

Designing Enabling Economies and Policies 2012 (DEEP 2012)

May 24-25, 2012, Toronto, Canada

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Versioning: V1.0 August 1, 2013

This joint OCAD U – G3ict White Paper with specific directions from participants is in response to the DEEP 2012 commitment to continue the dialogue on accessibility and to further promote inter-disciplinary and multi-stakeholder collaboration amongst all participants.

Acknowledgements

The Designing Enabling Economies and Policies (DEEP) 2012 Think-tank was made possible through funding from the following:

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1 Executive Summary

More than 100 participants accepted the challenge to meet in Toronto from May 24-25, 2012 and further expand the dialogue on Designing Enabling Economies and Policies (DEEP). Discussants were encouraged to take part in an active and engaging dialogue about the different levers that could impact accessibility as it relates to inclusion and universal design, identifying existing roadblocks and barriers and recognizing how effective development and adoption of policies could better promote accessibility, standards, good practices and further the adoption and implementation of the United Nation's Convention for Persons with Disabilities CRPD.

This DEEP white paper consists of the amalgamation and synthesis of the output gathered during the DEEP 2012 conference meetings with moderators and rapporteurs. The DEEP white paper captures highlights and key messages from the presenters and includes a thematic analysis on the common themes expressed at each of the plenary sessions as well as personal perspectives from one of the authors who has a vision impairment. Ten areas of importance to accessibility were identified for discussion prior to the DEEP 2012 meeting by a steering committee: Accessible Education, Workplace Accommodation, Broadcasting and New Media, Telecommunications, Contents and Services, Technology Levers, Economic Levers, Policy Levers, Education and Training and Societal Trends. During the discussions, participants were encouraged to discuss failed attempts, identify new ideas and approaches that could better encourage accessibility and inclusion and promote innovation. With the reference of case studies and experiential examples, an introspective view on what worked and what has not has also been captured. In this DEEP white paper, these discussions are summarized in the paper and a list of recommendations and proposed strategies that can be further developed into joint and concrete actions have been developed. The report also provides summaries from presentations and panels at the meeting: how regulations like the Accessibility for Ontarians with Disabilities Act (AODA) approached accessibility and inclusion through the development of 5 standards with a goal to make Ontario fully accessible by 2025; organisations such as the Ontario Public Services (OPS), IBM, Scotiabank and others who adopted the AODA standards to effect systemic and cultural changes in their day-to-day; international speakers and subject matter experts views on ways we can better influence attitudinal changes, work collaboratively across the globe and form strong partnerships to foster and promote a culture of innovation and creativity.

From the brainstorming sessions emerged several common themes which included the need to increase and develop focused training programs that spread across all stakeholders such as educational instructors, developers, testers and businesses. Furthermore it was clear that the benefits of effective collaboration to promote cultural change are required. Collaboration is cross-sectional and multi-disciplinary whether in education and training, in technology development, employment or policy, there is a need to better understand how each of the levers are dependent and inter-dependent and how they can be improved and further enhanced by the participations of all stakeholders. This DEEP white paper articulates new ideas, recommendations and proposed strategies that will both challenge and promote open debates and/or discussions.

A thematic review was conducted to identify trends, common themes and overlaps amongst the many levers and topics discussed at the conference. Through the thematic review four key themes emerged as leading practices and strategies: 1) Policies and Standards, 2) Sociocultural Change and inclusion, 3) Inter-operability, and 4) Collaboration. During this exercise, it also became clear that while there has been increased global awareness on accessibility needs and the benefits of inclusive design whether in policies, tools, products or services, there is a desperate need for global harmonization of standards, language, resource sharing and global engagement.

The DEEP 2012 participants articulated the need for a forum for continuous open discussion for adoption and deployment of accessibility as part of an overall global and inclusive strategy. To address this communication gap, this DEEP white paper will also serve as a base for the development of the DEEP on-line community (<http://deep.idrc.ocadu.ca>) where participants are invited to carry the work forward. The on-line community is encouraged to take specific topics of interest or ideas, develop the necessary relationships and collaboration to evolve and present progress through an evidence-based approach that is tangible and measurable. Also, through social media, blogs, and forums on specific topics or initiatives, participants are encouraged to take ownership of a particular idea or set of ideas develop it and test its viability, its effect on cultural and systemic change.

Participants of the DEEP conference believe that affecting change can only be achieved through positive and affirmative action which include collaboration and an ability to better promote and encourage innovation and creation. We must learn from the past and not repeat those same mistakes. The objective of creating the DEEP white paper and community is to keep people engaged and provide participants a forum to network and communicate freely and openly about actions that can and that are taken to further remove barriers in our global society. Through participative engagement, liberating discussions and a barrier free environment and framework, we hope to create an interactive and dynamic community that will further raise awareness and bring individuals together in changing the domestic and global landscape and paradigms around accessibility.

2 Introduction

The Designing Enabling Economies and Policies 2012 (DEEP 2012) Think Tank was held in Toronto, Ontario, Canada on May 23-25, 2012. The conference was initiated collaboratively by Axel Leblois of G3 ICT and Jutta Treviranus of the IDRC and IDI to substantively further the global digital inclusion agenda and the goals of the CRPD. The DEEP conference was collocated with the Inclusive Design Institute launch. This International Inquiry on ICT Accessibility hosted by OCAD University, with the support of the Province of Ontario was the first of its kind in Canada and was an effort to create an interactive and dynamic forum where accessibility stakeholders could gather and share their expertise and lessons learned.

The objectives of the conference were:

1. To engage in substantive in-depth discussion about implementation strategies for digital inclusion of persons with disabilities among decision makers

2. To promote the Convention on the Rights of Persons with Disabilities in their respective countries;
3. To identify levers and innovative approaches that go beyond current strategies.

The format and process was interactive with brainstorming break-out sessions led by participant moderators. Attendees already recognized the goal of inclusion and the importance of inclusive participation for persons with disabilities and contributed to a meaningful debate about innovative strategies to accomplish this goal. Information about successes and failures was recognized as equally important and sessions were designed to facilitate the greatest interaction possible among participants. The focus of discussions was on the process and lessons learned from implementing policy and programs rather than on the policies and programs themselves. Discussants with specific experiences to be shared as case studies were identified ahead of the sessions to facilitate the focus on process and lessons. The by-invitation only participants included Government, persons with disabilities advocates, United Nations affiliated organizations, private sector, service providers, experts and academia.

2.1 About G3ICT

[G3ict](#)—the Global Initiative for Inclusive Information and Communication Technologies—is an Advocacy Initiative of the [UN GAID](#) the United Nations Global Alliance for ICT and Development, launched in December 2006 in cooperation with the [Secretariat for the Convention on the Rights of Persons with Disabilities](#) at UN DESA. Its mission is to facilitate and support the implementation of the dispositions of the Convention on the Rights of Persons with Disabilities on the accessibility of Information Communication Technologies (ICTs) and assistive technologies. To accomplish its mission, G3ict works in collaboration with its constituents to:

1. Raise awareness on effective public policies, private sector initiatives, and standardization references. It reaches key stakeholders via conferences and showcases, briefings, web activities, publications, and social media;
2. Facilitate the sharing of solutions and good practices through a Web-based platform

2.2 About Inclusive Design Research Centre, OCAD U

The Inclusive Design Research Centre (IDRC) is a centre of expertise with a multidisciplinary team of computer scientists, engineers, educators, and practitioners, all focused on the inclusive design of emerging information and communication systems and practices. Established in 1994 at the University of Toronto, the IDRC (formerly ATRC) recently became a research and development centre at OCAD University and conducts proactive research and development to ensure that emerging information technologies accommodate the full range of human diversity including culture, language, age, and ability. The IDRC's influential role nationally and internationally has been recognized in numerous awards. The Canadian National Institute for the blind (CNIB) <http://www.cnib.ca/en/Pages/default.aspx> has dubbed the IDRC “a national treasure.”

The IDRC has carried out many successful accessible technology projects since its inception and has formed an extensive international network of consumer organizations, research centres, and corporations concerned with inclusive design of information systems and practice. Current projects

include the CFI and ORF-RE funded Inclusive Design Institute: a collaboration of eight Ontario post-secondary institutions lead by IDRC, focusing on development and implementation of inclusive teaching and learning practices in Ontario and abroad and The Flexible Learning for Open Education (FLOE) project. This large, international, multi-partner project is funded by the William and Flora Hewlett Foundation, and focuses on developing technologies and practices for creating inclusive open education resources. The project includes strategic partnerships with OER Commons, the Monterey Institute of Technology, and Connexions, as well as partners around world such as OER Africa, University of Cape Town, Strathmore University in Kenya, and IPTI in Brazil. Technology partners include Apple, RIM, Google, and Mozilla, with discussions ongoing to integrate content personalization technologies into iPad, iPhone, iPod, as well as Blackberry, and Android operating systems.

A major focus of IDRC work is standards and best practices development. Several of our recent projects reflect our expertise and experience in development, evaluation and implementation of accessible technology specifications. Recently, Jutta Treviranus, the director of the IDRC was Project Editor for the new accessibility standard ISO 24751 and was a member of the Accessibility Standards Advisory Council (ASAC). In 2007, the IDRC carried out background research for the AODA's Information and Communication Standard as well as provided the seed document for the standards development committee. In September 2007, the IDRC hosted an international forum on ELearning standards. A completed contract to the National Centre for Accessible Media, expanded on work started at the IDRC (as part of The Inclusive Learning Exchange (TILE) project) to develop accessibility metadata for use with learning object repository content and e-learning applications. As part of this contract, IDRC also evaluated the specification in terms of how well it met the needs of learners who required accessible content. From 2001 to 2005, IDRC also worked under contract to Industry Canada in developing and implementing accessibility specifications. During this time, IDRC developed Web-4-All an innovative system for automatically modifying Community Access Point workstations to suit the individual needs of each visitor. This system was one of the first software packages to fully implement the IMS accessibility for learner information package specification—a specification that was chaired by the IDRC. The IDRC has further demonstrated its expertise in the field of accessible technology standards through its ongoing work with the World Wide Web Consortiums, Web Accessibility Initiative (W3C, WAI). Since 2001, IDRC has co-lead or contributed to many accessibility standards and techniques documents released by WAI. The IDRC continues to focus on accessibility standards and specifications development and is looked to worldwide to lead the way in inclusive design innovation.

The IDRC has lead several multi-partner projects that have culminated in development of best practices documents and model content for accessible technology. This technology has crossed a variety of sectors including education, health and culture. Through these projects, the IDRC has remained at the forefront of new technologies and has stayed in a position to watch for and address potential barriers to inclusion in these technologies as they develop. Current work in the area of personalization includes participation in the Cloud4All project as well as a lead role in the international implementation of the Global Public Inclusive Infrastructure (GPII), an ambitious project aimed at developing a global network through which individuals will be able to personalize their experiences with everyday activities. Such personalization might include reconfiguring a bank machine display with large print, rendering a mobile

phone with a high contrast display, or perhaps reconfiguring a desktop email client to simplify the interface, among a wide range of other possibilities that allow anyone to get information in a form best suited for them.

The IDRC also provides a variety of accessibility consulting services. These include occupational and work place assessments through its Employment Accommodation Service. This service primarily matches people, many with disabilities, with technology best suited to accommodate their needs and to help them function effectively in the work place. The IDRC's WebSavvy services provide Web content accessibility evaluations to assist organizations in meeting regional and international Web site accessibility requirements. Some clients include banks such as The Royal Bank, BMO, and Bank of America, Higher education institution such as the University of Toronto, Capella University, and Harvard University, and media outlets such as CBC, NBC, and The New York Times, among many others.

