

User Experience Portfolio

Charlaine Janssen
Industrial Design
Eindhoven, The Netherlands
c.janssen@student.tue.nl

INTRODUCTION

This UX portfolio contains my personal definition and positioning towards User Experience. The various definitions of UX are discussed and compared, key aspects of UX are addressed and reflected upon and a summary will be provided of the materials discussed in the first three weeks of the course User Experience Theory and Practice. Lastly, I will discuss UX in regards to my own work and reflect upon the impact of the theory on my future.

POSITIONING TOWARDS UX

In the future, I want to be a user-centered design consultant. I always aim to design from a holistic perspective, meaning I have a reflective attitude and keep approaching the design process from different perspectives. I find it important that a user values a product they own or a service they use. I want to strengthen the feeling of ownership and improve the trust people have in them. One way of creating this value, is by focusing on the user experience of the product or service.

I find that my identity and way of working provides opportunity for working on UX. As can be seen in the empathic formation compass, my multi-perspective approach allows for empathy and insight into users emotions and experiences (Smeenk et al., 2019). Next to that, my need for holistic overview causes me to paint a whole picture of an experience, including the different

timespans of UX (Roto et al., 2011). This way I am able to work on experiences as a whole, not just experiencing in the moment of interaction.

A few goals I still have, hence the reason for choosing this course, are that I want to broaden my understanding of UX and how it relates to user centered design and usability. These are often mixed up by many designers, including me, and I think a more theoretical background with practical implementation of the theory will help me in this. Next to that, I want to learn how to isolate single aspects of UX in designs and how to evaluate and improve these with and for users.

DEFINING UX

User experience is introduced as a subset of experiences in general (Roto et al., 2011). Whereas usability focuses on the practical interactions of users with a system, user experience is a more dynamic concept addressing the relationship of the interaction with people, context and surrounding objects as well (Pettersson, 2018).

The past decades, many definitions of UX have occurred. However, as Pettersson addresses, none of the definitions are considered to be dominating (Pettersson, 2018). UX can be associated with a broad range of concepts, including emotional, contextual and aesthetic variables (Law et al., 2008)

Hassenzahl (2008) for example defines UX as "a momentary, primarily evaluative feeling (good-bad) while interacting with a product or service" (Hassenzahl,

2008) whereas Norman & Nielsen (2012) define UX as "encompassing all aspects of the end-user's interaction with the company, its services, and its products" (Norman & Nielsen, 2012).

Still, there are a few recurring factors when it comes to UX. From Hassenzahl's definition, we can derive that emotion plays an important role in the establishing of UX (Hassenzahl, 2008). However, emotions alone do not explain experience, since emotions are a momentary reaction. (Pettersson, 2018).

Alben (1996) addresses the importance of context. By UX, she means "all the aspects of how people use an interactive product", of which one is how well it fits into the entire context in which users are using it (Alben, 1996).

Although a concrete definition of UX is missing, UX is seen as something desirable (Law et al., 2008). Considering above named definitions, it may depend on the user's context, emotional state and system interaction how UX is defined (Roto et al., 2011) (Pettersson, 2018).

WEEKLY ACTIVITIES

Week 1

The defining of UX was the first topic discussed in the course. Although having a good understanding of UX in general, I found myself confusing UX, usability and user centered design either during the design process or during documentation. The speeddating during the first lecture allowed me to think critically about my view on

UX, and how it differs from general user involvement or usability testing.

Learning about the different factors involved in UX, such as the earlier mentioned emotions and context, allowed me to better formulate my positioning towards UX and increased my confidence to address UX in a design process. Being able to focus on these factors instead of a design as a whole, allowed me to define single aspects of a design that might impact the UX.

Brand & Rocchi (2011) made me aware of how the definition of 'value' for people changes over time. I found it interesting to see how changes in needs and values over time shape society and cause shifts in economic paradigms (Brand & Rocchi, 2011). Hassenzahl mentions good UX comes from fulfilling basic human needs (Hassenzahl 2008), but after learning about the economic paradigms in relation to value, I think it is important to consider paradigm shifts as well in relation to what impact this might have on human needs and values in a near future (Brand & Rocchi, 2011). Currently, more industries are interested in offering added value to their product or service, as opposed to having a materialistic focus. We are shifting towards a transformation paradigm. This need-driven transformation might not come from a basic human need as Hassenzahl suggests, but still impacts UX and how we design.

