Contents

Chapter 1

Aims and Objectives

Chapter 2

Literature Review

2.1 The origin of usability

Before the 1980s almost all users of computers were highly technical, with much experience and understanding of computing. Beginning in the 1960s a move towards less technical users began with the introduction time sharing and minicomputers. Which was further supplemented In the 1980s due to falling prices of computers as it become possible for many everyday people to become computer users. While falling prices continued, software practices remained the same with implicit assumptions of user experience and knowledge. This lead to frustrated users who lacked the knowledge of computing and become to associate computing with frustrations. From this usability become an important design goal for any system that was to be used by untrained, non technical users.(Cockton 2013)

2.2 Usability

After an examination of various definitions of usability , it reveals a commonality among definitions. For instance one of the most used definitions of usability is by Nilesen(1993) , defines usability in terms of five attributes Learn-ability, Efficiency. Memorability, Errors and Satisfaction.

Learn-ability How easy a system is to learn for a novice. Generally the first experience a user has of a system is that of learning therefore it is best that this period is kept to a minimum so that the user can be productive as soon as possible.

Efficiency How productive a user is once the user has learned how to use the system. There

is no point in having a system that once learned provides no benefits to productivity.

Memorability How easy it is to remember how to use a system once a user has had some time to use it. It is important so that an casual user may come back to use the system again and not have to waste time learning the system again.

Errors This refers to the error rate of a user when using the system. The error rate should be kept to a minimum and if an error is made the user should be able to recover from them easily. Further care should be taken so that major errors cannot occur.

Similarly the International Organisation of Standardization (*Ergonomics of human-system interaction*) defined usability as "Extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use." The terms used are further defined as follows:

Effectiveness The Accuracy and completeness with which users achieve specified goals

Efficiency The resources expended in relation to the accuracy and completeness with which users achieve specified goals.

Satisfaction Freedom from discomfort, and positive attitude to the use of the productive

Context of use Characteristics of the user, tasks and the organizational and physical environments.

Goal of use Intended outcome

Task of use Activities required to achieve a goal

Furthermore another, simpler definition of usability has been offered by Krug (2005), which defines usability as "making sure that something works well: that a person of average (or even below average) ability and experience can use the thingwhether its a Web site, a fighter jet, or a revolving doorfor its intended purpose without getting hopelessly frustrated." From these definitions the major theme that can be drawn out is, usability is concerned with the level of success,satisfaction the user has when interacting with a product. For this study we will be focusing on the ISO 9241-11 definition out of the three presented. It is the most detailed and widely used among literature. Furthermore this definition is used by the Common Industry Format for Usability Test reports which for further adds to its credibility. From a usability definition one can one can not further go onto define usability testing.

2.3 Usability Testing

Like usability, usability testing as well has numerous definitions. Rubin (2008) defines usability testing as "process that employs people as testing participants who are representative of the target audience to evaluate the degree to which a product meets specific usability criteria." While Another Expert, Barnum(2002) defines usability testing as "process of learning from users about a products usability by observing them using the product." While Joseph and Janice (1993) define usability testing in terms of five characteristics every that usability test shares.

1. The primary goal is to improve the usability of a product. For each test, you also have more specific goals and concerns that you articulate when planning the test.
2. The participants represent real users.
3. the participants do real tasks
4. You observe and record what participants do and say.
5. You analyze the data, diagnose the real problems. and recommend changes to fix those problems.

The literature indicates that usability testing involves the notion of observing and collecting data on when the user interacts with the product. Each test must have some goal or some criteria to test against, without there is no way to know when you change the product if if there was an increase in some aspect of usability. For the purposes of this study , usability testing will defined as the observance of authentic users carrying out authentic tasks in relation to the collaboration website in order to determine the effectiveness of solutions proposed.

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