

Deep inside friendly territory

Involving remote co-researchers to understand global users

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Abstract

The aim in this case study is to explore how to do contextual research in a remote and global context, in which cultural issues play a major part. We executed and evaluated a design research project on a flight-cabin crew-rest area. In this paper a design research method is laid out to obtain information from global users about their experiences, used for design projects, by engaging non-professionals in the research. We found that this collaborative way of doing design research can be very effective, but requires involvement of co-researchers throughout the various research activities, beyond data collection only. In addition, the collected data identified many themes, but needed an additional step, in the shape of a contextmapping-session to reach in-depth information.

KEYWORDS: global design, co-research, remote research, culture, user research

1 Introduction

Many products such as televisions, mobile phones and sport shoes are designed with the intention to serve people in different places and situations all over the world. However, products tend to diversify regionally: The older the product category, the stronger the influence of culture is (de Mooij, 2004). Whenever

possible, products tend to be adjusted to local situations, thus increasing their financial, utility and social values. For instance, in rural India the value of mobile phones increases if their users can easily share them by incorporating multiple address books and payment accounts (Lindholm, 2003).

The case we study in this paper is to design one global solution that will be accepted by multiple cultures. In this study Hofstede's (2005) cultural theory has been applied on a national as well as a professional level: the members of the group (in our case cabin crew-members) cope in a specific way with each other and with the situation due to both their national background and their professional context. Different crews from different nationalities and airlines will use the final design of a crew rest cabin; the place crewmembers sleep during longer flights, worldwide and adapt the crew-rest service to the global solutions (the physical product) offered. By doing so they utilize and adapt the solutions confronted with. Our aim is to serve different preferences in advance and bridge eventual possible cultural gaps. Another factor that complicates the design task is that the product service system to be designed is being used in a mobile environment (flying airplanes), which means that the design research, needed to understand user experience on personal, cultural and universal level, cannot easily be done on a specific location. Flight personnel with crew rest experience is difficult to reach since they live in many different paces in the world and when travelling they are occupied with their job. Besides, legislation of airlines is very strict, because of safety reasons and therefore, on-the-job observations, interviews and Experience Sampling Methods (Consolvo, 2005) are not allowed.

Designing for, or researching large, scattered and global-users is especially hard as it is a costly, time consuming practice. Beside, the money and time issues, it is difficult to create a good insight into individual, cultural and universal behaviors, needs and values.

Central question in this case study is therefore how to do contextual research in a remote and global context. The sub-questions are: (1) Is it effective and efficient to work with remote co-researchers and when? (2) Which factors do design researchers have to take into account when incorporating remote co-researchers in their project? (3) What are barriers and limitations for the use of remote co-researchers in design research projects? To answer these questions we executed and evaluated a design research project.

In this paper a design research method is laid out to obtain information from global users about their experiences, used for design projects.

We first discuss some of the theoretical perspectives on the concept of culture and co-research. Then a case is presented, in which travellers in the role of co-researchers are involved. Furthermore, the process of designing, organizing and executing of this research project is described, concluding with a discussion of some of the main insights derived from this case.

1.1 The concept of culture: D-L-L-D

For the definition (D) of culture we follow Hofstede (2005): 'The system of shared beliefs, values, customs, behaviours, and artefacts that the members of a society use to cope with their world and with one another, and that are transmitted from generation to generation through learning'. We mainly look at two levels (L) at culture; on a national (crews from different countries) and professional (airlines) level. For the manifestation or practices of cultural values, we look at all layers (L) (symbols, rituals, heroes and). Finally, the cultural dimensions (D) of both Hofstede and Trompenaars (Trompenaars, 1998) are used to understand on what dimensions differences are expected.

1.2 Remote co-research

Engaging people to do a joint research project is common practice in the field of participatory design (Avison, 1999). Co-research refers to the involvement of non-researchers in order to execute a research project in a domain they know well. They are not only reporting about their own experiences as is done in participatory action research, but are actively involved in designing and doing the research. In the field of design research, Van der Lugt (2007) involved members of an organization as co-researchers as part of an initiative to re-define the human resource services of the organization. The participating co-researchers received an inspiring research kit and were instructed in a workshop to enable them to reach sufficient 'depth' in the conversations. Then, they were asked to interview a number of employees in their direct context. With 20 co-researchers, this led to about 100 in-depth stories of employees' experiences. These experiences were then interpreted and structured in a collective effort by the co-researchers, leading to a set of 3 personas that were used by the design team.

