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Jonathan Frank  
*Suffolk University*, jfrank@suffolk.edu

Lydia Segal  
*Suffolk University*, lsegal@suffolk.edu

Miriam Weismann  
*Suffolk University*, mweismann@suffolk.edu

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Healthcare Web Accessibility: Litigation Avoidance or Strategic Opportunity?

Jonathan Frank
Suffolk University
jfrank@suffolk.edu

Lydia Segal
Suffolk University
lsegal@suffolk.edu

Miriam Weismann
Suffolk University
mweismann@suffolk.edu

ABSTRACT
In 2006, the National Federation of the Blind (NFB) sued Target Corporation alleging that the retailer’s website was inaccessible to the blind, in violation of the Americans with Disability Act (ADA) and various California statutes. Target eventually settled the case for US$9.7 million. The Target case presents an interesting dilemma to private sector healthcare providers. What corporate strategy is appropriate in the case of web accessibility? US Federal and state laws do not specifically require a private company to make its website accessible to customers with disabilities. However, the adverse media exposure from a private class action suit by a disability group can significantly damage a company’s reputation for corporate social responsibility (CSR).

We develop a model of corporate web accessibility behavior based on literature linking CSR activities to corporate financial performance. We test its use within the healthcare industry focusing on private-sector companies that deliver online healthcare information. We compare our sample to a group of non-healthcare companies with a reputation for corporate social responsibility for the years before and after the onset of the Target litigation. Results reveal significant differences in the way healthcare corporations choose to address web accessibility.

Keywords: Web Accessibility, Navigability, Listenability, Corporate Social Responsibility

INTRODUCTION
In 2006, a private action was instituted in federal court by the National Federation of the Blind (NFB) against the Target Corporation. The suit alleged that the retailer’s website was inaccessible to the blind, in violation of the ADA and various California statutes. Specifically, the NFB claimed that because the Target website provided direct access to products and services within its physical store locations, the inaccessibility of the website to excluded customers with disabilities from enjoyment of products within the stores which are places of public accommodation and thus, constituted discrimination under the ADA.

In ruling on Target’s motion to dismiss, the court allowed part of the complaint to stand on the basis that the complaint alleged a legal nexus between a discriminatory barrier (inaccessible website) and the use and enjoyment of the physical retail premises. In agreeing to pay plaintiff costs of $3.7 million and establishing a $6 million victims’ settlement fund, some might argue that Target’s business reason for settling the case was little more than a wise exercise in damage control and treated as a cost of doing business.

The Target case presents an interesting dilemma to healthcare providers in the private sector. Federal and state laws do not specifically require a private company to make its website accessible to customers with disabilities. However, the adverse media exposure from a private class action suit by a disability group can significantly damage a company’s reputation for corporate social responsibility (CSR).

Our paper will argue that healthcare providers can choose to do nothing about web accessibility; they can do the minimum to comply with WAI accessibility guidelines; or they can enhance their website’s design usability to appeal to all customers, with or without disabilities. Such a proactive strategy would not only enhance their reputation for corporate social responsibility, but would also help to build a valuable, loyal customer base.

The paper is laid out in four sections. First, we discuss US laws addressing web accessibility. Second, we develop a model of corporate web accessibility behavior based on literature linking CSR activities to corporate financial performance. Third, we introduce a software tool which we use to assess comparative corporate website usability trends from the perspective of a blind customer. Fourth, we test its use within the healthcare industry focusing on
private-sector companies that delivery online healthcare information. We compare our sample to a group of non-
healthcare companies with a reputation for corporate social responsibility for the years before and after the onset of
the Target litigation. Results reveal significant differences in the way corporations choose to address web
accessibility.

The Current State of Web Accessibility Law

In 1990, Congress passed the American with Disabilities Act (ADA)\(^3\) to prohibit discrimination on the basis of
disability. Title III of the ADA prohibits “discrimination against persons on the basis of disability in the full and
equal enjoyment of the goods, services, facilities, privileges, advantages or accommodations of any place of public
accommodation by any person who owns, leases (or leases to), or operates a place of public accommodation”. The
ADA does not include the internet as a place of public accommodation.

