

## Internet Justice: Reconceptualizing the Legal Rights of Persons with Disabilities to Promote Equal Access in the Age of Rapid Technological Change

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**Abstract:** Although a range of laws and regulations have been created in the United States to promote online accessibility for persons with disabilities, tremendous disparities persist in access to Internet technologies and content. Such inaccessibility is an enormous barrier to equality and participation in society for persons with disabilities. The current legal approaches to online accessibility have not proven successful, focusing on specific technologies and technical solutions to accessibility. This paper argues for a reconceptualization of the approach to promoting legal guarantees of online access for persons with disabilities, focusing on information and communication goals, the processes of accessing information, and new approaches to monitoring, guidance, and enforcement. Without a broader conception of accessibility under the law, persons with disabilities risk being increasingly excluded from the technologies and content of the Internet that are coming to define social, educational, employment, and government interactions.

**Key Words:** accessibility, internet, social justice

A reflection on the approach of accessibility law is extremely important as the Internet has significantly changed and continues to rapidly alter information behavior, communication, education, government, entertainment, and virtually every other important human interaction. The Internet and related technologies – such as computers, mobile devices, software, websites, and social media tools, among many others – promise to make even more significant changes to life in the future. In technologically advanced societies, living life exclusively offline is already increasingly difficult. Registering a student for school, filing taxes, applying for social benefits, banking, and numerous other functions often require use of the Internet. In many cases these types of services are exclusively online. Additionally, many entertainment options and shopping resources exist only online. When there are physical and virtual equivalents, the online equivalent often offers lower prices, greater selection, home delivery, and other conveniences. The devices powered by the Internet have created new means of interaction and information resources that were unthinkable even ten years ago. Yet, the opportunities of the Internet are not equally available to all.

The federal government in the United States has passed a range of laws and created sets of regulations pertaining to online accessibility for persons with disabilities. These laws include Section 508 of the Rehabilitation Act, the Americans with Disabilities Act, the E-government Act, the Telecommunications Act of 1996, and the Twenty-first Century Communications and Video Accessibility Act. Nevertheless, levels of accessibility remain remarkably low in the technologies needed to access online content, including software, computers, and mobile devices, as well as in the content of the Internet, across governmental, commercial, and even non-profit web content. Numerous studies have demonstrated – and continue to demonstrate – the large barriers and severe inequalities that many people with disabilities encounter when using the Internet. As the reliance on online interactions, services, and resources continues to expand, the disparities in access will become increasingly isolating for people with disabilities.

All of these issues have been understood since the mid-1990s, but attention paid to these issues by governments, industry, and educators has never been sufficient. In the current environment, concerns about lack of equal access to the Internet encompass not only information gathering, but also communication, social interaction, the ability to seek and engage in education and employment, and participation in government. Being excluded from the Internet and related technologies makes an individual tremendously disadvantaged in society. The Internet has been both a liberating tool that provides increased access to information as well as the creator “of new or additional barriers to accessing information and the benefits of an information society” (Stienstra, Watzke, & Birch, 2007, p. 151).

In fact, a technology with social benefits to everyone other than persons with disabilities can be seen as active oppression of persons with disabilities (Goggin & Newell, 2000, 2003). Recent specific examples of these inequalities of access to Internet technologies and content that have significantly affected people with disabilities include inaccessible mobile devices, tablets, e-book readers, social media sites, webmail programs, online testing sites, and educational materials (e.g., Higgins, 2009; Howard, 2011; Lazar & Wentz, 2011; Parry, 2010; Portner, 2010; Qualters, 2009; Sadon, 2010; Wentz & Lazar, 2011).

The lowly status accorded to online accessibility in many corners is encapsulated in the strange fact that in 2010, the Department of Justice announced that it would be asking agencies if they were in compliance with the online accessibility requirements of Section 508 of the Rehabilitation Act (Gordon & Kundra, 2010). While this may sound like a positive action on the surface, Section 508 was passed in 1998 and was to have been fully implemented by 2001. Further, the government has not looked into Section 508 compliance since 2004, despite a parade of studies documenting that government agencies do not generally comply with Section 508 requirements, such as the studies discussed in the next section. Perhaps the most surprising aspect was that there was no intention to objectively assess the accessibility of the sites, but simply to ask the agencies to tell the Department of Justice how accessible the sites are.

The Department of Justice report detailing the findings of their study ([http://www.ada.gov/508/508\\_Report.htm](http://www.ada.gov/508/508_Report.htm)) was released in late 2011. The levels of compliance with the requirements of Section 508 reported by the agencies were revealing. About 58% of agencies reported performing any routine accessibility testing of their websites, 22% of agencies reported checking for accessibility only when notified of accessibility problems, and 12% reported never checking accessibility and not having any plans to do so. At least, 73% did report providing an email address to report accessibility problems on the website. Beyond websites, levels of accessibility testing are even lower, as 30% of agencies developing multimedia reported having a process to check it for accessibility. The findings of the study reflect long-term trends in the approaches of many government agencies to inclusion of people with disabilities – only focusing on accessibility after a problem is externally identified (Lazar & Jaeger, 2011; Wentz, Jaeger, & Lazar, 2011).

The range of laws and regulations created by the United States government for promoting online access for persons with disabilities are more robust and comprehensive than those of any other nation (Jaeger, 2004; Simpson, 2009). However, they are of little value if they are not

coherent and enforceable. It is long past time for a refocusing of disability advocacy and research on this vital topic, as it truly is one of the most important areas of equality for persons with disabilities. During the campaign for the implementation of closed captioning, the term “media justice” was employed by people with hearing impairments to convey the importance of equal access to the content of television programs for all (Downey, 2008). Drawing on this precedent, it is time for persons with all types of disabilities to begin asserting their rights to Internet justice as the foundation of social inclusion in the Internet age.

This paper explores the reasons that the rapid pace of change of online technology necessitates a reconceptualization of disability rights law, the new information and communication conceptual pillars of disability rights law that might address these inequalities, and potential ways in which these concepts could be implemented and enforced under the law. The goal of these changes is to promote a notion of Internet justice for persons with disabilities, a justice that eliminates the barriers preventing equal participation of persons with disabilities in many Internet-related technologies and in many aspects of the online content.

### Inaccessibility and the Internet

In the United States, 54.4 million people have a disability (18.7% of the overall population in 2005), while the number of persons with disabilities worldwide was projected to approach one billion in 2010 (Albrecht & Verbugge, 2000; Metts, 2000; US Census Bureau, 2008). Technologies that are inherently designed to be inclusive of all users regardless of ability – including the large portion of the population with a disability – are known as “accessible technologies.” To be accessible, a technology must be usable in an equal manner by all users without relying on specific senses or abilities. Additionally, the technology must be compatible with the assistive technologies that users may rely on: narrators, scanners, enlargement, voice-activated technologies, refreshable Braille, and many other devices that persons with disabilities may employ (Draffon, 2009; Jaeger, 2009; Lazar, 2006; Lazar & Greenridge, 2006; Lazar & Jaeger, 2011).

Online inaccessibility can affect most people with disabilities, depending on the types of inaccessibility encountered. To be inclusive of persons with visual impairments, a website must be designed so that all of the text, buttons, and links can be read by a screen reading program like JAWS or Window-Eyes; that all graphics have alt tags – text describing the image; that it has sufficient contrast between text and background; that it works with screen magnifiers, screen enlargement software, and Braille readers; that it can be navigated by keyboard rather than mouse; that text size and color contrast can be adjusted; and that the features with other types of assistive technologies that may be used for text size and color contrast.

