

# DeThinkingService ReThinkingDesign

First Nordic Conference on  
Service Design and Service Innovation  
Oslo, 24th–26th November 2009

## Designing Mobile Service experiences, an exploratory study

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### Summary

This paper presents the results of an exploratory study on the relevance of experiential factors when using services. The multidisciplinary approach is stressed seeing that is an important contribution in terms of service design interfaces. The project aimed at identifying elements for designing service experiences and for contributing to an improved service design and testing process. The paper presents a study carried out on a group of participants in a creative training course on innovation. This study challenged participants to create a tool for modelling a new mobile loyalty service. Its main objective was the development and increase of this kind of experience tests instrument based on the interaction of several techniques.

### Keywords:

Service design, user experience, mobile interfaces, service experience prototyping.

### 1 Motivation

As a new world of opportunities for mobile services has emerged, we need to classify elements connected with the interest in mobile phones and their services, supporting the co-creation of value through the dedicated design to new particular and interactive applications, interfaces and its specific mobility [1]. In this context, it is of the greatest importance to understand a user's emotional and experiential behaviour [2]. Besides improving core technologies, developers must focus on providing end users with a rich and satisfying mobile-communication experience. In the framework of our Experiential Economy [3] and seeing that we are surrounded by an emergent development of services, users should be listened to.

So as to be successful any user's consultation must deconstruct the essential process or activity associated with a product or service [4]. Liz Sanders advocates a new perspective for Marketing-driven approaches of co-creation that she believes to not be generally put into practice from a participatory mind-set as is evidenced by their (over) use of the phrase "customer co-creation." "If people were truly valued as co-creators, they would likely be seen and referred to as partners or co-creators, not customers." [5]

Therefore Chris Dows, Ben Reason and Lavrans Lovlie [1] suggest that Service Design must result in a new mixture of all existing practices, novel terms, current values, evolved methods and skills founded on the traditional design disciplines. This new design process will meet the multidisciplinary paradigm proposed by D. Norman [6] seeing that it is a new approach that can combine the precision and rigor of business and engineering, the understanding of social interactions and the aesthetics of the arts. This proposed inter-disciplinary approach aims to explore and develop a common ground for projects of such an interactive nature.

Thus to research and design service experiences, 'experience prototyping' [7] is a fairly new tool with relevant potential in order to obtain a deeper understanding of what the use of a service experience can represent.

The reason for this study is linked to the creation of the first steps in the development of a new mobile service application which is to be articulated with loyalty services. Thus, this exploratory study intends to use experiential modeling in order to reach the necessary conclusions which will lead to the design of a new mobile service experience. Besides design affordances, meaningful signifiers are needed [8], to provide an indication of the possible outcomes, and alternative performances seeing that the use of mobile devices takes place in unpredictable environments. Furthermore, "the factors contributing to a good user experience include interactions with mobile devices and applications that are natural, intuitive, simple, pleasant, easy to remember, and adaptive to individuals' idiosyncrasies" [9]. One must take into consideration the increased use and popularity of smart-phones and their additional mobility features which will eventually become mainstream, just as mobile internet, location-based services, and other new technologies are already a common reality. Therefore, Brian Romanko submits [10] a discussion on the impact of these technologies as a much-welcomed addition. In the same way, Mobile Service experience prototyping on a regular basis has barely been researched, and very few studies can be found.

## 2 Method

Considering research through design as a method for Interaction Design, as the model presented by John Zimmerman et al at the CHI2007 (Zimmerman 2007 ), which allows design researchers to collaborate on equal footing with HCI engineering and behavioral science researchers, a qualitative phase of this study was initiated to identify possible adoption factors for the new mobile loyalty service.

Qualitative research for model formulation is advocated for a holistic conceptualization of areas that are ill-defined, under-researched, or relatively new [11]. Furthermore, to understand user behavior to inform design, qualitative methods are considered to be far more effective[12].

A discussion on the mobile service experience raises two research problems in the context of the empirical mobile service design – Firstly, what are the elements of mobile service experience prototypes? Secondly, how can they contribute to an improved mobile service design and testing process?

