a barrier to a visitor with a disability who uses assistive technologies. In addition to donors and recipients, potential employees or volunteers are overlooked. For example, people with disabilities, who might not otherwise be traditional volunteers, may be well suited in a “virtual” volunteer position—answering questions via e-mail or designing material for an organization at a distance [Conhaim, 2003]. If they cannot access websites to find these opportunities, then the NPO loses a key resource.

SIDEBAR 1: EXAMPLES OF ACCESSIBILITY ISSUES FOR PEOPLE WITH DISABILITIES

Individuals who use head pointers and mouth sticks, instead of mice, to access a website need to be able to navigate the site with only the keyboard. Also site tabbing must be in logical order to reduce key strokes and improve productivity. People with mobility impairments also prefer the use of Microsoft standard short cut keys (i.e. Ctrl V to cut) instead of creating their own short cut keys.

Users who are blind cannot use a computer monitor and must receive information from their computers via their other senses—hearing or touch. Users with low vision or visual impairment can also receive information through sound or touch, or they can modify their computer displays so the screen is more legible (e.g., through a larger font). They may prefer to use a Screen Reader to access a website. In order to accommodate screen reading software, a site should have all graphics/pictures tagged with a description (Alt Tag). This allows the Screen Reader to identify the graphic for the user.

Individuals with cognitive disabilities need the site to be designed clearly with both usability and accessibility design standards in mind. This makes the site more usable to all users but it is critical to users with cognitive disabilities because it may mean the difference between a success experience with the site versus a frustrating and disappointment one.

Author's Note. Note: These most common issues were identified with the help of an accessibility hardware and software testing firm, TecAccess [www.tecaccess.org].

As NPOs rely more heavily on their websites to attract and manage their donors and recipients, they also face the challenge of making their websites accessible to untapped donors and recipients. People with disabilities are often forgotten in the rush to make a website “flashy” and “cutting-edge.” Software improvements that enhance the visual and interactive appeal of a website may be pleasing to a person without a disability, but frustrating and a barrier to a visitor with a disability who uses assistive technologies. In addition to donors and recipients, potential employees or volunteers are overlooked. For example, people with disabilities, who might not otherwise be traditional volunteers, may be well suited in a “virtual” volunteer position—answering questions via e-mail or designing material for an organization at a distance [Conhaim, 2003]. If they cannot access websites to find these opportunities, then the NPO loses a key resource.

Organizations that overlook the large portion of their constituents with disabilities do so at considerable long-term risk to their success and legal position. Section 508 of the Rehabilitation Act [United States Congress, 1998], requires federal departments and agencies to provide access to electronic and information technology to people with disabilities. The law extends to

federal contractors and includes those NPOs that act on behalf of the federal government. As pressure increases to cut more government funding, more of the social burden will fall to charities [Bradley, 2003]. Furthermore, the government currently outsources a number of services to NPOs [Ryan, 1999]. This strong reliance on NPOs to do work once performed by the federal government may prompt Congress to mandate that all NPOs provide accessible websites for their clientele.

This threat is enhanced by the large and growing group of people with disabilities. Medical improvements are increasing the survival rate of children born with serious illness and severe injuries. In the United State, 5.2 million children and teenagers live with a physical or mental disability [Commerce, 1997]. Advocacy groups, like the National Information Center for Children and Youth with Disability, Children with Disabilities, and the Association to Benefit Children, are mobilizing to increase access to resources for children with disabilities.

In addition, as Baby Boomers age they will require assistive technologies as they face chronic health conditions, such as impaired vision and hearing loss [Schmetzke, 2001]. Over the next two decades, Baby Boomers will move into their prime giving years and are expected to donate trillions of dollars to NPOs [Bradley, 2003]. It is unlikely that such a vocal group will tolerate organizations ignoring their needs [Disabilities, 2001]. And, they may very well respond by withholding their donations and support. Further, advocates for elderly issues, such as the American Association of Retired People (AARP), continue to push organizations and the federal government to enhance accessibility further.

