

*H. MOLLENKOPF* (convener). **Happy aging.** *Gerontechnology* 2012;11(2):388; doi:10.4017/gt.2012.11.02.108.00 **Participants:** PETER KLEIN (Germany), TILDE BEKKER (Netherlands), FIORELLA MARCELLINI (Italy), and HEIDRUN MOLLENKOPF (Germany) **ISSUE** This symposium addresses the issue of how technology and in particular Ambient Assisted Living (AAL) systems and services can make older people's lives happier. **CONTENT** Quite often, technology is developed to compensate for age-related competence loss in older people who live independently. However, maintaining a social life and continuing with leisure activities is equally important for their well-being and quality of life. This symposium will present findings from several R&D projects on recent technical developments addressing these important aspects of older people's lives. **STRUCTURE** The symposium will be structured as follows: After the convenor's introduction three authors will present their experiences in the context of their research with (i) older people's expectations, needs, and attitudes towards technological systems; (ii) methods to assess user experiences and needs, and the possibility to translate these into methods for building an ambient intelligent future, considering user needs and competences; and (iii) a mobile social networking program, based on mobility, location, and context awareness built around the needs of older people, bringing existing communities together. Finally, the convenor will summarize the findings, and stimulate a discussion on the pros and cons of these technologies and approaches. **CONCLUSION** Conclusions for future research and development will be drawn on the basis of the presented findings and the contributions to the discussion.

*Keywords:* work & leisure, AAL, user needs, acceptance, user centred design, online social networks

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*P. KLEIN. Designing the User Experience – methods for building an ambient intelligent future.* *Gerontechnology* 2012;11(2):388-389; doi:10.4017/gt.2012.11.02.169.00 **Purpose** With the advent of 'smart homes', 'ambient intelligence', 'ambient assisted living' and 'ubiquitous computing', demands arise for new interaction paradigms. In contrast to WIMP-based user interfaces<sup>1</sup> (i.e. windows, icons, menus, pointing devices), which are good at abstracting workspaces, the new mode of interaction is characterized by direct manipulation of objects and multimodal interactions. But living in an ambient intelligent future does not only mean new technologies, ease of use, efficiency, automation and features. It also has a lot to do with emotions – what really matters to humans and what does it take to make technology more meaningful<sup>2</sup>. In order to design this future we need tools and methods for a user-centered design process. **Method** Scenario-based design (SBD)<sup>3</sup> is a user-centered, participatory design process. The core characteristics of this method are narrative descriptions of human activities and the modeling of personas (prototypical users). During iterative development, user stories are refined and become more detailed. The SBD is structured into five phases: problem scenarios, activity scenarios, information scenarios, interaction scenarios and documentation scenarios. Each phase includes methods from human-computer interaction (HCI) and usability research; e.g., ethnographic studies, interviews, focus groups, prototyping, and usability tests. One method that can be used to measure the user experience (UX) is the valence method<sup>4</sup>. The valence method is a formative evaluation of the user experience based on the user experience model developed by Hassenzahl<sup>5</sup>. The valence method captures positive and negative feelings during the exploration of an interactive product. In a subsequent retrospective interview phase users indicate the product design aspects that induced each instance of a positive or negative feeling. This phase further employs the laddering interview technique<sup>6</sup> to reveal the meaning of product design aspects to the user and the underlying fulfilled or frustrated needs. The generated information helps designers to understand and optimize the user experience potential of a product<sup>7</sup>. **Results & Discussion** Developing products using SBD reveals its advantages. Because development starts at an abstract level, there is substantial design freedom. After each iteration, a claims analysis<sup>8</sup> is conducted and triggers continuous requirements tracking and management. During several AAL R&D projects [for example: WiMi-Care: <http://wimi-care.de>; V2me: <http://www.v2me.org>] the SBD-method proved itself a valuable tool for efficient knowledge transfer between users, researchers and developers. Because of the good communicability and comprehensiveness of the scenarios, the study partici-

pants' anxiety of technology was substantially reduced during thesis projects (some of which included service robots and virtual avatars) leading to high acceptance of the designed solutions.

