

# Understanding Markets as Online Public Places: Insights from Consumers with Visual Impairments

Carol Kaufman-Scarborough and Terry L. Childers

*More than 20% of the U.S. population is composed of people with disabilities. When such people interact with certain marketplaces, such as commercial Web sites, some become "consumers with constraints," and others become liberated, experiencing the freedom to search for information independently for the first time. While accessibility in physical stores is mandated by the Americans with Disabilities Act, commercial Web sites do not fall under its jurisdiction, because they are not considered "public places." This research challenges this view and examines whether actual consumers interpret Web sites as public places. The authors examine this question in the context of experiences of consumers with visual impairments in online shopping. The authors apply the concepts of consumer normalcy and consumer vulnerability to the technology acceptance model as theoretical lenses through which to interpret this context. The findings form the basis for recommendations to policy makers to develop and enforce standards for Web site accessibility and to the marketplace to create a level playing field for people with visual impairments.*

*Keywords:* impairment, disability, online shopping, retail, Web development, consumer behavior

For many consumers, "going to the mall" is a frequent, if not everyday, experience. In addition to shopping for specific products, people often travel to shopping locations just to "be there," to participate in what is going on, or to "see and be seen" (Baker 2006; Sherry 1998b). However, not all consumers enjoy unrestricted freedom of movement or the ability to carry, hear, or see with normal acuity. People with disabilities may unexpectedly encounter constraints related to their disabilities that limit patronage and their abilities to act as independent consumers.

Before the Internet became a mainstay in everyday life, the Americans with Disabilities Act (ADA; 42 U.S.C. § 12101 et seq.) was signed into law in 1990 with the goal of maximizing accessibility for all citizens in physical places, such as schools, hospitals, stores, and malls (Baker and Carol Kaufman-Scarborough 2001). As a result, the ADA tended to focus on mobility disabilities within physical locations (Kaufman-Scarborough and Baker 2005). Because online shopping has become a popular option for consumers, public policy researchers and disabilities advocates have called for Web sites to be included in the ADA Title III's definition of "public accommodations" (Davis 2003; Frieden 2003; Jones, Childers, and Kaufman-Scarborough 2006; Kaye 2000; National Organization on Disability 2003; Ramasastry 2006; Schaefer 2003). The pivotal issue is that the ADA is not viewed as uniformly

applicable to commercial Web sites, because the Web is not a "place" that has a physical location. Courts have differed in their interpretation of the word "place," with some courts ruling that a physical location must exist, such as *Parker v. Metropolitan Life Insurance Co.* in 1997 and *Weyer v. Twentieth Century Fox Film Corp.* in 2000 (see Stephenson 2008). A federal judge also ruled that Southwest Airlines was not required to redesign its Web site to make it more accessible to the blind (McCullough 2002). In the first case of its kind (*Access Now Inc. v. Southwest Airlines* 2002), U.S. District Judge Patricia Seitz ruled that the ADA only regulated physical spaces, such as supermarkets and restaurants, and was not applicable to the online shopping environment.

Conversely, in *National Federation of the Blind v. Target Corporation* (2006), Target was sued in California by a blind student in cooperation with the National Federation of the Blind (Disability Rights Advocates 2006). The lawsuit charged that Target's Web site did not use common accessibility guidelines, such as "alternative text" labels that provide simple text alternatives to photos or diagrams. U.S. Judge Marilyn Hall Patel ruled that the ADA applies to some commercial Web sites (Ramasastry 2006). This ruling specifically focused on retail Web sites that are integrated with in-store retail operations. Patel's interpretation considered Target's Web site an extension of the physical store and, thus, under the jurisdiction of the ADA (Disability Rights Advocates 2006).

The fundamental question centers on whether a retail Web site is a public space that requires accommodation and, if so, when and how the accommodation takes form? Are retail Web sites "places" where all consumers can expect to browse a store's merchandise, examine its charac-

---

*Carol Kaufman-Scarborough* is Professor of Marketing, School of Business, Rutgers University-Camden (e-mail: ckaufman@camden.rutgers.edu). *Terry L. Childers* is Gatton Endowed Chair in Marketing, Gatton College of Business & Economics, University of Kentucky (e-mail: tchilders@uky.edu).

---

teristics, compare various brands and models, and confidently make a purchase if desired, or are some Web sites unknowingly configured to render them unusable by people with certain disabilities? Do there need to be “enough” people with disabilities who want to shop online to justify incorporating accessibility standards into commercial Web sites?

In terms of the latter, statistically, people with disabilities represent 54 million, or 20%, of the U.S. population (National Organization on Disability 2005; Waldrop and Stern 2003). That is, one of five people who log on to any retail Web site could have one or more disabilities. This number is likely to underestimate people whose computer and online shopping use are affected by some personal constraint, because many people without disabilities also experience a natural decline in eyesight, dexterity, and hearing as they age. Some firms argue that the market is not large enough to warrant special online accommodations (Heim 2000). In reality, estimates of the disposable income of people with disabilities vary from more than \$176 billion (Johnson 2000) to approximately \$1 trillion (Milliman 2002).

To provide a better sense of the usability of the online marketplace, we examine online shopping from the perspectives of people with visual impairments, building on prior research in public policy and retailing (Baker 2006; Baker, Stephens, and Hill 2001; Schaefer 2003). There are currently ten million blind or visually impaired people in the United States. Statistically, this means that 1 of every 30 people has a condition that limits his or her vision in some way. Of these, 1.3 million Americans are legally blind. Legal blindness is defined in terms of the available vision in a person’s “better” eye with the best possible correction. That is, a person must have a “central visual acuity of 20/200 or less in the better eye with the best possible correction, as measured on a Snellen vision chart, or a visual field of 20 degrees or less” (American Foundation for the Blind 2007). Blindness and visual impairments can occur in many ways, ranging from disease, accident, or the natural processes associated with aging. More recent forecasts report that some level of visual impairment is experienced by more than 16 million Americans, even when they wear glasses or contacts (Beck 2008). Moreover, Beck (2008) reports that this number is “expected to double by 2030” as eye diseases, such as macular degeneration, glaucoma, and diabetic retinopathy, become more prevalent in the aging population. Estimates of online access among people with visual impairments are dated, but a 2001 Harris Poll found that approximately 43% of people with vision problems used the Internet at home versus 56% of nondisabled people (Center for and Accessible Society 2002). Kaye (2000) finds that access among people with disabilities has run as much as half of the penetration rate among the nondisabled. Importantly, more than a quarter of respondents to a 2002 Pew Survey reported that their disabilities made it difficult or impossible to go online (Lenhart et al. 2003).

If the Web is a public place, it should ideally be accessible (easy to use) and similarly useful relative to other public places. If it is a marketplace, it should provide experiences and facilitate interactions between buyers and sellers in an enjoyable way (Sherry 1998b). Although the Web is a

nontraditional environment (Sherry 1998a), the nature of marketing–consumer transactions is altered as part of a “cybermarketplace” (Venkatesh 1998, p. 343). While people initially negotiated the virtual environment in somewhat of an isolated state (Venkatesh 1998), it has developed into an active space full of blogs, chat rooms, and social networking options on commercial Web sites, creating an online marketplace “commons” in which consumers gather to share knowledge and pool opinions at will.

To provide insights for policy makers regarding Web accessibility, we examine one specific context: the online shopping experiences of people with visual impairments. Although our findings cannot be generalized to all types of access issues or to all people with disabilities, we strive to provide evidence that consumers indeed interpret Web sites as public places. Our informants shared their experiences on Web accessibility and usefulness, together with their feelings of enjoyment and/or frustration, suggesting possible improvements to enhance access. We organized their replies according to the technology acceptance model (TAM; see Davis 1989, 1993), which uses the key concepts of ease of use, usefulness, and enjoyment to explain acceptance or rejection of Web technologies. We also integrate the concepts of consumer normalcy and consumer vulnerability to examine informants’ perceived success in shopping online. The findings indicate that though online shopping provides considerable independence and enjoyment for shoppers with visual impairments, it can also discriminate against them through poor Web site design and a failure to follow accessibility guidelines.

