Empathy Workshop: When Project team and Pilot Users Exchange Experiences

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Abstract: Empathizing with user, has been considered by many design researchers as one of the important factors that help to understand the final user’s needs and wishes during the design process. Hence there are still many design projects that do not consider that important basis for design of products and services. In fact, if we look into the psychological process of the way people communicate and build relationships, we can approve that empathy is fundamental and applying that might seem as an obvious matter in design process. This paper aims to be one another contribution to the field and seeks to emphasize the important role of the empathy in design process. In particular, this paper focuses on developing empathy between developers and trial users through a participatory session. We believe this is relevant because we sought to bring the experience of using Internet of Things (IoT)-based devices by trial users in their real homes. It will illustrate the process and results of the participatory session conducted for a pilot project INTrEPID. The whole process of workshop has been built on the fundamental theories about empathy in psychology and the value of its application during the early phases of design process. We suggest to apply the Empathy workshop method when the project team and the final users meet each other, for understanding not only the user's experience and needs, but also the technical team's efforts. It is also proved a good way for fostering the creativity and involving all stakeholders into the design of new services.

Keywords: Pilot users; Empathy; User Study; Co-design; Smart home.

1. Introduction

This paper focuses on a participatory session conducted for INTrEPID. an European project about an innovative Smart Home project for energy consumption. In particular, it illustrates a participatory workshop aiming to bring the project team members and pilot users at the same table to share their experience and seek to empathize with the other side of the project. We propose this method as an innovative way of getting feedbacks from the real field and design new IoT-based products with final users.

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First we bring some relevant literatures about empathy in psychology and design. Then we illustrate the detailed description of workshop design process and then we discuss the results.

1.1 What is INTrEPID project?

INTrEPID is a FP7 project about smart energy districts involving eight European partners from different industrial sectors. For a total of 56 families have been testing the Smart Home devices and a mobile application (Figure 1). Families come from two different countries, Italy and Denmark, and they used devices and mobile application in their home environment. The system is able of sensing and collecting data about the energy consumption of each home appliances. INTrEPID pilot has been organized in two phases, namely “monitoring” and “suggesting”. During the “monitoring” phase, users have been able to monitor their energy consumption using a mobile application (Figure 1) while during the “suggesting” phase users receive notifications regarding the best time to power on their appliances. Suggested timings were calculated by the system to better fit the energy consumption at the district level (Figure 1). We define the district as a neighborhood area, where, for technical or financial reasons, houses are subject to the same energy rules and billings policies, i.e. energy production could need to be absorbed as much as possible inside the district itself. Appliances involved in the “suggesting” phase are the washing machine and the dishwasher, the ones that intrinsically show flexibility on activation time.

The “monitoring” phase started in November 2014 and the “suggesting” phase in July 2015; both will run until the end of the project. All details about technology and design of mobile app interface are out of the scope of this work and can be found in other documents (Borean et. al., 2015a; 2015b).

Figure 1: Mobile application, some screenshots. On the left: suggesting phase. On the right: monitoring phase,

2. What is Empathy?

Many studies from different research domains and disciplines, such as philosophy, social psychology, psychiatry, psychotherapy, clinical psychology and neuroscience, proved the multidimensional nature of empathy (Decety & Jackson, 2004). The discovery of Mirror Neurons System demonstrates a neural basis of human capacities for understanding actions and intentions of other people, allowing a bio psychosocial approach to empathy studies (Blakeslee, 2006; Decety & Moriguchi, 2007).

The concept of empathy was fundamental in Carl Rogers’s studies (1959), and he defined empathy as a process:

1 http://www.fp7-intrepid.eu/
“... to perceive the internal frame of reference of other with accuracy and with the emotional components and meanings.”

In Roger’s person-centered approach, he focuses on a phenomenological understanding of another person’s experience, in the here and now relationship on what they are willing to share to each other.

According to the literature, empathy can be divided into two major components (Decety & Jackson, 2004; Albiero & Matricardi, 2006):

- Affective empathy, also called emotional empathy, which entails being affected and sharing another’s emotional or arousal state, and the capacity to respond with an appropriate emotion;
- Cognitive empathy, which means the capacity to understand another’s perspective or mental state, and knowing how the other person feels and what might be thinking (Goleman, 1996).

