Enhancing Independent Living Through the Internet of Things

What’s available?

**Cameras that can be monitored remotely**
See who is at the front door or elsewhere on your property, even if you have limited mobility or low vision.

**Motion sensors and door/window sensors**
Warns people with limited hearing who may not hear a break-in or someone entering their home.

**Water and gas sensors**
Provide alerts if the water is left running or the stove is left on, which can help people with cognitive disabilities to live independently.

**Connected Thermostat**
Adjusts the temperature in your home from your mobile device, even if you have limited mobility or the thermostat hardware is not accessible.

**Power module and light switches**
Enables people to turn off electronics and lights from their devices, helping people with limited mobility (you can turn off the light in a different room if you forgot).

**Door locks**
Remotely allow people to enter house if necessary and lock/unlock door through accessible interfaces.

**Medical monitoring equipment**
Provide your doctor with regular health updates from the comfort of your own home, both reducing the need to travel to a doctor’s office and reducing the cost of care.

The ability to live independently is something that we in the disability community have fought for, for many years. One of the biggest challenges we have faced in the independent living movement is how best to provide people with the tools they need, particularly when it comes to completing routine tasks, while also respecting their independence. We see the emergence of new connected devices and the “Internet of Things” as a reason for great optimism in our ability to help enable and achieve independence.

As the quality and availability of broadband internet access continues to grow, a new world of devices is being created and connected. The emergence of the internet of things has the potential to greatly improve the lives – and independence - of people with disabilities. Tasks that once required a family member or caregiver to complete, whether because of an inaccessible interface or being positioned in a way that restricted access, can now be managed by your smartphone or computer and from nearly anywhere in the world. Monitoring and communications that previously required specialized technology can increasingly be done with off-the-shelf devices. This means mainstream technologies can now deliver tools for independent living more broadly and at a more affordable rate.

As we think about the benefits of our ever-more connected world these are a few of the ways that the products, devices and technologies that are part of the internet of things can benefit people living independently.

-Kelly Buckland, Executive Director, National Council on Independent Living (NCIL)
Smart appliances
Control appliances from mobile devices, many of which have more accessible interfaces, but smart devices can be programmed to automatically function as we need them to.

Speech recognition and text to speech capabilities
Cloud-based speech engines and the emergence of screen readers on most devices improve the accessibility of devices and appliances, particularly for people who are blind or have low vision.

Receipt of notifications in most accessible formats
Whether it is a text message that someone is at the front door or an audio reminder that the refrigerator door is open, technologies allow us to get information in the most useful format.

Process and Routine Reminders
For people with cognitive disabilities, these tools can help to provide reminders about appointments or daily routines that need to be completed.

Automation
This is the area with the most work to be done, but also the most potential. As data from sensors is combined, processes can be automated, so that getting out of bed automatically turns on the bathroom light or leaving the house turns off the stove and locks the doors.

Personal Emergency Response System
Wearable devices give people new ways to contact family or emergency services both at home and elsewhere whenever needed. Modern solutions include features beyond just voice calls and can now automatically detect falls or enable you to send a text message.

Augmentative Communications
Communications apps that run on mainstream devices have greatly reduced the cost of tools that enable non-verbal, or cognitively delayed persons to communicate.

Near-Ubiquitous Video Communications
Video-calling apps and services on almost all devices with cameras mean that deaf and hard of hearing people can increasingly communicate with sign language from wherever they want.

Made possible with support from AT&T