As a centre with the mandate to keep leading edge technologies accessible, the IDRC has forged excellent relationships with a broad range of organizations of and for people with disabilities including such organizations as the Canadian Association of Independent Living Centres, the Canadian Association of the Deaf, the CNIB, the CHS, the Canadian Abilities Foundation (CAF) and the Learning Disabilities Association of Ontario (LDAO) to name only a few. The IDRC has partnered frequently with the Canadian Abilities Foundation to address barriers in online culture and education. Additionally, IDRC has worked with CAF to develop Access Guide Canada, a comprehensive database of accessible destinations and services in communities across Canada. IDRC has also partnered with LDAO to develop a web-based early intervention screening tool that enables early identification and amelioration of learning difficulties. In developing this tool, IDRC has worked with provincial education ministries in Ontario and Alberta. IDRC is skilled at managing relationships with private, public and non-profit organizations and has developed a considerable network of contacts across these sectors.

Recognizing the worldwide demand for skills and knowledge in inclusive design and a growing market for inclusively designed products and services, the IDRC and OCAD U established a Masters in Inclusive Design. This innovative program produces graduates with the capacity to form, lead and sustain a much-needed community of expertise in digital inclusion. Graduates apply their studies in all sectors that engage digital systems and networks, including government, education, private sector business, public sector, entertainment, arts, culture and health. The program takes advantage of the knowledge, experience, research networks and global open source communities of the Inclusive Design Research Centre. The MDes in Inclusive Design is a low residency two-year program with an executive style delivery format to accommodate the needs of working professionals and international students. The program itself is designed using inclusive design principles.

2.3 About Accessibility for Ontarians with Disabilities Act

The Accessibility for Ontarians with Disabilities Act (AODA) was passed in 2005. Its goal is to make Ontario accessible for people with disabilities by 2025. The AODA is divided into five different regulations:

1. Customer Service - Became law in 2008. [Ontario Regulation 429/07, Accessibility Standards for Customer Service](#)

The remaining four standards were amalgamated together and are now known as The Integrated Accessibility Standards Regulations (IASR) [Ontario Regulation 191/11, Integrated Accessibility Standards](#)

These include¹:

2. Information and Communication
3. Employment and Accommodation
4. Transportation
5. Built Standards of public spaces

Most accessibility legislation globally requires that the wronged party, namely the person with a disability mount a legal process and litigate the offending institution or individual. This process puts an undue burden on individuals who are frequently poorly resourced. It also puts the onus of proof of wrongdoing on individuals with disabilities. The AODA approach is to shift the burden of achieving equal access onto the provincial government and all organizations in the province of Ontario.

The AODA treats accessibility and compliance to accessibility regulations the same way that environmental regulations or public health regulations are treated. Both public and private organizations are required to report compliance and the province inspects and audits compliance and administers fines to organizations that do not comply. Individuals with disabilities help to set the standards but are not required to litigate. People with disabilities still have the option of litigation through human rights legislation. Responsibility for enforcing and upholding compliance is the responsibility of the government. All obligated organizations are held accountable for compliance and must report on their progress on a regular basis. This shifts accessibility compliance within an organization from a risk management issue (assessing the risk of litigation against the cost of compliance) to an organizational requirement. More information can also be found on: [Accessibility for Ontarians with Disabilities Act \(AODA\), 2005](#)

3 DEEP 2012 Program

The organizing committee was comprised of representatives from G3ICT, OCAD U and Abilities Inc. The conference program was developed in collaboration through consultation with subject matter experts, government representatives, UN Affiliates, individuals representing various accessibility, academia and business interests.

3.1 Format and Logistics

The DEEP program was developed in consultation with the program committee who met through online conferencing systems. Additional input was provided by the group through an extensive survey. The

¹ <http://www.mcsc.gov.on.ca/en/mcss/programs/accessibility/>

survey results were analysed and a draft program was developed by the organizing committee and presented to the committee for further refinement.

Attendees were asked to select and register for the sessions in which they wanted to contribute. Each participant was encouraged to select one session each day to provide input. The positive and participatory approach allowed for a broad scope of topics which facilitated and fueled invigorating and passionate discussion on new ideas and innovations, new approaches and identification of actions required to further integrate accessibility in mainstream products and services as well as policies and processes. The interactive dialogue heightened the imperative need for active collaboration in changing the domestic and global landscape and paradigms around accessibility despite our diverse roles and responsibilities.

The program included:

- Introduction from G3ICT and OCAD U
- Ontario Experience on E-Accessibility Legislation
- Overview of AODA
- Plenary sessions on the experience from Canadian and International stakeholders.
- Official Launch of OCAD's Inclusive Design Institute, 49 McCaul St.
- Ten 90 minute Break out sessions focusing on accessibility practices (use cases) and levers
Presentations by subject matter experts and leaders of findings and experiences of accessibility implementations

A copy of the program is available online at [The DEEP Think-tank Website](#).

4 DEEP 2012 Speaker key remarks and messages

DEEP discussions are intended to move the inclusion movement forward in all jurisdictions through a knowledge-sharing and participatory framework. This concept was expressed by Jutta Treviranus in her opening comments for DEEP 2012:

“When it comes to digital inclusion we sink or swim together. We do not need to establish which group has the greatest need, or compete for the place of the most disadvantaged. Everyone must be able to participate.

“If you are here you know the power of diverse perspectives. We want to hear less about the fact that you have had the same idea or done something similar and more about the difference. We do need to hear how what you have done is different, how your experience differs in a substantially useful way.

“We also welcome compassionate, constructive critique.

“What we need these next two days are your fresh ideas, your creative insights, your salient intuitions, about how to break this critical impasse in accessibility globally.

“We also know that mistakes can be just as, if not more, instructive than successes, we want to hear about what has not worked just as much as about what has worked.”

From this launch, DEEP 2012 began.

4.1 The Canadian and Ontario Experiences

A central focus for DEEP 2012 was the extensive accessibility standards legislation implemented in Ontario under the Accessibility for Ontarians with Disabilities Act (AODA). Ellen Waxman, Assistant Deputy Minister, Accessibility Directorate of Ontario, described this journey to the DEEP Delegates. Key points from her talk are excerpted in the following sections:

The journey of the AODA standards was a long process that spanned over 7 years and continues. More than 250 people participated in the 5 standards committee and more than 1,000 people were involved through various public consultations. The goal of the AODA is to achieve an accessible Ontario by 2025.

4.1.1 Purpose

It is important to understand the drivers: in this case the demographics. It is estimated that 1 in 7 has a disability in Ontario. According to Statistics Canada, more than 1.8 million Ontarians are estimated to have a disability. By 2017 the aging population or baby boomers will surpass the number of children from the ages 0-14 and will make up a large part of our overall population in Ontario.

4.1.2 The AODA

- There are five sets of Standards that are phased in from 2008 to 2025 to achieve full inclusion in Ontario.
- More than 1,000 organizations have reported 100% compliance in the public sector to date and the Focus is now on the 360,000 private organizations which were required to report on the customer service standards by December 2012.

4.1.3 The AODA approach: AODA standards to be reviewed on a regular basis.

- AODA puts the responsibility on organizations to comply. The 5 standards committees were made up of 50% of PWD's, 50% of industry, education and policy makers.
- The success criteria were based on the ability to demonstrate respect for all by ensuring to carefully listen and hear everyone's voice. The ministry maintained the right to accept or reject any recommendations-based on open conversation and debate. In addition, all proposed standards were shared through numerous public reviews before becoming law.

The recommendation to apply these standards to the public sector first provided a unique opportunity for the ministry to demonstrate leadership. The ministry also recognized the benefits of taking a Progressive enforcement measure, with heavy penalties for repeated non-compliance offenders. Daily fines up to \$100,000 can be applied for non-conformance or repeated offences.

Recognizing and promoting the benefits related to the economic impact further supported the approach adopted by the ministry. Data collected from the research from the Martin Prosperity Institute indicated that \$700,000 - \$1,600,000 in tourism alone is tied to the ability to provide accessible services.

Studies have also shown a 2.1 times return on investment (ROI) OI for PWD's in employment.²

4.1.4 Some of the challenges

- Managing many relationships, attitudes and perceptions proved to be trying at times.
- Building trust and ability to gain consensus at times for even the simple things was sometimes challenging.
- As some members were added on later in the process, ensuring everyone was on the same page, and allowing everyone to catch up was time consuming and difficult. Other challenges were related to the ability to provide alternate formats on time to meet everyone's needs.
- at times, it was difficult to know where to begin with so many things and perspectives to tackle and address however it was understood that no one custom solution was a fit for all.
- Communication was key to succeed.

4.1.5 What worked best

- Adopting a progressive approach provided organisations some flexibility and time to comply.
- Other considerations included;- Using WCAG 2.0 A as a starting base and gradually progressing to level AA,
- Extension of standards to education where Education material and training content must be available in accessible formats as per individual's needs.
- Provision of extensive free On-line training for stakeholders.
- Establishment of a dedicated contact centre to support AODA.
- Availability of specialized and industry based training offerings for hospital, tourism, education, etc.
- Building strategic partnerships - A total of 12 partnerships including: IDRC at OCADU, IDEA Student competition, Ontario Education Services.

4.1.6 Next steps

- Tapping on talented PWD's to address the labour market gaps and needs will be of high priority for the ministry.
- Promoting the use of the on-line compliance wizard reporting tool will be a focus from the ministry in order to further encourage private sector organizations to report compliance. Additional resources including additional policy guidelines and templates will also be developed and made available to organisations for the private sector.
- Audits in the private organization have been planned beginning in January 2013.
- A new structure to develop new standards will be further explored taking into account the lessons learned from this last iteration. The PAN, PARA-Pan games in 2015 will be used as a spring board to test the AODA and build the legacy for accessibility.
- For PWD's, technology makes things possible.

4.2 Experience of the Ontario Public Services

The first-large-scale implementation of the AODA standards was in the Ontario Public Service. Matt Rondell discussed this implementation; his remarks are excerpted in the following sections:

² Please see: <http://martinprosperity.org/2010/06/14/releasing-constraints-projecting-the-economic-impacts-of-increased-accessibility-in-ontario/> and <http://idrc.ocad.ca/index.php/resources/idrc-online/49-articles-and-papers/453-leveraging-inclusion-and-diversity-as-canadas-digital-advantage>,

4.2.1 Accessibility at the Ontario Public Services (OPS)

The OPS employs more than 63,000 employees. Of which 12% have a disability. The opportunity to demonstrate leadership and recognize the importance of accessibility as a business imperative was evident. It supported the views in the ability to meet the needs of our constituents especially as it was linked to core business, diversity and inclusion. It further aligned with the need to support employees to achieve their full potential. A multi-year accessibility plan was published in Jan. 2012 which included a corporate Statement of Commitment. An accessibility link was added to every single site; making it visible at all times. The plan includes the long-term vision, going beyond compliance and provides specifics on how to achieve accessibility.

4.2.2 What has worked well

A strong foundation was required to achieve success in implementation. OPS employed a variety of strategies:

- Finding champions to bring to the leadership table, meant that champions did not always have to be from senior ranks
- Networking from the ground-level up
- For all new websites: adopt the WCAG AA.
- Designed a methodology for testing, (Deploy boot camps), Managing web content.
- Shared accountability: Fostered cultural change by promoting that accessibility begins with everyone.
- Behavioural cultural inter-change – Responding and recognizing what accessibility means to each stakeholder.
- To support employees, extensive Training was developed and deployed focusing on specific items or topics which were deployed every 3 or 4 months.
- The topics were aligned to specific regulatory requirements.
- All OPS Self-service kiosks include accessibility features. It was recognized that Kiosks go beyond the traditional form of information devices and needed to include all interactive features. Using the OPS inclusion lenses. Considering different dimensions of how people use the device/technology helped find the happy balance to meet everyone's needs..
- In addition, we Include accessibility in the procurement process and Include accessibility in the emergency processes.

