Usability assessment Method of the open source applications

Case Study of OpenOffice.Org 3.0

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ABSTRACT

Open-source software is becoming a gradually more popular as a software development method; some of the most successful softwares are for example: the Linux operating system, Mozilla, Apache web server and openoffice.org. Open source softwares viewed by many as being very good in terms of their usage, reliability, performance and market share. Mostly open source software developer focus on functionality and different feature of the software; on the other hand they ignore the user centric design requirement. In this thesis the importance of the usability in Open source applications, such as Openoffice.org are described and how usability can be measured by assessing user performance such as, satisfaction, effectiveness and acceptability. Openoffice.org is a freely available office suite in different operating system and with different languages. The OpenOffice.org 3.0 feature set is similar to the feature set of Microsoft Office 2003. It has word processing, spreadsheet and presentation applications all together within a common suite. But still this application suite is not much familiar among common users that cause a major usability threat for usability studies. The basic purpose of this thesis was to find out the issues and users satisfaction regarding this Openoffice.org. Empirical method of usability assessment such as thinks aloud, Questionnaires and interviews were used.

Keywords: Open Source, usability, Openoffice.org, Usability assessment, empirical methodology
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Chapter 1

In this chapter the author discussed the basic introduction of the thesis in section 1.1. The author also illustrated the motivation about this thesis in section 1.2 and at the end of this chapter in section 1.3 the author illustrated the little bit background of this thesis.

1.1 Introduction

Simple definition of open source and free softwares, where the user is free to use the program, primarily developed by volunteers, any one can modify and customize and source code is available to users [23]. Different software companies have successfully developed open source software/projects. But it is also reality that some computer users prefer proprietary applications, because some open source softwares have poorer usability [30]. Poor usability is a huge barrier to wider open source adoption [4]. Open Source software’s are criticized; because these are no longer developed only to serve for particular users and to fulfil their needs. But it can be change if developer put a little bit effort to improve the usability in their Applications. In this thesis the author will present little background information of open source software and relationship with human computer Interaction. The author also analyse the open source application in term of usability. Usability simply define as, interaction of user with a system. (ISO 9241-11) define a usability “the degree to which a product can be used by particular users to achieve specified goals with effectiveness, efficiency and satisfaction in a particular context of use” [6]. The usability of Open Source Software is becoming a significant aspect [2]. Good, simple and understandable application always having the upper edge among the others while the usability is a key quality attribute for the success of interactive Application [5][7]. The purpose of the usability evaluation is to focus on the users to complete their task simply and to make this application useful due to the high competition in the field of HCI. Moreover, the usability is generally regards to insure the interactive products are easy to learn, effective to use and interesting for the users [6]. Open source softwares have increased a reputation for reliability, efficiency, functionality that has surprised many people in the software engineering world [1]. Open source software becoming an increasingly popular software development method producing successful software such as the Linux operating system and the Apache web server [1]. Applications like OpenOffice.org and Mozilla Firefox are spreading throughout the world of desktop computing [2]. The OpenOffice.org is a free software suite that seemed to inspire new hopes as far as usability concerned [3]. The adoption of this suite by several countries and by foreign armies in particular (Singapore in 2006, the French Gendarmerie in 2005) due to free of cost [3]. The OpenOffice.org suite is available for Linux, Windows and Solaris [8]. Most of the openoffice.org features are similar to MS-Office 2003. It has word processing, spreadsheet and presentation applications all joined together within a common looks and feel [8]. These applications roughly resemble Microsoft’s Office suite with Word, Excel and PowerPoint respectively. The reason to select this area of study is that
Openoffice.org is free open source application suite, regardless of this fact, why it is not popular among common users. The concept of this study is to evaluating the usability of Openoffice.org. The author will also discuss and conclude what are the views of the user regarding its efficiency, effectiveness and satisfaction in context of its use.

1.2 Motivation:

Openoffice.org is similar to Microsoft office 2003. OpenOffice.org is a free office suite available in different operating system and different languages. The reasons for conducting the research work, people can get more benefit from this openoffice.org free desktop office application suite. The OpenOffice.org is a software suite that seemed to inspire new hopes as far as usability concerned [3]. The adoption of this openoffice.org suite by several countries and foreign armies, especially (Singapore in 2006, the French Gendarmerie in 2005), because of free [3]. This openoffice.org has capacity and strength to make a good user in market, if we overcome or remove its usability flaws. Following are little bit more motivation for the author to choose this application suite for thesis.

- **Licence free.** It has no licensing fee and it is a free of cost desktop application suite. Licence free mean, freedom to modify, fix and redistribute copies of free software as much as you wish. No licensing issue just download and use.

- **Open source software.** Open source software means that, any one can modify and customize and source code is available to users [23].

- **Cross-platform.** OpenOffice.org is available in multiple operating systems like Sun Solaris, Linux Mac and Microsoft Windows.

- **Openoffice.org in many languages.** Interface of Open office.org are available in several languages, approximately more than 70 languages dictionary is available in Openoffice.org.

- **File compatibility.** Openoffice.org support several file formats for opening and saving the file. For example Microsoft Office2003, HTML, XML, WordPerfect, and Lotus 123 format. But it does not support the MS-Office 2007 file format.

- **No vendor confine.** OpenOffice.org uses the open document file format, which was developed by OASIS (Organization for the Advancement of Structured Information Standards). This file format can be read and unzipped in any text editor [40].

Openoffice.org possesses all these firm points, on the other hand one important question raised, why Openoffice.org is not much familiar among the common users. Then author
decided to explore the usability issues regarding this application and make it better according to the requirements and demands of the end users.

1.2 Background:

Two different groups setup the root of existing open source software movement in the beginning of 1980s. A MIT A1 Lab programmer, Richard Stallman resigned and launched the GNU project and he also wrote the GNU Manifesto, stating that “the availability of source code and freedom to redistribute and modify software are the fundamental right”[27]. On the other hand computer science group of University of California at Barkley improve the UNIX system and also develop many other applications. open source application can be define as “The user is free to use the open source application and also free to access the source code, full privileges to study and modify the program, therefore anyone can change and improve the software, and to redistribute it in modified or unmodified form” [23]. Any person organization/firm/ company can use the free open source software for any purpose without getting any licence. The design behind OSS becomes an important phenomenon in the computer science world [22]. Initially when software movement begun that time open source applications/software were not as popular among common user as today. Today Open source free software has significant market share, most of the popular web servers are open source. According to the survey which was published by Netcraft’s in April 2007, Apache had 58.86% of the market share, while Microsoft had only 31.13% [18]. Linux market is growing rapidly and exceeded $35.7 billion in 2008 [19].

A report by Standish Group says that adoption of open source has resulted in savings of about $60 billion per year to consumers [20] [21]. Open source software permits everybody to make a new version of the software, include it to new operating systems and processor architectures, share it with others or market it. Open-source is becoming an increasingly popular software development method, producing successful software such as the Linux operating system, Mozilla, Apache web server and openoffice.org. Open source free operating system generally has extremely better security, particularly when compared to Windows. Open source is almost free of cost and royalty free software. Future of the open source software is not depending on the single entity as compare to proprietary software ,the most important thing is availability of the source code and right to modify, it is very important feature of open source software. The fact which discuss above is true but we should also accept this fact that Open source free software is popular among sophisticated users like software developers, administrator, and also it does not so much influence the desktop users, because of the complex interface. Since the developers involved in the OSS development process and their focus is more on the technical side rather considering the end user in their minds. Open source software has a lower usability than proprietary software [29]. A good interface plays very important role to attract his users. Open source software is often criticized because of its poor user interface [28]. Before go into
the depth and importance of the usability, first need to know the simple definition of usability as “the degree to which a product can be used by particular users to achieve specified goals with effectiveness, efficiency and satisfaction in a particular context of use” [10]. Usability issues are not fully considered during development and test phase of free open source software, due to this the usability of open source software regarded as one reason of its limited use. Working as usability professional in open source ground is a challenging task because few usability experts participating in open source development process [28]. Open office.org is one of the most prominent desktop applications and Sun is the main contributor of this application. Openoffice.org is a complete office suite available in different operating system and different languages. The user interface and functionality of Open office is same like Microsoft office 2003. Open office.org store data in international open standard format and many other compatible office formats. Open office.org has some usability issues, and in this thesis the author will discuss the open office issues regarding usability prospective and also author will point out some usability flaws of openoffice.org by using usability methodology.
Chapter 2

In this chapter the author discuss those problems that face the students by using this open source application and their requirement to achieve their goal. The research questions are illustrated in section 2.1. The Goal and result are depicted in section 2.2.

2.1 Problem definition:

Open source softwares have good reliability, performance and market share as illustrated in previous chapter, and it is freely available with source code. On the other hand commercial and proprietary softwares are very expensive to buy for users. The important point of open source is copy left software because Licence for most software are design to take away user freedom to share and change but GNU(General public licences) is intended to guarantee the user to share and modify software to make sure that the software is free for all its users. The Standish group’s new study clearly shows how pervasive open source software is used in industries and now a day commercial and government organization taking major interest in Open source software usage [21]. But the problem is that they all are technical and expert user. Since the developers involved in the OSS development process and their focus is more on the technical side rather considering the end user in their minds. That is why desktop common user is not satisfied from its complex interface. Poor usability is a huge barrier to wider open source adaptation [4]. One thing which takes the OSS away from common user that is rough interface and lack of usability expert involvement. Good, simple and interactive interface make the application more understandable, usable and preferable for common user. In this thesis author will try to find out the major problem which cause not to wider spread open source adaptation among common users especially openoffice.org desktop application. The author will also point out some usability flaws of open office.org regarding user prospective, these usability flaws are major threats for usability studies and author will use a suitable usability methodology which help to improve this Open office.org application according to user requirements. The author gets into deep analysis about some usability error which makes this application not to familiar among common users.