Based on my goal to better understand how UX can be evaluated, I read up on UEQ and the Attrakdiff questionnaire next to the recommended reading. For the designer I want to become, I think it is important to have a well-filled toolkit on how to evaluate different aspects of design. These questionnaires provided me with practical skills on how to evaluate UX within my future designs.

Week 2

The second week, the focus was shifted towards empathy and the mixed perspective approach. As someone who does not have a natural talent when it comes to (affective) empathy, I found it interesting to

learn how the experiences and emotions of users could be collected and implemented during a design process to create empathy.

The group exercise done during the lecture helped me realize the relevance of methods and tools such as customer journey maps and storytelling. It was insightful to see what the other group did with our personal experiences, and how they handled these from a different perspective to form a concept.

Looking back on previous projects, I have experienced designing using different perspectives. However, it was not until now that I learned about the concrete difference between the three and how they strengthen the design process when combined (Smeenk et al., 2019). I find it important to involve users throughout a design process (2nd perspective) and to base design decisions on research and insights. (2nd & 3rd perspective) I have always been a bit hesitant about including 1st perspective experiences in the design process, but I have realized that, when well-balanced, adding this perspective only strengthens a design process. The empathic formation compass showed me how the three perspectives can be combined to design for empathy and overall UX (Smeenk et al., 2019).

Week 3

The theory of the third week was closest to my personal strengths and interests as a designer. Having followed the course 'Designing for Behavioral Change', I already had experienced designing using theories such as the Self Determination Theory and Integrated Behavior Model. However, I had not yet discussed these theories on how they might impact the user experience.

The same was true for the Attention Theory. My designs often operate in the periphery of the users attention, however my goal has always been to allow for the user to shift their attention to what they find important instead of being forced. Seeing the attention theory in the light of UX has given me a new application possibility instead of only above mentioned goal.

The Choice Theory in relation to decision making was relatively new for me. I feel like this theory can support

the behavior theories well, as it shows how people might respond in certain situations such as choice for example, which can help me predict and design for the behavior of user (Cialdini et al., 2002).

UNDERSTANDING UX

As was shortly touched upon in section 2, UX is a dynamic concept that addresses the relationship of the interaction with people, context and surrounding objects (Pettersson, 2018). The concept consists of many aspects to be considered when designing.

User Experience

User experience is often viewed as the moment a user interacts with a design. This is considered the core of an experience. However, it might be that a user has an indirect experience without interacting with a design, or that an experience before or after an interaction takes place as well (Roto et al., 2011). This distinguishes 'experiencing' from 'an experience' (Roto et al., 2011).

A user experience can be considered a timeline consisting of 4 phases. Before interacting with a design, a user might have an idea of what the interaction will be like. This is called anticipated UX. Here the expectations are built. As designer, it is important to consider this experience as well, since it can make the user perceive the actual interaction (momentary UX) either as disappointing or better than expected (Roto et al., 2011).

After the interaction, the user (unconsciously) reflects upon the experience, called episodic UX. In this phase, the user decides whether a specific usage was considered pleasant or not. Over time, this turns into cumulative UX, where the user recollects multiple uses and views the experience as a whole. Previous experiences influence future ones, so it is important for designers to not only consider the momentary UX, but to design for all 4 phases (Roto et al., 2011).

Hassenzahl (2011) introduces a simple model to design experience through interaction with an object; the Why, What How Model. He argues that one should start with the 'why' in order to clarify the users needs and emotion, and the experience that needs to be achieved. Only then, the object (what) can be determined based on

the functionalities needed to create the experience (how) (Hassenzahl, 2011).

Lastly, in order to evaluate UX, the same defined aspects of section 2 should be taken into account, such as emotion and context. For this, several evaluation tools have been developed, one of them being the AttrakDiff questionnaire. The questionnaire measures 4 essential aspects; intended product quality, subjective perception and evaluation of quality, pragmatic and hedonic qualities and lastly, behavioral and emotional consequences (Attrakdiff, 2013).

Value-based Design & Paradigms

Value-based design is a design approach that addresses the values of the user in a structured and comprehensive way (Friedman et al., 2013). The approach can be concretized using the tripartite method, which results in 3 different investigations. The conceptual investigation aims to define related stakeholders, both direct and indirect. By defining their values, trade-offs can be made among competing values. Empirical investigation then takes place to evaluate the success of designs in capturing the stakeholders value. The technical investigation, similar to the empirical investigation, measures the success of the designs, this time in regards to the technological aspect. (Friedman et al., 2013).