For users with hearing impairments, all audio content on the website must have closed captioning or a textual equivalent. For users with seizure disorders, websites must avoid flashing items. For users with cognitive disabilities, the navigation of the site and instructions should be clear, while the layout must be uncluttered. Users with mobility impairments must be able to navigate without a mouse through voice and other alternate input devices; finally, compatibility with a range of assistive technologies is also extremely important.

Information technologies can be accessible from the outset if designed to include all users and if the accessibility solutions are designed to carry through subsequent generations of an information technology (Hackett, Parmento, & Zeng, 2004; Kennard & Lyle, 2001; Lazar & Greenidge, 2006; Stephanidis & Emailiani, 1999; Vanderheiden, 2003). However, for most information technologies, accessibility is not part of the design process and accessibility testing infrequently occurs in the development and implementation of most information technologies (Jaeger, 2006a; Kanayama, 2003; Keates & Clarkson, 2003; Theofanos & Redish, 2003; Tusler, 2005). As a result of this lack of focus on accessibility, the average time between the introduction of a new ICT and the availability of an accessible version is three years (Kanayama, 2003). The design of technologies – when not including accessibility as a core component – actually disables rather than enables, creating further social barriers for persons with disabilities (Goggin & Newell, 2003; Moser, 2006).

The resulting barriers to Internet accessibility are significant, and reflected in the levels of usage. In 2011, 54% of adults with disabilities used the Internet, while 81% of other adults did (Fox, 2011a, 2011b). People with disabilities who do regularly use the Internet also lag behind in quality of access, with 41% of adults with disabilities having broadband access at home, while 69% of the rest of the population does. Similarly, a 2010 study found that broadband adoption by persons with disabilities was two-thirds that of the national average and that people with disabilities who have broadband engage in a much smaller range of online activities as a result of accessibility issues (Horrigan, 2010). This smaller range of activities results directly from inaccessibility of online content and pathways to that content.

Early estimates of the inaccessibility of commercial websites ranged from 80% to 95%; a 2004 study found that 91% of e-commerce websites did not meet Section 508 accessibility criteria; and in 2009, more than 90% of leading corporate, non-profit, and e-commerce sites were found to have accessibility barriers (Loiacono & McCoy, 2004, 2006; Loiacono, Romano, & McCoy, 2009; Sullivan & Matson, 2000). Corporations still lag behind federal and state governments in website accessibility (Yu & Parmanto, 2011).

Collectively, the findings from all of these studies demonstrate that most corporations have not “sufficiently recognized the importance of customers with disabilities to their business goals” (Loiacono, 2004, p. 82). Many companies are not even aware of their requirements under accessibility laws. A 2010 study found that 40% of airlines are unaware of the accessibility requirements for air travel websites and call centers, while two major airlines did not even honor these requirements (Lazar *et al.*, 2010). A 2012 follow-up study found no notable progress in compliance with these requirements (Lazar *et al.*, 2012). The inattention to these requirements for airline websites are representative of a larger problem with lack of attention to accessibility issues in other uses of websites by corporations.

In employment, many processes in a job that might have made a position difficult or impossible for a person with a disability now can be negotiated with the help of computers, the Internet, and assistive technologies (Ritchie & Blanck, 2003). However, employment statistics actually show that the first few years after the passage of Section 508 actually paralleled declines in employment of persons with disabilities (Bound & Waidmann, 2002). A 2005 study found that 97% of companies use the Internet and online services as part of hiring and human resources

processes, yet only 13% of these companies were familiar with the guidelines for accessible website design, and only 10% could confirm that their online hiring and human resources materials had been evaluated for accessibility (Bruyere, Erickson, & Looy, 2005). Of the persons with disabilities who are employed, 90% rely on accessible technologies in their jobs (Johnson, 2004).

In government information online, the accessibility picture is no better. Though a key of focus for Section 508 was access to online government information and services, a wide range of studies over the course of a decade have shown low levels of compliance with the law by government agencies (for overviews, see Jaeger, 2011; Lazar & Jaeger, 2011). In fact, a comparison of different studies over the years reveals almost no progress in overall levels of accessibility of e-government websites between 2000 and 2010 (Olalere & Lazar, 2011; Lazar, Jaeger, & Bertot, 2011). The percentages of accessible government websites have barely changed in ten years, with percentages of accessible websites still commonly found in teens or twenties a decade after the Section 508 requirements were to have been implemented (Olalere & Lazar, 2011).

Almost 70% of elementary and secondary schools and 100% of post-secondary institutions require students to use the Internet for educational and administrative activities (Ogden & Menter, 2009). However, the accessibility of academic websites has steadily decreased since the passage of Section 508, and teachers are rarely prepared to handle the technical problems that students with disabilities face in accessing online course materials (Carlson, 2004; Harper & DeWaters, 2008). A 2010 overview of studies of higher education accessibility showed more than 75% of the sites examined to be inaccessible (Bradbard, Peters, & Caneva, 2010). While the Internet and online content offer numerous new opportunities for persons with disabilities in education, employment, social interaction, and civic engagement, these potential benefits will not be realized in a heavily inaccessible online environment.

These Internet-related challenges to participation add to significant existing social barriers. The rates of failure to complete high school are about three times higher among persons with disabilities than the rest of the population; among those who pursue higher education, one year after graduation, only 5% of students with disabilities remain enrolled in four-year colleges (Stodden, 2005; US Department of Education, 2010; Wagner, Newman, Cameto, Garza, & Levine, 2005). For most people with disabilities, higher education “is still just a dream” (Mates, 2010, n. p.). Persons with disabilities face unemployment at more than three times higher levels than the rest of the population (54.4% versus 16.5%) and suffer similar gaps in educational attainment (US Census Bureau, 2008). For some types of disability, the gaps in employment are even higher – for people considered to have a severe disability by the Census Bureau, 69.3% are unemployed and 27.1% live in poverty, three times the national average (US Census Bureau, 2008). As such, the threat of lack of equal access to the Internet looms as a catastrophic expansion of current barriers and exclusions from society for persons with disabilities.

#### Access, Accessibility, and the Law

In 1969, the United States Supreme Court explicitly stated, “The Constitution protects the right to receive information and ideas” (*Stanley v. Georgia*, 1969, p. 564). Although often an

unspoken element of the guarantees of the First Amendment, this right to receive, access, and communicate information ensures the ability to meaningfully participate in society (Jaeger & McClure, 2004; Mart, 2003; McIver, Birdsall, & Rasmussen, 2003). Information access and exchange – regardless of medium – is a matter of civil rights. However, for persons with disabilities, inaccessible Internet technologies and content undermine these civil rights related to information.

However, the approaches to disability rights laws to technology have never been focused on technology as a means of information access and exchange. Instead the laws are based on the specific nature of certain technologies, leaving the laws inapplicable to technological change (Crawford, 2003; Frieden, 2003). By focusing on specific technologies and ignoring the underlying reasons that make accessibility a social necessity for persons with disabilities, the current conceptual approach to the law all but guarantees that online accessibility will not be achieved.

