Elderly users in Virtual worlds

Panote Siriaraya, Chee Siang Ang
School of Engineering and Digital Arts, University of Kent
Email:ps297@kent.ac.uk
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Introduction

We are living in an aging society. A UN report published in 2007 predicted that the global proportion of older people could reach 22% by the end of 2050 (UN , 2007). In Europe, almost 30% of the population is predicted to be older than 65 by 2050 (European Commission, 2007). Although these demographic changes present many challenges to the future society, it also underlines the emerging importance of older people as a consumer group. Even today, older people represent a growing consumer group which commands a considerable amount of purchasing power and disposable income (Eastman & Iyer, 2004).

Businesses and companies would thus benefit from designing products and services catering to the needs of elderly consumers. User driven innovation, which focuses on uncovering customer needs and utilising them as a source of innovation, has become increasingly important in a number of industries in product design and development (Rosted, 2005). Approaches such as *Ethnography* and *Participatory design* have been used to help identify customer needs in the user driven innovation process (innovaro, 2009). However, such methods often require direct participation from older people, which might prove difficult or costly, partly due to limitation in health and mobility.

Virtual worlds could be useful in providing an avenue for elderly customers to meet, interact and collaborate with companies in product design and development. In virtual worlds, older people could participate in customer research or contribute to *virtual participatory* design projects at the comfort of their own homes. Designing such virtual environments however, would first require us to understand how elderly users perceive and prefer to interact and socialise in such environments. Most research in this area tends to target younger adults who are familiar with technology and very few have specifically focused on the user and social engagement of older people in virtual worlds. Knowledge in this context could be used as a base of reference for further research and help designers create virtual environments which better match the preference and requirements of older people.

Currently, we are conducting an ongoing study to explore and analyse the characteristics and perceptions of elderly users in virtual worlds. Specifically, we aim to 1) develop a profile of older people who are virtual world users. 2) understand how older people perceive social interaction in virtual environments. 3) identify the benefits they perceive from using such platforms.

Background

The definition of what would be considered a virtual world has long been discussed and argued within academic research. Most definitions of virtual worlds require that i) virtual worlds should be persistence, shared by a large number of users and ii) interactions in virtual worlds are fed back in real time to users who are represented via avatars (Bartle, 2004). Other definitions require user editable content and group creation to be necessary (Maged, 2008). In the context of this study, we consider virtual worlds as virtual environments containing graphical representation of real or fictional places which people inhabit and interact through the use of their avatars.

One such virtual world we have identified to contain a substantial number of active elderly users is IMVU. IMVU is an avatar-based social network and instant messaging service utilising a 3D virtual environment. Founded in 2004, IMVU currently has more than 40 million registered users (IMVU Inc, 2010). Users in IMVU can not only socialise with other users in a 3D environment, but also participate in

activities such as dancing, customize their avatar and rooms as well as purchase and create virtual goods such as clothes or furniture.

As aforementioned, most research in virtual worlds focuses on mainstream users, who are usually teenagers or young adults. Research by Yee which studied user motivations proposed five significant motivators, or what he termed facets, which influence what users want from their virtual world experience. The five motivators are Relationship, Immersion, Grief, Achievement and Leadership (Bartle, 2004). Furthermore, deep interpersonal relationships can be found inside virtual worlds, as researchers have pointed to the existence of romance (Winder, 2008) , sex and support groups (Norris, 2009) in these virtual spaces. Other studies have identified communication, cooperation and collaboration as important determinants to user acceptance of virtual worlds (Fetscherin & Lattemann, 2008). Virtual worlds have also been used as tools to facilitate remote communication and collaboration between a large number of geographically distributed users. Examples of how businesses have used user communities to help improve products and services can be found at (Mollick & Edery, 2008).

Methods

In order to understand the engagement of older people in virtual worlds, we carried out qualitative semi-structured interview with older people who are currently using IMVU. In the sampling process, we used the search function provided by the IMVU host to identify potential participants for our interview. The criteria used in our search were that potential participants had to be verified as being older than 55 years and must have at least 3 months experience. Because of the explorative characteristic of the study and the small and specific nature of our intended sampling group, we had to resort to convenience sampling. The participants were interviewed online, using a graphical client software provided by the IMVU. The duration of the interview was usually 2 hours.

