

A user-friendly relational home computing interface

P. JACKSON, A. SIXSMITH, A. MIHAILIDIS. **High level architecture of a user-friendly relational home computing interface for people with mild cognitive impairment.** *Gerontechnology* 2014;13(2):219; doi:10.4017/gt.2014.13.02.398.00 **Purpose** This paper describes the initial phases of work done on creating a home computing interface designed especially for older adults with Mild Cognitive Impairment (MCI). Home computing has become a common part of contemporary daily life, arguably to the point where computer competency is a social expectation. Older adults may face numerous barriers to using computers, due to physical, cognitive, and social factors¹. Home computing can be used to address many challenges experienced by older adults, such as social isolation. Some people with MCI may not have necessarily lost any of their cognitive abilities, but memory loss and other problems can impair successful independent living. Making computers easier to use for older adults is a way to bring helpful technology into their lives, as well as to help them participate more fully in the digital world. This project is being pursued as part of the AAL-WELL project that seeks to promote healthy and active ageing, with special attention given to people living with MCI. **Methodology** The high-level architecture of this interface is based on a scoping review of the computing needs of people with MCI and includes technologies designed to facilitate ease-of-use by people with limited experience in using computers, along with relational agents designed to encourage and anticipate their interactions with applications. Technologies include motion recognition video cameras, such as those currently used in video game consoles, as well as speech recognition software. These avenues for input do not require the manipulation of a control device, and can be tailored to the unique characteristics of an individual, (such as compensating for tremors), providing greater accessibility. Another key technology is the concept of a relational agent; a relational agent is an animated computer character which seeks to build a relationship with the user over time². Using a relational agent as the primary means of communicating with the user facilitates interaction that is based on the patterns of normal human interaction. This reduces the amount of technical skill that a user needs to learn how to use the system. It also enables the inclusion of functionality and activities that are aimed at caring for the emotional and physical well-being of the user, such as polling for user's current emotional state, chatting, and reminders (e.g., to pay bills, exercise, take medicine, see friends). This project will continue, as software is developed to complete a useful prototype. This is achieved using an iterative development methodology, which is crucial not only in a technical sense, where it supports flexible and measurable progress (as seen in Agile software development), but also as participatory action research, since it gives stakeholders multiple opportunities to test, inform, and guide the development of the project based on their own knowledge and priorities. Technology can be seen as an extension of its user, supplementing their inherent abilities. For people suffering from some forms of decline associated with ageing, computers provide a useful and cost-effective tool for improving their daily life. Computers are also a way of increasing social interaction by means of electronic communication, and providing pleasurable activity, such as listening to music. This project shows how advancing technology can be used in an innovative manner to address the gap between the availability of home computing functionality and its effective use in the daily lives of older adults.

References

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