These inherent biases against online accessibility in the law also include two other key elements. First, disability rights laws in the United States have been built on an “antisubordination approach,” meaning that rights are available only if to those who are members of the legally defined class of people protected (Colker, 2005). In contrast, all other types of civil rights laws in the United States are based on an “antidifferentiation approach,” meaning that anyone has protections under the law if they are being discriminated against (Colker, 2005). This difference means that disability rights laws are much harder to enforce, as people with disabilities must first prove that they have standing under the law, something no other population must do under civil rights laws. This need to establish standing creates what has been labeled the “Goldilocks dilemma,” allowing courts to dismiss the claims of persons with disabilities who the courts determine are not qualified under the law unless they are of a “just right” level of disability (Areheart, 2008). Courts at all levels have enthusiastically embraced this option, significantly limiting the ability to enforce accessibility rights (Areheart, 2008; Davis, 2002; Lee, 2003; Switzer, 2003).

The second and closely related problem is that the law also has many exceptions, loopholes, and inherent contradictions in information and technology; these serve to increase and even encourage discrimination against persons with disabilities. There is an exemption written in many of the disability laws for an “undue burden,” which exempts the creation of accessible versions of products if such accessibility would be too costly or too time-consuming, with clearly defining these terms. As such, many corporations have used the undue burden exemption as a reason for not making accessible versions of technologies (Dispenza, 2002; Jaeger, 2006a; Kanayama, 2003; Lazar & Jaeger, 2011).

Yet, reliance on industry standards is insufficient to promote accessibility (Stienstra, 2006), and disability rights laws cannot be revised fast enough to match technological change at this point. Even if the political capital and will existed, legislation and rulemaking move too slowly to catch up to the pace of change in the online environment. To address this accessibility conundrum, disability law needs to be reconceptualized expressly to ensure ongoing equal access to the online technologies and content.

Thus far, the common perspective on disability and the Internet has been to apply pre-Internet approaches to contemporary problems (Goggin & Newell, 2006). However, the law related to information and technology access needs to better reflect the realities of the current environment and the inevitability of ongoing, significant technological change. Simply put, the law needs to focus on information and communication goals to promote social inclusion rather than just creating technical standards or performance metrics. Such an evolution in the conceptual foundations of disability rights law is vital to ensuring that persons with disabilities are able to participate in society.

Due to the rapid technological changes in the past two decades, staying engaged in society is moving from Internet access being necessary just for information access to Internet access being necessary for information access, communication, and social interaction (Jaeger & Xie, 2008). In considering the ways in which the law could move to promote sustained equality of access, the constantly evolving nature of the Internet and related technologies must be considered. Even an update to an existing technology may change the accessibility of the technology or the ways in which the user interacts through assistive technologies. Equality of access depends on equality of all levels of access. Until the complex nature of information access is embodied in disability right laws, these laws will not be able to promote meaningful online accessibility.

There are three types of access to information – physical access, intellectual access, and social access (Burnett, Jaeger, & Thompson, 2008; Jaeger & Burnett, 2010). Physical access is the most basic and familiar aspect in disability rights law – the ability to reach something, in this case information. Physical access to information is generally viewed as access to the document or other form embodying information, whether conveyed through print, electronic, verbal, or another means of communication – literally the process of getting to the information that is being sought (Svenonius, 2000). The vast majority of discourse on information access tends to focus on physical issues, such as the physical structures that contain information, the electronic structures that contain information and the paths that are traveled to get to information (Jaeger & Bowman, 2005). While it is a necessary prerequisite, mere physical access is not sufficient for full access. “It is a common, but mistaken, assumption that access to technology equals access to information” (McCreadie & Rice, 1999, p. 51). The ability of a user to get to information and the ability of that user to employ information to accomplish particular goals are very different (Culnan, 1983, 1984, 1985).

The next level of access is intellectual access – the ability to understand the information. Intellectual access can be understood as the accessing of the information itself after physical access has been obtained (Svenonius, 2000). Intellectual access to information “entails equal opportunity to understand intellectual content and pathways to that content” (Jaeger & Bowman, 2005, p. 68). Issues of intellectual access involve an understanding of how the information is presented to people seeking information, as well as the impact of such presentation on the process of information seeking; intellectual access to information includes the means through which the information is categorized, organized, displayed, and represented.

Social access – the ability to communicate and use the information in social contexts – is the most advanced level of access (Burnett, Jaeger, & Thompson, 2008). Such social contexts

can range from personal communication for entertainment purposes to educational and work settings to democratic participation. Gaining and understanding information without the ability to communicate that information prevents social engagement through the information. Social access is now heavily dependent on the online environment for communication in many contexts. The social access depends both on individual user's attitude toward the Internet and on the ability of the user to employ the Internet and related technologies to engage in social interactions.

The laws that have been implemented to promote accessibility generally focus on the physical access issues (Bowe, 1993). A clear example of this trend can be found in closed captioning. The current law mandates that closed captioning be available, without considering the types of content or levels of content that would be available in that format. As a result, a large amount of closed captioning text is rewritten to reflect a much lower reading level than the spoken words, demonstrating a lack of consideration of intellectual access, and the types of programming available with closed captioning have varied widely in usefulness and educational value, evidencing a lack of consideration of social access (Downey, 2008, 2010). As a result of this focus on physical access, even the training materials to assist developers in the creation of accessible technologies reflect this strong bias toward physical access (Law, Jaeger, & McKay, 2010).

On the Internet, a similar focus on physical access can be seen in Section 508 of the Rehabilitation Act, which is intended to ensure equal access to government information technologies and online content. Studies have shown low levels of compliance with the law (Dobransky & Hargittai, 2006; Ellison, 2004; Jaeger, 2006b; 2008; Lazar & Greenidge, 2006; Rubaii-Barrett & Wise, 2008). Both the Federal Communications Commission's National Broadband Plan and the National Council on Disability's National Disability Policy: A Progress Report recently noted the widespread failure of the federal government to comply with Section 508 requirements, with the later report paralleling non-compliance with Section 508 to the common inaccessibility of commercial websites (Federal Communications Commission, 2010; National Council on Disability, 2009). However, even full compliance would not address many of the access issues for persons with disabilities.

The Section 508 guidelines focus on physical access for persons with disabilities, emphasizing visual, hearing, and motor impairments, but mostly leaving out cognitive impairments (Jaeger & Bowman, 2005; Lazar, 2007; Lazar & Jaeger, 2011). This focus of the law on physical access results in limited consideration of intellectual and social dimensions of access. Compliance with Section 508 means that a website, software application, or operating system can technically be accessed by someone using an assistive technology input or output device. Technical accessibility, however, does not necessarily equate to an interface that is usable, understandable, or functional for communication (Theofanos & Redish, 2003). Without these later components, a technology can be technically accessible under the law and virtually preclude intellectual and social access for some or all persons with disabilities. For social equality to be achieved in access to the Internet, disability rights laws will need to place greater emphasis on achieving intellectual and social access – along with physical access – online.



Issues of online accessibility for persons with disabilities exist within a much broader policy context, and within this context, online accessibility is part of a set of issues resulting from a failure of policy harmonization. The increasingly rapid pace of technological change has resulted in many gaps between policy and technology, as well as gaps between different policies related to one technology. As policy struggles to stay relevant to new technologies, a key issue will be policy harmonization – the addressing of incomplete, inconsistent, and conflicting policies related to information and communication technologies (Bertot *et al*, 2009; Shuler, Jaeger, & Bertot, 2010). The challenges of policy harmonization are most prominent in the online environment, which are dependent on these technologies and where technological change is most rapid (Bertot, Jaeger, & Grimes, in press; Bertot, Jaeger, & Hansen, in press; Shuler, Jaeger, & Bertot, 2010).

