assistive tech for people with disabilities

THE STUDENT PERFORMED 2 COURSES OF THE GROUP UP-214R

Abdullayeva Nargiza

- Technology has always lent a helping hand for people with disabilities such as visual impairment, speech impairment, people with motion disabilities or disorders, etc.
- From providing help with reading despite a visual impairment, to keeping the deaf included in a group conversation, to helping patients with shaky hands have a meal independently, here are five assistive technologies that are helping the disabled get assistance when and where they need it.

Dot

- Dot is a wearable that is also the world's first Braille smartwatch. Dot is a practical solution that is more affordable than regular e-Braille devices, which may cost thousands, yet still works well for the blind. Dot helps the blind access messages, tweets, even books anywhere and at any time.
- Technically, this tool functions with six dots on four cells found on the surface of the smartwatch.
- These dots will raise or lower to form 4 letters in Braille at any time. It can connect via Bluetooth to any smartphone, then retrieve and translate the text (from an email or messaging app) into Braille for its owner.

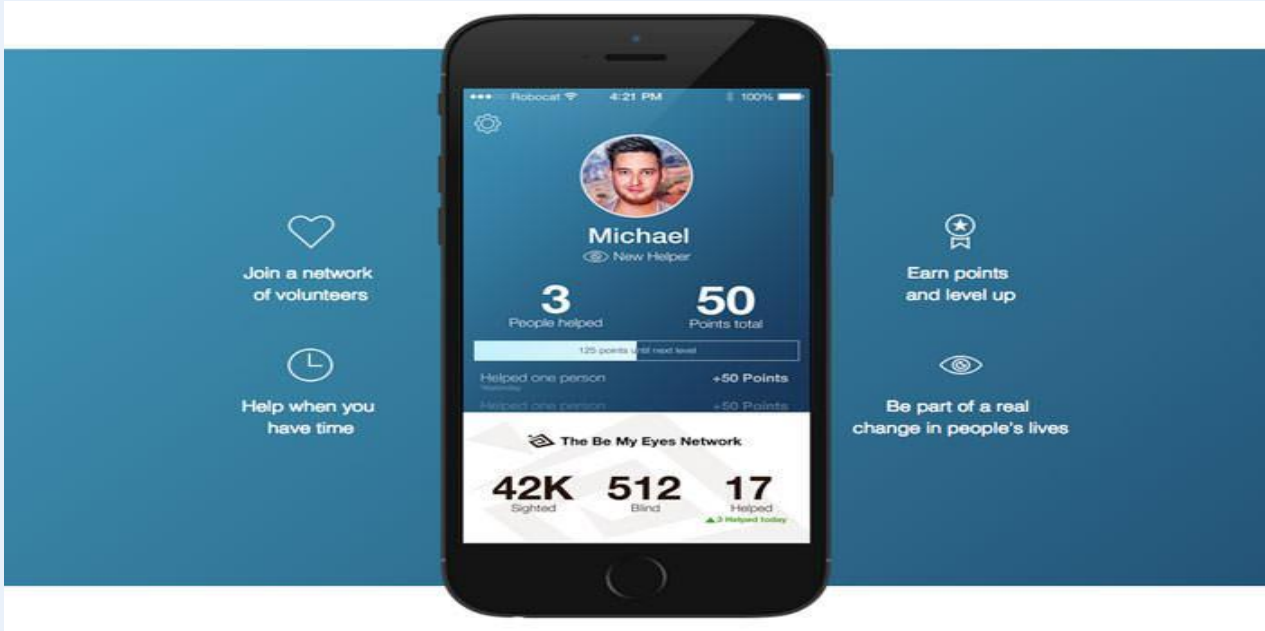
Sesame phone

Mobile phones ADVERTISEMENT
may have become a common need for everyone, including persons with disabilities. But regular phones are not equipped for the needs of people with limited mobility and who find it difficult to operate a regular phone.
Enter Sesame Phone, a touch free smartphone designed for people with disabilities.
This phone is designed to be used with **small head movements**, **tracked by its front-facing camera**. So you can access all the features of a smartphone without even touching this device. Gestures are recognized as if you were using a finger to operate it: swipe, browse, play, and more. Voice control is also added to provide a real hands-free experience on the phones.

Be My Eyes

Be My Eyes

By My Eyes is a super-cool application that helps blind people "see" the world.
It works by making a network that connects the blind with volunteers from around the world.
It is an easy way to ask for help for simple tasks like checking on the expiry date on a milk carton.
Volunteers will receive notifications or requests for help, and if they are too busy, the app can find someone else to step in and help. Each request will trigger a video call to volunteers so they can help the user.



