# Usability of Software Online Documentation:
# A User Study

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## Abstract

This paper discusses the usability of online documentation and summarizes the results of two usability surveys conducted to study the usability of online documentation for enterprise applications. Two groups of subjects were surveyed using paper questionnaires. The results show that users generally use documentation when they hit a roadblock. Even though the preference is for online documentation (49%), but the subjects like to use paper documentation 32% of the time. This paper analyzes user preferences and their current difficulties in using online documentation.

## 1    Introduction

Advances in the computer technology ― more powerful computers, more complex applications and ultimately the Internet and Web browsers ― have fundamentally changed the way people read, write and search for information. In the software industry the transition from the traditional way of delivering information by hard copy heavy manuals to soft copy, online documentation and online help appeared very fast. There are several advantages related to this method of delivering information. The ecological benefits include less paper thus less waste and the economical advantages include easy transfer, easy access to the information, easy maintenance and update.

Although most software companies now offer online documentation, much online documentation offers little more than paper documentation displayed on the computer screens. Paper documentations are not designed for viewing on a small computer display. Thus, putting documentation online by itself does not improve its use or its usefulness.

Online documentation uses the computer as a communication medium. It has two essential components. The first component is the content stored electronically. The second is the way for users to quickly and easily access that information. Thus there are two areas that usability is important in the online documentation. The usability of content: text picture, graphics and the usability of delivering techniques such as content, index, search engine and navigational tools. Several common types of error have been reported in writing user-friendly documentation. Weis (1991) summarizes these common errors in the following manner. First strategic, that includes searching several books, needing two books for one task, needing to ignore most pages. Second is structural, the problem such as jumping from front to back, never reading pages in sequence, searching for exhibits, tables. And the third type of common errors according to Weis is tactical. This includes: stopping to notice mechanical errors, getting stuck on inconsistent terminology, rereading difficult passages. To provide user-friendly design solutions in delivering and designing

documentation several authors offer a variety of guidelines and methodology (JoAnn T. Hackos & al. 1996, W Horton, 1991&1994, Carroll J. M, 1998, Mulvany N. C. 1997). Microsoft Corporation in an extensive manual provides a complete online writing reference (Microsoft, 1998). In the research arena besides the traditional cognitive researches on human behavior, reading, writing and comprehension, and early human factors guidelines in computer documentation (Sullivan & Chapanis A. 1983, Solem A.1985) there is an extensive body of research published focusing on computer documentation and behavior of the users in using online software documentation.

In a study on behavior of the enterprise software documentation, we conducted surveys to better understand user behavior in using online documentation. Our goal was to understand on one hand the user's preference in navigational tools that deliver the information and on the other hand their behavior in reading the documentation. We performed two parallel surveys using paper questionnaires.

In this paper we will review the general findings of this investigation that can be generalized to all enterprise software documentation users and not only a specific product or company.

The first survey intended to study the preference of users regarding navigation/tools when documentation was offered through a browser.

The objective of the second study was to understand the behavior of the users when using online documentation.

The ultimate goal of this study was to provide input to all the professionals who are involved in creating, writing and distributing online documentation, that could help them enhance the usability of the documentation.

## 2 Method

Two paper questionnaires were prepared.

The first questionnaire included one question asking the subjects to assign a number from 1 to 10 (1, least important, 10 most important) to the following navigational/tools in delivery of online documentation. These objects include "Hide Reference Panel"(Panel(/frame that includes content and search) "Show Graphics" "Print" "Breadcrumbs", "Previous (backward)", "Next (Forward)", "History", "Exit", and "Clear"

## 2.1 Subjects

41 subjects from employees of a computer company were selected. This group includes 20% QA engineers, 24% technical consultant and 56% newly hired technical employees participating in a new-hire training program. The subjects were generally technical staff with a very mixed cultural and ethnic background.

The second questionnaire contained three groups of questions: demographics, computer usage and documentation usage and documentation usage for specific enterprise application (not discussed in this paper)

21 subjects completed the second questionnaire.75% of the subjects who completed the second questionnaire are male and 25% are females. Age ranges consist 45% 30-35, 14% 35-45, 23%, 45-55 and 18% under age 30. 59% of the subjects went to graduate school, 36% to college and 5 % high school level.