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*Keywords:* user centered design, user experience design, affective engineering, scenario based design

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M.M. BEKKER, Y. LU, S.E. BAHA, R. VAN DEN BERG, J. SIEKMANS. *Designing tangible social media solutions for older adults.* *Gerontechnology* 2012;11(2):389-390; doi:10.4017/gt.2012.11.02.658.00

**Purpose** Older adults may have trouble staying socially connected because of technology barriers and ageing limitations. By combining subtle persuasive mechanisms with playful components to existing daily practices, our research aims to create opportunities for older adults to adopt social media to engage in social activities with their peers. The research question is how the use of playful experience mechanisms, such as fellowship, discovery/exploration/curiosity and expression/creativity, can create values, such as reciprocity and similarities, privacy and self-expression, and the need for a common frame for interaction<sup>1</sup> for older adults in their friendships and social networks. **Method** A design-research approach was followed to answer the research questions<sup>2</sup>. In such an approach, research is performed through design: iterations of prototypes are evaluated in context, leading to rich, qualitative and situational insights. Design artefacts are created to examine how theory can be translated into design considerations. **Results & Discussion** Two design cases were conducted to examine how the three playful principles mentioned above support older adults to engage with their social networks. These prototypes were built based on the assumption that designs would better fit the values of the older adults if the tangible social media solutions would support quality rather than quantity of contacts. Based on discus-

*Table 1: Mapping of three playful experiences to values of older adults related to friendship and social networks, through design elements that were incorporated in two design cases; DC1=design case 1; DC2 = design case 2*

Value	Design elements	Fellowship	Discovery Exploration Curiosity	Expression Creativity
Need for a common frame of interaction	Abstract / phatic message		DC1	
	Ambiguous feedback		DC2	
Privacy	Unobtrusive message	DC1, DC2		
Self expression	Sending abstract message			
	Develop own language			DC1
Reciprocity, similarities	Exchange gift	DC2		
Self expression	Create personalized token / gift			DC2

sions and evaluations with a total of 25 users, involved at different stages of the project, it was concluded that the three playful principles can contribute to different values that older adults appreciate in their friendships and social networks. These playful principles relate to different values for older adults within these two design cases (Table 1). The results show practical examples of how designers can create relationships between playful principles and values in the context of the ageing population.

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*F. MARCELLINI. HAPPY AGEING: Perspectives and needs of older people towards technology.*

*Gerontechnology 2012;11(2):390-391; doi:10.4017/gt.2012.11.02.151.00* **Purpose** HAPPY AGEING

(A Home based APProach to the Years of AGEING, AAL-2008-1-11) is a 28-month project, involving five European countries (Italy, the Netherlands, Spain, the United Kingdom, Hungary) and seven international partners, coordinated by the INRCA institute, for the development of a new assistive device for older people. The system is aimed at supporting the incidence of chronic conditions, and consists of an integrating and customizable system, composed by a life-style monitor for recording main activities in the home and reminding the user about activities to perform; a navigation assistant, to support user’s mobility in the nearby environment; and a personal assistant, to support actions and search for personal objects. **Method** To assure the system acceptance, all the developmental phases were performed in accordance with the user -centred design paradigm: first, a survey with 180 participants was conducted in Italy, Hungary and the Netherlands, in order to collect information on the needs of the elderly, attitudes towards technology, and system requirements. This was followed by focus groups with stakeholder representatives in each country, to analyse the system opportunities for the future. Then, rapid testing techniques were carried out on an early version of the system: 89 elderly gave a first feedback on the three modules, assessing the interfaces’ design. Finally, a field trial with 15 subjects was conducted in Italy, Hungary and the Netherlands to test the user satisfaction and acceptance of the system. After recruitment participants tested the system for one-week period at home, followed by two further testing phases (pre- and post-pilot testing phases). Both quantitative and qualitative methods were used.

