

# Mobile HCI and Older Population

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## ABSTRACT

Mobile technology has great potential to benefit older people. It allows them to retain a high level of independence and control over their lives. It can potentially play an important role in helping older people in many ways. Many of the commonly-used techniques of requirements capture for mobile technologies are inappropriate for use with older people, for a variety of reasons. These may be related to problems associated with age, cognitive complexity and motivation. The result is to restrict the potential of mobile technologies to provide support to older people. The research aims to understand and identify methodological challenges that exist in terms of user requirements from older population groups, mainly for mobile technologies.

## Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation (e.g., HCI)]: Evaluation/methodology. K.4.2 [Computers and Society]: Social Issues

## General Terms

Human Factors

## Keywords

Older people, mobile technology

## 1. INTRODUCTION

Older people are a large and growing percentage of the worldwide population. The population of older people is growing while at the same time there is an increasing importance of technology including mobile technology. The trend is towards an increasing incorporation of mobile technologies into our daily life and this includes older people. Previously, the use of technologies among older people was only limited to the desktop computers. However, in recent years the trends are towards the use of mobile applications such as mobile phone.

As the proportion of older people increases, they will of necessity become more independent which will have economic consequences.

The research is aimed to discuss and address issues on the development of applications for mobile devices focusing on

older people. It is known that mobile technologies have great potentials and benefits to older people. Therefore, it is essential to investigate and identify more appropriate methods for extracting information from this target user group in the context of mobile technologies.

## 2. MOBILE PHONE

Mobile phones are personal items which have become a part of our daily life. The majority of users assert that the mobile phone has played an important role in their daily activities and work [5].

The definition of what constitutes a mobile phone is imprecise and fluid. For instance it can also be perceived as mobile multimedia since it supports multimedia elements such as graphics for pictures, audio, video and interaction. For the purposes of this research, the mobile phone is considered as a mobile device that carries the feature of mobile technology, which is mainly used for communication in the form of voice and text. Currently, features like camera, multimedia messaging service (MMS), internet and email are considered as standard features for now. As features will be added, interfaces of mobile phone might get even more complex in the future – which may have the effect of further restricting the potential of mobile phone for older people.

There are also various problems restricting the potential of mobile phone in providing support to older people. These problems are related to age effects, cognitive complexity and motivation.

## 3. DATA COLLECTION METHODS

### 3.1 Current Methods

At present, there are many different methods of data collection available in terms of user requirements for mobile technology. However, not all the methods are suitable to use in the context of involving older people as participants. This is due to the fact that older people have an extremely wide range of characteristics and impairments compared to other groups of participants. For instance, the user centred approach tends to rely upon homogeneous groups but this is harder to achieve with older people who display dynamic diversity. Furthermore, according to Utopia researchers [2], “the cultural and experiential gap” can be big when developing new technology for older people.

In relation to this, a compilation of methods that are widely used with older people in terms of user requirements have been listed in table 1.0.

**Table 1. Summary of existing methods for data collection used in studies involving older people**

Method	Site
Artefacts	Field
Documentation - diaries - cultural probes	Field
Think-Aloud	Field, Lab
Focus groups / Participatory Activities	Field, Lab
Interviews	Field, Lab
Questionnaires	Field
Workshops/Hands-on sessions	Field, Lab
Scenarios	Field, Lab
Persona	Field, Lab
Role playing	Field, Lab
Drama-based Scenarios - Forum theatre	Lab

### 3.2 Difficulties with the Methods

There are difficulties with some of the methods used. For example, it has been reported that there are difficulties in handling focus groups consisting more than 3 older people [3]. These difficulties can be associated with hearing impairments, attention problems and the ability to follow a discussion which proved to hinder many participants' contributions.

Massimi et al. [4] reported that during participatory activities, older people, who had participated in building their own imagined mobile phone system, produced the type of mobile phone based on researchers' expectations and not their own.

There are also languages and cultural differences that tend to make communication between older people and younger people difficult [1,2]. Older people in the Utopia Project had the tendency not to complain or criticize products due to being modest and out of respect to the researchers. Jargon and technical terms can also be difficult for them to understand or use in describing products.

### 4. CONCLUSIONS

It seems that there should be more techniques adapted and used in gathering user requirements for mobile technology for older people. Since older people differ from the 'typical' group of users, it is a great challenge to identify methods that are

effective in terms of gathering older people's needs. The process of acquiring user requirements data from older people is therefore not a straightforward process [1, 6]. In fact, there is a need for an evaluation of existing methods with respect to older people, who vary in cultural and other aspects such as aging effects and cognitive complexity.

The main goal for this research is to investigate and identify more appropriate methods for use of mobile technologies in the context of older people.

The research is addressing several questions:

- What are the limitations of existing approaches to evaluating user requirements for older people?
- What criteria might be useful for evaluating potential evaluation methods?
- What are characteristics of a good evaluation method?
- What methods are appropriate and effective to older people in gathering requirements for mobile technology?

The potential contribution for the research will be to establish quality criteria in assessing evaluation methods for user requirements in the context of older people and mobile technology. It will fill the gap in identifying user requirement methods that are suitable and appropriate for older people using mobile technology.

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