The 50 US states do not demand that private businesses have blind-accessible websites. However, there have been
instances where States have tried to compel private entities to make their websites accessible through state civil
rights laws. In Massachusetts, for example, the Attorney General, with the help of the NFB, threatened to sue Apple
by invoking, among other laws, Massachusetts’s civil rights law. Apple settled, agreeing to make i-Tunes web
accessible to the blind in September 2008\(^4\).

Why then did Target settle the case? If the question is answered from a purely legal standpoint, it is fair to conclude
that it was not the law that primarily influenced the outcome. Arguably, Target’s business reason for settling the
case was little more than a wise exercise in damage control and treated as a cost of doing business.

LITERATURE REVIEW

In our review of the literature we seek to understand linkages between web accessibility, CSR activities, corporate
financial performance, and corporate strategy. We examine reasons for corporate non compliance with accessibility
guidelines.

Corporate Social Responsibility

The stakeholder theory of Corporate Social Responsibility emphasizes a broad set of social responsibilities for
business stakeholders (Clarkson, 1995). Stakeholders may include employees, shareholders, consumers, government
and other organizations or groups such as suppliers, trade unions, business associates and even competitors (Baker,
2008).

The terms reactive, defensive, accommodative, and proactive have been used since the late 70’s to characterize
corporate strategy or posture toward social responsibility (Clarkson, 1995; Wartick and Cochrane, 1985; Carroll,
1979). Reactive companies will deny responsibility and do less than required. Defensive companies will admit
responsibility but do the least that is required. Accommodative companies accept responsibility and do all that is
required. Finally, Proactive companies anticipate responsibility and do more than is required (Clarkson, 1995).

Web Accessibility and Corporate Social Responsibility

Can web accessibility be considered as a CSR activity? Is it “simply doing the right thing” (Carter and Markel,
2001)? It has been argued that marketers can strategically leverage web accessibility initiatives as a form of
corporate social responsibility (Peters and Bradbard, 2007). In an article on Fujitsu’s posture towards web
accessibility it was reported that implementing Website accessibility had become a corporate social responsibility,
rather than a traditional social action program (Takahashi, 2005). This study also reported that Fujitsu planned to
implement web accessibility throughout its entire organization and continue to improve the quality of Fujitsu
websites.

A study of web accessibility adoption by 51 European banks investigated whether adoption was motivated by an
expected increase in operational efficiency, or as part of a corporate social responsibility (CSR) strategy (Lorca and
Martínez, 2009). Results indicate that neither operational nor social factors exerted a significant influence on web
accessibility adoption. It was concluded however that greater web accessibility contributed in terms of Internet
visibility which could eventually lead to increased future financial performance.
CSR and Corporate Financial Performance

A World Economic Forum survey of CEOs reported that corporate brand reputation outranks financial performance as the most important measure of success. Companies with a public commitment to ethics perform better on three out of four financial measures. On average CSR-oriented companies also have 18% higher profits (Gupta and Sharma, 2009).

A study of business exposure, or “the degree to which a firm is vulnerable to its environment”, noted that a firm’s support for charities and social causes is highly correlated to the level of business exposure it faces (Miles, 1987).

It has been argued that CSR builds a reservoir of goodwill that firms can draw upon in times of crisis. The value of a positive reputation is “precisely because the development of a good reputation takes considerable time and depends on a firm making stable and consistent investments over time” (Bhattacharya and Sen, 2003). The study concluded that “reputation is the most valuable asset of any firm and is thus worth protecting”.

Peloza (2006) considered how corporate reputation affects the impact of CSR on corporate financial performance, and concluded that social responsibility is a major signal used by firms to create good reputations. McWilliams and Siegel (2001) indicated that positive CSR “creates a reputation that a firm is reliable and honest”.

Attitudes of Consumers with Disabilities

It has been reported that the people with disabilities in the US, Canada, UK, and Australia have annual incomes in excess of US$300 billion. Such potential buying power emphasizes the potential financial benefits to a web accessibility initiative (Loiacono et al, 2009).

Buyer behavior of consumers with disabilities is contingent upon the individual’s perception of whether the shopping environment seems enabling or disabling. The consumer reacts negatively to perceived access barriers that exist in the shopping context (Kaufman-Scarborough and Baker, 2005). It has been argued that those with disabilities are loyal consumers who prefer to purchase from more accessible Web sites (Vass, 2000; and Freedman, 2007). Several studies have warned that while consumers may not react strongly to a CSR program, they do react vigorously to “irresponsible” corporate behavior (Bhattacharya and Sen, 2004; Fielding, 2007; and Bhattacharya et al, 2006).

