Battle of the Wearables and Their Interaction Designs
Comparing the Apple Watch to Google Glass

Victor Frolov

Loyola Marymount University

Assignment 0924

September 24, 2015

1 Introduction

Wearable technology is becoming mainstream and is ranging from products such as fitness trackers, accessories to phones and even glasses that display information and allow you a virtual reality HUD. This report will attempt to objectively declare a superior user experience through interaction design from two infamous competing companies: Google and Apple.

Below are two sections; the first provides usability measures and a conclusion on which device performed better, and the second dives into why this was the case. The usability of the Apple Watch versus Google Glass will be measured with the following three tasks:

- Have the user send the following text message to any contact: "I'm sorry Dave, I'm afraid I can't do that."

- Have the user set driving directions from Loyola Marymount University to Staples Center.

- Have the user set a reminder for October 10th, 2017, with the title "Thanks Obama"

The measurable usabilities will fall under the following three categories: Learnability, Errors and Satisfaction.

## 2 Usability Measures

2.1 Task One: Sending a text message

The user must send the following text message to the contact *Aleksandar Frolov* : "I'm sorry Dave, I'm afraid I can't do that."

2.1.1 Learnability

Users were timed, demonstrating how long it would take someone who has never used the device to complete a task. Each bar represents a user, and the height represents how many seconds it took to complete the task. It is obvious that the Apple Watch's learnability beat out Google Glass.
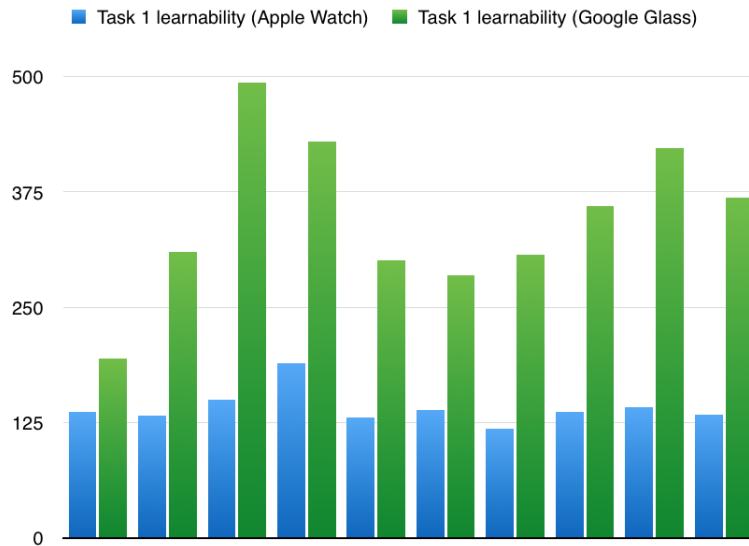
Below is the average time for a user to complete a task, in seconds. Green bar's height represents the average time to complete the task using Google Glass in seconds, and the blue bar represents the average time to complete the task in seconds using the Apple Watch.
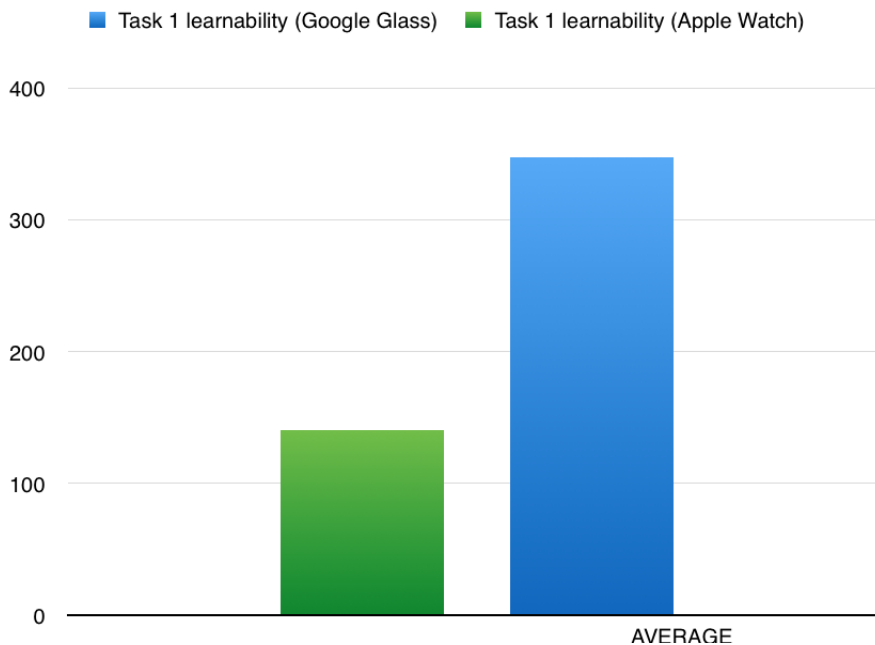
The Apple Watch's Average time to complete the task was 140.4 seconds, whereas Google Glass took 347, which was almost 2.5 times slower.

