Technology Demo on Capitol Hill—

Solutions to the Aging Services Crisis

Center for Aging Services Technologies

CAST

A program of the American Association of Homes and Services for the Aging

Program

Tuesday, March 16, 2004
3:30 – 6:30 p.m.
Dirksen Senate Office Building
Room G-50
1st & C Streets, NE
Washington, DC

To those of you gathered at the CAST Technology Demo, I extend my welcome and greetings from all members of the U.S. Senate Special Committee on Aging.

We truly live in an age of technological wonder. Enabling technologies will allow seniors to do more for themselves and stay in their own homes or independent settings as long as possible, operational technologies will help aging service providers manage their human resources and internal needs more effectively, and connective technologies such as telemedicine will allow seniors to be monitored from afar.

Senior citizens are benefiting from these new advancements, and using the technology too. Older Americans are now the fastest growing segment in the purchase and use of home computers. The baby boomers, as they retire, will drive up even further the need for, and use of, all sorts of health-care technology. They will demand excellence, ease of use, and ready access to the latest and the best equipment available. It is critical that we in Congress review and design national policies to address these new demands—and that it is something we are working to do.

Again, to those of you gathered in Washington, DC, I extend to you my best wishes and commitment to help you when and where I can.

Larry E. Craig
Chairman, U.S. Senate Special Committee on Aging

A Message From Your Host...

Center for Aging Services Technologies CAST

Thanks to the many miracles of modern health care, Americans are living longer than ever before. But as our senior population doubles over the next two decades, we face a daunting mission: to increase the quality of care for a record number of seniors, while somehow reducing the nation's health-care bill before the system implodes. The current health care and long-term care systems cannot scale to meet the needs of this coming age wave.

If we are to deliver quality care to today's and tomorrow's seniors, we need a wellness revolution. That is, we need to apply American innovation to wellness technologies that enable prevention, early detection, increased compliance and new modes of remote caregiving and family support. But the revolution must begin today. We have less than seven years to prepare for the first wave of Baby Boomers who will reach age 65 in 2011. It is imperative that our nation be proactive in putting forth a plan to prepare us for this age wave that will impact our health-care system, our economy and even our national security.

CAST was created to put the age wave challenge—and the opportunity for new technologies to help with this challenge—on the national agenda. We are working to catalyze crucial conversations and partnerships among American businesses, government agencies, aging services providers and university researchers. The scope and variety of technology demonstrations on display today just hint at the possibilities of what can be done if the public and private sectors pull together in a major initiative to head off a future crisis. Our hope is that these exhibits of laboratory prototypes and new products will help open the minds of researchers and policy makers around the country to new paradigms of long-term care—and that our nation can begin to bring attention, imagination and resources to home health care and aging-in-place solutions that will radically transform the way we care for ourselves and our seniors.

Sincerely,

Eric Dishman
Chair, Center for Aging Services Technologies

Exhibitors

Aware Home: Georgia Institute of Technology

- An Internet picture frame for caregiver awareness that monitors your older parents' physical activity in their home.
- A reminder panel that displays your history of moving different objects in your home such as medication.

Observe how a "smart picture frame," that sits quietly in your home, can provide insight into the activity and well being of an older family member who lives across town or across the country. Learn how older adults can track the use of objects in their home to remind them of when they last took a pill, fed their fish, or performed other common household tasks.

GE Security

- Observe a system for families and caregivers that can help seniors live at home longer by remotely monitoring a variety of functions, daily activities and medication compliance.

GE Security is launching a new Home Assurance Program that combines the wireless sensors and monitoring technology of the GE Personal Emergency Response System with the connectivity of new communication technologies and web-based systems to create innovative solutions for independent living. These systems can seamlessly integrate within the homes of older adults to provide unobtrusive monitoring of daily activities. Home activities are then channeled to a web-based system that provides alerts, alarms and notifications for any activities outside normal parameters.

Hewlett-Packard

- See HP's research for a vision of an integrated wellness system with wearable sensing devices connected with an always-on infrastructure, delivering relevant wellness knowledge to the individual and their caregiver.

HP's know-how in "consumerizing" technology and delivering complex streams of information in a complete solution will change the way people manage their health. Linking and communicating relevant information for personalized health care is an enormous unmet need in today's system. With the ability to electronically gather, secure and communicate vital information to the physician's office and family members through consumer-centric devices, HP will empower individuals to take more responsibility for their wellness and health care. HP's ability to connect people to information through technology in a reliable and secure system will enable people to live longer, healthier lives.

Honeywell

- Observe how the Independent LifeStyle Assistant™ monitoring system (I.L.S.A.™) transforms the home into an intelligent, supportive environment and makes this technology accessible for older Americans and those who care for them.