## Background

As Jane listens to the weather forecast on television, she hears that there is heavy snow forecasted along with frigid temperatures. Recognizing that the mall would be a 20-minute ride and not wanting to deal with the crowds, she decides instead to sit at her computer to order the new outfit she needs in two weeks for her brother’s wedding. As she navigates the Web, having searched on Google to find several options, she settles on a Web site for a store she had previously planned to visit that day at the mall. After scrolling through hundreds of links, Jane clicks on a link for an appealing option but finds the description lacking in the details she needs to make a decision. Jane’s screen reader identifies a picture of the outfit, but the text description (an “alt” tag) only responds with the words “woman’s suit in blue.”

Jane is visually impaired, and according to Baker (2006), she is vulnerable when retail transactions are defined around the use of visual cues. Her experience as a consumer with a visual impairment reflects the concerns highlighted in the lawsuit against Target. Although she wants to make an online purchase, she cannot gather the information she needs to make a decision, thus temporarily experiencing a state of vulnerability because the Web site design does not provide the information in a format she can access. Although she is “in” the electronic marketplace, she is clearly not in control and cannot accomplish her goals.

Analogously, someone with a hearing impairment might be “disabled” by a Web site that provides detailed information in an audio file, such as a downloadable recording of product assembly instructions with no accompanying writ-

ten information. Likewise, someone who is unable to use a mouse because of a physical impairment, such as arthritis, may be disabled by a Web site having features such as rollover menus. The theoretical perspective embodied in this discussion is the social model of disability. This model recognizes that any environment can either “enable” or “disable” a person according to the level of accessibility in its design (Chouinard 1997; Imrie 1999, 2000; Oliver 1990).

Fundamentally, shoppers are viewed to approach any marketplace with the potential to shop as a “fully able” consumer. Similar to other shoppers, people with disabilities expect that stores, malls, and Web sites will have elements present to enable desired shopping experiences. Shopping environments that do not can be described as using the more conservative “medical model,” which emphasizes the person’s responsibility to provide his or her own accommodations. For example, within the medical perspective, someone who is disabled would be expected to self-compensate by bringing a friend along to help open the door, get merchandise from high or low shelves, and/or assist in shopping online. Disabilities theorists recognize that many aspects of the physical environment are designed from an “ableist’s” perspective, favoring people who are able-bodied and essentially discriminating against those with disabilities (Chouinard 1997; Imrie 1999). People who are not able-bodied are not expected to participate fully, so accessibility is not included from the beginning. The electronic marketplace has been similarly criticized as accessible only to people who are able to understand and overcome common online obstacles.

### The TAM, Consumer Normalcy, and Consumer Vulnerability

The TAM examines a person’s acceptance of new technology on the basis of three determinants: the technology’s ability (1) to improve performance of specific tasks (“usefulness”), (2) to provide ease of use, and (3) to create enjoyment for the user (Childers et al. 2001; Davis, Bagozzi, and Warshaw 1992). If we refer back to our hypothetical example, the perceived usefulness of the technology refers to the degree to which using the Internet will improve Jane’s ability to attain her shopping goal (i.e., purchase an outfit online). In contrast, ease of use represents whether the technology is clear and understandable versus difficult to use with a high likelihood of error (e.g., Jane’s navigation through graphic-laden Web pages). Finally, enjoyment captures whether Jane experiences fun through shopping in the virtual store, apart from attainment of her particular shopping goal.

Prior studies that have used the TAM have addressed the adoption of mobile commerce (Bruner and Kumar 2005), the usage of self-service technology (Dabholkar and Bagozzi 2002), general Internet usage (Porter and Donthu 2006), and online shopping (Childers et al. 2001). Extending these works to our study of people with visual impairments, we propose that the level of usefulness, ease of use, and enjoyment of online shopping can be directly related to a person’s “being in the marketplace” and feeling like a “normal” consumer. According to Baker (2006, p. 41),

when shoppers feel like they belong, they experience consumer normalcy, reflecting the “desire to live like other consumers, while being accepted as other consumers are and being acceptable to oneself.” Conversely, consumer vulnerability is experienced when shoppers feel “a state of powerlessness arriving from an imbalance in marketplace interactions or from the consumption of marketing messages and products” (Baker, Gentry, and Rittenburg 2005, p. 134). Our study examines whether Web design is perceived as producing consumer normalcy, vulnerability, or both, depending on its effectiveness in creating accessibility.

Three basic Web elements affect the drivers of technology acceptance within the TAM model: navigation, convenience, and substitutability of experience. Ideally, navigation provides the user with “self-directed” movement through a Web site, in addition to a logical site map that provides intuitive search and retrieval of information (Hoffman and Novak 1996). Convenience reduces the effort, time, or other resources that people must spend when shopping online. Finally, online shoppers must trade off between the costs and the benefits of shopping online and shopping in person, removing face-to-face social interaction and the option to experience products in person while creating independence and eliminating transportation problems.

Bricks-and-mortar store designs assume that most “normal” customers have usable vision and are able to experience colors, decor, displays, and signage (Baker 2006; Bitner 1992; Mehrabian and Russell 1974). That is, they are able to drive, walk, or take mass transit to shopping locations. In addition, they can rely on visual cues, such as landmarks and signage, to determine their route through malls and stores. “Normal” customers are expected to shop on their own, navigate through uniquely configured stores, and respond to in-store cues when making decisions and purchases. However, this is not the reality for consumers who have significant visual impairments. The effort of traveling to a retail space, navigating through unseen or poorly seen space, and depending on salespeople to help may undermine the degree of normalcy these consumers experience.

Shopping is an important and valued part of people’s lives. Thus, people with disabilities may feel frustrated in their inability to complete even the simplest of consumer shopping tasks through ill-constructed retail environments (Kaufman-Scarborough 1999). Depending on the situation, they may experience consumer vulnerability (Baker, Gentry, and Rittenburg 2005) and be unable to achieve their goals as consumers unless they can adapt to and compensate for the conditions that confront them. Consumer vulnerability is a state, not a status. It is multidimensional, context specific, and does not need to be enduring.

This qualitative study is intended to provide insights into how people with visual impairments experience online shopping and whether their experiences create consumer normalcy and/or consumer vulnerability when shopping online. Does their Internet experience maintain, enhance, or reduce the feelings of acceptance and participation in the marketplace? Do they feel that they are treated as individuals? Do they feel “in control?” Do they feel “equal” to other consumers and experience a “belonging” in the marketplace?

## Methodology

The study extends prior marketplace examinations of consumers with visual impairments (Baker, Stephens, and Hill 2001) to the online environment. In particular, we examine visually impaired consumers' experiences and perceived difficulties when shopping online. We recruited the sample so that multiple types of vision problems were represented, such as macular degeneration, light perception, diabetic retinopathy, retinitis pigmentosa, and total blindness. This is necessary because we wanted to include a variety of types of assistive devices and methods of using the computer (mouse versus keyboard).

### Informants

The informants were 45 people with visual impairments who regularly shopped on the Internet. They were recruited through recommendations by professionals, references from other study informants, postings on listservs, and online support sites for visually impaired people (e.g., the National Federation of the Blind, the National Association of Blind Students). The sample comprised 22 men and 23 women, and the average age was 41.3 years. Fifteen informants (36%) had some functional vision, and 29 informants (64%) were totally blind. Of this latter group, 9 became blind at some point during their lifetime. In addition, 31% lived in New Jersey at the time of the interview, and the remaining 69% resided in 22 other states in the contiguous United States.

Although many informants were blind from birth, several became blind as children, as young adults, or as seniors. We recruited people with various "types" of blindness, such as retinitis pigmentosa and diabetic retinopathy, but we do not claim to have covered all possible causes resulting from disease, accident, or aging. Those who had partial vision described it in various ways, such as "seeing direct points of light," "having 10% vision in one eye plus some color," and "vision is like seeing through a telescope." Depending on their background, some informants received considerable training in Internet use and were likely to have been mainstreamed in their education.

Differences in visual abilities meant significant differences in the online technologies the informants used. For example, those who were totally blind tended to use screen-reading software, such as JAWS for Windows or Windows-Eyes. Because such people cannot see a monitor, they use the keyboard as their input device rather than a mouse. Informants who were partially sighted reported using a mix of technologies, such as screen readers (e.g., JAWS) and screen magnifiers (e.g., ZoomText). The "mouse versus keyboard" usage significantly affected the types of problems the informants encountered and the experiences that they shared.