English is native language for 77% of responded and second language for 23%. They have all over 3 years experience with computer. They are all familiar with the Windows Operating system; some also used Mac OS or Unix in the past. They all use Internet Explorer as a browser but some use also Navigator. They use Internet on a daily base for a variety of tasks such as reading, shopping, banking, and researching. They have used Internet for over 3 years and are familiar with

Microsoft Office and Lotus Note; some regularly use other applications such as PageMaker, Quicken Photoshop.
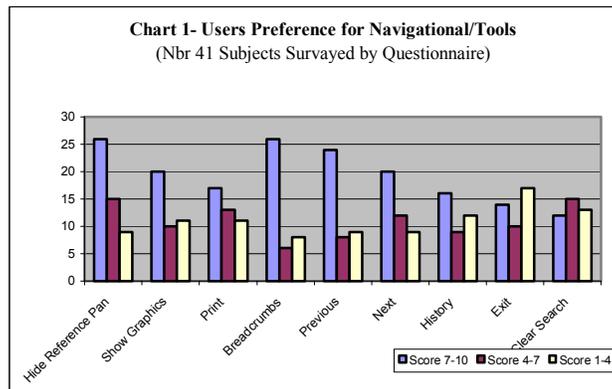
## 2.2   Procedure

The questionnaires was sent by email or handed out after a training session. The returned completed questionnaires were kept anonymous.  The participants for each survey were different.

## 3      Results

The results from the first survey show people (n=41) rating of navigation/tools item.

- 41% rate "Hide Reference Pan" Button between 7and 10.
- 49 % rate "Show Graphics" Button between 7and 10.
- 41% rate "Print" Button between 7and 10.
- 65% rate "Breadcrumbs" Button between 7and 10.
- 49% rate "Next" Button between 7and 10.
- 59% rate "Previous" Button between 7and 10.
- 40% rate "History" Button between 7and 10.
- 34% rate "Exit" Button between 7and 10.
- 30% rate "Clear Search" Button between 7and 10.

The total score for each item stays almost equal for all items except for the "Hide reference pan". This shows that the even if one subject is rating an object lower, the other subjects are rating it higher. This seems to be related to the level of expertise of each subject. For example if a subject use less "Search" they rate "clear search" lower, but the users who are using more search rate "clear search" higher. (Chart 1)



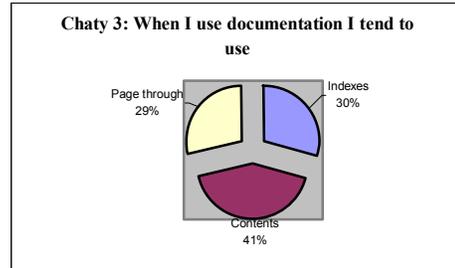**Chart 1- Users Preference for Navigational/Tools**
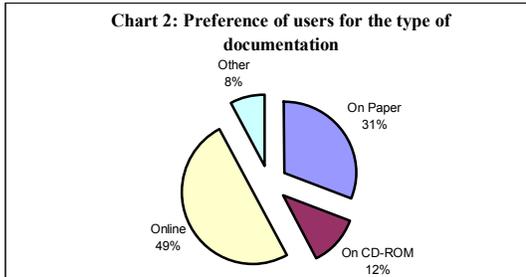(Nbr 41 Subjects Survayed by Questionnaire)

## 3.1   Behavior of the users in using documentation
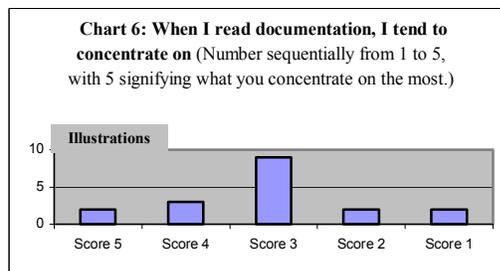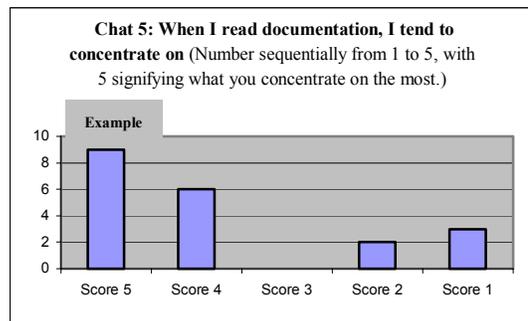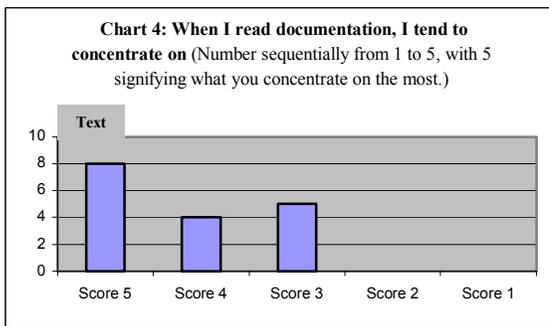
The results of the second survey shows that most users who start working with a new computer system, start using the system without first consulting the documentation. Generally, people start using the documentation only when they hit a roadblock.