Public support for the laws supporting people with disabilities is significant. Ninetythree percent of people without disabilities who are aware of the American's with Disabilities Act (ADA) (which requires organizations to provide access to those with disabilities) both approve and support it. Further, nearly 75% of people without disabilities believe that the benefits of the ADA to people with disabilities outweigh any additional costs imposed on organizations. [Thibodeau, 2000]. By opening their websites to people with disabilities, NPOs enhance their image and support by people without disabilities who believe supporting the needs of those with disabilities is a noble and important thing to do.

ORGANIZATION OF THIS PAPER

This study assesses NPOs' websites to determine their accessibility to those with disabilities. It begins with an overview of federal support, design issues for people with disabilities, and web design issues (Section II). Section III outlines the research questions and methodology. are outlined. The results of the study are presented in Section IV and discussed in Section V) The paper concludes with practical implications of the findings (Section VI) .

II. FEDERAL SUPPORT AND WEB ISSUES

FEDERAL SUPPORT

Section 508 of the Rehabilitation Act [United States Congress, 1998] and the Telecommunications Act of 1996 [Federal Communications Commission, 1996] are two federal laws enacted by Congress that impact the availability of information technology to people with disabilities. Section 508 mandates that all electronic and information technology purchased by the federal government be usable by people with disabilities. In addition, the United States Department of Justice (DOJ) ruled¹ in 1996 that state and local governments must provide "effective communications," regardless of the means of the channel (print, audio, or computerized media). Therefore, organizations covered under this law must make their Internet communications regarding their products and services accessible. This mandate was recently

¹ Opinion letter no. 204

expanded to cover the Web for federal agencies [U.S.Department of Justice, 2002]. Similarly, Section 255 of the Telecommunications Act of 1996 requires that all software and hardware developed in the United States be usable by people with disabilities, including incorporating modifications for them to be used with existing accessibility aids.

The support for making technology accessible to Americans with disabilities does not end at the legislative branch. In fact, the executive branch considers access to technology essential to ensuring that people with disabilities are able to take part in community life. The goal of the government's New Freedom Initiative is to speed the development of new technology and get it to people with disabilities at affordable prices [Triggs, 2001]. As stated by the President on October 15, 2002, the administration is, "committed to ensuring that the more than 54 million Americans with disabilities learn and develop skills, find meaningful work, and realize the promises of the Americans with Disabilities Act" [Bush, 2004]. These efforts were extended through tax incentives to employers who purchase equipment to allow workers with disabilities to telecommute [DisabilityInfo.gov, 2004].

WEB DESIGN FOR PEOPLE WITH DISABILITIES

Disabilities requiring attention by Web design modifications include sight, hearing, motorskill, and cognitive/neurological disabilities [Berliss, Krauss and Stoddard, 1996]. Assistive technological devices (ATD) improved life for people with disabilities. These devices such as Braille readers for the blind and voice-to-text translators for the deaf. However, using the Web can still be a great challenge. For example, audio files that announce incoming messages, like "You've got mail!" make it difficult for the hearing impaired. Highly animated graphics may make voiced descriptions of written content difficult for people with visual impairments. The website's ease of navigation is crucial for those using a mouth stick or other device to operate their computer [Zavoina, 2001].

Graceful degradation is the key to a well designed accessible website. Adaptive technologies that support people with disabilities must be able to convey the core content of a website even if the original website contains additional design components.

WEB DESIGN GUIDELINES

Two sets of guidelines assist designers in developing accessible websites.

1. The Web Accessibility Initiative (WAI) [W3C, 2004] developed the *Web Content Accessibility Guidelines* for Web content accessibility. The guidelines include three priority levels: one being the most serious to three being the least. The guides are presented in a checklist format in Table1.
2. *Section 508 of the Rehabilitation Act* [United States Congress, 1998] These guidelines are a subsection of the Web Content Accessibility Guidelines.