AXS map

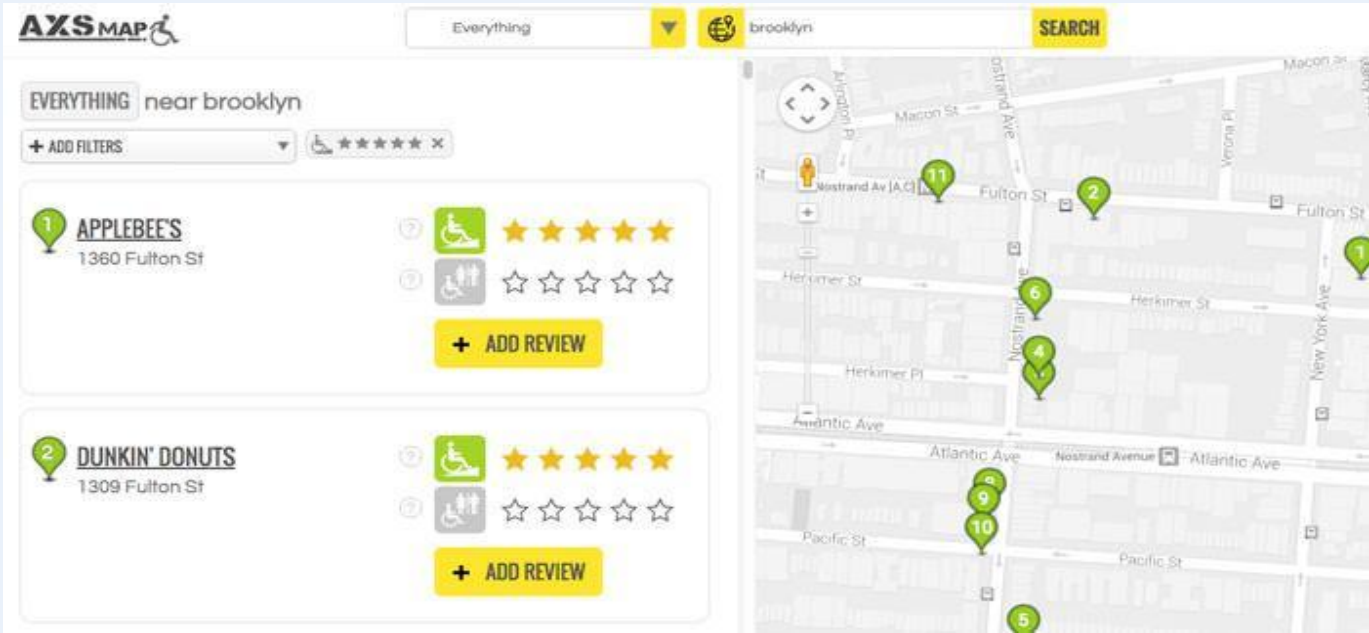
AXS map

For people without disabilities, wheelchair ramps and wheelchair accessible restrooms are not things they notice.

Many public sites are also not equipped with these facilities. This is a source of inconvenience to those who require a wheelchair to move around.

AXS Map is a **crowdsourced map that carries information about wheelchair-accessible ramps and restrooms** in public places such as restaurants, hotels, shopping malls, and more.

