

Older adults spur aging-in-place technology development

Older adults already are taking advantage of remote monitoring, smartphone apps and ambient computing to help them age in place, and they have the means to motivate technology companies to keep the innovations coming, according to the 2016 publication “Longevity Economy”.

As the 50-plus demographic continues to grow, the market opportunities are too large to ignore, With those in the ‘longevity economy’ wanting to maintain independence, employment and health for as long as possible, opportunities abound for companies to develop products and services to meet the demand.

Highlights:

- The median household wealth among older adults is more than 1,000% greater for those who avoid staying in nursing homes than for those who stay in nursing homes for more than 180 days.
- “Internet of Things” technologies ultimately are expected to bring more than \$300 billion in annual healthcare system savings for chronic illnesses — the majority coming from remote healthcare monitoring that enables healthcare professionals to keep track of older adults at home, whether for chronic illnesses or postsurgery recovery.

Several existing technologies that signal potential for the future:

- **Hexoskin** is a shirt with sensors integrated into the fabric to permit remote biometric monitoring of the heart, breathing, movement and other measures through Bluetooth and a phone app. Information collected from the sensors is uploaded into a system that allows individuals to track physiologic performance, but someday the shirt may facilitate telemedicine in uses ranging from “ambient assisted living” to sleep health. (Ambient assisted living tools are designed to be sensitive and responsive to the presence of people.)
- **Amazon's Echo**, an internet-connected, voice-activated ambient computer, connects home activities and communication with the outside world. Echo enables caregivers to stay connected with those for whom they are caring while also assisting them with activities of daily living (by, for instance, providing medication reminders, compiling shopping lists, compiling cooking instructions and playing audio books). Echo also can perform research and answer questions, functionality that the authors said has proved particularly useful for assisting people who have dementia, because “the system never tires.”
- Samsung, LG and other brands already have introduced sensor- and internet-connected refrigerators that communicate information about food to smartphones so that older adults and their caregivers can monitor shopping lists or even order and pay for groceries. Advanced appliances can remind people that items need to be replaced and even can monitor eating habits and provide nutrition-related reminders.
- Sensors embedded in toilets can measure glucose levels in urine, blood pressure, heart rate, body fat and weight. The results can be sent to a physician through the internet, enabling long-distance monitoring and charting of a person's well-being. “In a household of interconnected devices, one can even envisage your toilet communicating with your fridge, providing a feedback loop of nutritional adjustments and suggestions,” the report authors said.

Although the Internet of Things remains relatively new, these examples demonstrate how its emergent technologies can spur investment. IoT has the potential to become a driver of value for the healthcare system, the taxpayers who fund it, and ultimately the patients who will be able to enjoy greater independence and mobility in their later years.