In addition, the “empathic understanding” requires both the abilities to share (affective) and to think (cognitive). The affective component is related to the ability of feel the internal frame of reference of another, that is what Edith Stein defined as an “intersubjective understanding” (Stein, 1985). This has been then redefined by many authors as a self-other awareness, a sort of temporary identification (Decety & Jackson, 2004). The cognitive component is related to the notion of “perspective taking”, which is the tendency to spontaneously adopt others’ psychological perspectives (Albiero & Matricardi, 2006) or in other works defined as the mental flexibility to adopt someone else’s point of view. (Gerace et. al., 2013)

Adopting this perspective, empathy process allows connecting with our values and feelings, in order to better understand and empathize with others’ experience. The empathic relationship is characterized by a balance between looking inwards and looking outwards, stepping outside ourselves and exploring the lives and perspectives of other people (Krznaric, 2015). This continuous connection enables people to take role and interact with other people in order to respond appropriately, that identify the second aspect of empathy, which is the “empathic communication” (Rogers, 1959; Kohut, 1984; Stein, 1985). This phase is characterized by an active listening to others’ experience, related to verbal and non-verbal contents (e.g. gestures and body language), and by the ability of give each other feedback without any judgmental attitude. This helps to avoid the major barrier to interpersonal communication, that Rogers defined as our very natural tendency to judge, to evaluate and to approve (or disapprove) the statement of the other person (Rogers, 1959).

3. Empathy in Design Methods

The adjective ‘empathic’ in relation to design was introduced in the late-1990s when companies found out that customers’ responses to the questionnaires was not enough to develop successful products (Sanders & Dandavate, 1999; Leonard & Rayport, 1997). This lead to the view that designers should be more sensitive to users, be able to understand them, their situation, and feelings and in short to be more empathic.

Empathic design is particularly important when designers go from rational and practical issues to personal and experiences of people in private contexts (Mattelmiiki & Battarbee, 2002). This aspect is of particular interest in this paper as long as the INTrEPI D project trial, has been conducted in the...
users’ homes, which represent a private context and people usually avoid talking about their experiences and personal issues which are related to a private context.

In User-Centered Design (UCD), the empathy has been always recognized as an important factor for designers to understand better the users’ needs for whom they’re designing. In UCD, several tools and techniques have been developed in order to support an empathic design process. For instance, many researchers confirm the need to inform designers about user experiences and their context (Leonard & Rayport, 1997). And consequently a number of tools and techniques have been developed (Fulton Suri, 2003a; 2003b), aiming to support designers to “step into the user’s shoes” and “walk the user’s walk” in order to design products that fit the user’s life.

Empathy goes beyond the User-Centred Design approaches and takes a fundamental part of every Participatory Design process (Sanders, 2002). In this approach users become the experts of their experiences and an active part of the design process. In participatory design approach and co-design workshops, designers do design with users, instead of for users. Designers in those processes, play the role of the companion that support and facilitate the generation of ideas (Sanders, 2002; 2008).

Applying the concept of empathy from psychological point of view, has been also the purpose of many different researches. For example, Kouprie and Visser (2009) developed a framework consisting of four phases of the empathy in design process emphasizing the role of the designer’s experience on having empathy with the user. These phases are (1) discovery, (2) immersion, (3) connection and (4) detachment. In each phase the relation of the designer with the user changes.

Deana McDonagh developed an empathic design research strategy presenting an alternative design thinking process that builds on the capitals (e.g., background, physical abilities, and education) of the individual and the designer (Mcdonagh & Thomas, 2010).

Empathy emerges also as an important factor during the design thinking process (Plattner et. al., 2016). Empathic design is also considered in various researches as a tool, which accompanies the co-design process aimed at building empathy between designers and people (Yuan & Dong, 2014). The Storytelling and narratives tools have also proved their potentiality in creating empathy in design and valuation process with users (Fritsch et. al., 2007). In particular, this can be helpful for developers and designers, who seek to understand user’s experiences and needs. As they are not usually familiar with professional user studies methods and do not participate in those processes.