2.2 Research questions:

Designing the research questions is very important part in any research. The true saying of research methodology, that was taken from the lecture slides of Professor Dr Guohua bai “The good research is not, one who know the right answer but one, who is struggling to find out what the right question might be”. The whole research depends upon the research questions and then work systematically to address them. Research questions are the core of any research. In this thesis the author designed two research questions which are as fellows.

1. What are the usability issues in Openoffice.org regarding the users prospective?
2. Does Openoffice.org fulfil the users’ requirement?

The author has already discussed the importance of usability particularly in open source software. Usability plays an important role for its wider spread. The author is going to find out usability flaws in openoffice.org desktop application regarding user prospective. In second question author will find the user’s views regarding this openoffice.org application. What are users’ views about this application?

2.3 Goal/Result:

The whole outcome depends upon the investigation that the author will perform with users to meet their requirements about OpenOffice.org, and also to identify the usability issues in openoffice.org. The major goal of the thesis is to evaluate the usability of open source application specially openoffice.org. Following objectives are defined to achieve this goal:

- Detail literature study of usability assessment of open source application
- Choosing suitable methodology for designing and conducting usability Experiment
- Design the questionnaires
- Compiling and analyzing collected data through questionnaire
- Assessing the usability of the openoffice.org
- Validating the usability assessment through interviews
- Discussion and results

The author gathered all the quantitative date form BTH students, because they were easily accessible.
Chapter 3

3.1 Research Methodology.
In this chapter the author discussed the research methodology. Overview of the research methodology is illustrated in section 3.1. In section 3.2 the author vividly depicted the importance of literature review. How to conduct the experiment is discussed in section 3.3. Experiment i.e. thinks aloud techniques are depicted in section 3.4. Questionnaires and interviews are elaborated in section 3.5 and 3.6 respectively.

3.2 Overview:
Research is the careful and critical enquiry in seeking facts for principles. It can also say that research is the combination of both experience and reasoning and must be regarded as the most successful approach to discovery the truth. And methodology is the set of criteria followed in a particular discipline. There are different research method for investigation, for example Observation, questionnaire, interview, analysis of records, case study etc. These Methods and Techniques are used in performing research operation i.e. collection of data, statistical processing and analysis (test), to evaluate the accuracy of the results obtained.

But author use a systematic approach for investigation that is based on mixed methodology as elaborated by Creswell [9]. In this mixed approach author use qualitative and quantitative method of research. In quantitative approach measured and expressed in term of quantity. Quantitative research helps in précised measurement and knowing trends and changes over the time. The quantitative researched is mainly concerned with quantifying relationship or to compare two or more groups [30]. According to another definition The qualitative research is concerned with studying object in their natural setting. A qualitative research is attempted to interpret a phenomenon based on explanation that peoples brings to them [31]. This research will be taken in different segments. In first segment, a detailed and comprehensive literature study will be carried out to understand the usability assessment and open source application i.e. OpenOffice.org. In second phase the author select some method and technique for usability evaluation, there are different methods and techniques available for usability assessment but the author select think aloud technique for testing. After performing the initial usability test the author will design the questionnaire, in that way the result will be compile qualitatively, for more validating this research the author conducted an interviews with BTH students. Figure 3.1 illustrated the overview of the research methodology.
3.2 Literature Review:

Literature review is very important part of any dissertation proposal; no body can complete the thesis without literature review. This literature review provides the significance and validation of topic to the reader. Literature review take place at the initial phase to get understanding about the selection and importance of the topic. Initially the author deeply studies the importance of open source application then author further studied the significance of usability in open source application. Then author get some more understanding about the usability assessment methodologies. In order to find this literature, the author utilized the BTH (Blekinge Institute of Technology Ronneby Sweden) electronic library. (BTH) Electronic Library Information Navigator is good searching tool available to find almost all renowned journals. By using this tool, the author finds out the important information from journals and research articles of ACM, and IEEE. And the author also used Google and Google scholar for searching some good articles, e-books, white papers, and some organizational (Linux.com, openoffice.org) web sites.
3.3 Empirical methodology

There are number of methods and techniques for usability assessment but according to the research the author use an empirical assessment. The empirical assessment included the observation and collection of data from users, the author used this empirical method for investigation, some of which are as fellows

- Think aloud technique
- Questionnaire
- Interviews

3.3.1 Think aloud technique:

The author used a think aloud technique for the collection of data. Basically, Most of the time psychologists used a thinking-aloud studies and also user interface experts used in their experiment. In which videotapes of the participants were taken during perform this protocol [11]. In this technique participants speak loudly and verbalize their thoughts during each task. In this manner, observer can observe users responses and record their comments. If user stops speaking during a task, the observer gently interrupt the user in that way user should not feel disturbance. The authors will use think aloud technique for usability test of OpenOffice.org to understand the thinking of the BTH students. The author gathered the Usability test data form BTH students, because they were easily accessible.

3.3.2 Questionnaires

Interviews are very time, cost and resource consuming usability assessment method. But on the other hand we can not talk to great number of people in personally. If data collection is limited to few people that information may not represent the larger group. In order to get decision based on such data may mislead or even erroneous. Collecting information from large number of people is to use questionnaires. Questionnaires are one of the good techniques for usability study. Data can be collected from large number of people by questionnaires. From usability point of view, questionnaires and interviews are indirect methods, since they do not study the user interface itself but only users’ opinions about the user interface. One cannot always take user statements at face value [11]. But questionnaires are most important, cost effective and reliable usability assessment method. Different methods are used to present a questionnaire, and these questionnaires can be delivering in two modes either electronic questionnaires and paper based questionnaires mode[35]The paper based questionnaires is time consuming data collection method. It also takes additional time to enter data into the computer for analysis. If go into the more detail of electronic questionnaires it has three major mode of deliveries.

- Email questionnaires
There are two types of questionnaires designed methods.

- **Open Ended questionnaires**
- **Close ended questionnaires**

### 3.3.2.4 Open Ended questionnaires:

In open ended questions respondents are free to answer in their own words and thoughts. Text boxes are provided to write their answers. These are good to use when asking for attitude or feelings, likes and dislikes, memory recall, opinions, or additional comments [45]. But on the other hand, it has some drawbacks to use the open ended questions [34]. Such that, sometimes responders feel difficulty to express their sensitivity, that why responders skip and avoid these questions. In addition, open ended questions are time consuming and difficult to answer. By considering all these pros and cons, the author used very few open ended questionnaires.

### 3.3.2.5 Closed–Ended Questionnaires:

These close ended questionnaires are also known as Multiple Choice questions, it can be a One Answer or Multiple Answers. Closed-ended questions are those with pre-designed answers with a small or large set of potential choices [36]. Ranked questions are the important part to design the close ended questionnaires. Ranking questions are used when all the choices listed should be ranked according to a level of importance [36]. The author used mostly ranked question in Openoffice.org designed survey. The author assigned a ranked corresponding to each question [33]. Ranked questions are the most popular type of survey questions because they are generally the easiest for a respondent to answer and the easiest to analyze. The main purpose of the questionnaire to get the quantitative data about the application suite. The author presented the questionnaires interactively on the web page (URL), and delivered this link to all BTH Computer science students by e-mail. The responders answer the questions accordingly [11].

Before go into another detail, the author wanted to clear that" why the author used online survey". Let discuss little bit here. There are many advantages of using Web-based surveys compared to traditional mail or face to face methods. Because it allows respondents to take their own time, when they get free time then to complete the survey. E-mail survey is un-expensive, faster transmission method and to get the quicker response time of the survey. The author designed the questionnaires on surveygizmo.com. The link of the questionnaires is posted to all BTH students by email and got quick responses by using this approach.
3.3.3 Interviews

In order to collect information about a system by talking directly to them is called interview. Most of the time it is better than questionnaires because in it we get the deeper level of detail and getting interviewee reaction, opinion and how people reason about the issues. Interviews involve having an interviewer read the questions to the interviewee, and the answers are recorded by the interviewer instead of being filled in by the interviewee [11]. Interviews involve much of usability staff time, but it is more beneficial and flexible, because interviewer can explain difficult questions in more depth [11]

There are three categories of interviews:

- Structure interview
- Unstructured interview
- Semi structure
Chapter 4

Theoretical Work

In this chapter the author discussed basic definition of usability in section 4.1. The importance of usability and its role in interactive design principles were illustrated in section 4.2 and 4.3. This chapter comprised off completely theoretical work. In section 4.4 the author discussed the free open source applications. In section 4.7 the author explained the market share of Open source softwares. And author depicted the importance of usability in open source applications in section 4.7. The author discussed about the openoffice.org in 4.8. At the end of this chapter the author depicted the usability assessment methodology in section 4.9

4.1 Definition of Usability:

Simply define usability as “the degree to which a product can be used by particular users to achieve specified goals with effectiveness, efficiency and satisfaction in a particular context of use” [10]. Jakob Nielsen defines Usability in terms of five characteristics:

