

Corporate UX Guidelines: Policies and Publication

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ABSTRACT: *User eXperience (UX) is defined as involving a person's behaviors, attitudes, and emotions about using a particular product, system or service. A company's UX strategy can include many activities, such as design thinking, early user experience methods, content strategy, certain types of user and market research, quantitative assessments, process innovation, design patterns, UX organizational structure, and career development. To large technology corporations and companies UX provides an important part of their business, and has a major impact on strategy and decision making. However, the way UX is managed and implemented can vary greatly from company to company. This paper provides an overview of the UX processes used by some of the world's leading technology companies and discusses which aspects of those strategies these companies choose to disclose and share in the public sphere.*

Keywords: *User Experience, Usability, Human-Computer Interaction, Organizational Structure, Management Practice, Technology Management*

I. INTRODUCTION

When discussing the use of User eXperience (UX) within a large company, a major question that needs to be asked is what the most appropriate set of UX methods would be for that company. Almost every company that creates a product that requires humans to interact with computers makes use of some form of usability methods to test their product [1]. These techniques have been proven over time to improve the quality of the products produced, and usually lead to reduced costs for the company [2]. However, there are few commonalities between different companies when it comes to any attempts to create a standard definition of UX.

A recent study undertaken by Marcus et al [3] conducted a survey looking at the use of UX in six major technology companies (Fujitsu, IBM, Microsoft, Oracle, SAP and Siemens). Questions varied from the size of a company's UX team, to what types of prototyping tools are used, but perhaps the most interesting question was regarding the definition of UX within each company.

Fujitsu and Microsoft have both stated that they do not have a standard definition of UX. IBM was unclear as to who the question was directed, but ultimately ended up stating that UX is embedded throughout the entire production life cycle. For Oracle, SAP and Siemens, definitions of UX can be referenced from their individual mission statements. Oracle referenced the front-page of their website as an example of the experience that enables a visitor to clearly see the methods they use. SAP, though referring to their mission statement, explicitly stated that a company definition of UX does not exist, but they provide an in-depth explanation of what they perceive a user to be. SAP also gave further definitions of user-centered design and the role of the user interface designer. Of the companies listed above, Siemens gave the most in-depth answer about UX, and stated that [3] :

"UX describes the functional system between the users and the system as a whole, while UI can be misunderstood as pointing to what 'can be seen on the screens. We find that this would be too narrow of a focus."

Having an established UX framework for UX may enable a company to measure whether a product will be effective and successful in the market place. Schulze and Krömker [4] investigated the creation process of a framework of UX for both its influence factors and as an idea of scalable evaluation method sets, combining qualitative and quantitative data. The UX framework they proposed remains within the scope of the accepted definitions of UX, which include three main components: emotion, motivation and reflection.

The researchers found that a holistic approach must be taken when dealing with different groups of people throughout the development process [4]. This also led to the discovery that the framework was applicable for measuring UX when it came to interactive online products. A similar study was undertaken by Read [5] while

building a UX framework on a smaller scale for computer applications aimed at children. Read found similar results and reached similar conclusions to Schulze and Krömker[4].

When considering how a UX strategy works within an established company, it seems sensible to look at those who actually work in the UX groups within those organisations. Rohn [6] and Detweiler [7] have written about their UX experiences with Yellowpages.com and SAP respectively.

Rohn [6] described mechanisms to organizationally embed UX in a company and also states that UX professionals need to be proactive when dealing with customers. Since making a customer understand what UX entails can make the development process much easier. She further explains that even in companies with large UX departments, many employees can still be unaware of the benefits of UX. She states that UX should initially be focused on internal customers rather than external customers. Making the stakeholders happy will make it easier to keep UX at the forefront of the development process [6].

Detweiler [7] explained the ways in which to manage user-centered design within projects that call for UX and took a different approach to UX that relied on four principles that will help a UX team succeed when it comes to development:

- 1) A focus on end users
- 2) Validation of design requirements,
- 3) Iteration through different designs
- 4) An understanding of the experience from a holistic point of view.

Different companies inevitably are going to have different UX processes and their use will vary., as will the way they decide upon the methods to use. This can make it difficult for those who want to take advantage of the experience of companies that are successful (such as Microsoft, Apple, Google, Nokia, IBM and Oracle).

This paper outlines the ways in which companies publicly release their UX design guidelines and content. Many companies provide publicly accessible, general guidelines, while only a few have detailed examples of their UX methods and information on how they apply them [8].

