User Requirements in ICT-Based Social Media Use: Acceptance of a Virtual Coach

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Abstract
The AAL JP project V2me ("Virtual Coach reaches out to me") aims at increasing the quality of the social network in old age, thereby providing an opportunity to increase well-being and alleviate loneliness. In this contribution, results of two empirical studies are presented that aim at (1) gaining knowledge about user requirements and (2) first results on the usability and user acceptance of the prototype version of the V2me system.

Introduction
Social networks have a large impact on individual quality of life. Previous research has shown that not the number but the emotional quality of social relationships is crucial to well-being in old age. With an increasing number of older people living alone, having impaired mobility, and living geographically distant from kin, it might be difficult to increase the quality of one's social network or even maintain existing social relationships. The use of ICT might overcome these shortcomings by providing possibilities for older adults to get in contact with others in the virtual or the real world. The AAL project V2me ("Virtual coach reaches out to me") has the goal to maintain and increase the quality of the social network in old age. The project aims at developing a system that provides the possibility for elderly people to maintain existing social relationships and to find new significant social relations by ICT-based social media use. The function of the coach is twofold: (1) The coach mediates social contact with other users by providing easy-to-use social functionalities. (2) The coach helps to establish new social contacts by providing friendship enrichment lessons that are derived from a Dutch group intervention programme [1]. In this contribution, findings of two empirical studies are presented that assessed user requirements from both end-user and professional perspective as well as end-user acceptance of the prototype version of V2me.

Methods
A user requirements study in Germany in 2010 comprised workshops with professionals (nursing home staff; $N = 5$) and interviews with healthy elderly end-users ($N = 30$, mean age 80.5 years). The user acceptance study in the Netherlands in 2011 comprised workshops ($N_1 = 7$) and interviews ($N_2 = 6$) with healthy and alone-living older end-users (mean age ca. 79 years) testing the prototype version of the system on a 7'' tablet. Findings were acquired through both qualitative and quantitative analyses of the interviews as well as observational data from the acceptance workshops.

Results
Concerning the findings on user requirements, both end-users and professionals stressed similar *system requirements* for the ICT use of older people: (1) data security and (2) adaptability of the system to user characteristics were most important for ICT-based social media use in old age. Further, (3) the user interface should be easy to use and provide a low-complexity menu structure. Other factors comprised motivational

aspects of the ICT system: (4) The older users stressed the informational aspect of an ICT system to keep the user connected to daily life via news or interest groups. (5) The system should involve a positive user experience, for example, by providing positive feedback. (6) The system should be pro-active and suggest activities to the users. In a second step, *user characteristics* in ICT-based social media use were identified. These user characteristics included (1) motivation for ICT use and different user gratification types, (2) openness to ICT usage, and (3) openness to new social contacts.

Concerning the findings on usability and *user acceptance*, the workshops and interviews indicated that ease of use was reported to be quite high among almost all end-users. The emotional quality of interacting with as well as handling the tablet was rated by the majority of the end-users as positive or at least neutral. Also, the 7'' tablet seemed to be acceptable in terms of size and weight ("just about right"). Concerning the observed (and thus more objective) ease of use, several components of the prototype seemed to require initial training. For example, the coach message can be repeated by pressing a "repeat" icon. Most subjects did not notice this icon. Instructions of the coach were – although already adapted to the needs of older people – still perceived as quite difficult. Handling the touchscreen was new to almost all participants and was also observed as difficult and non-intuitive, as it required in all cases initial explanation.

Conclusions
The empirical results of gaining knowledge on user requirements in ICT-based social media use indicated a general openness to ICT use of older users who actively seek to widen their networks. The findings on usability and user acceptance of the prototype system showed at least moderate acceptance, provided that the user receives both a short initial training phase and constant support during the system testing. The next steps in the project will be to feed back these results into the design process as well as to implement social functionalities and to implement content in the friendship enrichment programme.

Aside from the potential benefits of using social media, potential barriers of ICT use might include specific user characteristics like frailty, cognitive impairments, and reluctance to ICT use. These characteristics might be particularly present in our target group of older people in assisted accommodation. Also, the real-life living arrangements as well as the user's social network have to be taken into account to make the system successful. Three lessons-learned in facilitating ICT-based social media use of older people shall conclude the contribution: (1) Constant end-user involvement through user-centred design and implementation, (2) Constant support and training throughout system use, and (3) User awareness regarding the users' social networks and physical environment to facilitate the transfer between virtual and real world.

References
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