

Disability and Information Technologies (Dis-IT) Research Alliance

**2004 SUMMER INSTITUTE**  
**People with Disabilities and New Technologies:**  
**A Social Barriers Approach**

June 14-18, 2004

Winnipeg, Manitoba, Canada

[www.dis-it.ca](http://www.dis-it.ca)

Compiled and edited by Sara Harms,  
with assistance from Gary Annable and Nancy Chislett

## Table of Contents

<b>Overview</b> .....	1
<b>About the Dis-IT Research Alliance</b> .....	3
<b>Monday, June 14, 2004</b> .....	4
“Using a Social Barriers Approach to Information Technology” .....	4
“How have people with disabilities identified challenges and benefits of new technologies?” .....	6
Panel Discussion .....	7
Closing Remarks .....	13
<b>Tuesday, June 15, 2004 (afternoon)</b> .....	15
“How can we develop information technologies to enhance the participation of people with disabilities?” .....	15
Introductory Presentation: Gary Birch .....	15
Panel Discussion .....	15
Small Group Discussions .....	19
Closing remarks .....	19
<b>Tuesday, June 15, 2004 (evening)</b> .....	21
Enabling Technologies, Disabling Societies: Challenges for People with Disabilities .....	21
<b>Wednesday, June 16, 2004</b> .....	23
“How do information technologies create opportunities and new barriers for people with disabilities?” .....	23
Introductory Presentation: Catherine Fichten .....	23
Panel Discussion #1 .....	23
Panel Discussion #2 .....	26
Closing Remarks .....	29
<b>Thursday, June 17, 2004</b> .....	30
“How do government and industry decision-making shape new information technologies?” .....	30
Introductory Presentation: Aldred Neufeldt .....	30
Small Group Discussions .....	30
Panel Discussion #1 .....	31
Small Group Discussions .....	33
Panel Discussion #2 .....	34
<b>Friday, June 18, 2004</b> .....	39
“How does the social barriers approach affect the development of new information technologies?” .....	39
Introduction: Deborah Stienstra .....	39
Panel Presentations .....	39
Discussion .....	42
Closing Panel .....	47
<b>Appendix 1: Participants</b> .....	51

## Overview

“People with Disabilities and New Technologies: A Social Barriers Approach,” the first summer institute of the [Disability and Information Technologies \(Dis-IT\) Research Alliance](#), was held in Winnipeg, Manitoba, Canada from June 14-18, 2004. The theme of the institute was “What is a social barriers model for information and communications technologies in the New Economy?”

Dr. Alan Roulstone (University of Sunderland, UK) was invited to discuss his social barriers approach to technology and to assist the Dis-IT Research Alliance in developing an interdisciplinary conceptual model, using the social model of disability to research new technologies. He led off the institute with a keynote presentation about the social barriers approach to technology. The remaining afternoon sessions were organized by members of the Dis-IT Research Alliance according to particular theme questions to do with disability and new technologies.

Daily sessions on the following topics were held at the [University of Manitoba](#):

- How have people with disabilities identified challenges and benefits of new technologies?
- How can we develop information technologies to enhance the participation of people with disabilities?
- How do information technologies create opportunities and new barriers for people with disabilities?
- How do government and industry decision-making shape new information technologies?
- How does the social barriers approach affect the development of new technologies?

*[Make each of these 5 points a link to the page where that day/topic begins]*

A talk open to the public was held June 15, 2004 at the [University of Winnipeg's](#) Eckhardt-Gramatté Hall that featured Dr. Alan Roulstone and Steve Jacobs (IDEAL Group, Inc.).

The University of Manitoba's [Interdisciplinary Master's Program in Disability Studies](#) offered a complementary graduate course from June 14-25, 2004. “Selected Topics in Disability Studies: New Technologies and People with Disabilities” (162.704) included the summer institute sessions June 14-18 and classes the following week.

Forty-two people attended the summer institute, including people with disabilities, researchers, academics, students, service providers, and representatives of disability organizations, industry, and government. Half (21) were members of the Dis-IT Research

Alliance, 9 were outside registrants, 6 were students taking “Selected Topics in Disability Studies,” and 6 were invited guests. See Appendix 1 for a list of participants.

## About the Dis-IT Research Alliance

The 2004 Dis-IT Summer Institute was presented by the [Disability and Information Technologies \(Dis-IT\) Research Alliance](#). The Dis-IT Research Alliance is a three-year project bringing together leading researchers, representatives of disability organizations, government, industry and service providers who are studying how to ensure that Canadians with disabilities can be part of the innovations and emerging information and communications technologies of the knowledge-driven New Economy. Dis-IT is examining how information and communications technologies can increase the quality of life and the inclusion of Canadians with disabilities in four areas: employment, post-secondary education, retail and public services, and democratic participation. It is funded by the [Social Sciences and Humanities Research Council of Canada](#) (SSHRC)'s [Initiative on the New Economy](#) (INE).

Summer institutes are an integral part of the knowledge dissemination component of the research alliance. They provide opportunities for participants from various backgrounds to meet face to face and share their ideas, information, and perspectives. Another Dis-IT institute will be held in the spring of 2005. A conference showcasing the findings of the research alliance will be held in 2006.

Each afternoon of the institute began with introductions around the room. These introductions contributed to the spirit of interaction and collaboration, of listening and interdisciplinary perspectives, and breaking down the distinction between audience and presenter, expert and layperson, academic and non-academic. Presentation styles varied from day to day, including interactive sessions with presenters, panel discussions, small group discussions, and formal presentations followed by large group discussions.

## Monday, June 14, 2004

### “Using a Social Barriers Approach to Information Technology”

Speaker: Dr. Alan Roulstone (University of Sunderland, UK)

Alan Roulstone was the first to apply a [social model of disability](#) to technology. Before his book-length study, [Enabling Technology: Disabled People, Work and New Technology](#), Roulstone explained that research to do with new technologies and disability was informed by a rehabilitation, or medical, model of disability: “The previous way that writers have applied thinking, as I’m going to argue, was very much on a rehabilitation, medically-focused, and dare I say medically dominated approach, which tended to talk about fixing the person.” These models view disability as a problem with the individual, and technology as a way of “fixing” the problem body. The social barriers model, on the other hand, identifies social organization as the source of disability. That is, the social model views the notion of disability as arising from societal attitudes rather than as a problem in the individual. According to the social model, individuals are not disabled; rather, we live in a disabling society.

Roulstone began his address by commenting on the way in which new information and communication technologies have the potential to redefine social organization, distance, time, and space: “We have now social possibilities that were unknown even twenty, thirty years ago.” For example, new technologies can fundamentally change the perception and reality of who can work and study. A person with a disability who may have been deemed “uneducable” or “unemployable” thirty years ago might now, with the appropriate information and communications technology, no longer fit into those categories. The virtual reality of the internet also creates a new social organization. When identity is created and constructed online, there exists the potential for disability to become a non-issue in the virtual world.

Roulstone cautioned that the rapid speed with which technology changes can also be disabling if technologies are not shaped or informed by people with disabilities: “We need to reflect on how technology can create more barriers if we don’t shape it, if we don’t radicalize it, if we don’t politicize it.” In other words, people with disabilities must be involved in the design of new technology, as well as at the level of policy making related to technology. He also emphasized the importance of the role of government regulations in terms of ensuring that the development of new technologies is enabling for people with disabilities.

“With industrialization an important but unplanned consequence—I’ll say that again—the important but *unplanned* consequence, the opposite of serendipity, anti-serendipity—the important but unplanned consequence in industrialization was that people whose bodies were not standard bodies, people whose height wasn’t average, or

whose physical strength was not average, were designed out of the economic nature of society. Now, [Vic] [Finkelstein](#) makes that point. It may be slightly overstated, but it is fundamental and is easily overlooked. It wasn't planned. Some of my students, my more lively students, when they're writing, will say things like... 'capitalists in the 19<sup>th</sup> century deliberately designed disabled people out of the factory system.' *No they didn't.* That wasn't the objective. But the end result clearly was the same, for those people whose bodies were not average and who had an impairment. ...In the UK, which was the birth of industry — I'm not bragging about that, there's lots of problems with it. But as the workshop of the world, we created a better population in the 19<sup>th</sup> century. ...And that presented us with the very language of disability following a hundred years. So it's easy to forget what's gone on there. If we turn that process around, what we've seen in the last thirty years has been the opposite process. Again, an unplanned but at times very positive consequence. Again, unplanned, but positive. If you sat down and wrote something like, or thought: 'industry has sat down and deliberately designed mainstream technologies for disabled people.' That's not true either, is it?"

Roulstone also compared and contrasted the development of new technologies during the twentieth century to the development of technologies during industrialization. He identified the following two significant differences:

1. Information is at the center of new technologies in the twentieth century, as opposed to the technologies of industrialization, which were concerned more with raw materials rather than information.
2. The development of new technologies during industrialization systematically but unintentionally excluded people with disabilities, because the emphasis was on physical capacity and the notion of the average worker: "With industrialization an important but unplanned consequence was that people whose bodies were not standard bodies, were not average, were designed out of the economic nature of society." The development of new technologies in the twentieth century, by contrast, has unintentionally been beneficial to people with disabilities by being, for the most part, an enabling factor.

*[Link to Alan Roulstone's paper]*

*[Link to Alan Roulstone's bibliography]*

The following important points arose in the discussion following Alan Roulstone's talk:

- There is an assumption that new technologies are inevitably progressive and enabling, and that progress is good. However, there is the potential for new technologies to create more barriers if people with disabilities do not shape the way in which technology is developed.

- Many people with disabilities experience feelings of ambivalence towards new technology.
- The role of the government is crucial in terms of ensuring that the development of new technologies is enabling for people with disabilities.
- People with disabilities must be involved at the level of design of new technology, as well as at the level of policy making.
- The challenge of information overload is often overlooked.
- Most mainstream technology is brought about by the needs of industry, not consumers with disabilities.
- The medical model of disability focuses on the cure/care “solution” of disability at the level of the individual. The social model, however, focuses on policy as the site of solution to disability, and building in access from the start.

**Key debate:** Was the exclusion of people with disabilities during industrialization intentional or unintentional?

**Key questions:** Is the systematic discrimination against people with disabilities also occurring in the development of new technologies? Can a social model of disability address structural issues that affect the systematic exclusion of people with disabilities?

### **“How have people with disabilities identified challenges and benefits of new technologies?”**

**Session Organizer:** [Council of Canadians with Disabilities](#)

**Moderator:** Laurie Beachell (Council of Canadians with Disabilities)

Laurie Beachell (Council of Canadians with Disabilities) acted as a strong voice for people with disabilities throughout the institute, particularly regarding issues to do with access, isolation, and poverty. He began this session by commenting that, in his opinion, the disability community is both ambivalent towards and overwhelmed by the topic of information technologies. He asserted that “Technology becomes either the great liberator or the creator of new barriers for people,” and gave the example of the Council of Canadians with Disabilities’ (CCD) former Access to Information Committee, which was primarily concerned with access to automated banking. He commented that

“After the systems were in place and the general public was using the system, then they [banks] started to think about why we needed to adapt it for people with disabilities. We ended up with discussions with [Canadian Bankers Association](#), and then with individual banks, and the [Canadian Standards Association](#). The debate and discussion has been ongoing for ten years, and still most of the automated banking systems are functionally unavailable to people with any particular adaptive needs. We were fighting rear-guard action, we were never involved in the design...we were the add-on or the afterthought.”

Beachell described this example as typical of the ways in which new technologies have created and continue to create new barriers for people with disabilities.