II. MICROSOFT

Examining Microsoft in an organizational context, their definition of UX is unclear. When looking at what those who work for major companies, such as Microsoft, have to say about UX it becomes quite clear that within a company there are many different groups and departments. Jeffrey Dunn, who works for Microsoft's Office Design Group (ODG) as a User Experience Designer, states that UX is defined as "...how software looks and behaves". He states that his department regularly discusses the UX methods the ODG uses, both on a general level as well as more in-depth discussions [9].

Lipstein [10], who also works for Microsoft's ODG, explained one general way that the ODG utilizes UX methods. He states that early on concept sketches are used, which help to make wireframes – these wireframes are then used to explore potential screen layouts. After wireframes have been produced, a high quality rendering of the product is developed, which leads to the next stage, which is the final build of the product [10]. No further detail was given about exactly what each step entailed, but the development process is clearly defined.

Weber [11], also part of Microsoft's ODG, details some of the UX research tools and techniques that they use. The main point of Weber's article was how to decide which UX method was best to use in the context of development. In the example described in the paper, Weber stated that after a preliminary study, the team then iterated through multiple testing processes (including eye tracker experiment) to see which method would be the best fit for the issues that arose. From here, Weber stated that taking the feedback that was collected was and is crucial to choosing the best-fit method, with hopes of improving the product in the long run. Iteration, according to Weber [11], is crucial in deciding which UX method to use next.

Microsoft has released a portion of their UX and design guidelines to the public [12]. Microsoft has set up this guideline site similar to an Application Programming Interface (API). Not only do the guidelines specify exactly which UX method Microsoft uses, but also the relevant development process used. This includes the design phase and progresses into the development and testing phases.

III. APPLE

Apple provides guidelines for developing applications using Apple products [13]. Within the site there are guidelines, similar to those provided by Microsoft. These guides are helpful if one intends to develop a specific application for the various Apple products, but there were few articles on their generic UX process [14]. Recently, Apple have publicly released their iOS human Interface Guidelines, explaining how to create user experiences based on Apple's design principles and guidelines [15].

Independent developers have extensively researched, and experimented with, the Apple interface. An article from New Magazine demonstrated the "5 Secrets of Apple's UX Design" [16]:

- 1) Continuity – the ability for Apple to anticipate what a user will do next
- 2) Visual transitions – provide a means of establishing a mental model of 3D space, which is both visually effective, and so that the user understands what is supposed to happen
- 3) Modality – break up applications into different chunks so users can better use them
- 4) Metaphors from real life – gives the example of books on shelves when using iBook, maps to something in the real world and
- 5) Investment in iteration / prototyping – different approaches yield the best results.

There are other books written that provide guidelines as to the best practice when developing applications for Apple iOS. For examples, Wood [17] dedicated a chapter of his book iOS Wow Factor to UX entitled, "User Experience Differentiation and Strategy." In this chapter he describes very similar issues to those listed by Fankowski [16].

Wood [17] also stresses continuity in the form of leading the market. This includes the psychology regarding the timing of when release an application to the market. Consistency and using feedback from the users is also seen as an important aspect of developing an effective application.

IV. INTRODUCTION

Google follows a philosophy which includes what they believe to be the best practice for a successful company [18], this was written when Google was in its infancy:

- 1) Focus on the user and all else will follow
- 2) It's best to do one thing really, really well
- 3) Fast is better than slow
- 4) Democracy on the web works
- 5) You don't need to be at your desk to need an answer
- 6) You can make money without doing evil
- 7) There's always more information out there
- 8) The need for information crosses all borders
- 9) You can be serious without a suit and
- 10) Great isn't good enough.

Based on this list, researchers at Google have been measuring many UX metrics on a long-term scale.

Rodden, Hutchinson and Fu [19] created a framework to measure both data-driven and user-centered user experiences for development teams within Google. The framework was entitled HEART, which stands for Happiness, Engagement, Adoption, Retention, and Task success:

- Happiness was stated as being metrics that relate to user experience on a subjective level, which can include satisfaction and visual appeal.
- Engagement was seen as how much a user could be involved with a product. This would be tracked by using metrics such as visits per week, or photo uploads a week.
- Adoption and Retention are the metrics used to track the difference between new users and existing users. These metrics often meet the most success with new products.
- The last metric detailed is task success, and deals mostly with traditional usability measures (efficiency, effectiveness and error rate).