WEB ACCESSIBILITY VALIDATION TOOLS

A number of tools examine website accessibility [Bell, 2000 and Berliss, Krauss, and Stoddard, 1996]. Validation programs, such as UsableNet² and A-Prompt³, test for WAI compliance, while others, such as Crunchy Technologies⁴, WatchFire⁵, and Wave⁶ test for Section 508 compliance. In addition, non-English based tools assess websites written in other languages,

² <http://www.usablenet.com>

³ aprompt.snow.utoronto.ca

⁴ www.crunchy.com

⁵ www.watchfire.com

⁶ www.temple.edu/inst_disabilities/piat/wave

Table 1. Priority Access Checkpoint Descriptions and Examples

Priority	Example Descriptions
Priority 1	A Web content developer must satisfy this checkpoint. Otherwise, one or more groups will find it impossible to access information in the document. Satisfying this checkpoint is a basic requirement for some groups to be able to use Web documents. <ul style="list-style-type: none"> ▪ Provide alternative text for all image-type buttons in forms. ▪ Provide alternative text for all images.
Priority 2	A Web content developer should satisfy this checkpoint. Otherwise, one or more groups will find difficulty to access information in the document. Satisfying this checkpoint will remove significant barriers to accessing Web documents. <ul style="list-style-type: none"> ▪ Use relative sizing and positioning (% values) rather than absolute (pixels). ▪ Use a public text identifier in a DOCTYPE statement. ▪ Make sure event handlers do not require use of a mouse.
Priority 3	A Web content developer may address this checkpoint. Otherwise, one or more groups will find it somewhat difficult to access information in the document. Satisfying this checkpoint will improve access to Web documents. <ul style="list-style-type: none"> ▪ Provide a summary for tables. ▪ Identify the language of the text. ▪ Include default, place-holding characters in edit boxes and text areas.
Note: Not a comprehensive list. For complete Priority definition source see www.w3.org .	

such as Torquemada⁷, for Italian websites, A-Prompt⁸ for French websites, and TAW⁹, for Austrian websites¹⁰.

III. RESEARCH QUESTIONS

Previous research shows that only 59 percent of college and university websites are accessible to people with disabilities [Schmetzke, 2001]. This percentage contrasts with the relatively low number (6%) of corporate websites that are accessible [Loiacano, 2003]. The question then becomes how accessible are NPO's websites? Specifically,

- How accessible are NPOs' homepages?
- Which types of accessibility barriers occur most frequently on these homepages?
- Is there a correlation between these NPO's size (revenues) and their homepage's accessibility?

SAMPLE

The sample of NPO homepages analyzed in this study consisted of those listed by *The Non Profit Times* as the top 100 largest NPOs in the United States, based on income [Sinclair, 2001]. The homepages¹¹ were analyzed for accessibility, based on both the WAI and Section 508 accessibility criteria. For those pages with text-only versions, the text-only version was also analyzed. Of the NPO 100 homepages analyzed, four were excluded from the study because the organizations did not have a website in August of 2003. Thus, 96 websites constituted the sample.

⁷ <http://www.webxtutti.it/testa.htm>

⁸ <http://aprompt.snow.utoronto.ca/french/index.html>

⁹ <http://www.tawdis.net/>

¹⁰ <http://www.w3.org/WAI/ER/existingtools.html#Evaluation2002>

¹¹ Since the homepage is typically the first page visited by a consumer it served as a proxy for the entire site's accessibility.

EVALUATION METHOD

Bobby WorldWide¹² is the generally accepted accessibility tool for checking the accessibility of Web pages and was selected for use in this study. Bobby checks for errors in webpages that do not meet the Section 508 guidelines or the Web Content Accessibility Guidelines, and provides a report highlighting the type, number, and location of accessibility barriers, and how they may be corrected.





