(Physical) Disability is a Form of Social Oppression?

“It is not individual limitations of whatever kind, which are the cause of the problem, but society’s failure to provide appropriate services.”

(Michael Oliver, 1996)

“The ‘correct’ thinking holds that disability is never the problem; it’s barriers in the outside world, including barriers of attitude, that are the problem. This is a bit de trop, in my experience. Here in the real world, the general issue of accommodating people with disabilities does relate to the specific disability and to what the person is trying to do. One cannot separate the two.”

(Joe Clark, 2002)

“Given that modern life paradoxically means that independence is achieved through greater dependence on others, the question, then is how does this differ from the requirements of disabled people?”

(Vic Finkelstein, 1980)

Technology is a feature of modern existence designed to make our lives and daily tasks easier. Why then do we devalue the adjustments people with disability make or the technologies they use as weak or special? Assistive technologies are stigmatized in ways that technologies used by people without disability are not. While people with disability may regard the accommodations or the assistive and adaptive technologies they use as an ordinary part of life, as non-disabled people would a kettle, washing machine or even computer, the technologies used by people with disability are stigmatized. Further, people with disability are often treated as helpless or dependent for using them (Wendell, 1996: 30).

There is no doubt that technology can revolutionize the lives of people with disability. Alan Roulstone (1998) argues that technology intersects with the wider sociocultural environment and can be understood in three ways with regard to its use by people with disability. The first framework he explores is technicism
which ignores the social relevance of technological change. Technicism
concentrates on technological change rather than the corresponding social change.
Roulstone's second framework considers a rehabilitative discourse of disability
delivery through technology. Adopting a right-wing political perspective, this
framework rests on technological determinism and adopts a discourse of deficit.
This is the model adopted by medical or deficit discourses of disability. As Stienstra
and Troschuk (2005) suggest:

[A] deficit model is widely used, by medical and technical 'experts,' to create new
and specialized technologies to address the gaps between the person and their
limited abilities as a result of their impairments. The technological solutions are viewed
as requiring a case-by-case approach rather than as something to be developed in
the mainstream. The deficit model identifies the relationships between disabled
people and technology primarily as those taking place at the individual level —
between a single person or a cluster of individuals with similar impairments, whose
life or lives can be made better by the development and application of technology.
(Sienstra and Troschuk, 2005)

This is the model society is collectively most familiar with — it locates the
problem of disability within the individual and suggest disability can be cured
through medicine or technologies. While these technologies can compensate for
impairment in a "non-disabled" world, their cultural interpretation and relevance
remains contested. At times, people with disability are used as motivation within
a rehabilitative discourse for the creation of technologies such as the bionic ear
and recent hopes for a bionic eye and ignore society's role in creating disability
(Goggins, 2008). Throughout this chapter, we will attempt to outline a way to
rethink this discourse in combination with a social understanding of disability to
develop better technologies and modes of inclusion.

In Roulstone's third framework, disability can be recognized as a social con-
struction. Although theorists interested in this politicization have accused tech-
nological development of contributing to the further disablement of people with
impairments (see Oliver, 1978; Davis, 1995), technology, in a broad sense, is
integral to the politicization of disability, particularly as we move further into
an Information Age of both employment and leisure. This perspective invites
links between personal perspectives, technological support, and the potential for
wider social change that we wish to develop further.

This chapter will critically examine the importance of technology to the forma-
tion of a social understanding of disability. In response to recent criticisms and
the increasing importance of the internet — and especially web 2.0 — to
to all members of society, not just the disabled, throughout this chapter we sug-
gest a framework for bringing the social model into the twenty-first century. A
consideration of impairment will allow a future in which people with disability
will benefit from a networked digital society. The Information Age is vital to

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the development of a new phase of disability. This chapter starts with a specific
examination of the social model of disability before turning to technology and
its role within the social model. We conclude by exploring digital impairment and
disability.