Qualitative research methods, which allow us to indentify how users perceive and use a particular technology (L.Cox, 2008) could be useful to generate in-depth understanding of many complex phenomena in socially oriented systems such as virtual worlds. Specifically, we believe that semi-structured interviews are appropriate because the flexibility of this method allow us to formulate a generalised understanding of various issues related to elderly users in virtual worlds. IMVU was selected for this study based mainly on the large number of active elderly users identified from a preliminary investigation on the presence of older users in various virtual worlds.

Interview Structure

As we wanted a broad understanding of the factors perceived by older people to be important in their interaction within virtual worlds, we decided to construct our interview questions to cover a range of dimensions.

1. Elderly Users: The demographics, characteristics, interests and Usage patterns of the elderly users of virtual worlds.
2. Social interaction: Factors which affect the formation and maintenance of relationships for older people in virtual worlds, the nature of the relationships and Issues perceived by older people to be important in communication and socialization through the virtual environment
3. Benefits: The benefits perceived by older people in using virtual worlds

Findings and Discussion

In this section, we present our preliminary findings based on 9 interviews we have conducted.

Elderly users of virtual worlds

Currently, nine elderly IMVU users have participated in the interview. Of the participants, five were

female and four were male. The average age of the participants was 59.88 years, with the youngest participant being 55 years of age and the oldest being 65 years old. Six of the participants reported being married, two being divorced and one widowed. Most interviewees reported themselves as being frequent users, using IMVU daily (5) or almost daily (3). In addition, most elderly users of IMVU reported to be familiar with computers and the internet. They use E-mail (9), social network sites (8), messenger programs/online chat sites (5) to socialise and video games(4) for entertainment.

When analysing the nature of older people who use virtual worlds, we found a number of interesting themes. First of all, older people who started using virtual worlds were in some way **limited in mobility**, either due to a physical disability or due to the effect of aging. In general, participants in the interview expressed a **willingness to learn** about virtual worlds. This supports much of the research which indicated that some older people are indeed interested and willing to learn about a new technology (Czaja & Lee, 2007). Some of the activities reported by elderly users in virtual worlds such as giving help or advice, teaching a class, building and managing a public room, show their **enthusiasm to contribute.** This feeling of wanting to make oneself useful could be seen to be a common interest of older people, as such behaviour has also been reported with research on other digital technology such as computer games (Abeele & Rompaey, 2006) and online communities (Pfeil, 2010). Based on these three characteristics and the fact that, older people want to remain productive while working with a flexible schedule (Czaja & Lee, 2007), we could argue that virtual worlds could become a valuable tool for collaboration in customer research or participatory design, especially for this age group.

Social interaction

From our analysis, we noticed that older people were able to form **deep interpersonal relationships** inside virtual worlds. Older people reported developing deep friendships and even romance in virtual worlds. Such activities have also been reported in studies regarding general users in virtual worlds (Winder, 2008). In the case of older people however, participants often cited that virtual worlds facilitated the development of intergenerational friendships which could be difficult to develop and maintain offline. Older people also reported receiving and giving support. Studies on older people in online support communities have suggested that anonymity plays an important part in facilitating the exchange of social support (Pfeil, 2010), which could be true in the context of virtual worlds as well as older people in our interview reported feeling safer when interacting in virtual worlds because of the hidden identity. Forms of **Aggression** have also been reported during the interview. Older people found that rudeness, forms of harassment and violent behaviours acted as a deterrent to the development of relationships and social interaction in virtual worlds. Participants often felt that such behaviours occur with teenagers or young adults. This might be the cause of why older people in our interview reported that they preferred to converse with people who are of similar age.

