

IGF 2017 Report

Session Title: WS145 The Internet of Things and accessibility for people with disability

The workshop brought together experts from the private sector, civil society, technical community and international organisations to discuss how policy, standards and innovative design can help to ensure that the Internet of Things is inclusive of many parts of the community.

Date: 19th December 2017

Time: 16.40 – 18.10

Session Organizer: Gunela Astbrink (Women with Disabilities Australia) and Shadi Abou-Zahra (W3C)

Chair/Moderator: Gunela Astbrink

Rapporteur/Notetaker: Gunela Astbrink

List of Speakers and their institutional affiliations:

Vint Cerf, Google

Maarten Botterman, Dynamic Coalition on IoT & ICANN Board member

Paul Timmers, Consultant on digital policy and society & Oxford University

Shadi Abou-Zahra, W3C

Satish Babu, International Centre for Free and Open Source Software (ICFOSS)

Andrea Saks, Dynamic Coalition on Accessibility and Disability & ITU

Gerry Ellis, Feel the Benefit

Key Issues raised (1 sentence per issue):

- Reliability and product safety are important for everyone but vital for people with disability.
- Interoperability is key so that mainstream software operates with various devices and also with a person's assistive technology
- Mainstreaming through universal design means that costs are reduced
- Privacy and ethical issues need to be addressed.

If there were presentations during the session, please provide a 1-paragraph summary for each presentation:

There were no presentations as this was a Birds of a Feather session.

Please describe the Discussions that took place during the workshop session (3 paragraphs):

People with disability can benefit from various applications related to the Internet of Things. Currently, people with disability use ambient assistive technologies that are especially designed to support independent living. This may include control of lighting, doors, heating, entertainment and security systems integrated through accessible interfaces. These assistive technologies have been expensive. The Internet of Things will mean mainstreaming of such systems. However, interoperability with existing systems and accessible user interface design need to be taken into account so new barriers are not created.

Reliability and product safety are important for everyone but vital for people with disability. Vint Cerf of Google stated that designers should not make assumptions about the needs of people with disability as disability covers a very broad spectrum from, for example, hearing loss to total deafness and from vision loss to total blindness. Involvement of people with disability directly with designers at the beginning of the design process may offer not only user friendly and customised products but also extreme user testing. Mainstream software should be interoperable with various devices and also with a person's assistive technology. It is a challenge especially for low-cost devices to operate in tandem. An example is when a home assistant device can turn on or off a TV but is not able to turn on captions on the TV. There are limitations to how interfaces communicate with each other and this may be due to business decisions to operate in closed or semi-closed environments. A free flow of data is needed. W3C is promoting the Web of Things as the interface to the Internet of Things and that this interoperable platform is where different solutions and systems could thrive as they do on the traditional Internet. Interoperability could be considered a legal issue. In Europe, there is economic legislation relating to the internal market that may include interoperability. Data flow between industries such as health, transport and energy mean that the boundaries of these sectors are blurring. For example, data is used for energy that is applicable in the smart home and thus for independent living. The device is configured through a web page or service (not a human readable page but a series of data flows) associated with the device and this is accessed through a cryptographic key. In this way, there is customisation of the device's controls but with an underlying uniformity. This is like a tool for commonality among a diversity of companies and the devices that they create. An example is Schema.org where there is cooperation across companies to create sets of identifiers associated with functionality.

Generality or universal design is a key concept. Captioning (and real-time text transcription) is an example of an application that went beyond a need for people with hearing loss to being used by people with English as a second language to follow the dialogue. If a specific device can have a mainstream use, this brings costs down and increases the reach of the device. Examples are the scanner (from the Kurzweil reading machine for blind people) and speech recognition (originally for people with limited hand functionality to use a keyboard). Open source software enables customisation at the grassroots level. IoT is applicable to developing countries. For example, the Pakistan

Government's innovation fund awarded first prize to a smart home mobile app for people with disability.

Several panellists emphasised the timeliness of this discussion as accessibility to IoT devices needs to be included in policy and the opportunity to do this is in the coming year. Currently, accessibility is rarely raised at IoT conferences and there is limited push from the disability sector.

Please describe any Participant suggestions regarding the way forward/ potential next steps /key takeaways (3 paragraphs):

Key messages were:

- a clear role for global standards that are harmonised across regions and languages
- privacy and ethics eg. monitoring of aged persons especially those with dementia.
- fairness and bias – prejudices in the physical world should not be perpetuated in the online world
- accessibility research leads to innovative solutions applicable to mainstream devices

It is timely to address accessibility in the policy and technical setting in the coming year. Important ways forward are to embrace collaborative possibilities. This will be through industry and civil society working together in the design of IoT devices and user testing. Another way is to ensure that key discussions for IoT policy development include accessibility. Through the use of case studies, accessibility can be raised at IoT conferences. This will help to build awareness about the importance of including people with disability as a significant user population for IoT. Temporary disability is an avenue to argue that accessibility affects everybody at some stage.

Finally, the challenges of privacy and security cut across accessibility to devices for people with disability and thus the discussions should not be separated. These discussions should continue online in the Dynamic Coalitions on IoT and Accessibility and Disability and through these platforms much more broadly.

Gender Reporting

Estimate the overall number of the participants present at the session: 31

Estimate the overall number of women present at the session: 11

To what extent did the session discuss gender equality and/or women's empowerment?
It was not specifically discussed.

If the session addressed issues related to gender equality and/or women's empowerment, please provide a brief summary of the discussion: N/A