This study intended to determine existing relations between mobile phone usage patterns, the tools which are mainly used, frameworks and loyalty cards which have already been adopted. It was designed to be an initial experiment to establish methods of mobile user's experiential factors.

This article reports the results of this exploratory study, carried out on a sample of 82 individuals from ten European different countries, whose average age is 21, during a creative training course on innovation. The sample's background is composed of 32,6% of product designers, 20% of industrial designers, 11,2% of mechanical engineers, 11,2% of computer engineers, and 9% of experts of human factors and professional from other fields. Furthermore, we must stress the importance of this sample as all of the participants are potential project innovators and mobile users. To begin with participants answered a questionnaire which aimed to provide information about their usage of mobile services and loyalty cards. Following this, they were invited to sketch a mental model for a new mobile loyalty service.

Kim Goodwin defends that [12] Mental Models are what humans use in internal representations based on imagination, perceptions and experience, and those conceptual structures sometimes reflect what is done by software engineers as implementation models. This Mental Modeling led to the construction of 82 possible outlines of a new mobile service interface.

### 3 Analysis

All of the participants had a mobile phone and 46% were already using wireless services associated with their phones, although 42,7% of the sample said that they only used to make phone calls and send text messages. 11,2% of the participants stated that they didn't have any loyalty card; 12% had at least 3 bonus cards and 16% had at least 3 identification' cards.

Those who admitted to having a predisposition for using a new mobile loyalty service, were those who used an average of at least two of a list of 12 features on their mobile phones (consulting the weather, sending e-mails, using a camera, GPS services, an external memory card, Instant Messaging, watching a TV Channel, checking websites, downloading music and games, personal assistant, commercial transactions, amongst others).

The empirical prototype was used to develop an imaginary interface through a co-discovery method [13]. During the session participants were asked to act as innovators and to develop their own Mental Model on how mobile loyalty service interface should work for a particular task.

The collected data was subjected to analysis, and the work which was developed by the participants, was transcribed and analyzed with the help of the Nvivo program for qualitative research. Next, the conceptual maps content were analyzed in order to reach conclusions on previous experience factors and also to obtain relevant clues for designing the interface (diagram 1).

