
How to Look Beyond What Users Say That They Want

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Abstract

This paper shares our experience with a strategic design project for defining the key user experience scenarios for utilizing location information available on mobile devices. While the domain area has been known both in industry and academia alike for many years, our stakeholders wanted to know what would be most appealing user experiences in the coming years, particularly beyond what is expected and available in the market right now. Therefore gaining confidence in understanding user needs and desires was considered crucial in the project. We pursued two main tracks of design research activities to bring insights on the current users' perceptions, needs and wants (contextual interviews) as well as implicit wishes and aspirations (exploration probes and creative workshop) we should fulfill when designing location aware solutions. We describe our rationales of how we designed the design research process, and compare the results of the two tracks.

Keywords

Concept design, user experience design, design planning, user studies, experience strategy

ACM Classification Keywords

H.1.2 [Models and Principles]: User/Machine Systems

H.5.2 [Information Interfaces and Presentation]: User Interfaces

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Introduction

Our team belongs to the in-house corporate design organization. Multidisciplinary in nature and located in three cities, we are responsible for proactive design concept and vision creation, in line with our overall design strategy. We provide knowledge and our expertise that could benefit the wide audience in the corporation. In the beginning of 2006, one of the selected themes for our team was concerning 'location', which was considered one of the key user experience domain areas for the upcoming devices. Our team was commissioned to look at the domain area and propose a strategic vision with a strong emphasis on user needs and motivation.

Our process started with collecting the internal needs and the status of many of the teams working in projects related to the domain area, before defining the scope and the objectives of the work. Thereby, we outlined the following criteria.

- Define the most salient user experience scenarios of utilizing location-aware mobile device in the coming years
- The scenarios have to be grounded on people's current or foreseeable lifestyles, reflecting actual user needs
- Focus on everyday life contexts, excluding tourism & driving context

Designing the design process

We started the initial desk research by collecting internally available knowledge on the domain area. This alone quickly revealed that there are in fact very few commercially available applications and services

relevant to our topic. We therefore started to look at ways to design our activities to support a balanced and holistic view on:

- People's current needs & aspirations for future
- Influence of characteristics of the environment

Our goal was to finalize the project in about 5 months, and as with any design project, we had to allocate our given resources carefully in the process. Thereby we came up with a plan which comprised of 4 main tasks for the design research. In particular, we pursued two separate user-involved design research tracks in order to bring in inspirations from very different viewpoints.

Task 1: Background research

It was crucial that we understood the user, technology, and business/market landscape well to begin with. We on one hand reviewed the academic research that was bubbling under, but at the same time, reviewed existing products and services that had relevance for using location information. At the time of early 2006, most of the commercialized products utilizing location information were navigation aids, especially designed for car driving contexts. In order to understand the current usage, we launched an online survey targeting existing mobile phone-based navigation system users in Europe. The survey was advertised through local newspapers in 6 European cities.

Task 2: Contextual interviews

Based on the background study, we defined areas in everyday lives that have the potential of benefiting from the use of location information. Due to lack of commercial product/service offerings, we designed a

qualitative study protocol that was comprised of an in-depth interview session according to a guided set of questions, followed by a session of field observation and contextual interview using the environment as prompts for further discussion.

Six cities including Milan (Italy), Munich (Germany), London (UK), Seoul (South Korea), Tokyo (Japan), and Hyderabad (India) were selected as interview locations, and each city had 7 to 8 people who participated in the individual interview. The recruited participants were regular mobile device users, highly mobile and social. For each city, we required a balanced group of participants in terms of e.g., gender, life stage (single vs. married), history of living in the city (less or more than 3 years), and so on. Prior experience with digital tools such as city guide, maps, and navigation aids were checked and preferred. Each interview took about 4-5 hours to complete. Each interviewee was asked to bring 3 different objects according to our request, which were used as stimulus for discussion during the interview. An analysis report was created for each of the cities, following the same structure and format. Each report highlighted the most salient user experience scenarios emerged, as well as key user archetypes that could characterize different user attitudes and motivations. Each report included a large number of photos and videos illustrating different contexts.