Beachell also gave an example of how technology can be beneficial to people with disabilities. He talked about the CCD's involvement in the E-Democracy theme of the Dis-IT Research Alliance as a positive example of the use of technology to attain full citizenship for people with disabilities.

## PANEL DISCUSSION

**Introduction and Closing Remarks:** Jim Derksen (Council of Canadians with Disabilities, Winnipeg)

**Panelists:** Ross Eadie (Info-Equity), Tanis Woodland (University of Manitoba), Gary Birch (Neil Squire Foundation), Jim Derksen (Council of Canadians with Disabilities)

### Introduction

Jim Derksen began by discussing his personal experiences as a bank customer. He commented that in-person banking was quite accessible, with the exception of the height of the counter in front of the bank tellers. One of the banks he uses has lower universal design counters. He described his experience with automated banking machines: "In my own case, I was able to use a very low teller machine, but then my bank moved to another location, and they put in the newer model. And although they were supposed to be accessible, I had lost some stretch so I could no longer reach as high, and the new accessible machines were not usable." Luckily, however, Derksen knew the manager and other people at the bank and had been a long-time customer, so "they actually rescued the old machine from the other location and installed it in the new location. So I've been able to continue using that banking machine." Derksen also expressed his frustration with the inaccessibility of parking machines, which became a recurring topic and example for many of the participants and presenters throughout the institute.

Derksen also discussed the benefits of new technologies in terms of access to information in government and community development. He gave the example of a friend, a disability rights lawyer who employs people to read for her or to generate texts in Braille or usable format, who had trouble accessing the law. In response, the Government of Manitoba now provides all laws in HTML format, so that they are now accessible to anyone who uses a computer. He also commented that for interest groups such as the Council of Canadians with Disabilities (CCD), new technology offers benefits for people with disabilities: "In the area of community development, certainly we are able to communicate more quickly, more effectively on issues, across a broader span."

Derksen also discussed how in general, information and access continues to be a challenge for people with disabilities. "The problem is, we often have to react once it has already been built. We've talked for a long time about being in at the design stage, although I suppose the challenge is even more fundamental. We need to create a new mindset where even before the design stage, there is a value base that says, 'we want to make this usable by as many differently-abled people as we can.' That is one of our fundamental motivations for this kind of innovation project that we're involved in."

Derksen concluded by addressing the following points:

- It is important to consider the wide range of economic capacity of individuals and that not everyone can afford enabling technology.
- Research and statistics are needed on how connected the disability community is to the internet.
- He stressed the need for remaining open and flexible because of the speed of change of new technologies: "The speed of change is incredible. We have to be flexible. We have to change the principles and positions that we once held with a certain rigidity. We have to accept fluidity, to accommodate new possibilities as they arise."
- Challenges of technology include information overload and the increased demand that websites have on organizations such as CCD.

**Panelist:** Tanis Woodland (Universal Design Consultant, Winnipeg, University of Manitoba)

Tanis Woodland discussed how technology has created new barriers and opportunities in her personal and professional experience. As an office assistant with a visual impairment, technology has allowed her to do paperwork electronically; however, a barrier she encounters in her work is the inaccessibility of many PDF (Portable Document Format) files.

Technology has also affected Tanis's personal life by creating new opportunities and barriers. For example, she explained how she is now able to go shopping online: "Technology has allowed a person like me to actually go shopping, believe it or not. If you are in a store and you have a visual disability, and there is no one with you, you have to find someone and ask them to describe what exactly you are looking for. Whereas with online shopping, you click a button and it gives you details of what you are looking for. Except for the ones that say 'click on this for enlarged photo.'"

Woodland also finds new technology useful for accessing current information, because she no longer has to wait for information to be published in other formats before having access to it. But she also continues to encounter barriers with new technology. For example, the menus of DVDs and mobile phones are often inaccessible to people with a visual disability. Woodland

suggested incorporating the principles of universal design in the development of information technologies: "What is true in the building industry is also true in the technology industry: disabled people have to be considered in the process and one of the ways that people can do that is by incorporating the principles of universal design in information technology."

Woodland concluded by listing the principles of universal design:

1. equitable use
2. flexibility in use
3. simple and intuitive
4. perceptible information
5. tolerance for error
6. low physical effort
7. size and space for approach and use

For a link to the principles of universal design, visit "The Center for Universal Design":

[http://www.design.ncsu.edu:8120/cud/univ\\_design/princ\\_overview.htm](http://www.design.ncsu.edu:8120/cud/univ_design/princ_overview.htm)

**Panelist:** Ross Eadie (InfoEquity Inc., Winnipeg)

Ross Eadie, a Winnipeg entrepreneur who produces multiple format documents, began his presentation by emphasizing:

- the importance of access to technology for people with disabilities
- the necessity for education about technology at the elementary and preschool level
- the need for technology to be affordable

Eadie identified the need for the "human dynamic" in the discussion of information technologies. He said that it is the "human barrier" that needs to be addressed, because no matter how positive an impact technology can have on the lives of people with disabilities, technology does not necessarily change the attitudes of discrimination towards people with disabilities. He emphasized the need for attitudinal, or "human" barriers to be addressed, especially in the workplace.

He then described a personal example: "I am actually an accountant. Only one person had the vision that a person who is blind can be an accountant, and that was our good friend Alan Simpson [former Managing Director of Winnipeg Independent Living Resource Centre] who passed away. But since then I have never been able to find a job in my field where my strength is. I have the technology and the ability to do things. And I say to people, 'it was easier for me to get elected [as a school board trustee] than it was for me to find employment as an accountant.'"

He called for the need to

- use universal design
- address social issues and the “human dynamic” alongside developing accessible ITs
- pressure publishers to offer multiple formats

**Panelist:** Gary Birch ([Neil Squire Foundation](#), Vancouver)

Gary Birch began by asking “Is emerging technology an opportunity for mainstreaming? Or is it an opportunity for further marginalization?”

“I really believe that with emerging technologies, it can go either way. I have a strong feeling that it’s going towards further marginalization. Despite the huge potential to equal or level the playing field, there is a huge propensity for further marginalization.”

Birch summarized the following main points:

- The Dis-IT Research Alliance should advocate for more accessible design.
- Dis-IT needs greater industry participation.
- It is important to ensure that people get the appropriate technology.
- Poverty as a barrier needs to be addressed.
- Technology should help people to gain confidence.

Birch discussed his personal experiences in conducting research. He has benefited greatly from technology, but he’s been finding it difficult to keep up with the most current technology. He describes this difficulty as an example of information overload, which is unrelated to his disability. He finds that his mobility disability also prevents him from being able to type quickly and prefers phone conversations to e-mail or online chat. He also remarked that “Automated parking systems are one of the most barrier-filled parts of my life.” As more parking machines become automated, the less likely he is able to use them. Security systems that require swiping cards also pose barriers to him, as well as automated banking machines. He emphasized that if consumers (people with disabilities) are involved at the level of design, then these problems and barriers are by no means insurmountable, and new opportunities can in fact be created.

## **Discussion**

Laurie Beachell (Council of Canadians with Disabilities) offered the perspective of a small non-profit advocacy organization: “CCD’s challenge is to identify what is the piece of work that is valuable for us to do.” He identified the E-Democracy research of the Dis-IT research alliance as important because it involves discussions about citizenship engagement in the electoral process and in policy debates and forums, which is a particular focus of CCD. He summarized CCD’s involvement in many other areas, including

- having a seat on an advisory council at [Industry Canada](#)
- being on two committees of the [Canadian Standards Association](#) establishing standards regarding access
- copyright issues
- various complaints to the [Canadian Transportation Agency](#)
- [Human Rights Commission](#) complaints

Beachell commented that CCD's involvement in these areas makes it difficult to know how to address or include the issue of ITs: "The community as a whole has no cohesive coming together around this topic. The disability community involvement in these issues is at this point a very much a hit and miss, and very much a reactive stage." He concluded that the Dis-IT Research Alliance will help CCD understand what kind of a contribution it can make to the issue of information technology and disability.

April D'Aubin (Council of Canadians with Disabilities) asked the panelists their views on how to encourage people to develop information technologies that incorporate universal design principles. Her question started an important discussion to do with the relationship between economics and the social barriers model.

Tanis Woodland (University of Manitoba) suggested bringing people with disabilities and industry together as a way to incorporate and implement universal design principles in the making of IT: "I think we're going to have to start at the industry and the consumer level." She suggested that by doing so, industry would be made more aware of universal design.

Laurie Beachell added that "industry at times have brought us to the table. They invite us to the meeting. They pay for the airfare and the hotel. They pay for none of the knowledge or expertise. They expect somebody else to pay for that. It drives us crazy. We're supposed to be instant experts but there's no support to the organization to develop the knowledge base."

Gary Birch (Neil Squire Foundation) agreed that bringing industry and consumers together is important, but commented that it is much easier said than done. He gave the example of some collaborative work he did with a cell phone company to try to make their cell phones more accessible to people with severe mobility impairments. In this particular experience, Birch observed that by the time the collaborative work was finished, the technology had become outdated and was going off the market. As a result, the accessible product had no chance of being developed. In the end, the cell phone company admitted that it was primarily interested in the 16-22 year-old market. Birch used this example to emphasize that, in his words, "It's a matter of really understanding what makes an industry tick. The only thing they have to worry about is their bottom line. And it's really hard to get them to think beyond that."

### **Key debate: Can an economic argument for making accessible ITs coexist with a social model of disability?**

Steve Jacobs (IDEAL Group Inc.) spoke passionately throughout the institute about how to advocate to industry to develop accessible technology. During the discussion, he said that what ultimately compels industry to make accessible information technologies is “the bottom line.” He suggested that it is possible to marry more money with more accessible products by looking at emerging markets and crossover benefits of accessible technology. He provided many examples of these crossover benefits, including one in which products that are accessible to people who are blind are also accessible to people who cannot read:

“If you look at, at least international companies, and you look at emerging markets...if you design a product to be accessible to a person who is blind, if you think about it, that same product could very well be made accessible to people who cannot read. And if you look in big emerging markets, there are over one billion consumers who can't read. Now any company in their right mind, trying to satisfy their stockholders, not focusing on how to design a product that is accessible to a potential of hundred of millions of consumers, they're not a good business. So they will focus on that. It's just that you really have to work with industry to understand those crossover benefits.”

In response to Jacobs's comments, Gary Birch voiced a concern that became a recurring topic of debate throughout the institute. He identified an important tension between economic arguments and the social model of disability. He called for the need to bring a social model lens into the discussion of how to develop accessible ITs: “Where does a social model come into this? How can we start to bring a community and social model that will be a different kind of driver than a how-can-we-make-more-money driver?” He said that the social model addresses accessibility issues with more scope because it is not driven by profit and “the bottom line.” For example, the economic argument does not address social inequality, discrimination, and human rights issues.

In response to the preceding discussion, Jim Derksen spoke powerfully to the group: “I take as an article of faith, that any disability accommodation or support will have crossover benefits for humanity in general. That this is not understood, realized, or acted upon, is the problem.” He suggested two ways of changing this:

- 1) collectively, through legislation (compelling industry through regulations)
- 2) individually, through spontaneous networking (relying on goodwill of the marketplace)

Derksen closed by stating, “There should be a value embedded in every part of every machine we make and use being that it must serve the broadest cross-section of humanity.” He

suggested that what is needed is a think tank to brainstorm the crossover benefits between enabling technology for disability needs and other groups of people.

