How to Create a User Experience Story

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Abstract. Narratives are a tool used in many disciplines. In the area of User Experience Design (UXD), in particular, a storytelling approach can be applied during the whole design process to improve the quality of developed concepts regarding user experience (UX). Furthermore stories support designers in exploring and communicating their new concept ideas. However, the guidelines on how to create a story are either too abstract or do not focus on the experience elements of the interaction. This paper aims at systemizing the storytelling approach in the context of UXD in a ten-step-methodology for story creation. The proposed approach emphasizes on experience-related elements of interaction. The UX story is written by and aims at designers with the scope to communicate UX and reinforce it in product implementation. Further, the approach is systemized in a ten-steps-description with additional form sheets in order to support the application by designers from various backgrounds. In future projects a systematic evaluation of the tools introduced would validate the observed positive outcomes of applying storytelling in UX projects.

Keywords: storytelling, narrative methods, DUXU processes, emotional design.

1 Introduction

Designing attractive products that evoke positive emotions requires knowledge about the feelings products arouse as well as knowledge about users and their needs. In recent years, research directions such as 'Emotional Design' [7] have appeared, with the common scope to make possible integrating affective, non-technical values in product design. The research fields of User Experience (UX) and User Experience Design (UXD) also focus on analyzing users' personal impression and making the emotional impact of product solutions describable, even measurable.

Narratives are a tool used in many disciplines, from knowledge management and sociology to software engineering and interaction design, with the goal to support communicating, collecting and compiling qualitative information by giving it a human face. In the area of UXD in particular, as suggested by Quesenbery and Brooks [8] a storytelling approach can be applied during the whole design process to improve the quality of developed concepts regarding UX, as well as to support designers in exploring and communicating their new concept ideas [2]. Although this approach is suggested in literature, concrete guidelines and instructions about how to create stories describing UX, are not to be found. Important thereby is that in this case

using narratives is a tool aiming at developers without expertise in writing, so guidelines used in screenwriting or novel writing are rather inappropriate. Meanwhile, stories describing UX are linked with psychological needs and motives and focus on product and interaction specific aspects, in contrast to organizational or other forms of storytelling, which serve different scopes.

These facts all emphasize the need for a simple and flexible tool which enables capturing of emotions, impressions and needs. With the proposed collection of story elements, designers can focus on experience-relevant aspects even from the early phases of the design process and achieve continuity until the concept implementation, without forgetting important UX aspects through the whole design process. A ten-step-description of the story creation process guides members of a design team applying this approach on their work.

The following section presents related work, while section 3 covers the description of the proposed methodological approach highlighted with an example. The paper ends with a discussion of the approach and an outlook on future research.

2   Background

In the areas of **management science and knowledge management** storytelling is suggested as an appropriate method to communicate activities, to inspire and motivate employees, visualize qualitative evaluations and pass on knowledge in a memorable way. In this context, storytelling is defined by Thier [13] as a method by which experiential knowledge of employees about significant events, collected from different perspectives of the participants, is evaluated and processed in the form of a shared experience story. This kind of stories is per definition different from a story describing interaction and has no UX relevance. Although they are used to support communication aspects, their aim is to document experiences from projects and hints in a transferable and usable for the entire company way. They do not focus on interaction or UX elements and cannot serve as guidelines for concept implementation. However, the generic phases of storytelling process [9]: plan, interview, extract, write, validate, and spread can be adapted with focus on UX. Goal of this work is to support in particular the phases extract and write. Extract is according to Kleiner & Roth [9] the most important phase of storytelling, where interview contents are structured under the analysis categories and a draft script is created. In our approach the analysis categories are adapted in the UXD context, described as "UX elements". For the write phase Thier [13] suggests a plot arrangement scheme: problem/initial situation – incidents/milestones – solutions/experiences. In UX stories the plot should be arranged according to an interaction –instead of topic-specific order and respecting the temporal aspects of UX. Another difference is that UX stories should enable the listener to understand motives and emotions concerning an interaction rather than learning something. Therefore in UX stories the role of the character is emphasized.

In the discipline of **design**, narrative methods can often be found as personas, storyboards and customer journeys, used in different phases of the design process but mostly for user research [12]. In **ethnography**, where human behavior and context play a vital role, stories are used as a user research method and as communication tool

[6]. Gausepohl et al. [4] emphasize that stories help understanding the context of use involving user characteristics, tasks, equipment and physical and social environment and are therefore valuable for the elicitation of requirements. In **interaction design** stories are introduced by Erickson [2] as a communication tool that supports the implementation of user information into prototypes. However, the storytelling tool is not systemized, so designers without similar experience have difficulties in applying it.