Although Bobby is the most accurate and widely used tool in the evaluation of website accessibility, it is not perfect. For example, Bobby only checks a subset of the WAI guidelines. Users must conduct manual checks on the subset not analyzed. In addition, the software is unable to check scripts, such as Javascript or content generated by script. Further, images are only scanned to ensure that an alternative text is attached to it, but the relevance or meaning of the text in relation to the image is not checked. Thus, manual review is required to ensure that false positives do not occur. It is also possible for Bobby to produce a false negative [Schmetzke, 2001]. For example, pages that provide a “text-only version” at the beginning of the website may not be approved, but the “text-only version” page itself may be approved. Finally, Bobby does not distinguish degrees of impact. For example, simple bullet icons without alternative text are of equal “error” status (Priority 1) to images with critical content without similar alt tags [Schmetzke, 2001].

Despite these shortcomings, Bobby is a good tool with which to measure the accessibility of Websites and most studies evaluating the accessibility of websites to people with disabilities use it [Schmetzke, 2001]. Organizations supporting and representing the people with disabilities, such as the National Center for the Dissemination of Disability Research and the National Organization on Disability, refer to Bobby and encourage its use¹³.

The “Bobby” validator contains four levels of approval (Table 2)

1. A Web page or website that meet all requirements outlined in Section 508 of the United States Rehabilitation Act Amendment are *Section 508 approved*.
2. Approval based on W3C Content Accessibility Guidelines 1.0. *AAA Bobby Approve* indicates that a webpage or site passes all W3C Priority accessibility checkpoints.
3. Those websites that pass Priority 1 and 2 accessibility checkpoints are considered *AA Bobby Approved*,
4. Those that pass Priority 1 checkpoints only are *A Bobby Approved*

Table 2: Levels of Bobby Approval

Icon	Description
	Indicates that the website meets all requirements outlined in Section 508 of the United States Rehabilitation Act Amendment.
	Indicates that the website passes all of the Priority (1, 2 and 3) accessibility checkpoints established under the W3C Web Content Accessibility Guidelines 1.0.
	Indicates that the website passes Priority 1 and 2 accessibility checkpoints established under the W3C Web Content Accessibility Guidelines 1.0.
	Indicates that the website passes Priority 1 accessibility checkpoints established under the W3C Web Content Accessibility Guidelines 1.0.

Source: bobby.watchfire.com

¹² <http://bobby.watchfire.com>

¹³ www.nccdr.org/about/policy/accessibility.html

Each homepage in this study was analyzed using both the U.S. Section 508 Guidelines and the Web Content Accessibility Guidelines 1.0. A report for each set of guidelines was created using Bobby. The first report highlighted the Section 508 barriers that were not met by the page. The second report, based on the Web Content Accessibility Guidelines 1.0, outlined Priority level (1, 2, and 3) barriers and provided a breakdown description of each including the number of instances (how many times the requirement was not met) (Figure 1).

