# Contextual User Experience: How to Reflect it in Interaction Designs?

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## Abstract

User experience is highly influenced and even changed by the context in which it occurs. In this SIG session we want to discuss how specific contexts influence various aspects of user experience. So far, both concepts "user experience" and "context" have been discussed a lot to various extent and in different dimensions. With this SIG, we aim to bring both concepts together, highlighting the differences arising from the consideration of different specific contexts and their relevant user experience factors. Thus, we reach a more comprehensive understanding of "contextual user experience", which opens up different roads for research and challenges the HCI community in all design and development phases. We will discuss user experience as focal point of user interface and interaction design bound to specific situational cases.

## Keywords

User experience, context, design, methods

## ACM Classification Keywords

H5.2 User interfaces: *Evaluation/methodology*, H1.2. User/Machine Systems: *Human factors*.

**General Terms**

Design, Human Factors, Measurement

## Contextual User Experience

Over the past years the field of Human-Computer Interaction (HCI) has moved beyond the desktop and explores novel forms of interaction in different contexts. Various theories and models motivating context oriented thinking have been proposed, such as the situated action theory suggesting that context determines how people behave in particular situations [7]. An in-depth understanding of the context enables application designers to choose what context to use for their applications [1]. The understanding of contextual experiences entails significant potential for shaping a user's interaction with complex interactive systems.

*User Experience Factors*

It is increasingly recognized in the HCI community and related fields, that apart from standard usability and ergonomic principles the much broader concept of user experience needs to be considered in the interaction design process. User experience (UX) explores how users feel about using a product, i.e. the affective aspects of product use. User experience has a dynamic nature, due to the ever-changing internal and emotional state of a person and due to differences in the circumstances during and after an interaction with a product ([3][5]). These points already make clear that it is essential to look beyond static aspects and to investigate the temporal aspects of UX – how UX changes over time (e.g. [4][5]) which also depends much on the context. To design next generation interaction innovations, it is crucial to identify the most relevant UX factors for a certain product/system. Aspects such as fun, enjoyment, emotion, sociability,

and other factors need to be considered intensively [8]. Moreover, UX factors need to be mapped to contextual factors, which heavily influence the user interaction with a certain product/system resulting in a matrix of factors versus contextual parameters.

*Context Factors*

In HCI, several definitions of context have been proposed during the last years. One of the most complete definitions of context is provided by Dey: "Context is any information that can be used to characterize the situation of an entity. An entity is a person, place, or object that is considered relevant to the interaction between a user and an application, including the user and applications themselves" [1]. From the interactional point of view, Dourish [2] describes context as a relational property between objects or activities rather than as pure information. Thus context is actively produced, maintained and enacted in the course of the activity. Both interpretations have their justification, however there is a need to make "context" more tangible – the same as user experience – by breaking it down into context factors. Thus, designing for a good "contextual user experience" is made more practicable for designers. Within our research we try to reach this goal by developing a comprehensive UX and context model/framework for several specialized areas.

*Designing for Contextual User Experience*

We are convinced that "contextual user experience" opens up different roads for research and puts us, as HCI community, in front of some challenging questions in all design and development phases of novel user interface and interaction designs. Thus, we will address

the following issues based on selected situational cases within the SIG session:

- Explicitly exploring the mapping of user experience factors to context parameters.

- Diving into the situational cases based on the experiences from the organizers (e.g. the "context car", the "context home", the "context shopping", "the context factory") and situational cases brought in by the attendees of this SIG session.

- Discussing a prepared user experience framework for a specialized user interface design (e.g. car user interface) demonstrating the influential context factors.

- Producing concrete examples for improving the discussed framework, taking the user experience and context factors into account. For instance, how can force feedback be used to increase the perceived safety in a car and which contextual information is needed?

- Discussing challenges for methodologies, techniques and tools for investigating the relationship between the user experience and the contextual settings. For instance, what are the limitations of the ESM (Experience Sampling Method) in the car context?

From our own current research as well as from former research projects, we know that both concepts, UX and context, are difficult to grasp in a static framework. Therefore it is essential to provide the designer with a modular and dynamic mean to design for a good user experience in a clearly specified context, which is still practicable. Discussing the different ways to reach this goal will be part of SIG session.

## Related Events
At CHI 2009, a SIG was organized (with participation of some of the organizers) on a similar topic: "User Experience Evaluation – Do You Know Which Method to Use?" [6]. The SIG was mainly focusing on the evaluation methods and did not put its focus on the context as major influencing factor. We have significant experience in this UX domain, and will discuss potentials and limitations of UX research in combination with context research. We will foster the active participation from the audience.

## SIG Audience
One of the goals of this SIG is to identify and gather people interested in user experience research and practice in different application areas and contexts. We foresee the following types of participants:

- Practitioners working in the design and development of interactive systems/novel user interfaces for different context areas; trying to address UX in the different phases of product development.

- Academics interested in exploring the relevant UX factors influencing the users' interaction with a system/product under consideration or combination with relevant contextual factors.

The audience would be approximately 40-80 participants from both industry and academia interested in the usage, collection, and improvement of the contextual user experience in different contexts.

## SIG Organization
The activity plan for the SIG is as follows:

- Introduction of the SIG background and goals of the SIG (10 minutes).

- Lively presentation of issues in the various fields related to the topic of the SIG by the organizers, in particular the presentation of UX factors/frameworks developed by the organizers based on practical case examples (e.g. for car interfaces, home ambient interaction) (20 minutes).

- Interactive session with active involvement of the audience. The organizers will prepare creative brainstorming materials including questions on the topic of the SIG in order to stimulate an interactive discussion in groups. The relevant UX and context factors for pre-defined application areas will be collected in sub-groups (30 minutes).

- The results from each group will be put on an interactive wall and should lead the final discussion in the plenary. This will provide an excellent context for discussing specific challenges for future contextual UX approaches (20 minutes).

- Wrap up of the discussion and creation of future plans, in particular on joint actions on this topic; distribution of an attendance list for creating a mailing list for further discussion and distribution of the results from the interactive session (an edited book on "contextual interfaces" is planned, which can be further promoted through this SIG and lead to some long-term collaborations) (10 minutes).

The organizers have extensive experience in organizing interactive sessions at various conferences, like SIGs as well as workshops at CHI2007, 2008, 2009, EuroiTV2008, 2009, AmI2008, AmI2009 as well related to other activities (master and PhD level courses, research as well as industrial settings).

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