4.2.3 Lessons learned

Below are some of the key lessons learned shared by OPS that can help others move their accessibility goals forward:

1. Make sure everyone understood what the regulation is.
2. Make sure they have the tools.
3. Use strategic alignment.
4. It's about planning.
5. Prevent barriers.
6. Include usability and accessibility in performance testing.
7. Foster behavioural transformation.
8. Think about accessibility from day one.
9. For inclusion, do not ask, "Why?" ask, "How?"

4.2.4 AODA summary

People are closely watching, to what degree and how the AODA accessibility compliance will be managed and administered. In Canada, Manitoba and Quebec seemed to have followed suit by introducing their own version of accessibility standards. While others have articulated great interest in the Ontario AODA experience, there is a sense that greater harmonization is required to promote and ensure standardization across Canada is achieved. The AODA approach presents a positive and affirmative approach to achieving accessibility and examples like the OPS model further supports how it can be achieved through proper planning. However, it is still too early to determine its social impact. Many have also expressed concerns around the AODA truly being able to achieve an inclusive Ontario by 2025.

Lastly, while the AODA presents a fresh and non-litigating approach to accessibility compliance, more Quantifiable research is required to determine and measure impact and effective cultural change. There is also a need to establish benchmarks and measurements to see how Ontario and Canada will fare against other progressive countries like the United States, the UK and others.

4.3 Canadian Experience Panel Discussions

A panel discussed inclusion from a variety of Canadian perspectives. David Lepofski (www.aodoalliance.org), one of the panelists noted,

“Removing barriers cost more, preventing barriers costs little if nothing at all. Looking ahead in information technology, the information, products and services we will require in 5 years have not yet been thought of or invented, they have not been contracted nor have they even been designed. This is the perfect opportunity to make the decision and do it right now. . . .

“Where do we stand with accessibility in Ontario? While we can claim to be the only legislation with a targeted date/timeline to achieve accessibility by 2025, we are at serious risk of not making that timeline. This is further supported by a recent report from Charles Beard. For Information Technology, The fact that we have regulated and mandated those standards is commendable, however our inability to implement as a result of too many exemptions, long timelines, regulations that are too generic and/or broad in some areas such as kiosks, will negatively affect our progress. . . .

“Resistance [to accessibility compliance] is also voiced with such things as the excuse tied to legacy systems or not having the skills to do accessibility. In either case, user interfaces which allow for everyone to interact with the systems are required and building the skills is part of innovation and an opportunity to remain competitive.”

Also on the panel was Rukhsana Syed from IBM Canada; she discussed the experience of implementing accessibility within this large corporation with over 400,000 employees globally.

“Accessibility has been part of IBM’s culture and history from the very beginning. Over the years, many tools and resources have been developed to promote and support diversity, inclusion and accessibility. A positive twist has been adopted promoting People Enablement Networks versus disability. “

Below are some of the approaches adopted by IBM:

1. Creation of Wiki containing resources to achieve accessible websites and documents.
2. Taking a top down approach making integration more manageable.
3. Having one managed accommodation fund which supports a corporate-wide commitment.
4. Recognizing that this is a shared accountability amongst all.
5. Extending accessible customer service to all international support centers.
6. Adopting the 3 A's: attitude, accessibility and accommodation.

Pina D'Intino from Scotiabank discussed implementation at her financial services institution that employs more than 77,000 employees in 55 countries worldwide; she noted:

“Accessibility is part of the Inclusion framework and has been adopted by the Human Investment Committee in the bank. In 2004/5, in partnership with IBM, the Information and Technology (IT) accessibility roadmap was developed adopting the WCAG standards and good practices.”

Approaches that have helped Scotiabank achieve their accessibility goals include:

1. Ability to gain Top down support through executive champion.
2. Establishment of Employee resource Group.
3. Recognizing the broader perspective on various disabilities and barriers
4. Accessibility must be planned for large organizations.
5. Recognizing and understanding the market value.
6. Recognizing risk; Knowing what to do and how.
7. Need for governance for oversight and sustainability.
8. ITIL “you can only manage what you measure”; so how do we measure?

Through the development of various accessibility and accommodation initiatives, both IBM and Scotiabank have recognized an increased need to support employees with disabilities with better and effective Employment preparedness programs. The paradigm needs to shift from the negative connotations that are often tied to disability to a more ability, confidence, and inclusive attitude lens. The panel put forward these final thoughts:

“We all have a disability at some time or another. Persons with disabilities must be advocates and must better support each other. Technology enables persons with disabilities, but does not replace accommodation. Achieving accessibility requires organizations to have an understanding of the motivation beyond legislation or regulation.”

We must promote accessibility in careers to bring forward more experiential perspectives.

4.4 International Experience Panel Discussion

Panelists from Australia (Gunela Astbrink), Europe (Inmaculada Placencia-Porrero) and the Americas (David Rojas) discussed inclusion and accessibility implementation in their regions. Their discussion are summarised in the following sections.

4.4.1 Australia

In Australia like in many other countries one of the challenge is the difficulty in infiltrating key organizations to include accessibility in what they do. While there is an abundance of training in various ministries, services, industries there will never be enough training to respond to the demand. There is significant anxiety and the expectations for some may be quite high, however it is viewed that one should not expect too much, too soon. The recognition for compliance is evident and very important and necessary to achieve accessibility. While many industry leaders and accessibility champions are making the difference and demonstrating progress there is a need to overcome policy gaps—challenges industry and government must work together to effect attitudinal changes sooner and faster. To effectively promote inclusion and accessibility, we must engage and consider various sectors.

It is observed that Australia and Canada share many similarities as it relates to population, demographics, geographic landscape and provincial strengths, therefore an opportunity to learn from each other presents itself. In 1993, the Australia Disability act initially experienced a lot of resistance, but there has been significant change since through many targeted and focused initiatives. Currently, there are many accessibility initiatives underway in Australia such as a national transportation strategy in transportation, accessible banking services, information, communication and training similarly to that of the AODA.

4.4.2 European Union

The European Union includes executives from 17 countries. Accessibility is supported by the many treaties amongst the participating countries, the United Nations convention for the Rights of persons with Disabilities and then the many layers of regulation. The Europeans Discrimination Act did not include anything for disabilities which may have further impeded inclusion and equality for all. Many of the questions that continue to be raised by organizations include whether they have the necessary competencies, who is obliged to do what and when. Many expressed that legislation does not provide enough specificity to provide direction or clarity on what has to be done. There is also on-going concern around the cost of developing accessibility standards, funding and who should be paying for all this. In addition, many argue that there should be a way to regulate manufactures to do accessibility. There is a gap in enforcement and promotion by not giving manufactures the adequate accountability/responsibility to include accessibility in their products and services.

4.4.3 The Americas and accessibility

In the Americas like many other countries, there is a lack of policed approach and a need to ensure inclusion of everyone to develop better solutions. There is a need to engage Public and private stakeholders to promote collaboration and partnerships and learn from each other. There is a need to understand how lessons learned can be better leveraged from countries like Canada when it comes to Measuring approaches and attempts. A better understanding of the impact of training and technology is needed to further progress.

Employment integration is everyone's responsibility, but often falls too short. There is a need to work closely with other agencies, like IDFC, UN, UNESCO to develop studies and measurements that could support accessibility and inclusion. While there are a number of available resources, there needs to be better integration and incorporation of share best practices. Lastly, there needs to be a significant change in the mind set for PWD's and employment. Too often, people still believe that persons with disabilities cannot do the job right or require far more support and costly accommodations. The development of better job development/transition programs to employment will help promote opportunities which will in turn build and promote confidence Partnerships with organizations to

promote early and long-term relationships such as internships will increase preparedness and will help change the mind set and cultural responses. We can learn from examples like the internship program at the Politecnico in Milan, where there is a 0% unemployment among alumni with disabilities. A diverse centric approach at IBM promotes advocacy and community engagement from primary and high schools, colleges and universities. More organized efforts like the one offered by Lime-Connect, (<http://www.limeconnect.com/>) are needed to foster relationships between colleges, universities and organizations to increase employment opportunities amongst persons with disabilities. In the UK, children are empowered by choosing their own accommodation very early on which teaches them to advocate for themselves and in turn engages them throughout education to employment.

4.5 Levers for Greater Inclusion and Accessibility

Don Tapscott, the author of several books and writing including *Growing Up Digital* (1996) and *the Naked Corporation*, spoke to the participants about levers for inclusion. Excerpts from his presentation are provided in the following:

The world is very volatile and a troubled place. The web presents a new model on how to tackle world issues and problems. While the web can be powerful it can also be controversial. A good example of such is the Kony 2012 invisible children story where the video was viewed by more than 100,000 people in less than one week, but many wondered how much of the money actually made to help those children. (<http://www.limeconnect.com/>).

The web offers huge promise and opportunity. It is growing like a prairie fire, around the world. And networks like Facebook has now exceeded more than 1 billion users

Capitalism advanced the standards of living. But with the arrival of global web society that doesn't know boundaries, nor is concerned with intellectual properties laws, we are facing a very challenging period. While State based global Institutions are still important they are increasingly becoming ineffective. The Increase in multi- stakeholder networks which include 4 pillars of society; government and government representatives, private sector, organizations and individuals are taking over and revolutionizing the world. The global networks are not state based but are multi-stakeholder based, and have a global outreach and are trying to do something good solving global issues and problems.

Digital networks are changing the world. The computer has become a new network infrastructure, changing the world, enabling stakeholders of the world to come together. Children are an authority in the digital evolution. People can now self-organize like never before and as a result many communities are forming instantaneously. Obama understood this well and used this to his advantage during his election campaign. He changed the way one votes, but did not affect industrial change or policies.

We are living in a huge Social revolution which is promoting transparency, integrity an economic revolution. Transparency has become the movement of today; organizations are being expected to bare all, and be naked. Transparency has become a powerful force of enablement.

We are also seeing an Economic revolution through integrity. Do well by doing well. Lots of companies did well by doing badly in the past, harming environment, creating pollution, making lots of money at the cost of others. Because of transparency, companies are doing more good and are more conscientious about things like corporate social responsibilities. Even individuals

who are Very, very wealthy people are now trying to do good by giving up their fortunes to causes. Economic revolution is also affected when the cost of staying where you are becomes greater than the cost of moving forward.

The current models are broken. Whether we look at the National State model, education, policy makers, Financial and economic models are all broken, however we can see the contours of a new era and a new model through global social networks fostering Ideas and innovation.

There are several new models emerging taking into account the 4 pillars of society. Examples include:

- Ideaage model, Policy networks like the International forum on internet policies,
- Advocacy movements, networks seeking to change the world,
- The Nike Corporation addressing child-slavery, and
- AVAZ. Org, People powered policy makers, progressive stakeholders influencing change in policies.

In addition, there are the doers/implementers type of networks which include Crisis comments.org resources around the world, KIVA.org raised \$400 MM to help farmers irrigate their land, Convenient.net and Watchdog networks like Human Rights Watch.org , OSFI for financial services. Lastly, there are those networks that create a platform. Usually they are not multi-levels stakeholders, but have a specific purpose or goal and try to bring change in the world. An Example of such is Ushikiti.org which was started in Kenya giving people the ability to text what was going on around them during crisis. These types of networks have now expanded to a variety of needs such as Political action networks such as Moveon.org which helped mobilize people in support of the Democratic Party.