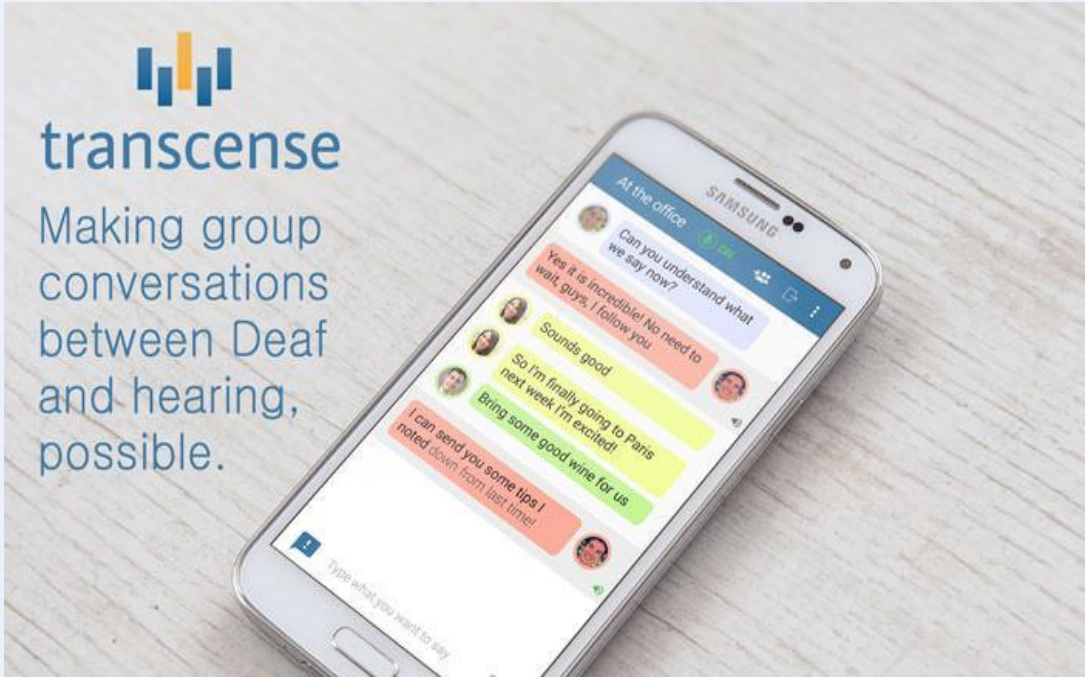
The map also carries information about how well-designed these facilities are with the help of **star ratings**.



Transcence

Transcence

The deaf can communicate via one-on-one conversations using sign language or lip-reading, but about when a group conversation arises? Transcence offers a great solution that can still keep the deaf in group conversations.
In a conversation, with the use of each participant's smartphone's microphone, the app catches what they are saying then converts it into text in real-time.
Each speaker has its corresponding text bubble, differentiated by color, just like what you would find in a regular group messaging chat room



assist-Mi

Bonus: 2 More..

assist-Mi

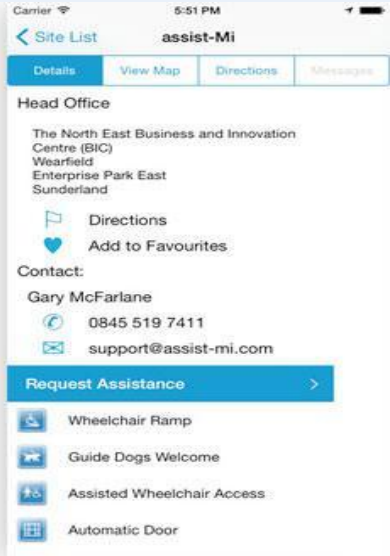
assist-Mi is an assistance application that helps disabled people to get assistance in real-time.

It is an app that connects service providers and caregivers with the disabled who may need their assistance at a moment's notice.

Services include help in getting to work, to go shopping for essentials or travel.

It has a feature called Mi-Profile, which provides a user's needs, so the service provider knows what to do when assistance is requested.

The app also has two-way communication and GPS for better location info



Liftware

Liftware

Liftware is a self-stabilizing handle on which you can attach an eating utensil like a fork or spoon.

It is beneficial for patients who suffer from Parkinson's disease or other forms of motion disorders that cause hand tremors. Liftware stabilizes up to 70% of the disruption and helps reduce the spilling of contents from the utensil before food reaches the patient's mouth.

Each liftware comes with the stabilizing handle, a charger, and three utensils, a spoon, fork and soup spoon.

Each charge can last for several meals, and the handle can be wiped down while the spoons and fork can be washed like a normal utensil.