In terms of online accessibility, many scholars have noted clear gaps between laws related to disability and the technological realities of the Internet; many legal commentators offered proposed solutions following the 2006 decision in the *National Federation of the Blind v. Target* case that held that e-commerce only has to be accessible if it sufficiently similar to a physical store. Evidencing a clear lack of understanding of technology and its social implications, the holding at least served to increase awareness of inaccessibility among legal scholars. A range of approaches were suggested, including, emphasizing a plain language interpretation of existing disability-rights laws to increase online accessibility, making text accessible and allowing other content to be inaccessible, regulating the Internet as if it were a telephone system, and having Congress pass another law specifically for online accessibility (e.g., Abrar & Dingle, 2009; Bashaw, 2008; Else, 2008; Kessling, 2008). The proposed solutions following the *National Federation of the Blind v. Target* generally overlooked the realities of enforcement of accessibility laws and/or the fact that technological change would render the proposed solutions quickly outdated.

More recently, the federal government engaged in efforts to harmonize accessibility laws. The Department of Justice (2010a) began pursuing a series of revisions to the ADA to account for changes in technology and society since the passage of the law, including website accessibility. The intent is to officially extend website accessibility requirements to all entities covered by the ADA, including local governments, state governments, and places of public accommodation. Applying the ADA to entertainment and commerce online would hopefully resolve many problems of inaccessibility and the problems created by the *Target* holding. A key part of the debate on improving the guidelines was the question of whether website accessibility for persons with disabilities should be based on performance standards (focusing how something works) or technical standards (focusing on how something is designed) (Department of Justice, 2010b).

Contemporaneously, the Architectural and Transportation Barriers Compliance Board – better known as the Access Board – began pursuing new regulations under Section 508 of the Rehabilitation Act and the accessibility provisions of the Telecommunications Act (Access Board, 2010a, 2010b). The first goal was to update the regulations to bring them in harmony across the laws. The second goal of these new regulations was to change the focus of the accessibility requirements from product type to functionality of a technology, accounting for the range of functions now embodied in many products. These changes represent a move from

technical standards to performance standards. In late 2011, the Access Board issues their proposed new rules for Sections 508 (<http://www.access-board.gov/news/ict-draft-rule.htm>).

While performance standards are the option more likely to produce accessible technologies than technical standards (Corcoran, 2011), neither of these approaches addresses the inherent structural issues with monitoring, compliance, and enforcement or larger conceptual issues of access. In both of these cases, the proposed new regulations would have significant impacts on online accessibility, but any impacts would only occur if the new regulations are monitored and enforced to ensure compliance. Nothing in these regulations would make significant changes in monitoring and enforcement approaches or activities, following the existing structures that have not produced an accessible online environment. Based on past precedent, it seems unlikely that these new regulations would result in widespread online accessibility. Additionally, neither new set of guidelines would sufficiently shift the focus to the overall goal of equality of access. While performance-based criteria would better account for considerations of physical access, the far more complex challenges of equality of intellectual and social access stretch far beyond the technical or performance-based standards under consideration.

Without more holistic changes, the situation is unlikely to significantly improve, regardless of the types of standards created. These limitations of the current approach in responding to technological change were evidenced in two other recent actions by the federal government related to accessibility. Congress passed the Twenty-first Century Communications and Video Accessibility Act of 2010, but, in spite of its title, the law was devoted to retroactive fixes to existing technologies, some of which had been widely used for half a century. At the same time, the Departments of Education and Justice (2010) stated that elementary, secondary, and postsecondary institutions were not allowed to use inaccessible e-book readers under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (*Settlement Agreement*, 2010). In both of these cases, legislation and enforcement lag far behind the technologies being used, offering at best delayed access.

To move beyond the Sisyphean cycle of persons with disabilities perpetually waiting for accessibility, changes to regulations or policy harmonization will not be sufficient. What is needed is a new approach, one which focuses on the ultimate outcome – equal access online for persons with disabilities – and is based on the methods most likely to produce the desired outcome. Such an approach would require significant structural changes to achieve goals of equality of access, resulting in a very different approach to monitoring, compliance, and enforcement than those previously taken in pursuit of disability rights. Simply put, the pursuit of Internet justice for person with disabilities will require an innovative approach to civil rights oversight.

### Implementing and Enforcing Internet Justice

It has been suggested that the most effective Internet policy might be that which learns from core principles of the online environment, one of which is fairness (Margetts, 2009). For persons with disabilities, fairness is missing from both the policy and the practice of the Internet. While the greater attention paid by the Obama administration to accessibility has resulted in an

expansion of some of the technologies covered and increased efforts for accessibility among government agencies, these efforts use the same underlying approach that has yet to result in equitable access for persons with disabilities (Jaeger, 2011; Lazar & Jaeger, 2011). In order for online accessibility to truly be guaranteed for persons with disabilities, the key conceptual problems detailed above must be addressed in ways that have not been a part of accessibility law and regulation to this point.

To achieve true equality of access to the Internet and related technologies under the law, the legal guarantees of access need to be reconceptualized to simultaneously focus on ensuring physical, intellectual, and social access to information and technologies in addition to the creation of technical accessibility standards that are not tied to specific technologies. There are several key areas that could be emphasized in the law to increase the focus on Internet justice to promote physical, intellectual, and social access. These elements encompass redefining disability, ensuring equal access, and providing better education about disability. The foundation of Internet justice, however, relies on the creation of an organization that can serve to implement, monitor, and enforce equality of access for persons with disabilities.

Such an organization could embrace several foundational principles that would be key to guaranteeing Internet justice:

1. **Coordination and Harmonization:** This one organization could harmonize all of the activities necessary to guaranteeing Internet justice, being empowered to produce guidance and regulations, to draft and monitor accessibility requirements, conduct accessibility research, support innovation in accessibility, and enforce accessibility requirements. Such an organization could be located in any of a number of agencies, though being a part of the DOJ would probably be a real source of strength. The agency could be headed by a Chief Accessibility Officer (CAO), a position that already exists in many forward-thinking technology companies (Lazar & Jaeger, 2011). An organization of this nature would facilitate the type of harmonization of uncoordinated accessibility laws and regulations that the DOJ and Access Board have recently begun.
2. **Monitoring and Enforcement:** Perhaps the greatest failing of the legal approach taken in the United States toward accessibility has been the lack of an effective enforcement mechanism for accessibility. By giving people with disabilities the responsibility to monitor accessibility and bring complaints and claims against agencies and companies that violate accessibility laws, the burden has been placed on people with disabilities to enforce their own rights in a way that no other minority or traditionally disadvantaged group does (Colker, 2005). As disability rights laws allow public and private entities to claim the requested accommodation is not financially or practically reasonable and therefore an undue burden under the law, most accommodations never occur due to claims that they represent too much effort in terms of time or cost. A government agency overseeing online accessibility would solve the problems in both of these cases, with the government taking responsibility for monitoring and enforcement of accessibility problems.
3. **Guidance and Leadership:** By bringing together the drafting, monitoring, and enforcement of requirements, it would be the clear responsibility of one organization to

ensure equal access to the Internet and related technologies for persons with disabilities. Government, non-profit, and commercial entities would know where to turn for requirements and for guidance to meet those requirements. This approach would also alleviate the unique responsibility, expense, and effort placed on people with disabilities of trying to enforce their own civil rights. A single organization would serve as the place to receive accessibility complaints and pursue those complaints as the party charged with enforcement. The new organization would have its own testing and research facilities to perform comprehensive evaluations of technologies and websites that are the focus of accessibility complaints.

