User Experience Goals as a Guiding Light in Design and Development - Early Findings

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Abstract. User experience (UX) goals are one means to describe user experience requirements and guide the design and evaluation of interactive systems in different application domains. This position paper discusses the results of a pre-workshop questionnaire for participants of a workshop on UX goals and their utilization. The domains of the case studies that participants described vary from workplace to consumer applications and education. Workshop participants defined a good UX goal as something that (1) helps in focusing the design, (2) is measurable, (3) describes positive emotions, and (4) communicates the desired experience. Furthermore, UX goals were considered useful in keeping the focus on important issues during design and development, and providing inspiration for design.

1   Introduction

To design technology that is capable of enabling, promoting and/or demonstrating specific user experience it is important to set *experiential goals* for the system or solution that is designed. Such *goal setting* approach as part of requirements processes is receiving increasing attention in design and development of interactive systems – not only in relation to everyday consumer technology but also when developing systems for work or education.

Due to the personal and subjective nature of experiences, it is not possible to force people to have specific experiences with products or services. However, designers can aim to facilitate specific experiences among the users, in other words, design *for* an experience [6]. Although the intended experience cannot be guaranteed, it will be more likely if designer utilizes the available knowledge, such as conveyed by Experience Design practice [1]. Commonly agreed experience goals can help the project team by "keeping user experience in focus through the multidisciplinary product development and marketing process" [3]. However, the process of defining, communicating and using

these experience goals as requirements in real life design cases has received little attention in Human-Computer Interaction (HCI) research.

When designing for an experience there is a need to define the *experience goals* that concretize the experiences the users are intended to have when interacting with the developed system. Goal is defined as "the aim or object towards which an endeavour is directed" (in Collins English Dictionary – 30th Anniversary Edition, 10th Edition 2009). By UX goals we mean the experiences that a designer intends the designed system to support for the end-users when they use the system in their activities. These experiences of the end-user are the ones that the system design and development aim to facilitate. The user experience goals can be presented as experiential requirements for the design and development. To concretize the UX goals, they need to be operationalized both for design and evaluation purposes. When UX goals are operationalized, they can be mapped to functional and non-functional requirements, and target user experiences (such as system qualities and impacts [4], as well as feelings and emotions [1]). When UX goals are operationalized, so that they can be measured and therefore evaluated by the users or the verbally expressed experiences of users can be compared to the set UX goals, they are called UX targets.

We held a workshop in fall 2012 at NordiCHI2012 conference [5] to bring together practitioners and academics to share knowledge and lessons learned and to explore:

- *How to identify, define, use and draw inspiration from user experience goals throughout the design and development process?*

The questions driving the workshop included:

- What constitutes a good UX goal?
- How UX goals can be identified and framed?
- How to make use of the UX goals in various design and development phases?

Here we report the results from a pre-workshop questionnaire that addressed the participants' projects described in their position papers. The focus was on defining UX goals, characteristics of UX goals, and their utilization.

2 Method

Before the workshop, the authors of the accepted papers were instructed to complete a questionnaire (in English) dealing with the main themes of the workshop (see Figure 1). We aimed to start the reflection about user experience in relation to the workshop themes and to gain an understanding of the commonalities across the papers. In this questionnaire, the paper authors were asked to reflect on their personal experiences and conceptions concerning the topic, specifically on usefulness of user experience goals.

   The link to the questionnaire was sent to each author of each accepted paper. We received nine responses (response rate 56%) from the possible sixteen respondents. One workshop organizer analyzed the answers to the questions prior to the workshop and discussed the analysis results with another organizer to form a consensus on the results. A summary of the results was presented to the participants before the group work in the workshop. The analysis was revised for this paper to a more detailed level by one of the organizers and authors of this paper.

Based on the case described in your paper, or thinking about some other case, please answer the following questions.