While some argue that digital technologies have created an environment that
supersedes the work of Oliver (1996) and Finkelstein (1980), we do not believe that
the social model has outlived its usefulness. Rather, we suggest that the implicit
focus on impairment that has always been present in the politicization of disabil-
ity, be recognized in order to move forward into the Information Age and toward
notions of universal design that would see a realization of both Finkelstein's
third phase of disability development and Tim Berners-Lee's (1997) equalizing
vision that the web should provide a platform for all, regardless of disability.

The Social Model of Disability

Disability, as a form of social oppression, is a concept that emerged following
civil rights movements in other areas such as race, gender, and sexuality. The
social model of disability as it considers social and cultural interpretations and
origins is an attempt to demedicalize disability by placing the emphasis on the
social factors that influence disability. The difference between disabling social
attitudes and actions and the impairment of the body has traditionally been an
important distinction in this model. Michael Oliver (1996) describes disability
as a form of social oppression distinct from any physical abnormality. Signifi-
cantly, Oliver also concentrates exclusively on "physical disability" suggesting
that there are some gaps in this model.

When the social creation of disability is emphasized, the social responsibil-
ity of finding solutions to these issues become relevant. This allows disability
to be reconceptualized within the discourse of civil rights. Disability is cre-
ated according to how humans have chosen to construct the world (Finkelstein,
1975). Finkelstein (1980) illustrates the social model of disability by reversing
the disempowerment experienced by people with disability through a hypotheti-
ical place physically and culturally structured for wheelchair users only. It is
the "able-bodied" visitors to the world, who become socially disabled as they
experience difficulty navigating an environment built exclusively for wheelchair
users:

Door and ceiling heights [would be] be lowered substantially. If now, able-bodied
people were to live in this community they would soon find that they were prevented
from "normal" social intercourse — they would be constantly knocking their heads
against the door lintels! Apart from bruises the able-bodied would inevitably find
themselves prevented from using the wheelchair-designed [sic] environment
and aids. They would lack jobs and become impoverished — they would become
disabled! (Finkelstein, 1980)
Similarities exist between Finkelstein’s hypothetical place and the island community of Martha’s Vineyard from the seventeenth to early twentieth century (Groe, 1985: 13). Due to an unusually high incidence of hereditary deafness on the Massachusetts island, the entire community learnt how to use sign language so that they could all communicate with each other. For deaf people, the barrier to full participation is not their inability to hear but rather the lack of common mode of communication with the hearing community.

Nora Groce (1985: 4) conducted an anthropological study of deafness on Martha’s Vineyard and maintains that deafness is socially isolating because of ignorance and misinformation — the bilingual community of Martha’s Vineyard show us that adaptation on the part of the non-disabled population results in the full integration of people with disability. Martha’s Vineyard suggests Finkelstein’s fantasy could work in the real world and that disability is related to social norms rather than individual’s bodies. Because everyone spoke sign language regardless of their hearing capabilities as a standard mode of communication, deafness did not become a disability in relation to communication. Society, on the island, was constructed to be inclusive without regard to a person’s hearing ability.

Similarly, the web was created as a shared information and communication space that could be accessed by anyone regardless of disability. As a result of the widespread uptake of personal computing during the 1980s, the use of adaptive technologies likewise became widespread. In the early predominantly text-based web environment, adaptive technology similarly flourished (Ellecor, 2010). Adaptive technology allows the user to determine the way information is communicated and displayed according to techniques that may bypass the effects of impairments. Digital information allows the adaptation of size, color, and output, unless restrictions are put in place to prevent these. When the web was mainly text, adaptive technologies integrated well. While this freedom of access allowed the web to develop, eventually commercial interests, described in the previous chapter, led to a situation whereby disability was disregarded for profits, and standards were no longer prioritized or even adhered to. Similarly, the more complex graphical web 2.0 environment has problems with a less accessible interface.

The deficit model of disability sees adaptive technologies as part of a rehabilitative discourse that assumes the relationship between the individual and user is one of dependence whereby experts without personal experience of disability dictate technological forms of care and cure. While Vasey (quoted in Dewsbury, 2004) argues that the social model does not aim to promote ways to compensate for every bodily dysfunction through technology, Marks (1999) suggests the tendency to exclude personal experience from the social model has allowed a theoretical vacuum to be filled by deficit and individualistic perspectives. Adaptive technologies acknowledge ambiguities and everyday experiences of people with disability whereas the social model perhaps does not.

