In-Car Concepts to Support Working Parents

Rachel Eardley, Jenny Hyams & Abigail Sellen

Hewlett-Packard Laboratories

Filton Rd., Bristol, UK BS34 8QZ

Rachel.Eardley@hp.com, jen_hyams@yahoo.co.uk ,

Abigail.Sellen@hp.com

CATEGORIES AND SUBJECT DESCRIPTORS

H.5.2 [Information Interfaces and Presentation]: User Interfaces — user-centered design; J.7 [Computer Applications]: Computers in Other Systems— consumer products.

GENERAL TERMS

Design, Human factors.

KEYWORDS

car, mobile applications, working parents

INTRODUCTION

Working parents are an interesting segment of the population because they have heavy demands in both home and work spheres. In an initial, in-depth study [1], we discovered many different strategies that working parents employ to help them cope with work and family demands whether they are at work, at home or mobile. This research also highlighted working parents' heavy dependency on the car as a kind of "mobile habitat" in which work and home demands are dealt with.   More particularly, we found that the car is the context within which the transition both geographically and mentally between work and home life is managed. Because of this, working parents spoke of a number of particular stresses associated with car travel.

Our goal in this strand of the research was to explore new opportunities to support working parents through the development of in-car applications aimed specifically at their needs. There is very little in the published literature aimed at the design of in-car applications focused on a particular population segment (although, see [4]). Most of the work in HCI and Human Factors Engineering is concerned with either driver support or "infotainment" applications (e.g, [2]).

APPROACH

Following on from the first study, the validity and extent of car-related stresses for a larger sample of working parents was confirmed in a follow-up questionnaire involving 715 people in both the US and the UK. Here, we found 6 of the most severe everyday problems for working parents were related either specifically to being in the car, or were more general problems exacerbated by being mobile (see [3]). On the basis of this finding, we conducted a follow-up workshop with six working parents to discuss car-related issues in more detail. Among the issues that most concerned them were:

- The stresses of having to drop off or pick up children on

time due to the uncertainties of traffic and unexpected demands from home or work.

- Stresses surrounding remembering objects and items for school and work that must be taken in the car or transferred between cars.

- The difficulty of taking care of work activities (e.g., time management and communications) while in the car.

- The difficulty of communicating with family and managing and coordinating family life while driving.

- The difficulty of entertaining children, especially younger ones, on longer journeys.

CURRENT DESIGN WORK & NEXT STEPS

Based on these findings, we have begun to develop a catalogue of design ideas for technological solutions either in the car, or connecting activities in the car with the household or the workplace. In the accompanying poster, we describe two of these ideas. In the first, we describe a mobile system for helping parents find and communicate with a trusted adult in the vicinity of their child's school for circumstances in which they are running late. In the second, we outline a system to help parents keep track of objects that both the parent and children need to take with them during the busy morning rush. Both of these issues were discussed in some depth during the workshop and also within the larger interview study [1].

Next steps include feeding back these concepts as well as others in the design catalogue during subsequent workshops with new groups of working parents. Based on this feedback we will identify the best concept or concepts to take forward for prototype development and evaluation with end users.

REFERENCES

1. Beech, S., Geelhoed, E., Murphy, R., Parker, J., Sellen, A. & Shaw, K. (2003). *The Lifestyles of Working Parents*. HP Labs Technical Report HPL -2003-88.

2. Ekholm, A. (Ed.) (2002). The design of in -car communication and information applications. *Special Issue of Personal and Ubiquitous Computing, Vol. 3(3).*

3. Sellen, AJ, Hyams, J. and Eardley, R. (2004). The everyday problems of working parents: Implications for new technologies. *Hewlett-Packard Technical Report.*

4. Smith-Bernadtsson, D. & Astrom, J. (2001). Is there a need for mobile services? *Procs. of 24th Information Systems Research Seminar in Sca ndanavia*