Japan company developing sensors for seniors

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In this Tuesday, Feb. 22, 2011 photo, Nippon Telegraph and Telegram Corp. Communications Science Laboratories staff imitates to brush his teeth during a demonstration of a wearable sensor attached to a wristwatch-like device during the NTT Research and Development Forum in Tokyo. Japan's top telecom company NTT says using this technology, what an elderly person is doing during each hour of the day can be shown on a chart. (AP Photo/Koji Sasahara)

Japan's top telecoms company is developing a simple wristwatch-like device to monitor the well-being of the elderly, part of a growing effort to improve care of the old in a nation whose population is aging faster than anywhere else.

The device, worn like a watch, has a built-in camera, microphone and accelerometer, which measure the pace and direction of hand movements to discern what wearers are doing - from brushing their teeth

to vacuuming or making coffee.

In a demonstration at Nippon Telegraph and Telephone Corp.'s research facility, the test subject's movements were collected as data that popped up as lines on a graph - with each kind of activity showing up as different patterns of lines. Using this technology, what an elderly person is doing during each hour of the day can be shown on a chart.

The prototype was connected to a personal computer for the demonstration, but researchers said such data could also be relayed by wireless or stored in a memory card to be looked at later.

Plans for commercial use are still undecided. But similar sensors are being tested around the world as tools for elderly care.

In the U.S., the Institute on Aging at the University of Virginia has been carrying out studies in practical applications of what it calls "body area sensor networks" to promote senior independent living.

What's important is that wearable sensors be easy to use, unobtrusive, ergonomic and even stylish, according to the institute, based in Charlottesville, Virginia. Costs, safety and privacy issues are also key.

Despite the potential for such technology in Japan, a nation filled with electronics and technology companies, NTT President Satoshi Miura said Japan is likely falling behind global rivals in promoting practical uses.

Worries are growing the Japanese government has not been as generous with funding and other support to allow the technology to grow into a real business, despite the fact that Japan is among the world's most advanced in the proliferation of broadband.

More than 90 percent of Japan's households are equipped with either optic fibers or fast-speed mobile connections.

"But how to use the technology is the other side of the story," Miura said in a presentation. "We will do our best in the private sector, but I hope the government will help."

Nintendo Co.'s Wii game-console remote-controller is one exception of such sensors becoming a huge business success. But that's video-game entertainment, not social welfare.

George Demiris, associate professor at the School of Medicine at the University of Washington, in Seattle, says technology for the elderly is complex, requiring more than just coming up with sophisticated technology.

Getting too much data, for instance, could simply burden already overworked health care professionals, and overly relying on technology could even make the elderly miserable, reducing opportunities for them to interact with real people, he said.

"Having more data alone does not mean we will have better care for older adults," Demiris said in an e-mail.

"We can have the most sophisticated technology in place, but if the response at the other end is not designed to address what the data show in a timely and efficient way, the technology itself is not useful," he said.