### Depth Interviews

We conducted depth interviews by telephone during Fall 2005–Spring 2006 to understand informants' experiences while shopping online. Each informant was interviewed by one of the authors for approximately 30 to 60 minutes regarding his or her use of online shopping, assistive tech-

nologies, and the Web access issues that he or she believed to be most important. Informants were asked to think about their past experiences when shopping online and, in particular, to discuss examples of "good" or "bad" sites. Questions were asked about perceived usefulness, ease of use, and feelings toward their experiences. All informants had access to the Web at home and reported varying degrees of expertise with online shopping. This loosely structured approach allowed the informants to recall and elaborate on their experiences without the constraints found in a more structured survey.

Copious notes were taken during each interview, and informants were encouraged to give examples of actual sites and of purchase occasions of specific products. Transcriptions of the interviews and handwritten memos produced 269 pages of typewritten notes. We analyzed the data through a reading and rereading strategy to systematically identify common patterns of experiences, specific Web site perceptions, and shared vocabulary that reflected the "voice of the consumer" (Baker, Stephens, and Hill 2001; Thompson 1997). Multiple themes emerged from the analysis that reflected informants' abilities to search for and obtain information, to evaluate merchandise, and to make independent choices, as well as their frustration with the availability and quality of the information online. The findings varied according to whether the informant had usable vision and the types of technologies he or she used.

In reporting our results, we assigned all informants a pseudonym. Their code names and ages appear in parentheses after each statement. To capture the voices and feelings of each respondent (Stern 1998), we present the quotations and e-mail comments as given, with minor clarification in brackets. We summarize informants' information in Table 1. We organize the findings around the major TAM elements (usefulness, ease of use, and enjoyment) plus consumer normalcy and consumer vulnerability, which form the central part of our model. Because navigation, convenience, and substitutability of experience occur throughout the TAM elements, we do not separate them out for individual discussion. Subsequently, we use the findings to develop recommendations for policy makers and market response.

## Findings

As we expected, people with visual impairments use the Web to shop online, sometimes as a substitute for shopping in physical stores. They want independence and control and often prefer self-directed but possibly more challenging online shopping to the overrestrictive assistance they receive when shopping in the store. They want to express individualism and creativity—a sense of personal taste—in the things they buy. They also want to avoid mistakes. Because our informants were experienced Web users, they were aware of the pitfalls of poor site design and the need for adaptation and initiative in the use of Web and assistive technologies.

Many reported that the interface between the various types of assistive aids and specific Web technologies could render portions of a Web site unusable, ineffective, or unpleasant to use when attempting to find desired consumer

**Table 1. People with Visual Impairments**

Pseudonym	Assistive Technology Aids	Gender	Age	State	Visual Impairment	Date Impaired
Alex	ZoomText, JAWS, Windows-Eyes	Male	50	Florida	Totally blind	Premature birth
Andrea	ZoomText	Female	23	New Jersey	Retinal disease, 20/400 vision	As a child
Annie	JAWS, Windows-Eyes	Female	52	Oregon	Totally blind	Birth
Barbara	FreedomBox	Female	59	California	Totally blind	Premature birth
Ben	JAWS	Male	29	New Jersey	Totally blind	Age 3
Carl		Male		New Jersey	Totally blind	Birth
Cathy	JAWS, Braille display	Female	51	New Jersey	Totally blind	As a baby
David	JAWS	Male	53	New Jersey	Totally blind	Birth
Doreen	JAWS, BrailleNote	Female	50	Pennsylvania	Totally blind	Birth
Edward	ZoomText	Male	32	New York	Retinitis pigmentosa	Age 8
Evelyn	ZoomText	Female	51	New Jersey	10% in one eye, some color vision	Birth
Fran	JAWS	Female	—	—	—	—
Frank	JAWS	Male	54	Maine	Sees direct points of light	Since 1990
Gloria	JAWS	Female	Middle age	New Jersey	Totally blind	—
Greg	JAWS	Male	73	New Jersey	Totally blind last ten years, legally blind since age ten	Age 10
Harry	JAWS, Windows-Eyes, BrailleNote, others	Male	36	Missouri	Totally blind	As a baby
Helen	JAWS, Kurzweil scanner, Braille printer	Female	65	New Jersey	Totally blind	Age 3
Irene	JAWS, Dragon Naturally Speaking	Female	40	New Jersey	Detached retina	Age 23
Jarrett	JAWS	Male	44	Florida	Totally blind	As a child
Jeffrey	JAWS	Male	23	Washington	Totally blind	Birth
Jennifer	ZoomText, Windows-Eyes	Female	53	New Jersey	Macular degeneration	Age 26
Kevin	JAWS	Male	20	California	Totally blind	Birth
Kristin	JAWS	Female	25	Utah	Totally blind	Birth
Larry	JAWS	Male	45	North Carolina	Light perception	Birth
Leslie	JAWS, Windows-Eyes, Braille display	Female	52	Massachusetts	Totally blind	Birth
Michelle	JAWS, OPENBook	Female	Late 30s	Virginia	Totally blind	Age 19
Mike	JAWS, ZoomText, Windows-Eyes	Male	35	Ohio	Diabetic retinopathy, legally blind, partial sight right eye	—
Mitchell	JAWS	Male	32	Vermont	Totally blind	Birth
Nadia	JAWS, Kurzweil scanner	Female	26	New Jersey	Totally blind	Age 11
Nathan	JAWS	Male	21	Indiana	Practically no vision	“During youth”
Olive	ZoomText	Female	45	New Jersey	20/100, limited need of magnifier	Age 28
Patricia	JAWS, Braille display	Female	22	California	Totally blind	Birth
Paul	JAWS, Windows-Eyes	Male	43	Missouri	Blind in one eye	Birth
Roseann	JAWS	Female	19	Tennessee	Can see four feet in left eye	Birth
Russ	JAWS, Dragon Naturally Speaking	Male	41	Missouri	Totally blind	As a teenager
Shirley	Windows-Eyes, Braille display	Female	45–50	Tennessee	Totally blind	As an infant
Steve	ZoomText, Windows-Eyes	Male	43	Nevada	Retinitis pigmentosa, Low vision	Age 10
Teresa	JAWS	Female	24	New Jersey	Totally blind	Birth
Tom	JAWS	Male	49	Connecticut	Totally blind, gradually over ten years	Gradually over years
Ursula	Windows-Eyes	Female	56	Wisconsin	Totally blind	Birth
Vicki	JAWS, Windows-Eyes, OPENBook	Female	52	New York	Totally blind	Birth
Victor	JAWS	Male	50	Louisiana	Totally blind	Birth
Walter	ZoomText, JAWS	Male	29	Florida	Low partial vision, glaucoma	Birth
Wayne	Windows-Eyes	Male	40	Minnesota	Light perception	Age 20
Yolanda	Windows-Eyes	Female	51	Maryland	Totally blind	Birth

information (navigation). Although they uniformly spoke of the convenience of online shopping, some used retail Web sites in tandem with visits to stores to inspect and purchase products. Most surprising was their tendency to gather information online and then subsequently place orders by telephone (substitutability of experience). They evidently view the commercial Web sites, physical stores, and telephone markets as integrated parts of an entire marketplace.

Our informants believed that they could achieve desired outcomes (usefulness) and also experience independent, self-controlled shopping for the first time. However, the limitations of technology coupled with inaccessible Web designs created significant problems regarding ease of use. Enjoyment occurred when Web sites were accommodating and operated as expected rather than through the experience of some form of fun, such as blogging or participating in chat rooms. The informants relayed many experiences regarding consumer normalcy and/or consumer vulnerability because, though online shopping could facilitate independence, it could also render them powerless as a result of technical problems and poor interfaces. We can summarize the responses with the following hypothetical consumer statement:

Finally, I'm not dependent on others to drive me to the store or clerks who don't have time to help once I'm there. I can browse whenever I like, comparing products with access to information that I've never had before. However, some Web sites are designed as if blind people never use them, causing problems with my assistive software, so I make mistakes, get stuck, and give up. It's so convenient when a site actually works with my software; then, I really enjoy shopping online.

