Technology and Disability Policy Highlights 2017 Top 25 Topics

Technology and Disability Policy Highlights (TDPH) editors covered a wide range of disability access issues in 2017. The graphic word cloud depicts the twenty-five most used keywords in 2017. The top five words by frequency in the 2016 and 2017 TDPHs were the same, varying only slightly in incidence and order. The topic that experienced the greatest shift from both years was “community,” shifting from 17th in 2016 to 36th in 2017. Compared to 2016, 2017 content featured more health, assistive technologies/services, American with Disabilities Act (ADA), design, government, and education subject matter.

The top five most cited words for 2017 were: disabilities, wireless, information, technology, and FCC (Federal Communications Commission). Under the “disabilities” keyword, the most covered disability type was vision, followed by deaf, mobility, and cognitive. A sampling of the disability-type-specific coverage included WayBand, a running assistant for users that are blind; smart glasses as an object and print-reading technology for people that are blind; telecommunications relay services; American Sign Language (ASL) interpreted emergency messages; Ava App, that facilitates group discussions for people who are Deaf or hearing impaired; and statistics on smartphone use by adults with physical, sensory and cognitive disabilities.

Improvements in sensor and wearable technology and internet communication this past year are rapidly accelerating the pace of research, development, and deployment. Content covered under the wireless, information, technology, and FCC topics reflect these advancements, covering artificial intelligence (AI), augmented reality (AR), virtual reality (VR), the internet of things (IoT), 3D printing, robotics, wearables, emergency communications access, and autonomous vehicles. In 2017, Nucleus 7, the first cochlear implant, fully with the iPhone, was approved by the U.S. Food and Drug Administration. A Google Glass app was created to work as a communication assistant for children on the autism spectrum. Sign-To-Text, a prototype Smart Sign Glove, is advancing the goal of bridging the communication gap between people who primarily communicate using ASL and people that use spoken languages. Also, 3D printed models were used as educational aids for students with cognitive and vision disabilities.

Augmented reality and virtual reality technology continue to advance at a prodigious rate, with new technologies allowing for great increases in resolution, computational power, and portability. Reluvi, launched in 2017, is a Samsung Gear VR app that pairs the headset with the user’s smartphone cameras to make images more accessible through magnification, color contrast adjustment, outlining objects, and screen filtering. Microsoft’s second HoloLens featured a built-in AI co-processor to make mixed-reality smarter. Apple announced its new augmented reality platform, ARKit, a free programming framework that lets developers and consumers create their own augmented reality applications. 2017 also saw virtual reality used in immersive digital therapy to reduce phantom pain in people with spinal cord injuries.

Artificial intelligence boomed last year like few other areas in tech, with big tech companies like Google, Apple, Microsoft, and Facebook having poured tons of money into the Al field. Labs and universities published papers at a higher volume in 2017. Companion robots that science fiction had promised finally hit the U.S. Leading the way was robot assistants, like Mayfield Robotics’ Kuri. Kuri is a companion robot that can offer users a variety of personalized reminders and communication options, such as home security surveillance and a virtual assistant for various tasks through a small, human-centered form factor and interface.

The legislative and regulatory activities were responsive to many of these advances in technology. Throughout 2017, the FCC sought stakeholder input on regulatory, technical, and consumer issues related to the fusion of broadband and health care delivery, access to 9-1-1, enhancing emergency alerts, hearing aid compatibility of wireless devices, and of course, their decision to partially repeal the 2015 Open Internet Order, reclassifying Internet once again as an information service. In the legislative arena, there was movement on autonomous vehicles legislation, and many states and organizations have emphasized the technology’s potential to improve independent transportation access for people with disabilities and older adults.

Federal agencies advanced the modernization of digital policy and infrastructure in 2017, including changes to regulations affecting the delivery and specificity of alerts in crisis situations, and promotion of digital inclusion of minority, rural and disability populations. These included transitions from legacy text telephone communications (TTY) to Real-Time Text (RTT), new guidelines for emergency alert systems, and mobile coverage across rural America. One challenge the FCC addressed was the granularity at which emergency alerts could be targeted geographically. New regulations focused the precision with which emergency alerts must be transmitted. 2017 also marked the 27th anniversary of the American with Disabilities Act (ADA). The FCC and the Department of Justice (DOJ) released information on how they are guiding policy and enforcing laws to advance a more inclusive society, further outlining agencies’ roles in complying with the ADA and outlining FCC
initiatives that advance information and communications access by people with disabilities. Moreover, at long last the Section 508 Information and Communication Technology (ICT) Standards and Guidelines (ICT-Refresh) were published in the Federal Register, starting the compliance clock for the federal agencies to make their electronic and information technologies and services accessible to people with disabilities.

2017 was a seminal year for accessible technology and policy, with many technologies introduced and refined, in addition to major policy changes that will deeply influence how we communicate and access information digitally moving forward. These technologies will undoubtedly have large effects on the technological landscape of 2018 and onwards. No matter the shifting landscape, the Wireless RERC will continue to analyze and present the policy implications of an increasingly connected world, and describe technologies' effect on our daily lives. Increasingly, smart devices can sense, collect, store, and often act upon, or induce user actions based on data received and displayed, bridging physical and digital environments and allowing for innovative approaches to health promotion, community integration, and independent living. With the massive data exchanged via Internet-connected devices and their rapidly growing popularity, 2018 should continue the trend of national debate of the consideration of the health and social implications of this research. The Wireless RERC will continue our work in examining how people with disabilities, and by extension society, can benefit from technology in 2018 and onwards.

We would like to thank our community of readers from across the U.S. and around the world. The TDPH reaches 882 subscribers directly via email and extends to a much larger audience through social media. We engage over 890 members in our LinkedIn Group (ATPG), 1124 followers on Twitter (@CACPGT_wRERC), and 337 fans on Facebook (WirelessRERC). If you have not already, please join us on social media. None of this would be possible without you, our readers. You may receive this newsletter directly as a monthly digest, or as it happens updates on social media. Either way, we appreciate your being a part of our network. As always, thanks for reading and sharing!

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