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The intersection between digital technology and the changing social position of people with disability was highlighted in 2006 when the theme at that year’s International Day of Disabled Persons was E-Accessibility. ICTs (Information and Communication Technologies) were heralded as having most of the answers to the exclusion of people with disability:

- no longer do the societal barriers of prejudice, infrastructure, and inaccessible formats stand in the way of participation. When available to everyone, information technologies foster individuals to reach their full potential, and for persons with disabilities it allows them to play their part in society’s development. (United Nations, 2006)

Although the web does provide excellent potential, information and computer technologies are not an automatic source of liberation. Digital documents on the internet enable people with disability greater access than physical spaces, such as libraries, especially for the more than 38 million blind and vision-impaired people who utilize screenreading technology (Bigham et al., 2008). However, digital does not always mean accessible since infrastructure issues can remain. Online documents are often presented in an image format that cannot be read by the user’s screenreader. Before they can be considered accessible, they must be converted and corrected by a sighted person. Despite the E-Accessibility rhetoric of the International Day of Disabled Persons, a massive gap still exists between the spin and the reality. Barriers continue to exist just as utopian discussions around the web and the benefits for people with disability abound. These celebrations do much to reassure the non-disabled of their normality and privileged position by disregarding the importance of disability as a public sphere issue.

In Everybody Here Spoke Sign Language, Groce (1985) recounts an interview with a 90-year-old woman who had lived on Martha’s Vineyard 50 years earlier. After Groce asked her about two residents who were deaf, the woman recalls that they were excellent fishermen and only remembers their hearing impairments when Groce prompts her. People with disability wish to be recognized for the contributions they make and/or their personality rather than exclusively for their impairment, which is often the first thing people notice. However, before this can happen, the world must be accessible or adapted to ensure people with disability can contribute. This happened on Martha’s Vineyard because non-verbal communication was normalized. Many herald the web as affording people with disability the opportunity to showcase their talents without their impairment being a factor at all. However, these discussions often sidestep the issue of accessibility and center on social interaction without consideration of the built-in “digital disability” (Goggin and Newell, 2003).

In a similar fashion to arguments that the web is both gender and race neutral, people with disability need not identify as disabled in online spaces and can instead be judged on their personality first. Communicating using information technologies allows a person to totally hide their physical appearance:
Unlike [face-to-face] interactions where one's physical appearance is obvious, it is assumed that one could potentially be completely free of these physical cues in computer mediated communication. It is a well-established finding that physical appearance is an important cue in social interaction. People treat others differently based on gender, race, age, ethnicity, physical disability, and attractiveness. Without these cues, individuals are unable to project stereotypes on others and thus, expectations for behavior based on these stereotypes should diminish. (Christopherson, 2007: 3045)

It is assumed that disability is not always a factor in the social encounter when people with disability are freed from their social roles. The web allows people with disability to interact with others in a way that is not usually possible in general society. This has been especially celebrated in relation to social networking sites and virtual worlds where people can choose their physical appearance (or avatar identity) and how much information they disclose about themselves. Many see this as an opportunity for a heightened understanding of social roles.

These discussions highlight the importance of fluid identity formation in terms of independence and self-empowerment for people with disability, and like the social model usually center on the experience of people with mobility impairments. While certainly an important discussion, there is potential that it ignores the disabling infrastructure of the internet and web - accessibility is still an issue. However, the frequent focus on disability in terms of mobility impairment reveals a wider tendency to focus on ability in discussions around the internet and disability. Despite its importance, such a focus potentially crowds out discussions of the ways impairments impact on initial and continued access. This focus has resulted in a lack of understanding around accessibility for those with vision and hearing impairments or cognitive impairments such as dyslexia, and those with a mobility impairment who can't use a mouse and/or keyboard, particularly as web 2.0 sites become more complex and harder to translate using assistive technologies.

