User Experience Lifecycle Reflection: An Interdisciplinary Journey to Enable Multiple Customer Touchpoints

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Abstract

User Experience (UX) is a complex construct of scopes and disciplines. Additionally, different points of view, approaches, and methods in academia and industry impede a consistent understanding. To optimize holistic experiences all associated parties have to collaborate. For a better understanding of the interdisciplinary nature of UX, we conducted a survey to get insights about a common understanding of terms and terminology (1) and expert interviews about involved disciplines in design processes (2). We could observe that not only HCI disciplines but also the marketing sector play an important role for a holistic user experience enabled by multiple touchpoints between user and organization. Our observation is a starting point to push discussions about the validity of current UX theory, methods for collaboration, and about how different disciplines can best address experiences in each stage of product usage. As a result, we derive a first roadmap for future endeavors.

Author Keywords

User experience; customer experience; interdisciplinary teams; organizational collaboration; ISO 9241-210;
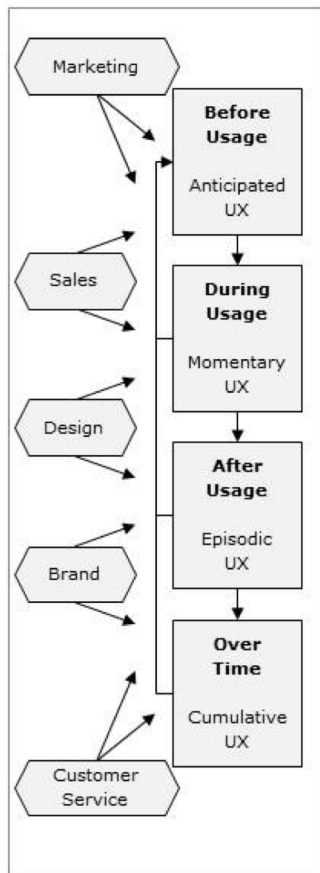
Figure 1: Time spans of UX according to Roto et al. [11], including the indicated influence of different customer touchpoints.

Introduction

When it comes to product success and user satisfaction, researchers and practitioners from the fields of User Experience (UX) and human-computer interaction (HCI) agree that feelings and emotions have overtaken usability as the key indicator [1,2]. However, despite the general agreement on its importance, various views on the concept of UX exist. Whereas a common understanding of UX is essential to move the scope of UX a step further, it is still necessary to holistically comprehend the relation between both UX theory and UX practice [17]. This relation becomes even more complex when more disciplines (e.g. marketing or strategy departments) come into play to meet the increasing expectations of experience-oriented customers [9]. In the following we want to reflect the current understanding of the UX lifecycle and investigate challenges and opportunities for an interdisciplinary perspective on multiple customer touchpoints. Therefore, we analyze the complexity of the context of UX, showcase current understandings and challenges from different departments (based on a survey in one design agency) and point out disciplines that should be involved in UX design processes (based on 24 expert interviews and analysis of the German UPA[1] industry report). Our overall goal is to identify and discuss current challenges of multi-touchpoint experience design and to derive a first roadmap for future endeavors.

Complexity of UX Design Contexts

When discussing with colleagues or reading the articles of various online blogs, the complexity of UX becomes

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[1] Professional association of German Usability and User Experience Professionals (www.germanupa.de)

obvious. Although there is a clear definition of UX and Usability by ISO 9241-210 [4], a global understanding is still missing [1, 8]. One source of complexity is that UX professionals also have to cope with several time dimensions of the UX lifecycle [10]. It is not sufficient to merely understand the difficulty of creating a certain experience when users interact with a system. Experiences can be formed even before and influenced after the interaction. In fact, the overall UX is the result of multiple iterations of imagining an experience, interacting with the system, and reflecting on the experience [2]. During these iterations, users have multiple touchpoints with the product, the brand, and associated services [14]. A marketing campaign can strongly influence anticipated experiences whereas customer service can have an impact on the experience after using a product. Hence, different disciplines have to be involved in UX design processes (Figure 1) and UX methods need to be developed to consider a broad product lifecycle [6, 11].

Moreover, it is difficult for practitioners to anticipate experiences associated with a service or product. During the development it is only possible to create an intended product character, based on its features. While interacting, users create an individual mental model (i.e., the translation of the intended product character based on their aspired application and context of use) [3]. As a consequence, designers and developers do not know if people use their products correctly. One approach to overcome this issue is to perform extensive user studies. In praxis, such studies often imply high effort and costs. Therefore, the number of subjects is reduced which, in turn, detracts statistical reliability and validity [13,17]. Another possibility is - by taking advantage of Industry 4.0 and

crowd-testing - to collect and react on instant feedback (collect data in the wild and use it for rapid product improvement) [14]. Additionally, the diversity of products and services leads to different contexts of use that have to be considered. Different branches like transportation, healthcare, or consumer electronics have variable approaches to handle individual challenges. Academia and industry as well have different perspectives and thus diverse needs and practices. Moreover, each discipline alias role in a project has its own objectives which they have to push.

Current Situation in UX Practice

In order to find out if and how perspectives on UX vary between different perspectives and to identify the disciplines that are typically concerned with UX in larger companies, we conducted two surveys.