Each of these metrics can be quantified, and then analyzed. Picking the best UX method can be crucial for successful product development, Rodden et al. [19] also stress that after UX process selection, the way this UX

framework is applied also crucial. They state that not every component of HEART should be utilized for every context; the metrics are flexible and meant to be used appropriately to meet the most success. These metrics have helped the teams at Google better adapt to the needs of the users, which ultimately can lead to better products.

V. NOKIA

Nokia provides in-depth UX information online explaining how the company designs and tests their products [20]. The information provided includes dedicated case studies of the products that have been released, and the process that were used to create the product. All stages are shown from design to development and the testing involved is described. Nokia also provides information on user-centered design and how an individual (or another company) can go about using similar methods for their own product development. The Nokia process has five UX methods broken up over three major areas. The major areas were defined as Idea, Code, and Application Ready.

Within the Idea thematic area, three items should be addressed.

- 1) They need to put the initial idea in front of others and see how they react to it
- 2) Mind mapping the design process
- 3) Starting to identify key design decisions.

The Code section includes:

- 4) Keeping up with the mind map
- 5) Solidifying the key design decisions
- 6) Completing quick user tests of the product.

In the last stage, Application Ready, mind mapping was again utilized to keep the product on track, as well as the last step, which details how to go about interacting with the customer to satisfy their needs.

VI. IBM

IBM provides information on topics such as design concepts, patterns, initial experience, user-centered design process, and an agile UX process [21]. The most recent information in this online resource was the agile UX process section. This section contains issues on the best UX methods in a general manner.

There are four key components in IBM's UX process:

- 1) Gaining continuous user feedback
- 2) Working across multiple iterations
- 3) Understanding the stakeholders
- 4) Designing the user experience.
- 5) The last section (designing the user experience) is similar to Apple's idea that the company tries to anticipate what the users are meant to do, and what they actually do.

VII. ORACLE

The final company examined for this paper was Oracle and their approach to UX. As with many of the other companies discussed in this paper, Oracle provided some information on their design process [22].

There are four recommended steps to designing an Oracle Business Intelligence application:

- 1) The first step would be identifying users
- 2) The second would be selecting the correct design pattern
- 3) The third would be using the selected design patterns
- 4) The last would be using the guidelines Oracle has created.

The topic of UX is not formally developed by Oracle. However, there are a number of blogs that report on the best practice for UX within Oracle [23].

VIII. DISCUSSION

This paper has shown that many the world's leading technology companies disclose and share information on their UX processes in the public sphere. Most companies have official websites and publications that provide useful resources for technical managers – an exception seems to be Apple and Microsoft who provide limited official UX information (mainly for specific products). To gather information about general Apple/Microsoft UX policies it is often better to reference independent sources.

Researching these companies and how they decide to gather resources might not always provide a holistic view of all that any particular company is doing when it comes to UX. Taking an approach to collecting data on UX, the Usability Professionals' Association [24] gives out a biennial survey to their individual members. The survey tracks items such as age, salary, region of the world a professional lives in, gender issues and the types of UX methods that they use. This last section is relevant to this paper since it can give a insight into which UX methods are used globally.

According to the UPA, the most used UX technique was user research, which includes methods such as surveys and interviews. The second most used UX technique was heuristic evaluations, in which an HCI expert reviews a product and gives feedback on what needs to be fixed within the program. A major change from 2009 to 2011 in the survey was the increase in the use of remote usability testing which saw a growth of 18% to 28% among the UX professionals [24,25]. This means that more testing is being undertaken in a manner that is not directly related to a physical laboratory or user experiment setting. This suggests that when it comes to looking at UX methods, individuals and companies are figuring out ways to reduce the cost of user testing - something that is increasingly important in a competitive technology marketplace.

IX. CONCLUSIONS

By looking at how both companies and individuals take UX into consideration, there were a few underlying themes that emerged from the literature. The first was that companies tend to release design guidelines, but not the actual UX methods that are used on a daily basis. Making guidelines available to the public is an effective way of gaining customers, and even potential workers. The companies not releasing their detailed UX methods makes sense, when one considers the fact that they do not want to be releasing "trade secrets" [3].

Another major theme that was seen in the corporate UX policies and information described in this paper was the process of iterative design. The idea of iteration has been shown to reduce the cost and time spent on a project [2]. If a UX team discovers product problems early on in the design process, there will be fewer chances of having to cancel the production of a product further along in the development process. Iterative design is also often employed by design teams to help select the right UX method for a particular product. The large corporations described in this paper take usability and UX seriously and by following some of their guidelines and best practice examples, technology managers can make improvements to their own businesses and products.

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