Assistive Computer Gadgets

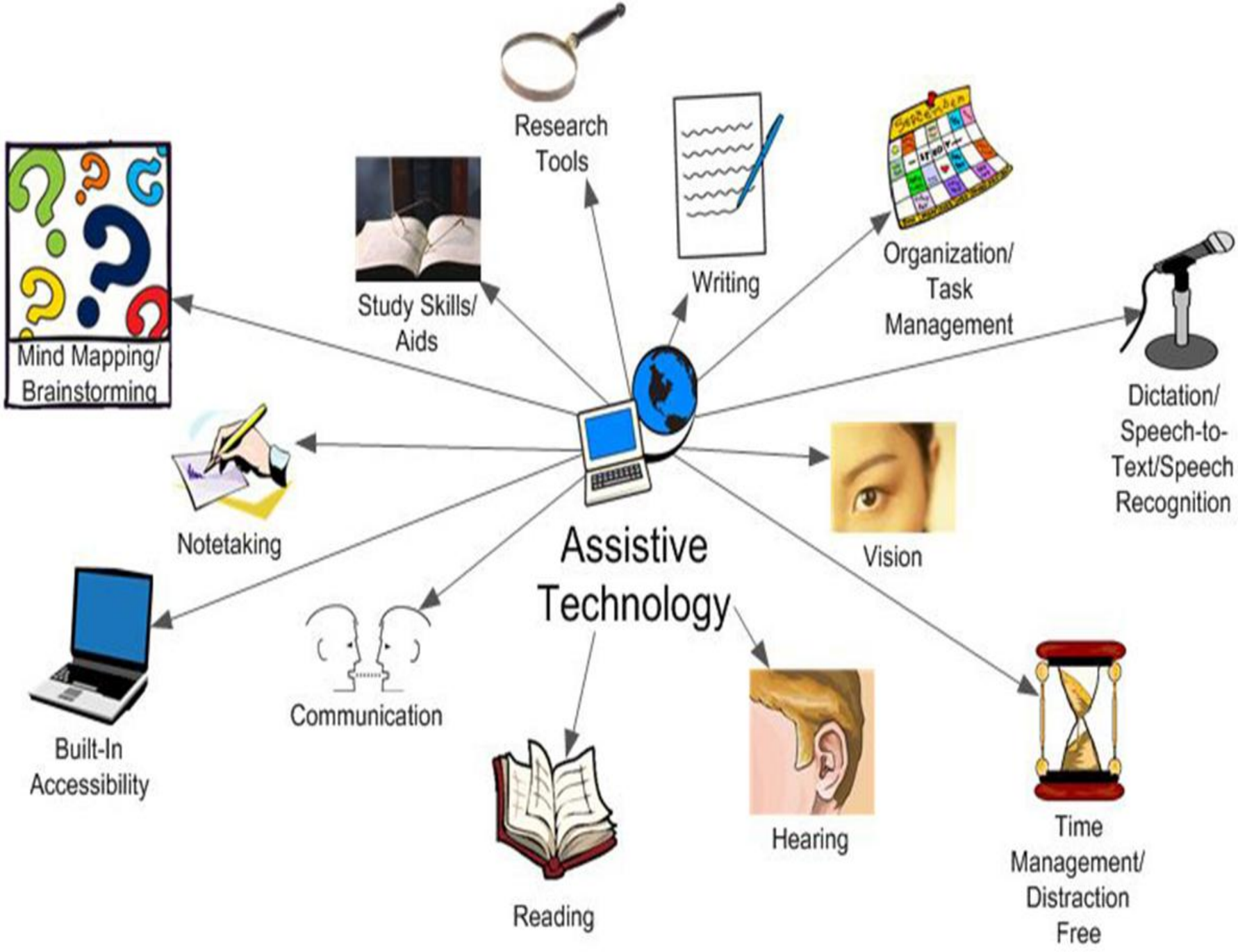
Using a computer may not be easy if you have limited use of your hands or arms, but there are plenty of gadgets and accessibility options that help. If you're using a touch screen computer or tablet, a few different companies make computer mounts that attach to your wheelchair and allow you to handle the device at any height you're comfortable with. Many apps themselves will have accessibility options that refine the user experience specifically for people with disabilities. You also have standard options like voice-to-text typing, digital readers, oversized mice and keyboards, and eye-tracking computer systems that control the computer with your eye movements.

Cleaning Robots

Trying to clean the house when you sit in a wheelchair or have limited mobility is a pain. Using a vacuum efficiently when you're in the chair is difficult, and vacuuming under chairs, beds or couches is nearly impossible without a few fancy attachments. Hiring a cleaning service is always an option—albeit, an expensive one. While there aren't gadgets available to perform every cleaning task, there are a few that can take care of the basic jobs, so you can spend your time doing what you enjoy most. The most popular cleaning technologies include:

Vacuum Robot: This is the classic home-cleaning robot option. Most models work quite well on carpets and swerve their little dirt-munching bodies under every available surface. Newer models from a few brands even have sensors that detect what area of the house the cleaning bot has visited, so it won't get stuck cleaning just one area. Most modern models also let you set a cleaning schedule, and a few fancier options even let you program the robot to return to its dock after cleaning and stay there until its next scheduled session.

Floor Mopping Robot: These ferocious scrubbers are nearly identical in operation to the vacuum robot, but they have a water reservoir to scrub clean your hardwood, linoleum or tile floors.


