
LET'S START TO CREATE A FUN PRODUCT: WHERE IS MY TOOLBOX?

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Abstract

In this paper, concerns are discussed regarding the lack of adequate tools to support ideation and concept creation and evaluation in the early phases of development of products that aim to be functional and fun. Such tools should produce evaluative data that provide informative input already early in the process when impact on product development is optimal.

Keywords

Product concept development, fun, affectability, evaluation

ACM Classification Keywords

H5.2 User Interfaces.

Introduction

Most products are designed to fulfill a particular 'useful' function, hence need to be effective and efficient. However, increasingly products also need to be fun, rather than merely being 'functional'. This results in quite different requirements compared to predominantly purposeful products – it is about playfulness rather than efficiency, being engaged rather than minimizing effort. And product innovation then turns into not merely working out how to apply technologies to realize some useful product function,

but also in how to create an appealing and alluring experience. So, next to usability, *affectability* is becoming an essential product requirement, i.e., products should have affective (emotional) appeal in addition to having functional appeal [10, 14].¹ Obviously, this extra requirement is going to have an impact on the approach adopted in the development process – notably, this focus is going to require dedicated evaluation methods and tools [6], *in every phase of the development process*.

Much is published about how to evaluate the usability of consumer products, and how to involve the intended users in such studies, throughout the product development phases. However, when considering the consumers' affective needs, desires and aspirations – what will delight them and what not – one is treading on new territory. Although some general motives and drives regarding affective products are described for example by [11 and 14], these descriptions tend to be so general that by themselves these seem not to be sufficient to guide the development process towards a concrete idea for an affectable product – other, more specific input is needed to guide the development process. Tools to collect the appropriate evaluation data regarding the affectability throughout the process could provide the development team with the necessary input.

¹ In the 'user experience' literature, many different terms are used to refer to the emotional, subjective aspects of product use (as opposed to more traditional usability aspects such as ease of use, functionality, learnability): pleasure, fun, engagement, etc. [3, 6, 7, 10, 11, 12, 14]. For lack of a generally accepted label, the new term 'affectability' is adopted in this paper to encapsulate such diverse 'affective product qualities'.

In the next section, the development process will be sketched, indicating for each step what type of 'affectability evaluation and input' one might like to have when working on novel product concepts (see [1] for examples of such product concepts).

Development process outline

A general outline of the development process might be described by the following phases: contextual inquiry, ideation, concept/scenario development, concept/scenario testing, prototyping, evaluation, product introduction [10]. Essentially it is an iterative process.

Contextual inquiry – investigating the current user situation via e.g. observations, tests, and interviews – can be conducted with a focus on affectability, resulting in data telling what is good about the current situation and what not, also in terms of affectability (and for determining the affectability level of the current situation, evaluation tools that are used for e.g. prototype testing might also be adopted now; for some examples, see e.g. [15]). However, such a contextual inquiry approach is less feasible when developing ('inventing') products for which no predecessor exists. Also, at this stage, it might be relatively easy to determine *what* needs to be improved, but that does not mean that it is going to be easy to determine *how* it can be improved.

For the next product development phase, idea generation or ideation, a range of tools to support ideation sessions have been developed (for an overview see e.g. [4]). However, there do not appear to be tools that can specifically support the "ideation for affect" at this stage. Ideation tools are the same whether one is

focusing on toys or on irons. Question is of course if it would be necessary in this stage to have special support, but it probably would not hurt, either.

The outcome of an idea generation session will be a mix of ideas, from small to impossible. The next step in the development process is narrowing down the number of ideas into a manageable amount of workable ideas. The most promising ideas can subsequently be worked out, for example in the form of concept descriptions, or in the form of scenarios [2, 5, 8, 10]. Scenarios are short stories of envisioned real life situations that describe a specific user (group), in a specific contextual setting, interacting with specific devices to fulfill specific tasks and intentions, resulting in a specific outcome (e.g. engagement). They illustrate the usage, the functionality and purpose of novel devices in daily life. It is an attempt also to translate an abstract idea into a more concrete manifestation. A scenario can be a powerful tool for further discussions between members of a project team, and for discussions with potential users (e.g., to learn more about attractiveness to users, or to collect additional user requirements and needs). Typically, in the discussions, participants are invited to comment on the different scenarios, indicate the benefits and drawbacks, requirements and necessary modifications, and select what they consider to be the best and most appealing ideas, and the worst ones. Of course, they will be asked to explain their choices. Scenario evaluations can provide valuable insights quite early in the process, albeit of qualitative nature.