1. Describe the domain of the project briefly
2. Which were the most important UX goals utilised in the project
   a. UX goal 1: _____
   b. UX goal 2: _____
   c. UX goal 3: _____
3. How did you come up with those goals? Based on
   a. a user study
   b. given UX target (e.g. from a customer)
   c. brand
   d. literature
   e. theory
   f. standards
   g. common sense
   h. something else, what?
4. Did you consider any other goals during the project? Which ones?
5. With whom did you communicate about the UX goals?
6. Now looking back, how much did the UX goals affect the design solutions in the project?
   a. 5 very much
   b. 4
   c. 3
   d. 2
   e. 1 not at all
7. Based on you own experience concerning UX goals, please complete the following sentences:
   a. In my opinion a good UX goal is _____.
   b. I have found UX goals useful for _____.
   c. UX goals affect design by _____.

Figure 1. Pre-workshop questionnaire sent to the participants prior to the workshop.

3 Results

Application domains. The papers covered three different application domains or contexts:

1. Workplace: remote operation of cranes, learning tool for forklift drivers, ERP system user interface development.
2. Consumer applications: on-line bingo, designing for dogs, and
3. Education: teaching experience-driven design for university students.

Most important UX goals in reported projects. The UX goals reported by the respondents were relatively similar across the projects. Feeling of safety and feeling of control were mentioned as UX goals in more than one project. The other reported UX goals include: *safety in operation, security, sense of control, feeling of presence, stimulation, competence, self-efficacy, reduced effort, reduced mistakes and errors, freedom from pain and distress, freedom to express natural behavior, and comfort.* In addition, various playful experiences were reported in the paper from education domain that described teaching of experience-driven design for post-graduate students. They include *captivation, submission, fellowship, humour, good mood, amusement, and relaxation.* There is a clear difference between the user experience goals of the paper from the experience-driven design course and the other papers. Although there seems to be a clear divide between pragmatic and hedonic goals here, they both can be equally important for user experience depending on the context or application area.

The sources for identifying UX goals. The most common way to identify the UX goals was a user study (7/9). Literature (3/9) and theory (3/9) were both reported by three respondents. A given UX goal, e.g., given by a customer, was reported by two respondents (2/9). In addition, brand, standards, and common sense were each reported by one respondent. In addition, ethical guidelines and a benchmark study were mentioned as sources for identifying UX goals.

Consideration of other UX goals. When asking whether any other goals were considered during the project (question 4), most respondents reported that UX goals had not been stable throughout the whole project. Three different ways of evolving had taken place based on the responses. First, the goals had been made more precise. Second, some goals had been dropped along the way. Finally, new goals, e.g., business goals, were identified during the project. This indicates that the user experience goals and the requirements may evolve and change to a certain extent as the design process progresses.

Communication of UX goals. Respondents reported that UX goals had been communicated widely in the participating organisations. The stakeholders reported included: customers, users (operators, forklift drivers),

domain experts, design or UX team, researchers, colleagues, product owner, and management. This can indicate that UX goals can be one means for powerful and important way of communicating the user experience requirements to the different stakeholder groups in the design and development phases and when justifying the design choices or even the development in the first place.

Assessing the level of effect of UX goals on the design within the project. Six respondents reported that the utilization of UX goals in the design process had had an effect on the design (three answers missing). Respondents were asked to assess on the scale from 1 (not at all) to 5 (very much) the effect of UX goals on the design. This question received six answers, with four respondents evaluating the effect on level four (4), one as very much (5), and one on level 3, averaging to level 4 (much effect). UX goals therefore seem to be important in the design process and can influence the project outcome.

The characteristics and functions of good UX goals. The responses to the sentence completion concerning a good UX goal covered two distinct aspects: characteristics of UX goals, and the functions of UX goals. Good UX goals were characterized as *measurable* in terms of experience (4/9), *clear and precise* (2/9), *broad* enough to allow space for design ideas (2/9), and *measurable in terms of money* (1/9). One of the respondents describes a good UX goal as "*clear, and enables defining a measurable target*".

The functions, i.e., use of good UX goals were described to be *guiding the design* (2/9), *evoking design ideas* (2/9), and most importantly *communication* (5/9). One respondent describes: "*A good UX goal is giving overall guidance for a certain mindset to follow throughout the whole design process.*" Another emphasizes that "*a good UX goal is a way to communicate the desired user-experiences to other people.*" All in all, the results emphasize the importance of communicative function of the UX goals as part of UX requirements. Furthermore, the measurability of UX goals was raised as an important characteristic, therefore calling for operationalizing UX goals to UX targets.