These types of networks are changing the world, and redefining the digital era, but no one has ever studied how this is happening or affecting people/change. Wake up; it's about engagement and new models of community engagement that include incentive programs. Stakes are very high and the world is in danger, and there is a desperate need to fix the economic situation by Moving to youth ratification.

4.5.1 Economic Levers and Market Forces

Richard Donovan Chief Executive Officer at Fifth Quadrant Analytics, Chief Executive Officer at Donovan Group LLC spoke to the participants about the economic power of including individuals with disabilities in the workplace and, through employment, in the economy. In this presentation, people with disabilities were portrayed as extreme users and Donovan urges all to use the extreme phenomenon to drive innovation and creativity. Extreme use and environments typically leads to innovation and designing for disability—an extreme use—fosters innovation. For example, Voice over for iPad was designed for reading impaired users but it is used by all. Donovan cites the example of Walgreen's who found that employing individuals with disability led to improved processes and productivity. Examples such as this one show that the return on investment is measurable; it does not negatively impact the bottom line.

4.5.2 Technology for Aging Gracefully

Ron Baecker, Technologies for Aging Gracefully lab (TAGlab), University of Toronto spoke to the group about inclusion as it relates to an increasingly aged population. In his talk, Ron noted that there are many ways that technology can support an increasingly elderly population; he notes that, “People are living much longer there will be a 23% increase in population by 2300.” Through technology we will be able to make our aging population more resilient, independent, agile, etc. Baecker notes that technology is available to help us stay healthier longer by decreasing cognitive disabilities or impediments as well as providing monitoring to enable independent living (e.g. smart cameras, MyVoice inc to support language after strokes, social networking for health & emotional support, digital life history to ameliorate dementia, etc.). It is important, however that for current seniors, solutions must not look or feel like computers as it can be intimidating.

4.5.3 The Importance of Community and Social Cohesion

Kristyn Wong-Tam, Toronto City Councillor spoke to the participants about community and social inclusion and how we can be doing a better job. Councillor Wong-Tam noted that there is a need to ensure that marginalized communities are actively engaged in planning and that there is a need to bridge between the wealthy and these marginalized communities. An example from Toronto is the Scarborough transit expansion which pitted a subway line against an LRT line. In Wong-Tam’s opinion, the importance in the debate was lost: Who uses the transit system? Not asking the right question, will lead to the wrong outcome. In fact, a year later, the city voted to support a more expensive subway line expansion through stable middle-income neighbourhoods rather than an LRT expansion that would have more stops and serve more lower-income neighbourhoods. Wong-Tam also noted that social inclusion must include everyone and credible data and provided these examples:

Building affordable housing: Include the population along with the engineers and architects. Ensure active participation. Ask how they live? How do you serve dinner? Where do you serve dinner? Asking the right question—that will influence inclusive and relevant questions up front. The finding from these questions: women believe the kitchen to be the most important part of housing, so build from the kitchen outward.

Financing: austerity measures that save money by cutting services, does this really translate into true savings and increased prosperous living? Who has access to finance and who does not? This is the wrong question. Instead ask, what are the services you can do without, what is core and what is gravy?

Public banking: repurposing of money and credit for public good. Where is the city depositing their money today? Why not have a government owned bank? Managed and administered by the government? Controlling its own finances. The ask in this case is for help from the community. Rogers has applied for a bank licence, Wal-Mart was issued a license, why not the government? The projected savings if public banking is millions if not billions in compound interest.

5 Knowledge Building: Successful Programs and Policies

Delegates worked in groups to analyze success factors and causes of failures of e-accessibility policies and programs in specific areas. Groups were asked to consider the impact of e-accessibility, voluntary initiatives, regulations, micro and macroeconomic perspectives. Participants were asked to gather experience and insight into strategies that do and do not work and the factors that influence their success and failure and then to pool this experience and insight and generate new promising approaches and strategies that have not yet been tried. Each group was asked to generate:

- 5 successful strategies that significantly have advanced accessibility and inclusion in the domain, listing the factors that contributed to their success.
- 3 strategies that have failed, possible reasons for the failure, and lessons to be learned from the failure.
- 3 new promising approaches and strategies that have not yet been tried and steps that can be implemented to put these strategies to a test.

A summary of the presentations from each group is available at <http://deep.idrc.ocadu.ca/discussion-page/deep-archives/deep2012-breakout-sessions-summary/>

Following is a closer look at each session with an observational lens on some of the key findings identified by the discussants and the author of this paper.

5.1 Accessible Education

In this discussion many share common concerns around the overwhelming amount of education resources, not yet available in a useful manner to allow them to be easily be integrated and immersive. Discussions brought three main factors that have an impact on accessibility of education into focus:

1. The role and importance of allies and champions
2. The need for more educational programs for people with intellectual impairments
3. The importance and need to provide integrated educational experiences and resources from the earliest possible phase whether it is by earlier integration of children with disabilities in classrooms or by better promoting projects and available resources.

5.1.1 Considerations/Observations

More education programs such as internship programs and sustainable and accessible funding need to be developed and promoted to include accessibility and inclusion. Programs like internships and integrated work opportunities will build confidence and preparedness to better integrate and immerse children in real-life situations such as higher education and future employment. Funding models including things like sponsorships and subsidies must be transparent and easily accessible to sustain the needs of children with disabilities throughout their entire life cycle. Educators also need to be better prepared, equipped with toolkits and resources. Educators and students alike, require more time and a better understanding of how to better integrate individuals in multi-disciplinary programs early on. Introduction to early integration will foster a larger community of knowledge through sharing and dispersed resources rather than through a community of experts.

5.1.2 Suggested Actions:

While the group did not list separate suggested actions from their session, several potential actions can be extracted from the observation/recommendations section captured above.

5.2 Workplace Accommodation

Workplace accommodation has seen a significant evolution primarily in large organizations. Many organizations have implemented policies and procedures that foster a culture of inclusion and integration in line with their diversity framework. While things like centralized funding and processes have gained popularity, their ability to notably increase PWD's in the workforce continues to lag.

On the other hand, while smaller organizations lack the ability to reach out to credible and sustainable resources and are often paralyzed in their efforts to properly accommodate individuals due to lack of funding and/or support, there seems to be an increase in creativity, innovation and willingness to better accommodate and integrate PWD's in their workplace. However, many are still confused and lack understanding of regulations and obligations regarding retention and reasonable accommodation which contributes to the reluctance of increasing representation of PWD's.

From the employee perspective, accommodations still take too long and are not transportable from one position to another. Many organizations and employers tend to want to adopt a one solution fits all model, which often results in inadequate accommodations and increased frustrations amongst PWD's and organizations. In addition, participants discussed:

1. How the importance of mentoring, coaching, peer support and employee resource groups is monumental for successful accommodations.

How the need to break the traditional paradigms about disabilities medical model which carries a negative and costly connotation/label can promote inclusion and how defining disability through the diversity and inclusive lens can shift attitudes to a more positive approach.

2. We must better articulate the need for accommodation by promoting a better understanding of accommodation tools and resources. This could be achieved through education and training by including: accessibility in the curriculum, labs, and use of checklists and shared resource material.

Promote and increase the understanding of benefit of inclusion by increasing allies and partnerships through other similar movements or initiatives such as the advancement of women, inclusion of aboriginals, minorities, etc. Leveraging from Examples such as the Politecnico of Milan where business and academia come together to promote and support inclusion in employment should be better publicized and replicated.

5.2.1 Considerations/Observations:

1. Programs that increase employment preparedness through internship opportunities and through partnerships between academia and businesses such as the Politecnico of Milan should be further explored and implemented. Creativity and flexibility through the use of mobile

channels to accommodate individuals for learning and work programs such as internships is not being effectively adopted and promoted. The ability to further provide education, experience through the use of flexible arrangements, could significantly reduce costs and risks, increase employment opportunities and mitigate barriers that cannot be quickly removed.

2. Integration of accessibility learning in academia and the curriculum and the use of checklists, standards and best practices could reduce efforts and costs and would reduce the need to re-invent solutions for each accommodation.
3. Most importantly, through active movement and champions, we need to change the definition of disability and accommodation and remove the medical and negative connotation which will result in a positive culture of integration. There is a definite need to recognize that disability may affect us all at some time in our lives and that accommodations, while personal, do not need to be complex or expensive as more and more mainstream solutions can often be leveraged to achieve an effective accommodation.

5.2.2 Suggested Actions:

1. Engage and include accessibility and inclusive education in the curricula to foster and build the pipeline from the grass roots. This integration will create a much more sustainable and proactive approach, build disability confidence and will create a dialogue of inclusion rather than of accommodation.
2. Develop a common repository and/or resource library for available resources containing funding information, available services and resources. This type of repository could be very helpful for individuals and organizations who require additional financial support. Funding programs exist through many different governmental and ministerial resources, however it is difficult to know and understand what applies to whom, when, how to apply for funding and whether the funding meets currency and the needs of the individual. As a result many of the provisions for adaptive tools and services are underutilized.
3. Conduct a review of current funding formulas. This review could benefit everyone ensuring that they are in line with current technologies, needs and mainstream solutions.
4. Develop a national repository or a central resource to post sponsored internships and programs such as requests for co-op's that could assist PWD's in their search for employment and experience opportunities and would also provide organizations greater visibility to promote their commitment to accessibility, competition for talent and build employment preparedness. While many programs currently exist, they are often obscure, difficult to find or almost impossible to access due to the number of opportunities. Many are short-term, part-time and on a non-remunerated basis.
5. Explore how we can better engage businesses and organizations to partner and collaborate in employment preparedness. Develop best practices, guides that can be shared with both PWD's and organizations to better identify and match talent and candidates.

5.3 Broadcasting and New Media:

Discussants shared views on the pros and cons of tighter and harmonized regulation to promote accessibility in broadcasting and new media. Should there be tighter regulation on what is being

produced and delivered to consumers? Should there be penalties for those who fail to produce accessible media? While there is a recognition for the huge impact that social networking has had on societal trends and the inclusion of PWD's, there is a need to create consistency and proactive behaviour and think about what is coming rather than trying to respond to what is there now. The influence of consumer advocacy and lobbying in this field cannot be ignored or under-estimated as expectations for real-time media such as captioning for example is a must and a need; therefore, these accessible options should be readily available and accessible through the use of mainstream products and devices.

5.3.1 Consideration/Observations:

1. Lobbying through governing agencies such as the CRTC (Canadian Radio and Telecommunications Commission) is required to create and adopt standards for broadcasting and new media.
2. While in some countries, including Canada, regulations require broadcasters to meet a certain level of accessible content, there are weak penalties (if any) to promote compliancy and adherence.
3. Copyright rights, restrictions and antiquated laws, continue to perpetuate the dialogue and hinder the ability to effectively and efficiently share material.
4. There is a need for clear guidelines for what and when media must be made available to all.

5.3.2 Suggested Actions:

1. Investigate if there is an opportunity to leverage or develop specific guidelines similar to those adopted by the web content and the World Wide Web community to promote accessible broadcasting and media.
2. Develop additional studies to identify if current standards could be leveraged or mirrored to expand the dialogue on accessible broadcasting and new media.
3. Identify leaders and organizations that have implemented accessible media and foster relationships so that they can play a better role in influencing other forms of media to include and deliver accessible content and material.
4. Lead by example, recognize the value and benefit for accessible media for all and Active positive lobbying with stakeholders who can also be influential and create increased awareness and demand. (In Canada, Accessible Media Incorporation (AMI) has a dedicated channel for the blind and visually impaired). What can be shared and leveraged from this experience?
5. Identify, develop and share best practices Document and articulate the benefits of accessibility. Articulating how has captioning changed the way we view and use captioning, helped the general population not only those who are deaf or hard of hearing for example, could help promote benefits and the return on investment. Learn from how the new generation of youths use media can also foster better solutions and products.