The idea that issues around race and gender are no longer relevant on the internet is a contested one. Similarly, if these differences were to vanish when online it might serve merely to mask inequalities in people's analog lives. Disability can be a crucial factor in the way people engage with the web and denying its existence is rarely empowering, especially if it means exclusion from the web in the first place. As web design has moved away from the promise of access by anyone regardless of disability, the medium itself has come to play a more prominent role as part of participation in broader society. Technologies can be redesigned to eliminate the ablest oppression that keeps people with disability from being able to participate fully in all aspects of the material/social world. Continued inaccessibility suggests certain bodies are valued over others. Further redevelopment is required to include people with disability.

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Difference and normality are framed through an interaction between technology, people, work, and society. Finkenstein (1980) identified three phases of disability "creation" - the feudal era where there was no separate disabled group, the industrial revolution when the concept of able-bodied normality was established and a third stage yet to occur when the gaze would be taken off the body and put onto society. He paid particular attention to the second stage where the construction of disability as dependency was consolidated. This stage occurred during the Industrial Revolution, when production lines were geared toward able-bodied norms and institutions caring for the disabled and insane were established. Boundaries of "normality" and disability were created during this era of rapid technological development.

For Finkenstein (1980), the second stage of disability, as it emerged out of the Industrial Revolution focused too heavily on impairment, which in turn stressed a "medical" model. The clear extension of this argument is that in order to highlight a social model of disability, the focus must be taken away from the impairment. Although articulating a powerful political strategy, this does not adequately fit into his third stage of disability. It likewise ignores and alienates some people who have impairments. As Paul Abberley (1999) argues, regardless of a barrier-free utopia, some people will just not be able to work due to their impairments. It is time for the social model of disability to refocus its philosophy to incorporate a consideration of impairment as an integral part of the experience of disability.

Finkenstein's phases relate directly to important periods of social change as they are tied to economic history. Economic social history can be divided into four revolutions, including the Agricultural, Industrial, Electrical, and the Information Revolutions. The Agricultural Revolution corresponds to Phase One while the Industrial Revolution and the Electrical Revolution together mark Phase Two. Finally, Phase Three is characterized by technologies integral to the Information Revolution. Bob Sapey (2000) suggests the social model of disability (particularly the work of Oliver and Finkenstein) may be superseded as a result of the grand scale of the Information Revolution. In response to the ability of the internet to change space - time relations and produce and distribute products, he contends:

It would make sense then to suggest that if the demands of clock-time were instrumental in the construction of disability during industrialization, then a new social meaning of time which involves greater speeds may be more demanding. However, this may not be the case as much of the work being undertaken at such speeds is being carried out electronically and as Finkenstein (1980) predicted of phase three, such developments may assist in the ending of disablement. (Sapey, 2000)

However, Sapey (2000: 6) also finds evidence that people with disability are excluded from informational occupations (computer programmers are least
likely to employ people with disability) to a greater extent than industrial and agricultural sectors. This corresponds to Goggin and Newell’s (2003: 153) contention that “technology will never deliver society from the reality of disability, [and that] disability continues to be constructed through that technology.” They suggest that as a society we have choices to make about whether to enable or disable through new technologies and questions must be asked regarding whose bodies are included and excluded. The future is bleak if we continue to reproduce disability digitally, yet there is optimism also that digital technologies will allow disability to unfold in unexpected ways to benefit everyone (Goggin and Newell, 2003: 153–54). In order for this to happen, recognition of the impact of impairment on the ways we interact with this technology is vital.

Finkelstein’s (1980) faith in technology rests in notions of technological determinism where structural changes to society and hence, discriminatory attitudinal barriers will be the direct result of innovations such as Braille keyboards that allow people a non-visual way to engage with computer keyboards. He believes technological change will directly result in a change to institutions, practices, and ideas. However, patterns of technology are influenced by the cultural traditions of the society that produces them. The social model recognizes that disability is created in and by society — it is the negative social reaction to impairment.

