HCI AND OLDER PEOPLE

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ABSTRACT

The inclusion of older people within the design cycle for information technology is discussed, and the successful development of a prototype email and web browser described. This is followed by a discussion of the use of theatrical techniques to educate designers in the requirements of older people for technology.

Keywords

Older and Disabled People, Requirements Gathering, Guidelines for Developers.

1. INTRODUCTION

The HCI requirements of older people differ in a number of important ways from those of other groups, but their needs and wants have received little attention from the HCI community. Demographic changers are leading to a growing population of older people many of whom have significant wealth and disposable income. Other less fortunate older people require access to many government services which are planned to be offered digitally. The switch-off of analogue television will affect those many older people who have shown no interest at all in digital technology. Legislation is also providing guarantees for older people with disabilities – approximately 50% of those over 65.

The HCI community thus has a moral, legal, and economic imperative to consider more carefully the particular challenges offered by this group of potential and actual users of computer systems.

2. RESEARCH AT DUNDEE

Applied Computing at Dundee has been developing computer systems for older and disabled people for over thirty years, and has recently announced the Queen Mother Centre for Information Technology to support Older People [1]. Projects include the UTOPIA (Usable Technology for Older People: Inclusive and Appropriate) project, a Scottish Higher Education Funded project in collaboration with the Universities of Glasgow, Napier and Abertay Dundee.

This project is focussed on helping industry tackle the challenges of an increasingly elderly user population, and has investigated methods for user requirements, developed specific applications for older people, and investigated ways of educating designers in industry on the needs and wants of older users.

3. REQUIREMENTS GATHERING

We firmly believe in including users within the design team of new technology and have been investigating how this can be done effectively with older people. We assembled a cohort of over 200 older people who have a range of physical, sensory and cognitive characteristics as well as including people with a wide range of experience of using computers, and attitudes to new technology ranging from being petrified of them to using them regularly. We have investigated ways in which we can interact with groups of old people to ascertain their needs and wants [2]. This has included novel ways of organising focus groups which are particularly suited to this field. For example, it is not easy for novices to speculate about technology about which they are ignorant – to this end we have used theatrical techniques, where script writers have produced realistic scenarios of what might happen when technology was installed in the home [3]. These videos were very successful in facilitating the discussions and led to many useful insights by the engineers involved in the project. Other techniques we have developed include workshops where older people have been able to try using technology in a very supportive environment. We have also found home visits can provide a wealth of information about older users' attitudes to technology [4].

4. A EMAIL SYSTEM AND WEB BROWSER FOR OLDER PEOPLE

In collaboration with an industrial consultancy company we developed a "proof of concept" email system and web search and navigation system aimed at older people for whom the internet was an "alien territory". We involved older users in the design and early evaluation of the prototypes, which offered a radically simple user interface which was designed to be intuitive to use, with minimum functionality, no jargon, and with font and contrast ratio, and button size appropriate for older people.

Evaluation trials were conducted which compared the proof of concept prototype with popular "out of the box"

commercial systems. The older people's performance was significantly better with the proof of concept system, in terms of tasks completed, fewer errors and hesitations, and fewer interventions by the experimenter, The older people found the commercial systems threatening, confusing, overpowering, and cluttered. In contrast, the proof of concept systems were found to be attractive and easy to use and they were prepared to use such a system in the future. This development thus showed that software could be designed which was more acceptable to older people than popular commercial systems, and produced quantitative improvements in performance.

It should be noted, however, that this process required significant transfer of knowledge of the characteristics of older people and how they behaved to the design team. Particularly in the early stages of the process, it was not easy to convince the design team of the level of older people's lack of understanding of information technology – not only jargon, but also metaphors, and the underlying assumptions were alien to many of these older people.

5. EDUCATING DESIGNERS.

One important output from the Proof of Concept development was a realisation of the need for a focus on educating design teams on the characteristics, needs and wants of older people and the ineffectiveness of standard guidelines and text books in getting this message across. We believe that it is vitally important to change the mind set of the designers, and this should precede information about guidelines and lists of recommended procedures.

In order to provide maximum impact we investigated the use of theatrical techniques to provide a hard hitting message in an accessible, and hopefully humorous form. We thus worked with a Theatre Company with professional actors, writers, directors and a video team. On the basis of evidence and anecdotes which our research team had gathered from older people we produced three short videos which illustrated the problems older people faced in using technology. We are making these videos widely available, and are asking a range of designers to fill in before and after questionnaires so that we can measure the effectiveness of this technique.

6. CONCLUSIONS

We have shown that it is possible to design information technology systems which, in contrast to many commercially available systems, older people find easy to use and which encourage them to use computers and the internet. We concluded that the major issue is changing the mind set of designers and are investigating ways in which theatrical techniques can be used to do this efficiently and effectively.

7. REFERENCES

For a full list of UTOPIA project publications see:

http://www.computing.dundee.ac.uk/projects/UTOPIA/Publications.asp

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