Research Tools
Writing
Organization/ Task Management
Study Skills/ Aids
Mind Mapping/ Brainstorming
Dictation/ Speech-to-Text/Speech Recognition
Notetaking
Vision
Assistive Technology
Built-In Accessibility
Communication
Hearing
Reading
Time Management/ Distraction Free

Personal Emergency Response System

This assistive technology for people with disabilities is a must-have — no matter what your level of mobility. Whether you live alone or have a caregiver or family member who helps you, this can you're your life in the event of an emergency. These devices often come as a wearable pendant, bracelet or pin that you can clip onto clothes. Pressing a small button can alert the best person if you're seriously injured or have any sort of emergency.

Smart Home Assistants

At-home digital assistants like Google Home and Amazon's Echo can make your significantly more wireless and decrease the amount of time you spend fidgeting with your phone or computer. For people who have limited use of their arms or hands, this technology is surprisingly useful. You can talk with the virtual assistants like a real person and for the most part, they'll respond like a normal person. The assistants can do handle routine tasks like making a calendar appointment and telling you the weather, to more sophisticated tasks like playing a particular song, ordering a product online or making movie recommendations.

Stair Climbing Power Chairs

About half of wheelchair users must use steps to enter or exit their home or work, and roughly the same number of people report struggling to enter or leave the home. Unfortunately, not every property is as handicap accessible as it should be. Wheelchair ramps might not get you where you need to go, or elevators may be out of service. These challenges put wheelchair users at the mercy of their environment and often require help from others.

Technology has changed this significantly.

Several companies and academic organizations have created power chairs that can literally climb stairs. Take this prototype by a group of university students in Zurich, Switzerland, as an example. The designers have developed a chair that uses tank-like treads and a Segway balance system to climb stairs in reverse, all while keeping the wheelchair user level and safe. They estimate the cost will be roughly comparable to a normal power chair, and give users unparalleled mobility.

Assistive Technology can:

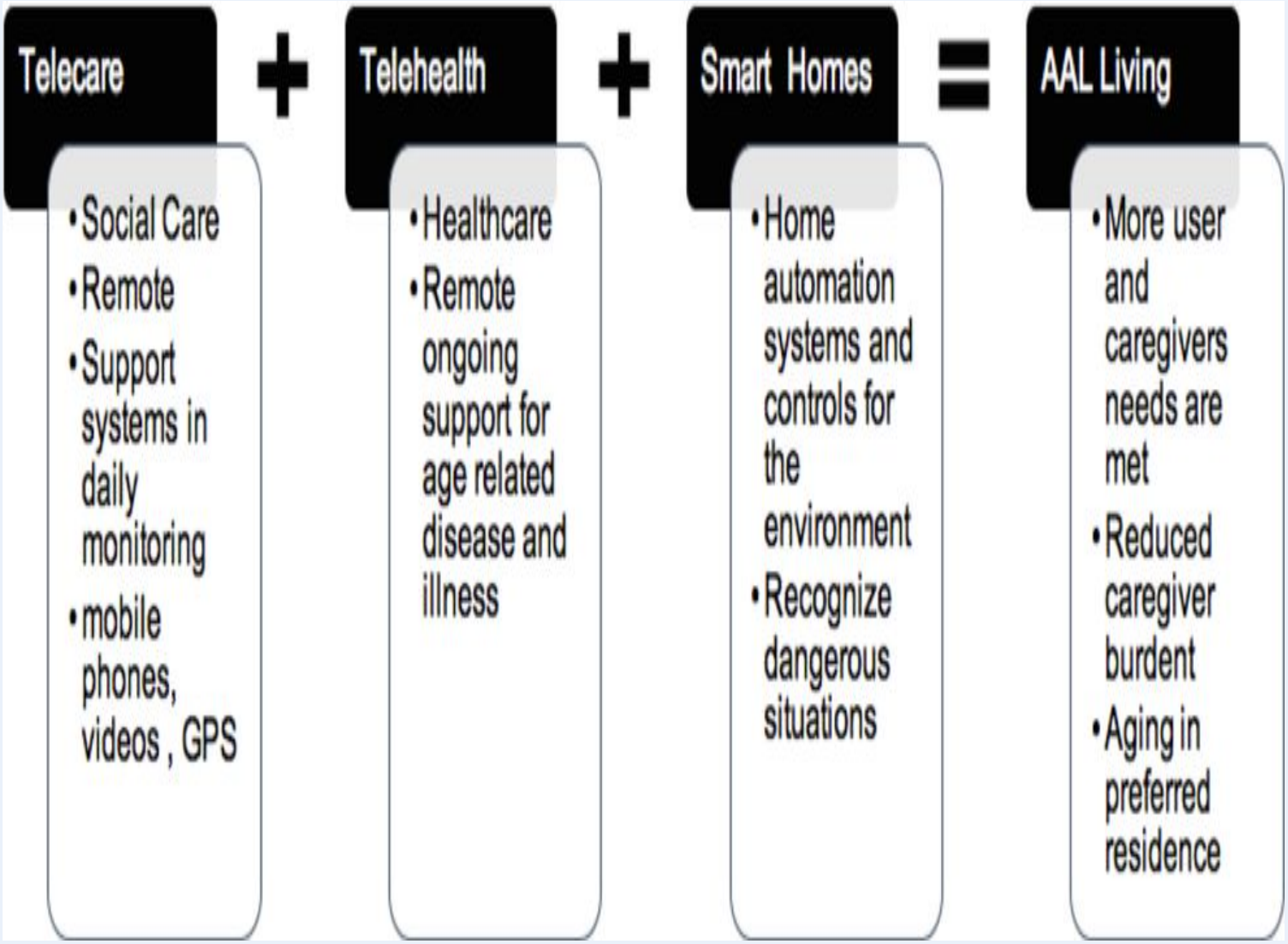
- Support people to access their human rights (United Nations Convention on the Rights of Persons with Disabilities)
- Support the State to deal with resource constraints on services and social welfare spend
- Support the State to respond to population increases amongst people with disabilities and older people
- Offer value for money in terms of user satisfaction and increased quality of life and cost savings
- Support people to complete their education
- Support people to get and retain employment
- Support people to live in their community
- Support people to become digitally literate

