Combining the Experience Sampling Method with the Day Reconstruction Method

Vassilis-Javed Khan[1]   Panos Markopoulos [1]   Wijnand IJsselsteijn[1]

[1]Eindhoven University of Technology
Den Dolech 2, 5600MB, Eindhoven, The Netherlands
{v.j.khan; p.markopoulos; w.a.ijsselsteijn}@tue.nl

ABSTRACT
This paper discusses the methodology of a survey of communication needs that aims to inform the design of innovative technologies to support family communication. Following a series of studies that relied on traditional methods: interviews, questionnaires and a field trial of a prototype, we have come to realize that we need a strongly contextualized survey of user needs. The method we adopt and which we discuss relies on a combination of: the Experience Sampling (ESM) and the Day Reconstruction (DRM).

Categories and Subject Descriptors
H.5.2 [User Interfaces]: Evaluation/methodology.

General Terms
Human Factors.

Keywords
Communication needs for parents, Experience sampling method, Day reconstruction method.

1. INTRODUCTION
Two facts of modern life put family communication needs of busy professionals into pressure: less time to spend in social communication and having to work in distant locations from their loved ones. Current communication media are ubiquitous and mostly affordable however they satisfy those needs partly because one has to spend time and effort to keep in touch.

From a technical perspective, the advance of computing will soon enable environments to sense and partly understand the context of the people inhabiting it. Therefore, environments can have information they can share with their inhabitants or with other people with the goal of helping people to keep in touch with minimum effort spend.

We envision that mobile devices and objects of the environment can semi-automatically exchange awareness information between them. We call the technology that shall enable this exchange Pervasive Awareness (PA) [2]. In our project we take a user-centered approach which has as a goal to research how such a technology can fit the communication needs of intra-family communication and more specifically the communication between parents.

The problem one is faced with, when following a user-centered approach, is how can someone reliably find out the communication needs of busy parents? That is a difficult task because their needs vary very dynamically. Thus to capture them one needs to have a flexible and context sensitive method to fit into the lives of the participants.

We were faced with the problem of capturing those needs when having performed an interview study with 20 busy parents [2], a field study of a rudimentary PA system [3] and an online survey with 69 participants. The common problem all those methods had was lacking flexibility to fit into the life events of participants. Having that flexibility we now believe that they could reliably capture the communication needs participants had.

Our efforts got us closer to uncovering the communication needs of busy parents however faced with the problem we mentioned a natural progression to our research was to use the Experience Sampling Method (ESM). Having created appropriate tools to execute the method and while piloting them we realized the shortcomings of the method. Some of the shortcomings included usability issues such as reading the question and tapping to insert a text. In addition, the application was perceived tedious because there was a single question that was asked and had usually similar answers. Moreover, there were many moments that participants could not answer the question. Finally, participants wanted to see that their input was actually used and acknowledged by the system. Having experienced the shortcomings an obvious solution to those was the tying up the ESM with the Day Reconstruction Method.

We will explain the reasoning of the tie up as well as the tools we have prepared to execute the combined methods in the remainder of this paper.

2. METHOD
In this section we will first cover the ESM and DRM methods with their pros and cons. Next we will present the tools we prepare for combining the two.

Experience sampling method
The ESM is a quasi-naturalistic method that involves signaling questions at subjects at random times throughout the day [4]. By using it, researchers try to capture the experience of the subject at a particular time. Although very useful in capturing a specific