Low Cost UX Design in New Media Design

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INTRODUCTION
In order to achieve low cost user experience design, one might investigate regular design practices and determine where cost might be cut. This is the approach in Jacob Nielsen's (in)famous strife for 'discount usability engineering' (cf. Nielsen, 1994). This paper argues for the opposite: instead of cutting costs, it is better to investigate design practices aiming at high user experience levels yet characterized by low costs. Such low cost user experience design can be found in the New Media Design practise in professional (higher) education. The basic idea behind is to educate bachelor students in Media Technology or general HCI to apply technology in creative ways such to build human-computer systems which are highly usable and provide an excellent user experience.

First, in occupational higher education it is almost natural to teach and to practise low-cost design methods in terms of time, effort and the cost of equipment. Also, in HCI in general but specifically in the design of new media products, it is natural to take a user centred approach. In designing websites, smartphone apps and internet of things applications it is eventually the end-user who decides where to spend his time and money. As a result, in new media design it is proverbial to pursue highly usable products with an excellent user experience.

Finally, as argued in de Haan (2014) in comparison to the old (analogue) media products such as paintings and newspapers, new media products are digital and software-based, with the result that very little effort is required to copy, edit and adapt product designs. Compared to software for business purposes or a hardware design like a car, the ability to play around with design solutions without high costs and without too much effort or expertise implies that the architecture of media products supports user experience design better then other areas of design. In short, new media design methodology should be a good field for studying low-cost user experience tools and techniques.

NEW MEDIA DESIGN
De Haan (2014) states that New Media Design products like interactive website and smartphone apps are easy to adapt to the context of use and the requirements and tastes of different users and user groups - very much unlike other design products. The basis for this characteristic is that new media designs almost always consist of mashups. Regardless if it concerns an Internet of Things application, an app or an interactive web application, each program consists of a small central core, containing the programming logic, in combination with a number of different services, each connected in a client-server architecture by a API; a programmers interface. The first reason for easy adaptation to user concerns is that for programs designed as mashups, if a particular service (hence: function) is no longer according to ones tastes, it is very easy to plug in another on. Likewise, during design several optional services may be tried-out without too much costs and effort.

The second reason why it is easy for new media products to attain high levels of usability and user experience is that mashups consist of multiple service interfaces connected to one central core which contains almost all presentation aspects of the app. In other words, the way in which the application presents itself to the end users, is dealt with at one place and one place only: in the core or the front-end of the app. If another 'look and feel' of an application is required, all there is to do is to change the front-end. Since the front-end in new media products often consists of a script rather then programming code that needs be compiled, user interface adaptation may consist of little more then textual changes. While a website is up and running, it is possible to present different groups of users with a different front-end, depending on, for example, which local webserver they use or what preferences the group has. Online optimization is not restricted to a single trial but may take the form of a continuous process of adapting the looks and behaviour of a website or mobile app to the behaviour of its users. Because of this particular characteristic, in new media design there is no strict distinction between the phases of designing an application and using it: the context of design includes to the context of use.

Finally, new media products are high in usability and user experience because different functions may be designed and implemented, relatively independent of each other. A computer program that consists of many different and relatively independent functions does not have to be designed and specified at once. As such there is no requirement that the design specifications or the programming specs should be complete (or consistent) at a particular time. As such, new media design allows for flexible user-centred design methods and agile design methods like Scrum and Extreme Programming. The main implication from the relative independence of the building blocks of new media applications is that the design process may proceed piece by piece: incrementally and iteratively.
Because of the flexibility regarding functionality, the ease of adapting the presentation of the user interface and that the design process affords for flexible and user-centred design methods, the design process is not only lightweight but also allows designers to use a variety of special purpose tools. Tools include concept drawings, task lists, persona descriptions, partial design results, wireframes, interface sketches, function lists and use cases, paper prototypes and demonstrators.

However, the most important consequence of the architecture of new media designs is the distinction between the development of the design conceptualisation or ideation, and the implementation as two relatively independent processes. Naturally, early in design, the development of ideas will be predominant and implementation will be more predominant in late stages but there is no necessary order of the two processes. In contrast to the 'logical' model for design with stages like: analysis, requirements, design, implementation, installation and testing, in new media design, ideation may actually be driven by the results of the implementation process. De Haan (2013) referred to this process as exploratory design where design activities are driven by the outcomes of design results as in artistic design in which e.g. a painting is gradually shaped by what is already on the canvas.

Exploratory Design in New Media Design

Ideation is (mostly) concerned with enacting methods such as paper prototypes, role-playing games, interface sketches, storyboards, whereas implementation is about how to translate ideas into 'something that works' including the choice of methods, tools and techniques to translate the conceptual ideas into working software. Both processes delineate the (remaining) design space and determine the boundaries of the design solution. As an example, an idea for a mobile app may be that it does something when two persons are in each other vicinity, and this may be implemented using Wifi hotspot ID's, GPS localisation or an aGPS service, etc. and which technique will be used depends on the context of use, including the platform, available hardware, required speed, etc.

Since ideation and implementation are relatively separate processes, it is possible to envision design as two semi-parallel streams, each ending with its own design result or design product. In the case of implementation, it is running code, whereas ideation delivers a complete 'user' specification: the design as a specification of what the user will experience, when they interact with the end-product.

The aforementioned tools may be assigned to either ideation of implementation. For example, where a task list is part of the ideation process, the equivalent use cases and activity diagrams are part of the implementation process. In our opinion, ideation is the most important design process in new media design because it specifies the design of the application at the level of abstraction of the user. As such, ideation is best supported by - what I would like to call: enacting: laying out, demonstrating or sketching what the design will do, what it will look like and how it works without referring to the implementation details. Early on in the design, enacting may take the form of paper prototypes, or the application may be acted out in real life. Van der Kooij and Retfalfi (2012), for instance, mention how they let students act out a computer game in real life where some participant take the role of 'alien' and others represent the 'shooter'. Later on in the design process, enacting may take the form of demonstrating the design with a scale model, presenting a prototype, showcasing a partial solution or presenting a demonstrator to show what the final product would look like.

In this paper we argued that design in the area of new media products has particular characteristics which 'afford' for high levels of usability and user experience. A main characteristic is the relative independence of the conceptualisation or the ideation with a specification of the application at the human level and the implementation as the technical specification in software. As such, ideation may be treated as the main (and perhaps the sole) focus of user experience design. Perhaps anecdotal, but as a teacher, I have always valued a good design over a working implementation. To conclude, I would like to argue that the concept of 'enacting', encapsulating role playing, sketching, playing out in real life situations (as children do) and 'what if' argumentation are not only most important in human centered design ... but it is also a very cost-effective way to explore design solutions.

REFERENCES