Task 3: Exploration probes [1]

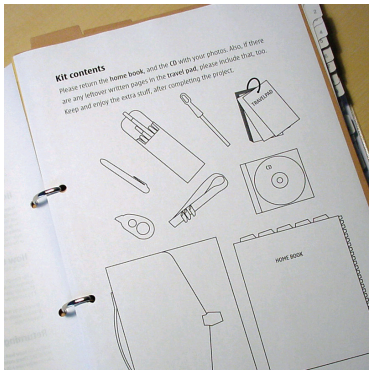
In order to complement the information expected from the contextual interviews, we wanted to explore the subject matter in a very different way, but still keeping an intimate connection with people's everyday lives. Our main motivation for pursuing this parallel track was

the known limitations of the qualitative user research (in this case, our contextual interviews) conducted in a very short period of time. For instance, however we try cross-examining the interviewee with multiple questions and observations it would be difficult to overcome the limit of how she or he can reflect on the less salient life moments, or continuity/discontinuity of certain attributes over time within 4-5 hours. Another limitation is that often people's opinions expressed during the interviews on what they think they want in the future are inevitably shaped and influenced by the mass media, or 'what they heard as possible'.

Thereby, we started to generate a list of 'moments in life' according to the areas covered in the contextual interview protocol. The difference was that instead of thinking about questions to ask, we focused on thinking about activities that would trigger ideas and facilitate moments of reflections for people who engage in the act. We wanted to urge the participants to stop for a moment, see and record how they are solving everyday problems related to their environment. We wanted to put the participants in situations that help them observe their own and others' behavior from the outside. We came up with 26 such tasks. These 26 tasks were then phrased and 'designed' in a way that participants can do things first and then reflect upon them later.



Figure 1. The exploration probe kit containing the home book, the travel book, and recording props. Selected participants received the kit via mail and all the tasks were self-administered.



As shown in figure 1, we designed the 'home book' and 'travel book' listing all the tasks. The travel book was in a form that the participants could carry with them all the time, take notes, tear it apart if needed, and paste the page in the home book if needed. The home book contained more comprehensive descriptions of all the tasks, plus additional pages and props that participants can use to report and consolidate the results of completed tasks.

We recruited 19 people from our global in-house design organization as participants. As completing the probe kits required participants' commitment and time, we ran a short survey to screen participants. Chosen participants were from four cities, including Los Angeles, London, Helsinki, and Tokyo. 2 to 3 weeks were given to complete the tasks they chose to do and send the home book back to us. Respecting that everyone would still have limited time for engaging in

the tasks, we design the probe kit in such a way that they could easily plan their time and choose which tasks they would and could do, by providing the overview of all the tasks, and short descriptions of estimated completion time and 'what it takes' for each of the tasks.

Task 4: Creative workshop

We invited 8 active contributors in the exploration probes to a four-day workshop in Tokyo, which was in fact given partly as an incentive for participation from the beginning. While exploration probes focused on individual experiences in a familiar environment, the creative workshop was designed to explore similar themes in groups and in an unfamiliar environment. We also created exercises for the workshop where the groups documented the environment for the others, thus exposing them to different strategies for creating maps and representations of the environment. Finally, the participants created a number of concepts and scenarios of new location aware devices and services.

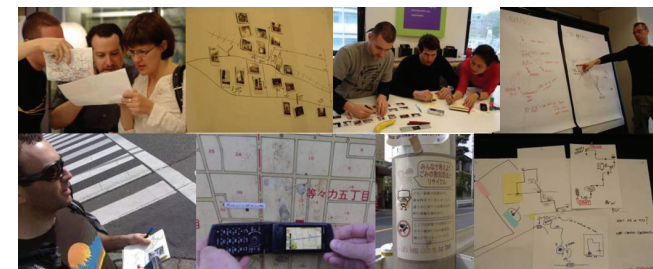


Figure 2. Workshop participants documenting their group task of exploring an unfamiliar environment.

While each of the four tasks in the design research phase was important in its own right, task 1 (background study) and 3 (exploration probes) had

more informative nature for task 2 (contextual interviews) and 4 (creative workshop), respectively. All the design research activities were done in 3 months from conception to execution and reporting.