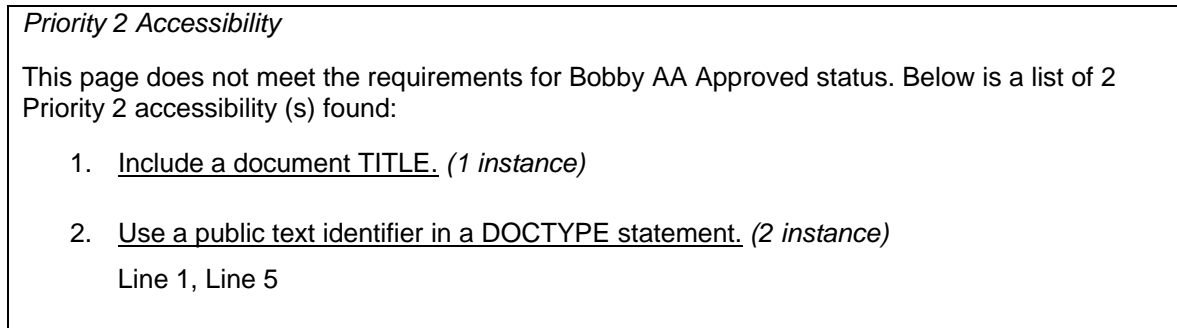


Figure 1: Sample Priority Accessibility Report

Although a website may fail to meet a requirement numerous times on the same page, Bobby records it as one “error” (accessibility barrier) and lists the number of instances the barrier/error occurs (Figure 1). In this study, the number of accessibility barriers was used for analysis and not the number of instances. Because this study focuses on which types of accessibility barriers occur most frequently, and the existence of an accessibility barrier (regardless of the number of instances) impacts the page’s accessibility, this methodology was considered appropriate.

Both the number of Priority accessibility barriers for each Priority (under Web Content Accessibility Guidelines 1.0), and those found under the U.S. Section 508 Guidelines, were recorded. Using a spreadsheet, the average number of accessibility barriers and the relative frequency of each specific accessibility barrier was calculated.

The homepage’s URL address for each organization (listed on the NPO 100 list) was entered into the Bobby analyzer. Each page was first analyzed using the Web Content Accessibility Guidelines 1.0, and then using the U.S. Section 508 Guidelines. A report for each set of guidelines was created. Appendix I lists the NPO organizations and their relative ranking.

IV. RESULTS

HOW ACCESSIBLE ARE THE NONPROFIT HOMEPAGES OF THE NPO 100?

Table 3 lists the Section 508 and WAI Guideline priorities and the number of access barriers occurring on each homepage. Only two NPOs (Salvation Army and J.F. Kennedy Center for Performing Arts) offered a text-only version of their homepage (no graphics included). These non-graphic versions were used for testing these two sites. Of the two text-only versions only one was Section 508 compliant.

Table3. Relative Frequency of Barriers/Failures on NPO Homepages

Priority ▪ Criteria	Number of NPO Homepages fail- ing to meet criteria
Priority 1: A Web content developer must satisfy this criterion *	
▪ Provide alternative text for all images.	77
▪ Provide alternative text for all image-type buttons in forms.	16
▪ Provide alternative text for all image map hot-spots (AREAs).	11
▪ Give each frame a title.	5
▪ Provide alternative text for each APPLET.	5
Priority 2: A Web content developer should satisfy this criterion. **	
▪ Use relative sizing and positioning (% values) rather than absolute (pixels).	82
▪ Make sure event handlers do not require use of a mouse.	59
▪ Do not use the same link phrase more than once when the links point to different URLs.	59
▪ Explicitly associate form controls and their labels with the LABEL element.	51
▪ Use a public text identifier in a DOCTYPE statement.	46
▪ Create link phrases that make sense when read out of context.	7
▪ Provide a NOFRAMES section when using FRAMES.	2
▪ Include a document TITLE.	1
▪ Do not cause a page to refresh automatically.	1
Priority 3: A Web content developer may address this criterion. ***	
▪ Provide a summary for tables.	88
▪ Identify the language of the text.	88
▪ Separate adjacent links with more than whitespace.	61
▪ Include default, place-holding characters in edit boxes and text areas.	46
▪ Client-side image map contains a link not presented elsewhere on this page.	23

*Otherwise, one or more groups will find it impossible to access information in the document. Satisfying this checkpoint is a basic requirement for some groups to be able to use Web documents.

**Otherwise, one or more groups will find difficulty to access information in the document. Satisfying this checkpoint will remove significant barriers to accessing Web documents.

***Otherwise, one or more groups will find it somewhat difficult to access information in the document. Satisfying this checkpoint will improve access to Web documents.

Source: www.w3.org

Priority barriers varied based on Priority. Of the 96 hompages tested, 84 contained at least one Priority 1 accessibility barrier. Three or more Priority 2 accessibility barriers were found in 67 of the hompages. Similarly, three or more Priority 3 accessibility barriers existed in 73 hompages. Eighty-nine pages contained Section 508 accessibility barriers (Table 4).