We have applied co-research as a means to gain access to experiential worlds of people that are hard to reach. The adaptation to co-research, which we refer to as 'remote co-research' is different. The involved people (frequent flyers), who investigate the experiences of professional staff (the cabin crew) were not experts of the research domain and they were not travelling to the context of research specifically for the research. They combined this research aim with a personal one. We involved these frequent flyers for practical reasons in order to achieve a global perspective on the crew rest experience.

2 Case: a global crew rest service design

The design project was part of a graduation project of a master design student (first author) and has been executed in consultation of a company, designing and producing crew rest cabins. This engineering driven company identified the need to move from a design problem solving way of thinking to an inquiry and service based thinking to secure its position as market leader (Kambell, 2011). From a concrete engineering-focus the attention moved to an abstract-values-focus to serve crewmembers during their work. This move led to the start of a design research-project to understand the user experiences of their crew rest cabins.

2.1 Preliminary research

The project started with a local contextmapping session with 4 Dutch crewmembers to find out what variables could be important to investigate the user experiences. This session served to identify crude directions and a knowledge gap that could be investigated with a literature study and field research.

2.2 Design of the research approach

A half-day design session with 3 design researchers, 2 company members and a graduating student, was organized with the aim to find strategies to fill the knowledge gap. One of the strategies was to involve remote co-researchers. Furthermore, solutions were generated for the selection and recruitment of remote co-researchers and their research tasks and means. Based on the knowledge gap 'research kits' were developed to support the co-researchers to do their research.

2.3 Remote co-research

For the remote co-research we found 6 frequent flyers motivated to do the research. In total they had sessions with 19 crewmembers from 7 crews in 8 nations. Because six different people acted as researchers, bias was minimized, as specific answers are not unintentionally evoked or recognized by one person.. In total 19 kits were analyzed.

The remote co-researchers had to be empowered to ask and say the right things. To do so they were individually trained during the meeting in which the research kit was handed over. In that meeting the research was demonstrated with the remote co-researcher being the participant, to get a better understanding of the questions and to create empathy with future participants. The first thing explained was the motivation and goal for this research; what the research team was looking for and which themes the team believed to be of special interest. It was important for the remote co-researcher to realize that the preferred results were not problems or improvements per se, but rather interesting stories and anecdotes from crewmembers. After this introduction, a booklet with questions, which is part of the research kit, was used with the researcher acting as remote co-researcher, showing how it should and could be done. The result, a filled out booklet, was discussed afterwards, creating the foundation for the remote co-researcher to work with. The filled out booklet with results and remarks was taken by the remote co-researcher and acted as a reminder to the training. It was recommended to read the booklet just before the start of the sessions with participants.

2.4 Research kit

The first version of the research kit was created by the design-team alone. But subsequent iterations were improved based on input of the remote researchers and end-users.

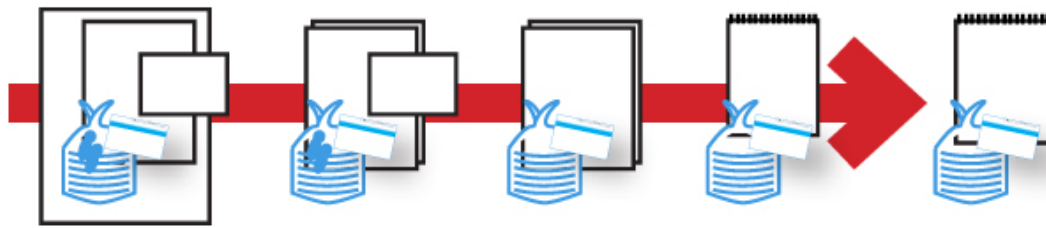


Figure 1 From left to right: The research kit improvement process

The first version of the booklet appeared to be too 'open' as the answers were not rich enough. Furthermore, the different paper sizes and loose papers were very hard to handle, the researcher had to stand instead of sitting down with a crewmember and there was much less time for sessions with participants available than expected. This resulted in the second version of the kit, which was all A4 size. The third version removed the opening 'sensitizer' (a kind of business card for the participant), as it was un-useful. The fourth version took the shape of a booklet, taking the researcher by the hand in order to retain more anecdotes and richer information. Finally the following tips and tricks regarding the three phases of the research were added in the introduction:

1. Making contact with the participant, as this first step often determines how the rest of the conversation will turn out and it is a step people often seem to fear. Some minor suggestions seemed to help people step over a perceived threshold.
2. How can you improve the results of the research? Containing tips about interviewing, attitude and letting participants think out loud.
3. How can you write down results and conclusions in a way they would remain clear, rich and alive for the original research team who needs to interpret them? , Containing tips on what and how to write down quotes and stories..