Havi Echenberg (Policy Consultant) was struck by the discussion of the usefulness of crossover benefits to convince industry to develop accessible ITs. She said, “I am a big believer in the echo-effect in public policy-making: that rather than bigger and louder voices, you want the same messages from unlikely places.” She suggested industry could be encouraged to develop accessible ITs if they got an echo from the corporate social responsibility work, funded by foundations, that is underway.

### **Key debate: Is technology neutral?**

In response to Jim Derksen’s discussion of humanity and the development of ITs, Aldred Neufeldt (University of Calgary) suggested that it is important to focus on the values that we bestow on technology: “Technology is simply an embodiment of knowledge. It’s like all knowledge; it might help, it might not help, so we shouldn’t be deluding ourselves that it’s either good or bad; it depends on how it is used. It’s about values.”

Deborah Stienstra (University of Manitoba) challenged the notion that technology is neutral:

“I don’t think that technology in any way, shape, or form is neutral. I think technology is made for someone and for some purpose. That means it’s non-neutral. It has an end-user in sight. I think part of our challenge here is to look realistically at the policy and advocacy agendas and see how we can move those things forward. And also as researchers to uncover the ‘for whom and for what’ purposes and call to account people, industry, and governments for supporting industry. I completely reject the notion that technology is neutral. I think unequivocally it is not neutral. I don’t think there is a deliberate and vindictive attempt to exclude people with disabilities, but I think there is an active attempt to address a particular market of people and the government stands firmly hand-in-hand supporting that. I think that as researchers, we have a responsibility to uncover those things and share that knowledge with the broader community in order to move forward an advocacy perspective.”

### **CLOSING REMARKS**

Jim Derksen concluded Monday’s session with the following closing remarks:

“Change is increasingly more rapid and we are sometimes overwhelmed by the built environment that we are creating for ourselves. We see problems that are emerging—we see people who are being left out; we see people who are enabled. It will be interesting to see how the younger generation is dealing with this new emerging

environment. We're sorry in some cases that the spirit of inclusion and generosity for all humanity is not present in the machine world that we build. We're still dialoguing about how to achieve this. We talked about social movements. We talked about values. We talked about analyzing the purpose of profit and so on. I can only hope that we will develop some vision of fuller inclusion as a *raison d'être* for moving technology ahead rather than to have this irrational, in my mind, faith in the genius of the marketplace to achieve our complex evolution simply because it has the power to change our environment. We know it has the power—but for what end? The purpose and outcomes don't seem to concern or trouble us enough."

## Tuesday, June 15, 2004 (afternoon)

**“How can we develop information technologies to enhance the participation of people with disabilities?”**

**Session Organizer:** Gary Birch ([Neil Squire Foundation](#))

### INTRODUCTORY PRESENTATION: GARY BIRCH

Gary Birch, leader of the Dis-IT Retail and Public Services research theme, began with an introductory PowerPoint presentation that addressed the question, “How can we develop information technologies to enhance the participation of people with disabilities?” He focused on three areas:

1. future trends related to assistive technology
2. user need identification
3. possible areas for future research

Birch also discussed his interest in researching a direct brain-controlled switch as an effective interface technology for persons with limited mobility.

Birch also showed a video, “Wireless Delivery of Electronic Public Services for Persons with Disabilities” that explored the question, “What if in the near future, most public services could be accessed by portable wireless technologies?” It summarized the technology that already exists, and the new opportunities they can create for people with disabilities. The video also discussed the crossover benefits that these new opportunities provide to a wider audience. The video is an integral part of knowledge dissemination for his research theme, Retail and Public Services, in the Dis-IT Research Alliance.

*[link to Gary Birch's PowerPoint presentation]*

*[link to Gary Birch's video]*

### PANEL DISCUSSION

**Panelists:** Steve Jacobs (IDEAL Group, Inc.), Doug Brolly (RBC Royal Bank), Marshall Ring (SMD AbiTech), Jacquie Ripat (University of Manitoba)

**Panelist:** Steve Jacobs ([IDEAL Group, Inc.](#), Hilliard , Ohio)

Steve Jacobs's presentation addressed the question, “What compels people to design more accessible ICTs?” He discussed the word **compels** as an acronym that represents the **c**ultural, **o**rganizational, **m**oral, **p**olitical, **e**thical, **l**egal, and **s**ocial forces that compel industry to design accessible ICTs. He stressed, however, that profit is ultimately what drives industry: “If you

look at the demand-pull market forces, as compared to supply-push market forces—and they're both really complimentary—the need to constantly enhance the quality of employees, competitive advantage, productivity, market share and then profit, is what makes a business survive, and that's their primary focus."

Jacobs argued that many accessible technologies have much broader applications in emerging markets, including for people over 65 and people who cannot read, particularly outside of North America.

"So what we're going to take a look at, are some market forces that are being created from within emerging markets to design products a little bit differently than they may be designed today, to accommodate people with access requirements very similar to those requirements of what we classically refer to as 'people with disabilities'...In the top ten big emerging markets there are well over 300 million people with disabilities that impact the potential of their using information and communications technology... So one driver is people with disabilities—we all know that...I don't know about you, but I can't see, hear, think, or move about as easily as I did when I was 21. If you look at the top 10 big emerging markets, there are 180 million people 65 years of age and over. Any company designing a product that they hope people in what we call the 'baby boom' generation—older generation—if they expect people to use it, they really need to take a closer look at the individual wants, needs, and preferences of use of people over 65, because those will be different than a younger demographic group...When we think about technologies that screen read or that let you use voice recognition, we sometimes think about mobility disabilities and technologies that support people who are blind, when in fact, with probably not that much modification, an interface that is designed to accommodate a person who is blind, could probably accommodate a person who never learned to read...."

He gave many other examples of how to identify crossover benefits between big emerging markets and people with disabilities as a way of compelling industry to design accessible ICTs.

*[link to Steve Jacobs's PowerPoint presentation]*

**Panelist: Doug Brolly ([RBC Royal Bank, Toronto](#))**

Doug Brolly delivered the PowerPoint presentation, "Using Accessible Technology to Support Growth and Innovation." He provided a corporate perspective to the discussion of how to develop information technologies to enhance the participation of people with disabilities. His examples came out of his experience as a Manager of contact centre solutions at RBC Royal Bank bis Group.

*[link to Doug Brolly's PowerPoint presentation]*

**Panelist: Marshall Ring ([SMD AbiTech](#))**

Marshall Ring delivered the PowerPoint presentation, "How every day ICT consumer products can be developed to enhance the participation of people with disabilities: Industry's Perspective." He asserted that what prevents industry from developing accessible ITs is a market barrier rather than a technical barrier. His presentation outlined two arguments that could be presented to industry for making ITs accessible, including "Triple Bottom Line" accounting (financial, social, and environmental), and market opportunities (e.g., people with disabilities making an alliance with the aging population to increase market size).

*[link to Marshall Ring's PowerPoint presentation]*

**Panelist: Jacquie Ripat ([University of Manitoba](#))**

Jacquie Ripat presented "How to develop information technologies to enhance the participation of people with disabilities: The affect side of technology." She discussed the role of physical, cognitive (or thinking), and affective (or emotional) abilities in the development of information technology. She identified the affective or emotional reaction (e.g., fear, frustration, confidence) of the user of ITs as the component that is the least discussed or considered by the technology development world.

*[link to Jacquie Ripat's PowerPoint presentation]*

*[link to Jacquie Ripat's speech]*

**Discussion**

Deborah Stienstra (University of Manitoba) commented on how the panel discussed the development of ITs from the perspectives of industry and at the level of the individual, and called for the discussion to include other policy constraints:

"It seems to me we are developing a theoretical approach to technology and disability that includes the physical, cognitive, affective, and market forces, but what is missing are other policy constraints. For example, some of the things we brought up yesterday like poverty, the implications of policy, isolation, housing policy, home support systems, family circumstances, and employment. This panel focused on either industry as structural force or the individual, whether it's at a biomedical or the

emotional/physical level. Let's think also of how our understanding of technology is shaped by these other forces."

Laurie Beachell (Council of Canadians with Disabilities) commented that labour force participation by people with disabilities has declined at the same time as access to the built environment, education, and services has improved:

"While we can argue market share and while we can align ourselves with other market groupings, seniors, etcetera, and while all of those seem like potentials, the reality is that we have a tremendous improvement in access in the built environment, we have tremendous increased inclusive education process, and all of those factors. Yet we have diminishing labour force participation, we have less support in services for people to be able to access community, and those industries that have undertaken major changes using new technology, like the airlines, are actually decreasing service, not recognizing market share even though they know that seniors are one of the big groups that have money and travel and that need supportive services. All of the indicators in the market are that services for the last 5-8 years are getting worse. We are in a battle right now where we are not moving forward. We have tremendously new innovative services, from independent living centres to new models of services in supporting individuals to participate in community life. And frankly, we are reinstitutionalizing people in this country. We should not kid ourselves that things are getting substantially better. We are having to fight battles that we thought we had won twenty years ago. Unless we also put in regulations, and unless we change the legislation, and unless governments use purchasing power to influence accessible design, I don't think we're going to be able, as a community with a limited leadership and resource, to do the education that we need to do to change the mindset of a very strong opposition."

He then added that the disability community can benefit from the industry perspective as presented by Steve Jacobs and Marshall Ring. Beachell commented that the industry perspective offers a strong economic argument for making accessible ITs that does not involve a human rights argument that organizations like CCD normally employ: "We have to find ways of presenting the economic argument in conjunction with the rights-based and values-based argument so that we can move that agenda forward. We don't do the economic piece very well."

Delphine Kinvig (Programmer-Analyst Administrative Systems, Information Services and Technology, University of Manitoba) commented on the importance of educating IT professionals and people within the disability community itself regarding all aspects of disability:

“We may be educating designers and we may be educating program developers, but there is one area of education that we have to remember. We have to educate people with disabilities about other people with disabilities. It is easy to become complacent about other people’s problems if your own seems insurmountable. My experience is that if I go into a group and I’m talking to, say, people with cerebral palsy, they are not necessarily cognizant of the needs of, say, someone who is visually impaired. We need to educate ourselves as well as the public at large if we wish to develop a solid, unified implementation plan approach to solving many of the problems we as people with disabilities face everyday.”

## SMALL GROUP DISCUSSIONS

Gary Birch asked the participants to divide into three groups to identify opportunities and barriers in developing more accessible ITs and what some of the solutions might be to these barriers. One group discussed the crossover benefits of accessible ITs for people with disabilities and other groups. They identified two categories of existing accessible ITs:

1. ITs that were originally created for people with disabilities that have since become beneficial to many and/or entered the mainstream (<http://ideal-group.org/ecc/>)
2. mainstream ITs that also have crossover benefits for the disability community

Another group discussed the need for education as a way of addressing and overcoming the public’s fear of technology. The group identified a 3-step process for how to develop accessible ITs in the next twenty years:

1. increase awareness to mitigate fear through education
2. legislation needs to be in place
3. aim for universal design

The group also came up with the following question: How do we prevent legislation from limiting innovation?

The third group came up with three key statements from their discussion:

1. Accessibility needs to be considered across socio-economic classes/conditions
2. Use ICT to increase education levels of people with disabilities
3. Involve people with disabilities in the design and implementation of ICT

## CLOSING REMARKS

Gary Birch summarized the afternoon session, commenting that the discussion ranged from

“the technology itself, to how we identify what kind of technology will be useful, how we identify the needs that people with disabilities want addressed, to regulatory issues: how do we design and develop this technology in ways that are user-friendly. We discussed the

models that industry uses, and were reminded of powerful examples of technology that was originally intended for people with disabilities that made it into the mainstream. My concern about that is that there are huge gaps that get left because you end up with 'small markets,' very important markets, that just don't get addressed because there is no market pull." Birch called for the need to bring together the various models of disability, including the social barriers, rights, and citizenship models, along with using economic arguments in order to address the question of how to develop information technologies to enhance the participation of people with disabilities.