However, at times the social model does not go far enough, as Sally French argues “some of the most profound problems experienced by people with certain impairments are difficult, if not impossible, to solve by social manipulation” (1993: 17). There have been calls for a social theory of impairment to note the existence and relevance of impairment. Likewise, Wendell finds that “the biological and the social are interactive in creating disability” (1996: 35). Working from these expressions of dissatisfaction with the model and parallels drawn with feminist theory, Carol Thomas (1999) defined “impairment effects” as ways to articulate the experience of impairment within the social model. Thinking about impairment effects is particularly relevant to designing assistive technology and enabling people with disability digital access.

While the social model was integral in raising the self-esteem and political awareness of the disabled community, this model requires urgent revision. Biology does affect the lives of people who have impairments and to deny this is to deny a huge part of the lived experience of people who have impairments. Accessibility 2.0 puts the needs of the user at the center — adaptive technology which recognizes impairment effects is central to this. We seek to consider the interaction between society, impairment, and technology as a way to move forward into the Information Age. Finkelstein and Oliver argue that disability is the result of a capitalist mode of production, whereby bodies were judged on their ability to operate heavy machinery and submit to regimes of productivity. Deliverance from this disabling environment rests on a new mode of production. The digital era has initiated a new mode of production which values adaptation and economics for maximum productivity.

**Technology and the Social Model of Disability**

Technology is often broadly presented within the social model of disability (see Finkelstein, 1980; Oliver, 1996) as a single entity that can be seen to alleviate impairments and enable people to enter the workforce. A consideration of impairment as well as socially created disability offers a more nuanced approach to the social construction of disability. Universal design is a principle that can be uniquely applied to a digital environment in a way that works for different users without working against each other’s interests. A consideration of impairment is vital to the full inclusion of people with disability in the digital arena, as features that enhance accessibility for groups with a certain type of impairment can diminish accessibility for another. As suggested in Chapter 3, there is enough variety in digital adaptation to allow different modes of access depending on impairment, for example people with hearing impairment blog in sign language using webcams, while people with vision impairments adopt podcasts and so on. In Chapter 7, we will examine the way this manifests in the virtual world Second Life and the importance of keeping access options open. As an aspect of universal design, accessibility 2.0 prioritizes the needs of users who access the web in different ways and for different reasons (Kelly et al., 2007).

Technological change and participation in the workforce features prominently throughout Finkelstein’s three stages of disability. For Finkelstein (1980), the second stage has had the greatest influence on the world as we know it now. Machines were created to be used by a number of different people and therefore could not be modified to suit individual needs or impairments because mass (and quick) production was the aim. This phase followed a period (the first phase of disability) where people with disability existed in the margins of society and worked as part of the family unit. Small machinery was adapted to suit “individual physiques” and people with disability worked as part of the family unit (Finkelstein, 1981). Disability moved into the second phase, when production lines were geared toward able-bodied norms and people competed for work (Finkelstein, 1980). The notion of able-bodied normality was created and the construction of disability as dependency was consolidated. In theory, the third phase of disability or the Information Revolution should be similar to the first phase because workstations can be adapted to suit individual physiques and ergonomic is valued among people working in the information economy. Web 2.0 empowers the individual who was previously subsumed in the industrial revolution when able-bodied normality was established. However, the stigma initiated during the second phase remains in the third as adaptive technologies are devalued and accessibility is ignored or foregone for the sake of speed and profit. However, if the web 2.0 philosophy that everyone controls and personalizes their web experience is extended to include people with disability, attitudinal barriers will decrease.

Finkelstein (1980) sees disability as a social construction based on lack of access. He is confident that the third phase, characterized by technological change,
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being able to mainstream technology without any adaptation or intermediary appeals to Deaf people both because it lessens the stigma attached to needing equipment to be modified and it is less expensive than “special” equipment. SMS and fax machines ... although not designed with Deaf people in mind ... suits their purposes and solves what were previously difficulties in communication from afar. (Power, Power and Horstmanhof, 2006: 81)

Of particular interest is the example of SMS because it has been widely adopted by the entire community. It also allows deaf people to benefit from the telephone in a mainstream way for the first time. This group has been integral in driving developments in SMS, including both abbreviated vocabulary and the expansion of interconnectivity amongst different providers. Condensed messages lacking in syntax, tense, and other key markers of written expression were used in TTY conversations, long before SMS (Power and Power, 2004: 335). Anecdotal evidence suggests deaf people introduced this new genre of English expression characteristic of SMS communication.