Table 4. Barriers by Priority and U.S. Section 508 Guidelines

	Number of Barriers						
	0	1	2	3	4	5	6
Priority 1	14	55	26	3	0	0	0
Priority 2	1	13	15	18	32	16	1
Priority 3	0	8	15	28	39	6	0
Section 508	11	32	31	20	3	0	0

Note: Numbers may not add to 100% due to rounding.

The average number of accessibility barriers per page varied based on Priority: Priority 1 was 1.19; Priority 2 was 3.24; and Priority 3 was 3.21 (Table5). Though the Priority 1 accessibility barriers tend to be low, the highest number of Priority 1 barriers on a homepage was three found on three homepages. Priority 2 and 3 accessibility barriers are slightly higher with 3.24 and 3.21 barrier averages respectively. Some homepages had no Priority 2 barriers, while others had as many as six. At least one Priority 3 accessibility barriers was found on all pages, , with some websites including as many as five access barriers. Fourteen of the homepages had zero Priority 1 accessibility barriers (Table 5). The minimum number of Priority 2 access barriers on any given homepage was one. Similarly, the minimum number of Priority 3 was one (Table 5).

Table 5. Access Priority Barriers Per Homepage

	Average/page	Lowest/page	Highest/page
Priority 1	1.19	0	3
Priority 2	3.24	0	6
Priority 3	3.21	1	5
Section 508	1.74	0	4

Table 6 presents data on the overall number of homepages that met Section 508 approval and the minimum WAI guidelines. Of the 96 homepages analyzed, 11 were Bobby approved based on Section 508 (in practice, a subset of the WAI criteria) and 14 were “A Approved” under the WAI guidelines. No page, however, achieved the highest level of WAI approval (“AAA Approval”) or even “AA Approval”

Table 6. Nonprofit 100 Organizations with Bobby Approved Homepages

	Number
“508” Approved	11
“AAA” Approved	0
“AA” Approved	0
“A” Approved*	14

*Indicates no Priority 1 issues.

WHICH TYPES OF ACCESSIBILITY BARRIERS OCCUR MOST FREQUENTLY ON THESE HOMEPAGES?

Failure to provide alternative text for all images (77) is the top Priority 1 access barrier followed by failure to provide text description of image-type buttons (16) and site maps that include picture links or "hot-spots" (11) (see Table 3). Since some viewers are unable to view images, these alternative text options allow computers to present information about the image to users. This feature is helpful for those who require a screen reader to read the contents of the screen, such as people with visual and cognitive disabilities. It also helps users without disabilities who chose to turn off the image-loading function in their browser and are browsing the Web based on pure text (like Lynx, a text browser for the Web).

The number of Priority 2 access barriers varied. The use of relative rather than absolute sizing and positioning was an error found on most homepages (82). Since users, with visual impairments may need to change font-size on a page, the text on a page should not be fixed. It should be adjustable based on the viewing device used. This consideration is also important for those people without disabilities who may be using small handheld devices. The second most prevalent access barrier is making sure the use of a mouse is not required (59). Since not all users use a mouse, it is important that event handlers, which affect the functionality of a page (mouse movement, typing, and voice input), be device-independent. Fifty-seven of the 96 homepages examined contained the third most significant Priority 2 accessibility barrier—the same link phrase was used to identify two different links. Instead the two links should have been identified by different, link phrases. Using the same phrase for multiple links may cause confusion and surprise to users who are using text-reading browsers and believe the links to be the same. The third most prevalent Priority 2 barrier is explicitly associating form controls and their labels with the LABEL element—found in 51 of the homepages analyzed. This access barrier may prevent a browser from indicating to a user which label applies to a given control. Though it may be clear to many users that clicking on a label positions the cursor in the form field, this situation is not necessarily the case for people with disabilities who may be using special browsers.