### Usefulness: Can I Do What I Came For?

We asked the informants to discuss whether shopping online improved their abilities to reach desired outcomes, such as buying a specific product or gathering information. The results were mixed. When sites provide the needed navigation tools that work with assistive technologies, the informants could achieve successful outcomes, thus contributing to feelings of consumer normalcy. In effect, shopping online enabled them to shop like everyone else with newfound freedom, such as David (age 53) who reported feeling empowered with a new sense of spontaneity and control:

The ability to shop independently, and to make decisions independently, to browse independently, and to make that purchase is truly liberating for me.... The ability to go on an online grocery shopping site like ShopRite ... and to be able to bring up the sale items, to be able to find out what is one sale, to be able to look at the nutritional information, is truly exciting for me. Because I've never been able to do it.

Spontaneous behaviors, such as "browsing in an unplanned way" and "surprising someone with a gift," become possible for the first time, adding to the sense of control over one's choices:

My wife's and my anniversary is the 21st of March, and I went online and I bought her a watch. And I just, I did not go to the Web site of Sears or JCPenney, or somewhere. I searched a little more deeply ... and was able to pick and choose among different styles,... which I wouldn't have been able to do as inde-

pendently,... but I wanted to choose that watch completely myself without any assistance.... It's made me a more accomplished shopper because I can do more of it at my leisure, and I can do more of [it] independently as opposed to employ the services of a sighted person. Because everything is right there in a format that I can read myself. (Victor, age 50)

Ironically, many Web site features that provide usefulness to people with sight, such as Flash, pop-ups, and information that moves, have the opposite impact on people with vision problems. Irene (age 40) has a detached retina and describes her vision as "similar to seeing through a telescope." She noted that the information contained in a Web page can be read by a screen reader, potentially creating fundamental differences in the way that information can be accessed and, therefore, the way it is processed. She noted that before her vision problems began, she used to "scan" Web sites quickly before going to the section that she wanted. With a detached retina, however, much has changed:

If I go to a retail site, it will have a very short description of [a product];... you, as a sighted person, scroll down very quickly and get to where you need to be. A blind person can't scroll like that;... we have to go down line by line or item by item and go through all of the stops.

Web elements, such as photographs, graphics, and simple descriptions, may fail to provide the detail people with visual impairments may need to make an informed decision, and moreover it may take considerably longer to scan and process the information presented. For example, Evelyn (age 51) has only partial sight in one eye. She uses enlargement software that enables her to examine sections of each Web site rather than the Web site as a whole. The magnification level she uses enables her to view only part of a screen at a time, missing the connections between the information that other Web users would see. However, the online magnification enables her to enlarge product features—something she cannot do in the store setting. She can obtain the information she wants, as long as pull-down menus do not open and cover the information she is reading:

For example, one of the Web sites that I use is ... a health vitamin store;... let's say you're looking for calcium ... and you click and what that actually brings up is the product label off the vitamin bottle;... with using ZoomText, I'm only looking at about a one-third of the screen at any one time because of the level of magnification that I require;... when I move the mouse to access a different sector of the screen, frequently the pull-down menus drop down and that interferes with what I'm seeing.

At times, online shopping productivity is diminished by Web sites that use unique descriptions that are not meaningful if a person cannot see. For example, many informants in our study reported disappointment and frustration with non-standard color names that cannot be readily understood unless they are seen. The informants wanted to match furniture or an item of clothing using a well-known color name, but instead the Web site often listed creative names that did not provide color information:

Shopping online has more descriptive information than going to the store, but it has to be described well.... Another thing I

found with clothing Web sites, is they try to invent these new colors. There is no red, blue, or green. They have like “desert rose,” and I don’t know what that means. (Teresa, age 24)

### Ease of Use: Can I Make It Work?

People who are blind typically do not use a mouse, because they cannot see the pointer to navigate around a computer screen. Instead, they use their keyboard in ways that emulate the use of a mouse. Web designs that require a mouse to click into a table or on certain types of desired information effectively make that information inaccessible to the blind user. As Annie (age 52) reported, “I would say the assumption of the designer is that everyone uses a mouse and no one uses a keyboard.”

Disabilities scholars argue that a “disabling environment” occurs when a person could act independently until some feature in the environment makes his or her disability predominant in the transaction. Many informants anticipated having problems and reported preemptive behavior, finding ways to compensate for deficiencies in actual Web sites, and they often went offline to compensate for site limitations. Indeed, some reported searching for the toll-free number before their shopping experience so that they were ready when problems arose. Doreen (age 50) repeatedly mentioned that her coping strategy was to seek additional assistance by calling a representative on the telephone to complete the transaction:

When I got to the point where I had to input data like my credit card number and fill out the forms and fill out the fields,... I found myself putting information sometimes in the wrong field ... because the information [wasn’t] always in sync;... you’ll sort of fill things up part way, and it’ll see that you’re having some trouble, and somewhere along the line you’ll see a toll-free number, so I’ll call the toll-free number.

For some people with disabilities, a sense of ease of use translates more directly into accessibility. Many believe that the Web provides prepurchase information that is inaccessible in actual physical stores, such as product labels (through screen readers) or enlarged patterns and designs (though this has its limitations as we discuss). Comments centered on navigation, structure of tables, insufficient descriptions, and poorly labeled links. Because of these problems, one informant commented that design issues “exclude many blind persons from what is becoming a major form of shopping” (Gloria, age 45).

Some informants commented on the cognitive effort required to shop online. Because they could not easily scan and rescan a Web site to combine all information about a product or specific offer, they often resorted to rote memory, hoping that they could recall all the information needed when making a decision:

Form mode in JAWS allows you to fill in specific information in forms, billing/shipping address and payment information;... [a problem is that the software] doesn’t tell you what field you’re filling in. You have to read the whole page and memorize them and write them down and then fill that in. Amazon is not like that. (Teresa, age 24)

### “Yes, I Can!” Enjoyment

Informants did not report enjoying any specific Web sites in and of themselves, though they had favorites they patronized regularly. Instead of viewing the Web as a “fun” escape, informants enjoyed other aspects, such as being independent, not needing to summon someone to help them, and not being forced to get a ride.

I wouldn’t call it fun. It’s just a normal thing. I don’t mind doing it. I don’t say, “oh, I hate shopping on the Web.” But then I don’t say, “oh yeah, I get to go buy something online today.” Actually, I do depending on what it is. (Roseann, age 19)

What many informants enjoyed was the ability to do things for themselves and not to interact with insensitive employees. Doreen (age 50), who is completely blind, mentioned being taken advantage of in physical stores and prefers the online environment because “if you’re blind, certain salespeople see you coming.” Some able-bodied people working as salespeople may feel uncomfortable and uneasy while serving shoppers with disabilities, which strains communications and reinforces stereotypic feelings of being unwanted (Baker 2006; Braithwaite, Waldron, and Finn 1999). The informants indicated that they often appreciated how the Internet conceals their visual impairments, allowing them to maintain a greater sense of anonymity (McKenna and Bargh 1998) and preventing potentially patronizing behaviors. Consumers with disabilities may experience greater anonymity online than face-to-face, leading to their designation as “opinion leaders” because this greater anonymity results in a greater influence on other consumers, including the nondisabled. In a postinterview, “off-the-tape” discussion, several informants mentioned making friends through social networking sites and waiting until friendships were established before mentioning that they had vision impairments to ensure that a friendship was “genuine.”

Others reported that shopping online was not enjoyment at all but rather just a way to avoid other problems, such as taking two buses to get to the mall. As one informant noted, she liked to shop, but shopping online was “more practical than enjoyable” (Vicki, age 52). However, it may take longer and be more complicated. When informants mentioned enjoyment, they discussed a sense of accomplishment that could be achieved by being able to conduct their own search and evaluation and to perform the purchase online without personal assistance. That is, it is the ability to find ways to achieve functional goals that seems to drive the sense of enjoyment that people with visual impairments experience in the online shopping environment:

Being able to do edit searches for products and thereby being able to easily prepare or read a description of different products—that’s the part that I enjoy the most; and then of course the convenience of having it shipped to you is nice as well, but the first two is what really makes it most enjoyable for me. (Ben, age 29)

### Consumer Normalcy and Consumer Vulnerability

The informants’ comments indicate that online shopping can elevate the experience of consumer normalcy for people

with visual impairments, with some important limitations. First, online shopping helps create a feeling of participating in the marketplace and of choosing when to involve others rather than depending on others. Second, it enables them to enhance their individuality by shopping according to their own preferences, allowing each person to feel “more like me” rather than someone whose choices are being made by others. Victor (age 50), who has been totally blind since birth, linked his independence with his ability to search online. He mentioned how much he enjoyed being surprised by products and features that he found online, and he appreciated the ability to search without help and without interference, a combination that defined his sense of consumer normalcy:

I would probably, as a blind person, be able to do more actual independent—and I underscore the word *independent*—shopping on the Web because I can search through items myself using adaptive technology, using the screen reader—and finding things literally on my own without employing the use of a sighted person.