As Brand & Rocchi (2011) also address, values play a crucial role in UX design. They present “Paradigms in value creation” to help understand the drivers of (future) value. The paradigms provide an overview of value creation from both a people and a business perspective. (Brand & Rocchi, 2011).

During the industrial economy, people wanted to fulfill functional needs. As a result, industries opted for mass production and modernization of tools. Shifting towards the experience economy, these needs changed into having lifestyle options and creating an own identity. Industries responded to this by promoting brand lifestyles and experiences. The knowledge economy followed, where the users needs shifted towards individual empowerment and development. This resulted in industries enabling creativity and development through knowledge

sharing platforms. Currently we are shifting towards a transformation economy, where users needs consist of making meaningful contributions in collaboration with others. (Brand & Rocchi, 2011).

Empathy

Empathy exists in different forms. Overall, it is described as the ability to identify with other’s experiences (Smeenk et al., 2019). Empathy can be further divided into 3 categories. Affective empathy is the ability of a person to share their personal emotional experiences. Cognitive empathy is the ability of a person to understand the emotional experience of others. Lastly there is the ability to distinguish between oneself and another (Smeenk et al., 2019).

The importance of empathy in UX design is reflected on by Tomico et al. (2012), who stated there are 3 perspectives to design through. The first person perspective allows for personal experiences to be included when designing. The second person perspective entails user involvement of relevant target groups during the design process, and the third person perspective focuses on research and insight implementation without the involvement of users (Tomico et al., 2012).

Through these 3 perspectives, empathy can be created and used throughout a design process. Smeenk et al. (2019) combined these perspectives into the empathic formation compass, supporting the implementation and evaluation of empathy in design.

Behavior

There are many theories and models when it comes to human behavior. However, in relation to UX design, the integrated behavior model provides insight how peoples behavior, motivation and goals influence the experience of using a product or service in everyday life (Montaño et al. 2008).

In order to execute certain behavior, a person needs intention. Intention is influenced by 3 aspects; Attitude is formed by an overall evaluation of the intended behavior. Perceived Norm reflects the belief about whether others will approve of the behavior, and Personal Agency is determined by the perceived control

over the behavior and one’s confidence in the ability to perform the behavior. (Montaño et al. 2008).

Past behavior guides future responses. This is where UX plays an important role, as past user experiences might influence future behavior. If an experience is already familiar, behavior may occur automatically. It has become a habit. However, when this is not the case, conscious decision making is necessary (Ouellette et al. 1998).

Self Determination Theory explains the levels of motivation possible within a person, and how to allow for a shift along the self determination scale (Gagné et al. 2005). The theory distinguishes 2 kinds of motivation; intrinsic and extrinsic motivation. The theory addresses 3 basic human needs; competence, autonomy and relatedness. The level of fulfillment of these needs influences allows for shifts in motivation (Gagné et al. 2005). This is where UX comes into play, as intrinsic motivation might be considered a more positive experience depending on the used product or service. The other way around, having a positive experience might result in an increased feeling of competence and experience mastery (Gagné et al. 2005).

Perception & Attention

When a user interacts with a product or service, there are different levels of attention that can be used. Bakker et al. (2016) describes this as the Interaction Attention Continuum (Bakker et al. 2016). Focused attention, on one end of the continuum, is needed when a user uses a product in the center of their attention. All focus is required. On the other end of the continuum is peripheral interaction. This requires little focus and direct attention from the user, as they can perceive information in the periphery of their attention. They do not need to shift their focus from what they were doing initially. Inbetween these levels of interaction we find implicit interaction. Here interaction takes place in the periphery of attention and shifts to the center of attention when relevant for or desired by the user. (Bakker et al. 2016).

Building onto this, the attention theory distinguishes between selective theory and divided attention theory.

Whereas with selective attention, one tries to focus on one stimulus while actively ignoring others, with divided attention one tries to divide their attention over multiple tasks. These differences in (required) attention for interaction might impact the experience of an interaction, and should therefore be considered when designing (Bakker 2010).

Social Translucence

Social translucence occurs when three requirements are met; visibility of the action of others in one's environment, awareness of what is happening and accountability for actions. Achieving social translucence might result in people coordinating actions and behavior based on the social information and skills available. This coordination can improve the overall experience of shared products, systems and environments (Erickson et al. 2000).