Technical Reasons for Inaccessible Websites

It has been estimated that only one percent of web developers took accessibility into account when designing Web pages (Markel, 2001). Another study found that sixty-four percent of corporate webmasters agreed that “management is unaware of the importance of web accessibility”, and the most significant barriers to website accessibility are “a lack of policies and awareness by management” (Loiacono et al, 2009).

Some webmasters questioned the usefulness of relying on automated testing with tools such as Bobby. Compliance with standards does not guarantee website accessibility. For example, a “compliant” corporate site may not be usable to blind customers due to its poorly designed menu structure. WAI accessibility guidelines have been criticized for focusing on blind users’ issues and not those with other disabilities, such as cognitive or physical disabilities. Thus, it may be seen that a site is addressing issues of accessibility, but they are doing so for only one group, blind users (Paciello, 2005).

Experiences of Blind Consumers with Web Accessibility

There have been several studies on the experiences of blind users with Web Accessibility. Blind users often become frustrated and annoyed while using the web (Lazar et al, 2004). Problem areas range from poorly named links, important text displayed only in a graphic, form fields with incorrect or missing labels and names, and popup windows (Mankoff et al, 2005). In addition, blind users navigate pages by using jump keys built into voice browsers. They then create a mental model of a page, and try to navigate logically to find their target information. A user may take more than 5 minutes to navigate within a single poorly designed page. Current web disability checkers ignore this “time-oriented” aspect of accessibility (Takagi et al, 2004).

A study of 315 websites over the period 1997-2002 concluded that adding new technology to a Web page increases complexity, and inadvertently contributes to increasing barriers to accessibility for persons with disabilities (Zeng et al, 2004). For example, there is often a lack of accessibility experience among web developers. Developers choose...
tools that check compliance using syntactical checking. Checkable errors are narrowly limited to the level of the tag description layer (Mankoff et al., 2005; Takagi et al., 2004).

In one study of web developers’ attitudes towards Web Accessibility the majority of webmasters supported the concept of Web Accessibility, but cited roadblocks to accessibility such as lack of time, lack of training, lack of managerial support, lack of client support, inadequate software tools, and confusing accessibility guidelines (Lazar et al., 2004).

MODEL BUILDING

The proposed model in Figure 1 examines website accessibility in relation to CSR posture. Accessibility measurement issues are discussed in the next section. The observable CSR posture of an organization, based on its web accessibility history, should be related to its propensity to value and engage in CSR activities in general. CSR posture can be categorized as reactive, defensive, accommodative, and proactive using the RDAP scale (Clarkson, 1995).

Propensity to engage in CSR activities has been related to the type of product or service offered by the organization, and can be categorized as Search Goods, Non-Durable Experience Goods, Durable Experience Goods, Experience Services, and Credence Services. Companies selling a credence service, such as financial or medical services are more likely to take a proactive posture towards CSR activities such as making websites accessible to the blind (Vitaliano and Siegel, 2007).

Over the last few years, websites have become more visually complex. Screen readers rely on text which can be read back to the blind user. Multimedia web technologies impact the efficacy of using screen readers, and are expected to have had a negative effect on accessibility. We hypothesized that after February 2006, corporations began to take note of the widely publicized Target case, and that this would have had a positive effect on corporate web accessibility. We hypothesized that a company’s technical expertise, as well as senior management support for accessibility would positively affect observed website accessibility. Last we argued that compliance with accessibility standards alone would not necessarily result in a website which would be used by customers with disabilities. Corporations who consider web usability from the customer’s perspective and reengineer their website design to create a high level of usability are more likely to gain a competitive advantage.
Rather than use simple compliance error checking utilities, we chose IBM’s aDesigner software (Fukada, 2005). This permitted us to simulate a webpage from a blind user’s perspective. It was the only tool which permitted us to measure usability and not just compliance with WAI guidelines. The aDesigner model uses two measures, Navigability and Listenability. Navigability measures how easily a blind user can find the information they require on a website. Navigability consists of reaching time, which measures the time it takes for a blind user to reach the major target elements on a page using a voice browser. For example reaching times of over 90 seconds will lead to a lower Navigability score (out of 100).