## Tuesday, June 15, 2004 (evening)

### Enabling Technologies, Disabling Societies: Challenges for People with Disabilities

Alan Roulstone ([University of Sunderland](#), UK)

To a public audience of approximately 60 at the University of Winnipeg's Eckhardt-Gramatté Hall, Alan Roulstone (University of Sunderland) described his experiences researching how technology has enabled people with disabilities in the workplace environment in the United Kingdom. His research throughout the 1990s culminated in the 1998 publication of *Enabling Technology: Disabled People, Work, and New Technology* (Open University Press). Roulstone described how research to do with technology and people with disabilities had, until the appearance of *Enabling Technology*, been conducted according to what is known as the medical model of disability. He explained that the medical model assumes that disability lies within the individual, whether it be in the body, brain, or both. The "bottom line" of this model is to correct the individual, to "fix" the disability by way of augmentative or assistive technology.

Roulstone was the first to apply a social model of disability to technology in his research. In contrast to the medical model, the social model of disability focuses on the need to change society, rather than the individual. The social model identifies the failure of mainstream society to respond to, acknowledge, accommodate, or include difference. Using the social model allowed Roulstone to identify social barriers such as negative attitudes and perceptions about disability, as well as policy barriers that people with disabilities have encountered in their experiences with enabling technologies in the workplace. Along with barriers, Roulstone highlighted the positive experiences that people with disabilities have had using enabling technology in the workplace. In closing, he emphasized the importance of acknowledging people with disabilities as experts about their own lives with respect to enabling technology and any other research related to disability.

#### **Response from Industry Perspective:** Steve Jacobs (IDEAL Group, Inc.)

In response to Roulstone's talk, Steve Jacobs (IDEAL Group, Inc.) offered a positive perspective from industry. He suggested that approaching industry with either a social or medical model does not stimulate self-sustaining activity—rather, it addresses what he called a supply-push market force. He discussed how it is possible for industry to develop accessible technology using demand-pull market forces that are self-sustaining by creating a demand from within that would compel industry to develop more accessible, usable and useful information technologies not only for people with disabilities, but for everybody.

Jacobs argued that industry can look internationally to big emerging markets to see the crossover benefits of developing enabling technology. He offered many compelling examples of these kinds of crossover market opportunities, including:

- Screen reader technology for people with visual impairments has the mainstream market benefit of appealing to populations of people who cannot read.
- Plain language content for people with intellectual disabilities has the mainstream market benefit of significantly reducing the cost of translating content to other languages (because automated translation tools can translate plain language more accurately than complex language).
- Text captions on videos for people who are deaf have the mainstream benefit of allowing word searches of videos archived on-line.

Jacobs spoke with excitement and passion about the potential for effectively advocating to industry to make accessible, usable, and useful technology by addressing their very own “bottom line.”

## Wednesday, June 16, 2004

**“How do information technologies create opportunities and new barriers for people with disabilities?”**

**Session Organizer:** Catherine Fichten ([Dawson College](#), Montreal)

### INTRODUCTORY PRESENTATION: CATHERINE FICHTEN

Catherine Fichten emphasized the importance of people with disabilities to have access to appropriate technology in order to succeed in post-secondary education: “While folks in post-secondary education are generally a privileged lot, they are a very important privileged lot. I think a lot of the changes are going to come from folks with diplomas and degrees.” She described the Adaptech Research Network, an organization she co-directs. Adaptech produces a popular list of free and inexpensive software that can be used as adaptive aids for people with disabilities (<http://www.adaptech.org>).

Fichten showed the video, “Web Accessibility: Access for All Video.” The video, available from California State University, Fresno, provides an introduction to web accessibility with a focus on the user’s perspective. <http://www.csufresno.edu/webaccess/materials/videoclips.htm>

Fichten organized two panel discussions to discuss how information technologies create opportunities and new barriers for people with disabilities. The first panel focused on the post-secondary educational context and discussed personal and institutional experiences. The second panel discussed how information technologies create opportunities and new barriers for people with disabilities from the perspectives of industry, government, and consumer-based organizations.

### PANEL DISCUSSION #1

**Topic:** “How do information technologies create opportunities and new barriers for people with disabilities?”

**Panelists:** Rajesh Malik (Dawson College), Daniel Lamb (Adaptech Research Network), Shan Robertson (Mount Royal College), Joan Wolforth (McGill University)

**Panelist:** Rajesh Malik ([Dawson College](#), [Concordia University](#), Montreal)

Rajesh Malik discussed his experiences with information technology as a professor who is blind, including successes (e.g., Web-CT, Proquest) and obstacles (e.g., First Class, PDF files). He recommended the following initiatives:

- Canada needs powerful legislation like ADA
- Canadian universities and colleges need policies to adopt fully accessible software

Malik suggested that without these initiatives, the stereotype that people with disabilities are not contributing members of society will prevail. These initiatives are needed to change the general public's attitudes and stereotypes about disability that are influenced by a medical model of disability: "I think a lot of change is possible, but change can only come about when people truly believe that persons with disabilities are productive members of society. That they are meaningful, contributing members of our society. It's not going to happen if the old attitudes based on the medical model prevail. It requires a major attitude change and I think legislation can make a difference, and sadly, good legislation has been lacking in this country, and I think that's one way in which we should proceed, and ought to proceed."

**Panelist: Daniel Lamb ([Adaptech Research Network](#), Montreal)**

Daniel Lamb began by emphasizing the importance of giving students with disabilities the opportunity to succeed in post-secondary education. He addressed the issue of cost by saying that "the accommodations and the resources that we push for pay off. ...Students succeed if given the opportunity, if given the resources, if given the tools so that they can succeed. This requires a whole system of support that is more than just a few pieces of technology."

Lamb discussed the way in which information technologies that create new opportunities for students with disabilities can, in fact, create new barriers for students with multiple disabilities. He gave the example of one person with multiple disabilities, including neurological disabilities and hearing loss. This individual, because of motor skill difficulties, would normally benefit from using Dragon Naturally Speaking voice input software, but the program assumes that the user can hear and has vocal capability. These kinds of challenges require ingenuity.

Lamb referred people to the [Adaptech Research Network's](#) list of free and inexpensive technologies for exciting new opportunities for students and people with disabilities. He also mentioned the barrier of language, arguing that Canada needs to legislate French language software to be fully accessible.

**Panelist: Shan Robertson ([Mount Royal College](#), Calgary)**

Shan Robertson spoke from her perspective as a provider of services to college students with disabilities: "There's no question that there are opportunities that information technology can provide for people with disabilities. But from my perspective, particularly the college perspective, the challenge is we've got these great pieces of software for these students to use, but they're coming out of high school into post-secondary not prepared. Some of them have never seen the software before." She identified many key barriers and opportunities related to IT, described successful initiatives, and suggested changes that need to happen. Some of her

recommended changes included hiring assistive technologist trainers in disability resource centres, funding training in assistive technology, and decreasing the cost of assistive technology.

*[link to Shan Robertson's presentation notes]*

**Panelist: Joan Wolforth ([McGill University](#), Montreal)**

Joan Wolforth discussed how today's universities demand computer competence from admission to graduation. She began by saying that "Personally, I have always been very determined that any service that I run is technology-based because I see it as a way for students to become independent and work independently but also because it's training for the future—so that they go out into the world with the knowledge of technology." She gave examples of how the "electronic university" is a good development for students with disabilities in principle, but listed the barriers that are currently preventing many students with disabilities from benefiting from on-line learning. Wolforth concluded by listing ways these barriers can be overcome at the levels of provincial and federal funding, university policy and investment, and individual students willing to invest the time to become computer literate and learn about available software and hardware.

*[link to Joan Wolforth's presentation notes]*

**Discussion**

Delphine Kinvig (Programmer-Analyst Administrative Systems, Information Services and Technology, University of Manitoba) asked if there are granting agencies that provide funding for universities for setting up technology services. Joan Wolforth (McGill University) answered that universities come under provincial human rights codes legislation rather than the federal Charter of Rights and Freedoms and that it is the obligation of the provinces to provide access. The opportunities for funding, therefore, change from province to province. Often it is a matter of demonstrating to the university administration itself that disability services require funding support: "I think this is really a lobbying task, and probably students are a lot more effective than the disability service department." Catherine Fichten (Dawson College) suggested the website of the National Educational Association of Disabled Students (NEADS) for information about funding for equipment, loans, bursaries and subsidies, as well as a directory of programs, services, and aids: [www.neads.ca](http://www.neads.ca)

Lawrence Euteneier (Industry Canada) asked the panel for suggestions for practices for recycling or dispensing of unused assistive technology. Daniel Lamb suggested Reboot Canada (<http://www.rebootcanada.ca/>) for disposing of and recycling computers.

Don Shackel (Manitoba First Nations Education Research Centre) asked if e-learning has been linked anywhere in Canada to improving access to post-secondary education, particularly in remote communities. Shan Robertson described a collective of post-secondary institutions in Alberta, where a primary institution hosts a course and e-learning is used for students from secondary institutions and remote areas to participate. Accessibility, however, is not addressed in this collective: “The issues that are arising that are concerning for me are that you are going to get a student from Lac La Biche, Alberta who is taking a course that is hosted at Mount Royal College who requires *x, y, and z*. We are legally obligated to provide for accommodation to make sure the website is accessible. It is not. So now what are we going to do? The college has to cough up the money.”

#### PANEL DISCUSSION #2

**Topic:** “How do information technologies create opportunities and new barriers for people with disabilities?”

**Panelists:** Steve Jacobs (IDEAL Group, Inc.), Mary Frances Laughton (Industry Canada), Deborah Stienstra (University of Manitoba)

**Panelist: Steve Jacobs ([IDEAL Group, Inc](#))**

According to statistics from a recent Harris Poll, industry can determine that people with disabilities generally do not have large discretionary incomes. In order to effect change in industry to make accessible technology, Steve Jacobs suggested the need for educational outreach to industry about people with disabilities: “I think that it would be very helpful, to break down a lot of barriers of technology, to create a course or some type of educational outreach to anyone in the community wishing to effect change in industry. I really think that gaining an understanding of industry is very important.”

Jacobs then referred to the IDEAL Group at NCR model as an example of effecting change in a company from the inside-out, through creating a not-for-profit organization within the corporation. Within this model, the corporation financially supports the not-for-profit organization and would, for example, direct all calls to do with accessibility to the not-for-profit organization. When the not-for-profit organization produces positive results, the corporation can take credit, at the same time as the model allows for freedom to make mistakes: “That was our thinking out of the box about technology, which really isn’t a problem, as I see it. It’s getting industry to care about designing accessible products.”