The informants are able *to be* consumers by being able to shop “more like everyone else,” that is, in ways that consumers who can see perhaps take for granted—surprising people with gifts, discovering satisfying choices, comparing weights and measures. Online shopping makes them feel as if “they are in the market” rather than having the market filtered by others. Jeffrey (age 23), among others, noted that online shopping “gives me more independence than bricks-and-mortar stores would.” As another informant also reported,

The people you are with, who can see, stop and look at the things that interest *them*. Unless someone knows you very well, they won't realize that a particular thing you're passing interests *you*. So they don't stop and show you things that interest you, whereas they will stop and look at things that interest *them*, even if they are on a shopping outing with you. (Shirley, age 47)

Paradoxically, the online environment also can prevent shoppers with visual impairments from being “in the market.” People with visual impairments are sometimes forced to abandon their intended online purchase plans and to seek assistance from sales representatives over the telephone. Perhaps worse, several informants reported in-store shopping trips as being defined by an assistant's or a friend's task-driven purpose as well as demeaning interactions with sales associates. Although perhaps well intentioned, the overcompensatory behavior of these sales associates served to reduce informants' self-esteem (Baker 2006) and engendered a sense of loss of freedom and independence. As a result, Irene (age 40) found that she could not be herself in what she searched for, and the information she wanted was often overlooked:

Employees censor what you're looking at;... they limit my choice,... [and] they do not want to read the titles of all the songs on CDs that I might buy.... Online, I can find out and even listen to sound tracks.

Shopping online provides informants a potential combination of the aspects of normalcy—being there in some respects, carrying out their own preferences, controlling

what they do and how they shop, and feeling as if they belong in the environment. Online shopping also empowers shoppers with visual impairments with a full range of consumer experiences that are within their control, many of which had not been accessible in the past. Jennifer (age 53) excitedly described how she could become a “smart shopper” by learning to make comparisons and spending time gathering information to use in making a decision:

I can now look at contents. I can compare weights.... So I can determine which is a better buy. I can see actually what things cost.

Familiar Web site designs, similar to familiar store layouts, can increase perceived accessibility and ease of use. Physical retail spaces have a tendency to use similar store layouts within store types, such as supermarkets and discount stores, simplifying shopping for their customers. Web sites can differ dramatically and assume visual scanning by the user (Childers et al. 2001; Hoffman and Novak 1996). As a result, consumers with normal vision can quickly scan their environment and determine where products are located. In contrast, many Web sites have unique layouts and internal hyperlinks that reduce common designs across sites. People with visual impairments report developing loyalty to sites or site designs that they have judged to be accessible and avoiding sites that add unnecessary visual distractions.

I'll research/browse differently if it is a specific site or brand I know. (Walter, age 29)

From what I have been told and from what I understand,... a lot of Web designers want to make that Web site very flashy or, as my wife likes to say, full of eye candy.... Very catchy to the individual who is sighted. So therefore, when you get a lot of eye candy or you get a lot of busy work on the Web page, then the screen reader goes whoa. (Harry, age 36)

Informants shared similar experiences of vulnerability when attempting to complete an online purchase confidently. Although the informants trusted the information they found online, they reported that aspects of the site design made it impossible to feel confident in the checkout process without depending on others. Several mentioned that they adapted to the situation by calling friends and family to help input the information, adapting to the experience of “consumer vulnerability” (Baker, Gentry, and Rittenburg 2005).

If I want to buy something and I don't really have a lot of time, I'll call my brother. And we call my brother and sister “the Internet assistive company.” When we want to buy something quick, we call them, and they go click click click, and it is done in ten minutes. Then, it would have taken me at least a half an hour. (Yolanda, age 51)

People who experience vulnerability often develop coping strategies as mechanisms to deal with vulnerability. Vulnerability is characterized by situational dependence and a lack of control in consumption contexts. The preceding excerpt suggests that Yolanda may not have the online experience she wants when she is in a hurry; in other words, she becomes dependent and is not in control. However, she is proactive and has a plan to call family and friends when

the Web must be used quickly to prevent dependence on someone else.

Tom (age 49) became blind gradually throughout his lifetime. He spoke about the trade-offs of convenient, independent Web shopping versus potential ordering mistakes associated with inputting data. Shopping online could potentially become more arduous because of the increased cognitive demands of inputting data to online shopping forms. As Tom reported,

Being a person who has been visually impaired for over 20 years and blind for two years, I find [that] I'm more independent and can shop [online] at my own convenience as opposed to waiting for someone to transport me to a store to begin the shopping experience.... Form designs, especially at purchase, have a mismatch with assistive technology;... one time, [I] ordered 450 of a product since [I] couldn't tell if [I had] typed it correctly. Amazon is accessible but not usable, has 200–300 links, many without header tag.

## Theoretical Implications

This study indicates that many of our informants interpreted commercial Web sites as public places in which they can shop, investigate products, interact with other consumers, and, ultimately, make purchases. However, navigating and making purchases through Web sites can lead to unique positive and negative experiences, suggesting several extensions to the literature on TAM, normalcy, and vulnerability.

The TAM is founded on the utilitarian concepts of ease of use and usefulness, with the more recent addition of enjoyment, in predicting acceptance of information technologies. When conventional physical markets were more difficult or unable to meet their needs, the informants often chose commercial Web sites as alternative marketplaces in which to examine and purchase merchandise. Although the TAM has been extended to the Web in prior research (Childers et al. 2001), the voices of people with visual impairments provide additional extensions and modifications to the stereotypical meanings of ease of use and usability. In many cases, the Web offers a broader experience of independence and personal choice than physical stores, enabling people to be in the marketplace with free choices to find, browse, investigate, and make personal decisions, unencumbered by the good intentions of friends or salespeople. Moreover, the meaning of enjoyment is not limited to having fun in and of itself. Instead, enjoyment can simply be experienced when everything works the way it is supposed to and when shoppers with visual impairments find that Web designers expected them to be there, such as when accommodations (e.g., “alt” tags) are informative and easy to use. Shirley (age 45) described it as follows: “It’s like being locked out of every library in the land and suddenly you have a magic carpet (Internet) and a set of keys.”

Related to success-based enjoyment, consumer normalcy captures people’s experiences of the marketplace as they carry out their roles as shoppers. The informants’ comments indicate that being in the marketplace must include reactions to others in those marketplaces, similar to Bitner’s (1992) framework, which integrates the experiences of customers, other shoppers, and employees. What types of interactions with these “other” players lead to a definition of an

online place that makes a person feel “normal?” When dominance from family and friends or help from naive salespeople constrains rather than facilitates a person’s shopping choices, turning to retail Web sites becomes a strategy to increase shopping independence. As Sherry (1998b) notes, physical stores can become “nonplaces” when spontaneous interaction with others and merchandise discoveries are limited or discouraged. Although some informants mentioned valuing personal relationships in the actual stores, the potential for self-controlled shopping combined with personal interactions reflected an online place that was often preferred for its rich social experiences and enhanced shopping information.

Finally, consumer vulnerability occurs when a shopper experiences a state of powerlessness. People with disabilities may experience this state in both online and offline shopping, but only physical places are regulated by the ADA, providing some recourse when doors cannot be opened, signs cannot be read, and salespeople cannot be heard. Commercial Web sites can inadvertently take shoppers out of the marketplace when shopping information is unobtainable or transactions cannot be completed. Ironically, people with disabilities can be rendered even more powerless by the inapplicability of the ADA. As a result, the informants devised various strategies to anticipate, reduce, or manage situations of inaccessibility. Moreover, many of their methods were shared through online networks of people with disabilities, who posted suggestions of how to overcome Web site problems and recommendations of retail Web sites that were reported to be accessible.