What we learned

We pursued two very different tracks of understanding user needs and wants. One track was to collect user insights based on interviews. The obvious benefit of this track was that we could cover 6 different cities and collect information on a larger number of people in a very short period of time. The other track was to let people do things first, and reflect their own behaviors through self-documentation. Participants were asked to do things that were slightly beyond what they would have done otherwise on their own so that they would discover or observe new things about their environment or different aspects of their lives.

Contextual interviews

The most important findings from the interviews were the user archetypes and influence of the infrastructure on user needs. We discovered 7 dimensions that are important for characterizing users of location information on mobile devices:

- Attitudes toward preparation
- Attitude toward navigation
- Trigger for discovering new places
- Motivation to explore environment
- Curiosity about environment
- Recording life moments
- Attitude toward technology use

7 salient themes were also consolidated based on data from 6 cities. By looking at the overlaps coming from multiple cities, we could also get a sense of how the environment influences the user needs. For instance, densely populated, bigger cities necessitate people to 'localize' their lifestyle in smaller bubbles, seeking new things and navigating the city based on their selected small neighborhoods or certain thematic interests. As another example, the maturity of mobile phone usage culture correlated with the degree in which people associate location information to more socially centered functions.

Creative workshop

We had in total 12 participants and 2 facilitators (including the first author) for the workshop. Majority of the participants did not speak Japanese and had little or no prior experience in visiting Tokyo. As participants were all working in the domain of mobile industry, on average they had a better idea about the available technology and related developments. 8 themes emerged from the workshop, and 3 of them were further developed as user scenarios. As participants were a multidisciplinary group of designers, we concluded the workshop by developing design guidelines for each of the disciplines of industrial, graphic, and interaction design. As the project team was part of the workshop, all the process was thoroughly documented.

Comparing the findings

Common themes from both tracks were way-finding, social organization, and being aware of the environment of 'here and now and then'. However, the seven salient themes from contextual interviews were

largely about utilitarian ways of using location information. Typically people stated their needs or wants based on the existence of certain 'tools' and their functions such as helping bargain hunting, or a way to mark places to remember quickly and without hassle.

In contrast, the eight themes we created in the workshop were mostly about personal or shared experiences, with stronger emphases on the mental gratification and longer-term motivations of use. For instance, the common theme of navigating in the city was approached by workshop participants more from the perspective of information needs that can provide 'peace of mind' during the journey. Also escaping boredom or creating small excitement in everyday life context was an important theme in the workshop but did not emerge from the contextual interviews.

The difference in the setup including participants' domain knowledge, exercises visualizing the experience, time for observing and reflecting on their own lives, stimulus given by the foreign city, and so on would be an explanation of the differences observed in the resulting themes.

Conclusions

We consolidated all the information to create 7 user experience scenarios of future location-aware mobile devices. The project team prioritized the rich material of potential scenarios with rationales considering technical feasibility and business potentials, as our role was not only providing a blue sky vision, but also showing the way to get there with a special focus on user interactions. We also left out scenarios that were interesting but did not have enough focus on location information, such as 'heartbeat sharing' between

people in intimate relationships. The information about the various urban environments allowed us to enrich the scenarios with more assumptions about enablers and show stoppers from infrastructure and cultural characteristics. Comparing the findings from the two tracks of design research activities, we also tried to represent a balanced vision between the utilitarian and the aspirational user motivations.

Looking back, we could have done many things differently. For instance, the workshop could have happened after the contextual interview results became available so that the designers could focus on creating the scenarios. However, having these two tracks separated from each other brought the project team a perspective to look beyond what people – designers or 'common people' say they want. Creating user scenarios of the future is much more organic than scientific in practice, in the sense it's about making valid and plausible assumptions about the future based on understanding the present. And having two different sets of themes from the same topic provided the project team much more confidence at the results.

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References

[1] Bill Gaver , Tony Dunne , Elena Pacenti, Design: Cultural probes, interactions, v.6 n.1, p.21-29, Jan./Feb. 1999