**Panelist: Mary Frances Laughton ([Assistive Devices Industry Office, Industry Canada](#))**

Mary Frances Laughton offered the government perspective on how new technologies create barriers and new opportunities for people with disabilities in the following areas:

- Legislation: Canada should refer to other G8 countries' legislation with respect to disability and new technologies as an opportunity for Canada to emulate the positive examples and avoid the negative examples. Canada's Charter of Rights and Freedoms would be a positive place to begin.
- Funding: There is a senior level of the federal bureaucracy interested in the disability file. The bureaucrats who are working inside the system and the advocates who are working outside the system can work together for a solid, unified voice to make sure that technology and life-long learning is accessible.
- [Persons with Disabilities Online](#) website has been redesigned with a complete usability study and has many excellent links to helpful sites, including [Adaptech Research Network](#), [Web-4-All](#), [Neil Squire Foundation](#), [Canadian Centre on Disability Studies](#), [Adaptive Technology Resource Centre](#)
- Council on Access to Information for Print Disabled Canadians of the New Library and Archives of Canada: A resource study is being done by the [National Educational Association of Disabled Students](#) (NEADS) and [Learning Disabilities Association of Canada](#) setting up a compendium of best practices. There is also a project to set up a national library service for the print-disabled that is working closely with publishers to address the inaccessibility of textual material.
- Office for Disability Issues (ODI) Government of Canada website: [http://www.sdc.gc.ca/en/gateways/nav/top\\_nav/program/odi.shtml](http://www.sdc.gc.ca/en/gateways/nav/top_nav/program/odi.shtml)
- [Council on Access to Information for Print Disabled Canadians and National Access Council's "Vision and Implementation Plan for a Clearinghouse for Print-Disabled Canadians"](#): Describes a vision for the services the Clearinghouse could provide for publishers and alternate format producers, how the Clearinghouse should evolve, and how it should be governed.
- [Western Economic Diversification Office](#): Recently set up a commercialization office for medical and assistive technology in British Columbia that will make it easier to get assistive technology that is developed in Canada commercialized.
- [Canada Foundation for Innovation](#): This foundation that provides infrastructure funding has been supporting assistive technology.
- [Web-4-All](#): Making the web accessible wherever it can be <http://web4all.atrc.utoronto.ca/>.
- Life-long learning: When doing lobbying, remember life-long learning is one of the watch words that Government of Canada is committed to.

**Panelist: Deborah Stienstra ([University of Manitoba](#))**

Deborah Stienstra offered an organizational/structural perspective to the discussion of how new technologies create barriers and new opportunities for people with disabilities. Drawing on her past experiences as Royal Bank Research Chair at the Canadian Centre on Disability

Studies, she discussed five key ways that ITs can and have been used by self-representational disability organizations:

- 1) Websites for sharing information. For example, DAWN Ontario (Disabled Women's Network Ontario) <http://dawn.thot.net>; Canadian Centre on Disability Studies's "Disability Rights in Canada: A Virtual Museum [www.disabilityrightsmuseum.ca](http://www.disabilityrightsmuseum.ca).
- 2) Contact with memberships. For example, Canadian Association for Community Living (CACL) <http://www.cacl.ca> and Council of Canadians with Disabilities (CCD) <http://www.ccdonline.ca/> maintain email consultations about what the organization is doing on a weekly basis, which also motivate members to do action.
- 3) Advocacy. ITs are used both for advocating to governments and mobilizing members to advocate.
- 4) E-consultations.
- 5) Organizational Development. For example, the [Learning Disabilities Association of Canada](#) (LDAC) has brought technology into their office in response to their members' needs to access technology in a more private place.
- 6) Policy engagement/Capacity Development

Stienstra identified the following key barriers regarding ITs in disability organizations:

- Lack of knowledge/know-how
- Cost
- Staff for web maintenance
- Organizations are resource-poor, IT is often lowest priority
- IT can increase demands on organization which further depletes existing scarce resources
- Are ITs the best tools for its membership's needs?
- Does it meet the needs of only elite members rather than grassroots members?
- Information missing about computer usage needs or wants, need to know needs by region, aboriginal on and off reserve, urban, rural and remote, French/English, gender, impairment.

Stienstra closed with the following comments:

"Finally, one thing I think that the disability community needs to be convinced of, and it's one of the jobs that I see as my role of doing, is that using information technology is one part of a broader communications/education/advocacy strategy. But it *is* one part in the world that we live in." She then shared two resources:

- 1) [Connecting People to Policy](#) is an initiative of the [Council of Canadians with Disabilities](#) and the [Canadian Association for Community Living](#), funded by the national [Voluntary Sector Initiative](#). Its purpose is to build capacity for connecting people with disabilities to participate in policy. This site will be taken up by the E-Democracy theme of the [Disability and Information Technologies \(Dis-IT\) Research Alliance](#), which will create a

broader policy engagement site for the disability community at <http://www.disabilitypolicy.ca>.

- 2) Another resource is the “Social and Disability Policy” section of the website of the Canadian Association of Independent Living Centres (CAILC) ([www.cailc.ca](http://www.cailc.ca)). CAILC addresses issues of resource-poor organizations by identifying voluntary regional content area editors in the independent living centers across Canada who provide content for the national website.

## CLOSING REMARKS

Catherine Fichten closed the session by describing a study she did of disability service providers in Quebec universities and colleges: “We would call the service providers and asked how, overall, were the IT needs of students being met? Most of the answers were ‘not bad, pretty good.’ And then we asked, ‘what type of adaptive products have you got on campus?’ And they said ‘we don’t have any. We don’t have any equipment but we have human volunteers.’” Fichten explained that many smaller postsecondary institutions reported that students’ needs are being met, but they use human volunteers rather than adaptive technology to accommodate students with disabilities. She stressed how this situation “denies people autonomy, it denies people access to the technology which they are going to need for the rest of their lives, and is not reasonable accommodation. So I would hope that with universal design, perhaps in the future we don’t have much of this. And this is not research from 15 years ago, this is from a year and half ago.”

## Thursday, June 17, 2004

### **“How do government and industry decision-making shape new information technologies?”**

**Session Organizer:** Aldred Neufeldt ([University of Calgary](#))

#### INTRODUCTORY PRESENTATION: ALDRED NEUFELDT

Aldred Neufeldt began with an introductory PowerPoint presentation that addressed what he called a heuristic framework for situating technology and industry within a social, economic, political, and cultural context.

The remainder of the afternoon was then divided into two parts:

1. “How does industry decision-making shape new information technologies?”
2. “How does government decision-making shape new information technologies?”

*[link to Aldred Neufeldt’s PowerPoint presentation]*

#### SMALL GROUP DISCUSSIONS

### **“How does industry decision-making shape the development of information technologies in general?”**

Industry...

- is driven by profit, market share, cost, and perceived market—it identifies and targets markets
- has political influence because government is a customer.
- has visionary or entrepreneurial leaders.
- makes assessments around risk and tolerance of risk.
- is influenced by safety policy around standards and legislation.
- works with university research and development.
- designs with the intent of reducing cost of production for operation, specifically reducing labour costs.
- is driven by corporate values.
- at times emphasizes esthetics at the expense of function.
- restricts markets through monopolies or cartels.
- is influenced by the flavour of the day.
- is influenced by the bandwagon effect.
- makes decisions according to patent limitations or restrictions.
- perpetuates associated/implicated markets.
- participates in planned obsolescence.

**“How does industry decision-making shape the development of information technologies as it pertains to people with disabilities?”**

Industry...

- does not often consult with people with disabilities at the design stage, does not provide adequate compensation when it does.
- often requires an internal champion or a personal connection in order to develop accessible ITs.
- is able to tap into funding opportunities, research and development related to disabilities.
- considers the issue of accessibility.
- thinks of marketing needs beyond disability.
- responds to advocacy and demand.
- considers the guaranteed target market resulting from government subsidies.
- is capable of bringing out IT that further marginalizes people with disabilities and which is inherently inaccessible.

**PANEL DISCUSSION #1**

**Topic:** “How does industry decision-making shape new information technologies?”

**Moderator:** Aldred Neufeldt (University of Calgary)

**Panelists:** Shelley Kinash (University of Calgary), Steve Jacobs (IDEAL Group, Inc.), James Watzke (British Columbia Institute of Technology)

**Panelist: Shelley Kinash ([University of Calgary](#))**

Shelley Kinash gave a PowerPoint presentation about the need for universal design in the development of information technologies that are accessible to blind online learners. She also showed a video of interviews with Norman Coombs and Richard Banks, the principals of [Equal Access to Software and Information](#) (EASI), who have produced 17 tips for online learning.

*[link to Shelley Kinash’s PowerPoint presentation]*

*[link to Shelley Kinash’s paper]*

**Panelist: Steve Jacobs ([IDEAL Group Inc.](#))**

Steve Jacobs summarized the lists produced during the previous small group discussion about what drives/motivates industry and the factors that corporate decision-makers take into consideration as part of their decision-making process: “From my experience of too many years in industry, what you were describing were factors that corporate decision-makers take

into consideration as part of their decision-making process: diversity, corporate value, the market, and things of that sort.” He made a distinction between these factors from those that, in his opinion, actually drive specific decisions to design certain products and the ways they are developed: “That is a little bit different, in my opinion, than what actually drives specific decisions to design certain products and ways that they are developed. And one is a means to an end; the other is an end to a means. Means to an end would be corporate conscience, diversity, some of the things we talked about.”

Jacobs then listed fifteen drivers that, in his experience as a manager of a group that develops products, impact how industry makes decisions when developing products: “These I would consider to be the end to a means.” He listed these factors as:

- return on investment
- what the competition is doing
- major user group request for a new product or an enhancement to an existing product
- the size of an organization’s development budget
- Wall Street analyst’s opinions regarding the features of a product
- losing a lawsuit
- laws themselves
- avoiding a lawsuit
- technical guidelines
- length of time from development to market
- individual large customer user requests for enhancements to change
- public relations
- power
- politics

Steve suggested that, “When you approach a company to advocate [for developing accessible Its], if you could really dig down to what it is you are really trying to say to them, rather than corporate values, you may want to focus on the company being recognized in the community as a good corporate citizen which says good public relations for them.”

**Panelist: James Watzke ([British Columbia Institute of Technology](#))**

Watzke emphasized the following three points:

- 1) Industry does not perceive people with disabilities as a promising market, so it is important to focus on the crossover potential of markets with similar needs.
- 2) Private companies do much research on consumer needs and market opportunities, but do not disclose this information.
- 3) The general health of the economy influences industry decision-making.

He then discussed what he called political capital (e.g., social responsibility) versus stigma (e.g., social stigma). He stressed that industry has to perceive significant political capital in

order to take the risks associated with bringing a product to market that, as he put it, every bit of their homework tells them will not be a big seller. In discussing political capital and stigma, Watzke said companies will avoid stigma at all cost.

#### SMALL GROUP DISCUSSIONS

**“How does government decision-making shape the development of information technologies *in general*?”**

Government...

- is influenced by political agenda (e.g., regional disparity) in the form of subsidies.
- Depends if there is an election coming up (i.e., political gain). For example, is IT the agenda of the moment?
- sets minimum requirements: regulations and standards.
- is a major consumer of IT in terms of procurement.
- federal [Office for Disability Issues](#) (ODI) can be internal champion to advocate for accessible ITs.
- administers research grants (e.g., [Canadian Institutes for Health Research](#) (CIHR), [Social Sciences and Humanities Research Council](#) (SSHRC)).
- wants or needs to be seen as a leader and an international presence in terms of IT research and development.
- administers design awards.
- raises public awareness about disability issues and the need for IT.
- is influenced by provincial and economic priorities/initiatives.
- can mimic the trade and decision-making of other governments (e.g., USA).
- uses tax measures/tariffs as incentive.
- is influenced by the risk of being seen as politically incorrect/risk of embarrassment.
- considers the health of the economy.
- can provide statistical analysis on computer and electronic products exports.
- is shaped by tensions between jurisdictions (e.g., Provincial/Municipal/First Nations), which affects capacity of government to respond to IT initiatives as well as to IT needs. Complexity of living in multi-jurisdictional environment and loss of sovereignty through trade agreements will shape domestic IT development.
- is influenced by forward-looking immigration policy which relates to skilled workers who can contribute to the making of IT.
- influences commercialization through research and development.

