Providing Feedback to UX Designers Using UX Evaluation Methods

Michael M. Pirker

IRIT-ICS

Univ. Paul Sabatier Toulouse III

118, Route de Narbonne

31062 Toulouse, FRANCE

Michael.Pirker@irit.fr

Regina Bernhaupt

IRIT-ICS

Univ. Paul Sabatier Toulouse III

118, Route de Narbonne

31062 Toulouse, FRANCE

Regina.Bernhaupt@irit.fr

Abstract

User-centered Design (UCD) and User Experience (UX) have become important keywords when developing and designing products and services that aim to be successful and competitive on the market. In the area of entertainment oriented services, like interactive TV, new challenges arise, shifting the focus from task-based usability to highly personal, context-dependent use experiences. In order to improve UX design and assist designers by providing valuable feedback in various development stages, we propose the usage of a set of UX evaluation methods dedicated to the evaluation of entertainment oriented services.

Keywords

UX, User Experience, UX Evaluation, UX Questionnaire

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Today's products and services are expected to be intuitive, easy and pleasurable to use and also visually appealing. UCD-based approaches help to produce devices and services that fulfill the users' needs and requirements; nevertheless, the increased focus on the

user in the design process is posing new challenges to researchers and practitioners alike. It is not sufficient anymore to just know the target audience; good designers must be able to understand the users' needs, what causes these needs, and estimate how the future users would perceive the product and how they would use it. Thus, designing for an excellent User Experience is a difficult and challenging task where the designer has to keep track of a multitude of different aspects, ranging from system and usability aspects to aesthetic impressions, contextual factors and emotions.

Given the workshop topic of exploring ways to enable the designers to get closer to their target audience and experience like the future user, we propose the usage of objective means to measure UX during product development to inform the designer about the results of his UX design, how well certain UX factors have been addressed and which factors might have been overseen or have not been given the necessary attention.

To be able to immerse into the user's experiental system, and hence design for a better UX, it is crucial to know which factors are influencing UX, how certain factors are intertwined, and also not to neglect basic usability problems as factors that are also contributing to the overall UX of a product or system. As design decisions are likely based on the personal judgment and skill of the designer, objective means to measure UX can point the designer towards important UX factors and help him to immerse into the future user's experiental system, and at the same time serve as a control how well these factors were addressed.

We thus see the need to have some objective means to evaluate UX of a product or system, in order to inform

design about (a) how precise their perception of the future users' experiences is, (b) how properly certain UX factors have been addressed and thus (c) to provide feedback on how to improve the overall design.

In our research, we are aiming to address these issues by developing an UX evaluation method. As a first step, an UX questionnaire will focus on the UX evaluation of interaction and entertainment technologies in the living room. This should allow investigating and measuring UX factors already in early design phases. Further steps will include the development of expert guidelines that can be used in the tradition of heuristic evaluation to understand if and to what extent future systems support major UX factors.

User Experience and UX Evaluation
User Experience is in general a much utilized, but not well defined term [2,3], used by researchers and practitioners alike. Despite several attempts to define and better explain the user's experience when interacting with an interactive system in the past, the HCI community still has no agreed definition of what really makes up user experience. A lot of effort has recently been made by various researchers and practitioners alike to find a clearer definition of UX and its evaluation methods [3,6,7]. Nevertheless, there are still several different approaches and concepts existing, each measuring and highlighting different factors. UX is still associated with a multitude of meanings, the different foci of these diverse theoretical models include a broad range of concepts, e.g. pragmatism, emotion, affect, experience, value, pleasure, beauty, hedonic quality, etc [3]. Each of these currently co-existing, different concepts uses different methods to evaluate UX factors.

To evaluate emotion and affect, for example, EmoCards [1], physiological measures or evaluation of valence and arousal can be used. To evaluate situational or temporal experiences, some approaches in mobile UX exist, using conceptual-analytical research and data gathering techniques [5]. For prototypes, usability evaluation methods can be enhanced by including experiental aspects to the evaluations, e.g. in long-term field trials, where diaries, experience sampling, questionnaires, and focus groups can be used to collect experiental data [5].Once product development is finished and the product is ready for or already on the market, the UX of actual users can be measured; according to [5] this can be done in various ways, such as such as collecting feedback data using traditional market and user research methods, and utilizing the latest technological and community opportunities enabled by Internet.

As stated by [4], UX measurement should essentially be self-reported, trajectory-based and adaptive, in accord with the common understanding of UX as subjective, dynamic and context-dependent [3]. Thus, traditional techniques such as questionnaire, interview, and think-aloud remain important for capturing self-reported data [4].

User Experience and Designer Experience
Within our current research, we focus on the evaluation of UX of interaction technologies in the living room, especially for iTV. We are at the moment developing a method to evaluate UX in this domain, which is based on findings from large-scale ethnographic studies (UX factors from a user perspective) as well as UX factors identified in current UX literature.

Two ethnographically oriented studies in two different countries with overall 69 participating households and 179 participants (149 adults) were conducted in 2010, in order to identify factors influencing the UX of entertainment technology usage in the home and especially in the living room. From a user's perspective, the identified factors include the aesthetic experience (incl. visual and haptic experience), utility, purpose, the elicitation of emotions, functionality and usability. Other factors observed were the need for stimulation and identification, as well as the contextual factors time, place/situation, social influences and whether a device is perceived as personal or not. At the moment, these findings are used to develop a UX questionnaire for our domain as a first step, which is currently evaluated and checked for validity in first user tests.

From our perspective, we see a need to evaluate UX via objective rather than subjective means. To gather UX data objectively, the use of a standardized UX evaluation questionnaire seems appropriate. Later on, the use of expert guidelines should provide the opportunity to assure an objective UX evaluation during product development. This should make UX factors comparable to a certain point, in order to identify areas where improvements can be made. This will be achieved by the UX questionnaire that is developed at the moment, addressing multiple UX factors identified in the current UX-research literature and from a user's perspective within ethnographic studies.

It can be argued that the understanding of UX factors and the use of UX evaluation methods can shed light on how well a designer can immerse into the future user's experiental system and identify areas that still can be improved. While it is not supporting the designer in

feeling or experiencing like the user, like other methods do (e.g. inspirational methods), it can provide feedback about the quality of the UX design process already in early design stages.

During the workshop we present the developed UX evaluation method and a framework that helps designers to decide which factors of UX must be taken into account when developing entertainment oriented services and products for the living room.

Conclusion

Currently existing UCD- and UX-research approaches and methods are able to serve product and system designers with valuable data, which can help them to immerse into the future user's context of usage, better understand the user and base design decisions on the experiental system of the user.

Nevertheless, we stress the importance of means to objectively measure UX and provide feedback to design in various product development stages. Applying such methods can provide information about which and how well certain UX factors were addressed, and could reveal areas that still can be improved.

This research addresses these issues with the UX evaluation methods which are in their development phase at the moment. The first step will be a UX evaluation questionnaire that can quickly provide insights about the UX of an interaction technique, service or User Interface concerning various UX factors like e.g. aesthetic factors, usability and utility related

factors and factors connected to the context of usage (temporal and situational).

Further steps will include expert guidelines that can be used in the tradition of heuristic evaluation and that will provide insights concerning major influencing UX factors. Details about these methods will be further described in future publications.

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