Honeywell is working on solutions that make use of consumer-friendly technology. I.L.S.A.™ employs sensors to monitor critical activities, artificial intelligence to make judgments and multiple communication devices to tie the senior to caregivers, health workers and family. Touch-screen devices will be used as a communication channel. The goal is to transform the home into an intelligent, supportive environment and to find ways to make this technology accessible for older Americans and those who care for them.

Intel Proactive Health Lab: Social Health Monitoring & Support

- A computer screen phone and home network that track the social health of early Alzheimer's patients, helping them to remember names and faces of their friends & family.

After a year-long study of the needs of families dealing with Alzheimer's, Mild Cognitive Impairment (MCI) and other cognitive disorders, researchers in Intel's Proactive Health Lab in Portland, Oregon, have built various prototypes of future technologies to help people with MCI remember the names, faces and past conversations they have had with their loved ones. Prototypes of a screen phone that provides rich contextual data (e.g., who I have spoken to, when we last spoke, and what we discussed) and a sensor network that looks for sudden declines in social contact will be shown. Intel's long-term goals are to use home-based technologies to help with the early detection of cognitive decline and to help those with decline stay socially active and engaged for as long as possible.

Intel Research Seattle: Caregiver's Assistant

- A home technology that senses the use of everyday artifacts to help a caregiver track an elder's activities of daily living (ADLs).

Researchers at Intel Research Seattle and the University of Washington have built a prototype that can infer the activities of daily living that people do in their homes. By placing postage-stamp sized wireless, battery-less sensor tags on everyday objects such as a toothbrush, coffee cup or pill bottle and using ambient tag readers to detect when the tags move, we are able to track when and which objects are in use. Given objects in use, we can discover whether someone has successfully brushed their teeth, fixed a meal or managed to take a medication. The long-range goal of Intel's research is to develop practical computerized assistants that can help elders and their caregivers manage everyday activities so that the elders' independence is compromised as little as possible.

Massachusetts Institute of Technology

- Wearable and home-based sensors that can help people stay healthy and remain independent as they age.

Learn how portable wireless sensors, combined with computer algorithms, can automatically detect activities of daily living and monitor changes in everyday activity that may indicate emerging health problems. Observe how small, comfortable, watch-like sensors can communicate wirelessly with a mobile computer (such as a PDA/phone) in real time and be used to motivate healthy behaviors.

Oregon Health Sciences University/Elite Care

- An intelligent bed that tracks sleep patterns and weight to detect disease and helps prevent falls by turning on and off lights when you get up at night.

Learn how unobtrusive sensing combined with advanced, but hidden, computation sensing technologies can be incorporated into household rooms and furniture to collect and transmit health monitoring data. Observe how these same helpful sensors can turn the light off after you get in bed, or turn it on when you get up, keeping older adults safer.

Sears Methodist Retirement System, Inc.

- Bridging the use of technology products together with a single source for oversight.

Learn how biometric sensors, automated medication dispensers and fall systems coupled with single source oversight create a safer, more secure environment for those who choose to stay in their home.

University of Michigan

- Robots and devices that help frail seniors remember their daily activities and walk more easily to perform them.

Observe how Artificial Intelligence techniques have been used to develop highly individualized, adaptive systems. Examples include Autominder, a flexible reminder system for people with cognitive impairment that has been deployed both on a custom-designed mobile robot and on handheld devices, and IMP, a robotic walker that provides navigational support.

University of Rochester

- Observe an elder talk to Chester the Pill, who figures out from her questions that she has a headache. Then watch Chester help her understand what she can and cannot take based on her condition and her physician's instructions. All this without touching a keyboard!

Learn how an elder can speak with an interactive medication coach on a computerized intelligent "Health Wizard" to determine which medications to take and not to take, and when. Unlike a simple scheduling device, this conversational Health Wizard is being taught to listen to an elder's intent and query its databases for things like the physicians' instructions, the pharmacy's information, Web information about medications and contra indications, images of the pills, and then help to figure out the complexities.

University of Virginia

- A sensor that "listens" to your footsteps and walking patterns for signs of increased fall risk.
- A smart chair that automatically monitors your breathing and heart rate on a daily basis.

Observe how a "smart chair" can passively double as a device that monitors breathing and heart rate, and how sensors can act as a movement monitor for use in diagnosing early onset osteoarthritis and other gait anomalies, as well as for monitoring falls.

Viterion TeleHealthcare – A Bayer-Panasonic Company

- Telehealth devices that help patients manage and monitor their health, as well as interact with their medical professional, from home.

Observe how a blood pressure cuff, non-invasive blood oxygen monitor, digital weight scale, blood glucose meter, stethoscope, spirometer, thermometer and digital camera can be integrated into a turn-key system to support telehealthcare.

Motorola

- Motorola is developing MOTOHEALTH, a prototype integrated mobile health monitoring solution, which uses Motorola's cell phones to help older adults manage their chronic conditions and increase their independence, while potentially reducing health-care costs.

