Temporal sketching as a method to balance service and experience design

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Abstract
This paper discusses the challenges of balancing service- and user experience design perspectives when engaging in the complexity of modern design processes. We argue this can be seen as a balance between different levels of socio-technical complexity – ranging from micro perspectives of a touchpoint's interfaces, to a systemic perspective's focus on actor maps and service blueprints. We propose video- and animation-based sketching as a way to use the temporal nature of both disciplines as a common language for zooming in and out of both micro, meso and macro levels of a service system design, and thus function as one approach to bridge the method gap between the two disciplines.

Author Keywords
Service design; UX; User Experience Design; Sketching; Animation; Video; Temporality

Introduction: Service Design & UX – a clash of disciplines in need of a bridge?
Balancing service and user experience design perspectives can be difficult when engaging in the complexity of modern design processes. Since Donald Norman introduced the 'user experience' term for a wider audience, by extending on usability and interaction design discourse, centered around the

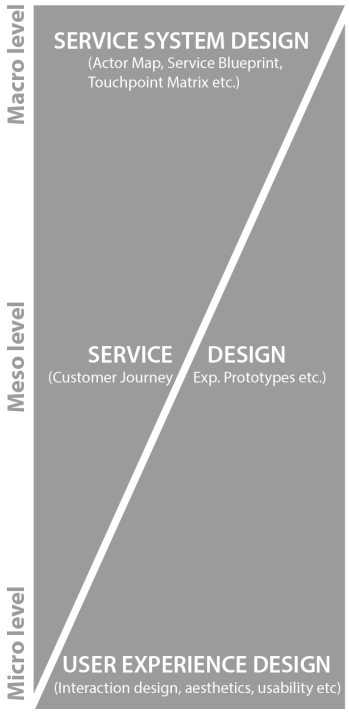

Figure 1: The micro, meso and macro levels of user experience design, service design, and service systems design, with examples of their representative approaches.

interface alone, to a more holistic perspective focus on context, form factor and emotional design, the term UX has gradually become an industry catch-all phrase for issues of digital design issues [1]. Service design has had a more eclectic rise to fame, by being derived from the traditions and disciplines of many different disciplines, ranging from e.g. ethnography, marketing, and interaction design [2][3][4]. However, a common element for service design seems to be the argument that services, contrary to traditional artefacts, are only realized through their unfoldment over time – they are inherently temporal phenomena [5]. Temporality has also been observed as one of the defining factors of user experience as something different from 'just' interface design (e.g. [6][7]). In user experience design, temporality is seen as the 'fourth dimension' of which behavior unfolds, and as such any concept of UX can be seen as 'sketches of behavior over time' [7].

Hereby we argue time, and more specific the temporal aspects of design, can be seen as a common denominator of service and user experience design. The difference here is then not the 'what' but 'how' the two disciplines deal with temporality. UX tends to focus on an individual or intersubjective relation to a given technology – from interaction with an interface, to the (social) consequences the context of this interaction. Service designs tend to increase the contextual complexity – as noted by Glushko [8] there are now at least seven service contexts in play, distributed amongst physical, social and digital touchpoints. With this rise in complexity, there is a need for other tools, such as e.g. actor maps or service blueprints, to capture the totality of the service system. In this regard, both service design and UX works with user behavior over the course of time, but at different socio-technical complexities. This provides a central methodical challenge; *how do we balance the micro level of the individual user experience, and macro level with the systemic overview of a complex service design?*

In the paper we will discuss this question as an issue of finding a suitable meta-medium to combine and balance the perspectives of both service and user experience design tools among both micro, meso and macro levels (figure 1). In the following we propose and discuss video- and animation as temporal sketching approaches to utilize the temporal nature of both disciplines as a common language for zooming in and out of the three levels of a service system design, and thus act as one possible approach to bridge the method gap between the two disciplines.