5.4 Telecommunications

We live in perpetually connected societies and as such there is a constant need to be connected to everyone and anything at all times. More and more services and products are being delivered through digitalization and electronic channels eliminating traditional brick and mortar structures and face to face interaction, fostering a culture of autonomy and self-service solutions. As a result there is a much

greater need to ensure that services and products are available and accessible to all. The involvement and engagement of PWD's in the development of products and services ensure results in greater adoption by all.

5.4.1 Considerations/Observations

1. Discussants debated the need and benefits of more guidelines, best practices and/or legislation to affect measurable and tangible change. Proactive steps such as the inclusion of accessibility requirements in the procurement of services and products result in the delivery of accessible products and services and reduce the need for accommodation and/or remediation. This can be viewed as best practice, a marketing and business advantage rather than legislated change.
2. The need to view Standards at an international level and harmonize policies, interoperability, compatibility which reduces costs and promotes innovation and creativity to allow for flexibility and personalization in a fast-paced and an evolving technological environment.

5.4.2 Suggested Actions:

1. Evaluate and further explore the opportunities to use standard practices as progressive enhancement coding to minimize rework for multiple channels and devices. This approach can promote inclusion regardless of versions or releases and can substantially reduce costs by promoting personalization and customization.
2. Identify synergy and opportunities to further incorporate personalization in main street devices and delivery channels.

5.5 Contents and Services

As more and more services are now being provided primarily through on-line channels, the need for inclusion and accessibility is on the forefront of organizations in their attempt to retain and attract new consumers and customers, reducing premises and infrastructure costs and provide faster and more seamless services and products. While many understand the need to incorporate accessibility practices such as standards, checklists, tools and the engagement of PWD's to develop accessible products and services, adoption is often compromised by the complexity and lack of integrated tools and processes that add additional time and effort.

5.5.1 Considerations/Observations:

1. Processes and tools to create accessible content should be simplified and integrated without author intervention. Many accessible authoring tools are available today but are viewed as add-ons and require additional steps to ensure compliance. As a result the level of abandonment is quite high.
2. Raise the profile and need for accessibility to the level that privacy, usability and security have reached. Are there opportunities to mimic and re-purpose some of those strategic approaches to include accessibility? Rather than viewing it as another thing to do; privacy can be enhanced by incorporating accessibility which promotes independence and autonomy.
3. There is a difference between implementing and integrating accessibility in the development of products and services. The true benefits of seamless integration are not recognized and therefore many will implement accessible solutions after the fact. This approach will ultimately

result in a need to remediate which will cost more and take more time to achieve a service or product of choice.

4. There is continued challenge with the ability to keep up with new technology and innovation, therefore impacting the ability to adopt standards. While many will argue that standards are simply guidelines and should not be prescriptive, others argue that there is a need for detail and specificity in order to adequately measure accessibility. Focus on criteria for acceptance and compliance is required to gain confidence that the job is done.

5.5.2 Suggested Actions:

1. Engage PWD's when developing tools and products through the entire process. This will add a new perspective and view, provide input towards greater usability and accessibility which will reduce rework and remediation.
2. Increase and better promote built-in/ready to use accessibility features already available. Many authoring tools now offer some level of integrated checklist and accessibility validators. Regretfully they are not well published or promoted and often even stripped from "locked" configurations or setups. In addition, in most cases, validation is conducted by adding extra steps which elongate the process and consume resources.
3. Develop additional training and easy access to these integrated functions and tools is required to create accessible content by all authors regardless of their level of expertise. The notion of activating an accessibility checker similarly to that of the automated spell check would go a long way.
4. Develop better accessibility measurements. There is a need to develop well-defined and acceptable measures and criteria to measure accessibility and ensure individuals have achieved some level of completion. There is a need to specifically state what makes content accessible and, what constitutes a pass or a fail. While the AODA in Ontario, Canada regulates the need for accessible services including content, there are no measurements in place to report on. This approach is not unique to Ontario, many ministries, states and countries have adopted standards and guidelines but have failed to provide structured measurement methodologies.
5. Explore opportunities for the harmonization of regulations and standards, thus much is left to interpretation. Explore the opportunity to use the AODA case to expand and develop good practices.

6 Acting with Levers—Multi-stakeholders' perspectives

Delegates worked in groups to discuss levers for inclusion. Groups were asked to consider multi-stakeholders' perspectives and to think beyond current efforts and approaches as well as to step back and introduce new perspectives outside the realm of accessibility, rethink and reframe the problem. Each group was asked to generate:

- 3 Current assumptions or conventions that block progress toward greater inclusion in the domain:
- 2 to 3 disruptive trends that have or may destabilize conditions that maintain these barriers.

- 2 to 3 side benefits of accessibility and inclusion in the domain, and potential allies that might value these benefits (list names of groups and influential individuals if possible).
- 3 ways to leverage disruptive trends in the domain and steps that should be taken to take advantage of these trends.

6.1 Technology Levers

New publishing standards supporting digital readers bring the structure required to make documents accessible to individuals with print impairments, cloud services offer a way to pool resources, digital curriculum makes it easier to share alternative formats, and online networks enable crowdsourcing for things like captions and descriptions.

6.1.1 Considerations/Observations

1. There is a lack of understanding and awareness around the benefits of accessibility as it relates to opportunities to increase service, return on investment and cost. How and what it means to achieve accessibility is not well understood and therefore not viewed as a priority and dealt with in a reactionary mode rather than proactive and progressive enhancement. A shift in mind set /approach is required so that accessibility is viewed as designing for environmental barriers and designing for aging and linguistic diversity not special needs.
2. Education and training is lacking whether it is in understanding how to better create accessible solutions and tools that are accessible from the get go or whether to raise awareness of what has been already available or built in. This could have a direct impact on shifting the perception around the cost of supporting individuals using assistive features and tools.
3. There is a need for better harmonization for standards and legislation to ensure sustainability and drive accessibility forward and increase world-wide adoption.
4. Recognition of Consumers as producers, identification of allies such as the youth population, can significantly improve user experience and promote innovation when in the development of products and services

6.1.2 Suggested Actions

1. Include accessibility education in the curriculum early on. This will help raise awareness, understanding and demystify myths around accessibility. This will also foster inclusion and will develop a community of innovators and creators for better products and services. Much has been done to promote inclusion from a diversity lens; the same can be done for accessibility education around the use of good practices, language and use of tools.
2. Engage PWD's and all stakeholders in inclusive development and usability testing to increase research and outreach. Better document and publicize/communicate personal experiences and delights to help inspire others.
3. Increase lobbying for harmonization of standards and legislation through partnerships to increase collaboration amongst developers and service providers to achieve a common goal. This can help leverage technology practices and inter-operability between mainstream and

assistive technology developers and manufacturers by reducing the time required for assistive technology to catch up with mainstream devices.

6.2 Economic Levers, Demographics and Market Forces

Demographics and Market Forces,—the aging of the Western world—produces a large market of demanding consumers who experience disabilities. Meanwhile, the nature of our changing economy requires a diversity of labour skills, perspectives and greater collaboration. Tools that support a distributed work force have the potential to make tasks and workflow accessible to workers with disabilities. How can we better leverage to enable greater inclusion?

6.2.1 Considerations/Observations

1. Accomplishments/innovations and benefits of inclusive design are not well-publicized in the media and through advertisement. They are often downplayed or associated with the notion of addressing special needs and as such there is an underestimation as to how broad the outreach is when services and products are accessible or not. Accessibility should be viewed as inclusion, not a response to special needs.
2. There is evidence of a significant disconnect when understanding how accessibility translates to business return on investment, values and opportunities. The benefits of better customer service, better usability and or reduced support or customization costs, are not well known or documented and most importantly difficult to track and report. Many studies will present a macro view and cost avoidance scenarios, but very few studies illustrate how inclusion and accessibility relates to the generation of profit and returns. There is a need for data, evidence & stories to be shared to promote benefits of inclusive design and values.

6.2.2 Suggested Actions

1. Promote the benefits of inclusion and accessibility in mainstream advertisement, media and publicity. This can be done by ensuring that media includes PWD's and all diversities in the advertisement of products and services.
2. Develop more accessibility campaigns and align the benefits of accessibility similar to the approach used to promote other campaigns such as corporate responsibility and green economy.

6.3 CRPD and Policy Levers

The broad support of the Convention on the Rights of Persons with Disabilities (CRPD) shows a growing global commitment to equal access for persons with disabilities. The negative impact of inequality on a society has become an unarguable and daily-emphasized fact. Leveraging Information and Communication technologies is necessary, so that international cooperation can help foster standards, global economies of scale and resource sharing. There is great focus here on globally harmonized policies and standards to help set the bar on how accessibility practices can be adopted reported and measured. The discussants offered the following considerations:

6.3.1 Considerations/Observations:

1. There is no common understanding of the convention leaving each country to interpret and implement accessibility differently. While the convention uses consistent language it does not go far enough to provide countries and states the necessary clarity to implement uniform guidelines or direction on how to implement solutions.
2. Funding for programs, tools, infrastructure should be more readily available.
3. Education plays a big role in promoting the convention. Dispelling myths around cost, training of technologists and recognizing the benefits of universal design through the adoption of standards can increase market share.
4. Consideration to reward organizations through incentives could improve perception and promote positive action. While penalties for non-conformance may exist in some countries through litigation, often these approaches will result in negative responses, and reactionary measures rather than promoting integration and innovation.

6.3.2 Suggested Actions:

1. Provide a network of experts that can provide high level overview on guidance on key instruments that can be used and implemented by every country or state.
2. Develop harmonized standards for communication devices that include better integration for personalization and customization options to meet individual's preferences. Leverage this technology to its full potential to improve accessibility to resources such as training, education and accessible services and products.
3. Develop partnerships amongst communication manufacturers to adopt standards that are inter-operational, user friendly and are shared to minimize re-learning and re-adaptation each time a new device is used.
4. Develop the dialogue around accessibility and universal design to align to the eco system. This will promote a proactive approach rather than reactive. Explore areas where other initiatives such as protection of privacy, the green movement, have seen success and identify ways to leverage some of those policies and practices to promote accessibility and universal design.

6.4 Education and Training on Accessibility Self-Learning

When knowledge about accessible design and development is fully integrated into education and training, especially in fields relevant to ICT design, development, business processes and practices; products and services will begin to be designed accessibly by default, and inclusive design becomes a conventional and habitual process. Personalized learning systems support inclusive education and support students in learning to learn: a much needed skill in a knowledge economy.

Education is under great pressure and scrutiny to evolve and become more inclusive and engaging. While we have seen significant growth in distance learning and education and more access to open learning, we continue to face accessibility challenges and barriers to better include students with disabilities in main-stream education. The rigidity and antiquated practices around evaluations, markings and lack of adoption in standards continues to further marginalize and segregate students with

disabilities. Financial and time constraints also perpetuate the development of good practices and support for cultural, individualized and personalized education which meet the individual's needs. Students lack the control to make decisions surrounding their education; they are not empowered, not encouraged to be innovative and do not have access to assistive tools and devices as they see fit. Much of the curriculum, methods and approaches are prescribed resulting in a failed attempt to fit in the one solution, fits all model.