4. Empathy Workshop

According to what has been learned in the study of empathy (Figure 2) and its application in design process and also the emerging need of involving users in the design and evaluation phases of innovative services, we decided to organize a participatory session. We sought to create an environment for people who were effectively involved in the testing phase (Pilot Users) and some developers, to meet each other in an informal setting.

4.1 Designing and Running

Our first objective for this workshop, was to gather feedback on the use, quality of interaction and the general system performance from trial users. We sought to set up a session that would allow users to express their evaluations and experiences, confronting directly with those who have developed it, instead of using traditional methods such as interviews and focus groups. This would enable users to ask direct questions regarding the development aspects of the service and also
having the opportunity to make suggestions and express their opinions, thus becoming an integral part of the design team and not just mere users of new technologies. In particular, the purpose of this workshop was to foster the empathy among the participants, in order to allow everyone to work in a friendly environment and to understand other's needs and wishes during exchange of experiences. Especially, we designed the whole process taking into account of two principal components of empathy as it is defined in psychology: the “empathic understanding” and the “empathic communication” (figure 2).

![Diagram showing the two principal components of empathy: empathic understanding and empathic communication.](image)

**Figure 2**: Two principal components of empathy: the “empathic understanding” and the “empathic communication” and how it is applied in Empathy Workshop.

The workshop involved 8 participants, built out four groups consisting of two components each; one trial-user and one project member (Table 1 and Table 2).

| Trial-user | Gender | Family members | Engagement with INTrEPID |
|------------|--------|----------------|-------------------------|
| Giuseppe   | M      | 1              | Low                     |
| Mauro      | M      | 2              | Medium                  |
| Paolo      | M      | 1              | Low                     |
| Laura      | F      | 4              | High                    |

| Groups | Trial-user | Project Team         |
|--------|------------|----------------------|
| A      | Giuseppe   | Trial Manager        |
| B      | Mauro      | Data Analyst         |
| C      | Paolo      | Mobile App Developer |
| D      | Laura      | System Architect     |

The workshop kit, which illustrated eight principal phases of the workshop process, has been provided to each participant (Figure 3).
The whole process was designed with the purpose of facilitating the exchange of ideas and experiences between two sides of the project of INTrePID. We started the workshop with an “Ice Breaker” phase, which helped participants to get to know each other, and then discussing about and choosing the name of the group.

During the 2nd phase, we asked each participant to choose and talk about a feature of the product (tested or developed depending on their role: trial-user or developer). This phase aimed at making them think, while choosing a feature, about their own real experiences. In this phase, trial-users had to choose and specify a feature that made them to have good feeling or experience, because it was easy to understand, intuitive to use and etc. And also to choose another feature, which did not make them feel good about the product and that they struggled to understand its functionalities while using, and so on. This helped trial-users to highlight different characteristics of the product, whether positive or negative and to open the discussions for evaluation.

The 3rd and 4th phases, were designed with the purpose of sharing the findings in the second phase by storytelling, and then going narrow in more details of those issues identified previously in second phase. These phases were mostly concerned about the affective component of empathic understanding. We asked participants to dig deeper into the partner’s experiences, with the purpose of understanding other’s point of view, thus enabling empathy through in-subjective understanding and self-other awareness.

The 5th and 6th phases were designed for individual works through which, each participant had to find the strength, and weaknesses of what emerged from the experience expressed by the partner. As a result, these phases provided a list of features: 1) that do not fully meet the needs and requirements of the trial-user, 2) features that have been used correctly and 3) features that have been used in an unusual or incorrect manner.
During the 7th phase, each participant had to discuss with the partner about what have understood in previous steps in order to collect feedbacks. Doing so for understanding better the experience of the partner and get feedback about whether their assumption about the partner’s experience were true or false. This phase in particular concerned about the “cognitive” part of the empathic understanding and it helped them to take perspectives.

During the 8th phase, after the continuous exchanging of ideas, thoughts and feedback, which has involved the empathic communication, each participant, individually, had to redesign and improve a problematic feature, which has been raised during the discussion with the partner. In this phase, participants tried to solve the negative aspects and to enhance the positive aspects. Therefore, they attempt to put themselves in the other's shoes to understand their needs and issues. In other words, participants stepped out-side of ourselves and took roles through active listening.