As blind users listen to the content of a web page, the Listenability of the page is an important determinant of accessibility. The aDesigner model derives Listenability from a combined code and text-oriented analysis. ALT attributes are checked for the appropriateness of alternative texts. Web authors often separate each character of a word with a space for a desired visual effect. When interpreted by a screen reader, the extra spaces make it difficult for blind people to understand the meaning of the word.

RESULTS

A random sample of private sector providers of medical information was selected from the CAPHIS Top 100 List of Health Websites You Can Trust (Medical Library Association, 2008) The Target suit hinged upon whether or not Target’s store and website were part of an integrated effort. Therefore, only healthcare providers with a physical as well as an online presence were chosen (Table 1).

<table>
<thead>
<tr>
<th>HarvardVanguard</th>
<th>FamilyDoctor</th>
<th>Dr.Mirkin</th>
</tr>
</thead>
<tbody>
<tr>
<td>HealthSquare</td>
<td>InteliHealth</td>
<td>KeepKidsHealthy</td>
</tr>
<tr>
<td>MayoClinic</td>
<td>MedicineNet</td>
<td>WebMD</td>
</tr>
<tr>
<td>DrugInfoNet</td>
<td>VirtualHospital</td>
<td>American Academy of Pediatrics</td>
</tr>
<tr>
<td>ClevelandClinic</td>
<td>InternetHealthResources</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Sample of Healthcare Providers

The Internet Archive began in 1996 to preserve the rapidly growing web. The Wayback Machine became available in 2001 enabling users to access over 100 terabytes of archived web pages. Archived sites have been growing at the rate of 12 terabytes per month and now number 85 billion pages (Hacket et al, 2004; Yaukey, 2008). Using the Wayback machine, the first occurrence in the month of the providers’ homepages were retrieved on February 2000, June 2001, June 2002, April 2003, May 2004, June 2005, February 2006, August 2006, August 2007, and August 2008. Accessibility scores for Compliance, Listenability, and Navigability were recorded from aDesigner on a 100-point scale. Listenability and Navigability data were averaged as a proxy for usability.

Figure 2 describes healthcare accessibility trends where compliance and usability were calculated by IBM’s aDesigner software as discussed in the previous section. The figure indicates an initial drop followed by a rising trend in compliance and usability over the study period. Usability scores are lower than compliance scores. This was not surprising given the extra effort required to create usable websites which can be easily navigated and understood by blind consumers.
It is interesting to compare our sample’s experience to that of Target Corporation in Figure 3.

Table 2 reports a comparison of compliance and usability means among the 14 healthcare providers for the six years before the lawsuit, to the period ending when the Target case was settled in 2008. These data suggest that there was a significant improvement in both compliance and usability scores after the onset of the Target case. One explanation might be that the healthcare industry had taken note of the implications of a potential class-action suit over accessibility, and responded with improvements in compliance and usability.

<table>
<thead>
<tr>
<th>Sample Healthcare Providers N=14</th>
<th>Compliance</th>
<th>Usability</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 2000- Feb 2006</td>
<td>68.9</td>
<td>52.6</td>
<td>0.02**</td>
</tr>
<tr>
<td>Aug 2006- Aug 2008</td>
<td>79</td>
<td>61.5</td>
<td>0.03**</td>
</tr>
</tbody>
</table>

Table 2: Healthcare Provider Website Accessibility Before/After Onset of Target Case, N=14

In order to test whether the Web Accessibility of healthcare provider was comparable with other organizations, a comparison was made with companies recognized as America’s most socially responsible corporations. A sample of the top rated corporations was extracted from the Social Funds Corporate Social Research Center CSR Index for the year 2000, the start of the analysis period (Social Funds Corporate Social Research Center, 2008). The benchmark companies are listed in Table 3.
Table 3: Top U.S. CSR Companies

| Adobe Systems | Hewlett-Packard | New York Times |
| Avon Products | IBM | Southwest Airlines |
| Bank of America | JP Morgan Chase | Symantec Corp. |
| Charles Schwab | Lexmark International | Timberland |
| Fannie Mae | Marriott International | |
| FedEx Corp. | Microsoft | |

The results of each company’s Web Accessibility score for blind users were averaged over the period 2000-2008. A comparison of means in Table 4 revealed that the healthcare provider usability average score of 51.13 was significantly lower than the average 67.98 scored by the top CSR companies over the test period. This result suggests a possible linkage between CSR and website accessibility initiatives.