Most homepages also contained Priority 3 access barriers. The major Priority 3 barrier—found in 88 of the homepages—was not providing a "summary" attribute which gives a brief description of a table's structure and purpose. The summary allows the table to be understood by users though it itself could not be read. For example, Table 6 on the previous page would include a summary stating that it summarized the Nonprofit 100 organizations with Bobby approved homepages and text-only versions and that only 11 were Section 508 approved, 14 were A Approved, and none were AA or AAA approved. Similarly, 88 homepages did not identify the language of the text which would assist computer devices in presenting information to users. This barrier also prevents automatic translation software from translating text from one language into another if necessary. Sixty-one of the hompages failed to separate adjacent links. Assistive technologies used by people who are blind find it difficult to identify which pieces of text are links and which are not without sufficient white space.

IS THERE A CORRELATION BETWEEN THESE NPOS' SIZE (REVENUE) AND THEIR HOMEPAGE?

A correlation analysis of the data found that the Spearman correlation (.05, $p = .638$) between the (NPO 100) rank of the organization and its homepage's level of accessibility (based on Priority 1 accessibility barriers) was not significant. Higher revenue NPOs did not contain significantly fewer overall errors than lower revenue counterparts. Therefore, it appears that an organization's revenue does not matter in terms of ensuring higher accessible websites. The larger revednue NPOs do not put more effort into making homepages accessible.

V. DISCUSSION

The results indicate that 85 of the 96 NPO homepages (based on Section 508 criteria) do not provide fully accessible homepages. Further, only 14 meet the minimum Priority 1 WAI standards. No homepage is completely free of Priority 2 and 3 access barriers (Table 5).

Priority 1 accessibility barriers are less prevalent than the other two barrier types. This result indicates that organizations may be able to address the accessibility issues on their homepages without much difficulty. The Priority 1 issues are those that *must* be addressed if a website is to be accessible. Simple and inexpensive website modifications, such as reviewing a homepage and adding alternative text on images, can be used to make a previously inaccessible homepage accessible.

Many organizations however have yet to make these minor and much needed modifications. Why? It is possible that this problem is the result of lack of awareness of the issue, lack of time to devote to updating sites, and general technostress felt by NPO's trying to keep up with new technologies and modifications to websites [Schmetzke, 2001]. Though these reasons are all understandable, , it is surprising that so few NPO homepages are accessible given their socially conscious missions. Though more NPOs (11%) are accessible than corporate homepages (6%) [Loiacono, 2003;Loiacono, forthcoming], one would expect their social conscience to play a bigger role in ensuring their websites are open to all people—especially those with disabilities.

VI. IMPLICATIONS AND CONCLUSIONS

By ignoring accessibility issues, most NPOs are neglecting a large untapped market of donors, volunteers, and potential recipients of their services. With a minimal investment in website accessibility, NPOs could decrease the amount of money they spend to gain and maintain donors and volunteers. For example, online solicitations are significantly cheaper (20 cents per solicitation) than traditional forms of marketing, such as direct marketing and telemarketing (one dollar or more per solicitation). Therefore, an NGO with an accessible website can save at least 80 cents per solicitation if a person with a disability chooses this method of donating. More cost savings are possible when people with disabilities (donors, volunteers, and potential recipients) are able to interact (not just for donating) with NGOs through an accessible website.

Editor's Note: This article was received on February 2, 2004 and was published on May __, 2004

REFERENCES

EDITOR'S NOTE: The following reference list contains the address of World Wide Web pages. Readers who have the ability to access the Web directly from their computer or are reading the paper on the Web, can gain direct access to these references. Readers are warned, however, that

1. these links existed as of the date of publication but are not guaranteed to be working thereafter.
2. the contents of Web pages may change over time. Where version information is provided in the References, different versions may not contain the information or the conclusions referenced.
3. the authors of the Web pages, not CAIS, are responsible for the accuracy of their content.
4. the author of this article, not CAIS, is responsible for the accuracy of the URL and version information.