In **UX design**, as suggested by Quesenbery and Brooks [8], a storytelling approach can be applied during the whole design process to improve the quality of the developed concepts regarding UX, as well as to support designers in exploring and communicating their new concept ideas. The main concept of their work is that stories evolve through the design process. They introduce different story types according to different possible audiences and design phases. Particularly interesting for this work is the technical specification story type, which summarizes useful information in a structure including: presumptions on which the story experiences base, user experiences described in two sentences, goals of the new experience, references and takeaways as a short summary. Still, those stories do not give concrete information about the interaction or the product itself to support the concept implementation.

Summing up, there is a lot of literature on the reasons why applying storytelling. However, the guidelines on how to create a story are either not aiming at designers or do not focus on reinforcing UX. The proposed approach emphasizes on experience-related elements of interaction. The UX story is written by and aims at designers, with the scope to communicate UX and reinforce it in product implementation. Further, the approach is systemized in a ten-steps-description with additional form sheets to be filled, in order to support the application by UX designers from various backgrounds.

3   Approach: Creating Stories with UX Elements

We introduce a methodology for creating UX stories consisting of experience-related elements defined as setting and arranged into a story plot (overview in Fig.1).

Fig. 1. Overview of the proposed approach with an excerpt of an exemplary UX story as output

3.1   Story Elements

Psychological Needs and Motive
The approach of UX aims at developing experiences via the product usage, which has to meet psychological needs and motives of the user and fulfill or even exceed his expectations [10]. To support this need-oriented approach from the beginning of the design process we suggest that the users´ needs and motives [5] to be fulfilled by the new concept are defined as first story elements. In order to support designers with little background in psychology, we recommend selecting one need from an established set of psychological needs, for instance the set of the 10 psychological needs tested by Sheldon et al. [10]. The concept quality regarding UX could then be assessed according to the degree of need fulfillment. The user motive or motives are, in this approach, expressed as a simple sentence in the form "I want to ..." or "I can …". This motive-sentence represents the design goal and could serve as title of the story, making the vision for the new product clear to everyone involved in the design process.

Character
One of the main characteristics of stories in comparison to other techniques for modeling applications is that they are personal. To give the story a human face we suggest defining a well-drawn character as main protagonist of the UX story. The study of the story character also emphasizes the user-centered character of the design process. A typical user of the system, defined as persona [1] as result of marketing analysis, can therefore be selected. The authors recommend considering selecting an untypical user as protagonist of the story as well, of course, depending on the development object and goal.

System Components
Subsystems, product components or functions which address the same need as the development object, are proposed to be listed as highly relevant elements to the holistic experience. The integration of more components into a consistent product experience can be a challenging part of designing for UX. This story element is supposed to encourage designers to integrate the new concept into a system of more components that contribute to the fulfillment of the same motive and to reassure the consistency of the experience described in the story.

Use Cases
Roto et al. [10] emphasize the temporal aspect of experiences, highlighting the role of expectation and remembrance. Environment and context factors have an impact on the motives, as well. We suggest that all use cases relevant for the new concept be listed and selected systematically. In this step, designers are supposed to explore how the experience described in their story (and the developed UX) changes over the use in different cases. This step should also serve as basis for the definition of the plot.

Coincidence and/or Disturbing Event (Resulting in Emotions and Activities)
Finally, we recommend the selection of at least one key event for the story, which highlights the need for the new product/concept. This can be a disturbing event -the problem solved by the new solution, or a coincidence -providing the chance for the use of the new concept. Either way, due to this key event, the story character faces critical emotions and the need for activities/actions that are enabled by the new concept. This key event describing the highlight of the experience will also serve as peak point of the story plot. For example, a key point by the end of the story can contribute to creating an exciting story but also to creating of a positive remembrance on the interaction.

Methodology Steps
Our methodological approach consists of 10 steps, described in the following section. Steps 1 to 4 concern the definition of the story setting, which should be filled into *form sheet 1* (Fig. 4), while steps 5 to 8 result in the definition of the story plot. Finally, steps 9 and 10 concern writing and visualizing story in an appropriate format. To further support the designers by the application of the methodology, the description is extended with forms to be filled during the process. The methodology has been applied on the example of a new cooking device, used as short example demonstrating the methodology steps and use of forms in the next section.

1. Determine the main **motive** characterizing the reason for the use of the product. Formulate it in the form of "I want ..." - or "I can ..." - sentence.
2. Choose up to 2 **psychological needs** to be fulfilled by the product. Use the collection of 10 psychological needs.

