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November 2017: Microsoft reveals more Windows 10 accessibility features, mouth controlled virtual reality headset developed, care charity promotes social and digital engagement among disabled and older people.

designability | dispATches
The latest in the world of **Assistive Technology**

Public policy, legislation and campaigns

European Parliament passes the Accessibility Act
The European Accessibility Act was passed by the European Parliament on 14th September. The Act seeks to bolster existing accessibility requirements for products and services sold within the European Union. It must now be approved by the European Council before becoming law.

Government highlights barriers for disabled people in digital services
The government has published a set of profiles highlighting common barriers disabled people encounter when accessing digital services with advice for designers on how they can be overcome. Among the profiles are a partially sighted screenreader user, a user with rheumatoid arthritis, a profoundly deaf person and an older person with multiple conditions.

World Wide Web Consortium consults on AT friendly website guidelines
The World Wide Web Consortium has published new guidelines on Accessible Rich Internet Applications and has invited feedback from other experts before they are fully adopted. The guidelines aim to encourage web developers to make their website compatible with assistive technologies.

Transport for London issues guidance over bus wheelchair spaces
Transport for London has revised its wheelchair accessibility guidance for bus drivers. The guidance introduces new procedures that recommend how drivers should handle passengers who are unreasonably refusing to vacate the wheelchair space when it is needed by a disabled person.

Technological developments and innovations

Microsoft unveils more Windows 10 accessibility features
Further details of the new accessibility features for Windows 10 have been released in Microsoft's Fall Creators update for software developers. In addition to the eyetracking support highlighted in earlier editions of dispATches, Microsoft have produced features for people with reading difficulties, more ways to use speech recognition, inbuilt image detection and audio descriptions and colour filters for people with colour blindness.

Mouth controlled virtual reality headset developed
Researchers at the State University of New York have developed a virtual reality prototype headset that allows users to interact with the virtual world using only mouth gestures. The developers envisage a wide range of applications for the technology, including facilitating healthcare therapies for disabled patients.

Bluetooth mouse directs cursor through head movements
A team of engineers has created a Bluetooth mouse for people who are unable to use their hands. The GlassOuse is worn like a pair of glasses and tracks the user's head movements to move the cursor on the screen. Users make mouse clicks by biting on an extension that

Training & events

Assistive Technology and Learning Through Play

Enabling Play

Palace of Westminster, London

Wednesday 22nd November

The All Party Parliamentary Group hosts a high-profile panel discussion on AT facilitated play

Occupational Therapy Show 2017

FOR REAL HEROES LIKE YOU

Birmingham NEC

Wednesday 22nd – Thursday 23rd November

The UK's largest free occupational therapy event with lectures, hands on workshops and an exhibition of products and

Care charity promotes social and digital engagement among disabled and older people
Community care charity Jewish Care is piloting a new scheme aimed at combating digital exclusion and social isolation among the over 80s and younger people with disabilities by providing them with iPads. Participants will take part in a ten-week iPad course during which they will be encouraged to become actively engaged online.

services

Social Care Tech: Can Innovation save the crisis?

Funding news

Tech for Good 2018 funding programme opens
Comic Relief and the Paul Hammond Foundation have announced details of the Tech for Good 2018 funding programme which encourages the use of software and digital technology to solve social problems.

Tuesday 14th November

Greencoat Place, London

A panel discussion exploring the role social care technology in reducing the pressures on the health and social care sector

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Comment from Clive, author of dispATches

How technology for people with visual and hearing impairments has evolved
Few things define our relationship with the world more than our senses. Visual and hearing impairments are the two of the most common forms of disability. Over 11 million people in the UK are believed to have some form of hearing loss and two million live with a visual impairment. The main problem deafness and impaired hearing causes is a breakdown in communication making it harder to forge relationships with other people. Those with visual impairments are more likely to have a mobility disorder and have an increased risk of accidental injury.
However, technology has evolved to tackle some of the challenges linked to these disabilities, with dramatic results.

From rams' horns to iPhones
Technological solutions to reduced vison and hearing have been around since at least the 13th century when the English Franciscan Friar Roger Bacon prescribed lenses to people with weak eyesight and hollowed out animal horns were used as primitive hearing devices.

The 18th century witnessed the American founding father Benjamin Franklin's invention of the bifocal lens while the 1800s brought the creation of the Braille literary code and Thomas Edison's carbon transmitter for the telephone which amplified the decibel level to help people with hearing loss benefit from modern communication technology. The first white canes signifying blindness to onlookers and vacuum tube hearing aids both emerged in the 1920s and the Perkins Brailler – widely seen as the first mechanical Braille writer – came onto the scene in 1951.
The growth of digital technology from the 1980s onwards has produced an array of new techniques. Restorative devices such as implants and external devices such as hearing aids can restore function. Products such as voice and sound controls and touch based interfaces that offer tactile feedback can help bypass many sensory deficits. Visual and audio information can be enhanced by optimising image resolution and colour and brightness or by manipulating volume and acoustics.
Much of the software and hardware required to create assistive technologies for people with sensory impairments are relatively commonplace, for example, in the settings of video editing applications and the widgets that are built into most smartphones.
The most significant technological development for people with sensory impairments in recent years has been the explosion of mobile computing. The ready availability of pocket-sized devices that can support both speech and text communication and act as one's eyes and ears has been powerful force for independence.
The Apple iPhone was one of the first mobile devices to include a complete suite of features for people with visual impairments such as the Zoom screen magnifier and the VoiceOver screen reader. Smartphone operating systems now incorporate vibration and visual cues that are useful for deaf and hearing-impaired people. Combine these with the versatility of modern smartphones and the army of app developers constantly finding new ways to harness the technology's capabilities and you can begin to imagine the almost endless scope for innovation.
Future prospects
We may be on the verge of another period of significant innovation. Smart canes have recently been designed to upgrade an old idea with GPS and 3D cameras to provide more information to the user on their whereabouts and detect obstacles that might be in their path while built-in robotics lead the way via a motorised tip. Software is making it easier for the deaf and hearing impaired to communicate, for example, by translating sign language into speech, and speech into text.
The growing interest in wearable devices is another technological trend from which people with sensory impairments are well-placed to benefit. Haptic technologies harness the sense of touch to convey messages through tactile signals such as vibration, texture, slip and temperature sensations. Wearable devices with haptic properties are being developed to compensate for the wearer's disability. Haptic belts designed to

detect sounds on the frequency of human speech have been used to provide nonverbal cues to help hearing and visually impaired people during social interactions.

It has not all been plain sailing. Initially, tablets and smartphones' tactilely featureless surfaces presented access challenges to people with visual impairments. The last major innovation in hearing technology was the incorporation of the digital signal processing chip into hearing aids in the mid-1980s. The barriers to adoption and sustained use that affect most assistive technology users have surfaced among people with sensory impairments.

Technology may not be the answer to everything. Guide dogs can often navigate crowds and other complex environments better than a smart device fitted with sensors and a sophisticated algorithm. Some in the deaf community view technology that promises to 'cure' their condition with apprehension, potentially leading to the erosion of a collective identity fostered over generations through a shared experience of isolation from the hearing world and reliance on sign language.

If you have news or information that you would like included in the next issue, or if you have any comments about dispATches, please <u>email Clive</u>**.**

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