

We'll stay in touch Intuitive communication means for social connectedness

**Margit Biemans¹, Aart van Halteren², Betsy van Dijk³, Gert-Jan Rijckenberg,
Xander van Pelt¹, Remco Poortinga¹**

Telematica Instituut¹, Philips Research² Universiteit Twente³, Ericsson Telecommunicatie

One of the dominant aspects in people's well-being is social connectedness. Social connectedness refers to the subjective awareness of being in close interpersonal, meaningful, and positive social relationships and social contexts (Tilburg et al., 1998; Perlman & Paplau 1981). In our research project we studied whether new services and high-tech products can help to increase connectedness between families (i.e. small community). A multidisciplinary approach is adopted in which technical and Human Factors knowledge are combined. The technology approach is strongly based on rapid prototyping, extending, reusing, and integrating existing devices and services in a novel, innovative way. Human Factors knowledge aims at user-centred design and evaluation of a.o. user experiences.

When people are forced to leave their home environment for a period of time, the lack of social connectedness might become predominant. This might lead to feelings of loneliness and have a negative effect on wellbeing. The focus in this project is on spinal cord lesion patients in a rehabilitation clinic, and their family members at home. Spinal cord lesion patients have to stay in the rehabilitation clinic up to one year after their accident or illness.

The project consists of three phases:

1. Inventory of technology possibilities and restrictions, and user requirements;
2. Technical probe study; one technical device is tested
3. Pilot study; an integrated combination of technological devices and services is tested

Inventory phase

In this phase, the technology focus was on making an inventory of services and devices that provide (a)synchronous communication, exchange content, provide input to presence and awareness information and ways to present this information. Moreover, an inventory was made of the technical limitations of the rehabilitation clinic: bandwidth, wireless connections, firewalls, etc.

The user part of this project focused on the patients, their family members, and staff members of the clinic. During interviews, aspects were discussed about current social connectedness; visits from family and friends, phone calls, cards, email, MSN, Skype, video-conferencing, social networking, photo frames and so on. Remarkably, the user needs of rehabilitants and their family are rather similar to families that are geographically dispersed (cf. Astra system). The main difference is that as a result of a major lifetime event (spinal cord lesion) some people are more open to learn to use new technologies. Combining the findings of this phase resulted in three scenarios that were discussed with the patients and their families:

1. **A piece of everyday life:** family members make photo's and text messages, and send them to a photo frame near the bed of the patient: the patient gets surprised and informed about the everyday things in normal life, e.g. flowers in the garden, fish caught by son, new class members, etc.
2. **Stay in touch:** one dedicated mobile phone is distributed amongst a small community of friends or colleagues. One person is responsible for the phone each week. He has to keep in touch with the patient via photo's and text messages to the photo frame near the bed of the patient. In this way, they stay connected and when the patient gets home after a year, getting back in contact will be easier.



Figure 1. Example of photo frame

3. **Please, not now:** rehabilitating patients suffer from mood changes and are

often tired in the evening. Phone calls or other ways of getting in touch are inconvenient. However, they are often too polite to ignore the phone calls. Patients can indicate their presence and mood information on a Chumby (see picture), which is presented on the Nabaztag in the home of the family. The Chumby is chosen as an input device because of the limited motor functions of the patients.



Figure 2. Example of Chumby and Nabaztag

Technical probe study

The three scenarios are being tested in practice with patients in a technical probe study (two weeks). The basic idea of the technical probe study is to let users explore the possibilities of the technical devices, let them reflect on it, and measure their experiences in various ways. Pre- and post test measurements (interviews and questionnaires) on social connectedness are conducted and combined with log data. Attention will be paid to interaction aspects: do photos lead to phone calls? Is presence information respected? What are expectations and effects of the mood information displayed?

Future research

Based upon the results of the technical probe study intuitive communication services and devices will be integrated and combined and tested in various pilots. The results of the pilot study should lead to research questions about social connectedness, and the design of new devices that integrate crucial aspects of social connectedness.

References

- Markopoulos, P. et al. (2004). Keeping in touch with the family: home and away with the ASTRA awareness system. In: *Proceedings CHI 2004*, April 24-29 2004, Vienna, Austria, pp. 1351-1354
- Perlman, D., Peplau, L.A. (1981). Towards a social psychology of loneliness. *Personal relationships in disorder*, pp. 31-56, edited by Duchk, S.W., Gilmour, R. London: Academic Press
- Van Tilburg, T., de Jong Gierveld, J., Lecchini, L., Marsiglia, D. (1998). Social integration and loneliness: A comparative study among older adults in the Netherlands and Tuscany, Italy. *Journal of social and personal relationships*, 15: 740-754.