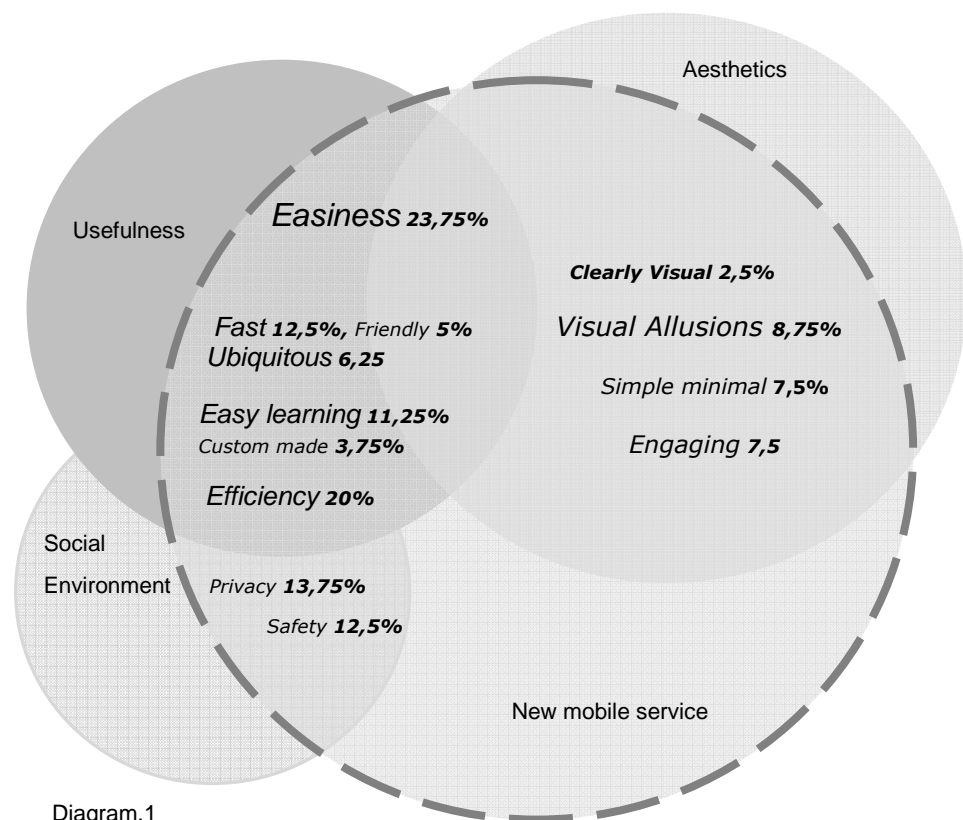


Diagram.1

The data gathered were organized in three main clusters which had been referred to by the participants on the conceptual maps: the loyalty service, the mobile phone, and the experiential factors related to the use of a new mobile loyalty service.

The clusters of experiential factor were ordered in terms of their relevance for the new service design. Some aspects reflect the Interface’s environment: Aesthetics (clearly visual, visual allusions, minimal, or engaging); Easiness of usage (easiness, speed, friendliness, ubiquitous, easy learning, custom made and efficiency); and usefulness; other aspects reflect the Social Environment of the service: Safety and Privacy.

According to Colin Shaw [14] Safety is clearly a basic requirement in many customer experiences and represents the fear of running risks. The 12,5% of references on safety concern may have been influenced by functional aspects such as an those referred to by an individual *“Having passwords - I don't want more than one password”*.

Some authors submit that Security/privacy includes security of credit card payments and privacy of shared information[15]. Thus, this issue was also considered *“Web access to your account so one would be able to follow everything you bought”*.

	Actions	Tools
<b>Mobile Phone</b>	<p><i>“enter the information by entering them in a keyboard”</i></p> <p><b>43,75%</b></p>	<p><i>“your credits will be added by RFID”</i></p> <p><b>65%</b></p>
<b>Service</b>	<p><i>“making shopping”</i> <i>“reservations”</i> <i>“Paying”</i></p> <p><b>32,6%</b></p>	<p><i>“(…)When you reach the bonus points you also get a message.”</i></p> <p><b>30%</b></p>

Table 1.

Subsequently, the Clusters – Mobile phone and Service were divided into ‘actions’ and ‘tools’ (Table. 1). Each participant chose a scenario type to perform the service (ex. financial, sports, car, travel, communication, information and supermarket). The use of elements and behaviours connected to the loyalty service environment were codified from their above mentioned mental models. This information was ascertained from the mobile phone’s cluster in same manner.

## 4 Evaluations

This exploratory study is a first step towards the development of new methods for translating experience factors into mobile service design, through service experience prototyping. The use of crossed methods, comprising a questionnaire and a paper prototyping task, allowed an exploratory understanding of the experiential factors that are important in mobile service design, from the point of view of potential developers.

Apart from applying the existing methodologies for studying service mobile user's behaviour, this study also reveals a better understanding of some design elements that affect user perceptions. The analysis has pointed out some experiential factors deemed important in terms of service design, such as aesthetic values and easiness of usage.

This exploratory exercise has helped to reach a better understanding on the relations between loyalty card services and mobile phone habits. Efficiency's factors were mentioned by the three main background groups (designers, engineers and human technology/management professionals) On the other hand, easiness was referred to mainly by the designer's group. Speed was generically considered by all of the groups as a relevant factor. Differences were found in terms of aesthetics values according to each of the group's background. The group paid particular attention to the functional and technological aspects surrounding mobile phones in comparison to the service design characteristics. This fact is undoubtedly a result of their major professional backgrounds, the majority being related to the product industry.

## 5 Conclusions

Despite the fact that this is an initial test on experience modeling, it has revealed to be a potential tool in the Experience test's field and has proven to be a kickoff method for the development and the creation of human centered services. The test facilitates the identification of experiential factors as well as visually mapping their importance and relationship according to each participant.

The work can also contribute to improving the service design process as an effort to include interest in co-creation from the marketing perspective by working with people as "partners" not only customers, but also as users who can express their experiences, materialize them and help in the innovation process[5].

Several other research frameworks can be useful in future stages of the development, of such a study such as IDEO experience prototyping [16]or the service theatre framework [17]. However, a systematic approach towards service experience prototyping is still lacking.

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