6.4.1 Considerations/observations:

1. Teachers and educational assistants lack support and have enormous time and funding constraints to prepare and learn the use of assistive technologies and the adoption of standards that can create a more universal yet flexible approach. This creates a weak responsiveness approach rather than a planned, managed and proactive measure of integration.
2. There is a need for education to incorporate accessibility in their curriculum so that student can learn what accessibility is, how it can benefit all and how it can be used early on. Educational institutes must also demonstrate their commitment to accessibility and inclusion by better adopting standards in their own environments, websites and materials. This could significantly reduce the need for some accommodations and ensure that students could access material in the manner that suits them best.
3. Leveraging technology and social networking to promote education, foster innovation, collaboration and inclusion: review and expand policies for students to better leverage the use of mainstream devices and networks to share, learn and participate in education.

6.4.2 Suggested Actions:

1. Promote the adoption of standards in the creation of material, resources and services in collaboration with school boards and educational workers.
 - a. Through the identification of champions, peer to peer support, personal experiences and networks, augment capacity, share good practices and lessons learned and encourage early adoption of accessible standards (such as WCAG) and principles in schools.
 - b. Engage students and faculty in active participation through forums, feedback and evaluations. While revised policies could further and formalize the adoption of inclusion, influence and active collaboration may produce faster results as it creates a voice for all.
2. Conduct a review of current education delivery mechanisms/channels to identify roadblocks and barriers that hinder education and learning. Recognize that students learn differently and at different paces.
 - a. While there is great work being done in the delivery of alternate learning such as E-learning, distant education and self-learning, there is no common understanding or acceptance of what defines or what constitutes learning in an informal or less rigid structure as it pertains to today's world.

- b. Several projects in universities have been undertaken to evaluate the effect of alternate education, including a pilot at UBC, Canada, where traditional marking and evaluation is being challenged, but very little is done to promote the results, benefits and good practices that have led to any success. Further study of these programs could help change education and marketing approaches
 - c. A collection of global experiences and successes could inspire other entities to leverage programs, resources and delivery channels and could ultimately foster increased participation and innovation.
 3. Develop a preliminary roadmap containing guidelines to provide direction and tools to better integrate accessibility from the development of curriculum, integration and use of mainstream devices and assistive technologies and programs and support for students and educational workers.
 - a. Guidelines must provide direction and support mechanisms to better prepare everyone with the use of technology, understand where gaps and accommodations may still be required and the ability to identify opportunities to leverage resources and tools.
 - b. A learning module for educational workers to support students who require different learning approaches and tools and the use of assistive tools may also be helpful in building confidence, preparedness and promote better integration in a proactive way.
 - c. The roadmap should have defined timelines for adoption and integration and should include measurements criteria for the reporting of progress.
 4. Explore common resource repositories where educational roadmaps and resources could be added and collected.
 - a. Initiatives such as raising the floor, GPII, could be explored as a means of creating a global centre for other educational entities to refer to, adopt standards and practices.
 - b. A collection of successes and experiences could also be added to celebrate and further create opportunities to leverage resources, technologies and global learning.

6.5 Societal Trends

The occupy movement, flourishing youth initiatives for social justice, and global advocacy networks linked by online systems, all indicate a growing appetite for greater equality of opportunity and inclusion. The ability to identify synergies and allies is key to raising awareness and creating an active momentum for increased participation. In order for societal change to occur and be sustainable, several key elements need to be addressed:

1. the need for common language, goals and shared resources
2. The need for strong legislation and regulations and enforcers for compliance
3. The need to elevate the need for accessibility to a cultural change for inclusion.
4. The need to use humour and visible public performances to demonstrate real and added value

5. There is a need for a joint plan to make real impact in appropriate ways. Whether it is in joining forces, collecting resources or using social media to promote accessibility and inclusion, it must be done in a positive light, with impactful examples that are relevant to society. Recognition of how simple changes such as curb cuts or ramps have benefited all whether you are an athlete, a person with a wheelchair, or a mom pushing a stroller, can be used to raise the awareness on universal design and win-win solutions.

6.5.1 Considerations/Observations

1. Build on successes. Many movements such as Pride, MIUSA, Black Sash, and others have had significant impact in creating a momentum for change through positive action. There may be opportunities to partner and ally the accessibility movement to other movements to demonstrate that accessibility affects us all, regardless of gender, ethnicity, culture, and financial condition.
2. Be proud. For many years and through many cultures, disability has had a negative connotation: it has been viewed as a burden, a curse, an act of God to punish, or closely tied to the medical model which often translates in costly and demanding resources to support. PWD's must raise and better project self-confidence and celebrate their successes, leaving negative energies behind.
3. Encourage joint ownership of work, like the participation in open source programs and development
4. Showcase success stories and examples, role models and champions
5. Locative Gaming/competition games to make visible where the gaps in provision are
6. All people are our allies

6.5.2 Suggested Actions:

1. Develop a repository for the collection of activities related to movements that have had social impact/change. A repository containing events, guidelines and network resources could assist others in planning events or aligning themselves with other movements to build on numbers.
2. Develop global guidelines to help policy makers and implementers create inclusive policies through the engagement of all stakeholders including PWD's. Global guidelines could include references to a common use of language, resources and links to a common repository, tools and templates and measurement criteria. Ensuring that stakeholders are engaged may also promote stronger commitment and adoption of standards and commonly used resources.
3. Explore opportunities to create funding resources and mechanisms to reward adherence and address needs for compliance. Initiatives like the USBLN certification should be expanded and leveraged globally to recognize and reward organizations that are responding to accessibility needs and inclusion.
4. Build partnerships with media and publicity delivery channels to increase visibility of PWD's and the value of accessibility. Use arts, humour, champions and multiple delivery mediums to encourage innovation and creativity and to deliver positive messages that translate into

benefits, market share and a reflection of true diversity in our society. Celebrate the little wins. While specialty magazines or websites provide a place of reference for all, consideration to include publicity for the promotion of inclusion and accessibility should be baked into main-stream publications as well.

5. Promote and represent accessibility through the eyes of champions and leaders. Similar to actions and activities as those undertaken for women and diversity in leadership and advancement of women. Create a community of mentors, bloggers, broadcasters, leaders and champions and foster relationships to help promote representation and inclusion of PWD's in employment, advertisement, marketing, social communities and networking, etc.

7 Thematic Analysis of the DEEP Break-Out Sessions

As the days progressed and the conversations carried out, as participants, we became aware of the common themes, concerns and overlap within each discussion area. There is a common thread and agreement that we must take a more aggressive and proactive role in order to have effective change. While regulation and legislation plays a huge role in moving towards an inclusive society and there are many debates as to whether it is necessary or it is hindering the progress; there is resounding consensus on the need for better and increased collaboration and partnerships amongst all stakeholders to achieve measurable and tangible results. It is also evident that the dialogue on accessibility and inclusion has progressed significantly and there is great advancement in technology to support better integration; however, the infrastructure, programs and processes that support accessibility have not seen the same amount of progression, adoption or refinement. There is further consensus amongst all that while we must recognize our past experiences and learning, we must focus ahead and not waste time and efforts or re-invent the past.

We undertook a thematic analysis of the content generated in the break-out session to identify and demonstrate the overlapping themes and common trends. The intent of this analysis is also to provide clarity as to how we can prioritize initiatives and focus on specific tasks through action. Eleven themes were defined based on an initial review of the session materials as well as knowledge of the field. Each strategy and recommendation was then scored across one or more thematic categories by the authors. For each of the 79 analysed statements with eleven possible theme scores, the authors agreed in all but ten scores. As a result of this scoring, four key themes emerged as leading practices and strategies: Policies and Standards (39 statements fit this category), Sociocultural Change and inclusion (31 statements), Inter-operability (score of 19), and collaboration (18). Because the number of statements in each session was not even, we also tabulated the number of breakout sessions that referred to one of the themes. We found that the frequency of the themes across the sessions matched the ranking of the top four themes. In the frequency tabulation, however, the theme of Regulation occurred as frequently as Interoperability and Collaboration. Table 1 and Table 2 show all of the themes and their respective scores. Following is a discussion of each of the four priority themes; while this prioritization is useful for our discussion purposes, a risk analysis based on probability that the recommendations could be implemented and of the impact of implementation or failure to implement could further help prioritize initiatives and actions.

Theme	Score
Policies/Standards (Government, NGO, Orgs, Businesses, Schools, etc.)	39
Socio-cultural Change (Mainstreaming/Designing for Inclusion)	31
Inter-operability & Universal Design	20
Collaboration-engaging stakeholders esp. outside of PWD	19
Regulation (enforcement)	16
Communication/Awareness	13
Common repository (best practices, inclusion information, case studies, etc.)	10
Create Evidence/research	10
Training (in using ATs, in interpreting standards, in creating accessible documents)	8
Group Advocacy	8
Involvement of PWD's	8

Table 1: Score for each theme across all strategies and recommendations generated for each session

	Training	Collaboration	Repository	Policies and Standards	Communication and Awareness	Group Advocacy	Regulation	Involvement of PWDs	Sociocultural Change	Interoperability	Evidence
Technology Lever	0	0	1	1	1	0	0	0	1	0	1
Economic Lever	0	1	0	1	0	0	0	0	1	0	0
CRPD and Policy levers	1	1	0	1	1	0	0	0	1	1	0
Education and training on accessibility self-learning	1	1	0	0	0	1	1	1	0	0	1
Societal Trends	0	0	1	0	0	1	1	0	1	0	0
Accessible education	1	1	0	1	1	1	1	1	1	1	0
Workplace accommodation	1	1	1	1	0	1	0	0	1	1	0
Broadcasting and Media	0	0	0	1	0	0	1	0	1	1	1
Telecommunications	1	1	0	1	0	0	1	1	0	1	0
Contents and Services	0	0	0	1	1	0	1	0	1	1	0
Total	5	6	3	8	4	4	6	3	8	6	3

Table 2: Frequency of each theme across sessions.

7.1 Policies and Standards to Promote Global Strategic and Systemic Change

When reviewing comments around governance, standards, NGO's, schools, businesses, and regulations, it is easy to see how the role of policies can affect or hinder systemic, measurable and/or sustainable

global change. Through the CRPD, numerous Human Rights regulations and legislations have been implemented and many countries have seen an emergence and increased awareness around the topic of accessibility and inclusion. However, efforts are often constrained or restricted by lack of priority, political stands, jurisdiction, financial constraints and/or lack of direction. These constraints often result in mixed messages, interpretation, inconsistent application or adherence, fragmentation and unsupported resources. Policies, for example, exist on many fronts: federal or national, provincial or state, and organizational but often lack harmonization, and cohesiveness. Also, policies frequently do not provide any guidance for structured implementation or roadmaps for success. The CRPD for example, provides an overarching accessibility statement on the promotion of rights of PWD's. Many countries will have endorsed and some may have gone as far as ratifying the convention; however, there is no defined timeframe for when countries must ratify and implement, nor is there a provision for non-compliance.

Other examples exist in the education and instructional sector where there is a growing dialogue regarding the transformation of education such as in the use of open education resources, the use of E-learning and the use of mainstream technology to respond to alternative learning needs; yet the policies that support or enable such evolution and change or use of these mainstream technologies are either antiquated or non-existent. There is a plurality of technology standards that have emerged over the last decade, yet no strong policies or tools that can help achieve a consistent and common use of applicable standards. Most regulations are based on litigations and lack tools and processes for affirmative and positive adoption and enforcement. While there have been many debates on the benefits or hindrance of penalties for non-conformance, often regulations are lax and are introduced with very little weight or governance. Whether strong penalties is the right direction to go remains a highly debatable and often disputed subject and approach as while it may provide governance, it may also continue to propagate the negative perceptions and dialogue around disability and accessibility.