The research part of the booklet was built up from 7 sections, providing a red line for the conversation with the crew. These 7 sections were based on conversations about and results from previous findings, each containing an 'A or B' question, extended by a 'why' question. The last five sections had a third question as well, asking how the current situation could be improved? This structure of questioning, from close to open, allowed people from different cultures to answer.

This co-creation with the remote co-researchers of the research kit proved to be very useful and resulted in a different appearance of the working kit and focused on different aspects of the previously identified directions as well.

2.5 Enrichment session

A final session was organized to make the data, found via the remote co-researchers, more illustrative. In this session 4 Dutch crewmembers were invited to talk about the previously uncovered experiences. Before the session, they were prepared, using a sensitizing booklet (Sleeswijk Visser et al., 2005) with questions about their workday, focusing on care and attention. The session resulted in lively quotes that did not need to get transferred via a remote co-researcher.

2.6 Final design

The research resulted in three themes: Control, Closing off and Care, accompanied by quotes to retain a connection with the context and later converted to a storyboard. The final design incorporates most of the results into one concept and is called Safehaven. The crew rest cabin is split up into three areas to guide the transition from and to work: the entrance, the hallway and the individual bunk. The entrance is designed to act as a border between work and rest. The hallway completes the metamorphosis as it facilitates changing clothes, washing up etc. Work clothes are then hoisted up (to the more work related level of the crew) and left behind, as a metaphor for leaving work behind. To get even further away from work, another border is set up in the shape of the bunk-hatch, creating a 'matrushka doll' of borders.

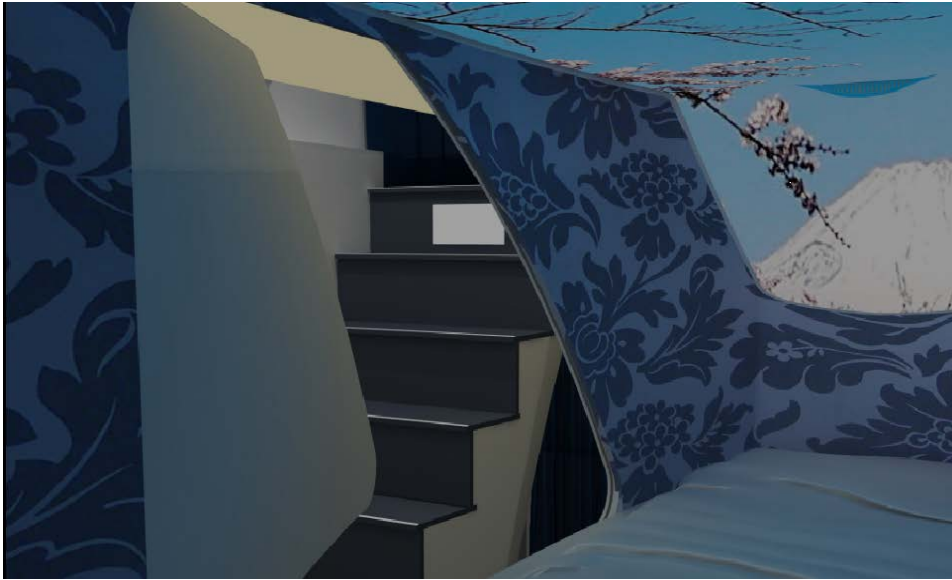


Figure 2 Artist impression of the hallway seen from inside a bunk-bed.

3 Results and discussion

In this project we decided to work with remote co-researchers as a solution for the contextual design research in a remote and global situation. The question is, what the value of this approach is in this specific situation.