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APPENDIX I. ORGANIZATIONS IN STUDY

NPO 100 Rank	Name
1	Lutheran Services in America
2	The National Council of YMCAs
3	United Jewish Communities
4	Salvation Army
5	American Red Cross
6	Catholic Charities USA
7	Goodwill Industries International
8	Fidelity Investments Charitable Gift Fund
9	Boys & Girls Club of America
10	American Cancer Society, Inc.
11	The Nature Conservancy
12	Shriners Hospitals for Children
13	Boy Scouts of America
14	America's Second Harvest
15	Girl Scouts of the USA
16	YWCA of the USA
17	Planned Parenthood Federation of America
18	United Cerebral Palsy Association
19	Gift In Kind International
20	National Easter Seal Society
21	Habitat for Humanity International
22	Volunteers of America
23	Smithsonian Institution
24	Public Broadcasting Service
25	American Heart Association
26	World Vision
27	The Metropolitan Museum of Art
28	ALSAC-St. Jude's Children's Research Hospital
29	CARE (Cooperative for Assistance and Relief Everywhere)
30	Larry Jones Intl. Ministries/Feed the Children
31	Catholic Relief Services
32	Campus Crusade for Christ, Inc.
33	City of Hope
34	Dana Farber Cancer Institute
35	AmeriCares Foundation
36	Fred Hutchinson Cancer Research Center
37	National Gallery of Art
38	Colonial Williamsburg Foundation
39	Food For The Poor
40	March of Dimes
41	Art Institute of Chicago
42	Metropolitan Opera Assoc., Inc.
43	Museum of Modern Art
44	Big Brother/Big Sisters of America
45	American Museum of Natural History
46	Girls Incorporated
47	United States Olympic Committee
48	Special Olympics International, Inc.
49	American Diabetes Association
50	American Lung Association
51	National Benevolent Association
52	Museum of Fine Arts, Boston

NPO 100

Rank	Name
53	Trust For Public Land
54	United Negro College Fund, Inc.
55	Trinity Christian Broadcasting
56	Christian Broadcasting Network
57	US Fund for UNICEF
58	National Multiple Sclerosis Society
59	International Rescue Committee
60	Hadassah the Women's Zionist Organization of America, Inc. & Rltd Ent.
61	Muscular Dystrophy Association
62	Robert W. Woodruff Arts Center, Inc.
63	Young Life
64	Father Flanagan's Boys' Home
65	National Association for the Exchange of Ind. Resources
66	Alzheimer's Disease and Related Disorders Association
67	Save the Children Federation, Inc.
68	The Christian and Missionary Alliance
69	American Bible Society
70	J.F. Kennedy Center for the Performing Arts
71	Arthritis Foundation
72	Educational Broadcasting Corp.
73	Leukemia & Lymphoma Society
74	Rotary Foundation of Rotary International
75	Cystic Fibrosis Foundation
76	Duck's Unlimited Inc.
77	Samaritan's Purse
78	Disabled American Veterans
79	Focus on the Family
80	Christian Children's Fund
81	Billy Graham Evangelistic Association
82	Wycliffe Bible Translators
83	Families of Freedom Scholarship Fund (Citizens' Scholarship Fund of America)
84	Jewish Board of Family and Children's Services
85	Junior Achievement, Inc.
86	Juvenile Diabetes Foundation International
87	Covenant House
88	World Wildlife Fund
89	Wildlife Conservation Society
90	Vanguard Charitable Endowment Program
91	Mercy Corps International
92	Neighborhood Centers, Inc.
93	Christian Aid Ministries
94	National Mental Health Association
95	Summer Institute of Linguistics, Inc.
96	National Wildlife Federation & Endowment
97	Map International, Inc.
98	Project HOPE
99	National Jewish Medical and Research Center
100	Compassion International

Source:

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