As mobile telephony has become increasingly important, the convenience of SMS cannot be ignored. Mobiles provide people another way to communicate and participate in society. A common form of communication is integral to building communities. SMS, an unexpected feature of mobile phones, gives the hearing and deaf a common language (Power and Power, 2004: 333). Deaf people who SMS ten times more than people without hearing impairments (Harper, 2003: 159) are able to achieve greater autonomy through this technology.

Digitizing Impairment and Disability

Digital technology has potential to move the markers of what disability is. HCI (Human Computer Interaction) is a discipline of study which seeks to understand the relationship between computers and the people who use them. It combines computer science with many other fields of enquiry such as design and psychology to develop technologies in ergonomic and culturally appropriate ways. However, HCI has been criticized for assuming a particular type of body. A more in-depth consideration about the ways different bodies interact with computers would facilitate a move beyond the assumption that the body is universal.

A lack of awareness has resulted in a failure to consider the needs of people with disability during the design and evaluation of software and hardware. However, we are now seeing an increase of awareness as a result of greater contact between disability organizations and software developers as well as the increased possibility of legal action. A more developed form of HCI investigation accounts for the impacts of specific contexts, cultures, and bodies. Including accessibility within the already interdisciplinary arenas of HCI is becoming more important as computing technology is spreading across every aspect of our lives. Soon, designers will need to consider the user who cannot see, hear or touch as a matter of course.
The embodied experience of disability, that is recognition of impairment, therefore advances HCI and software and hardware design in such a way that benefits our increasingly digitized world. This merging of disability, ability, and the needs of the “general population” goes some way in instigating the much-needed “interrogation of the unmarked category of ‘able’ and ‘ability’” (Gergen, 2008). This interrogation looks to the ways ability is constructed rather than disability. An interrogation of ableism is important precisely because without it, we could not have a “concept of difference” (Campbell, 2009: 6). In the information economy, technology should be adapted to suit individuals and the rhetoric of compulsory correction is peripheral to a recognition that we all depend on different technologies to participate in work and social life.

In Britain in the 1970s, the Union of Physically Impaired against Segregation (UPIAS) developed a document entitled Fundamental Principles of Disability in which they problematized the notion that disability is an individual’s problem that can be located within a damaged body (Oliver, 1996). The participation of people with disability in the workforce was one of the key motivating factors for the UPIAS when they developed this document. The document was a response to the way that the organization of work since the industrial revolution has been structured around a set of values which disable people who have impairments (Barnes, 1999). Web 2.0 technologies are changing the workforce and the role people with disability play in it. When impairment and accessibility 2.0 is considered, the values that disable people who have impairments could potentially change.

Although influenced by the social model of disability, as it separates disability from impairment, we recognize disability as an embodied experience of physical difference and social stigma in line with Sharon Snyder’s argument that disability: “no longer means a condition, an incapacity, or lack that belongs to the body, but rather a product of interactions between self, society, body, and the variety of interactions (from political economies to personal commitments) that they engender” (Snyder, 2006). Snyder’s definition recognizes the body as an aspect of disability and does not compromise on society’s part in creating disability. Integral to the social model of disability is the separation of disability (socially created) and impairment (biological). As a way of maintaining political significance, this model has been dedicated in its adherence to this separation, refusing to consider the impact of impairment on the lives of people with disability for fear it would weaken the model. While social disability is a major contributing factor, the effects of impairment are likewise central to the experience of people with disability. A model of empowerment needs to recognize this, not push it further into the private sphere. For Joe Clark (2002), cited at the beginning of this chapter, a consideration of impairment in the digital arena is integral to addressing the question of disability discrimination.