Video & animation as temporal 'languages'

Video has for many years been investigated as a temporal language for design – a way to capture and emotionally engage with the user in context [9] [10] [11]. Furthermore, video has been introduced as means of both sketching and prototyping new interaction and service concepts (e.g. [12][13][14]). Recently, the role of animation, as a simulative and expressive component, has been explored within the context of design sketching [15] [16]. Through animation, the designer has the ability to temporally sketch both actual events (e.g. enactments in a given context) and simulate not yet existing artefacts or abstract concepts (e.g. an animated interface or a service blueprint). Building on Olofsson & Sjölen's [17] categorization of sketching types, we argue these traits of animation-based video sketches enable design sketches to both ask questions (explorative), as well as propose more

Figure 2: The static sketching of the service journey for the 'idea machine' concept.

concrete answers to specific details (explanatory). In the next section we will detail a design case, in which we have experimented with video- & animation-based sketching, before discussing the principles of using such temporal sketching approaches to bridge the gap between the two disciplines.

Case: The U-CrAc workshop

An interdisciplinary workshop named U-CrAc - the abbreviation of User-driven Creative Academy [18] has since 2008 been a context for experiments by bringing educations, research and local organisations from practice together. Students from industrial design, experience design, media science, entrepreneurial engineering, and recreational therapy, were involved in mixed design teams. Design challenges were provided by local organisations and should be based on a problematic circumstance found in practice and preferable have an IT and experience dimension. The student teams were provided with the assignments to explore and solve within a methodological frame lasting around three weeks depending on the different years. The students design were required to deliver a video- and animation-based sketch lasting 3-5 minutes, which should be based upon the insights from working with both UX and service design tools (e.g. interface design, personas, customer journeys and service blueprints).

Students' videos as design portfolios

Since hosting the first U-CrAc workshop in 2008, more than 600 animation-based video sketches has been collected online on www.ucrac.dk. We view these videos, and their accompanied process reflections on the web-site as 'annotated portfolios' [19] – as a broad scope of the potential of temporal sketching approaches.

For the purpose of framing our perspective on the method merger between service and user experience design, we have selected one specific case from the annotated portfolios, which showcases how temporal sketching might bridge the method gap between experiential and systemic perspectives in the design process. The selected case is 'The Idea Machine', which provides an intriguing example of how temporal sketching enables the designers to zoom in and out of service system to merge service and user experience design perspectives in their early design process. Since a written description does not do justice to the temporal nature of the sketch, we refer to the uploaded video in [20] for further reference.

EXAMPLE: THE IDEA MACHINE

A local Public Elderly and Handicapped Administration (PEHA) challenged the design student team with a service design assignment. The PEHA had the vision to support its citizens in becoming as self-reliant as possible, but to succeed with this they had to empower their employees at all levels of the organisation and enable them to come up with ideas and build the structure and backstage for absorbing the ideas.

The students behind the selected service design went through a structured design process with a variety of methods. During the three weeks the students went through three guiding phases of 1. Observation and Analysis, 2. Synthesis and 3. Realization inspired by Kumar' innovation model [21].

During Observation and Analysis the students conducted ethnographic fieldwork at a nursing home with interviews of the elderly and the employees as well as walk along observations. The collected data was

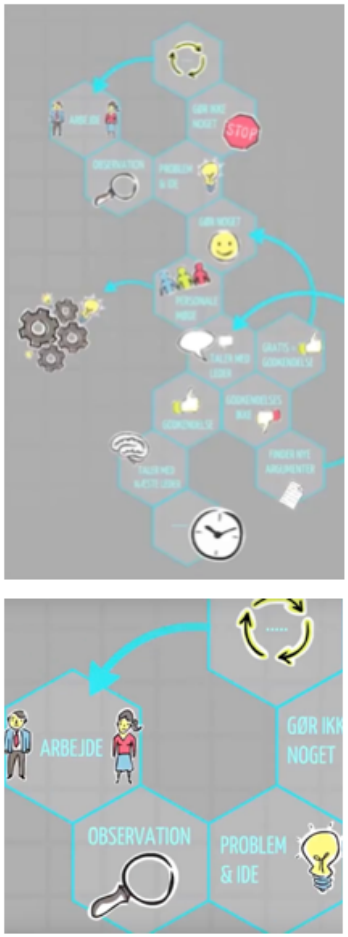

Figure 3: Stills from 'the idea machine' animation-based sketch – showing the systemic macro level of the service system.

mapped through Service Blueprints and Object Theater. The next phase, synthesis, involved traditional brainstorms together with bodystorms and low fidelity video sketches as well as working on system through game inspired activities. The final phase, Realisation, aimed at presenting a conform concept, which will be presented below.