1. **Learnability:** The system should be easy to learn, so that the user should quickly and easily done their work with system
2. **Efficiency.** The system should be efficient to use, when the user learned about the usage of the system. Then we can expect the good level of productivity
3. **Memorability:** The system should be easy to remember, if frequent users used the system after some period of time. They should not learn all the thing again.
4. **Errors.** Whenever the users use the system, they should make a very few errors while using the system. But on the other hand the system should be protected from catastrophic errors or failure of the system
5. **Satisfaction.** The system should be pleasurable to use, so that users should free from discomfort

The reason for emergence of usability as complete field of software development is that, it is impossible to design best possible user interface, unless if you work on the basis of an understanding of the users and their tasks, then, by all means design the best interface, but make sure to validate it with user tests and the other usability methods. Some computer programs are easily learned and efficient to use but some are difficult. There is difference in the design of the user interface and they do not care the common user in their mind. The term *usability* is an abstract term that refers to these and similar qualities of a user interface [32]
4.2 Importance of Usability:

When the importance of usability engineering acknowledge, in result of that interactive interfaces come into the existence. Usability is one of the important considerations in the design of products, because it is concerned with the level to which the users are able to work effectively, efficiently and satisfaction with this product. As every body knows that interactive Interfaces are easy to use, attractive and pleasant for common users. Users are becoming less willing to put up with difficult or uncomfortable interfaces since experience with some current interfaces has shown them that software can indeed be easy to learn and pleasant to use[11]. Usability is an effective tool to involve the users in the development processes for developing an interactive system according to their needs. The professor technical university Denmark’s Tim frank read 70 reviews of software products in different computer magazine and he got 784 comments on usability issues of the software. This thing shows the importance of usability in today’s market [32]. There are hundred thousand of Web sites offer users information, goods, services, and entertainment. But on the other hand many of these sites are difficult to use, don't work properly, and ultimately don't attract or keep users. Same in the case with bad interface E-commerce site, almost half of their potential sales decreased. In other words, with better usability, the average site could increase its current sale by 79%. An interactive system with high degree of usability has the following characteristics and goals: efficiency, learnability, errors, Memorability and satisfaction defined by Jakob Nielsen in his book the "Usability engineering [11]. Basically usability evaluation measures the user performance, satisfaction and acceptability. One thing need to discuss here usability evaluation doesn’t mean to test the intelligence of the user, only to testing the product and services. The figure below is the usability frame work, which describes the complete usability test environment and its measures outcome.
Usability lies in the interaction of the user with the product or system and can only be accurately measured by assessing user performance, satisfaction and effectiveness. Good and interactive designs always have good usability. Let discuss and understand the interactive design.

4.3 Interactive design:

Interactive design defines the behavior “interact”, when applied to computer software, it is also known as Human-Computer Interaction. And user only interacts with GUI system through interfaces. That is why User interfaces are the most important part of any computer system. Because it the system to the user. It can be seen, it can be touched and it can be heard. The goal of the interface design are simple, to make working with computer easy, productive and enjoyable [33]. An application with good interface creates good impact, awareness and understanding among the users for guiding them in multidimensional ways for achieving their goals

4.3.1 Design Principles:

In order to design the best interface that meet the user requirement, it is important to know about the basic design principles. These basic design principles were presented by. L. Constantine and L. Lockwood
• The structure principle.
• The simplicity principle.
• The visibility principle
• The feedback principle.
• The tolerance principle.
• The reuse principle [48].

4.4 What is the Free Open source application:

The open source and free software is the program where the user is free to use the program, free to access source code, full privileges to study and modify the program and free to redistribute the modified form of the program to any one, any where [2]. That is one should be free to redistribute the copies either with modification or without of modification, either taking charges of these modification or without charges. [23]. The freedom to use a program is that any person or company/firm/organization can use it to any type of computer system for any kind of job without requiring informing or communicating with developer or any other particular. In order to make changes, and to make this improved version meaningful, there is need to access the source code of the program. Therefore accessibility of source code is important condition for free software. [24].

When write word “free software”, it has an ambiguity in the meaning of this word “free” because it has two meaning such as “freedom” and “gratis”. But, there are two term used for open source softwares , the first term which mainly used is “open source software” , it referring to users freedom of use and redistribution but, it can be some cost, etc., and ‘free software’ it referring to zero purchase cost. It is not necessary that all open source software is free. Open Source Software gives at one-end the developers, to participate in the form of source code and at the other-end the user, to use or modify a program, as the basic requirement of an open source program is availability of the source code. That implies that open source refers to shared software code, and collaboration among developers and user. This includes identifying and correcting errors making improvements [25]. There are many applications of open source software and developers are trying to improve the interface of open source softwares because interface play very important role to attract common users. There are some familiar, popular and widely used open source softwares are as fellows:

1. Linux and Mac operating system
3. PHP, Perl Web languages and MySQL is Data Base.
4. Virus and spam protection: ClamAV, Spam Assassin
5. Desktop applications: Open Office, Mozilla, gAIM, (eBase)
6. Security Software : Gnu.PG or GPG
Open source free softwares have much benefits as compare to propriety software. Open source free softwares are more batter stable interoperable and secure. The most important thing it has no licensing cost, good community support and direct line to developer.

4.5 Why open source softwares:

Open Source/ free softwares are very successful due to their usage, market share, reliability etc as follows: [18]. The author discuss importance of open source softwares one bye one below in different context of use.

4.5.1 Usage of Open Source Software

Usage of the open source software may reduce the cost, according to the following reports.

- Oracle’s Chairman and CEO, Larry Ellison has announced that Oracle will switch to GNU/Linux in 2002. By replacing in first six months Oracle saved $170,000 in software costs [18].
- A business Week online article reported that “Mind Bridge” shifted their 300 employees’ intranet from Microsoft server products and Sun Solarise to GNU/Linux. Their Chief operating officer announces that we have save hundreds of thousands of dollars by using this [18].

4.5.2 Market Share

As we know that most of the popular web servers are open source. According to the survey which is published by Netcraft’s in April 2007, Apache had 58.86% of the market share, while Microsoft had only 31.13% [18]. Linux market is growing rapidly and has been exceeded $35.7 billion in 2008 [19].

4.5.3 Reliability

Reliability is the ability of a system to perform its tasks in normal situation, as well in unexpected situation. “The Fuzzy Revised paper measured reliability of different free/open source and proprietary application by providing a programs random characters and determining which ones resisted crashing and freeze-ups, which software is more reliable then other” (there analysis/results are shown in figure 4.5.3). This approach is unlikely to find subtle failures, yet the authors found that their approach still manages to find many errors in production software and is a useful tool for finding software flaws. This approach is particularly fair and can be largely applied to any program, making it possible to compare different programs reasonably.[18] According to the Fuzzy study, open source/free softwares are more reliable then proprietary applications. Figure
4.5.3 below shows the failure rate (crashing and freezeups) of open source applications and proprietary application

![Figure 4.5.3: Reliability analysis [18]](link)

According to the figure (4.5.3), average failure rate is 23%, Linux have 9% failure rate and the GNU utilities have only 6% failure rates and windows has a 99% failure rate.

### 4.6 Importance of Usability in Open Source Software:

The basic purpose of this thesis is to describe the importance of the usability in Open source applications; purpose is not, to degrade them. Open source softwares are very good in terms of their usage, reliability, performance, market share etc as described earlier, but interface designers need to make interface that are easy and attractive for any user to use.

Mostly open source software is often developed by engineers for other engineers. Their goal is not to make a good user interface (which is very easy to operate by common user), they only want to make an application/software that perform a functionality or specific task, which is in their mind. There is also not enough feedback to the engineers from real world users because there are not that many knowledgeable usability people using the open source software [36].

However, since the most recent GNU/Linux distributions, have change this and now Ubuntu is a desktop oriented application that based on GNU/Linux, which provide up-to-date and stable operating system for his users. As Ubuntu is easy to operate for common user and also user did not need lot of knowledge before to use it.

#### 4.6.1 Focus on Functionality not the Common User:

It is a tradition that most of the open source free software developers focus on the functionality and different features of software. These developers ignore the user centric design requirements. [38, 37] They give priority to functionality of the system instead of its interaction with its users. They do like
this, because these developers have only little interaction with HCI (Human computer interaction) studies. They do not have much awareness in HCI area. [37]

4.6.2 Improvement attempt to Developed simplified interface for open source community

In 1983 after the birth of Free Open Source Software (F/OSS) community, an attempt has been made to simplify the usage of several free open source applications, but success was not according to the thinking until 1996. At that time most of the users was using the proprietary operating system with certain proprietary applications, which was being developed according to the need of the market and users. Such applications focusing several factors like: effectiveness, efficiency and satisfaction.

4.6.3 Usability as a critical factor in OpenOffice.org, KDE and GNOME projects

After this F/OSS announce KDE project (1996) , GNOME project (1997) [37] and OpenOffice.org was developed in 13 October 2000. In these projects main focus of F/OSS community was to fulfil the end user requirements especially usability issues. In simple we can say their mission was provide full fledged desktop environment and complete office suite in which usability as a critical factor. Sun was the main contributor of this application after launching OpenOffice.org project it was the time that they communicate with end-user to understand their needs and their approach of computer usage. It’s working well, but still need some more improvement. The main problem is that, Open source community has little experience in usability and designing graphical user interfaces, like how to write the phrase understandable bye the user, what colors to use that still allow color-blind people to use my software or how to best name categories for efficient navigation, I can do nothing but listen to people's opinions in that matter. These whole facts and knowledge cover in usability issues and interactive interfaces design.