COMPETENCE
„very capable in what I did"

PLEASURE - STIMULATION
„I was experiencing new sensations and activities"

SECURITY
„my life is structured and predictable"

SELF-ACTUALIZATION-MEANING
„I was becoming who I really am"

RELATEDNESS
„contact with people who care for me and who I care for "

AUTONOMY
„free to do things my own way"

POPULARITY - INFLUENCE
„I was a person whose advice others seek and follow"

SELF ESTEEM
„quite satisfied with who I am"

PHYSICAL THRIVING
„a strong sense of physical well-being"

MONEY - LUXURY
„nice things and possessions"

Fig. 2. Set of psychological needs (based on Sheldon et al., 2011)

3. Choose the **characters** appearing in the story, writing a short description of the character and his usage pattern. *Form sheet 2* (Fig. 3) can be used for support. Note: Does a Marketing Persona already exist? Does it make sense to choose a typical user, or a rather non-typical user? Are one or more characters needed in the story?

```
Name................................
Sex..................................
Age..................................
Marital status......................    PICTURE
Children............................
Job..................................


Character............................................
......................................................
Hobbies...............................................
......................................................
Use context...........................................
......................................................
What connects him/her with the product?
......................................................
......................................................
```

Fig. 3. Form sheet 2 for character description

4. Find other **system components** affecting your product experience. Those can be super-, sub- or other systems, and existing features of the product. Note: Select components that address the same motive and need as your product.

The result of steps 1 to 4 (**story setting**) can be summarized in form sheet 1:

Motive	**Motive** *"I want to be inspired and guided to cook diverse fresh dishes"*
Needs	**Needs** stimulation / competence
Character(s)	**Character(s)** Student (21) "The student who has little time for and no experience in cooking, but enjoys eating home-made food"
System-components	**System-components** hotplate / fridge / kitchen surface / recipes / crockery / meal ingredients

Fig. 4. Form sheet 1 for story setting, as defined in steps 1 to 4, exemplarily filled (right)

5. Collect **use cases** (*form sheet 3,* Fig.5), where your product is used. Choose up to 6 use cases that appear to be particularly interesting / critical in your story. Note: What happens before, during, after use? What role do environment and context factors play?

Fig. 5. The form sheet 3 for collecting use cases, exemplarily filled (right)

6. Define at least one "**Key event**", which emphasizes the need for the new product and arouses critical emotions of the character. This may be the problem solved by the new solution, or a chance to use the product.
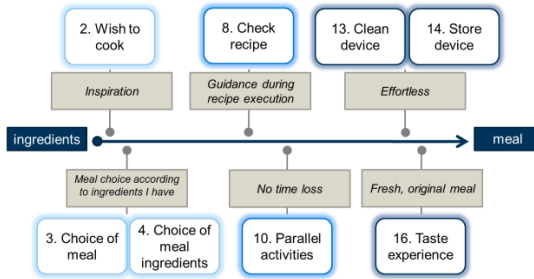7. Choose a plot line and arrange the use cases and key events accordingly.

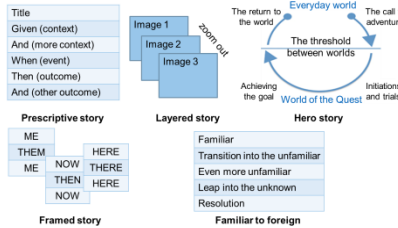**Fig. 6.** Example of a plot line with use cases and key events

Fig. 7. Examples of possible plot lines (based on Quesenbery and Brooks, 2010)

8. Describe each use case as "substory" using *form 4* (Fig.8). The left side in the sequence of events describes user behavior, while the right side the system response.
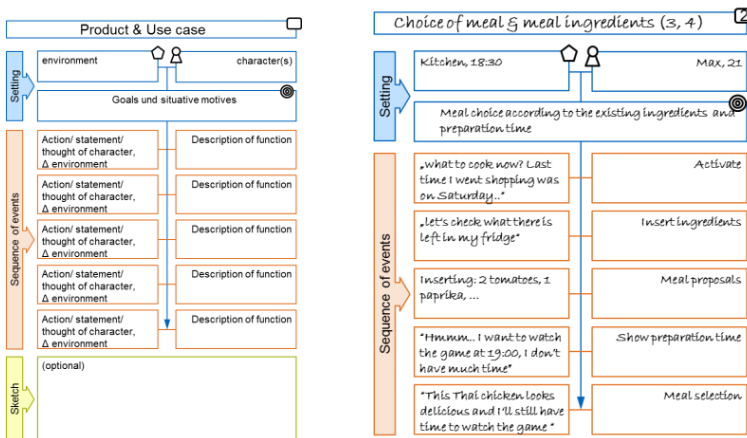

Fig. 8. The form sheet 4 for creating substories, exemplarily filled (right)