4. **Access Considerations:** To accompany the consolidation of online accessibility responsibilities into a single government organization, the existing requirements for accessibility would need to be reconsidered and strengthened. Such new requirements would need to be developed with the direct input from people with disabilities and disability rights organizations that represent the spectrum of different disabilities. The newly conceived regulations would focus on the information and communication needs of users with disabilities rather than on specific technological or performance issues.

Requirements developed from this perspective would account for the physical, intellectual, and social dimensions of accessibility and the range of needs of people with different kinds of disabilities. This approach would shift the focus away from technical concerns to social concerns with technological components. Following upon a broader, more inclusive understanding of disability and all of the access needs that are essential components of participation in society in an age of rapid technological change, requirements would account for the full range of physical and cognitive disabilities and the physical, intellectual, and social access needs that accompany this full range of disabilities.

These types of requirements would focus on access and social justice outcomes, avoiding the problem of the requirements being far behind the current technologies. The access goals would remain the same as the technologies changed. The concept of Internet justice rests on such a significant shift in the basic legal understanding of disability.

The access requirements would need to cover both hardware, software, and content. The most basic change this approach would result in is the firm requirement that technologies be designed to be inherently accessible from the outset, with no new inaccessible products being allowed to reach the market. Mandating that online technologies address the physical, intellectual, and social dimensions of accessibility for individuals with disabilities would mean that all technologies related to the Internet would have to be made accessible to be made available. These requirements would apply both to new versions of existing technologies and ones that have not yet been developed. The current average multi-year gap between an online technology being introduced and an accessible version being made available renders most accessible versions of online technologies so far out-of-date as to be utterly useless.

5. **Technical Dimensions:** The requirements produced by the agency would also include clear technical standards, articulating who will benefit from the requirements and the importance of accessibility to those populations; specific guidance and instructions for website developers and webmasters; monitoring, testing, and compliance-oriented technical assistance programs; and explanations of enforcement mechanism and clear

sanctions for failure to provide accessible technologies. As part of this new set of requirements, the possibility of claiming undue burden on new products would disappear.

If a new Internet-related technology is to be available to the public, it would be equally available to all members of the public. Meaningful enforcement of the new accessibility requirements must be a central consideration for this organization. To ensure the laws and guidelines are actually complied with, such an agency would need meaningful monitoring and enforcement powers over both government and corporations.

The requirements would also extend beyond the creation of technologies themselves to encompass all elements of online information, communication, and interaction. As online social networks and other online interactions are becoming a pillar of interpersonal communication, education, employment, and civic participation, persons with disabilities need to be included in these tools and communities (Anderson & Jonsson, 2005; Bowker & Tuffin, 2002; Jaeger & Xie, 2008).

In fact, social networks related to disability are a preferred online destination for many persons with disabilities (Guo, Bricout, & Huang, 2005; Seymour & Lupton, 2004). The move toward a focus on communication and interaction as the primary uses of the Internet necessitates that social networks and other forms of online communication must also be explicitly accountable under the new requirements. Ultimately, these new requirements would serve to change the overall approach to the development of both Internet technologies and online content.

6. **Research and Education:** The organization would need authority to promote accessibility to help entities deal with the stricter online accessibility requirements. To promote innovation and new designs in accessibility, the organization would need funding to support research. Currently, research spending on disability is woefully inadequate, with only small amounts of grant money available for Internet-related accessibility research from a disparate set of government sources. Additionally, the organization would need a set of further inducements at its disposal to promote and reward the focus on Internet accessibility in the public and private sector, such as merit recognitions, seals of approval, and tax credits.

The organization would also support accessibility development by providing best practice guides, developer handbooks, and other instructional materials for including accessibility in the design, development, and implementation processes. The organization would try to reach managers and developers, as well as the public in general, to provide meaningful education about the social importance of Internet accessibility and the benefits to individual companies and government agencies and to society as a whole. Education specifically about the importance of Internet justice would accompany the reconceptualization of the laws, as organizational acceptance of accessibility is heavily reliant on acceptance by leaders and managers within an organization (Jaeger & Matteson, 2009).

7. **Social Inclusion:** The changes that could derive from such a government agency with this mandate would likely extend far beyond increased accessibility online. The increased access would create greater opportunities in education, employment, communication, social interaction, entertainment, and civic participation, which could greatly improve the opportunities for and the inclusion of people with disabilities in physical and virtual

society. Truly guaranteeing people with disabilities an equal place online could greatly alter the ways in which people with disabilities are perceived, treated, and included in society, in both the physical world and the online world. Working toward achieving Internet justice in this manner could also serve as a test case for the implementation, monitoring, and enforcement of disability rights in other areas. If this approach is successful, a more consolidated approach to disability rights could be employed in other aspects of society.

8. **Building on Past Successes:** The United States government is uniquely positioned to create an agency that could successfully address issues of online equality. As the nation that has led the way in the formalization of legal rights for persons with disabilities, this approach is in keeping with past innovations and accomplishments. For all of the gaps in the law discussed above, the United States still has the strongest and most specific set of disability rights laws internationally (Jaeger, 2011). Guaranteeing Internet justice to persons with disabilities in the twenty-first century would be as significant and necessary as guaranteeing a right to a free public education for students with disabilities in the 1970s. Further, as the United States has a comprehensive, national set of disability rights laws, it would have a better chance of succeeding at such a major reconceptualization than a nation with decentralized, state- or province-based disability rights laws, where implementations tend to be far less standard and less frequently applied, or a nation with greater numbers of exclusions to their laws, or a nation where compliance is voluntary, or a nation where standards are created by industry (e.g., Barnes & Mercer, 2003; Burns & Gordon, 2010; Gulliksen, Alexson, Persson, & Goransson, 2010; Stienstra, 2006).

There are likely other key principles of Internet justice beyond those detailed above that would become evident with greater discourse around the issue and if the concept were to be incorporated into the law and other areas. However, these foundational elements could serve as the basis of improving and ensuring Internet justice for persons with disabilities as rapid technological change makes equal access to the technologies and content of the Internet ever more important for participation in society. Changing the laws to embrace the concept of Internet justice would take time and effort, but such changes are necessary to ensure long-term social inclusion of persons with disabilities.

## Conclusion

The age of rapid technological change needs a broader, more affirmative concept of disability rights under the law to ensure access to the technologies and content of the Internet that are now the lifeblood of employment, education, interaction, communication, and participation in government and society. The pace of development of information technologies renders inadequate the notion of purely technical or performance-based standards that are slowly updated to account for new technologies. A retroactive approach to Internet accessibility will never catch up to new devices and content, while performance-based standards do not capture the complexities of the levels of information access, particularly intellectual and social access considerations. In either case, new regulations alone, whether technical or performance-based, will never lead to the holistic changes in guidance, implementation, monitoring, and enforcement that are necessary for Internet justice to be achieved.

