

Inclusive Design for Older People

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ABSTRACT

The Centre for HCI Design (HCID) at City University London has Inclusive Design as one of its key research themes. Older people have been the main research population we have been studying under this theme for a number of years now. Our work in this theme focuses primarily on the design and evaluation of web interfaces for this population. In this paper we describe our work in this area.

Categories and Subject Descriptors

H5.2: User Interfaces

General Terms

Design, Human Factors.

Keywords

Web Design Guidelines, CMC, Inclusive Design

1. WEB NAVIGATION

How information is categorized, labeled and presented and how navigation is facilitated determines not only whether users will and can find what they need, but also affects user satisfaction and does influence return visits. Hierarchical structures are one of the best ways to present information [16].

Unfortunately, we currently lack an underlying model for understanding the goals of users' actions when browsing the WWW. In particular, little attention has been paid to extracting the intentions of users, or to predicting goal-based web surfing behavior. To address this, in previous work [17] we have looked at how parametric mathematical modeling could be a way to capture age related differences in browsing web hierarchies. More recently we have looked further at this issue by incorporating eye-tracking in our data collection methodologies [12] and expanding our pool of users to include older people with dementia [7].

2. WEB ACCESSIBILITY DESIGN GUIDELIENS FOR OLDER PEOPLE

Our SilverWeb guidelines were initially based on a literature review of over 100 peer-reviewed papers from the area of

Human-Computer Interaction, web design and ageing. Out of the reviewed papers, an initial set of 52 guidelines was extracted, and the results of this process were reported in a CHI 2005 paper [14] and an ASSETS 2005 paper [15]. Card sorting was then applied in order to improve their categorisation, and a Focus Group with HCI experts reviewed the guidelines to further improve them. This process resulted in a new smaller set of 38 guidelines that were sorted into 11 categories. The results of this part of the work are reported in a UAIS Journal paper [13]. In order to validate the new smaller set of guidelines, a Heuristic Evaluation was performed with both sets of guidelines and the guidelines were then evaluated in a controlled experiment with 16 older web users.

The SilverWeb guidelines were then compared to seven other sets of web design guidelines for older and/or disabled people. Discrepancies between the set of guidelines were identified, and a Focus Group was conducted in order to discuss changes to the existing guidelines. This process resulted in a revised set of 37 SilverWeb guidelines. A consecutive Heuristic Evaluation supported the validity of the new set of SilverWeb guidelines.

3. PARTICIPATORY DESIGN AND CREATIVITY WORKSHOPS WITH OLDER PEOPLE

We also aim to investigate strengths and weaknesses of existing user-centered design (UCD) methods for eliciting requirements for older adults creative engagement [7, 8, 9, 10, 11]. In the first part of our pilot study we involved older people in designing and developing a design concept for future interface. We used three research methods: Conversational Interviews, Personas and Brainstorming where older senior with fifth professionals in creative leadership generated many creative ideas. The result of this session was a prototype named "Virtual-garden" (see Figure 1). Users could potentially employ this device (which has an interface that resembles a real garden) as an empathic information appliance that provide weather forecasts and could help control smart devices and assistive technologies.

In the second part of this project, interviews in pairs with four age groups: HCI students, families and older people in their sixties and in their eighties were conducted. In creative sessions we asked them to place themselves in different situations: having a conversation with a friend, taking medicine, being reminded of daily activities and at that bring into use certain parts of the prototype. Here we were especially interested in: (a) what is the role of the model in stimulating new ideas, (b) what kind of ideas the model generated and (c) what were the main difficulties that block creative design for this populations.

These two pilot studies with future ones we are planning will help us understand better how we could involve older people in UCD creative process.



Figure 1. The virtual-garden prototype

4. SOCIAL SUPPORT IN ONLINE COMMUNITIES FOR OLDER PEOPLE

Ensuring access to information on the internet is no longer sufficient, as social aspects of activities on the internet have to be considered, too [2]. Including taking into account how older people communicate with each other, exchange information and support, and form online relationships.

In our research, we identified the components of social support in online support communities for older people and analysed how people form relationships by communicating with each other. We conducted a content analysis of messages within an online support community for older people and developed a code scheme that consists of seven categories. These categories outline different aspects of online social support for older people [3, 4]. Our findings show that supportive communication is related to close relationships between members of the online community and a dense network structure [5]. To further investigate older people's needs concerning online support communities, we also conducted interviews with 31 older people with various backgrounds in internet and online support community usage. We analysed how older experience support in offline settings. Findings show how older people perceive the exchange of social support in offline settings, via email, and in online support communities [6]. Our research gives insight into the characteristics, patterns and dynamics of social support within online support communities for older people.

In an other quantitative study we identified differences and similarities of older people and teenagers in the social networking site MySpace [1].

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