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Postprint / Postprint

Sammelwerksbeitrag / collection article

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### Empfohlene Zitierung / Suggested Citation:

Kern, D., & Schmidt, A. (2007). Gas station flash survey: a method for interviewing drivers. In T. Paul-Stueve (Ed.), *Mensch & Computer 2007: Workshopband* (pp. 1-5). Weimar: Verl. d. Bauhaus-Universität. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-464106>

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# Gas station flash survey – A Method for interviewing drivers

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## Abstract

Interviews and questionnaires are very important techniques to acquire information from the potential user. Surveys are one tool to understand users' needs which is in particular helpful in the early phases of user interface design processes. To get meaningful information interface designers typically determine the target user group for an application. Most commonly, when designing in-car interfaces, the car drivers are the prime target group. In this paper we suggest a method to involve this group for a quick survey and we report our experience. The distinct features of this method are the location where the survey takes place (the gas station) and the length of the interview (2 to 5 minutes). This place ensures that the people actually use cars and have driven for sometime before the interview. The time is determined due to the task (filling the car) and people typically do not have plans how to spend this time and are happy to use this spare time to answer questions.

## 1 Introduction

Knowing what the user wants is the key factor to success in a user centered design process. For in-car interfaces the driver as the user is in the centre of investigations. User surveys based on contextualized interviews or questionnaires are useful to get driver's imaginations, ideas and wishes for the developing of user interfaces especially in the early design phases.

In this paper we present a method to conduct a "flash interview" with the desired target group "drivers". The interview is designed to take place at a gas station, which is chosen; because it is likely to meet there potential users who have some spare time. Our experience is based on interviews, which were done in a project for improving in-car telecommunication (Kern et al. 2007). The basic method and the conducted survey will be presented after a short analysis of related work in the field of user surveys and user interface design for drivers.

## 2 Related Work

In Human-Computer interaction, surveys are an important technique to involve the user in the design process of a user interface. There are different methods like interviews and questionnaires with different styles of questions like open ended or closed question and which employ different technologies like web based surveys, software or paper. For more details see (Dix et al. 2003).

For the user interface design process for car interfaces can be noted, that for the late phase of design processes, there is a lot of assistance to evaluate a developed prototype or systems, like in a driving simulator (Kuhl et al. 1995, Kang 2004), with a lane-change-task (Mattes, 2003) or occlusion test (Keinath et al., 2001). These methods require the participants to come to a lab and spend a significant time there. To create ideas or validate early design concepts these methods are not practical.

One possibility to reach a large group of users is the use of online questionnaires. However, in case a specific user group is required, online questionnaires have to be specifically targeted as otherwise the opinions gathered may be of little use. Online questionnaires are typically done while users are at home or in the office and hence they are detached from using the car at the moment the answer the questions. In contrast the flash interview at the gas station is a survey method especially tailored for the user group “car drivers”.

## 3 Gas Station Flash Interview

The survey method introduced here was developed and employed during a project to improve in-car communication techniques. Its main goal was to get quick input from a large number of drivers in a short time for a new in-car user interface. Thus, we chose to carry out the interview at a gas station, because there it is easily possible to get drivers only as participants. As a further reason, the gas station is useful for a flash interview, because drivers very rarely have something to do while fueling their car. We found exactly these couple of minutes (2 to 5 minutes) are very useful for an interview and willingness to participate is high.

As people typically come to the gas station with the car which they use, selecting drivers from a typically market segment can be easily done. E.g. when designing for SUVs only drivers that come with an SUV are included in the interview.

The central limitation is the duration of the interview. Researchers are free to choose interviewing techniques bearing in mind the short time period available. They can use closed question formats like scalar, ranked, alternative and multiple choice questions as well as open questions. Because the drivers are standing close to their cars and they are possibly busy with the fuel nozzle, the interviewer should ask short questions and give only a few quick answer possibilities for closed questions.

When designing the interview, it is essential to get the timing right. Interviewers have to calculate enough time for the preparation, introduction and questions. It is strongly advised to conduct preliminary interviews without the time pressure to ensure that the interviews can be conducted in 2 to 5 minutes. During these preliminary interviews, the interviewers can generate a list of hints for open questions from the given answers, which they can provide to the participants, in case that those cannot come up with an answer in some time or to animate to further thoughts. Of course, great care must be taken not to influence the participants. Additionally the fact that hints were given should be noted in the report of the answers.

As the time is very short this has to be reflected in the preparation for the researcher, too. When using open questions it is still helpful to have a list of possible answers derived, e.g., from the preliminary interview, so that during the interview the interviewer needs only to tick most of the given answers instead of writing them down. Alternatively recording the whole conversation or recording audio notes is a further option to save time.

To minimize the unused time between interviews at a gas station, either a large gas station or a day when many drivers visit the gas station should be chosen. According to our experience the best days in Germany are Mondays, Fridays and Saturdays.