Chronic diseases (such as diabetes and obesity) have reached epidemic proportions in the US, particularly among older adults. Medical studies have indicated that daily monitoring helps patients with chronic diseases to maintain appropriate drug, diet and exercise regimens. Unfortunately, few patients can frequently interact with their health-care providers. The MOTOHEALTH solution, when implemented into a comprehensive program, can eliminate the distance barrier by giving health-care providers useful, daily updates on a patient's physiological levels (such as blood pressure, glucose level, weight, among others). This facilitates proactive treatment action, resulting in fewer hospitalizations and visits to emergency rooms with potentially lower health-care costs.

Philips Medical Systems/Comcast Partnership

- A health-care service that uses broadband technology to facilitate communication between chronic disease patients and health-care providers.

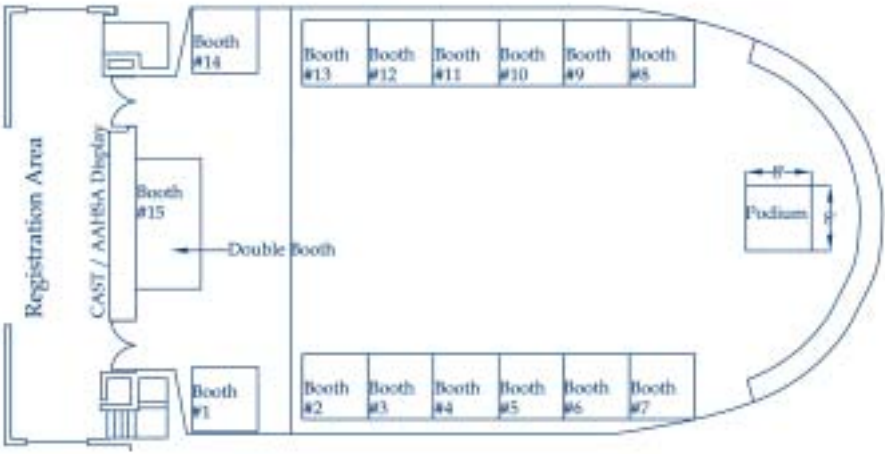
This secure communication platform, jointly developed by Philips and Comcast, will support older adults who need to be monitored for their continuous health but still want to lead an independent lifestyle. Broadband technologies can provide patients who have chronic diseases (such as congestive heart failure) with personalized health-care information they can access through their home television. Useful, engaging and personalized content, as well as medication reminders and positive reinforcement, can help empower patients to manage their own health. Remote patient monitoring allows health-care providers to make more timely and informed care decisions, driving out the cost of unnecessary hospitalizations while improving clinician efficiency and patient outcomes.

These technologies are still in development and do not represent any existing offering. The system is neither currently under review by the FDA nor available for sale in the U.S. or in other geographies.

University of Washington: Assisted Cognition Project

- A cell phone that serves as an intelligent navigational assistant designed to help people with memory problems find their way around town and use public transportation.

Researchers in the Assisted Cognition Project at the University of Washington have developed a prototype of a cell phone-based personal guidance system that helps people who have problems with becoming lost and disoriented travel safely through their community. It continuously learns the pattern of the user's daily movements throughout the town. If it detects that the user is likely to be lost (for example, traveling on a bus in a unfamiliar part of town), it "calls" the user to ask if he or she needs help. If the user does not confirm that he or she is okay, the system puts the user in voice contact with a family member or other caretaker.



Booth	Exhibitor
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2	Philips Medical Systems/Comcast Partnership
3	University of Washington
4	Honeywell
5	Georgia Institute of Technology
6	Motorola
7	Oregon Health and Science University/Elite Care
8	University of Virginia
9	Viterion TeleHealthcare - A Bayer/Panasonic Partnership
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13	General Electric
14	University of Rochester
15a	Intel Research Seattle
15b	Intel Proactive Health Lab

The Center for Aging Services Technologies (CAST) is the key catalyst for bringing together companies, universities, aging services providers, organizations and government to drive awareness, development and application of technologies that will improve services for the aging. CAST is creating the foundation that will ensure technology solutions attain their fullest potential to meet the needs of our aging society. CAST's web site is **www.agingtech.org**.

CAST Clearinghouse

CAST is proud to announce the CAST Clearinghouse…a place to learn and share—- **www.agingtech.org**. We invite aging services providers, technology developers and researchers to share information about their ongoing technology projects. Join this unique Web site as a content contributor today. For questions, please contact **info@agingtech.org** today.

The American Association of Homes and Services for the Aging

(AAHSA) is committed to advancing the vision of healthy, affordable, ethical aging services for America. The association represents 5,600 mission-driven, not-for-profit nursing homes, continuing care retirement communities, assisted living and senior housing facilities, and community service organizations. Every day, AAHSA's members serve more than two million older persons across the country. The AAHSA Web site is **www.aahsa.org**.

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