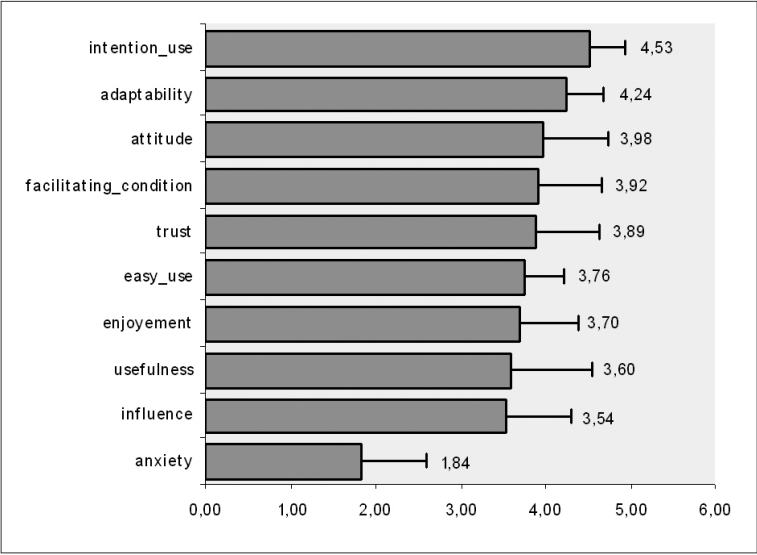


Figure 1. HAPPY AGEING acceptance: score of the UTAUT questionnaire dimensions

**Results & Discussion**

Technology acceptance and expectations were assessed during the survey and the field trial, in order to get the end-users' perspective on technology at the beginning of the project and the real evaluation of the system acceptability after its use. During the survey, expectations were assessed using ad-hoc questions: the results indicate very high expectation levels. This was interpreted as too positive a representation of the technology, probably through lack of knowledge, use, or accessibility. During the field trial, the expectations were assessed again after a short training on the system, using the Matching Person and Technology Model forms<sup>1</sup>, while the acceptance was evaluated using a questionnaire based on the Unified Theory of Acceptance and Use of Technology (UTAUT<sup>2</sup>), underlying a very balanced model within all the areas (*Figure 1*). We deduced that during experimental stages with technologies appropriate training should promote a more realistic view of technology, and so promote acceptance among the elderly. In the case of the HA (Human Acceptance)-system, further analysis is required but it appears to be considered 'acceptable' by the elderly. It will be necessary, however, to complement the assessment with perceived easy-of-use and perceived usefulness evaluations.

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*H. MOLLENKOPF. Older persons' needs and expectations regarding new technologies. Gerontechnology* 2012;11(2):391; doi:10.4017/gt.2012.11.02.166.00 **Purpose** For many years EU R&D and Ambient Assisted Living (AAL) programs have funded a range of projects to develop technologies suited to enhancing older people's independent living and mitigating demographic change<sup>1</sup>. This presentation will discuss the experiences of some of these projects (in which the author was involved as member of the advisory boards) and draw conclusions on further technology research and possible implementation. **Method** The paper will draw on (i) the review of several EU-projects, especially projects dealing with independent living and social networks, and (ii) presentations given in the scope of the HAPPY AGING symposium at this conference. The author will particularly focus on technologies developed for maintaining older persons' social participation and well-being. **Results & Discussion** The review shows that each of the respective projects applied some kind of user involvement to assess the potential older users' needs and expectations<sup>2-4</sup>. However, close investigation of the older study participants' statements shows that findings emerging from projects do not reliably mirror real life situations. Therefore, it seems difficult to translate the findings into products that both meet the potential older users' needs and are ready for implementation beyond project sites and living labs. Possible barriers, on the one hand, and necessary strategies, on the other, will be discussed.

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