Assertions of Internet justice through the law should become central to discourse and advocacy if persons with disabilities are to have a meaningful role in a society that is ever more dependent on the Internet and related technologies. If these changes are to be accomplished, it is imperative for disability rights organizations and disability studies scholars to concentrate efforts on this issue. Historically, disability rights causes in the United States have been most successful when disability rights organizations have coordinated their efforts (Barnartt & Scotch, 2001; Fleischer & Zames, 2001; Scotch, 2001). Given all of the potential negative social, educational, and economic consequences of an inaccessible Internet, it behooves everyone concerned about equality and social inclusion for persons with disabilities to contribute to advocating for Internet justice.

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#### References

Abrar, A., & Dingle, K. (2009). From madness to method: The Americans with Disabilities Act meets the internet. *Harvard Civil Rights-Civil Liberties Law Review*, 44, 133-157.

Access Board. (2010a). *Board releases draft refresh of Section 508 standards and Section 255 guidelines*. Retrieved from: <http://www.access-board.gov/news/ict-draft-rule.htm>

Access Board. (2010b). *Americans with Disabilities Act (ADA) accessibility guidelines for buildings and facilities; Telecommunications Act accessibility guidelines; electronic and information technology accessibility standards: Advance notion of proposed rulemaking*. Retrieved from: <http://www.access-board.gov/sec508/refresh/notice.htm>

Albrecht, G. L., & Verbugge, L. M. (2000). The global emergence of disability. In G. L. Albrecht, R. Fitzpatrick, & S. C. Scrimshaw (Eds.), *The handbook of social studies in health and medicine* (pp. 293-307). London: Sage.

Areheart, B. A. (2008). When disability isn't "just right": The entrenchment of the medical model of disability and the goldilocks dilemma. *Indiana Law Journal*, 83(1), 181-232.

Anderson, P., & Jonsson, B. (2005). Being there. *Disability & Society*, 20, 719-733.

Barnartt, S., & Scotch, R. (2001). *Disability protests: Contentious politics 1970-1999*. Washington DC: Gallaudet University Press.

Barnes, C., & Mercer, G. (2003). *Disability*. Cambridge, UK: Polity.

- Bashaw, J. (2008). Applying the Americans with Disabilities Act to private websites after National Federation of the Blind v. Target. *Shidler Journal of Law Commerce, and Technology*, 4, 3-25.
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. Promoting transparency and accountability through ICTs, social media, and collaborative e-government. Manuscript in preparation. *Transforming Government: People, Process and Policy*.
- Bertot, J. C., Jaeger, P. T., & Hansen, D. The impact of policies on government social media usage: Issues, challenges, and recommendations. Manuscript in preparation. *Government Information Quarterly*.
- Bertot, J. C., Jaeger, P. T., Shuler, J. A., Simmons, S. N., & Grimes, J. M. (2009). Reconciling government documents and e-government: Government information in policy, librarianship, and education. *Government Information Quarterly*, 26, 433-436.
- Bound, J., & Waidmann, T. (2002). Accounting for recent declines in employment rates among working-aged men and women with disabilities. *Journal of Human Resources*, 37, 231-250.
- Bowe, F. G. (1993). Access to the information age: Fundamental decisions in telecommunications policy. *Policy Studies Journal*, 21(4), 765-774.
- Bowker, N., & Tuffin, K. (2002). Disability discourses for online identities. *Disability and Society*, 17, 327-344.
- Bradbard, D. A., Peters, C., & Caneva, Y. (2010). Web accessibility policies at land-grant universities. *Internet and Higher Education*.
- Bruyere, S., Erickson, W. E., & Looy, S. (2005). Information technology and the workplace: Implications for persons with disabilities. *Disability Studies Quarterly*, 25(2). Retrieved from: <http://www.dsqsds.org>
- Burnett, G., Jaeger, P. T., & Thompson, K. M. (2008). The social aspects of information access: The viewpoint of normative theory of information behavior. *Library & Information Science Research*, 30, 56-66.
- Burns, K. K., & Gordon, G. L. (2010). Analyzing the impact of disability legislation in Canada and the United States. *Journal of Disability Policy Studies*, 20, 205-218.
- Carlson, S. (2004). Left out online: Electronic media should be a boon for people with disabilities, but few colleges embrace the many new technologies that could help. *Chronicle of Higher Education*, 50(40), A23.
- Colker, R. (2005). *The disability pendulum: The first decade of the Americans with Disabilities Act*. New York: New York University.



- Corcoran, L. (2011). ADA and the Internet: Standardizing the accessibility of web sites. Retrieved from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1914705](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1914705)
- Crawford, C. (2003). Cyberplace: Defining a right to Internet access through public accommodation law. *Temple Law Review*, 76, 225-280.
- Culnan, M. J. (1983). Environmental scanning: The effects of task complexity and source accessibility on information gathering behavior. *Decision Sciences*, 14(2), 194-206.
- Culnan, M. J. (1984). The dimensions of accessibility to online information: Implications for implanting office information systems. *ACM Transactions on Office Information Systems*, 2(2), 141-150.
- Culnan, M. J. (1985). The dimensions of perceived accessibility to information: Implications for the delivery of information systems and services. *Journal of the American Society for Information Science*, 36(5), 302-308.
- Davis, J. J. (2002). *Bending over backwards: Disability, dismodernism, and other difficulty positions*. New York: New York University Press.
- Dispenza, M. L. (2002). Overcoming the new digital divide: Technology accommodations and the undue hardship defense under the Americans with Disabilities Act. *Syracuse Law Review*, 52, 159-181.
- Dobransky, K., & Hargittai, E. (2006). The disability divide in internet access and use. *Information Communication & Society*, 9, 313-334.
- Downey, G. J. (2008). *Closed captioning: Subtitling, stenography, and digital convergence of text with television*. Baltimore: Johns Hopkins University Press.
- Downey, G. J. (2010). Teaching reading with television: Constructing closed captioning using rhetoric of literacy. In A. R. Nelson, & J. L. Rudolph (Eds.), *Education and the Culture of Print in Modern America* (pp. 191-214). Madison, WI: University of Wisconsin Press
- Draffon, E. A. (2009). Assistive technology. In D. Pollack (Ed.), *Neurodiversity in higher education: Positive responses to specific learning strategies* (pp. 217-242). West-Sussex: Wiley-Blackford.
- Ellison, J. (2004). Assessing the accessibility of fifty United States government Web pages: Using Bobby to check on Uncle Sam. *First Monday*, 9(7). Retrieved from: [http://www.firstmonday.org/issues/issue9\\_7/ellison/index.html](http://www.firstmonday.org/issues/issue9_7/ellison/index.html)
- Else, S. (2008). Courts must welcome the reality of the modern world: Cyberspace is the place under Title III of the Americans with Disabilities Act. *Washington and Lee Law Review*, 65, 1121-1158.