Recommendations

We recommend the introduction of an Assistive Technology (AT) Passport as a central connector for a comprehensive ecosystem of supports. It can place people with disabilities and older people at the centre of articulating and driving their Assistive Technology needs. It can act as a record of a person's Assistive Technology usage, training and IT support needs as well as funding history. This requires an infrastructure that complements existing service provision, as well as information provision, training and the promotion of innovation. The recommendations made here are based on desk research, interviews, case studies and discussions with stakeholders and a survey of Assistive Technology users. We have also taken guidance from international best practice (Eastin 2012, NDIA 2015).

1. Issue a cross-Government Policy Statement that supports people's right to access Assistive Technology at any age, where there is an identified need Issue a policy statement to guide the development of a comprehensive ecosystem of supports for Assistive Technology including making provision for an AT Passport. The policy statement can set out principles by which a service can be developed. These include an accessible, consumer-focused and flexible service. The policy statement can prioritise value for money, and central procurement. It can also stipulate that Assistive Technology must improve people's lives and be sustainable. Such a statement requires ministerial support, where it can cross government departments and be stitched into wider systems of service delivery.


Education
Mobility
Employment
Areas in which
AT Can Help Your Child
Socialization
Communication
Leisure &
Recreation


Telecare
• Social Care
• Remote
• Support systems in daily monitoring
• mobile phones, videos , GPS
+
Telehealth
• Healthcare
• Remote ongoing support for age related disease and illness
+
Smart Homes
• Home automation systems and controls for the environment
• Recognize dangerous situations
=
AAL Living
• More user and caregivers needs are met
• Reduced caregiver burdent
• Aging in preferred residence

Develop funding protocols

Eligibility criteria must be established to respond to both the person's financial means and complexity of Assistive Technology solutions. Assistive Technology may be too expensive for the individual to bear, beyond a specified threshold of reasonable cost. Funding must be based on income and need regardless of the purpose for which the technology is used. Many Assistive Technology needs can be met by off-the-shelf items such as handheld devices. Complex needs may include more expensive items such as eye gaze systems or highly individualised custom made solutions. Central procurement can offer the best value for money for commonly used technology. Procurement could be coordinated across government departments by the central coordinating agency.

Develop Service Provision

We require a more comprehensive model for service provision. We considered many international models and experiences in other countries, including the UK, Australia and the US. This model is largely informed by the joint European Assistive Technology Information Network model (EASTIN 2012) and the Association for the Advancement of Assistive Technology in Europe (AAATE) position which sets out seven steps to service delivery. The seven steps are set out in Figure 2 and include referral and establishment of eligibility for funding. The applicant is then assessed and time is taken to select the most appropriate solution, before that solution is chosen, implemented and a process for follow up is put in place