**“How does government decision-making shape the development of information technologies *as ITs pertain to people with disabilities*?”**

Government...

- acts as a model employer by providing accessible IT.

- provides scholarships and education in IT.
- supports and funds disability service providers
- can provide legislation around web accessibility/universal design.
- has a budget line for IT.
- can intervene when industry fails to develop accessible ITs.

## PANEL DISCUSSION #2

**Topic:** “How does government decision-making shape new information technologies?”

**Moderator:** Aldred Neufeldt (University of Calgary)

**Panelists:** Mary Frances Laughton (Industry Canada), Lawrence Euteneier (Industry Canada)

**Panelist: Mary Frances Laughton** ([Assistive Devices Industry Office](#), [Industry Canada](#))

Mary Frances Laughton discussed how the [Information and Communications Technologies branch of Industry Canada](#) provides the supports that an industry sector needs to grow and prosper: “What the Government of Canada wants is a healthy economy and healthy citizenry, and if ICT can make that happen, then that is a good thing.”

Her branch is concerned with marketplace issues that make an industry sector grow, including trade, investment, highly qualified personnel, appropriate taxation, and appropriate research. The Government of Canada now provides strategic information to support industry and has designated granting agencies including the [Canadian Institutes for Health Research](#), [Canada Foundation for Innovation](#), the [Social Sciences and Humanities Research Council](#), the [National Science and Engineering Research Council](#), and [Canada Research Chairs](#) to support the research and development of the ICT industry. Her branch is currently working on how to make Canada the “place to be” for IT developers.

Laughton asserted that the government should intervene when the market fails to make accessible technology: “We should actually be intervening in a greater way to ensure that our companies understand the needs of people with disabilities...They need to understand about independent technologies. The role of my office is to help industry understand that.” She offered a list of what the Government of Canada has done and should do with respect to influencing the development of accessible ITs:

- The Canadian federal government was the first in the world to adopt the World Wide Web Consortium’s [W3C](#)’s Web Content Accessibility Guidelines for its website.
- Government of Canada should intervene to ensure that industry makes accessible ITs.
- Government of Canada should have a greater role in technology development.
- ICT is a healthy industry, is an enabling industry for all other industries.
- Government of Canada is influenced by lobbying: the voice of public makes a difference.

Laughton closed with the following positive and encouraging remarks:

“The ICT industry is a healthy industry, and it is the enabling industry for all of the other industry sectors. And what I said yesterday about a solid voice telling the government what you want with respect to accessible ICT is going to make it happen. My office continues to exist because a group of consumers said to the federal government, ‘you need to have an office looking at accessible technology.’ Had that not happened, when program review came, my office would have disappeared. So, the voice of the public does make a difference. The government, I do think, is listening. ...But I think that consorted together we can continue to move the agenda forward. Canada has not yet lost its role as leader and I think together we can make it so that it keeps it. And a program such as this is just indicative of how that is going to happen.”

**Panelist: Lawrence Euteneier (Web Accessibility Office, Industry Canada)**

Lawrence Euteneier discussed the challenge of making Canada the most connected nation in the world, which would involve everyone throughout rural, urban, and remote Canada having internet access. He commented on the increasing digital divide, which is the gap that exists between those who have and those who do not have access to technology. In response, his department has shifted focus in terms of resources: “We’re going to be putting a lot more focus on the digital divide, and more resources towards that in the next couple of years.”

Euteneier went on to describe the way in which the Government of Canada has shaped access to IT. He began with the Charter of Rights and Freedoms and various provincial human rights codes that mandate equality. In his opinion, “these were very powerful tools, but they weren’t necessarily backed up with funding, and as a result, in Canada, we had a transference of responsibility to the private sector to accommodate individuals with disabilities in the workplace. Not to exclude them, but to include them, and accommodate them.”

He explained that as a result, the government never looked at the cost of accommodation, or at what they could do to reduce the cost of accommodation. Employees would have to go to the human rights commission to ensure accommodation: “And it’s been effective, in some ways, in terms of making sure people have accommodations. But what it’s done is put an emphasis on accommodating, on fixing the employee.”

This emphasis on fixing the individual, over the years, has affected the manner in which people with disabilities have been accommodated and, in fact, employed: “People had careers, people lost careers, people had got them back, people lost them again. In the computer field and emerging technology field, a lot of people with disabilities were brought in to work in these fields, and a lot of people lost their jobs because of shifts in technology. And again, the

government was saying, you must accommodate. So accommodation was all about fixing the person.”

Euteneier then described the federal government’s 2002 [Policy on the Duty to Accommodate Persons with Disabilities in the Federal Public Service](#), which states that information systems must be made accessible at the time of design. This policy works to eliminate systemic barriers, rather than to “fix” the problem of disability at the level of individual accommodation. According to Euteneier, “There’s been some precedent-setting cases that employees have launched and that the Human Rights Committee has ruled on that, saying it’s not acceptable to accommodate a person in the office, at the individual level.”

Euteneier then discussed a survey of federal government employees which showed that employees with disabilities felt marginalized, were unhappy, and that their overall satisfaction was lowest of all employee groups. In response, he and Mary Frances Laughton, as members of the Advisory Committee on Employees with Disabilities at Industry Canada, put forward a proposal for a study on accommodation, which subsequently revealed that employees were dissatisfied with accommodation: “We’re not happy to go and beg for accommodations all the time: ‘you’ve got to fix my workplace; you’ve got to fix me up so I can be productive.’ That’s not a good way to make yourself popular.”

They also did a study on the accessibility of ITs, and discovered that, for the most part, they are inaccessible. As a result, Industry Canada has supplied money for a Technology Accessibility Consultant Testing Service to help Industry Canada technologists understand what it is they need to do at the level of design, to develop accessible ITs.

In order to address these problems, Euteneier suggested training more broadly by bringing the Duty to Accommodate policy to technologists and to the high tech sector: “The types of tools they’re building for the federal government are the same tools that are found in every workplace across Canada that’s embraced knowledge technology. If we can fix the chosen leadership within the federal government, definitely, it’s going to spill out. And if we can help the high tech sector identify how they can build more accessible technology, that’s going to reach out to bigger markets not only within government offices in Ottawa, but across Canada, into the United States, into Europe, and around the world. Then we’re going to help position these Canadian companies to grow.”

Euteneier identified the challenge of demonstrating to Canadian companies that there is in fact a market for developing accessible ITs. He addressed the challenge of defining what accessible technology is: “We do not have a clear set of measurement criteria determining exactly what accessible technology means. It’s easy to say your technology shall be accessible, but what exactly does that mean in every specific case? Not how do you get there, which is what the

World Wide Web Consortium [W3C] talks about, how to get to accessible websites, but what is accessible technology in every instance?"

He concluded by calling for the need to converge assistive technology with information technology, how to make it a competitive process so that the private sector can compete with other sectors that face similar challenges. The private sector needs to feel it has a level playing field for developing accessible ITs.

### **Discussion**

Steve Jacobs (IDEAL Group, Inc.) referred to a study done by [KPMG](#) that showed that Canada's overall cost of doing business in 2004 is the lowest internationally, which is a competitive advantage. He recommended the website [www.competitivealternatives.com](http://www.competitivealternatives.com) for additional detail about the KPMG study.

Judy Redmond (City of Winnipeg) commented that there are often opportunities within government to train frontline people about accessibility, which leads to creativity. She emphasized that having an "internal champion" (i.e., a disability advocate within government) is key within bureaucracy.

Delphine Kinvig (Programmer-Analyst Administrative Systems, Information Services and Technology, University of Manitoba) recommended a website for free training for the world wide web (e.g., tutorials on HTML and web design): [www.w3schools.com](http://www.w3schools.com)

Lindsey Troschuk (Dis-IT Research Assistant) commented on the difficulty of developing a definition of accessibility: "It's really difficult because there are a lot of really different types of definitions out there. There's web accessibility definitions, there's the actual technology accessibility definitions, there's universal design principles. We've been trying to come up with a definition that brings in values and principles while still addressing technology and the web." Troschuk asked the panelists for recommendations for a definition of accessibility.

Shelley Kinash (University of Calgary) recommended a recent definition from Microsoft by Moulton, Huyler, Hertz, and Levenson who "combined the concepts of usability and accessibility." She thought their definition of accessibility was valuable, because of its straightforward language and incorporation of assistive technologies. (See <http://www.microsoft.com/enable/business/at.aspx>.)

Lawrence Euteneier (Industry Canada) suggested "barrier-free technology" as a definition of accessibility.

### **Key Questions:**

- What is a definition of accessibility that addresses technology and the built environment as well as values and principles?

- What are effective ways to advocate to industry to develop accessible ITs?
- What are effective ways to advocate to government to develop accessible ITs?

## Friday, June 18, 2004

### **“How does the social barriers approach affect the development of new information technologies?”**

**Session Organizer:** Deborah Stienstra ([University of Manitoba](#))

#### INTRODUCTION: DEBORAH STIENSTRA

Deborah Stienstra introduced the final afternoon session as an opportunity to discuss the directions that the Dis-IT research alliance will take in the next year, and to create a sense of how next year’s institute will be structured. She described the research alliance as having a fluid agenda with an evolving set of relationships and an evolving research agenda. She invited a panel of consumers, activists, peer support workers, students, government, and industry representatives to reflect on the questions: “what have we discovered?” and “where do we go from here?” A group discussion following the panel included general comments and reflections. The second half of the session brought comments from Alan Roulstone and the remaining theme leaders and co-directors of the Dis-IT Research Alliance.

#### PANEL PRESENTATIONS

**Panelist: Mike Schenkeveld** ([Independent Living Resource Centre](#), Winnipeg)

Mike Schenkeveld identified three factors that are integral to developing accessible ITs:

- 1) Government. He identified legislation as important: “having the Government support and believe in this type of movement will create awareness and an opportunity for all community members to become full citizens.”
- 2) Economic. He suggested that the private sector be used as a valuable and natural resource to assist people with disabilities: “When I look at tapping into the private sector, I think integration is really important.” He suggested that the private sector could help to create positions and opportunities in the marketplace for people with disabilities.
- 3) Education. “We have to make sure that when we’re implementing new technologies, and I speak as a consumer, that we have to make sure that people know how to use this technology.”

He suggested combining these three areas in order to shape new technologies that are accessible to people with disabilities. He stressed the importance of continuing to consult with consumers throughout the research: “What I hope happens in the future is that consumers like ourselves continue to be invited to such groups so that we are continuously being able to share what we are seeing in the community, what we see happening in the community with regards to what consumers’ needs are.”

**Panelist: Shane McKenzie ([Independent Living Resource Centre](#), Winnipeg)**

Shane McKenzie's presentation expanded Mike Schenkeveld's (Independent Living Resource Centre) discussion of the three areas of government, economics, and education. McKenzie stressed the need for the participation of people with disabilities in all of these areas. He reiterated comments made by Laurie Beachell (Council of Canadians with Disabilities) earlier in the institute. "Historically, the disability community has not argued the business, or economic side of things well. We just never have done it. I think there's room there for the development of strategies to make us better at doing that. I think that's where partnerships between all three of those models [governmental, economic, and educational models] come into place." He emphasized that the disability community could benefit from learning how to better advocate to industry.

