

1 EXECUTIVE SUMMARY

Innovation Alliance

Technology development is taken place at unprecedented speed at the same time as pressures from a tumultuous and changing global economy increase in countries throughout the world. In order to address this situation The Innovation Alliance has taken an initiative on technology creation based on user needs. The aim is to create a public/private partnership anchored in Denmark, Finland and California. In this partnership, technology push is combined with application pull in a series of user driven, research based technology creation projects.

First project - background

In much of the Western world and Asia there will be a dramatic increase in the number of elder citizens and in the number of lifestyle related diseases. At the same time the elders will expect better service from public and private service providers, and support in living their lives the way they choose.

On the technology side, embedded systems and wireless technologies are maturing. These technologies have a number of promises for improving services in home and health.

The first project is called Information Technology for Assisted Living at Home (ITALH). It is aimed at increasing quality of life with a focus on the home, e.g. through better support for elderly citizens who want to stay in their own homes without forgetting the support of emerging mobile lifestyle. Even though the aim is focused to our growing senior citizen group, the project utilizes basic design for all concepts and provides general solutions for the usability and applications of new technology for home and health.

Within this alliance, the individual partners have specific interests and expertise (which overlap in varying degrees) and that together will provide both synergies and a complete, suite of services as the final result.

Goals

The goal of this project is to use information and computer technology to provide assisted living and remote health care monitoring to improve the quality of life and extend the ability to live at home for elderly and other citizens. This will be achieved with a suite of applications and devices that provide for a modular, integrated, scalable system of integrated services. This facilitates e.g., better home based rehabilitation and health monitoring and support to emerging mobile lifestyles providing independent living. The technology will be developed, integrated and tested within at least three different regional/national systems and standards.

Technology

The technology research will focus on enabling technologies that provide new ways to develop embedded, wireless solutions for living in smart and healthy buildings and spaces: homes, hospitals and city areas. We are combining the maturing technologies of embedded and wireless systems with the emerging technologies of sensor and actuator networks at this very discontinuing point in technology development. The partners bring

world class technical expertise in the core areas that are crucial to the success of the project, specifically: embedded software systems, wireless and mobile technology, sensors, computer vision, electronic packaging, software infrastructure/architecture, user interfaces and smart spaces.

Participatory design

In addition to the technology research, a network of local service providers, user groups and expert in social and health services provide their expertise and feedback for designing the novel technical solutions as well as new services that are necessary for utilization of the technology

Through participatory design with the stakeholders we have a unique opportunity to develop useful, novel approaches and solutions based on users needs in diverse set of real life settings – and thus to provide the regions with a competitive advantage in the rapidly growing market of elder tech and generally home and health.

Test sites are an integral part of the ITALH project and will be developed and expanded throughout in order to evaluate both the requirements of ITALH and the functionality of the systems and the architecture. The testbed approach will be to use multiple test sites in geographically diverse settings.

Anticipated outcome of the project

This substantial inter-discipline cooperation between various professions and service structures in international settings provides a unique opportunity for researchers, service providers and technology companies to put together strong cases towards applications of new technology enabling new international business and services in home and health.

The integrated solutions through the cooperation provides the necessary connection to intelligent wireless sensor networks and pervasive home technologies which together are the enabling technological environment for real long term health monitoring and in general for supporting elder citizens in living the way they choose. Thus the new technology will have substantial social impact as well. It will make possible real home health care applications due to ubiquitous and on demand capability of measurement. The power to provide an on demand, direct link between a doctor and patient's physiological measurement would greatly enhance their quality of life. Other examples of support facilitated by the technology include care provided by family members, friends or health service provides which will enable elder citizens to retain independent lifestyle and be in contact and in reach of services for home and health if needed. Through the proper adaptation of the emerging technology the healthcare system will become more mobile, demand driven, efficient and patient friendly while maintaining at least the same quality of care, potentially providing a significant increase in quality.