## 4 Example Use of the Method

The method was initially used in a project for improving in-car communication interfaces (Kern et al. 2007). The goal was to find out which conditions and situations are contributing to make a call in a car convenient or disturbing. We decided to ask two open questions. Both questions were discussed with participants without time pressure in a pilot study ahead of the interviews, so that many possible answers and hints were collected. This was very helpful for conducting the actual interviews at the gas station.

For the survey we choose a busy day, in this case a Friday. Within four hours, two hours from 10am – 12am and two hours from 2pm – 4pm, one researcher was able to interview 58 drivers. To our surprise everybody who was asked to participate volunteered to take part in the survey and spend the otherwise unused time during the fueling of the car for the interview.

To give the reader a feeling about how many answers can be expected we present the quantitative results in the following. For the first question, we documented 144 spontaneous answers and after given a hint further 55 answers were added. Thus, each participant gave 2.5 spontaneous answers and 0.9 further answers on average. For the second question, we altogether got 127 answers, which means 2.2 answers per participant. Because the hints were identical for both questions no more hints were given for the second question. In our experience this method is very efficient as we got in a 4 hours a total of more than 300 answers. With the collected answers we got a good estimate for the further development of a new in-car user interface from the specific target group in a very short amount of time. Our experience indicates that the quality of the answers was better than from typical web surveys.

## 5 Characteristics of the Gas Station Flash Survey

Gas Stations Flash Survey is a low cost survey method with the specific target group “car drivers”. In very short time and without the need to start a recruiting process and without paying participants a compensation for the time they spent (although it may be a nice act to show some appreciation to the volunteers), a large number of useful statements can be collected for the development of a new in-car user interface.

Due to the short period of time, it is important to survey just *one specific objective* with just a few selected, easy to understand questions. Either closed or open questions are suitable. Regarding the kind of the interview the number of questions, which are qualified, varied and needs to be assessed in a pilot interview. To answer close questions with three or four answers possibilities are of course quicker answered than open questions. To avoid this disadvantage of open questions hints may be carefully used to inspire the participants.

To conduct a successful interview a careful preparation is essential. To generate hint lists, possible answers for close questions and to get a feeling how long the real interview will be, so that the interviewer doesn’t run the risk of interrupting the interview at an early stage.

Given by the circumstance in which the interviews are carried out this method is not suitable for longer interviews that, for example require the participants to read scenarios or understand complex systems. Otherwise, the discussion would have to be interrupted and very probably be terminated prematurely. However, it provides a relatively *constant time window available for the interview*.

As the interview provides an initial contact with drivers this could be taken as an *opportunity to recruit* them for follow up interviews or user studies (e.g. ask their permission to call them in a later design phase).

The *high willingness of the drivers to participate* must be highlighted. Interviewers in shopping arcade or shopping malls for example have often the problem to recruit participant. Most people purport that they don’t have time. Whereas in our interview period at the gas station all asked drivers were disposed to use the time to answer the questions. The high rate of cooperation is very motivating for the interviewer, too.

One important issue which we observed during the use of this method: most customers at a gas station are male. During our survey, only two participants were female. It seems that for family cars going to the gas station is at least in Germany male dominated task. To counter the *gender inequality* it is useful to chose a large gas station and take particular care to get a balanced set of interview participants.

### 5.1 Advantages and Disadvantages

The main advantage of this kind of interview is that only the desired target group is asked. The interviewer doesn’t need to sort out the non-drivers as it is likely to be the case in an online survey, for example. As people come to the gas station by car, the interviews are in

situ and hence relate directly to the users' experience. The observed enthusiasm to participate in this survey is encouraging. Within a short time period a lot of drivers can be asked and they don't have to spend extra time.

On the other hand, this method is not useful for longer or complex interviews since due to the short time, you can only ask a few questions and the participants are probably not able to fill in a questionnaire by them self. If you have too many questions, it is more likely that you have to abort the interview in advance and the driver has to leave before you are finished with the interview. That makes the preparation time ahead of the interview very important and more time-consuming. Another disadvantage is the fact, that in this method the recruited participants are more likely to be male than female, to achieve a balanced gender study more time must be spent.

## 6 Summary and Conclusions

We presented a method to interview car drivers. The location of the interviews, a gas station, is the most important aspect. The drivers are asked only a few questions during the time they use to fuel their cars. It can be ascertained that in a short time you can get many statements from the desired target group with only a few questions for a variety of applications.

At the gas station there are also passengers in cars, and hence depending on the target group for the applications (e.g. in-car entertainment) it may be useful to recruit this target group in a similar type of interview also at the gas station. Similarly to interviews at the gas station it can be considered to go to other places, where drivers have spare time. One example is the drive-through car-wash. Here it seems that the spare time is due to waiting even longer.

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