- Federal Communications Commission. (2010). *The national broadband plan: Connecting America*. Washington DC: Author. Retrieved from: <http://www.broadband.gov/>
- Fleischer, D. Z., & Zames, F. (2001). *The disability rights movement: From charity to confrontation*. Philadelphia: Temple University Press.
- Fox, S. (2011a). *Americans living with disability and their technology profile*. Washington, DC: Pew Internet and American Life Project.
- Fox, S. (2011b). *What people living with disability can teach us*. Washington, DC: Pew Internet and American Life Project.
- Frieden, R. (2003). Adjusting the horizontal and vertical in telecommunications regulation: A comparison of the traditional and a new layered approach. *Federal Communication Law Journal*, 55, 207-250.
- Goggin, G., & Newell, C. (2000). An end to disabling policies? Toward enlightened universal service. *Information Society*, 16, 127-133.
- Goggin, G., & Newell, C. (2003). *Digital disability: The social construction of disability in new media*. Lanham, MD: Rowman and Littlefield.
- Goggin, G., & Newell, C. (2006). Disability, identity, and interdependence: ICTs and new social norms. *Information Communication & Society*, 9, 309-311.
- Gordon, D. I., & Kundra, V. (2010). *Memorandum for Chief Acquisitions Officers and Chief Information Officers: Improving the accessibility of government information*. Washington DC: Office of Management and Budget. Retrieved from: <http://www.whitehouse.gov>
- Gulliksen, J., Alexson, H., Persson, H., & Goransson, B. (2010). Accessibility and public policy in Sweden. *Interactions*, 17(3), 26-29.
- Guo, B., Bricout, J. C., & Huang, J. (2005). A common open space or a digital divide? A social model perspective on the online disability community in china. *Disability and Society*, 20, 49-66.
- Hackett, S., Parmanto, B., & Zeng, X. (2004). Accessibility of Internet websites through time. *Proceedings of the ACM Conference on Assistive Technology (ASSETS)*, 32-39.
- Harper, K. A., & DeWaters, J. (2008). A quest for website accessibility in higher education institutions. *Internet and Higher Education*, 11, 160-164.
- Higgins, C., Jr. (2009, Sept. 14). Insurers shun multitasking speech devices. *New York Times*. Retrieved from: [www.nytimes.com/2009/09/15/technology/15speech.html](http://www.nytimes.com/2009/09/15/technology/15speech.html)

- Horrigan, J. B. (2010). *Broadband adoption and use in America*. Washington DC: Federal Communications Commission.
- Howard, A. (2011). Pew: Disability or illness hinders many Americans from using the Internet. Retrieved from: <http://Gov20.govfresh.com>
- Jaeger, P. T. (2004). Beyond Section 508: The spectrum of legal requirements for accessible e-government websites in the United States. *Journal of Government Information*, 30(4), 518-533.
- Jaeger, P. T. (2006a). Telecommunications policy and individuals with disabilities: Issues of accessibility and social inclusion in the policy and research agenda. *Telecommunications Policy*, 30(2), 112-124.
- Jaeger, P. T. (2006b). Assessing Section 508 compliance on federal e-government websites: A multi-method, user-centered evaluation of accessibility for persons with disabilities. *Government Information Quarterly*, 23(2), 169-190.
- Jaeger, P. T. (2009). Persons with disabilities and intergenerational universal usability. *Interactions*, 16(3), 66-67.
- Jaeger, P. T. (2011). *Disability and the Internet: Access, inclusion, and virtual barriers*. Boulder, CO: Lynne Reiner.
- Jaeger, P. T., & Bowman, C. A. (2005). *Understanding disability: Inclusion, access, diversity, & civil rights*. Westport, CT: Praeger.
- Jaeger, P. T., & Burnett, G. (2010). *Information worlds: Social context, technology, & information behavior in the age of the internet*. London: Routledge.
- Jaeger, P. T., & Matteson, M. (2009). E-government and technology acceptance: The implementation of Section 508 guidelines for e-government websites. *Electronic Journal of E-Government*, 7(1), 87-98. Retrieved from: <http://www.ejeg.com/volume-7/vol7-iss1/v7-i1-art8.htm>
- Jaeger, P. T., & McClure, C. R. (2004). Potential legal challenges to the application of the Children's Internet Protection Act (CIPA) in public libraries: Strategies and issues. *First Monday*, 9(2). Retrieved from: [http://www.firstmonday.org/issues/issue9\\_2/jaeger/index.html](http://www.firstmonday.org/issues/issue9_2/jaeger/index.html).
- Jaeger, P. T., & Xie, B. (2009). Developing online community accessibility guidelines for persons with disabilities and older adults. *Journal of Disability Policy Studies*, 20, 55-63.
- Johnson, A. D. (2004). Assistive technology changes lives: Opening a window to the world. *Diversity, Inc.*, 3(3), 23-32.

- Kanayama, T. (2003). Leaving it all up to industry: People with disabilities and the Telecommunications Act of 1996. *Information Society, 19*, 185-194.
- Keates, S., & Clarkson, P. J. (2003). Countering design exclusion: Bridging the gap between usability and accessibility. *Universal Access in the Information Society, 2*, 215-225.
- Kennard, W. E., & Lyle, E. E. (2001). With freedom comes responsibility: ensuring that the next generation of technologies is accessible, usable, and affordable. *CommLaw Conspectus, 10*, 5-22.
- Kessler, N. D. (2008). Why the Target “nexus test” leaves disabled Americans disconnected: A better approach to determine whether private commercial websites are “places of accommodation.” *Houston Law Review, 45*, 992-1029.
- Law, C. M., Jaeger, P. T., & McKay, E. (2010). The need for developer-centered universal access design resources. *Universal Access in the Information Society, 9*, 327-335.
- Lazar, J. (2006). *Web usability: A user-centered design approach*. Boston: Addison-Wesley.
- Lazar, J. (2007). Introduction to universal usability. In *Universal usability: Designing computer interfaces for diverse user populations* (pp. 1-12). Chichester, UK: John Wiley & Sons.
- Lazar, J., & Greenidge, K. (2006). One year older, but not necessarily wiser: An evaluation of homepage accessibility problems over time. *Universal Access in the Information Society, 4*(4), 285-291.
- Lazar, J., & Jaeger, P. T. (2011). Promoting and enforcing web site accessibility. *Issues in Science and Technology, 17*(2), 68-82.
- Lazar, J., Jaeger, P. T., Adams, A., Angelozzi, A., Manohar, J., Marciniak, J., Murphy, J., Norasteh, P., Olsen, C., Poneres, E., Scott, T., Vaidya, N., & Walsh, J. (2010). Up in the air: Are airlines following the new DOT rules on equal pricing for people with disabilities when websites are inaccessible? *Government Information Quarterly, 27*, 329-336.
- Lazar, J., Jaeger, P. T., & Bertot, J. C. (2011). Persons with disabilities and physical and virtual public library settings. In J. C. Bertot, P. T. Jaeger, & C. R. McClure (Eds.), *Public libraries and the Internet: Roles, perspectives, and implications* (pp. 177-189). Westport, CT: Libraries Unlimited.
- Lazar, J., & Wentz, B. (2011). Separate but unequal: Web interfaces for people with disabilities. *User Experience, 10*(3).
- Lazar, J., Jaeger, P. T., Olalere, A., Algarne, M., Augustine, Z., Brown, C., D’Erasmus, F., Dotson, B., Endiape, G., Govender, L., Hagos, N., Hunt, G., Lawrence, W., Plummer, R., Richardson, A., Saval, J., Schickling, C., Schley, C., Szoka, D., Torrie, R., and Walton, M. (2012). Still up in the air: Government regulation of airline websites and continuing price

inequality for persons with disabilities online. *dg.o '12: Proceedings of the 13<sup>th</sup> Annual International Digital Government Research Conference*.

Lee, B. A. (2003). A decade of the Americans with Disabilities Act: Judicial outcomes and unresolved problems. *Industrial Relations*, 42, 11-30.

Loiacono, E. T. (2004). Cyberaccess: Web accessibility and corporate America. *Communications of the ACM*, 47(12), 82-87.