4.7 What is open office.org? :

Open office.org commonly knows as open office. Openoffice.org is a complete office suite available in different operating system and different languages. The user interface and functionality of Open office is same like Microsoft office .the main point which can makes this application more widespread that it is absolutely free. The word Open source means that you can contribute to make the product better by joining the community. The OpenOffice.org project is mainly sponsored by Sun Microsystems, which is the major contributor of code to the Project. There were some other key corporate contributors include RedHat, RedFlag Novell, CH2000, IBM, and Google. Furthermore
450,000 people from nearly every curve of the globe have joined this Project with the idea of creating the best possible office suite that all can use. OpenOffice.org is the most important open source office suite with about 85 million downloaded copies world wide [26].Openoffice.org package consist of number of applications.

4.7.1 Writer (Word Processor):

Writer has fully feature, stylist tools for creating letters, books, reports, newsletters, brochures, and other documents. It is a powerful navigator word processor same like the Microsoft word.[40]

4.7.2 Impress (Presentation):

It has fully feature multimedia presentation tools, to create and modify diagram pictures and make interactive presentations. Impress is compatible with Microsoft's PowerPoint file format and can also save your work in numerous graphics formats, including Macromedia Flash (SWF).[40]

4.7.3 Calc (spreadsheet):

It has fully feature spreadsheet functionality. This Calc consist of more then 300 functions. It also includes statistical and mathematical operation. It can also generate 2D and 3D chart [40].

4.7.4 Draw (vector graphics):

OpenOffice.org Draw is a drawing tool that produces everything from simple diagrams or flowcharts to 3-D artwork. You can also create your own clipart. Draw support more than 20 formats to save the file like PNG, HTML, PDF and Flash etc.[40]

4.7.5 Base (database):

Base is a database tools in OpenOffice.org in which users can create and edit forms, reports, queries, tables, views, and relations, so that managing a connected database is same like as in other popular database applications. Base includes HSQLDB as its default relational database engine. It can also use dBase, Microsoft Access, MySQL, or Oracle, or any ODBC- or JDBC-compliant database [40].

4.7.6 Math (formula editor):

It is used to create mathematical equations with a graphic user interface or by directly typing the formulas into the equation editor. It is also used to create formulas in other documents, such as Writer
and Impress files; Math can also work as a stand-alone tool. And save the file standard Mathematical Mark-up Language (MathML) format [40].

OpenOffice.org is standards certified by OSI as open-standard, and the first software package in the world to use OASIS Open Document Format (ISO 26300) as its native file format.

4.9 Usability Assessment methods

Usability can be measured by assessing user performance, satisfaction, effectiveness and acceptability. Usability assessment is basically investigation of model or system. The purpose of usability assessment, whether the system is good enough to satisfy all the needs and requirements of the users and other potential stakeholders, such as the users' clients and managers [11]. There are two type of usability assessment method, analytical and empirical.

In analytical assessment produce many interpretation not the solid fact . On the other hand the empirical assessment involve the analysis of the actual users and its task [41]. Empirical assessment is very popular method of investigating the usability of any system. In order to study the Openoffice.org, The author used and empirical method for usability assessment. This technique has different advantages and disadvantages which discussed below.

4.9.1 Think aloud Protocol

Think aloud is new and widely used protocol for investigate the usability of the system.

Basically, think aloud protocol is used by psychologist and user interface expert for experiment [11]. The author design different tasks for the participants to execute this test. In each task participants speak loudly and verbalize their thoughts. In this manner the author observed users response and recorded their comments.

The main advantages of this method are as fellows:

- Rapid, high-quality, qualitative user feedback as compared to questionnaires
- Real time data can be gathered such as: direct observation of what the subject is doing.
- Hearing what the subject wants, or is trying, to do.
- If the subjects feel some difficulties to understand the steps, the observer has the chance to clarify the situation.
- It has a high degree of flexibility; the experiment may easily be control or steered by the observer.
- The existence of two people allows significant, direct dialogue.

In addition, the protocol may be used in two distinct scenarios.
Effectiveness and Satisfaction are the two main features of the usability was covered in think aloud protocol test. The authors adopted a think aloud technique for usability test of OpenOffice.org to understand the thinking of the students.

**4.9.2 Questionnaires:**

Interviews are very time, cost and resource consuming usability assessment method. But on the other hand we can not talk to great number of people in personally. If data collection is limited to few people that information may not represent the larger group. In order to get decision based on such data may mislead or even erroneous. Collecting information from large number of people is to use questionnaires. Questionnaires are one of the good techniques for usability study. Data can be collected from large number of people by questionnaires. From usability point of view, questionnaires and interviews are indirect methods, since they do not study the user interface itself but only users’ opinions about the user interface. One cannot always take user statements at face value [11]. But questionnaires are most important, cost effective and reliable usability assessment method. Different methods are used to present a questionnaire, and these questionnaires can be delivering in two modes either electronic questionnaires and paper based questionnaires mode [44]. The paper based questionnaires is time consuming data collection method. It also takes additional time to enter data into the computer for analysis.

If go into the more detail of electronic questionnaires it has three major type.

- Email questionnaires
- Email invitation linked to URL
- Questionnaires on the web pages

**E-mail questionnaires:**

It is mostly in plain text and include with in an e-mail. these questionnaires are sent to specific number of people, whom you have email address in your list. These questionnaires are posted to a particular list of people for whom you have e-mail addresses. The respondents uses the “reply” e-mail function and answer the questions

**E-mail invitation link to URL:**

In this type of survey design of questionnaires delivery mode, participants are invited to response the questionnaires by clicking on the link or copying and pasting the URL into their Web browser.
Questionnaire response can get from participants by using this web page. The author used E-mail invitation link to URL for questionnaires.

**Web page questionnaires:**

In this method questionnaires are posted on the web site of the organization, if any one visited that web page, are directed to complete the questionnaires web page, this is the one way to get the response of the user.

But E-mail invitation link to URL web base survey is one of the most popular survey methods to ask the questionnaires. There are two types of questionnaires designed methods.

- Open Ended questionnaires
- Close ended questionnaires

**Open Ended questionnaires:**

Responders are allowed to answer in their own world in open ended questions. Text boxes are provided to write their answers. These are good to use when asking for attitude or feelings, likes and dislikes, memory recall, opinions, or additional comments [43]. But on the other hand it has some draw backs to use the open ended questions [43], such that, sometimes responder feel difficulty to express their sensitivity, that’s why responder skips and avoid these questions. In addition open ended questions are time consuming and difficult to answer. By considering all these pros and cons, the author used very few open ended questionnaires.

**Closed–Ended Questionnaires:**

These close ended questionnaires are also known as Multiple Choice questions, it can be a One Answer or Multiple Answers. Closed-ended questions are those with pre-designed answers with a small or large set of potential choices [45]. Ranked questions are the important part to design the close ended questionnaires. Ranking questions are used when all the choices listed should be ranked according to a level of importance [45]. The author used mostly ranked question in Openoffice.org designed survey. The author assigned a ranked corresponding to each questions [42]. Ranked questions are the most popular type of survey questions because they are generally the easiest for a respondent to answer and the easiest to analyze. The main purpose of the questionnaire to get the quantitative data about the application. The author presented the questionnaires interactively on the web page (URL), and delivered this link to all BTH Computer science students by e-mail. The responders answer the questions accordingly [11].

Before go into another detail, the author wanted to clear that” why I used online survey”. Let discuss little bit here. There are many advantages of using Web-based surveys compared to traditional mail or face to face methods. Because it allows respondents to take their own time, when they get free time
then to complete the survey. E-mail survey is un-expensive, faster transmission method and to get the quicker response time of the survey.

4.9.3 Interviews:
In order to get feedback and comments about the application, the author asked the questions directly talking with the participants. Those students were selected, who took part in think aloud test and questionnaires. In order to get investigation about the application the author held Interview with open ended and close ended questions. Most of the time it is better than questionnaires because in it we get the deeper level of detail and getting responders reaction, opinion and how people reason about the issues. Interviews involve having an interviewer read the questions to the respondent, and the answers are recorded by the interviewer instead of being filled in by the respondent.[11].Interviews involve much of usability staff time ,but it is more beneficial and flexible ,because interviewer can explain difficult questions in more depth[11]

There are three categories of interviews.
- Structure interview
- Unstructured interview
- Semi structure

Structure interview:
Structure interview are those in which pre-defined set of questions and responses can assure and it is based on close ended questions. A structured approach can provide more reliable, quantifiable data than the unstructured approach [17].

Unstructured interview
It is also known as open ended questions .In unstructured approach the interviewee provides additional information and explanatory approach without the fixed answer.

Semi structured.
Combination of open and close ended questions is called semi structured. In the beginning of the interview, the interviewee asked the structured questions once the quantifiable data is covered then open ended discussion start. The author will conduct the interviews with limited number of students. The author will asked the unstructured interview from the interviewees and get their opinion about the openoffice.org application.
Chapter 5

Empirical Work

In this section the author discussed the procedure of conducting the usability test and evaluation. For the conduction of usability test, the author selected the think aloud technique. In order to conduct the usability test, the author felt it necessary to conduct pre-test questions before commencing the post test. There are different factors that influence the usability test and its results, such as usability measures, Observer’s role, Number of participant, tasks, usability problem report, test environment, and other factors [32]. These factors are illustrated in Figure 5.1.

