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Socially dependable design: The challenge of ageing populations for HCI

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Abstract

This paper considers the needs of an ageing population and the implications for Human Computer Interaction (HCI) research. The discussion is structured around findings from interviews with medical and care professionals and older people. Various technologies are being successfully used to monitor for falls and other emergencies, and also to assess and manage risk. The design of this technology is currently driven by a medical model of client needs and takes little account of the social context of the home. The design challenges for HCI are to make this technology attractive, provide privacy, allow informed choice and reduce rather than increase the isolation currently felt by many older people. It is argued that the ageing population presents a fundamental challenge to HCI in the need for socially dependable systems. Socially dependable systems take account of social context, the need for sociability and are accessible to all who need them.

1. Introduction

1.1. Technology and the ageing society

You live, wherever you are, in an ageing society. By 2050 there will be more people in the world over 60 than there will be people under age 15. This is a historic reversal of proportions and it is unprecedented in human history (United Nations, 1999). It is a global phenomenon, occurring in both the 'more' and 'less developed' world. Declining fertility

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rates and increased longevity will have far-reaching and profound consequences, year on year, for the rest of our lives. In 1999, 15% of the European population were 80 years of age or older; in 2050, barring holocaust or pandemic, that will have doubled. It is statistically likely that we will live longer than any other generation could have possibly hoped or feared. Lifestyle magazines may flatter us that, because we are all living longer, 30 is the new 20, 50 the new 40 and so on, and to an extent this is true. Age is a social as well as a biological construct. Indeed the term 'elderly' is problematic: many people do not like it when it is attached to them, it may not reflect their abilities and it can be stigmatising. This paper uses the term current in UK government literature 'older people' meaning people over 60, although this is far from value neutral. While it is important not to stereotype people and assume that older people are necessarily frail, it is also important not to romanticise or patronise older people. Of course we should not assume that all older people will become less able but we cannot ignore the facts of our inevitable physical decline or underestimate the challenges that the ageing society presents in terms of provision, care and support. There are approximately 60 million informal (that is unpaid) carers in the UK, 90% of these are family members and most are women, many of these are themselves older people (Age Concern, 2002). Formal and informal care provision is already strained. How then will the ageing population be cared for in the coming decades? What new forms of support will arise when there are twice as many people over 60 as there are now?

The answers to these questions are increasingly formulated in terms of technologies for independent living. Older people will live in their own homes for longer with technological support. Institutional care is expensive and governments are well aware of the potential savings to be made if people continue to live in their own homes. The UK government, for example, has set a deadline of 2010 for telecare to be available in every home that needs it, although there is considerable doubt about whether this deadline will be met (Curry et al., 2002).

Perhaps the most prevalent current technology used in support of independent living has a purely monitoring function. Quite frail older people are given the confidence to live independently through telecare devices that automatically call for help should they fall or experience some other domestic emergency (Section 3.2). Technology can assist with activities of daily living by compensating for problems of mobility, manual dexterity, also for sensory and cognitive deficits. If you have mobility problems, so called 'smart home technology' can open a door for you or allow you to control lighting and so on (see, for example, (Van Berlo, 2002)). Deafness can be ameliorated through specialised communication devices such as text phones. There is also much current interest in reminder and advice systems for people with cognitive problems. The market for this kind of technology is relatively small and so there are not, in general, the cost savings that come with mass markets. This problem has been addressed by a movement known as Inclusive Design, promoting the idea that all products should be suitable for the widest population (Coleman, 2001). The principle here is that, with ingenuity, it should be possible to design technologies that both older and younger people can use. Power tools designed for people with arthritis can be equally attractive to people with no such problems.