## The Need for Marketplace and Policy Response

### Is a Web Site a Place? Does the ADA Apply?

Should the ADA be reinterpreted to include accessibility guidelines for online marketplaces? As we described previously, commercial Web sites currently do not come under the jurisdiction of the ADA unless they are an extension of a physical store. Such a conclusion raises the issue of whether stand-alone companies that operate solely in an electronic format should be “accessible” as well (Ramasastri 2006). Our study indicates that voluntary adherence to accessibility guidelines (e.g., [www.w3.org](http://www.w3.org)) is not sufficient, and legally mandated standards for accessibility need to be considered.

A pivotal point in prior legal decisions centers on the “nexus,” or connection between the retailer’s physical stores and the Web sites themselves. A site that is “heavily integrated” with physical retail stores would enable consumers to perform such tasks as finding store locations, looking up store hours, identifying in-store specials, printing out store coupons, and ordering items for in-store pickup (DuPree 2007). Ironically, in *Access Now Inc. v. Southwest Airlines* (2002), the court held that the inability to use Southwest’s online ticket purchasing was not discriminatory under the ADA, because the online “ticket counter” was not a physical space. However, if a lack of access to Web purchases forces people with disabilities to travel to the physical ticket counters, increased difficulty in shopping along with greater effort and cost is likely.

## The Role of Public Policy Research

Public policy researchers are encouraged to take a leadership role in providing evidence that Web sites are actually alternative “placeways” (Sherry 1998a), or “public marketplaces” where transactions of information, money, and time actually take place. Our data strengthen the argument that Web sites are indeed public accommodations and thus should fall under the jurisdiction of the ADA. In the recent court case, Target argued that its Web site was not itself a public accommodation, but the judge maintained that plaintiffs could argue that an inaccessible Web site could impede “the full and equal enjoyment of goods and services offered for sale in Target stores” (Ramasastry 2006).

Another fundamental question is, What defines a Web site’s “integration” with a retailer’s physical locations, and how “tightly” must it be integrated to come under the ADA’s jurisdiction (Bashaw 2008)? Understanding what constitutes integration and interference would contribute to framing the nature of multichannel retailing. Currently, such interference is particularly important because it appears to discriminate against people with disabilities through diminished access to Web-only specials, discounts, and product offers.

## Enhancements to Consumer Normalcy and Consumer Vulnerability: No Harm

Another public policy implication centers on the right of people with visual impairments to avoid suffering any serious form of harm when prevented from shopping online. For example, statistics indicate that more people (58%) report using the Internet than turning to professionals (e.g., doctors, lawyers), relying on family or friends (45%), or directly contacting a government agency (34%; Estabrook, Witt, and Raine 2007) when facing health problems, when needing legal information, or when changing jobs or starting a business. Because Web sites are often a preferred or even a required source of information, exclusion as a result of limited accessibility can lead to significant disadvantages in everyday life and may lead to costly mistakes for the user.

Another theme among the informants involved making errors in entering critical information, such as the number of items purchased or credit card numbers, often resulting in great cost to the individual. One informant irately described her experience of booking and subsequently cancelling a cruise through an online service, while being unaware of a processing error that negated her cancellation request. She was informed of her full liability for the charges and was required to file a lawsuit to establish that though she had followed all online instructions, the site did not alert her that the transaction had not been successfully cancelled. This problem rendered her powerless and uninformed, causing her to experience consumer vulnerability and financial penalties through no fault of her own.

As noted in prior work, more people with than without disabling chronic conditions (31% versus 20%) reported feeling frustrated by a lack of information or an inability to find needed information online (Fox 2007). In our study, informants reported potentially severe consequences of online errors when ordering products such as prescription

drugs. Although many informants reported ordering their medications online, they feared mistakenly ordering an incorrect amount or strength because of ill-designed buttons and online charts. Standard safety practices are needed when potentially life-threatening situations can occur through mistakes in online order processing.

## Recommendations

### Recommendations for Policy Makers

First, policy makers can mandate that well-established standards for Web accessibility be enforced for online commercial marketplaces using the W3C (2006) accessibility diagnostics tools and policies by the international Web Accessibility Initiative. This study identified problems at all points along the transaction path, from initial searches for information to possible purchase and even the eventual return of merchandise.

For example, online shopping carts should be required to meet strict standards for putting an item into the cart and also removing it. Shoppers in physical marketplaces take for granted that they know exactly what is in their carts; should the online marketplace provide any less certainty? Redundant systems could be built into the Web site to read aloud the current list of items in the shopping cart. Analogously, sites passing an accessibility standard could have a programmable option that is switched on when someone enters the site, thus allowing shoppers to complete entire transactions using only their keyboards. Home page designs could also benefit from a more standardized layout that includes key action tabs, such as “access customer service” or “site overview/layout,” in the same locations on the screen. Having more standardized home pages across sites within a category (e.g., electronics) would provide a comfortable launching point that would not prohibit additional competitive advantages accrued through exceeding these accessibility standards (e.g., one-click purchasing).

Second, the informants revealed that accessible technology can be expensive, difficult to install, and difficult to use. Various types of accessible software may perform well with one Web site and fail miserably with another. Policy makers might advocate the development of accessible “freeware” and increased governmental supports for people in purchasing and setting up the equipment and software they need. The LowBrowse software recently introduced by Lighthouse International is a promising example (Bawa 2008). Available for free public download, this software add-on to the Mozilla Firefox browser enables users to magnify lines of Web text over which they have scrolled; the magnified text appears at the top of the user’s screen. It also has speech capability and is customizable to users’ preferences. Social service agencies might provide house calls, similar to the Geek Squad in-home support available at cost through Best Buy. Studies report that informants in Centers for Independent Living are enthusiastic users of e-mail, bulletin boards, and Internet support groups (Ritchie and Blanck 2003).

Third, retailers often argue that accessibility costs money, whether in the bricks-and-mortar environment or online. Policy makers might address this argument by

encouraging Web accessibility using governmental incentives similar to those that encourage the hiring of people with disabilities, such as specific tax-incentive programs. When disabled employees are hired, tax deductions may be available to cover costs when barriers are removed and modifications to the workplace are made. Analogously, retailers could be encouraged to apply for funds or deductions that cover the costs associated with making the Web accessible, testing, building alternative sites, and integrating technologies that increase accessibility to larger numbers of shoppers.

Finally, government regulators can require periodic usability tests for all commercial Web sites, as was mandated in the Target lawsuit settlement. This last recommendation is particularly important because technologies are changing on almost a daily basis. Because many Web sites have dominant visual components, such as Flash, streaming video, and slide-show capabilities, we recommend that government agencies require a usability test to be conducted periodically, perhaps at a minimum of every two years.

### Marketplace Responses

First, online retailers can conduct voluntary tests of their Web sites to ensure accessibility. Many free Web accessibility tests are available at the Web Accessibility Initiative's Web site. Rather than simply identifying a problem, such tools are designed to enable companies to understand and simulate the potential problems their Web site can cause for customers, such as testing for color and contrast (see [www.vischeck.com](http://www.vischeck.com)).

Second, accessibility problems are likely to arise when student software designers are not taught to view people with disabilities as typical Web site users. Software and Web design students need to be taught that people with disabilities patronize commercial Web sites as a manner of course. The informants mentioned several problems that could be included, such as the design of tables and charts, the choice of meaningful versus noninformative names given to color, and the development of informative "alt" tags when photos are presented. Prior research has noted that providing compensatory information in picture format (to sighted shoppers) is one important way to compensate for the lack of direct product experience through different senses when shopping online (Peck and Childers 2003, 2008).

Third, assistive software can be designed to automatically detect Web elements that interfere with assistive devices and software and to provide options to bypass them. The informants offered several examples of Web sites that had software embedded that would disconnect users from the site because of some hidden conflict with their assistive device or software. Conducting simply usability tests with people with visual impairments (or other disabilities) might uncover unknown problems that can be voluntarily remedied versus responding to a costly lawsuit.

Finally, professional retailing groups, such as the National Retail Federation, could develop their own certification that a commercial Web site is "accessible and user friendly." These groups might also solicit feedback from disability advocacy panels and provide best-practice evaluations that would give retailers examples of what con-

stitutes a useful and easily accessible Web site. Ratings of such sites by retail category might also encourage competitive efforts to produce innovations that support access and usability. Just as other certifications are associated with various social action groups, approval by a professional retailing group may provide the retail industry with additional pressure to ensure accessible commercial sites. People with visual impairments could subsequently search for and find sites that have undergone this certification and patronize them with confidence.