7.2 Socio-cultural Change through Education, Knowledge and Capacity-building

Socio-cultural change that brings notions of diversity into mainstream thought and expectations occurs through multiple changes throughout a culture and its institutions. If we consolidate comments and references that were captured under the education and training, such as injecting accessibility in curriculum at an early stage, providing instructors with references and resource material, training and educating professionals, awareness of integrated accessibility features, products and services, etc. this could arguably all be viewed as our ability to improve education that would ultimately result in increased awareness, better communication and integration in achieving stronger socio-cultural change.

Accessible education is a critical starting point for socio-cultural change. We know that education is critical for participation in multiple aspects of society and providing an equitable education to all students will help foster inclusion and recognition of the importance of diversity within a culture. Whether it is for a student with disabilities or other types of abilities, an educational instructor, a website or product developer and tester policy maker or enforcer education should always include and adopt accessibility principles, standards and good practices. Education should provide flexibility, opportunities for customization and individualization and should be immersive. At the same time, there is a need to educate the commercial engines of a society to the great economic benefits of inclusion not only in providing a broader consumer base but also in the improved design and greater flexibility of use that comes from designing for diversity.

7.3 Global Information, Communication and Technology

When consolidating comments related to inter-operability, collaboration communication and technology, it became very obvious that there is a lot to do to improve awareness for inclusion and accessibility. While we have seen great progress in mainstream solutions to include accessibility, improve inter-operability and compatibility, often those efforts are not known or effectively communicated or publicized and the use and effectiveness of these accessible solutions is greatly underutilized and often completely lost. For example, how many users use the accessibility features readily available on their desktop operating programs, the built-in accessibility checkers in many authoring tools or the accessibility features and functions available in most mobile devices? Many don't even know they exist and if they do, they are difficult to find. Many consumers take these accessibility features for granted and often don't understand or recognize the importance of using these features to respond to the needs of those who absolutely require them because of accessibility needs. So often while the inter-operability and compatibility is built in, features are often turned off or removed due to security reasons. Manufacturers and consumers are also quite concerned with the rapid technology evolution and their ability to keep up with the pace and cost of doing so.

Increased collaboration with all stakeholders including the inclusion of PWD's in the development of products and services is not only necessary but is essential to ensure that products meet the general needs of the mass population and new barriers are not introduced. By not including all stakeholders, results can be compromised and ineffective and success to achieve tangible and measurable impact will continue to be marginal. Furthermore, the engagement of persons with disabilities in the development of products, best practices and even communication would increase adoption that can improve the quality and usability of new assistive technologies and mainstream products. Stronger collaboration with all stakeholders including assistive technology manufacturers with mainstream product developers could greatly increase affordability, personalization and reduce the need for customized solutions.

While discussing these topics at length, we also recognized that there is a vast amount of data, resources available for people to tap into whether trying to adopt best practices, find more about techniques and training material or simply about raising increased awareness. It is evident that information is readily available and the volume of information is increasing rapidly but resources for information are scattered and unstructured and difficult to interpret or use for the most part. In addition, there is excellent work that is being overlooked and underused that could be better leveraged to promote effective and proven best practices and approaches as it relates to accessibility. A good example of this is the Global Public Inclusive Infrastructure (GPII) which consists of a number of components that work together to form the infrastructure enhancements to make our broadband infrastructure into an inclusive broadband infrastructure. The GPII is focussed on anyone who has difficulty using information and communication technologies as a result of those with limited or no literacy, those with disability or functional limitations, those with limited or no digital literacy and those who are aging and are forced to use technology. The GPII provides information and resources on:

- Aid
 - An on-line aid to help professionals and consumers discover which of all the techniques and features (that can be found in assistive technologies or built into mainstream products) would make ICT easier or possible for them (or their clients) to use.
- Needs, Preference & Permission Storage System

- A way (in the cloud or on a personal device) to securely and privately store information on what works for them, how they need to have things set up, and what they have permission to use (products, services) in a way they can use anywhere, anytime.
- Unified Listing and Marketplace
 - A single up-to-date listing of all the solutions available today internationally - and a marketplace that is safe to try them out and select them.
- Shopping Aid
 - A tool to use with the Unified Listing and the GPII Marketplace help users (and professionals) find everything (techniques, built-in features, assistive technologies) that is known that could help address a person's needs and preferences

Despite initiatives like the GPII, individuals repeatedly have expressed great difficulty in making sense of the information, apply good practices or even know good information from bad. At the DEEP conference many participants suggested that there would be a great advantage in having a global repository of accessibility information which could include a multitude of relevant resources, toolkits to better promote adoption and promote accessibility, best practices and training, evidence-based references and research, and information on inter-operability. A global ICT repository would provide a central area for all information to be captured and referenced to, foster collaboration and promote common language and use as it relates to accessibility, best practices and techniques.

The global repository which could simply be an opportunity to further expand the GPII initiative could be viewed as a mechanism or a central point of reference for everything accessibility:

- Whether it is in the need to access good practices as they related to IT, testing, product or service development, resources for accessible tools, methods and lessons learned; many have expressed the need for information to be synchronized, centralized, better captured, stored and searchable from a global repository.
- A repository could contain a comprehensive database(s), that is easy to search, use and diverse to meet the accessibility population including those who manufacture, support products and services accessibility and those who use accessibility services and products. It must have the appropriate degree of detail, granularity, customization and personalization so that users can access information in the manner that meets their needs best.
- The consideration to use cloud to access the global repository needs to be further explored to ensure users are not facing additional barriers related to security or bandwidth restrictions and privacy issues.
- While a global repository of information and resources provides a platform for all, it may be owned and/or managed by one or a collaboration of users, each owning up to certain pieces/sections. The availability and use of the global repository must promote open source, collaboration and partnerships to push the dialogue and adoption of standards and good practices while providing governance and maintaining some control and integrity.

7.4 Accessibility through Education, knowledge and capacity building

Let's take a look at the thematic analysis through the education lenses. If we consolidate comments and references that were captured under the education and training, such as injecting accessibility in curriculums at an early stage, providing instructors with references and resource material, training and educating professionals, awareness of integrated accessibility features, products and services, etc. this could arguably all be viewed as our ability to improve education that would ultimately result in increased awareness, better communication and integration in achieving stronger socio-cultural change.

Education around accessibility must respond to many needs and stakeholders. Whether it is for a student with disabilities or other types of abilities, an educational instructor, a website or product developer and tester policy maker or enforcer education should always include and adopt accessibility principles, standards and good practices. Education should provide flexibility, opportunities for customization and individualization and should be immersive. The following highlight the importance of education in achieving inclusion as well as key aspects of using education:

- Accessibility education is a cross-disciplinary need and requirement and affects multiple levers such as technology, employment, societal change, communication and others and should be recognized as a foundation for all learning.
- A repository for assistive tools, resources and references should be available for educators, students and other stakeholders and should provide easy to access information as it is relevant to the requestor. The repository should not simply be a dump of a plurality of documents, but a structured resource for individuals to navigate and obtain meaningful and useful information and tools and a communication channel for any accessibility findings.
- Accessibility, inclusion and universal design should be included early in all curriculums to promote integration and seamless adoption of standards and good practices. This can result in building a pipeline that increases capacity, better integration and inspiration and motivation for innovation and creativity.
- Education must catch up with times. Policies must be reviewed and expanded to include better use of assistive devices and mainstream devices as tools to improve learning.
- Traditional boundaries for measuring and evaluating students must be broadened or modified to recognize those who learn in informal settings.
- Educational instructors must be better prepared and equipped to support students who have a variety of abilities and must embrace a culture of inclusion rather than “specialized or accommodation” needs.

When it comes to education, accessibility and inclusion is a journey which begins at the very beginning of an individual’s life cycle and must extend to all stakeholders throughout it. Better education on what is meant by accessibility, how it is achieved through standards, tools and good practices, what are the values and benefits of accessibility and understanding how technology plays a role in early adoption are all key factors to successful integration of accessibility with learning.

7.5 Building Inclusion through better social engagement and collaboration

In the analysis, if we consolidate references and comments under the need for social-cultural change through inclusion, better and stronger collaboration, need for engagement of PWD’s and need for group advocacy all will translate to a resounding message that through effective collaboration and partnership we can achieve the highest degree of acceptance, inclusion and integration. Participants expressed that success can better be achieved through joint collaboration and active engagement by all.

In addition:

- A) There is a strong desire to shift the dialogue around disability and accessibility to a more inclusive and diverse abilities spectrum.
- B) Untapped opportunities to further promote inclusion include the need to significantly increase the Representation and promotion of inclusion practices and design in media, entertainment and marketing messaging.

- C) Solidarity amongst Advocacy groups is required to further strengthen the movement, identify allies and raise the profile
- D) Promotion of the benefits and return on investment of accessible and inclusive design are often under-rated, not well understood and/or communicated. Studies like the one from the Martin Prosperity Institute can help close the gap between the social definition and the business model.
- E) The cost of accommodation is often misunderstood, therefore either inflated or under-estimated which leads to reluctance to hire PWDs in the work environment
- F) Reduce and/or eliminate any opportunity for segregation of PWD's in schools, programs and services.
- G) Leverage universal and inclusive design in mainstream to better promote accessibility.
- H) Recognize opportunities for integration not sought out as an after-thought or something that is simply for a small group of people.
Similar to the notion of design for inclusion, accessibility must be recognized as a benefit for all regardless of genders, demographics, ethnicity and people with different abilities.

8 Implications for policy makers involved in implementing the ICT accessibility agenda of the Convention of Rights for Persons with Disabilities

Participants recognize the purpose and intent of the United Nations CRPD, however many have expressed that the CRPD must take a more active and affirmative role in the design of policies that enable countries and stakeholders to positively affect economic change. Inclusive design, which includes accessibility, must be promoted through an eco-system and framework that starts from the ground up and is implementable and supported top down. Policies must be universal and synchronized and must share a common language. Global infusion is required to better understand progress, barriers and roadblocks that exist. Promotion of cultural integration and diversity will have a direct impact on accessibility.

Who are our stakeholders? While there has been a lot of dialogue on this particular topic, there seems to be an evident gap in our ability to better engage PWD's to help move the agenda forward. So how can we ensure the policies, guidelines and services we produce and deliver meet the needs of that demographic.

Historically, many policies were designed to create awareness and articulate a desired goal, but lacked in actionable or affirmative actions that include timelines, measurements and targets. Resoundingly, participants of the DEEP conference have indicated the need for clear direction and guidelines as to how the convention must be implemented. While a balance between prescriptive and directive must be achieved, the convention could take a much more active role in developing guidelines focused on integration and implementation. When considering ICT for example, there is great need for harmonization of standards and policies. How do we achieve accessibility, what are the tools that can be shared and leveraged globally? How can we further promote open source to share information and good practices collect artifacts and study cases that demonstrate progression.

While developed countries may have more available resources and capacity, often their ability to achieve change is negatively impeded by bureaucracy, complicated policies and procedures that result in significant costs. We must allow ourselves to be inspired and be creative by those who use the services and products. We must allow for better communication amongst similar global and

international agencies and build on collaboration rather than silos. Most importantly we must accept that this is not an easy task and while ideally we all have a desire to fully integrate accessibility and inclusion in all that we do; it has many nuances and degrees. It is affected by culture, infrastructure, politics, regulations, funding models, ICT resources, behaviours, and of course the rapid evolution of technology and social networking. Let's not discount the need for the ability to proactively respond to increased demand as it relates to our aging population, our technology savvy youths and the increased opportunities for joint collaboration and partnerships.