He suggested that the Dis-IT alliance could look to the environmental lobbyist community as an example of how to infiltrate government, the private sector, and education. He described how the environmental industry "has managed to meld those three—the governmental, economic, and educational models—into a very successful method of raising awareness, and actually has turned into quite a money-making enterprise... They have been able to lobby government for legislation. They have been able to get into the private sector in terms of coming down from the government with tax incentives and things of that nature, as well as the production of things like blue boxes, which we never would have seen 25 years ago. Educationally, the 'green theories' are being taught everywhere from primary school all the way up to graduate degrees. ... Whether we can take cues from that, I'm not sure." He ended by stressing the importance of involving the disability community in creating a strategy for partnerships amongst government, industry, and education.

**Panelist: Lindsey Troschuk (Student, [University of Manitoba](#))**

Lindsey Troschuk noted that one of the key barriers that came up during the institute was that there are many people with disabilities who are not online, that there is a digital divide, and that there are no statistics in Canada to confirm how many people with disabilities are online, or use IT. She stressed, however, that there are many people with disabilities who are online, and that it is important to further engage those who are participating in the virtual world: "One of the things that we can focus on in the future is how to embrace the community that is already online in order to get people further engaged."

Troschuk also mentioned that technology need not "lead the way," and that people with disabilities can help to determine which technology is used and how: "Technology doesn't have to determine the path that we go down—we determine the path that we go down, what

technology we're going to use, how we're going to use it." She listed the DisAbled Women's Network of Ontario (<http://dawn.thot.net/>), the Learning Disabilities Association of Canada (<http://www.ldac-taac.ca/>), and Mood Disorders Society of Canada (<http://www.mooddisorderscanada.ca/>) as examples of how the disability community is using technology to self-advocate.

**Panelist: Steve Jacobs ([IDEAL Group, Inc.](#))**

Steve Jacobs began by commenting that the ultimate objective of the summer institute and the Dis-IT Research Alliance is to increase the ability of all Canadians, including those with disabilities, to use and benefit from new technologies. He outlined how each Dis-IT research theme—employment, e-democracy, retail and public services, and e-learning—cannot reach its full potential without the support of industry. Jacobs asserted that the alliance must make a concerted effort to reach out to industry: "We should not expect them to see things on our terms. We need to understand what makes industry tick, take the great work we're doing, and present it back to industry in terms that they understand, like designing more competitive products and services. This ties to their bottom line, creating new markets, hiring the best employees for any particular job regardless of a person's physical abilities, increased exports, valuable business-focused research." Jacobs thinks that the work of the alliance will be successful if industry is engaged and industry can be proactive as a participator and supporter. He suggested educating industry online and to engage Industry Canada, along with industry in the research process.

**Panelist: Lawrence Euteneier ([Industry Canada](#))**

Lawrence Euteneier discussed a consultation by the House of Commons Special Subcommittee on Disability that was done online in attempt to reach people with disabilities across Canada: "They weren't trying to get around advocacy groups, they weren't trying to 'cook the process,' they weren't trying to get a predetermined output from this consultation. They just wanted to get a sense of what people were thinking [about the Canada Pension Plan] without it being filtered, and get it directly from all regions of Canada. They wanted to use that experience to grow and show it as a best-case practice for other committees in the House of Commons." He discussed the need for consultations and a sense of ownership by the public regarding programs and initiatives, and the need to educate the public about the issues and ideas that are being proposed.

Euteneier also commented that the Government of Canada is increasing its on-line presence. He stressed again the need to know how many people with disabilities are, in fact, online. He asked the questions

- How do we reduce the digital divide in Canada?

- How do we address fear of technology?
- How do we improve literacy skills required to use technology?

He added that there are many people with disabilities in Canada who have both low computer and low literacy skills: "If we don't find a way to bring these people into the information era, into the knowledge economy, those people are going to be further and further excluded from the economy, and further and further excluded from society as it shifts more and more into an online environment."

## DISCUSSION

Gary Birch asked the panelists for strategies on how Dis-IT can strengthen or maximize its relationship with the Government of Canada. The responses sparked an important discussion about how ITs have both the potential to further marginalize but also to provide new opportunities for people with disabilities in terms of online consultations and full citizenship.

Lawrence Euteneier (Industry Canada) asserted that the federal government doesn't hear enough about the role and importance that IT plays, or could play, in the lives of people with disabilities: "They understand transportation, housing, employment, and education, and those issues, because they've been around for years and decades. ... They need to know that for people with disabilities, the internet technology is not an option. It is essential. When people adopt that technology, it revolutionizes their lives."

Laurie Beachell (Council of Canadians with Disabilities) agreed with Euteneier, but cautioned that many people with disabilities could be further marginalized if all government consultation with the disability community were to be done through IT:

"There is also a sector within our community that are not going to be, in the foreseeable future, served by any of this technology. And they are going to be further marginalized if we put all of our solutions into consulting with people through technology. For some, without the personal interface, and an actual body that connects with them, you will not get feedback. And I caution all of us: this project is tremendously exciting; it has tremendous potential, but there is a hierarchy within the disability community of who is actually getting supports and services. And there are those that, for multiple reasons, are more marginalized, and this technology is not going to be the solution. It would be the solution if they could actually access it, and if we had unlimited resources to invest in the supports for those individuals. ... We have to recognize that within our organizational structures, and I include CCD in that, much of the leadership are advantaged, much of the leadership have resource and skill and capacity and education. Many of those who are not necessarily connected to our organizations, or to any of these consultations, are people who are absolutely still isolated, and institutionalized, in some instances. And there are certain sectors within the hierarchy,

particularly those with cognitive impairments or mental health concerns, etc. that are further stigmatized and isolated for a whole bunch of other reasons, that we're not going to solve by technology either. So when I think that some of the people that we are trying to hear a voice from—let's not think that websites and chat rooms and email lists and listservs are going to create greater access for a lot of these people, because they aren't going to be participating."

Deborah Stienstra (University of Manitoba) responded to Beachell's caution: "I'm curious—do we even know how many people with disabilities and which people with disabilities are accessing the web? And how come we don't know? How come the government is not finding out that information for us if we don't know it?" She then suggested that Beachell's comments are based on thinking of technology as it exists right now:

"Part of what our alliance is intended to do, is to say, '*what would it take* to engage people from a variety of backgrounds, using IT?' One of the marginalized groups that [Beachell] talked about that could be further marginalized by IT are people with mental health disabilities. [However,] in recent interviews with that very population's organization, their response was: 'do you know how many hits a day a website on mood disorders get? It's in the tens of thousands per day.' Because people want to know more about their situation, not having to go to the experts, but becoming self-knowledgeable. They want to have peer support. Families want to have support. Some of those communities see a way of using IT."

Euteneier also responded to Beachell's comments by asking: "If we don't put more emphasis on this, and as technology continues to reshape our society, what's it going to mean for everybody with a disability? Not just the ones that are marginalized now, or on the cusp, or just barely getting by, but in general. Is it going to shift people one way or the other? Is it going to change? That's what I'm interested in knowing."

Gary Birch (Neil Squire Foundation) addressed the issue of disability supports: "I think the disability community has been very clear that part of disability supports is to ensure that the appropriate technology—not second-hand equipment, but the appropriate technology gets appropriately delivered. ...There is a real potential that the technology itself can marginalize because it's not rolled out in an accessible format."

In response to Beachell's comments, Steve Jacobs commented that:

"As each of us identify ways that new technology can help people, I think we have a responsibility to identify the people it can't help. If we're creating awareness, if we're establishing links to government, to the community, to industry, and we only talk about

the great things technology does, we could inadvertently create a larger digital divide, and misrepresent what the truth is. And in the same effort, when I talk about how great technology is, maybe I should talk about who technology can't help today, and why, and what needs to happen to make it happen. And I think if we do that as an organized, concerted effort, we can make some kind of an impact."

**Key question:** What would it take to recognize the potential for increased marginalization for people, including people with disabilities, in the development of ITs?

Don Shackel (Manitoba First Nations Education Research Centre) stressed that poverty and privilege are important factors to keep in mind:

"I constantly move between these two worlds of—not affluence, but of privilege—and I look at what I can afford for my son, and what the majority of people who I work with on a daily basis can afford, where half the houses in many of the communities don't have electricity or running water, let alone access to technology. Whenever we talk about technology I think there is the danger of it becoming elitist, and further marginalizing."

In response to Shackel's concerns about further marginalization, Deborah Stienstra (University of Manitoba) suggested asking the question another way: "To prevent us from falling into either a victimization mode or an 'inability to move' mode is to say, 'what would it take to recognize the potential for increased marginalization, what would it take to bring that population there?'" Stienstra listed the following "bits and pieces" of discussions throughout the institute that are positive examples of addressing the danger of further marginalization:

- free and inexpensive software ([www.adaptech.org](http://www.adaptech.org))
- recycling hardware
- providing spaces that are public but safe for certain populations for using IT
- adding intimate "*face-en-face*" human supports

She concluded: "To me, those are the pieces of creating something that would address the question, 'what would it take to recognize the potential for increased marginalization?'"

Lindsey Troschuk (Dis-IT Research Assistant) recommended a study on aboriginal connectivity both on and off reserve: <http://www.aboriginalcanada.gc.ca/connectivity>

**Key question:** How do we perceive technology? What is our emotional reaction to technology? Are we open to it? Are we afraid of it? Do we resist it?

During the discussion, Deborah Stienstra remarked that "What isn't here [in this discussion], is something that Jacquie [Ripat] brought up much earlier in the week, around the emotional

content around technology. ...It isn't just a 'skill thing,' sometimes it's an emotional thing. It's our engagement, how we perceive technology, how we come to it."

Lawrence Euteneier echoed Stienstra's comments: "There's not a lot of openness amongst people, who don't currently use technology, to embrace it. It's not a matter of putting boxes and wires out there and making them accessible. That was the typical solution that the government has taken to make Canada the most connected nation in the world."

Gary Birch (Neil Squire Foundation) talked about the Neil Squire Foundation's Computer Comfort Program, which provides people with a non-threatening environment to become comfortable with technology. He added, however, that this program is difficult to keep funded: "The reason why government often doesn't want to fund it, especially more recently, is because they see it [as] so far-removed from getting people into the work force. And yet we see it so classically as the initial step."

Tanis Woodland (University of Manitoba) stressed the need to address people's fear of technology: "A lot of people are very afraid of computers. A strategy has to be developed for teaching persons to use technology whether you have a disability or not. People come away not knowing still how to use the machine. They say 'well, I got training, but they just showed me how to do it and I don't remember.' It comes down to attitudes and teaching strategies for those supports."

**Discussion:** What is a key message from the Dis-IT Research Alliance?

Mary Frances Laughton (Industry Canada) suggested and has already begun to convey the following message: "ICT is an enabler, particularly for people with disabilities, and mainstream industry should understand that people with disabilities have the same needs as everyone else, and that standards should be accommodated by industry."

Rajesh Malik (Dawson College) suggested that it would be better to focus on inclusion rather than accommodation. Responding to his comment, Laughton added the importance for the Government of Canada to be aware of the following:

"We need to purchase the platforms that are receptive to the assistive or adaptive technology that people need and we have to be cognizant that at any point in time, one of us could be joining this employment equity group. This is the only employment equity group that is open to all. We need to remember that when we are buying gear and setting up offices and putting buildings in place, that at any point in time, those offices and that gear could be being used by somebody with a disability and that therefore an accommodation may be required at some point."

**Key Debate:** Does the key message from the alliance need to stress accommodation or inclusion? Is inclusion more consistent with a social model of disability?

### General Comments/Suggested Resources

Delphine Kinvig (University of Manitoba) emphasized the following key points:

- Knowledge dissemination is crucial.
- Disability organizations need to form a common message about IT in order to lobby government effectively.
- Education and training about accessible IT is important.