The temporal sketch starts of by presenting the assignment proposed by PEHA before an overall system map is presented. In this sense the current situation and the proposed service design is firstly presented at the *macro level* through animation. Here the system map is illustrated with affiliated hexagons; each representing an activity with stakeholders and how the activity is interconnected to the other activities. The video- and animation-based sketch then zooms into the starting hexagon, where the current practice is presented through a stop motion animated scenario – employees are conducting their work as they experience occurring problems, which lead to an idea. From here the idea is followed through the system map as it is alternated in an unfortunately direction during its way through the organization. The sketch then offers an alternative route through the system map, which illustrates the proposed service design by presenting a digital platform. The concept of the digital platform, the Idea Machine, is then presented as a digital enabled service through which the employees can record, edit and submit a short video illustrating both a given problem and the employees' suggested solution.

From here the sketch changes its form and fidelity as the center of attention is moved to the *meso-level* of the service design. Here it is no longer the ideas path, which is followed, but how an employee is confronted with a problematic situation, generates an idea and adjusts it with colleagues. This sequence or 'customer journey' is illustrated with simple drawings in a stop motion format.

Next is the *micro-level* of the service design presented as the sketch is now illustrating the proposed product interaction through a low fidelity interface animation. Here the sketch is composed of multiple layers of hand made drawing, video footage and animations. The sketch is at the micro-level walking through the actual interaction in the interface to illustrate the recording, editing and up loading of a given problem and the suggested solution.

The final part of the sketch moves the perspective from the micro-level to the marco-level as it presents how the employees' identified problem and suggested solution, in its original format, is handle in the organization through the earlier presented hexagons. In this sense the project was concerned with both the employees journey as well as the accommodating structure of the service as a whole.

Discussion

As shown with the Idea Machine example, video- and animation-based sketches can be used to focus on both the systemic and experiential level. The temporality of video and animation enables this balancing act by depicting a sequential causality through the video medium, as well as allowing for simulating more dynamic and interactive choices through the addition of animated layers.

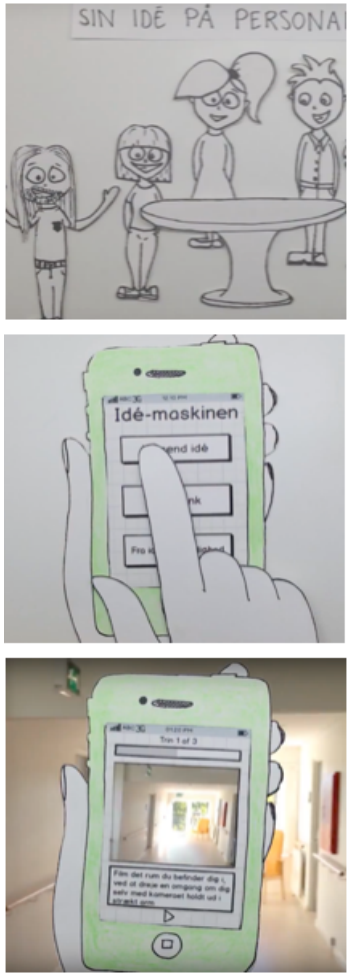

Figure 4: Stills from 'the idea machine' animation-based sketch – showing the social interactions and user experience on meso- and micro levels of the service.

We argue this positions temporal sketching, as one possible method to balance service and user experience design factors in the early design process of complex service systems due to its explanatory and exploratory nature. As an explanatory sketch the temporal format does not only offer information on a certain dimension by communicating the initial thoughts behind the design, but equally important it raises questions into the other dimensions, and thus becomes, at least partially, explorative. As such, a temporal sketch with focus on the systemic dimension can clarify selected service touchpoints, yet it also raise questions towards the experience dimensions of e.g. an app interface as a specific point. If a temporal sketch serves to illustrate the experience dimension of a service, then the same sketch enables designers to raise very context specific questions such as; where does the information go? What is required to process the information? What or who process the information and how is it done? A video- & animation-based sketch is hereby able to balance back and forth between the experiential micro level of a touchpoint, as well as out to a macro level of the systemic whole, and hereby allowing perspectives to surface into the design conversation.