Benefits

One of the recurring themes in regards to benefits of using Virtual worlds was the **maintenance and expansion of social networks**. Most elderly users reported using IMVU to meet new people or keep in touch with friends and family members. As such use of computer mediated communication (CMC) tools by older people is well reported in literature (Blit-Cohen & Litwin, 2004) (Karavidas, Lim, & Katsikas, 2005), one can argue that older people engage with virtual worlds as a form of CMC. One of the reasons for such usage might be similar to why older people use emails and other online communication tools, which is to reduce loneliness and receive support (Karavidas, Lim, & Katsikas, 2005). Another factor might be that most of our interviewees reported being limited in mobility, thus having less chance to meet new people physically to expand their social network. Finally, our participants often treated virtual worlds as a kind of enabling technology (Winder, 2008), which helped **remove limitations**. Similar empowerment has been reported by chronically ill users in virtual worlds (Kizelshteyn, 2008), but what was particularly interesting was that many participants in our interview recounted that virtual worlds helped remove limitations due to aging. Virtual worlds allowed older people to enjoy activities which

were no longer possible in physical life due to aging.

Conclusion

In order to identify concepts or guidelines to design virtual environments which facilitate interaction and encourage participation of older people, we conducted a semi-structured interview. So far, nine elderly users of IMVU have been interviewed and themes have been constructed based on three main topics which are older people, social interaction and perceived benefits. More qualitative interviews with elderly users of different virtual worlds will be conducted to generalise and expand our existing themes. User profile data of older people from (non virtual world) social network sites would be extracted and compared with user information from virtual worlds to help enhance our findings. The findings from our study could hopefully be applied to develop better virtual environments to be used in various situations for elderly users.

References

Abeele, V. A., & Rompaey, V. (2006). Introducing human centered research to game design: designing game concepts for. *Proc. CHI 2006 Extended Abstracts,* , 1469-1474.

Bartle, R. A. (2004). *Designing virtual worlds* .

Blit-Cohen, E., & Litwin, H. (2004). Elder participation in cyberspace: A qualitative analysis of Israeli retirees. *Journal of Aging studies 18* , 385-398.

Czaja, S. J., & Lee, C. C. (2007). *The Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications.* CRC Press.

Eastman, J. K., & Iyer, R. (2004). The elderly's uses and attitudes towards the Internet. *Journal of Consumer Marketing* .

European Commission. (2007). *i2010 : independent living for the ageing society.* Luxembourg: Office for Official Publications of the European Communities.

Fetscherin, M., & Lattemann, C. (2008). User acceptance of virtual worlds. *Journal of Electronic Commerce Research* , 231-242.

IMVU Inc. (2010). *IMVU information*. Retrieved 03 16, 2010, from IMVU: http://www.imvu.com/about/index.php

Innovaro. (2009). *Innovation Breifing 09-06: Customer Centered Innovation.* innovaro.

Karavidas, M., Lim, N. K., & Katsikas, S. L. (2005). The effects of computers on older adult users. *Computers in Human Behaviour 21 (2005)* , 671-711.

Kizelshteyn, M. (2008). Therapy and The Metaverse: Second Life and The Changing Conditions of Therapy For Convalescent and Chronically Ill Users. *Washinton University Undergraduate Research digest* .

L.Cox, P. C. (2008). *Research Methods for Human Computer Interaction.* Cambridge University Press.

Maged, N. (2008). Web 3D for Public, Environmental and Occupational Health: Early Examples from Second Life®. *Int J Environ Res Public Health* , 290-317.

Mollick, E., & Edery, D. (2008). *Changing the Game: How Video Games Are Transforming the Future of Business: How Video Games Are Transforming the Business World (Hardcover).* Financial Times.

Norris, J. (2009). The Growth and Direction of Heathcare Support Groups in Virtual worlds. *Journal of Virtual Worlds Research* .

Pfeil, U. (2010). Online support communities. In C. S. Ang, & P. Zaphiris, *Socal computing and virtual communities* (pp. 121-150). Taylor & Francis Group.

Rosted, J. (2005). *User-driven innovation: Results and recommendations.* FORA.

UN . (2007). *UN population report, Executive Summary, 2007 edition of World Population Ageing.* United Nations Department of Economic and Social Affairs, Population Division.

Winder, D. (2008). *Being Virtual, who you really are online* . John Wiley & Sons Ltd.