Usability Metrics in the Desktops of Various OS

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Introduction

Interaction Design

In the second chapter of their text *Designing the User Interface*, Shneiderman and Plaisant discuss "*standards*" to follow while creating systems. The chapter separates these rules into Guidelines, specific definitions distributed and adhered to by companies and organizations and Principles, broader generalizations that are more "fundamental."

For this report, personalization tasks on the Mac, Windows, and Linux systems were pitted against each other to test their usability. Each provides a basic philosophy or guidelines for developers to follow. Further discussion of the guidelines can be found in the */guideline survey/* section of the repository.

Usability Metrics

In order to create a concrete, non-subjective method of rating the usability of systems, a set of 5 usability metrics were created. These assign qualitative values in order to rate systems numerically.

1. **Learnability**: the amount of time that it takes to learn the system.
2. **Memorability**: the amount of time that it takes to recall how to use a system after a period of time has passed since learning.
3. **Efficiency**: the amount of time it takes to complete a task using the system.
4. **Errors**: the amount of errors made while completing a task while using the system.
5. **Satisfaction**: the amount of satisfaction gained while using the system.

Usability Meterics in context of this assignment

We are comparing the interaction designs of Mac, Windows and Linux operating systems. Our focus will be the desktop. We will be timing how long it

takes to change the desktop background, change the screen resolution, and take a screen shot. We will be looking at three of the four usability metrics: Learnability, Efficiency, and Satisfaction.

Learnability is how fast a person who knows nothing about a system can accomplish something with that system. How fast can the user figure out how to get to the change desktop menu? How easy is it for the user to figure out how to change the screen resolution? How fast can the user learn how to take a screen shot? We are comparing how well each operating system helps the user learn how to accomplish the three tasks. We will be asking some users to complete the tasks on systems they are not familiar with.

Efficiency is how fast a person who knows how to use a system well can accomplish a certain task. Which system allows the user to change the desktop background, change the screen resolution and take a screen shot the fasted? We will compare how fast each operating system allows the user to complete the tasks. We will be timing users who are skilled with each system.

Satisfaction is how happy a user is with a system. We are recording each persons opinion after completing each task in order to see which operating system is the most pleasing for the user. How pleased was the user with the process of changing the background, changing the screen resolution and taking a screen shot?

Procedure

3 Concrete Tests
In order to test system usability, the following three tests were concieved:

1. Saving a jpg via the Chrome Browser to the computer and setting it as the background
2. Changing the Screen Resolution
3. Taking a screenshot.

Procedure
For each subject, we prepared, on a Linux, Windows, and Mac, the Chrome Browser with a picture that had never been saved to the computer before and closed all superflous windows. The system settings icon remained in the taskbar of every system. The subjects were briefed on the tests as follows:

1. **Background Changing**: You must save this (indicates) picture and set it as your desktop background. Feel free to open any window or use any sort of help dialouge or search engine.
2. **Screen Resolution Change**: Alter the screen resolution from the current set-up to any other setting.
3. **Taking a Screen Shot**: Take a screenshot of the desktop and save it.

We first tested the subject on the foriegn system and then on their usual systems. The times were recorded on a Samsung Galaxy S3 default clock/stopwatch. Miliseconds were not recorded. Satisfaction was rated on a scale of 1-10, with 1 being the least satisfaction and 10 being the most satisfaction.

Data Reports

Our first subject was a male junior, who works primarily on Apple, has had some Windows experience, and no experience on Linux. His main system was Apple and new system was Linux.

Task	Main System	New System
Changing Background	0:07	1:16
Changing Screen Resolution	0:09	0:39
Screen Shot	1:07	0:02

The subject was very agitated when setting the desktop on the Linux. He had also forgotten the shortcut on the mac and was trying multiple combinations and opened up music players and browsers in the meanwhile. He rated the Linux a 6/10 satisfaction and the Apple an 7/10.

Our second subject was a female junior, who works primarily on Apple, has had some Windows experience, and no experience on Linux. Her main system was Apple and new system was Linux.

Task	Main System	New System
Changing Background	0:04	1:12
Changing Screen Resolution	0:16	0:45
Screen Shot	0:02	0:01

She rated the Linux a 4.5/10 satisfaction and the Apple an 8.5/10.

Our second subject was a female junior, who works primarily on Apple, has had some Windows experience, and little experience on Linux. Her main system was Apple and new system was Linux.

Task	Main System	New System
Changing Background	0:30	2:41
Changing Screen Resolution	0:16	1:12
Screen Shot	0:03	0:01

She rated the Linux a 6.5/10 satisfaction and the Apple an 7.5/10

Reflections

These reflections reflect those of Kaitlyn Higa. The same report, but with Lisa Rosenbaum's reflections are contained within the other file of this folder 0918_l.pdfOverall, theseresultsillustratetheusabilityofbothsystems.Revealedindiscussionwith Onebigdifferencebetweenthetwosystems, howeveristheeaseofscreenshots.TheLinuxboxhadac shift−4−space.)Thoughintheschemeofthings, screenshotsarenotthemostessentialthing, itbre