### Future Directions

The respondents in our sample provide evidence that they indeed "go" to the online marketplace to shop. For them, it is a place to gather information, to make comparisons at their own pace, and to make choices that reflect their personal preferences. When sites are designed with accessibility in mind, they can be a welcoming place that enables shoppers to be in control of their purchases. Thus, we recommend that policy makers take a strong stand in arguing that Web sites are indeed places of public accommodation and need to be regulated by the ADA, especially when they are the only entity in which sales can take place, such as Amazon.com and Priceline.com.

Well-constructed, accessible Web sites can empower people with disabilities to participate as "normal" customers with a full complement of controllable options while shopping, rendering them active informants in the market that affects their lives (Bolton and Bookings 1996; Zimmerman et al. 1992). When control is increased through accessible design, it can translate into an increased feeling of self-determination over goals, such as those in online shopping. This psychological empowerment creates feelings associated with a greater degree of self-efficacy and competence (Conger and Kanungo 2001; Zimmerman 1995). People with disabilities who are empowered are more likely to acquire the skills and knowledge necessary to support their independence and enhanced self-confidence (Fawcett et al. 1994). Possessing a sense of control also enables people with disabilities to reduce their perceived dependency, to be more assertive, and to increase their decision-making confidence by gaining access to more complete information (Chamberlin 1997). Research should examine the development of online expertise among people with disabilities and consider whether the ability to more selectively identify and attend to relevant product information can, in turn, reduce processing load (Brucks 1985) and improve ease of use. Further research should examine not only the acquisition of online knowledge but also how this knowledge pairs with a person's empowerment-driven confidence in calibrating better-quality decisions (Alba and Hutchinson 2000).

### References

- Access Now Inc. v. Southwest Airlines* (2002), Case No. 02-21734-Civ-Seitz/Bandstra, 227 F.Supp.2d 1312 (S.D. Fla.).
- Alba, Joseph W. and J. Wesley Hutchinson (2000), "Knowledge Calibration: What Consumers Know and What They Think They Know," *Journal of Consumer Research*, 27 (September), 123-56.

- American Foundation for the Blind (2007), "Glossary of Eye Conditions," (access January 13, 2009), [available at <http://www.afb.org/seniorsite.asp?SectionID=63&DocumentID=2139>].
- Baker, Stacey Menzel (2006), "Consumer Normalcy: Understanding the Value of Shopping Through Narratives of Consumers with Visual Impairments," *Journal of Retailing*, 81 (1), 37–50.
- , James W. Gentry, and Terri L. Rittenburg (2005), "Building Understanding of the Domain of Consumer Vulnerability," *Journal of Macromarketing*, 25 (2), 128–39.
- and Carol Kaufman-Scarborough (2001), "Marketing and Public Accommodation: A Retrospective on Title III of the Americans with Disabilities Act," *Journal of Public Policy & Marketing*, 20 (Fall), 297–304.
- , Debra L. Stephens, and Ronald P. Hill (2001), "Marketplace Experiences of Consumers with Visual Impairments: Beyond the Americans with Disabilities Act," *Journal of Public Policy & Marketing*, 20 (Fall), 215–24.
- Bashaw, Jeffrey (2008), "Applying the Americans with Disabilities Act to Private Websites After *National Federation of the Blind v. Target*," *Shidler Journal of Law, Commerce, & Technology*, 4 (February 25), (accessed July 25, 2008), [available at <http://www.lctjournal.washington.edu/Vol4/a10Bashaw.html>].
- Bawa, Joanne (2008), "LowBrowse: A Web Browser for the Visually Impaired," (accessed July 25, 2008), [available at <http://www.usabilitynews.com/news/article4883.asp>].
- Beck, Melinda (2008), "High Technology for Low Vision," *The Wall Street Journal*, (September 9), (accessed September 9, 2008), [available at [http://online.wsj.com/article/SB122091525305212313.html?mod=2\\_1566\\_topbox](http://online.wsj.com/article/SB122091525305212313.html?mod=2_1566_topbox)].
- Bitner, Mary Jo (1992), "Servicescapes: The Impact of Physical Surroundings on Customers and Employees," *Journal of Marketing*, 56 (April), 69–82.
- Bolton, Brian and Jeffrey Bookings (1996), "Development of a Multifaceted Definition of Empowerment," *Rehabilitation Counseling Bulletin*, 39 (4), 256–64.
- Braithwaite, Dawn, Vincent Waldron, and Jerry Finn (1999), "Communication of Social Support in Computer-Mediated Groups for People with Disabilities," *Health Communication*, 11 (2), 123–51.
- Brucks, Merrie (1985), "The Effects of Product Class Knowledge on Information Search Behavior," *Journal of Consumer Research*, 12 (June), 1–16.
- Bruner, Gordon C. and Anand Kumar (2005), "Explaining Consumer Acceptance of Handheld Internet Devices," *Journal of Business Research*, 58 (5), 553–58.
- The Center for an Accessible Society (2002), "People with Disabilities Still Lag on Internet Usage," (January 22), (accessed April 3, 2008), [available at [http://www.accessiblesociety.org/e\\_letters/index.htm](http://www.accessiblesociety.org/e_letters/index.htm)].
- Chamberlin, Judi (1997), "A Working Definition of Empowerment," *Psychiatric Rehabilitation Journal*, 20 (4), 43–46.
- Childers, Terry L., Christopher L. Carr, Joann Peck, and Stephen Carson (2001), "Hedonic and Utilitarian Motivations for Online Retail Shopping Behavior," *Journal of Retailing*, 77 (Winter), 511–35.
- Chouinard, Vera (1997), "Making Space for Disabling Differences: Challenging Ableist Geographies," *Environment and Planning D: Society and Space*, 15 (4), 379–87.
- Conger, Jay A. and Rabindra N. Kanungo (2001), "The Empowerment Process: Integrating Theory and Practice," *Academy of Management Review*, 13 (3), 471–82.
- Dabholkar, Pratibha A. and Richard P. Bagozzi (2002), "An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors," *Journal of the Academy of Marketing Science*, 30 (3), 184–201.
- Davis, Fred D. (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly*, 13 (3), 319–40.
- (1993), "User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts," *International Journal of Man-Machine Studies*, 38 (3), 982–1003.
- , Richard P. Bagozzi, and Paul R. Warshaw (1992), "Extrinsic and Intrinsic Motivation to Use Computers in the Workplace," *Journal of Applied Social Psychology*, 22 (14), 1111–32.
- Davis, Joel J. (2003), "The Accessibility Divide: The Visually-Impaired and Access to Online News," *Journal of Broadcasting and Electronic Media*, 47 (3), 474–81.
- Disability Rights Advocates (2006), "Target Corporation Sued for Discrimination Against the Blind," (accessed April 3, 2008), [available at [http://www.dralegal.org/cases/private\\_business/nfb\\_v\\_target.php](http://www.dralegal.org/cases/private_business/nfb_v_target.php)].
- DuPree, Isabel Arana (2007), "Websites as 'Places of Public Accommodation': Amending the Americans with Disabilities Act in the Wake of *National Federation of the Blind v. Target Corporation*," *North Carolina Journal of Law & Technology*, 8 (2), (accessed July 25, 2008), [available at <http://www.ncjolt.org/content/view/97/62/>].
- Estabrook, Leigh, Evans Witt, and Lee Rainie (2007), "Online Activities & Pursuits: Information Searches that Solve Problems," (accessed July 25, 2008), [available at [http://www.pewinternet.org/ppf/r231/report\\_display.asp](http://www.pewinternet.org/ppf/r231/report_display.asp)].
- Fawcett, Stephen B., Glen W. White, Fabricio E. Balcazar, Yolanda Suarez-Balcazar, R. Mark Mathews, Adrienne Paine-Andrews, et al. (1994), "A Contextual-Behavioral Model of Empowerment: Case Studies Involving People with Physical Disabilities," *American Journal of Community Psychology*, 22 (4), 471–96.
- Fox, Susannah (2007), "E-Patients with a Disability or a Chronic Disease," *Pew Internet and American Life Project*, (accessed July 25, 2008), [available at [http://www.pewinternet.org/pdfs/EPatients\\_Chronic\\_Conditions\\_2007.pdf](http://www.pewinternet.org/pdfs/EPatients_Chronic_Conditions_2007.pdf)].
- Frieden, Lex (2003), "When the Americans with Disabilities Act Goes Online: Application of the ADA to the Internet and the Worldwide Web," *Position Papers of the National Council on Disability*, (accessed November 10, 2008), [available at <http://www.ncd.gov/newsroom/publications/2003/adainternet.htm>].
- Heim, Judy (2000), "Locking Out the Disabled: Office Buildings Have Wheelchair Ramps, TV Has Closed Captions, but Many Web Sites Are Inaccessible to People with Disabilities. Things Don't Have to Be That Way," *PC World Magazine*, (September), (accessed April 3, 2008), [available at <http://www.pcworld.com>].
- Hoffman, Donna L. and Thomas P. Novak (1996), "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing*, 60 (July), 50–68.
- Imrie, Rob (1999), "The Body, Disability and Le Corbusier's Conception of the Radiant Environment," in *Mind and Body Spaces: Geographies of Illness, Impairments and Disability*, Ruth Butler and Hester Parr, eds. New York: Routledge, 25–45.