![Diagram showing the process of usability test](image)

**Fig 5.1 Current issues with usability testing**

5.1 Select Number of participant:

The number of participants has also been discussed in a number of researches; Nielsen recommends that optimum five users are enough to discover 85% of usability problems [50]. In order to conduct the usability test author kept in mind all the detail about the number of participants and limited time constraint of the thesis, so the author selected the 6 students from BTH at graduate level. All 6
students were from computer science program. They all have a 4 to 5 year of experience of using MS-Office.

5.2 Test Environment and Tools:

The test environment was controlled by providing a same machine and very quite room. The usability test was conducted in fully balanced university library room. The author provided same computer system and printed form of the test’s task to all participants. The author observed the participants and got permission to record their activities with digital camera. Following are the specifications for think aloud test.

<table>
<thead>
<tr>
<th>Number of participants</th>
<th>6 BTH students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasks performed</td>
<td>3 tasks</td>
</tr>
<tr>
<td>Test Environment</td>
<td>Book Prior Library room</td>
</tr>
<tr>
<td>Participants background</td>
<td>Computer Science</td>
</tr>
<tr>
<td>experience of using MS-Office</td>
<td>4 to 5 year</td>
</tr>
<tr>
<td>The age of the average participants</td>
<td>28 years</td>
</tr>
<tr>
<td>Gender</td>
<td>Male students</td>
</tr>
<tr>
<td>System specification for test</td>
<td>2.0 GHz Processor, 1 Gb Ram, HP Compaq, 120 Gb hard disk.</td>
</tr>
</tbody>
</table>

5.3 Pre-Test:

The pre-test was design in order to assure, the test scenarios that are given in table 6.1 were precisely defined and users had no difficulty to understand the entire steps. First the author consults with the supervisor and made some improvement according to supervisor suggestion. After that the author selected two students and got their feedback related to each steps.

5.4 Usability Experiment of OpenOffice.org:

The author performed a usability test according to availability of the participants. The purpose of the Think aloud technique is to evaluate the application, not to test the user. The intention of this test was clearly informed to all participants. The observer taken the notes along audio recording in usability test and when the participant stop speaking, observer remind him smoothly as he had to speak loudly while performing each step. The main purpose was to evaluate its effectiveness, functionality related to the
satisfaction of the users. The time given to each participant was noted before and after the experiment. When the students finished their tasks, there was a discussion about the test and application. Following tasks were given to the students to perform experiment.

For all tasks that follow, please speak loud when you are performing each step.

- Whatever the action you perform during this test must speak something about that

Tasks 1 Word Processing (Writer Scenarios)

Task1 scenario:
Creating a new text document and formatting an existing text document

Steps

1. Open the Open office.org
2. Create a new text document.
3. Write the some text and apply the time new Roman formatting.
4. Find the synonym of any word such as; argue, world, present.
5. Draw basic shape like line and arrows
6. Save the document on desktop in task1 folder but don't close your text editor.
7. I already prepared another document called or named “test1”. Please open this document.
8. Copy the text from test1 file and paste it in your file below your text.
9. Change the heading's font size to 14, bold and underline it.
10. Change the list-format with a circle bullet in front of every line.
11. Change the line spacing 1 to 1.5
12. Save the document and exit.

Task 2 Presentation (Impress Scenario)

Steps

1. Open Impress Application to create the presentation
2. Create and write the first slide with this heading (Name, Address, Study program,) make them heading with font size 24 pt with diamond bullet.
3. Create another new slide and draw two boxes, one blue and one green,
4. Add any two names in each box.
5. Create a bar graph by (enter some data in it)
6. Creating a footer for all the slides
7. Save and Exit

Task 3 Spread Sheet (Calc Scenario)

Steps
1. Open calc application
2. Enter at least three name of your course subjects into three different cells
3. Then enter the total marks of each subject and also enter the marks obtain in each subjects (minimum of three subjects)
4. Add the total number and then take the percentage
5. Draw the graph or chart of this scenario
6. Save and exit.

Table 6.1

5.4.1 Tasks Recording.
Whatever the action or step performed during this test, participants are free to speak and express their thoughts, and observer noted their recording as fellows.
1. Time used to complete each task
2. Usability problem Faced during each task
3. Number of task completed successfully
4. What problem face during Uncompleted task
5. What is the satisfaction level of the user

5.5 Questionnaire conducted by Email invitation linked to URL
The author used an Email invitation linked to URL based survey (Questionnaires) from all participants to measure their satisfaction and understanding regarding OpenOffice.org. The author used two type of questionnaires close ended question and open ended questions. Close-ended questions got the highest response rate. Close-ended questions include: Yes or No, True or False, Multiple Choice questions and rated questions. The author used the survey short and to the point, because the respondent may get tired and not reply, if it is long. First question in survey always set the tone and
first question should be easy to answer. The author adopted the same procedure to design a survey. By using Email invitation linked to URL-based survey all participants replied the questionnaires in time. The basic purpose of this survey is to measure the usability of the OpenOffice.org and requirement of the user regarding OpenOffice.org. The author used both types of questionnaires; such that open-ended and close-ended questionnaires to get the important information. Before designing the questionnaires the author clearly mentioned that user’s participation play very important role to gather the right information and feedback. The survey questions are as demonstrated in appendix.

5.6 Interviews

Interview is used to evaluate and validate the usability test results of a system [13]. The author conducted the interviews with each participant independently, in order to validate the results, which were taken during usability test and questionnaires. In order to get the user opinion about the system, the author asked the open-ended questions from the interviewees. The author demonstrated the interview questions and their in Appendix section 10.2
Chapter 6

Results and Analysis

This is a very important chapter. In this chapter the author analyzed all the data, which was collected during the empirical methodology. The author discussed the experiment result in section 6.1. Problem analysis of each task in experiment was illustrated in section 6.2. The author presented the Analysis of experiment and literature in section 6.3. The Questionnaires Results and analysis was vividly depicted in section 6.4 and 6.5. At the end of this chapter the author discussed the Interview results and Analysis in section 6.6

6.1 Experiment Results:

The author conducted a test from six students independently. Each student performed number of tasks according to schedule and sample that was given to them. The author recorded their comments and talks, when they were performing each task. The author took this experiment in complete balanced environment in library group room and fellow the literature guideline of conduction experiment. All the participants who performed this experiment are the students of BTH University. All students were selected from computer science background. It means that they all very well familiar with use of computer and MS-Office. The age of the average participants was 28 years. The most important thing for author that all the participants, who performed this experiment approximately had 3 to 4 year of experience of using Microsoft Office 2007. But at the other hand they all were new user of Openoffice.org. The table 7.1 shows the participants time taken to complete each task.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Task-1 Time</th>
<th>Task-2 Time</th>
<th>Task-2 Time</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student-1</td>
<td>8.5</td>
<td>11.5</td>
<td>3.5</td>
<td>23.5</td>
</tr>
<tr>
<td>Student-2</td>
<td>7.5</td>
<td>10.00</td>
<td>3.0</td>
<td>20.5</td>
</tr>
<tr>
<td>Student-3</td>
<td>8</td>
<td>9.5</td>
<td>3.5</td>
<td>21</td>
</tr>
</tbody>
</table>
In order to analyze the above table 7.1, the author examines some time variation among all tasks. The author also made a note of completed and uncompleted steps. There were different steps involved to complete one task. Let analyze each task in graphical form.

**Think aloud Table 7.1**

<table>
<thead>
<tr>
<th>Student-4</th>
<th>8.5</th>
<th>10.5</th>
<th>3.5</th>
<th>22.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student-5</td>
<td>8.00</td>
<td>10.00</td>
<td>3.0</td>
<td>21.</td>
</tr>
<tr>
<td>Student-6</td>
<td>6.00</td>
<td>8.02</td>
<td>4.00</td>
<td>18.02</td>
</tr>
</tbody>
</table>

**Think aloud Figure 7.2**

This figure 7.2 shows the experiment performed by six students and each student assigned three tasks to complete this experiment. Student-1 took 8.5 minutes in task-1 and faced some problem in some steps, which are mention in task analysis and in task-2 student-1 spent 10.5 minutes, this task also took too much time and it was also lengthy task., student-1 took very less time approximately 3.5 minutes in task-3, it was a short task and participants felt very little problem while performing this task-3.
Some time variations are clearly depicted in graphic fig 7.2 for each task corresponding to each student. This graph shows all the details of above think aloud table 7.1.

6.2 Problem analysis of each task in Experiment

The author intensely observed all the participants when they were performing experiment. During the experiment observer noted the entire problem, which was faced all participant in each task. This task was related to world processor and task scenario was clearly and well designed with different steps. These steps were distributed in three different tasks as shown in table 6.1. Different participant faced different problem in each tasks. Let analyze the problem of each task one by one.

6.2.1 Task # 1

There were total 12 steps in task-1, and each participant was performed all 12 steps to complete this task. One common problem observed almost all students was failed to find the synonym of any word. All students got stuck in this step and they did not complete this step. Student faced another problem while performing this task was that six out of three students were not able to draw the basic shape such as arrow and line. But all steps were clearly demonstrated in table 6.1.

