AODA Transportation Standards Resource Page

Content from August 18 presentation by Jutta Treviranus to the AODA Transportation Review Committee:

Inclusive Design Research Centre

- Established in 1993
- inclusive design of emerging technologies
- all things open source, open access, open standards, open data

3 dimensions of Inclusive Design

1. recognize that we are all unique, enable people to understand their uniqueness, design for one-size-fits-one in an integrated way
2. accessible design process, co-design with people you design for – consider: who is at the table, where is the table, what are the tools?
3. consider the context and the system – impact of design decisions – ever more entangled world – encourage virtuous cycles

Experience and insights:

Amazon – people and goods – drone delivery systems

Google – wayfinding, maps and autonomous vehicle interfaces

UBER and City of Toronto – engaged community in developing UBERAssist, UBERWav and driver training in accessibility, also consider employment of people with disabilities in transportation industry – drivers not just riders – Beethoven for drivers who are deaf

Metrolinx – Presto roll out and kiosks

Tata consulting – affordable accessible cars

Ministry of Transportation -- 100 years and inclusive culture – Happy anniversary! – very siloed by function and region – promoting "ISH" – integrated, strategic and horizontal – transformation is also supportive of inclusive design

Accessible Transportation Technologies Research Initiative

8 research topics:

1. Smart wayfinding and navigation systems
2. Pre-trip Concierge and Virtualization
3. Shared-Use, Automation and Robotics
4. Safe Intersection Crossing
5. Standard Accessible Data Platform
6. Universal/Inclusive Design Standards and ICT
7. Integrated Payment Systems
8. Leverage Existing Technologies and Ongoing Research

Coleman Institute –Cognitive Access

- Mobility-For-All Community Access through Intelligent Mass Transportation Systems – Jim Sullivan

Qualifications

My most relevant qualification is that I have an appreciation for what I don’t know and can’t predict.

Especially in times of change your greatest risk is hubris. You want to be very wary of anyone that claims they have the answer or a fool-proof plan – at best their focus is far too narrow.

Risk Aversion in Times of Change
In times of change – People with disabilities are your most valuable intelligence – they are the canaries in the coalmine -- the first but definitely not the last to feel an area of risk and design fail. People with disabilities can act as your early warning signal.

Complex Adaptive Systems

- Highly relevant to designing policy.
- The transportation system is a system under stress that is about to be impacted by some very disruptive technologies and practices.
- It is a system that is frayed at the edges and beyond capacity.
- People with disabilities the first to feel a design mismatch.

One important message is: avoid Cobra Effects

The unintended consequences of over-simplistic approaches to complex problems.

I played two roles in a very costly Cobra effect in the development of regulations– because the Web Content guidelines referenced by Canadian federal legislation for government websites were not updated, the Common Look and Feel accessibility regulations required that Web sites not depend on scripts at a time when the government mandated that services be moved online, which required the use of scripts – the majority of the discussion of accessibility by federal employees was therefore on how to seek exemptions from accessibility requirements -- federal Web developers were in a double bind: obey (outdated but mandated) accessibility requirements or do your job – this was finally resolved in the federal case of the Common Look and Feel and Donna Jodhan

Big Data and Research

- This committee is venturing into uncharted territory -- which has dangerous blind spots -- our systems of evidence and inquiry are designed to ignore this domain -- research and especially big data is eliminating the noise and outliers -- people with disabilities are the noise in a data set and the outliers -- people with disabilities are not even the weak signals - but the data that has no pattern
- Artificial intelligence, smart systems and intelligent systems are based on data that ignores people with disabilities.
- We need to look at small, thick data, rather than big data, we need to make use of n=me research.

How to successfully intervene in a complex adaptive system?

- Leverage connection and dynamic data
- Work toward the “edge” scenario/case/requirement - the people that can't use, have difficulty using, or hate the current design or product
- Focus on transitions - between systems that view themselves as self contained but should be integrated (one municipal transit system and another, carshare programs and subways, etc.) -- greatest risk factors are at the boundaries (e.g., jurisdictional boundaries)
- Focus on the interaction between dynamic and static parts – things that change and things that are resistant to change (new disruptive technologies and established services)

- Broad Collaboration is Critical

Reach out across jurisdictions and areas of responsibility - do not assume that someone will build the bridges – do not abdicate responsibilities at your boundaries

- Committee task and structure

- Awesome task and responsibility
- Most critical - working together – we are all in this together – whether an obligated organization or a consumer – an adversarial or fragmented stance will botch a design – we need diverse perspectives that are treated with respect and open consideration
- Want to achieve balance and what is called “dynamic equilibrium” – not just between consumers and obligated organizations but between all stakeholders
- We are not just dealing with one pivot point, but multiple pivot points – this is a multi-faceted challenge

Need agility, transparency, responsiveness, resourcefulness

- Legislation is anything but agile
- Most challenging task: How do you design regulations that provide testable criteria and clear guidance -- while at the same time, provide support for diversity, responsiveness and agility?
- Regulate process not product
• Remain technology neutral
• Support modularity and interoperability (e.g., enable alternative interfaces to car controls)

Focus on systemic interventions
• research funding and procurement should be conditional on proactive participation of people with disabilities in the research
• integration of inclusive design and accessibility curriculum in training and education

Use emerging technology for compliance monitoring
• Data gathered by services such as UBER, internet of things monitors, and open data can be used to monitor accessibility compliance for continuous improvement

One technology to be aware of:
• Blockchains and vehicle sharing without intermediaries
• What will we regulate?

Gary: “Beam me up Scotty”
• Telepresence and Virtual Reality

One last thought:
Re-think roads, not just vehicles

Links to Microsoft Article on Inclusive Design and Inclusive Design Resources
The links above discuss the transformation of Microsoft in a Fast Company article, as well as a link to the Microsoft Inclusive Design page.

Below are a collection of transportation-related links that show emerging technologies as well as accessibility or inclusive design considerations:

Accessible Transportation Technologies Research Initiative (US)
This is an ongoing research initiative supported by the US government that provides a rich set of continuously updated resources and research reports:
http://www.its.dot.gov/research_archives/attri/attri_progress.htm

Additional links regarding connected vehicle innovations
QNX makes much of the software used in vehicles today (they are located in Ottawa and are owned by Blackberry) http://www.qnx.com/content/qnx/en.html

Taxis

Accessible Kiosks
The following links are of relevance to accessible kiosks. (unfortunately the CSA standards are behind a paywall):

CSA B651-12 - Accessible design for the built environment
http://shop.csa.ca/en/canada/accessibility/b651-12/invt/27021232012
This provides guidance on tactile signage and accessible approach spaces.

Guidelines and Standards for Tactile Graphics, 2010 -
http://www.brailleauthority.org/tg/
Produced by the Braille Authority of North America. Provides information about best practices, current methods, and design principles for the production of readable tactile graphics.

This was in addition to the usual suspects:
Section 508 Standards for Electronic and Information Technology

2010 ADA Standards for Accessible Design

WCAG 2.0
http://www.w3.org/TR/WCAG20/

Guidance on Applying WCAG 2.0 to Non-Web Information and Communications Technologies (WCAG2ICT)
http://www.w3.org/TR/wcag2ict/

http://www.dezeen.com/2014/10/21/daan-roosegaarde-glowing-lines-smart-highway-oss-netherlands/