Chapter 13
Building a Mutual Assistance Community for Elderly People

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ABSTRACT

Efficient and cost-effective solutions are needed to meet the demands for services required by an ever increasing number of users. We discuss the characteristics of Ambient Assisted Living (AAL) as a new approach that promises to address the needs of elderly people. We propose combining social aspects with technology to build a community of mutual care which, among other things, can serve as a platform to effectively organize the social resources, promote social connection, and introduce intergenerational activities. Our research analyzes the characteristics of a mutual assistance community to help elderly people age well. The needed technologies are investigated, challenges of building such a community are reviewed, and the design of some prototypic solutions and preliminary research on organizing services inside the community are discussed.

INTRODUCTION

A well known trend and a dominant characteristic of most of our societies is the rapid increase in the elderly population. Several statistical reports have revealed that the proportion of elderly people has kept increasing since the end of last century. For example, EUROSTAT (2004) indicated that "the share of the total European population (EU 15) older than 65 is set to increase from 16.3% in 2000 to 22% by 2025 and 27.5% by 2050." The European overview report of Ambient Assisted Living (AAL) also investigated this trend (Steg et al., 2006). Several research programmes that focus on AAL have been started, such as the Ambient Assisted Living Joint Programme launched by the European Union in 2008, which aims to find an efficient solution to help elderly people live independently.

Supporting independent living is a key goal of AAL services. Research indicates that elderly people would prefer to live in their own homes rather than in nursing homes but they need support to remain independent in their homes (Counsel and Care, 2005). Research has also shown that remote clinical therapy at home will not negatively affect the therapy process (Deutsch, Lewis & Burdea, 2007). However, one significant characteristic of the elderly and people with disabilities is reduced mobility and social contact. Reduced mobility can make simple tasks such as feeding a pet or mowing the lawn difficult. To improve the quality of life for the elderly, it is important to provide timely assistance in home settings.

AAL aims at extending the time that elderly people can live in their home environment by increasing their autonomy and assisting them in carrying out daily activities through the use of intelligent products and the provision of remote services including care services. Most efforts towards building ambient assisted living systems are based on developing pervasive devices and using Ambient Intelligence to integrate these devices in a safe environment. Ambient Intelligence refers to electronic systems that provide services in a sensitive and responsive way to the presence of people, and are unobtrusively integrated into our daily environment (Aarts, Harwig & Schuurmans, 2001). Living assistance systems and assistive devices are being developed to facilitate daily living and show promise in helping elderly people to live independently and in comfort. However, these systems and devices do not fully express the power of people or the importance of social connections and social activities. Although such efforts aspire to assist elderly people to live independently by transferring dependence from the human side to assistive devices, we observe how such transfers often reduce the social connections of those assisted in this way.

Home assistance systems developed using Ambient Intelligence can produce a safer environment for elderly people. Currently available solutions appear to overemphasize the technology and inadequately address the human element. This is evident in the low level of adoption of the technology. We suggest combining the mechanical power of assistive devices and the human power from "social computing"—seamlessly integrated— to provide timely, needed services and effective utilization of social resources. This means focusing not only on keeping elderly people physically healthy, but also on taking other daily requirements into consideration to improve their quality of life.

In the next sections, we introduce a prototype of a mutual assistance community.

RELATED WORK

Much research has been carried out on building intelligent environments around people such as Aware Home (Aware Home 2007) and I-Living (I-Living 2007). These studies found that "smart houses" improved the independence of elderly people, and reduced manual work. Devices such as RFID (Radio Frequency Identification), and

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