This dualistic potential is an important quality in the context of merging service and user experience design perspectives, since some aspects of a service system might be more important to explore by 'zooming' in on critical aspects of the system's touchpoints, while other aspects of systems might only need to be precisely explained to give an overall understanding of the system, as well as where the specific explored touchpoint fits into the larger whole. In this way, temporal sketches can balance service and experience design issues, by merging isolated artefact interactions with broader customer journeys, into coherent systemic considerations. Furthermore, the sequential and narrative structure, of temporal sketches, embrace complexity by acknowledging that sketches can have multiple roles - while explanatory within one dimension it might be exploratory within another dimension.

Though temporal sketching has proven as an effective meta-medium for service- and user experience design, the approach is not a silver bullet for all issues related to the two fields. While effective in terms of creating exploratory sketches for others to reflect upon, or explanatory sketches for effective concept communication, temporal sketches offer less in regard to the collaborative investigative roles also associated with both service- and user experience design processes. The applied tools in both fields are often open for participation from both designers and other stakeholders when e.g. co-producing an actor map or a service blueprint.

In contrary, temporal sketching requires a certain amount of tool proficiency to produce a video- or animation-based sketch, compared to e.g. sketching by hand. As a consequence, the sketching process itself, constituted of iterative 'see-move-see' loops [22] is not as inclusive or transparent, as if the designer sketched together with other stakeholders on e.g. a white board. In other words, the often digital tools used to produce video- and animation-based sketches causes a 'black box' for the sketching process. That is unless the designer of the temporal sketch outputs each temporal sketching loop as what would essentially be different 'digital version' of the video- and animation-based sketch. If such versions are not gradually saved and made accessible, the temporal sketch can be at risk of

assuming a too persuasive function – acting only to show the proposed service system from its most favorable side, not open for critical scrutiny by peers or stakeholders. This issue is important to address for temporal sketching, since it potentially requires multiple different versions of a temporal sketch, to both explore micro, meso and macro perspectives of a service system design, before the different elements are edited together into a final coherent whole. In the 'Idea Machine' case the students were tasked with keeping an archive of their early temporal sketches, made prior to the final one depicted in the above. This ensured some version control of different levels of the idea, but still calls for even further versions needed to make the sketching process fully transparent to others. In the end, while video and animation adds valuable insights into the relation between events and interactions over time, across multiple levels, they are also very fleeting and momentary mediums. As such, the potential of temporal sketching is not to replace conventional and more static design tools, but rather act as a meta medium, aimed a tying the different levels together.

Perspectives

As points for further discussion, we can now sum up three main issues raised by the above. First, the use of temporal languages, forces the designer to both think and present their ideas in a sequential format. By 'telling' a concept temporally, we in turn 'read' the sketches narratively like short stories of user journeys throughout an entire system, as well as zooming in on concrete touchpoint interactions. Thus, the design enforces a zooming in and out of the social and systemic aspects of the design concept. Secondly, the narrative arrangement in a sequence also forces the designer to make explicit choices for what to focus on, and what to leave out of the sketch – e.g. which social interactions and technical touchpoints to zoom in on, and which elements to 'just' show in a systemic overview. In this way, the designer needs to leave more or less explicit 'holes' in the temporal sketches, opening up the design space for further questioning and design critique, and thus balances between explorative and explanatory sketching potentials. Finally, the explicit choices of what to include, and what to leave out, gives the service and user experience designer a responsibility for being transparent about the choices made in zooming between the social and systemic levels, in order to avoid the fallacy of presenting the design persuasively 'at its finest' – not open for further questions or critical feedback. Taking these three points into consideration, we argue, that maintaining a temporal dimension, where events are sorted and order in a certain sequence, presents a promising potential for balancing service and user experience design factors in the early explorative, and later explanatory phases of the design process.

As a final remark, temporal sketching is only one among many different approaches, which can potentially support the balancing of service and user experience design issues. The approach has proven to add an intriguing possibility to move between different levels of detail, but also how this requires the designer to be extra cautious in ensuring transparency and openness to collaboration. We see a potential for further studies to be made on how to ensure this transparency, and add a more collaborative layers to the temporal sketching process – moving not just between levels of the service system, but also between its stakeholders in the process.

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