Table 4: Social Responsibility and Accessibility

<table>
<thead>
<tr>
<th>Average Web Accessibility (Usability Scores)</th>
<th>2000-2008</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHealth Providers (N=14)</td>
<td>53.13</td>
<td>0.0000***</td>
</tr>
<tr>
<td>“Socially Responsible” Corporations (N=16)</td>
<td>67.98</td>
<td></td>
</tr>
</tbody>
</table>

A meta-analysis of the sample usability data was conducted. We focused on usability scores rather than compliance scores because we felt usability was more indicative of corporate dedication to addressing the needs of customers with disabilities. Given the small size of the two groups, n1=15 and n2=16, slopes of individual case regressions were compared via a t-test, which is appropriate for small groups with less than 30 observations, as discussed by Campbell (1975) in which he talks about looking across cases to note patterns in data (i.e., pattern matching).

The analysis of the slopes in Table 5 suggests that top CSR companies were continually improving their usability over the period 2000-2008. There did not appear to be a significant jump in usability in response to the litigation between the National Federation of the Blind and Target Corporation in February 2006. An analysis of the healthcare provider usability trends over the same period revealed some striking differences. For the period before the onset of the Target case, the healthcare providers’ usability had been growing at a much slower rate than the CSR sample. After the Target case began however, the healthcare providers significantly increased their website usability as measured by their regression slope.

Table 5: Comparisons of β’s Sample vs. CSR

<table>
<thead>
<tr>
<th>Change in Web Accessibility (usability scores)</th>
<th>Slope before Feb-06</th>
<th>Slope after Feb-06</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>healthcare Providers (N=14)</td>
<td>0.99</td>
<td>4.56</td>
<td>0.005***</td>
</tr>
<tr>
<td>Top “Socially Responsible” Corporations (N=16)</td>
<td>1.81</td>
<td>2.55</td>
<td>0.425</td>
</tr>
</tbody>
</table>
CONCLUSIONS

While the Target case is frequently touted as a break-through in federal jurisprudence, caution should be exercised in evaluating the real legal impact of the decision. Instead the main impact of this decision may have been a “wake-up call” to corporations. To avert a similar action by the NFB or other disability groups, corporations need to improve their website accessibility. They can do the minimum to comply with disability standards, or they can redesign the usability of their website. By addressing usability issues, corporations can increase market share and gain a competitive advantage.

We tested our conceptual model explaining a corporation’s web accessibility initiatives within the healthcare marketplace. We assumed that healthcare companies may be more attuned to the needs of customers with disabilities. Our results supported the hypothesis that healthcare providers significantly improved the accessibility of their websites after the start of the National Federation of the Blind class action suit against Target Corporation. As expected, there was extensive variability in website compliance and usability between healthcare providers. The websites of the healthcare providers were not as accessible as websites of other corporations recognized for their emphasis on being socially responsible corporate citizens. While these corporations maintained proactive accessibility standards throughout the study period, 2000-2008, the healthcare providers appeared to improve their accessibility only after the onset of the Target case.

LIMITATIONS

There were some limitations to this study. Ideally pages need to be tested with actual users who have disabilities rather than a simulator such as in IBM’s aDesigner model. We analyzed only the home pages of a small sample of healthcare providers. Further research into website accessibility might expand this analysis by going deeper into a larger sample of healthcare provider websites using a larger number of time periods sampled. Structured interviews with developers, designers, IS managers, and senior managers will lead to a better understanding of some of the underlying factors influencing an organization’s posture towards accessibility for blind users. Interviews will also increase knowledge about factors that promote or deter the implementation of Web Accessibility. Future studies should extend analysis to consider users with disabilities other than blindness and visual impairment.

REFERENCES


42. Social Funds Corporate Social Research Center, Business Ethics 100 Best Corporate Citizens at http://www.socialfunds.com/about/page.cgi/100best.html


53. Zeng, X; Hackett, S; Parmanto, B.(2004) Accessibility of Internet Websites through Time, ASSETS’04, October 18–20, Atlanta, Georgia, USA

NOTES

2. The World Wide Web Consortium (W3C)’s Web Accessibility Initiative (WAI) is an effort to improve the accessibility of the Web for people with disabilities. WAI provides accessibility guidelines to web developers. (Web Content Accessibility Guidelines 1.0 and 2.0)