In the first survey, we Caused by the various definitions and perspectives of UX we wanted to understand if there are likewise discrepancies between

As a staring point, we surveyed 13 employees of different departments of one design agency. Participants worked in in the following disciplines: 2 employees of business development, 1 sales and marketing manager, 2 project management and 8 designers. As the word cloud shows (Figure 2), UX was described mainly withthe terms "Experience, Usage, multi sensual, holistic, positive, User, Product, and Service". Compared to the definition of User Experience of ISO 9241-210 [5]: "person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service", we cannot see big disagreements, except of the term "positive", which was mentioned by 6 respondents (thereof 4 designers).

Further surveys are planned to gain more generalizable insights.

In order to understand which disciplines are involved in UX processes we asked 11 UX researchers and 13 UX practitioners over the course of one week to present their perspectives on UX design. It is notable that all academic participants regularly publish at HCI conferences and the interviewed practitioners represent perceptions from established firms and startups.

Figure 2: Word cloud illustrates the number of mentioned nouns, adjectives and verbs which were used to define the personal understanding of UX, collected by an anonymous survey in a design agency.

The following overviews summarizes respective affiliations (less than 24 mentions due to companies who wished not to be mentioned):

- *University Affiliations*: Aalborg University, University of Bristol, University of Lugano, New Jersey Institute of Technology, University of Oulu (2x), Queensland University of Technology (2x), University of Stuttgart, Tampere University of Technology (2x).
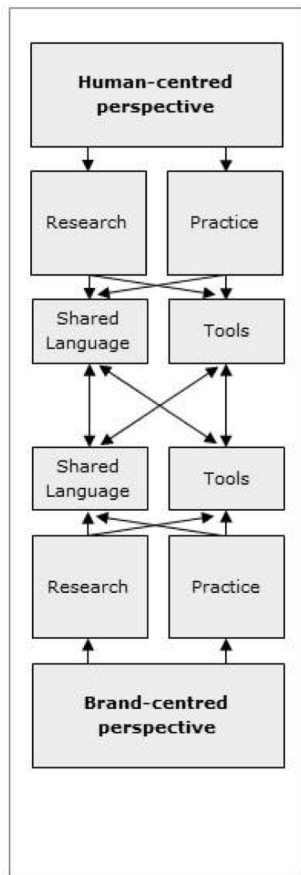
Figure 3: Multiple needs for action when human-centred and brand-centred disciplines collaborate, derived by our insights.

- *Industry Affiliations*: AirBnB, Allianz, GoCardless, Google, IICM, Nokia, Number26, Stylight, Tado, Talentry, Twitter.

We asked all interview participants to name disciplines that should be involved in UX design processes. Table 1 shows an overview of the top 10 mentions from all 24 interviews. Comparing our results with the academic background of Usability and UX professionals in Germany collected and reported by the UPA [4] we can observe that the top 5 fields of studies/training are computer science (14%) and media informatics (12%), followed by digital media (9%), communication design (9%) and media design as formal training (7%).

Discipline	n	Percentage
Backend Development	20	83%
Visual/Graphics Design	18	75%
Marketing	18	75%
Interaction Design	12	50%
Product Management	12	50%
User Research	10	42%
Usability Engineering/Testing	5	21%
UI/Frontend Development	5	21%
General Management	5	21%
Public Relations	3	13%

Table 1: Top 10 disciplines involved in the UX design process in 24 expert interviews (multiple responses possible).

Economics is represented by 6% of German UX professionals. This goes along with our findings. Thus we conclude that Software Engineering, Design, and Marketing are key disciplines in UX design. Interestingly from an HCI perspective, the brand-centered field marketing seems to play an important role in UX and

we feel vindicated to foster an ongoing debate about the interdisciplinary scope of UX.

Research Questions for Multi-Touchpoint Experience Design

As we could see, the basic idea of UX is in principle aligned. Moreover, UX professionals endorse multiple disciplines which are already involved, regarding academic backgrounds. The pursuit of these capabilities has to be fostered to enable holistic experiences. But there is also a need to handle the challenges when human-centered and brand-centered disciplines are working together. Researchers and practitioners of the HCI and marketing sectors now have to find a common ground for a shared language as well as appropriate tools to analyze multi touchpoint experiences (Figure 3). This can be particularly challenging in current organizational settings, as UX-designers and developers often lack the chance to influence strategic questions [12]. Furthermore, the different time spans of UX do not only illustrate the complexity of UX but also imply a discussion how respective feelings can be best initiated, shaped, and influenced. Therefore we have to recognize that HCI-related disciplines often struggle to close the gap between themselves but also between academic UX research and industrial UX development [16]. Based on the aforementioned complexity of UX design contexts and our surveys we would like to raise and discuss the following questions in the workshop:

- Are current UX definitions still adequate regarding interdisciplinary organizational structures?

- What are appropriated tools to measure and communicate multiple touchpoint experiences?

- How and by which disciplines can experiences be best addressed before, during, and after usage?
- How can we enhance a joyful collaboration between different disciplines in academia and practice?

Conclusion and Outlook

This paper shall serve as a foundation for a discourse about multiple touchpoint experiences. As a starting point towards a roadmap for future endeavors we propose the following steps: First, all associated disciplines need to create a common understanding. Second, different disciplines have to jointly develop tools and processes for a stimulating collaboration. Third, synergies in interdisciplinary settings have to be identified. We thereby took a first step with the development of QUX, a UX evaluation tool that supports an organizational understanding of UX [7]. Moreover we developed CrowdUX, a tool for a holistic evaluation for any kind of product or service - applicable in each step of the UX lifecycle [14]. All in all, an ongoing debate about challenges and opportunities of multiple touchpoint experience need to be fostered to bring the concept of UX to the next level.

Acknowledgements

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