The usefulness of UX goals. The second sentence completion focused on the usefulness of UX goals. Four categories for usefulness of UX goals were identified in the responses: focus and framing of UX for design (4/9), to ideate and innovate in design (2/9), to communicate the UX (2/9), to evaluate the design (1/9) as well as to build a business case for developing the UX of a system (1/9). Results indicate that UX goals indeed are useful for various purposes and are important especially in the first phases of the design process and for communicating user's experiences that are aimed for.

Effect of UX goals on design. In the third sentence completion the respondents were asked to state how the utilization of UX goals in the design

process affects design. Responses were categorized as follows. The UX goals affect design by providing inspiration (1/9) and vision (2/9), and focus for design (3/9), guiding the design process (3/9), and supporting communication to educate the organization about UX (1/9). As an example, one of the respondents described: *"UX goals affect design by guiding the product development in its different phases. Their design implications in the context environment should be meticulously defined, e.g., according to the gathered domain and user data, and taken as the guiding stars in the design."* He/she emphasizes the importance and role of UX goals throughout the development process as well as discusses how other collected information is used for defining the goals. The importance for design process becomes evident from these answers.

4 Conclusion

The results of our questionnaire illustrate that UX goals can be used as an important part of UX requirements. They therefore supplement other means of defining and communicating UX requirements. Specified UX goals can have multiple roles and purposes in the design and development process, such as providing focus and framing of UX, provide a source for inspiration, ideation and innovation, supporting communication of experiential goals to the different stakeholders, supporting evaluation, and building a business case.

As the results come from a very limited set of cases, a more extensive study based on real-life design cases could shed more light on UX goals as part of UX requirements and their presentation. Currently we are working on a more recent data set that was collected during a second workshop in NordiCHI2014 that focused on the first stages of experience design, specifically on identifying and choosing experience goals [2]. Our aim is to understand 1) where designers get insight and inspiration for defining UX goals and 2) what means are used for communicating UX goals among stakeholders. Based on the findings we will present a process model and instructions to support practitioners to identify and define UX goals. The proposed model and instructions will be iterated based on feedback to be collected via interviews and surveys from designers and HCI experts in academia and industry. In addition, a survey on identifying, defining and using UX goals is planned.

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References

[1] Hassenzahl, M. Experience Design – Technology for All the Right Reasons. Morgan & Claypool, 2010.

[2] Kaasinen, E., Karvonen, H., Lu, Y., Varsaluoma, J., Väätäjä, H. The Fuzzy Front End of Experience Design. Workshop Proceedings, in conjuction with NordiCHI2012. VTT, 2015. ISBN 978-951-38-8213-6

[3] Kaasinen, E., Roto, V., Hakulinen, J., Heimonen, T., Jokinen, J., P., P., Karvonen, H., Keskinen, T., Koskinen, H., Lu, Y., Saariluoma, P., Tokkonen, H. and Turunen, M. Defining User Experience Goals to Guide the Design of Industrial Systems. Behaviour & Information Technology journal, Taylor & Francis. 2015. DOI: 10.1080/0144929X.2015.1035335

[4] Väätäjä, H. Framing the User Experience in Mobile Newsmaking with Smartphones. Doctoral Dissertation. Tampere University of Technology. 2014. http://URN.fi/URN:ISBN:978-952-15-3270-2

[5] Väätäjä, H., Olsson, T., Roto, V., Savioja, P., eds. UX Goals 2012 Workshop – How to Utilize User Experience Goals in Design? Workshop Proceedings held in conjunction with NordiCHI2012, Oct. 12th, Copenhagen, Denmark. Tampere University of Technology. 2012. http://URN.fi/URN:ISBN:978-952-15-2955-9

[6] Wright, P., J. McCarthy, and L. Meekison. Making sense of experience. In Funology: From usability to enjoyment, edited by Blythe, M., Overbeeke, C., Monk, A. F., and Wright, P. C., 43-53. Netherlands: Springer, 2005.