Mike Schenkeveld suggested peer support as a resource: “We have a lot of peers out there, people with disabilities who know about technology, who are scattered throughout Manitoba. We can team up peers with peers who want to know about technology. We’re saying we don’t need professionals. We’re saying we can actually use what we already have.”

Caroline Polak Scowcroft (Graduate Student, University of Manitoba) recommended a document by the [World Summit on the Information Society](#) (WSIS) as a resource. She read Principle 7, Principle 10, Principle 13, and Principle 14 from the “Declaration of Principles” from WSIS’s Geneva (2003) phase: ([http://www.itu.int/dms\\_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0004!!MSW-E.doc](http://www.itu.int/dms_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0004!!MSW-E.doc))

Lawrence Euteneier discussed a program that his department has been piloting in the last few years that is funded by [Youth Employment Strategy](#) funding from [Human Resources and Skills Development Canada](#) (HRSDC), which they put out to communities to hire people with disabilities from the ages 16-30. The communities were given the tools and accessible formats to train these people with disabilities to use [Web-4-All](#) technologies: “It was just amazing how many people, first of all, had their first job experience. And secondly, how many of them went on to other jobs after that, because they got some computer skills for the first time. ...We’re hoping to expand that initiative.”

Susan Gibson (Multiple Things Training and Art Connections Inc.) commented on the discussion from her perspective as an artist, mediator, and adult education trainer: “There is a place for art in the discussion of disability; there is a place for art in the discussion of IT, I’m not sure yet if there is a place for artists with disabilities in the discussion, we’ll work that through.” She also discussed her reactions to the discussion from the perspective of a trainer in adult education and addressed her concern about poverty and accessibility: “Often when you’re sitting on the front line, you’re making judgments about the academics that are having these discussions. ...There’s got to be a way, as a person who does counseling and connecting,

there's got to be a way of addressing some of those issues that we're talking about in terms of the barriers that are not just between someone sitting and teaching a class at university and someone who is living on a reserve. ...How do you make sure those issues of accessibility are there, make sure those voices are heard in the consultation?"

Laurie Beachell (Council of Canadians with Disabilities) emphasized that is important to note the immediate impact that the Dis-IT research alliance is having on making IT more accessible:

"The [University of Manitoba](#) will have to become more accessible to house the website for the [[Dis-IT](#)] alliance. As we are working through other institutions, [SSHRC](#) (Social Sciences and Humanities Research Council of Canada) itself, who funded this program, will have to become more inclusive, because they funded it, in order for them to share the research outcomes of this within their networks. ...As long as we also pick them off one at a time, and not forget the immediate opportunity right in front of us, so that we don't miss those immediates as we struggle with the long term. Because we can make those immediates more accessible and more inclusive and more open as we go along."

## CLOSING PANEL

**Panelists:** Alan Roulstone (University of Sunderland), Gary Birch (Neil Squire Foundation, Leader of Dis-IT Retail and Public Services Theme), Gary Annable (Council of Canadians with Disabilities, Dis-IT Community Co-Director), Deborah Stienstra (University of Manitoba, Dis-IT Research Co-Director)

### **Panelist: Alan Roulstone ([University of Sunderland](#))**

Alan Roulstone reviewed the key comments made during the institute around the nature of new technology and technology generally, and then more specifically around education, employment, governance, and industry. He offered the following general comments:

- He asserted that technology is decidedly not neutral: "New technology is saturated with social meaning. ...It is made by people for people with a set of social values."
- "It is important to capture the diversity of the experience [of people with disabilities]," including class, gender, multiple and varied disabilities.
- "It's our social and economic system that shapes the technologies that we choose."
- He commented on the exciting and yet risky nature of cross-disciplinary work: "I think getting insights from other disciplines and other areas of academic, industry, disabled people, is probably one of the most energizing experiences you can get."

Roulstone read from ex-British Prime Minister Harold Wilson's famous 1963 speech, "The White Heat of Technology." Roulstone highlighted the way in which Wilson discussed new technology within a social and economic framework, connecting society and science.

Roulstone offered the following specific comments regarding terms of employment, people with disabilities, and IT:

- “You cannot look at new technology, disabled people, and employment without understanding the law in some detail.”
- “You’ve got to understand the dynamics of the workplace of disabled people. New technology can enable disabled people in the workplace, but...attitudes can negate and wither the benefits of new technology. ...What are the limits, what are the facilitators?”
- “We need to understand when things are working well, and how best to present ‘best practice’ in new technology. ...It’s just as important to understand how [disabled] people do get on with new technology and how.”
- There is a “lack of ongoing support in the workplace.” He emphasized the importance of providing support to people with disabilities in the workplace in addition to providing the enabling technology: “The ongoing support of disabled people is enormously important.”

Roulstone offered the following specific comments regarding education, people with disabilities, and IT:

- Online learning is now “taken for granted” in post-secondary education.
- Online learning “has not been planned around disabled people and inclusion.”
- There are “enormous challenges” in making online learning accessible to people with disabilities.

He offered the following summary of governance, people with disabilities, and IT:

- “ICT and the socio-economic position of people” is important to consider, and connecting with the most excluded.
- Regulation is important in the role of government and business.
- Many exciting initiatives are going on in provincial and federal government.
- “The coordination [of regulation] is difficult. It often leads to a lottery of provision, a lack of joining up of policy not because of nasty intent.”

Finally, Roulstone offered the following comments about industry, people with disabilities, and IT:

- Business could be enlightened by looking at enabling technology.
- We should learn from the past: “Looking at specific corporations is valuable, and we should look at how when that has worked, how it worked.”
- “Industry is not rational. The market and industry doesn’t always work in a rational and humane way. And disabled people, trying to find their way through an industry, is still extremely difficult.”

Roulstone closed by saying that he feels optimism from the interdisciplinary work of the summer institute: “I think there’s far more scope for optimism than pessimism, far more. But I still take my [umbrella].”

*[link to Alan Roulstone’s bibliography]*

**Panelist: Gary Birch ([Neil Squire Foundation](#), Leader of [Dis-IT](#) Retail and Public Services theme)**

Gary Birch discussed the following overall highlights of the summer institute:

- “Very rarely do I participate in a forum where I’ve seen the engagement so evenly spread and a real diversity of views. It’s been very fun to be part of that, very educational.”
- The opportunity to have industry at the table and to make a genuine connection and partnership with industry is very exciting.
- It is important to build existing partnerships and create new ones.
- “The better we can understand industry, the better they can understand us.”
- A common vocabulary is key in this kind of interdisciplinary work.
- “The [Dis-IT] alliance can be part of the process of articulating a very carefully crafted, focused message that will go to government and probably to industry, and...to the community to use that message to push for change.”
- “As a research alliance we need to disseminate our research results widely and really be models of doing it in a creative and effective way and really modeling accessibility.”
- It is important to remember poverty when pushing for disability supports, perhaps in the way Dis-IT does its research and articulates its key message.
- He agreed with Shane McKenzie (Independent Living Resource Centre) “that we’ve got something to learn maybe from the environmental movement.”
- “When we do the disability supports initiatives, it’s not just making sure the technology is there, but it’s making sure that they’re delivered appropriately with the appropriate supports and the appropriate ‘human touch.’”
- In terms of a key message, “inclusion, using that as our rallying point, this is all about including everybody. Technology has its role to play in ensuring that people are included and are full citizens.”
- It is important to pressure federal and provincial governments to get going with their procurement policies: “Mary Frances [Laughton, Industry Canada] has developed an excellent tool kit. I hope that all departments will pick it up and make it not just a nice thing to use if you feel like it, but actually make it a requirement.” (Government of Canada Accessible Procurement Toolkit: <http://www.apr.gc.ca/>)

**Panelist: Gary Annable ([Council of Canadians with Disabilities](#), [Dis-IT](#) Community Co-Director)**

Gary Annable discussed the following overall highlights:

- “I’ve been astonished at how few barriers there have been between audience and presenters. To me, some of the most innovative thinking has come from the audience.”
- “I see industry as key right now. ...I’m going to be working with our current partners to attempt to expand Dis-IT’s industry representation.”
- Annable found Monday’s afternoon session pivotal. He thanked Laurie Beachell (Council of Canadians with Disabilities) for reminding the Dis-IT researchers not to focus only on the most privileged minority of people with disabilities: “We have to be careful about getting seduced by the ‘coolness’ of technology and always be vigilant about who is going to benefit and who is not going to benefit.”
- Annable stressed the importance of face-to-face meetings among researchers and partners: “That opportunity has been really energizing.”

**Panelist: Deborah Stienstra ([Dis-IT](#) Research Co-Director, Leader of E-Democracy theme, [University of Manitoba](#))**

Stienstra commented that prior to the institute, the alliance network and partners seemed like a skeleton with limbs in different parts of Canada. The institute provided the opportunity to bring flesh and blood and breath to the skeleton; she emphasized the importance of bringing together the theme leaders and partners face-to-face. She felt that during the institute, the participants have “been able to make real something that will continue,” and that the Dis-IT alliance is beginning to develop a framework for understanding disability and IT and the direction in which the research is going.

## Appendix 1: Participants

Gary Annable ([Dis-IT Research Alliance](#))  
Laurie Beachell ([Council of Canadians with Disabilities](#))  
Gary Birch ([Neil Squire Foundation](#))  
Christine Blais ([University of Manitoba](#))  
Doug Brolly ([RBC Royal Bank bis Group](#))  
Lynne Coventry ([NCR Corp.](#))  
Julia Curcio ([Dis-IT](#) Research Assistant)  
April D'Aubin ([Council of Canadians with Disabilities](#))  
Jim Derksen ([Council of Canadians with Disabilities](#))  
Ross Eadie ([Info Equity Inc.](#))  
Havi Echenberg (Policy Consultant)  
Lawrence Euteneier ([Industry Canada](#))  
Patrick Falastein ([University of Manitoba Graduate Studies](#))  
Catherine Fichten ([Dawson College](#))  
Susan Gibson (Multiple Things Training and Arts Connections Inc.)  
Eli Goldenberg ([Government of Manitoba](#))  
Sara Harms ([Dis-IT Research Assistant](#))  
Steve Jacobs ([IDEAL Group, Inc.](#))  
Mike Karp  
Shelley Kinash ([University of Calgary](#))  
Delphine Kinvig ([University of Manitoba](#))  
Leigh Kippen ([Independent Living Resource Centre](#))  
Daniel Lamb ([Adaptech Research Network](#))  
Mary Frances Laughton ([Industry Canada](#))  
Julie Li ([Government of Manitoba](#))  
Rajesh Malik ([Dawson College](#))  
Laurie McArthur ([Adaptive Technology Resource Centre](#))  
Shane McKenzie ([Independent Living Resource Centre](#))  
Aldred Neufeldt ([University of Calgary](#))  
Caroline Polak Scowcroft ([University of Manitoba Graduate Studies](#))  
Judy Redmond ([City of Winnipeg](#))  
Marshall Ring ([SMD AbiTech](#))  
Jacquie Ripat ([University of Manitoba](#))  
Shan Robertson ([Mount Royal College](#))  
Alan Roulstone ([University of Sutherland](#))  
Mike Schenkeveld ([Independent Living Resource Centre](#))  
Don Shackel ([University of Manitoba Graduate Studies](#))  
Deborah Stienstra ([University of Manitoba](#))

Lindsey Troschuk ([Dis-IT](#) Research Assistant)

James Watzke ([British Columbia Institute of Technology](#))

Joan Wolforth ([McGill University](#))

Tanis Woodland ([University of Manitoba](#))