49% of people prefer "Online" documentation, and 31% "Paper Documentation" and only 12 % prefer on "CD-ROM Documentation". (Chart 2)

When the subjects use documentation. They tend between "Page through", "Indexes", and "Contents" use first content (41%), index (30%) and Page through 29%. Many users state that they use "Search" as an entry door to documentation. (Chart 3)

**Chart 2: Preference of users for the type of documentation**

Other 8%
On Paper 31%
Online 49%
On CD-ROM 12%

**Chaty 3: When I use documentation I tend to use**

Page through 29%
Indexes 30%
Contents 41%

Surveyed People tend to concentrate on. "Text" then "Examples" and a last "Illustrations" when they use documentation. (Chart 4, 5 and 6)

**Chart 4: When I read documentation, I tend to concentrate on** (Number sequentially from 1 to 5, with 5 signifying what you concentrate on the most.)

Text

| Score | Value |
|-------|-------|
| Score 5 | 8 |
| Score 4 | 4 |
| Score 3 | 5 |
| Score 2 | 0 |
| Score 1 | 0 |

**Chat 5: When I read documentation, I tend to concentrate on** (Number sequentially from 1 to 5, with 5 signifying what you concentrate on the most.)

Example

| Score | Value |
|-------|-------|
| Score 5 | 9 |
| Score 4 | 6 |
| Score 3 | 0 |
| Score 2 | 2 |
| Score 1 | 3 |

**Chart 6: When I read documentation, I tend to concentrate on** (Number sequentially from 1 to 5, with 5 signifying what you concentrate on the most.)

Illustrations

| Score | Value |
|-------|-------|
| Score 5 | 2 |
| Score 4 | 3 |
| Score 3 | 9 |
| Score 2 | 2 |
| Score 1 | 2 |

# 4    Discussion and Conclusion

The results of the first survey suggest that to improve the usability of the online documentation, it is important to provide all types of navigational tools and improve their effectiveness. The fact that the total score for each item stays equal shows that ultimately it would be useful to have all of these items in the site (Hide Reference Pan, Show Graphics, Print, Breadcrumbs, previous next, History, Exit and Clear search). The subjects also consider the tools such as "Hide reference pan", "Breadcrumbs", "Previous" and "Next" more important, thus it is highly recommended to not only

make all of them available but also design them in a way that they act precisely and accurately. Some items such as "clear search" seem to be used more by advanced and moderate users who relay more on search.

The second study confirms already well-understood knowledge that users use documentation when they hit a roadblock. Even though the preference goes for online documentation (49%), but the subjects like to use paper documentation in 32% of the time. This study shows that software documentations need to be available on line but they should also be printable by users in order to give them opportunity to have a hard copy. The entry point to the documentation seems to be first through "Content" (41%) and equally, "Index" "Page through" or "Search". Users seem to prefer to look at the text first then, the examples and finally the illustrations.

This study also suggests that one major difficulty in using the software documentation is lack of examples and detailed descriptions.

The behavior of the enterprise software documentation users may differ from other communities of users such as: novice users, average Internet users or other categories of computer users. The subjects that we surveyed were expert users totally familiar with computer applications. Thus we should not generalize the findings of this study to all users. The study groups for both surveys were limited in number. Thus further study is needed to investigate more in depth behavior of online documentation in order to improve radically the usability of the computer manual and online documentation. It is generally understood that user-friendly documentation cannot improve an unfriendly application. A simple procedure, explained well is clearly simple. On the other hand a difficult procedure, explained well, is still difficult. Bad documentation makes procedures harder to follow. But clear documentation cannot improve an unfriendly system.

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