- (2000), "Disabling Environments and the Geography of Access Policies and Practices," *Disability & Society*, 15 (January), 5–24.
- Johnson, Carrie (2000), "The Growth of Multichannel Retailing: A Forrester Document Prepared for National Governor's Association and the National Conference of State Legislatures," (accessed April 3, 2008), [available at <http://www.nga.org/cda/files/0407multichannel.pdf>].
- Jones, William J., Terry L. Childers, and Carol Kaufman-Scarborough (2006), "Hedonic and Utilitarian Dimensions of Online Retail Shopping: Does Disability Matter?" in *AMA Winter Educators' Conference: Marketing Theory and Applications*, Jean L. Johnson and John Hulland, eds. Chicago: American Marketing Association, 168.
- Kaufman-Scarborough, Carol (1999), "Reasonable Access for Mobility-Disabled Persons Is More Than Widening the Door," *Journal of Retailing*, 75 (Winter), 479–508.
- and Stacey Menzel Baker (2005), "Do People with Disabilities Believe the ADA Has Served Their Consumer Interests?" *Journal of Consumer Affairs*, 39 (Summer), 1–26.
- Kaye, H. Stephen (2000), *Disability and the Digital Divide*. Washington, DC: U.S. Department of Education.
- Lenhart, Amanda, John Horrigan, Lee Rainie, Katherine Allen, Angie Boyce, Mary Madden, et al. (2003), "The Ever-Shifting Internet Population: A New Look at Internet Access and the Digital Divide," (April 16), (accessed January 13, 2009), [available at [http://www.pewinternet.org/PPF/r/88/report\\_display.asp](http://www.pewinternet.org/PPF/r/88/report_display.asp)].
- McCullough, Declan (2002), "Judge: Disabilities Act Doesn't Cover Web," (accessed April 3, 2008), [available at <http://www.zmag.org>].
- McKenna, Katelyn and John Bargh (1998), "Coming Out in the Age of the Internet: Identity 'Demarginalization' Through Virtual Group Participation," *Journal of Personality and Social Psychology*, 75 (3), 681–94.
- Mehrabian, Albert and James A. Russell (1974), *An Approach to Environmental Psychology*. Cambridge, MA: MIT Press.
- Milliman, R.E. (2002), "Website Accessibility and the Private Sector: Disability Stakeholders Cannot Tolerate 2% Access," *Information Technology and Disabilities*, (accessed April 3, 2008), [available at <http://people.rit.edu/easi/itd/itdv08n2/milliman.htm>].
- National Federation of the Blind v. Target Corporation* (2006), 452 F. Supp. 2d 946 (N.D. Cal. 2006), (accessed April 3, 2008), [available at [http://www.nfbtargetlawsuit.com/final\\_settlement.html](http://www.nfbtargetlawsuit.com/final_settlement.html)].
- National Organization on Disability (2003), "When the Americans with Disabilities Act Goes Online: Application of the ADA to the Internet and the Worldwide Web," online position paper, (accessed April 3, 2008), [available at <http://www.ncd.gov/newsroom/publications/2003/adainternet.htm>].
- (2005), "Frequently Asked Questions on Disability," (accessed April 3, 2008), [available at <http://www.nod.org>].
- Oliver, Mike (1990), "The Individual and Social Models of Disability," paper presented at Joint Workshop of the Living Options Group and the Research Unit of the Royal College of Physicians on People with Established Locomotor Disabilities in Hospitals, (March 23), (accessed July 25, 2008), [available at <http://www.leeds.ac.uk/disability-studies/archiveuk/Oliver/in%20soc%20dis.pdf>].
- Peck, Joann and Terry L. Childers (2003), "To Have and to Hold: The Influence of Haptic Information on Product Judgments," *Journal of Marketing*, 67 (April), 35–48.
- and ——— (2008), "If It Tastes, Smells, Sounds, and Feels Like A Duck, Then It Must Be a...: Effects of Sensory Factors on Consumer Behaviors," in *Handbook of Consumer Psychology*, Curtis P. Haugtvedt, Paul M. Herr, and Frank R. Kardes, eds. New York: Psychology Press, 193–219.
- Porter, Constance Elise and Naveen Donthu (2006), "Using the Technology Acceptance Model to Explain How Attitudes Determine Internet Usage: The Role of Perceived Access Barriers and Demographics," *Journal of Business Research*, 59 (9), 999–1007.
- Ramasastri, Anita (2006), "Does the Americans with Disabilities Act Require That Commercial Websites Be Accessible to the Blind?" (October 3), (accessed April 3, 2008), [available at <http://writ.news.findlaw.com/ramasastri/20061003.html>].
- Ritchie, Heather and Peter Blanck (2003), "The Promise of the Internet for Disability: A Study of Online Services and Website Accessibility at Centers for Independent Living," *Behavioral Sciences and the Law*, 21 (January–February), 5–26.
- Schaefer, Kelly (2003), "E-Space Inclusion: A Case for the Americans with Disabilities Act in Cyberspace," *Journal of Public Policy & Marketing*, 22 (Fall), 223–27.
- Sherry, John F. (1998a), "Alternative Placeways: Visiting the Undiscovered Country," in *Servicescapes: The Concept of Place in Contemporary Markets*, John F. Sherry Jr., ed. Chicago: NTC Business Books, 337–41.
- (1998b), "Understanding Markets as Places: An Introduction to Servicescapes," in *Servicescapes: The Concept of Place in Contemporary Markets*, John F. Sherry Jr., ed. Chicago: NTC Business Books, 1–24.
- Stephenson, Correy E. (2008), "Target Settles Suit over Website Accessibility," *Lawyers USA*, (accessed April 3, 2008), [available at <http://www.allbusiness.com/legal/trial-procedure-suits-claims/11565692-1.html>].
- Stern, Barbara (1998), "Narratological Analysis of Consumer Voices in Postmodern Research Accounts," in *Representing Consumers: Voices, Views, and Visions*, B.B. Stern, ed. New York: Routledge, 55–82.
- Thompson, Craig J. (1997), "Interpreting Consumers: A Hermeneutical Framework for Deriving Marketing Insights from the Texts of Consumers' Consumption Stories," *Journal of Marketing Research*, 34 (November), 438–55.
- Venkatesh, A. (1998), "Cyberculture: Consumers and Cybermarketscapes," in *Servicescapes: The Concept of Place in Contemporary Markets*, John F. Sherry Jr., ed. Chicago: NTC Business Books, 343–76.
- W3C (2006), "Complete List of Web Accessibility Evaluation Tools," Web Accessibility Initiative, (March 17), (accessed October 22, 2008), [available at <http://www.w3.org/WAI/ER/tools/complete>].
- Waldrop, Judith and Sharon M. Stern (2003), "Disability Status: 2000," report of the U.S. Census Bureau, (March), (accessed April 3, 2008), [available at <http://www.census.gov/prod/2003pubs/c2kbr-17.pdf>].
- Zimmerman, Mark A. (1995), "Psychological Empowerment: Issues and Illustrations," *American Journal of Community Psychology*, 23 (5), 581–99.
- , Barbara A. Israel, Amy Schulz, and Barry Checkoway (1992), "Further Explorations in Empowerment Theory: An Empirical Analysis of Psychological Empowerment," *American Journal of Community Psychology*, 20 (6), 707–727.

Copyright of *Journal of Public Policy & Marketing* is the property of *American Marketing Association* and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.