Key Aspects

Above, many aspects regarding UX design are elaborated upon. It is important that as UX designer, I am aware of these different aspects and that I know how to work with them. However, each scenario might require a different approach, needing different methods and theories. The challenge is to evaluate different scenarios and being able to select the right methods at the right moment.

Reflecting on my positioning towards UX, I find certain key aspects to be more interesting than others. One of the methods that supports my way of working on UX is, the multi-perspective approach as described by Tomico et al. (2012). I find it important and valuable to include different perspectives and stakeholders during a design process, this to create a holistic overview and empathy. Using multiple perspectives, I am able to reflect on the user experience as a whole.

Secondly, I find behavior theories to be very interesting. Our behavior, especially habits, shape such a large part of our everyday life, and change in these can therefore have a large impact on our daily life. As a designer, my goal is to discover aspects of someone's daily life that might benefit from a design and that way impact their daily life in a positive way. By using theories such as the

Self Determination Theory, I am able to find concrete design opportunities such as need for autonomy to make this possible (Gagné et al. 2005).

As might be clear from this portfolio already, I am a designer who uses a human centered design approach to allow for UX in new or existing products and services. I find that this is a delicate process that requires small steps and many iterations. Nordman et al. (2014) states that innovation can be distinguished between incremental innovation and radical innovation (Nordman et al., 2014). Incremental innovation is well served by literature and practice, and human centered design serve this process well. The bold statement that human centered design might not allow for radical innovation is something I only partly agree with. I see that a human centered approach often leads to design opportunities within existing products or systems, however, I do think that expansion of this approach towards new perspectives, paradigms and interpretations can just as well allow for radical innovation as dreams of inventors and engineers.

NEW INSIGHTS

For my M1.1 project I worked on improving the exit and entry experience of the house together with my group. The final design was a kinetic structure that, through an abstract range of movements, lights and sounds informed the user on the status of their home. To design for this experience, we used a first person perspective, supported by a second person perspective. We immersed ourselves into the user experience, and focused on the values and needs that drove the user when it came to the exit and entry experience. Looking back on this approach, we might have benefitted from balancing the three perspectives more. That way we would have had a better overview of the challenge at hand.

Our design was located in the periphery of the users attention when not active. Once active, the user was able to perceive the information both in the periphery of their attention or by shifting their focus towards the artefact on the wall. The purpose of our design was to notify the user on the state of the house. In order to maintain the connection to the house, the decision was made to deny the user from interacting with the design. Looking

back, it would have been interesting to explore implicit interaction as a way for the user to communicate with the house without taking away the connection to it.

For my final bachelor project I designed a system that promoted social translucence in open office spaces. By communicating availability in the periphery of the office workers attention, I aimed to ease the social construct of 'do not disturb'. During the design process, I was very focused on the second and third person perspective. I tried to involve users throughout the whole design process and did a lot of literature research on existing solutions. Even though I had experienced working in an open office myself, I was hesitant to include these experiences in my design considerations. Looking back, these insights matched quite well with the insights from other perspectives and would have helped me gain a holistic overview on the problem much sooner.

My initial goal during my final bachelor project was to improve social translucence in the office based on habits of office workers. I found it interesting to see that small habits such as getting a cup of coffee in the morning resulted in smalltalk with colleagues and the habit of checking your agenda first thing when sitting down affected the feeling of control for the rest of the day. However, I did not have enough knowledge about the behavior theories as described above yet to be able to design for these habits. If I were to tackle this now, I would have concrete models and methods to analyse these habits and find design opportunities.

UX PROPOSITION

To summarize this portfolio, I am a designer who aims to develop a holistic perspective. This means I have a reflective attitude and keep approaching the design process from different perspectives. I find it important that a user values a product they own or a service they use. I want to strengthen the feeling of ownership and improve the trust people have in them. This approach and mindset allows me to pinpoint the key elements of designs that need or allow for improved user experience.