- Is it effective and efficient to work with remote co-researchers if so when?
- Which factors do design researchers have to take into account when incorporating remote co-researchers in their project?
- What are barriers and limitations for the use of remote co-researchers in design research projects?

3.1 Reliability of data

A weak part of the research is that the data travels between multiple people, influencing the reliability of the insights by the interpretation of data by each person involved. Questions are transferred via the remote co-researcher to the participant and answers travel back from the participant to the remote co-researcher, who makes a translation, writes them down and passes these notes on to the original researcher, see figure 3.

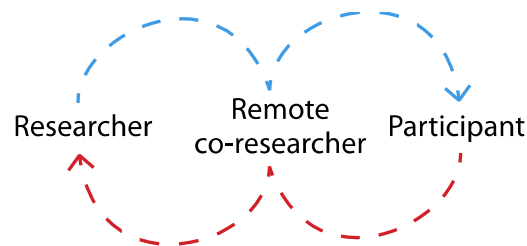


Figure 3 Information travels from researcher via remote co-researcher to participant(s) and is returned via the remote co-researcher as well.

Explaining what we were looking for helped to create ‘goggles’ (a way of looking) for the remote co-researcher to approach the research with. It is impossible to look through exactly the same goggles as the remote co-researcher, making interpretation of the results hard. Therefore, it is important to do the interpreting together with the remote co-researcher, talking about the results and their meaning. **Iteration:** These discussions are also needed to improve the research kit for other remote co-research users. An iterative process, which means a constantly improvement related to both the research kit and the design, seems to be unavoidable. **Time:** The time needs extra attention since the researcher relies highly on the availability of remote co-researcher’s time-schedule. Therefore, plans should be made in an early stage, taking into account throughput time and flexibility for adjustments. **Selection of remote co-researchers:** A limitation of the research, due to time pressure, was that all remote co-researchers were Dutch and the number and variety of participants (gender, role as a crew member, nationality and airline) was low. However, involving end-users (crew members) in the process of designing and doing the research proved to be extra useful as it helps end-users to look at their work in a different way. By acting as a researcher they look at their own work through a different perspective, boosting their level of ‘understanding’. providing deeper insights on their own experience as well.

3.2 Depth of insights

The outcomes communicated via the booklets widened the scope of the research as was intended and the results proved to be inspiring as well, but they did not yield many deep insights. So enriching the data with a session is advised. However, there is room for the improvement of the quality of the booklets and

returned insights. For instance, it helped to explain more comprehensively how results could be written down. In the later stages of this research, the researcher showed the remote co-researchers how the research could be done, by acting it out. In this play the researcher focused on tone of voice, and getting participants to tell more without putting words in their mouth. On top of that discussing the results should be done with every returned kit. It increases the workload for the remote co-researchers, but will increase the level of insights even more. **Trust:** When the researcher needs to bridge a cultural gap between him/herself and the participant(s), extra attention should be paid to create trust between both parties (van Rijn, 2005; van Boeijen, 2011). The strict security rules within airline-cultures increased this need to build up trust. Giving clear and high quality background information about the remote co-researcher him/herself and the research project created this. **Global context:** Some participants of a specific crew seemed to be more willing to accept hierarchy than others (which was in line with the higher score on the cultural dimension 'power distance'). Participants of another crew were expressing their preferences for individual freedom, which means that they emphasized the desire for personal preferences (which was in line with the higher score on the cultural dimension 'individualism'), while other crewmembers were more willing to adjust to the current situation. Some members of a specific crew expressed their desire to have privacy for changing clothes (which was in line with the higher score on the cultural dimension 'masculinity'). The designer (first author) assumes that designing for 'lower power distance', 'higher individuality' and 'higher indulgence' will finally serve all cultures. Extra attention is given to the need for privacy when changing clothes.

4 Conclusion

This paper started with the central question; how to do contextual research in a remote and global context, with the aim to design a global product service system that serves people from different cultures (nationally and professionally). The remote co-research approach was chosen as a solution to gain insights of the 'difficult to reach intended-users' (crew members). It helps end-users to look at their work in a different way, making them not only useful as co-researchers but as super participants as well. This kind of research seems promising but has its limitations as mentioned in the discussion. Nevertheless, we think that remote co-

research is a valuable addition to design research in design projects where intended users and the context of use is difficult to reach. Therefore, it is worth further experimentation.

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