The Problem

Hawaii is the third most rapidly aging state in the nation. According to the 2004 State Plan on Aging, Hawaii's older adult population (individuals 60 years of age and older) continues to grow in number and proportion. In 1970, there were 67,490 older adults, representing nine percent of the population, by 2000, 207,001 individuals were older adults, representing 17 percent of the total population. By 2020, it is predicted that twenty-five percent of the population will be 60 or over.

This is part of a global demographic shift in the proportion and number of elderly people in society that will impact every institution, from medical care to accommodation, transportation and employment. In some countries, such as Japan, there is already a severe shortage of younger people available to take over skilled jobs and to provide individual care giving for the elderly. This problem is expected to become worldwide within the next twenty years. One consequence is that the age for retirement will be higher.

The Solution

Assistive technology matched to the individual needs, abilities, preferences and culture of aging people has the greatest potential for alleviating the pending crisis. The goal is to enable elderly people to maintain their independence and remain living in their own homes for as long as possible while maintaining a high level of personal well being. This technology will enable people to:

- Maintain communications with family members, friends, and health care workers.

- Access local information on the web in their native language.

- Control smart appliances and entertainment systems in their home using natural speech and gestures.

- Monitor medical conditions and manage medications.

- Keep track of health related issues such as nutrition and exercise

- Maintain schedules for all activities.

- Report emergencies and receive emergency information and assistance.

- Participate in community events, online games, and social events.

- Participate in lifelong learning and educational programs.

It will be necessary for the assistive technologies to take over many of the tasks that are currently performed by both skilled, and unskilled caregivers.

The Ho'alauna Project

The Archimedes Project has developed prototypes of a new technology called Ho'alauna or "good neighbor," that directly addresses the needs of aging people. Ho'alauna provides a selection of easy-to-use tools for managing the day-to-day tasks of daily living and staying connected to family, friends, and caregivers.

Ho'alauna implements new interaction strategies that enable aging individuals to join the information age without the burden of learning about computers.

Simple email and Internet-based voice and video messaging enables grandparents to bond more closely to their grandchildren and to stay close to all the other people in their lives. Other tools make it easy to write notes and letters, schedule appointments, manage medication, keep track of money, plan nutritious meals, manage personal information, and to find information on the Internet. Ho'alauna also enables users to remotely control appliances, security systems, doors, windows, drapes, and entertainment equipment such as radios, TVs, and DVDs using their own natural words and gestures.

Archimedes researchers are planning several studies to learn how seniors in Hawaii could best use Ho'alauna to stay in touch with friends, family, emergency personnel, healthcare assistants, and doctors; control their home environment; obtain information and training about health and safety issues, and participate in telemedicine.

![Archimedes Hawaii logo]

The Archimedes Hawaii Project is a multidisciplinary group of researchers dedicated to making computers and information technology devices easier for everyone to use. We place particular emphasis on:

- Eliminating generic usability problems that impact everyone,

- Accommodating the special needs of people with disabilities,

- Enabling aging people to maintain a high level of well being and to remain independent for as long as possible, and

- Making computer-based education and lifelong learning accessible and effective for everyone.

The Archimedes Project was founded at Stanford University in 1992 and moved to the University of Hawaii in 2003. Our laboratory is located in the restored historic firehouse on N. King Street, half a block north of the famous Tamashiro Fish Market.

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Ho'alauna Project

A Technology Solution for Connecting Hawaii's Seniors to their Family, Community, and Healthcare; and Controlling their Home Environment