6.2.2 Task # 2.

This task was related to Presentation (impress) application. There were total seven steps required to complete this task of impress scenario. Four students faced problem to create and select the proper layout of the slide and to enter some data in this slide. Three student faced problem while creating a boxes and also entering a data in each boxes. And two students got problem to create a bar graph along some data. Half of the student did not feel comfort while using this impress application in order to analyze further that approximately three student faced problem in three steps but they completed four steps without any problem. Half students completed all steps without any problem.

6.2.3 Task # 3

In order to complete this task, six steps were required. This task was related to Spread Sheet (Calc) application. In this task almost all students complete this task easily except two. They just faced problem in step number 4, where needed to calculate a percentage of this scenario and also faced problem to draw chart of given scenario. But other participants performed all step well but different variation of time which is clearly mention in think aloud table 7.1.
6.3 Analysis of experiment and Literature:

All participants performed this experiment in same place and same computer. Authors critically observed each participant and did not interfere while performing this experiment. Three task were designed to performed this experiment different problem was faced at different steps, but some of the students were not satisfied from OpenOffice.org. Because it has an older interface, toolbar and menu bar like MS-office 2003. At the other hand all most all participants were familiar with Microsoft office 2007 interface. That’s why they faced some problem while performing this experiment. The author also studied the literature and got conclusion form it that OpenOffice.org is a complete office suite and freely available, it has been discussed in literature reviewed. The author also wanted to highlight some good point of discussion, which he got from literature review; these points are in the favor of openoffice.org.

- Open Office.org provide a built in PDF export.
- All 2D and 3D charts are available in Opneoffice.org.
- Multimedia flash export available in presentation application, at the other hand it is not available in Microsoft power point 2007.here it has an upper edge.
- Thousand of clipart and thousand of animation available on the web for OpneOffice.org 3.0.
- It is available for multi platform and in many languages.

The author has been discussed the entire literature study and experiment analysis about this application suite. After performing this experiment the author designed questionnaires for further investigation.

6.4 Questionnaires Results

Interview can not be taken from the large number of people personally. If data is collected from the limited number of people that information may not represent the large group. And decision taken on the basis of such data may mislead or even erroneous. So that’s why the author decided to design clearly and well organized questionnaires and published on the survey design web site. BTH student were selected as test participants of this openoffice.org survey and posted this survey URL to BTH students on their email addresses .By using this method the author got the quick response. The author took the guide line from the literature [42] [43] [44] [45] in order to design the questionnaires .More then 30 quick responses of this web base survey were received from our targeted user group. The author received all the quantitative data by using web survey. The author counted the numbers of responses of the participants who completed the survey and compute their percentage of participant relevant to each level and criteria. Questionnaires feed back are represented graphically below in figs 6.3, 6.4, 6.5, 6.6, and 6.7.
Most of the questions asked in well structured sequence, the very first question asked about the office suite usage. Some of the questions are as fellows.

Which Office suites you use frequently?

Response

![Chart showing user comparison of open office and MS-Office 2007 at BTH, Fig 6.3](chart.png)

User comparison of open office and Ms-Office 2007 at BTH, Fig 6.3

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-Office</td>
<td>28</td>
<td>93.33%</td>
</tr>
<tr>
<td>Open Office</td>
<td>2</td>
<td>6.67%</td>
</tr>
</tbody>
</table>

6.5 Questionnaires Analysis

The author tried to find number of openoffice.org 3.0 user in BTH. MS-Office has more number of users as compared to Openoffice.org.3.0 as shown in Fig 6.3. And more then 93 % participants are using MS-Office from more then 2 year. When the author asked a question, “did you use an OpenOffice.org 3.0“

Did used OpenOffice.org .
50% of the students has been used Openoffice.org suite before this experiment and 50% students did not know about the OpenOffice.org, so the author had good population for experiment, then the author further investigated that which of the application of OpenOffice.org is frequently used.

According to outcome of this question as shown in fig 6.5, world processor was the most frequent used application in open office and other two applications were very less in use.

After asking some of these basic questions, the author decided to include number of questionnaires relevant to each criterion such as satisfaction, consistency, simplicity, Learnability, completeness. According to the response of the students the author computed the percentage of each criterion as given in table fig 6.6.
Participants Questionnaires feed back:

In order to analyze the questionnaires qualitative outcome, the author represent the questionnaire’s feed back graphically.

<table>
<thead>
<tr>
<th>Number of Levels</th>
<th>No Of Responses</th>
<th>Easy to Use or Simplicity</th>
<th>Consistency</th>
<th>Completeness</th>
<th>Learnability</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level-1 S.Agree</td>
<td>30</td>
<td>17.19%</td>
<td>21.47%</td>
<td>17.33%</td>
<td>16.31%</td>
<td>09.1%</td>
</tr>
<tr>
<td>Level-2 Agree</td>
<td>29</td>
<td>25.15%</td>
<td>24.11%</td>
<td>22.34%</td>
<td>26.19%</td>
<td>12.19%</td>
</tr>
<tr>
<td>Neutral</td>
<td>29</td>
<td>18.33%</td>
<td>21.77%</td>
<td>20.9%</td>
<td>21.38%</td>
<td>19.31%</td>
</tr>
<tr>
<td>Level-4 Disagree</td>
<td>30</td>
<td>13.45%</td>
<td>13.9%</td>
<td>22.19%</td>
<td>14.19%</td>
<td>30.01%</td>
</tr>
<tr>
<td>Level-5 S.Disagree</td>
<td>29</td>
<td>09.5%</td>
<td>11.45%</td>
<td>09.00%</td>
<td>13.46%</td>
<td>19.45%</td>
</tr>
<tr>
<td>N/A</td>
<td>25</td>
<td>14.5%</td>
<td>10.0%</td>
<td>05.00%</td>
<td>9.00%</td>
<td>15.00%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Questionnaires feed back Figure 6.7
This figure 6.7 represents the number of student’s choices in percentage on Y-axis. The criterion (satisfaction, consistency, simplicity, Learnability and completeness) are representing on X-axis against each question. Different colours of bars illustrates the number of levels such as (Strongly agree, Agree, Neutral, Disagree, Strongly Disagree and N/A). This figure 6.7 describes the responses of the students relevant to questionnaire’s criterion, 17.19 percent students are strongly agree that the open office is an easy to use application. And 25 percent students also agree with this statement. But 18.33 percent students remain neutral with this statement. If analyze it further then it comes to know that 13.45 percent are disagree and 9.5 percent are strongly disagree with this statement. By examine graph in more depth, it comes to know that average 21.095 students are agree that openoffice.org is a simple and easy to use application suite. But at the other hand average 11.045 percent are disagree with this statement. Hence it has been proved from this result that OpenOffice.org is a simple and easy to use application suite. If analyze the consistency criteria in the application, it is clearly shown in bar graph that average 23.29 percent are agree that it is a consistent application and average 12.65 percent students disagree with this statement. Average 20 percent students are agreeing that is a complete office application. On the other hand average 15.5 percent students not agree with this statement, but one strange thing observes that 21 percent students remain neutral with this statement, so it needs further investigate through interviews. If further examine this application with learnability prospective ,it comes to know that average 21.4 percent students agree that it is a easy to learn and easy to understand office application. And 13.82 percent students are not agreeing with this statement.

Response of the students concerning the satisfaction of the student about this application is about 11 percent is agree with this statement. But 24 percent students are disagreeing with this statement. They are not satisfying with this OpenOffice.org 3.0 desktop application. Then the author needs to investigate this matter of dissatisfaction about this application by interviews. Another important thing for further investigation, when The author asked this question that “Would you recommend the OpenOffice.org office suite to others?”, The author get this response as shown in graph below.
This figure 6.8 also needs some further investigation for wider spread of this application suite. The author investigates this issue by using interview, and can get some deeper level of detail that’s why some people don’t want to recommend this software to others; even it is free and simple available office application suite.

6.6 Interview results and Analysis

Interviews involve much of usability time and resources, but it is more beneficial and flexible, because interviewer can explain difficult questions in more depth [11]. The Interviewer gets the deeper level of detail and getting reaction of the interviewee’s opinion and how people reason about the issues. Authors clearly designed the interview questions with the help of supervisor, and then conducted the interview with same people, who took part in experiment.

Interview questions and their responses are demonstrated in appendix. The author got responses from the interviews that Openoffice.org is a simple to use application suite. It is almost easy to learn and understand office application. But one thing should discuss here is that half of the interviewees were not satisfy from layout and interface of the Openoffice.org. Majority of the student not felt comfort while working in it; because most of the participants were familiar with MS-Office 2007and on the other hand openoffice.org doesn’t support the MS-Office 2007 file format. The author also analyze that some of the functions are not available or difficult to find. Half of the student did not find any interesting thing except built in PDF converter and Multimedia flash export in Openoffice.org application suite. When the author asked question from interviewees that “Are you willing to adopt OpenOffice.org for academic, personal and business activities?” fifty percent reply yes and fifty percent reply no. Even it is free available software and easy to install, no licensing issue even then response was equal in quantity. Another problem observed and also got it from literature studies are that Openoffice.org takes too much execution time to load into a memory [49].
Chapter 7

Discussion/analysis

7.1 Discussion

Validation and assessment is depicted in this chapter of the thesis. This chapter divided into two parts, in one part the author discussed the selected criteria. And another part is about validation of the results.