At this point in the development process, also feedback and input regarding the affectability, and how to realize that, is more than welcome – probably more even than

in the previous stage. However, scenarios, or for that matter any form of concept description that is being adopted in this stage, are still rather abstract depictions of an idea or a concept in its early stage. Can scenarios then reliably enough elicit feedback on the affectability potential of the concept? To a large extent, the enjoyment one experiences in a product comes from the interaction, or from the specific 'look and feel' of the product – and with scenarios the stakeholders need to imagine what that will be like – which is likely going to be a difficult task for most stakeholders. Experience has shown [e.g. 5, 8] that feedback regarding functionality aspects of the concepts depicted, and even regarding usability requirements can be fruitfully collected. However, the ability of scenarios, or other forms of concept descriptions, to reliably elicit feedback on the affective qualities of the concepts presented, has not yet been established.

Next phase is then prototyping of the concept or concepts that were selected based on the previous step. Where 'usability' guidelines exist, telling what to do and what not when detailing a product concept, and its functionality, interaction style, interfaces, etc., such guidelines do not seem to exist for affectability. Broadly formulated heuristics might be available [e.g., 11, 14, 12, and 13 for games], but these only provide guidance for prototyping at a general level. More, and more specific guidelines, based on extensive research, would be welcome.

Once prototypes are available, one could start testing with the intended users to learn about usability and affectability of the concept. More and more tools that can be used in this stage become available; see, for example, [6 and 15], and the overview of evaluation

tools presented on
<http://www.designandemotion.org/society/engage/>.

Discussion

The core question one would like to see answered throughout the development process is, of course, how we can make sure that the final product is going to be fun, pleasurable, appealing, *'affectable'* (in addition to being functional and usable). It is important to address this question early on, because it is not unlikely that affectability is going to require some fundamental design decisions about what it is that the user is going to be offered, and in what way. And such fundamental design decisions are usually difficult if not impossible to readdress at a later stage in the development process, when more and more features of the product under development are being fixed. Evaluation data collected in the final stages of the development of the product provides a useful check of the qualities of the product, but possibilities to repair any potential issues are usually severely limited.

However, the dominant practice still seems to be that the affective aspects of products are evaluated quite late in the development process; and as discussed above, this is partly due to a lack of adequate methods and tools to obtain relevant input regarding affectability early on in the process. And input that is available (e.g. heuristics or broad models, such as those from [12, 11, 14, and 13]), generally does not provide steering at a sufficient level of detail and concreteness, i.e., these are not 'tangible' enough in the ideation, scenario, and prototype building phases to help work out ideas in some level of detail. As a colleague stated the other day, summarizing our discussions regarding the affective qualities of a product concept under

development: "we need more than statements that the product concept should feel nice to the touch, have a luxurious appearance, perform tasks in an elegant and high-standard way, and exhibit behavior that is most of the time predictable, but occasionally (pleasantly) surprising the user". However, such heuristics could be a starting point in the development of more detailed models, but more (research) work is needed here. And, importantly, this is going to be relevant input to support further development of adequate, valid and reliable evaluation methods as well.

Concluding remarks

Fun, enjoyment, pleasure, and similar 'experience', or affectability labels are still ill-defined concepts [7, 9], and despite the growing interest in experience as a vital aspect in software and product design, a common understanding of what this is in the context of product use, and how products should be designed to achieve this objective, is still under development. After many years of research and practice of how to design usable products, it is much easier to give rules and guidelines for the design of usable products than for the design of pleasurable products.

Since affective aspects of product use is a relatively new field (see also [3]), no large body of established methods and tools exist yet. A number of tools to be used in the design process of affective products have been published (e.g. [6]). Several tools are available via the ENGAGE website (<http://www.designandemotion.org/society/engage/>). Although apparently more tools and methods have been worked out for testing purposes in the later stages of product development [6, 10], it is equally important to have reliable and useful tools in the earlier

stages of development, to support concept development, and conduct early testing even when no prototype is available yet. The concept/scenario development phase seems to be the most appropriate one for early evaluation of the new concept.

To further support guidance in the early phases of product development, theories around affective aspects of product use are essential. Heuristics could be a starting point to guide further development of such theories, but more research is needed to build a comprehensive model of which aspects around human-product interaction result in an affective response in the user. This would support the development of products in a more specific way than currently is possible.

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