Further consideration must be given to:

- The need to expand the definition of accessibility to better reflect invisible disabilities, removing the negative connotations associated with the medical model.
- Explore the possibility to develop a placeholder for the creation of a global repository that can be shared by all.
- Build a collection of plans and activities underway to move the agenda forward for all to share and encourage participation and collaboration.
- Define clear guidelines including good practices, lessons learned, shared tools and resources.
- Focus on integration and implementation practices, where the opportunities for seamless integration are apparent.
- Develop measurements and success criteria for accessibility.
- Develop adequate and appropriate reporting. Unless there is a need to report and be accountable to achieve a targeted outcome, the passive approach continues to drive this movement and it is difficult to truly manage and measure progress.
- Develop a collection of constructive and positive study cases, promoting progress and positive impact.
- Capture a collection of lessons learned so others can avoid the pitfalls and build knowledge.

9 Conclusion

The 2012 Toronto DEEP conference served to invigorate the participants and fuel their energy to take ownership and recognize that together we can make a difference. The evolution and growing adoption of social networks will continue to play a huge role in changing the landscape for many. The voice of those individuals needing and rely on inclusive and accessible design is much more vocalized and heard. While mainstream products will include more integrated accessibility features there is great dependency/expectation on the impact of personalization to reduce barriers and allow people to access information, services and products in the manner they see fit. There is also great debate on the viability of assistive tools and manufacturers as more mainstream products include integrated accessibility features and personalization in their products. The need to actively include representation of PWD's and all other diversities will better position this next phase and will ensure personalization is inclusive. The need for social cohesiveness and harmonization of standards and regulations at a global level is required in order to bring structure to accessibility requirements and provide direction for better integration, implementation and sustainability.

We must better leverage lessons learned and continue to identify opportunities and synergies to promote and inject accessibility through effective inclusion in all aspects of life whether we are speaking of design, development, testing or deployment and furthermore better promote the value proposition, benefits of achieving the accessibility goal.

Participants of the DEEP conference believe that affecting change can only be achieved through positive, joint and affirmative action which include collaboration and an ability to better promote and encourage innovation and creation. During the DEEP conference in Toronto, several discussions served to validate and support ideas and projects that may have been initially being considered but had not yet gained momentum. Since then, we have seen evidence of growth through initiatives such as:

- 1) The launch of the Global Financial and Banking Services research lead by G3ict, which will partner with banks and financial institutions across the globe to identify what is being done in the realm of accessibility particularly for senior and persons with disabilities,
- 2) The development and launch of an accessibility professional association looking at developing a certification program for accessibility professionals
- 3) The growth of the Masters of Design in Inclusive Design program at OCAD University where many existing notions and beliefs around accessibility and inclusive design have been challenged, scrutinized and further explored. As a result, several new projects addressing organizational, systemic and cultural changes have been presented and are currently under development. Here are a few examples:

Future Friendly Schools

You're invited to help design an exciting new program to drive student engagement: Future Friendly Schools is a network and certification for schools committed to providing inclusive, responsible, and globally-relevant learning experiences. The program will provide certification based on indicators in the areas of Global Citizenship, Student Voice, and Environmental Stewardship - and an open UserVoice process is underway to ensure the indicators reflect diverse input from educators and students globally. Visit the site and share your thoughts at <http://www.futurefriendlyschools.org> - and follow the program for updates on Twitter @BFutureFriendly.

Designing an Accessible Web Technology

Most of the work in web accessibility focuses on bridging the gaps, but the current strategy of adapting web pages to accessible technologies has limitations: it is reactive, it is an extra (and often left out) step in the development process, and the results tend to be a compromise at best. This project explores whether it is possible to design web a technology that is inherently accessible and makes it easier for developers to create complex web pages.

The first part is creating a framework for building web pages that has accessibility at its heart, and building demonstration web pages and applications using the framework. The second part is looking at limitations of current screen readers, and designing a prototype screen reader that demonstrates how assistive technology can benefit from creating web pages using the framework.

Research blog: <http://jacobmouka.com/blog/>

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Discovering How People Actually Feel About Open and Inclusive Ideas, So You Can Work With Them To Improve Education For Everyone

- How do your colleagues and peers, or your students, or your teachers at your own institution feel about Open Access publishing, the practice of making published articles available to everyone, not just those that can afford a subscription to journals?
- How do your students feel about Open CourseWare, the placing of class materials on open web sites like OCW.mit.edu, so everyone, not just those able to take the class, can use and benefit from them?
- How does staff at your school feel about the use of inclusive technologies and practices in creating and delivering their educational materials, so that everyone can access and use them easily?
- What do faculty or students think about MOOCs, the latest rage in open online teaching and learning, where well developed and supported classes from major schools are opened to anyone online to take and benefit from, like those at Coursera.com, or Udacity.com or EdX.org, where tens of thousands of students are the norm for class size?

If you are interested in making education more open, or more inclusive, or both, then it is helpful to have a way to learn how people at your institution, or in your community, really think about these ideas, and what they might be willing to do about them. The Mujo.org project is working to make the tools available to you to do just that, to find out what people think by helping you develop, apply and analyze quick and efficient online surveys on these topics. The project, whose early, alpha site is at Mujo.org, is developing example surveys, tools and step by step procedures that you can take and use at your own institution. What you learn from these surveys can help you identify what people think are the important advantages and disadvantages of current and proposed practices, who already supports these ideas and might be willing to work with you, and how to approach people in your environment about improving open and inclusive practices. And in the process you can help yourself and others by talking about what you've done, or asking questions of experts when you get stuck and sharing the answers.

To find out more go to www.mujo.org.

International Association of Accessibility Professionals (IAAP)

IAAP's mission is to define, promote and improve the accessibility profession globally through networking, education and certification in order to enable the creation of accessible products, content and services.

The IAAP's goal is to recruit a diverse set of founding member companies who are geographically diverse, represent a wide range of industries, and can collectively fund the start-up operations for the new organization. If you are interested in becoming a founding member or wish to contribute content

such as best practices, education material, organizational frameworks/roadmaps as it relates to accessibility, contact IAAP at: info@accessibilityprofessional.org.

In addition and most importantly, global initiatives such as the e-accessibility policy toolkit for persons with disabilities which G3/ICT co-produced with the ITU and focusses more specifically on the CRPD provisions regarding accessibility on information and communication technologies (ICT) which demonstrates how through strong global collaboration and partnerships, accessibility can be better achieved and sustained. The ITU site logs around 1,500 visitors per month on average from around the world at www.e-accessibilitytoolkit.org and contains a plurality of resources that touch on ICT accessibility. ICT accessibility is a cross-cutting issue that concerns a broad range of government agencies and ministries, including those for broadcasting, communication, education, employment and human rights. The Toolkit was designed to address policy makers and regulators in all of these areas.

The objective of creating the DEEP community is to keep people engaged and provide participants a forum to network and communicate freely and openly about actions that can and that are taken to further remove barriers in our society. We invite you to join the conversation, add to the list of initiatives that have been started, those that have seen new light and those that are still being talked about or considered.

9.1 Next Steps

The DEEP journey began on May 23, 2012 but now continues in full force. In this DEEP white paper and through the second DEEP meeting in July 2013, we have amalgamated, synthesized and attempted to capture the salient points that have been shared by all throughout the entire conference. A number of suggested strategies and recommendations have been included based on all participant feedback and contribution as well as those developed by the author of this paper. The objective of the DEEP white paper is to promote joint and affirmative action. The website is now available, at <http://deep.idrc.ocadu.ca> for moderators, facilitators and participants of the DEEP community to move the dialogue forward, to develop the necessary partnerships and build collaboration amongst stakeholders and present evidence of progression at the next DEEP Heartbeat conference which will take place in Toronto in 2013. As advocates and champions in the accessibility field, we seek your active leadership and expertise to further promote and encourage innovation and raise the bar on inclusive design and accessibility which will continue to positively affect change.

We invite those of you who have lead a brainstorming session during the 2012 DEEP conference or anyone wanting to lead the conversation on a particular topic to take action. We ask for your leadership to develop the dialogue further by voicing your thoughts, share your projects and initiatives and tell us how we can better work together. No idea, initiative or project is too little or too big. We need your input on how to build better global collaborations and stronger partnerships across multiple disciplines, cross-industry and multiple platforms. We invite you to voice your opinion. Do you agree with the suggested actions or recommendations? Tell us whether there are other levers that we should be looking at. Using the internet and social media, we invite you to create blogs, forums, and use videos to

identify resources to keep moving forward. Use DEEP 2013 in your title or reference so that we can track engagement.

Help us ensure we are fully inclusive and accessible; we want to further engage others who can help a community of experts in their own rights. We will be trending and collecting all feedback on the outcome and topics from the Toronto Deep conference, amalgamating all input and presenting a preliminary progress report along with the launch of the DEEP web on-line community in July 2013. Help us elevate the benefits of innovation and creativity. Through a one team, one goal approach we can affect cultural change that will further promote the CRPD globally and empower PWD's to reach their full potential and live a full and inclusive life.

10 Appendices

10.1 Post-conference Survey Feedback

An electronic survey was sent to all 103 participants between June 1 and 20th, requesting feedback on their experience at the Toronto DEEP conference. Participants commented on content, relevance, format of the conference, etc. All participants expressed great satisfaction with the format, the duration and timing of the conference. Twenty-seven responded to the survey (a 25% response rate).

Most indicated that they would like the conference to take place –annually and would like to see workgroups or sessions focusing on specific topics or levers evolve following this conference.. Most notably many expressed the desire to continue to take action and report progress at the next conference. It is important to note that while digitalization and the use of social networking is evolving rapidly as a medium or delivery channel for participatory research, results of the survey indicate that there is a preference to active face to face participation rather than through electronic mediums. Once information is collected, there is value to electronically contain and capture all contribution, but most have a preference to face to face conversations and networking opportunities.

10.2 Resources and references

Activism site to mobilize people in support of the democratic party <http://front.moveon.org/>
Alliance for Ontarians Disability Act <http://www.aodaalliance.org/>
AODA
http://www.mcass.gov.on.ca/en/mcass/programs/accessibility/understanding_accessibility/aoda.aspx or
ATIA www.atia.org
Australian Network on Disability www.and.org.au
Black Sash <http://www.blacksash.org.za/index.php/our-legacy/our-history>
Wikinomics--Book by Don Tapscott and Anthony D. Williams <http://www.wikinomics.com/book/>
The Naked Corporation--Book by Don Tapscott and David Ticoll <http://www.nakedcorporation.com/>
Growing up Digital--Book by Don Tapscott <http://www.growingupdigital.com/>
Canadian National Institute for the Blind www.cnib.ca
Digital roadmap for inclusion in Ireland <http://www.ria.ie/about/our-work/committees/committees-for-the-humanities-and-social-sciences/social-sciences-committee/news.aspx>
G3/ICT <http://g3ict.com/>
Google – Mozilla www.mozilla.org
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_05a11_e.htm
Human rights watch <http://www.hrw.org/>
IBM www.ibm.com/able
Independence through Art Project: Tardis <http://www.thecamdensociety.co.uk/october-gallery>
JOIN joininfo.ca
Kiva One Acre Fund – funding to help farmers <http://www.kiva.org/partners/202>

Linked In – accessibility forums www.linkedin.com
March of dimes.org www.marchofdimes.ca
Microsoft www.microsoft.com/enable
My Voice Inc <http://myvoiceaac.com/>
NFB.org www.nfb.org
OCADU www.ocadu.ca

Paciello Group <http://paciellogroup.com/>

RIM www.rim.com

Section 508 www.section508.gov

SSB Bart www.ssbartgroup.com

United Nations Convention on the Rights of Persons with Disabilities

<http://www.un.org/disabilities/convention/conventionfull.shtml> or

www.ccdonline.ca/en/international/un

USBLN www.usbln.org

W3C www.w3.org

World Health Organization <http://www.who.int/features/qa/50/en/index.html> and

<http://www.who.int/disabilities/en/index.html>