During the whole process we tried to support the empathic understanding and communication. In particular, understand how difficult and expensive for developers could be to design and implement a simple function, and for developers understand how their design guidelines, that they assume to be useful and easy to use, might not fully encounter the needs and capabilities of users.
5. Finding and Limitations

As the Empathy workshop experiment has been tested for the first time, so feedbacks about the workshop process and methodology itself have been formally collected. This has been done through a short questionnaire at the end of the workshop. Participants filled a simple questionnaire about what they did and did not like about the workshop.

According to the result of the questionnaire, most people enjoyed the informal atmosphere that enabled a free discussion with the partner. They also felt comfortable to express their point of view without fear about judgments. They reported that reflecting on the emotional part of their experience helped them to be relaxed and natural. All agreed on the fact that getting in touch with the other side of the project was a new and interesting exercise that make them thinking about different aspects of the same experience they did not envision before.
The workshop was organized in time-slotted sessions with questions and notes that helped the participants to focus on specific parts: some of participants, liked the tight timing, while others would have liked to have more time for discussion and reflecting. Regarding time slots, we do believe that having a fixed timing layout is a good way for helping people to organize their discussion: however, an open discussion session after workshop, would have surely improved the overall experience (Table 3, Table 4).

We also got few, but helpful inputs about how to improve the workshop next time. A participant suggested to create the groups according to a specific project feature: in such a way final user and the developer could discuss exactly on the same topic from two different points of view. Another helpful advice was to add a “one-to-all” session, where all the trial users could ask specific questions to one team member. We do think an open discussion after workshop would address this need as well.

Based on our experience, we found that Empathy Workshop, compared to traditional evaluation and user studies methods (i.e. focus groups and interviews) is useful as it facilitates the involvement of all project team members that have been working more on the technical side of the project and are not usually involved in user studies. The lack of “user-studies’ experts” in this process, helped to build a friendlier and participatory atmosphere. This method can be extended in numbers of stakeholders, for example through involving the marketing staffs and business operations analysts.

Table 3. Feedback from participants regarding the methodology

| What people LIKED the most | Informal venue | Exchange of point of views | Duration |
|---------------------------|----------------|-----------------------------|----------|
| A new way of interaction; | Very comfortable and engaging atmosphere, “It was like we were playing a game”; | Nice opportunity to talk with ‘the other side’ of the project; Should be used more often, as an effective powwow; Useful to understand the difficulties behind the project | ‘Time-slot’ sessions helped to stay focused and organized; Interesting mixture of collecting experiences (Storytelling) and the ideating (Creativity). |

| What people DID NOT LIKE | Duration |
|-------------------------|----------|
| ‘Time-slots’ were too short and tight for discussion and face to face debate; In particular for the “Ideate” phase, they needed to have more time in order to enhance creativity. |
to the developer and not the way around. We have proposed this methodological approach in order to facilitate the exchange of information and feedbacks among two parties: final users and the developers. The motivation behind of setting up a participatory session, instead of using traditional methods such as interviews and focus groups, was to allow users to express their evaluations and experiences, confronting directly with those who have developed the service. We suggest to use the Empathy Workshop method, when the project team and the final users would meet for not only to understand the user experience and needs, but also the efforts and requirements of the technical team of the project. Doing so by creating an empathic communication between stakeholders, that foster the process of evaluating user experience and the product performance. In particular, the purpose was that the final users feel all the efforts behind of the design and implementation of a simple function, and developers understand how their design guidelines, assumed useful and easy to use, might not fully encounter the needs and capabilities of users.

The participatory way of doing this workshop, proved a good way for fostering the creativity and involving all stakeholders into the evaluation and re-designing of IoT devices.

Although the process of Empathy Workshop was designed for the evaluation purpose of the IoT devices, it proved also useful for ideating solutions for technical problems. This method enabled to collect feedbacks from users on the use, quality of interaction and the general system (devices and mobile App) performance. This also helped them to become an integral part of the design team and not just mere users of new technologies.

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