9. Formulate each substory as text. The entire text is your story!

Example: *It's 18:30 and Max wants to eat something before the game starts. Last time he was shopping was on Saturday and he has no idea what he could possibly cook with the leftovers in his fridge. He activates his cooking device, checks his fridge (only 2 tomatoes, a chicken breast and 1paprika are still there) and types the ingredients. To his great surprise, four meal proposals appear. "This Thai chicken looks delicious and I'll still have time to watch the game ", he thinks, as he selects the meal.*

10. Visualize your story in a form appropriate for the receiver of your story. Visualization options include: text, illustrated text, storyboard, film.
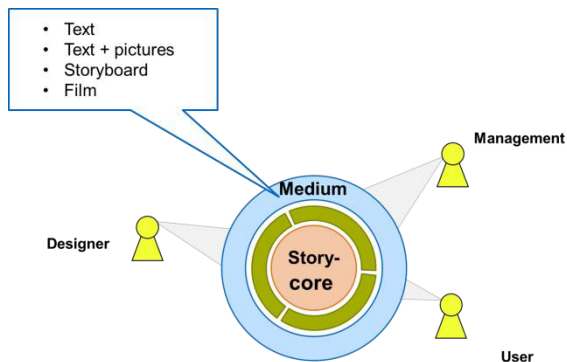

Fig. 9. The choice of visualization form of the story should be made according to the audience

4   Discussion

The proposed methodology for creating UX stories has been applied in student projects. The student teams, consisting of designers without previous experience in UXD or storytelling have been asked to create a UX story using the proposed method description and form sheets. A scenario including information about the development task concerning the market, the environment and the company, as well as a product proposal served as input for their work. Qualitative interview and observation results have been collected to assess the communication of ideas within the teams and the comprehensibility of the process, based on the method description and the use of forms. The UX stories quality has been reviewed in regards to completeness in UX related aspects.

The **communication within the teams** is supported by the use of stories: the common communication platform facilitates cooperation, the discussion about user feelings and motives was encouraged in many stages and the contributions of all team members could be structured as story elements. Moreover, the team shared a common and specific vision about the product to be developed. Still, the need for a moderator should be examined further, since time issues with long discussions and documentation issues (ideas not being documented) have been observed. The method

description guided the team in every step of the process. We observed the need for further explanations mostly in steps 2 and 8, so the kitchen device example has been integrated in the method description. The use of forms has clearly supported the process. They have been extended with notes based on the participants' remarks. Another parameter to be further examined is the form of the data given as input: for this work we experimented with scenarios including the product proposal and qualitative data. Another limitation is that since the approach was applied in workshop sessions, it was difficult to evaluate how easy it would be for a team to integrate it into their standard working procedures and furthermore, what consequences it would have regarding time effort.

The main advantage of the **UX stories as result of the process** was that they involved many UX related aspects, emotional, temporal and contextual, and showed high potential for leading to emotional products. The ideas were documented in a presentable form, even from the early design phases, and the UX quality of the concept ideas is possible according to psychological needs fulfillment through the story. The suggested approach also reinforced the integration of the concept ideas into a context of use and helped gaining a systemic view with the interrelations with other relevant systems or services. Scope of this work is to support designers capturing UX elements in a story, which guides the concept implementation, rather than creating a "perfect" narration. The stories with "spoken language" had a more original effect, but it should be further examined if the narration quality has a big impact on the UX quality. The format of the experience story is also a point to be discussed: it can differ from text to illustrated storyboard or film. The authors suggest working primarily with text, but further experiments should confirm this assumption.

5   Conclusion and Outlook

Designing emotional products requires tools which support communication and reinforce integration of UX aspects from the beginning of the design process. In UXD many challenges need to be faced with communication of non-tangible, affective characteristics being essential. UX stories are introduced as a tool to face these challenges and improve the holistic experience. Systemizing the story creation process is very important in this context, since the approach aims at designers with no background in storytelling. Further, UX stories focus on the experience aspects of an interaction and are therefore different from other story types. The advantage of having a simple tool that can be applied from the beginning of the design process is decisive for the use of UX stories, as well as for the improved quality of the stories by the end of the project.

A description of the experience elements composing the UX story, a method description in ten steps as well as form sheets supporting the designer are introduced in this paper. By applying this approach in student projects, we could evaluate, improve and complete the collection of story elements and the methodology steps. The students without background in psychology, UXD and professional writing, were able to create new concepts taking into consideration experience-relevant aspects and stories which helped them structure and communicate their ideas.

In further projects we intend to systematically evaluate the proposed approach and the UX stories themselves, in order to validate the first qualitative data from the application within student projects. We will record the group sessions and analyze the communication [3] to assess comprehensibility of the process and the use of the method description and forms. On the other hand, the quality of the stories as complementary element of the product specification will be assessed. Thereby we also plan to explore different story visualization forms and their impact. The quality of generated concept ideas regarding UX is another parameter we intent to further investigate.

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