Loiacono, E. T., & McCoy, S. (2004). Website accessibility: An online sector analysis. *Information Technology & People*, 17, 87-101.

Loiacono, E. T., & McCoy, S. (2006). Website accessibility: A cross-sector comparison. *Universal Access in the Information Society*, 4, 393-399.

Loiacono, E. T., Romano, N. C., Jr., & McCoy, S. (2009). The state of corporate website accessibility. *Communications of the ACM*, 52(8), 128-132.

Margetts, H. Z. (2009). The Internet and public policy. *Policy & Internet*, 1(1), article 1.

Mart, S. N. (2003). The right to receive information. *Law Library Journal*, 95, 175-189.

Mates, B. T. (2010, 14 September). Twenty years of assistive technologies. *American Libraries*. Retrieved from: <http://www.americanlibraries.org>

Metts, R. L. (2000). *Disability issues, trends, and recommendations for the World Bank*. Washington DC: World Bank.

McCreadie, M., & Rice, R. E. (1999). Trends in analyzing access to information, part I: Cross-disciplinary conceptions of access. *Information Processing and Management*, 35, 45-76.

McIver, W. J., Birdsall, W. F., & Rasmussen, M. (2003). The Internet and the right to communicate. *First Monday*, 8(2). Retrieved from: [http://www.firstmonday.org/issues/issue8\\_12/mciver/](http://www.firstmonday.org/issues/issue8_12/mciver/)

Moser, I. (2006). Disability and the promises of technology: Technology, subjectivity, and embodiment within an order of the normal. *Information Communication & Society*, 9, 373-395.

National Council on Disability. (2009). *National disability policy: A progress report*. Washington DC: Author. Retrieved from: <http://www.ndc.gov>

National Federation of the Blind v. Target. 452 F. Supp. 2d 946 (2006).

Ogden, J. S., & Menter, L. (2009). Inaccessible school webpages: Are remedies available? *Journal of Law and Education*, 38, 393-408.

- Olalere, A. M., & Lazar, J. (2011). Accessibility of U.S. federal government Web sites: Section 508 compliance and site accessibility statements. *Government Information Quarterly*, 28, 303-309
- Parry, M. (2010). Colleges lock out blind students online. *Chronicle of Higher Education*. Retrieved from: <http://www.chronicle.com>
- Portner, J. (2010, June 22). Smartphones flunk for blind users. Blind users see digital divide in new generation phones. *Bay Citizen (CA)*. Retrieved from: [www.baycitizen.org/technology/story/smartphones-fail-visually-impaired/](http://www.baycitizen.org/technology/story/smartphones-fail-visually-impaired/)
- Qualters, S. (2009). Blind law student sues Law School Admissions Council over accessibility. *National Law Journal*. Retrieved from: <http://www.law.com>
- Ritchie, H., & Blanck, P. (2003). The promise of the Internet for disability: A study of on-line services and web site accessibility at centers for independent living. *Behavioral Sciences and the Law*, 21, 5-26.
- Rubaii-Barrett, N., and Wise, L. (2008). Disability access and e-government: An empirical analysis of state practices. *Journal of Disability Policy Studies*, 19, 52-64.
- Sadon, R. (2010, August 23). E-textbooks starting to turn a page. MSNCB. Retrieved from: <http://www.msnbc.com>
- Scotch, R. K. (2001) *From goodwill to civil rights: Transforming federal disability policy*. Philadelphia: Temple University Press.
- Settlement agreement between the United States, the National Federation of the Blind, the American Council of the Blind, and Arizona State University. (2010). Retrieved from: [http://www.ada.dov/arizona\\_state\\_university.htm](http://www.ada.dov/arizona_state_university.htm)
- Seymour, W., & Lupton, D. (2004). Holding the line online: Exploring wired relationships for people with disabilities. *Disability and Society*, 19, 291-305.
- Shuler, J. A., Jaeger, P. T., & Bertot, J. C. (2010). Implications of harmonizing e-government principles and the Federal Depository Library Program (FDLP). *Government Information Quarterly*, 27, 9-16.
- Simpson, J. (2009). Inclusive information and communication technologies for people with disabilities. *Disability Studies Quarterly*, 29, 1-13. Retrieved from: <http://www.dsq-sds.org>
- Stanley v. Georgia*. (1969). 394 U.S. 557.
- Stephanandis, C., & Emailiani, P. L. (1999). Connecting to the information society: A European perspective. *Technology and Disability*, 10, 21-44.

- Stienstra, D. (2006). The critical space between: Access, inclusion, and standards in information technology. *Information Communication & Society*, 9, 335-354.
- Stienstra, D., Watzke, J., & Birch, G. E. (2007). A three-way dance: The global public good and accessibility in information technologies. *Information Society*, 23, 149-158.
- Stodden, R. A. (2005). The status of persons with disabilities in postsecondary education. *TASH Connections*, 31(11/12), 4-7.
- Sullivan, T., & Matson, R. (2000). Barriers to use: Usability and content accessibility on the Web's most popular sites. In J. Thomas & J. Scholtz (Eds.), *Proceedings of the Conference on Universal Usability* (pp. 139-144). New York: ACM.
- Svenonious, E. (2000). *The intellectual foundation of information organization*. Cambridge, MA: Massachusetts Institute of Technology Press.
- Switzer, J. V. (2003). *Disabled rights: American disability policy and the fight for equality*. Washington DC: Georgetown University Press.
- Theofanos, M., & Redish, J. (2003). Bridging the gap: Between accessibility and usability. *Interactions*, 10(6), 36-51.
- Tusler, A. (2005). How to make technology work: A study of best practices in United States electronic and information technology companies. *Disability Studies Quarterly*, 25(2).
- United States Census Bureau. (2008). *Americans with disabilities 2005: Household economic studies*. Washington DC: Author.
- United States Department of Education. (2010). *Digest of education statistics, 2009*. Washington DC: Author.
- United States Department of Education and United States Department of Justice. (2010). *Electronic book reader dear colleague letter: Questions and answers about the law, the technology, and the population affected*. Retrieved from: <http://www.ed.gov>
- United States Department of Justice. (2010b). Nondiscrimination on the basis of disability: Accessibility of Web information and services of state and local government entities and public accommodations. *Federal Register*, 75(142), 43463.
- United States Department of Justice. (2010a). *Fact sheet: Advance notice of proposed rulemaking on accessibility of web information and services provided by entities covered by the ADA*. Washington DC: Author.
- Vanderheiden, G. C. (2003). Opening comments. Presented at the 2003 Voice over Internet Protocol Services Forum (Madison, WI). Retrieved from: <http://www.fcc.gov/voip/voipforum.html>

Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). *After high school: A first look at postschool experiences of youth with disabilities: A report from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

Wentz, B., & Lazar, J. L. (2011). Are separate interfaces inherently unequal? An evaluation with blind users of the usability of two interfaces for a social networking platform. Presented at *iConference 2011*, Seattle, WA, United States.

Wentz, B., Jaeger, P. T., & Lazar, J. L. (2011). Retrofitting accessibility: The legal inequality of after-the-fact online access for persons with disabilities in the United States. *First Monday*, 11(7). Retrieved from:  
<http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/viewArticle/3666/3077>

Yu, D. X., & Parmanto, R. (2011). U.S. state government websites demonstrate better in terms of accessibility compared to federal government and commercial websites. *Government Information Quarterly*, 28, 484-490.