7.1.1 Simplicity:

Majority of the students admitted that OpenOffice.org 3.0 is a simple and easy to use office suite. It is available for multi platforms and in Multilanguage. It is easy to install and simple to use. Its Applications provided the same interface like MS-office 2003 applications. OpenOffice.org introduced same old interface like MS-office 2003 interface in 2007. But if they want to stay in this competition, they have to bring a new innovation in opnoffice.org interface. Definitely MS-office 2003 is simple to use interface beside this it has no interaction and innovation in its interface, that is why they change their interface, and people accepted their new effort and new innovation.

7.1.2 Consistency:

Consistency means that the design of the user interface should be meaningful and purposeful, and it will be clear and recognize to the user. Organize related things to one place. Because lack of consistency creates a complexity in the system. Open office.org is a complete office suite and it provide almost maximum tool that required to the user for normal usage. It provides a good consistent layout of the interface just like a MS-Office 2003. Openoffice.org holds a good learnability and efficiency because they do not need to learn the same features of the system again and again.

7.1.3 Learnability:

Learnability mean that, whenever user interacts with the system first time, they can easily perform the task. In the prospective of Open office.org 3.0 few of the task create problem while performing the task first time. Overall openoffice.org 3.0 has good learnability except few task remained incomplete during experiment. The author also assessed the learnability by using questionnaires almost majority of the students are satisfied with the learniability of the system.
7.1.4 Satisfaction

Satisfaction represents the effectiveness and how pleasing to work on the system, satisfaction can be defined as in other words that, how much it is acceptable. In this thesis satisfaction level of the students has been collected by experiment, questionnaires and interviews. According to feedback of this methodology, students are not much satisfied with OpenOffice.org 3.0, because some of the basic functionalities are absent or difficult to find. It is also not possible to read the Docx document in Openoffice.org. Most of the student failed to find the synonym of the words in Openoffice.org experiment. Most important thing is that its application’s interfaces is not impresses and attractive for the user. OpenOffice.org’s applications almost have the same interface like MS-Office-2003’s applications. There is no new change and innovation in its interface. People become fading up from this old interface. That is why MS-office2007 changes its simple interface into Ribbon interface. Most of the students don’t prefer to use openoffice.org frequently. One more important factor regarding the dissatisfaction of the student is that, it takes too much execution time, to load into memory.

7.1.5 Completeness:

Completeness means, all the frequent use options, tools and function should be available to the user. OpenOffice.org provides maximum frequent used tools and function except few. OpenOffice.org can not meet the needs of students with current layout of interface and limited number of features and content, such as students are not satisfied with the synonym finding option, all students were failed to perform this steps. It also takes too much time to load into memory. Some of the features are difficult to find.

7.2 Validation

There are four criteria of judging the accuracy of the qualitative research proposed by Guba and Lincoln [47]. For validating the result the author first conducted the experiment, after performing the experiment, the author posted questionnaires to BTH student. In order to validate the result, author carried out the interviews from BTH students.

7.2.1 Credibility

The main purpose of qualitative research results is credible from the participant’s eyes. Participants are only valid key to judge the credibility of the result [47]. For validating a result the author conducted the interviews from 6 students. For the accuracy of the thesis, the authors used a mixed research methodology. Based on a literature review, usability test and questionnaires outcomes, the author conducted interview with six students to validate the results of usability assessment of the openoffice.org. Details of these interviews contained in appendix section.
and these interviews validate the usability assessment of the system. After adopting this validation process, the authors are confident about credibility of the study.

7.2.2 Transferability:

Transferability mean, results of qualitative research can be generalized or transferred to other contexts or setting [47]. In this thesis OpenOffice.org application suite provides the same tools, functions and services like MS-Office application suite. Most of the students used MSOffice-2007 and it save a document in Docx format. The main threat is that Openoffice.org doesn’t support the Docx file format. Another potential threat can be similar educational system and culture background of the students. Almost all the students have the same educational and culture background in this usability test. The test result may be different, if different sex, educational and cultural background students performed this test. MS-Office 2007 brought a change in office 2007 and introduces a new interface such as ribbon interface and openoffice.org has the same old interface. Another threat is that most of the student has been fade up from old interface.

7.2.3 Dependability:

Dependability means that any change takes place in the context of research over time [47]. It is the duty of the researcher to explain these changes and its effect on research with respect to time. The authors selected the number of students for experiment from BTH and conducted the usability experiment of OpenOffice.org. The author reserved a morning time and same library group room with participants. The author design a web survey after analyzing the experiment, and posted to BTH students on their emails. Whenever they felt relax and got time they respond accordingly.

7.2.4 Confirmability:

Confirmability means that the results could be confirmed or supported by other researchers [47]. There are number of approaches to boost confirmability. The author got the confirmability of the thesis by properly documenting the usability assessment method and literature study at each steps. The author used thinks aloud techniques for experiment. The author designed the questionnaires, on the basis of experiment and questionnaires design guideline. The author further validated the result by the help of interview.
EPILOGUES 8

This is the last part of the thesis; this chapter consists of, conclusion, recommendation and future work.

8.1 Conclusion:

The purpose of thesis to evaluate the openoffice.org application suite, to find the usability issues and satisfaction level of the user regarding this application. The author selected the number of students from BTH University to conduct the usability experiment. This usability experiment is performed in totally balanced environment. The university group room was prior reserved according to time reservation with graduate students. After the analysis of usability experiment and literature study, the author designed the questionnaires and posted to BTH students on their emails and got quick response. Then results of questionnaires were deeply analyzed and validate this result by interviews with same students who took part in experiment and questionnaires.

On the basis of research questions, the author analyze that Openoffice.org is one of the license free great desktop office application suite. On the other hand the author draws a conclusion on the basis of this usability evaluation methodology is that Openoffice.org could not build an impression on user with current interface, functionality and tools. Most of the interviewees were not satisfied from current layout of the interface and tools. And most of the student not felt comfort while working in it.

8.2 Recommendation for improvement:

The author draws attention of open source community toward this Openoffice.org application and recommends some of the points on the basis of observation, which was taken during analysis of the experiment, questionnaires outcome and interviews that might helpful in improving the OpenOffice.org application suite. These points are as fellows.

- There is interoperability problem in between openoffice.org and MS-Office 2007. Openoffice.org should support the MS-Office 2007’s Docx File format.
- OpenOffice.org takes too much time to execute or load into a memory [49], execution time should be decrease.
- Openoffice.org has the same old and limited set of interface. There should be a new innovation in its interface that impresses the user.
- There should be more advanced features with less mouse clicks
- There should be eye catching and beautiful templates, users do not struggle to find style and formatting.
- Openoffice.org doesn’t support the speech recognition; this functionality should be included for users ease.
- Some of the tool options are difficult to find in Openoffice.org. Such as in usability experiment, there was one step to find the synonym. The entire student failed to complete this step. Most frequent tool should be in main tool bar or easy to find.
- When save a file in open office extension and then try to open this file with other office suite like Microsoft office 2003 then file does not open. This problem should be solve.

8.3 Future Work:

Recommendations are very important to improve the openoffice.org application suite.
Open standards are generally considered to have important economic and technological benefits.
Organizations are seeking benefits of open standard, but there are role to consider the Interpretability.
In a future work the author can work to find the Interoperability issues of open Document format.
References


Appendix

Screen shot *OpenOffice.org* Writer

*Openoffice.org* Writer (Word Processor):

Writer has fully feature, stylist tools for creating letters, books, reports, newsletters, brochures, and other documents. It is a powerful navigator word processor same like the Microsoft word.[40]
OpenOffice.org Calc (spreadsheet):

It has fully feature spreadsheet functionality. It includes over 300 functions for financial, statistical, and mathematical operations, among others. Calc can also generate 2D and 3D charts. [40]
OpenOffice.org Impress Slides

Openoffice.org Impress (Presentation):

It has fully feature multimedia presentation tools, to create and modify diagram pictures and make interactive presentations. Impress is compatible with Microsoft's PowerPoint file format and can also save your work in numerous graphics formats, including Macromedia Flash (SWF).[40]
# Questionnaires

Please answer the following questions, it will help me to identify the usability issue of OpenOffice.org.