REFERENCES

- Alben, L. (1996). Quality of experience: defining the criteria for effective interaction design. *interactions*, 3(3), 11–15. <https://doi.org/10.1145/235008.235010>
- Attrakdiff. (2013). Instrument of measurement. Retrieved from <http://attrakdiff.de/science-en.html#arbeitsmodell>
- Bakker, S., Hoven, van den, E. A. W. H., & Eggen, J. H. (2010). Design for the periphery. In A. Nijholt, E. O. Dijk, P. M. C. Lemmens, & S. Luitjens (Eds.), *Proceedings of the Eurohaptics 2010 symposium Haptic and AudioVisual Stimuli : Enhancing Experiences and Interaction*, July 7, Amsterdam, The Netherlands (pp. 71-80). (CTIT Workshop Proceedings Series; Vol. WP10-01). Enschede: Universiteit Twente.
- Bakker, S., & Niemantsverdriet, K. (2016). The interaction-attention continuum: considering various levels of human attention in interaction design. *International Journal of Design*, 10(2). <http://www.ijdesign.org/index.php/IJDesign/article/view/2341/73>
- Brand, R., & Rocchi, S. (2011). Rethinking value in a changing landscape. A model for strategic reflection and business transformation. A Philips Design paper. https://www.researchgate.net/publication/272941478_Rethinking_value_in_a_changing_landscape_A_model_for_strategic_reflection_and_business_transformation
- Cialdini, R. B., & Goldstein, N. J. (2002). The Science and Practice of Persuasion. *Cornell Hotel and Restaurant Administration Quarterly*, 43(2), 40–50. <https://doi.org/10.1177/001088040204300204>
- Erickson, T., & Kellogg, W. A. (2000). Social trans-lucence. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 7(1), 59–83. <https://doi.org/10.1145/344949.345004>
- Friedman B., Kahn P.H., Borning A., Huldgren A. (2013) Value Sensitive Design and Information Systems. In: Doorn N., Schuurbiens D., van de Poel I., Gorman M. (eds) *Early engagement and new technologies: Opening up the laboratory. Philosophy of Engineering and Technology*, vol 16. Springer https://link.springer.com/chapter/10.1007%2F978-94-007-7844-3_4
- Gagne and Deci. Self-determination theory and work motivation *J. Organiz. Behav.* 26, 331–362 (2005) Wiley <https://onlinelibrary.wiley.com/doi/full/10.1002/job.32>
- Hassenzahl, M. (2011). User Experience and Experience Design. Retrieved from *Interaction-Design.org*: <https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/user-experience-and-experience-design>
- Hassenzahl, M. (2008). User experience (UX). *Proceedings of the 20th International Conference of the Assn- IHM '08*. <https://doi.org/10.1145/1512714.1512717>
- Law, E., Roto, V., Vermeeren, A. P. O. S., Kort, J., & Hassenzahl, M. (2008). Towards a shared definition of user experience. *Proceeding of the Twenty-Sixth Annual CHI Conference Extended Abstracts on Human Factors in Computing Systems - CHI '08. Proceeding of the twenty-sixth annual CHI conference extended abstracts*. <https://doi.org/10.1145/1358628.1358693>
- Montaño, D. and Kasprzyk, D. (2008), Chapter 4 Theory of Reasoned Action, Theory of Planned Behavior, and the Integrated Behavioral Model , In *Health Behavior: Theory, Research, and Practice*, 4th Edition, Karen Glanz (Editor), Barbara K. Rimer (Editor), K. Viswanath (Editor). Nielsen, J. & Norman, D. (2012). *The Definition of User Experience (UX)*. Retrieved from <https://www.nngroup.com/articles/definition-user-experience/>
- Norman, D. A., & Verganti, R. (2014). Incremental and radical innovation: Design research vs. technology and meaning change. *Design Issues*, 30(1), 78-96 https://doi.org/10.1162/DESI_a_00250
- Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological bulletin*, 124(1), 54. <https://pdfs.semanticscholar.org/1877/3d4fa2e3d187f17b387ef56e4fdf6c1e8c15.pdf>
- Pettersson, I., & Chalmers tekniska högskola. (2018). *Eliciting User Experience Information in Early Design Phases*. (p. 9-33) Amsterdam, Nederland: Amsterdam University Press.
- Roto, V., Law, E., Vermeeren, A., Hoonhout, J. (2011). *User Experience White paper*. Retrieved from <http://www.allaboutux.org/files/UX-WhitePaper.pdf>
- Smeenk, W., Sturm, J., & Eggen, B. (2019). A comparison of existing frameworks leading to an empathic formation compass for co-design. *International Journal of Design*.
- Tomico, O., Winthagen, V. O., & van Heist, M. M. G. (2012). Designing for, with or within: 1st, 2nd and 3rd person points of view on designing for systems. In *Proceedings of the 7th Nordic Conference on Human Computer Interaction: Making Sense Through Design* (pp. 180-188). New York, NY: ACM