Older Adults and Digital TV

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ABSTRACT

This paper introduces the PhD research topic of the author and raises questions that are felt to be relevant to the challenges facing the accessibility of DTV. It is the aim that these questions can provoke discussion. It also highlights the areas that the author is interested in as part of the PhD research.

Categories and Subject Descriptors

J.7 [**Computers in Other Systems**]: Consumer products;

H.5.2 [**Information Interfaces and Presentation**]: User Interfaces – graphical user interfaces, input devices and strategies, interaction styles, screen design, training, help and documentation, user-centered design.

General Terms

Design, Human Factors, Standardization.

Keywords

Older Adults, Digital Television.

1. INTRODUCTION

From June 2009 I will be beginning my PhD that is entitled, "Adaptive Technologies for Enhancing the Accessibility of Digital TV," in the School of Computing at The University of Dundee in partnership with BBC Research. The core of this research will be to investigate the range of potential assistive interface technologies that could change the way in which people experience digital television (DTV).

2. BACKGROUND, INTERESTS AND QUESTIONS

The accessibility issues of DTV is an area that is of great interest to me. One group likely to have accessibility issues is older adults. This is a growing demographic of modern day society, largely due to the 'baby boom' in the 20th century.

As part of my current project, I have worked closely with older adults to learn more about their thoughts and feelings towards the introduction of home health monitoring, or telecare. This telecare allows their health carers to collect and view data about from the patient's own home for patients who have chronic diseases. This will allow the carer to find trends in the patient data and allow the patient to remain in their own home for as long as possible, and possibly also reduce the need for hospital visits. It has been established that older adults are the most likely group to have chronic disease. For more information please see the SAPHE website [4].

A workshop was run for this research that involved inviting a group of older adults from the local area to come to the School of Computing and give their opinions on technology devices that could be used as part of a healthcare system to give them feedback of their own data [1]. This workshop gave me an insight into some of the problems that older adults have with using new technology devices, problems that the designers and developers of these devices must solve. As we prepare for the changeover from analogue to DTV, I see these problems as being relevant to the design and development of DTV, with many questions being raised.

Firstly, it is clear that there is no 'average' older user. They have all lived different types of lives and will have different levels of experience when using software based interfaces. Some will be happy to use them and 'get to grips' with them with ease, whereas others will have more trouble. Carmichael [2] further illustrates this by showing that although it is accepted that the required software interface abilities diminish with age, the variation between those ability levels also appears to get larger as the target population gets older.

Physical factors that will affect older adults' usage of DTV include increasingly poor vision, hearing and motor control as well as decreased tactile sensitivity. In the above-mentioned workshop, the problem that many of the group had with the devices was their small screen size and small icon displays. On the devices that had touch screens, the group felt that it could be difficult to 'click' on icons as some would find it difficult to be accurate when selecting. This can be easily related to the users having to deal with small icons on their TV set, and their ability to 'control their remote'.

Necessity of use or perceived value [3] is another of the factors that influences older adults using new technology. During the workshop the group spoke of how younger people would be "seduced by the attractiveness" of the technologies on show [1]. They also felt that older adults were more likely to put "practical usage and cost" above all else. An example of this is the mobile phone. The majority of the group in the workshop had their own mobile phone with a set of basic functions to make and receive calls and text messages. They had adapted to using mobile phones because of the perceived benefits to them i.e. a useful way of keeping in contact with friends and family, as well as in emergency situations. Can it therefore be argued that as television changes from analogue to digital, older adults will find a means appropriate to themselves of controlling their digital television set as they have no other choice? How much of this approach will result in the older adult 'just getting by' with using basic functions and not being able to fully embrace the features of DTV? Finally, how much will older adults actually want to use the additional features of DTV?

The ability to learn is another factor that has to be taken into consideration. During the workshop, the older adults felt that having a simple sequence of events when using the devices

would make it easier to remember how to perform tasks. They felt that this process would then become "automatic," like using a home telephone. A 'fear factor' also has to be taken into consideration, as there was a general fear of "breaking" the devices when they used them, and losing the settings of the screen. This again comes into consideration when looking at the menu systems used in digital TVs. Can these menu systems be simplified for use? Can they be customised for individual users, with the settings 'locked in'? Is it likely that any type of customization would have their own usability issues?

3. FUTURE RESEARCH

The focus of my PhD research will be what the potential assistive interface technologies are and how will they change the way in which people experience DTV. At this stage I am interested in the use of technologies such as Speech Synthesis as a way of rendering text or menus as audio for those who find reading difficult; Speech Recognition to allow users to speak commands to the TV rather than get to grips with complex remote controls; Gesture Recognition used to navigate by pointing a physical device again to move away from the normal remote control and Software Agents to find interesting content to make the amount of material available on DTV easier to handle. However, there are questions before the above areas are addressed of if the core access methods don't work properly for sectors of the population, how will adding technologies help that? Can the basic flow of control and interaction be designed so that it becomes a familiar habit users don't need to think about? There is also the possible impact of making inappropriate choices that have to be considered.

I am also interested in learning more about suitable design approaches when working with older adults. Obvious to this area is the issues raised by using inclusive design and how this will affect the development of DTV and its services. Inclusive design appears to be integral in producing viable solutions for making DTV accessible.

4. CONCLUSION

Through my PhD research, I look forward to becoming part of the process to attempt to solve some of the problems facing older adults using DTV. There are clearly many challenges that lie ahead in finding these solutions, and hopefully many of the questions that have been raised in this paper can be answered during this course of research.

5. REFERENCES

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