## Survey Design for Usability Assessment of OpenOffice.org

1. **Which Office suites you use frequently?**
   - MS-Office
   - Open Office
   - Star Office
   - Non

2. **How long you are using office Suite?**
   - I just installed the software for the first time.
   - 1-6 months
   - 7-12 months
   - 1-2 years
   - More than 2 years

3. **Did you use the OpenOffice.org?**
   - Yes
   - No

4. **Which Application of OpenOffice.org you used frequent or plain to Use**
   - Word Processor Application (OpenOffice.org Writer)
   - Presentation Application (OpenOffice.org Impress)
• Spreadsheet Application (OpenOffice.org Calc)

• Non

5. For which tasks do you use the Word Processor OpenOffice.org Writer?

• Homework and Assignments writing

• Academic thesis writing

• Surveys

• Book writing

• Reading documents

• letters/correspondence

• Taking notes

• Meeting minutes

• Contracts

• Bills/invoices

• Job applications

• Microsoft Word format import

• Microsoft Word format export

• PDF export
6. Is the word processor Application OpenOffice.org (Writer) an easy to use Application?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

7. Is the word processor OpenOffice.org (Writer) provides meaningful and easy to understand toolbar, menu and icons

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

8. Are you satisfy with word processor OpenOffice.org (Writer) application

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

9. Is it easy to find the synonyms of the words?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

10. Is the word processor OpenOffice.org (Writer) meets all yours requirements

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

11. Is the spreadsheet application OpenOffice.org (Calc) easy to use Application?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>
12. Is the spreadsheet application OpenOffice.org (Calc) provides a meaningful and easy to understand toolbar, menus and icons.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

13. Is the User satisfy with spreadsheet application OpenOffice.org (Calc) application

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

14. Is the spreadsheet application OpenOffice.org (Calc) meets all your’s requirements

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

15. Is the Presentation application OpenOffice.org (Impress) easy to use Application?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

16. Is the Presentation application OpenOffice.org (Impress) provides meaningful and easy to understand toolbar, menus and icons

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

17. Are you satisfy with Presentation application OpenOffice.org (Impress) application

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

18. Is the Presentation application OpenOffice.org (Impress) meets all your requirements
<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

19. Is OpenOffice.org easy to learn and easy to use Desktop office Suite

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

20. Are you satisfied with the execution performance of OpenOffice.org?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
</table>

21. Would you recommend the OpenOffice.org office suite to others?

Yes

No

22. What are the things that are missing in OpenOffice.org? Please answer with some argument
Interviews Questions and Answer

Interview-1

1) What was your first impression of openoffice.org?

Well first impression was, as I looked openoffice.org, I didn't felt anything strange as its look was very much similar to the earlier versions of MS word. But it really gave a very good feeling when I found all format setting on right click.

2) When you were using OpenOffice.org, for which were the things you mostly use it for?

Ans

- Thesis proposals,
- applications
- Assignments and Notes
- Making presentations slides
- Reading lecture slides
- Calculating different assignments result

3) What are most difficult things, when you were using OpenOffice.org world processor (Writer)? Please answer with some arguments

Ans

Most difficult thing is that when I try to found the synonym of some word. I got stuck with this step.
And I could not complete this task

4) What are most difficult things, when you were using OpenOffice.org Presentation Application (Impress)? Please answer with some arguments.

Ans

I faced Problem while writing text and selecting the right layout and also faced problem to enter the data into bar graph
5) What are most difficult things, when you were using OpenOffice.org Presentation Application (Impress)?
Ans
It is not so much difficult to use, initially I just got problem to create the slide, but overall it is easy to use.

6) Are you willing to adopt OpenOffice.org for academic, personal and business activities? Please answer with some arguments.
Ans
Yes I would like to adopt it for academic and personal activities because it’s free and easily available.

7) What are the most interesting things you find in OpenOffice.org?
Ans
- Built in PDF export regarding world processor
- Presentation application support multi media flash export

8) Are you satisfied that, it is complete office suite for all users? Please answer with some arguments.
Ans
Yes it is complete office suite, but it doesn’t provide the compatibility with MS-Office-2007. It takes too much time to load into memory.

9) How do you compare OpenOffice.org with others office suite?
Ans
It is a complete office suite. It provides all those basic functions and tools, which are available in other office suite.
- Built in PDF support
- 2D and 3D chart support
- Thousand of clip art available on the web
- It is available in multi plate form in multi languages
- It has the interoperability with other office suite like star office and MS.office-2003

10) What’s your Opinion? How can improve this office suite for common users?
Ans
Interview-2

Questions and Answer

1) What was your first impression of openoffice.org?
   Ans
   It is good and nice freely available office application.

2) When you were using OpenOffice.org, for which were the things you mostly use it for?
   Ans
   • Report writing
   • applications writing
   • Making presentations slides
   • Reading lecture slides
   • Calculating different assignments result

3) What are most difficult things, when you were using OpenOffice.org world processor (Writer)? Please answer with some arguments
   Ans
   • I got stuck when I tried to find the synonym.
   • It doesn’t support MS-Office 2007 file format.

4) What are most difficult things, when you were using OpenOffice.org Presentation Application (Impress)? Please answer with some arguments.
   Ans
   I faced problem when I was creating a slide
5) What are most difficult things, when you were using OpenOffice.org Spread Sheet Application (Calc)?
   Ans
   I faced problem to enter the data into graph

6) Are you willing to adopt OpenOffice.org for academic, personal and business activities? Please answer with some arguments.
   Ans
   No I don’t like to adopt it. It has a same uninteresting and old interface like MS-office 2003

7) What are the most interesting things you find in OpenOffice.org?
   Ans
   - Freely available Office Suite with multi platform
   - Built in PDF

8) Are you satisfied that, it is complete office suite for all users? Please answer with some arguments.
   Ans
   No I am not fully satisfying from OpenOffice.org, because It take too much time to load into memory. Some functions are difficult to find.

9) How do you compare OpenOffice.org with others office suite?
   Ans
   - It is same like the MSoffice-2003.
   - it is a complete freely available office suite.
   - It provide built in PDF converter.

10) What’s your Opinion? How can improve this office suite for common users?
    Ans
    Basic function should be in main menu bar like MS-office 2007. Open Office should change the old interface.

Interview-3
Questions and Answer
1) **What was your first impression of openoffice.org?**

**Ans**

Well, initially when I open this office suite first time it seems a new application. But when I opened its applications and its functionality, I found that it is same like a MS-Office 2003 application suite. In my prospective it is simple and easy to understand application suite.

2) **When you were using OpenOffice.org, for which were the things you mostly use it for?**

**Ans**

- Assignments
- applications
- documentation purpose ,
- Thesis proposals,
- Making presentations
- Reading lecture slides
- Calculating different assignments result

3) **What are most difficult things, when you were using OpenOffice.org world processor (Writer)? Please answer with some arguments**

**Ans**

When I tried to find the synonym of the world .I failed to complete this task. Another problem it doesn’t support MS-Office 2007 Docx file format.

5) **What are most difficult things, when you were using OpenOffice.org Presentation Application (Impress)? Please answer with some arguments.**

**Ans**

When I tried to enter data into graph, I felt problem. But overall it’s not too much difficult to work in presentation application.

7) **What are most difficult things, when you were using OpenOffice.org Spread Sheet Application (Calc)?**

**Ans**

It is same like as MS-Office 2003. I didn’t find any difficult thing.
8) Are you willing to adopt OpenOffice.org for academic, personal and business activities? Please answer with some arguments.

Ans

No I don’t like to adopt it for academic. I am not feeling comfort while working in it because it has the older interface

9) What are the most interesting things you find in OpenOffice.org?

Ans

- Freely available Office Suite with multi platform and multi language
- Built in PDF

10) Are you satisfied that, it is complete office suite for all users? Please answer with some arguments.

Ans

No I am not fully satisfying from OpenOffice.org, because it does not provide the compatibility with MS-Office2007 and it also have a same dull and old interface like MS-office 2003. It takes too much time to load into memory. And further more, some functions are difficult to find.

11) How do you compare OpenOffice.org with others office suite?

Ans

It is complete office suite, But overall it provides all basic functionality, which provides others office suite.

- Built in PDF support
- Thousand of clip art available on the web
- It is available in multi plate form in multi languages
- It has the interoperability with other office suite like star office and MS.office-2003

12) What’s your Opinion? How can improve this office suite for common users?

Ans

I would like to say that interface should be change. They should introduce some new attractive interface. The synonyms should be on right click. Provide the compatibility with MS-2007.
Interview-4

Questions and Answer

1) What was your first impression of openoffice.org?
Ans
It is a nice and free office application suite.

2) When you were using OpenOffice.org, for which were the things you mostly use it for?
Ans
- Assignments
- applications
- documentation purpose,
- Thesis proposals,
- Making presentations
- Reading lecture slides
- Calculating different assignments result

3) What are most difficult things, when you were using OpenOffice.org world processor (Writer)? Please answer with some arguments
Ans
I could not open Docx file in openoffice.org. And I also could not open the ODF format in MS-world. I also faced problem in finding synonym of the world

5) What are most difficult things, when you were using OpenOffice.org Presentation Application (Impress)? Please answer with some arguments.
Ans
Presentation is easy to use application of openoffice.org; I did not find any major problem while using it

7) What are most difficult things, when you were using OpenOffice.org Spread Sheet Application (Calc)?
Ans
It is same like as MS- Excel. I didn’t find any difficult thing.
8) Are you willing to adopt OpenOffice.org for academic, personal and business activities? Please answer with some arguments.
Ans
Yes we can adopt it for academic and personal activities because it’s free and easily available

9) What are the most interesting things you find in OpenOffice.org?
Ans
- Freely available Office Suite and Presentation application support multimedia flash export. It also has built in PDF

10) Are you satisfied that, it is complete office suite for all users? Please answer with some arguments.
Ans
Well being a free office suite I am satisfy. On the other hand if you compare openoffice.org with MS-office 2007.then I will prefer MS-office. It’s reliable and comfort office suite.

11) How do you compare OpenOffice.org with others office suite?
Ans
If you compare OpenOffice.org with MS-office 2007.then I will prefer MS-office. It’s reliable and comfort office suite. If you compare interface point of view then MS-Office 2007 has better and new interface. Which attract the user.

12) What’s your Opinion? How can improve this office suite for common users?
Ans
The interface should be change. They should introduce some new interface like MS-Office 2007. The synonyms should be on right click. Provide the compatibility with MS-Office-2007.