Roulstone’s (1998) second framework of disability deliverance through technology, and Finkelstein’s (1980) characteristics of the second phase of disability (the Industrial Revolution) both relate to an oppressive rehabilitative regime being imposed onto people with disability. Yet people with disability can and do benefit from technology appropriately adapted, so as to enable participation in the workforce and social life. The social model has suffered from a theoretical vacuum which unfortunately has perpetuated the deficit model of disability. When personal experience is left out of the discussion, the space is subsumed by the more dominant deficit voices which perpetuate a rehabilitative regime. When we come to recognize the significance of impairment in the ways technologies can be designed around different bodies, the cultural difference between the able and disabled could in fact become as simple as a “variation in the way things are carried out” (Dewsbury et al., 2004: 154).

In 2006, Shakespeare previously highly critical of these critiques, introduced his own powerful critique of the social model of disability which for the first time foregrounded the experience of impairment. While acknowledging that the social approach as it has separated disability and impairment is successful in shifting attention away from individuals and onto society, he also finds that “the strength and simplicity of the social model of disability has created as many problems as it has solved” (Shakespeare, 2006: 31). These problems relate to impairment and the refusal of the social model to acknowledge the effects of impairment on the lives of people with disability. Impairment can create difficulties that cannot be attributed only to a disabling society (Shakespeare 2006: 38-39). Recognition of impairment is necessary in creating an accessible environment because different adaptations may be required. Acknowledging the intersection between self, society, and the body without stigmatizing impairment is accessibility 2.0.

Curb cuts are an example of the way features that enhance accessibility for groups with a certain type of impairment can diminish accessibility for another (Shakespeare, 2006: 46). This is mirrored in the digital environment. Innovations that may aid one group of users, such as people with vision impairments, may exclude another, such as those who are deaf or hard of hearing. Different impairments mean a different navigational experience. Individual choice is important and usability and user-generated output must be prioritized. Therefore despite claims to the contrary, a social understanding of disability must take into consideration impairment because universal design cannot be aggregated. This also holds significance to the creation of online accessible spaces where assistive and adaptive computer technologies have been described as “electronic curb cuts” (Westin, 2005).

The rapidly changing digital realm is not slowing down and is becoming increasingly important to everyone, not just the disabled. Significant changes that have taken place since 2006 when E-Accessibility was recognized as holding enormous potential for people with disability. Arguably, the “E” prefix is already out of date as internet users gravitate more toward “I”. A move into “U” to embrace universal design and usability is the next logical step. Technology,
in a broad sense, often features in discussions that both problematize and perpetuate individualized notions of disability. The workforce is undergoing huge changes as a result of informationization (Castells, 1996 quoted in Barnes, 1999). This “web-oriented information-based economy” (Westin, 2005) will impact on and enable the participation of people with disability.

In the absence of appropriate adaptive technologies, informationization acts as a form of marginalization that further excludes people with disability who as a minority group are already socially, culturally, and economically excluded. People with disability are often considered unable to contribute to the economy and therefore left out of policy debate and discussion. However, E-governance could bring people with disability into the democratic policy process (Stienstra and Troschuk, 2005). The manipulation of time, space, and communication also holds significance in the creation of a disability community and other social activities amongst this group (Seymour and Lupton, 2004). The growing importance of digital technologies and web access in fully participating in society provides the social model of disability the opportunity for revision.

Conclusion
The social model of disability (re)defines disability as society’s unwillingness to meet the needs of people who have impairments. Three clear stages of disability creation have been identified by Vic Finkelstein (1980): The feudal era (no separation); the industrial revolution (formation of able-bodied normality); and a future third stage in which technological innovations will directly result in a change to institutions, practices, and ideas. In order to develop appropriate non-stigmatized technologies and change institutions, practices, and ideas, it is time to bring forward the implicit focus on impairment that has always been present in the politicization of disability (Oliver, 1996; Finkelstein, 1980) and embrace the Information Age and notions of universal design. This would see a realization of both Finkelstein’s third phase of disability development (1980) and Tim Berners-Lee’s grand vision for the web. From the social construction of disability, informationization, and the importance of impairment to a discussion of disability studies and accessibility, in the next chapter we turn our attentions to social networking, at the cutting edge of debates regarding disability and platforms for participation.