2.1.2 Errors

User errors were tracked when attempting to send a text message.

Apple Watch 4 out of 10 users assumed that pressing on crown would open keyboard and returned to the home screen instead. The same 4 users shut off the screen by pressing lock button right after. 3 out of 10 users had voice recognition issues, which may have been due to slurring of the words. 1 user was stuck in the watch face, confused how to exit it.

Google Watch 10 out of 10 users mistapped or swiped incorrectly causing the user to return back to the menu. 6 out of 10 users had voice recognition issues, where the message would cut out early. Could be due to slurring of the words.

2.1.3 Satisfaction

Below is the user overall satisfaction when attempting to send the text message.
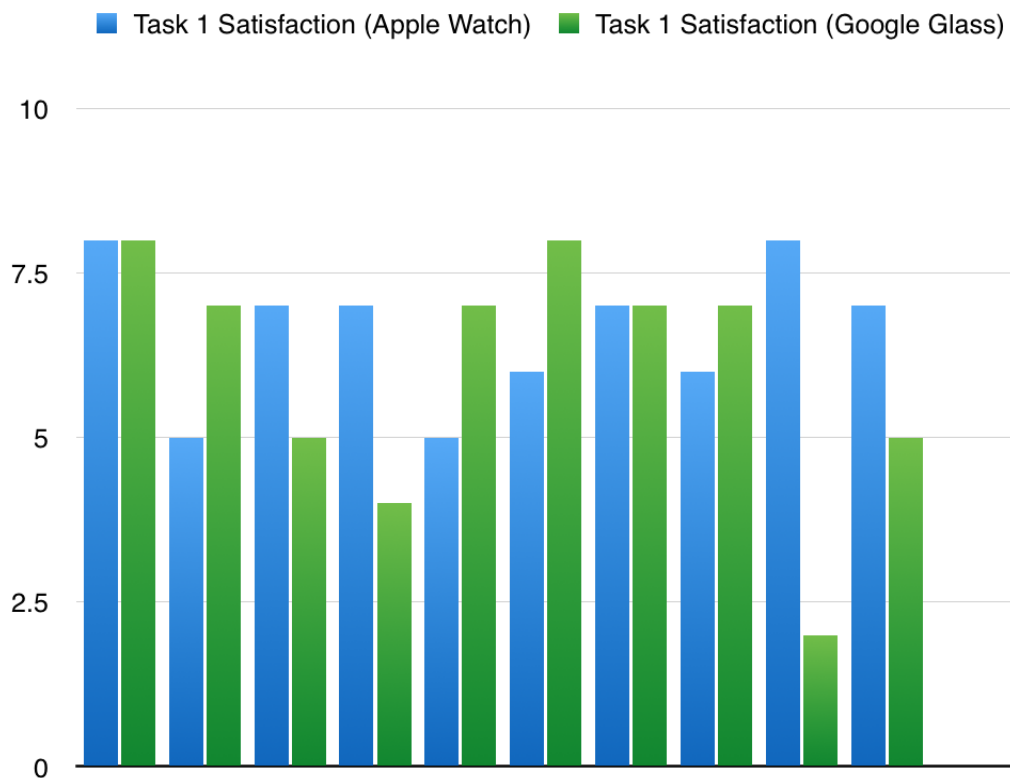
Below is the average satisfaction (blue represents Apple Watch, green represents Google Glass)
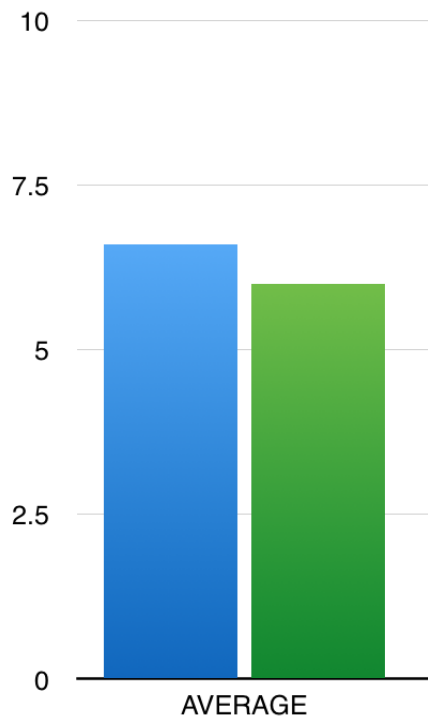
Remarkably, even though each user struggled using Google Glass, and ran into far errors, and took much longer on average to send a text message(with the only outlier being a quick completion) the subjective satisfaction was almost identical, landing at 6.6 for the Apple Watch, and 6 for Google Glass

2.2 Task Two: Set Driving Directions

Have the user set driving directions from Loyola Marymount University to Staples Center.

2.2.1 Learnability

holder

2.2.2 Errors

holder

2.2.3 Satisfaction

holder

2.3 Task Three: Set Reminder

Have the user set a reminder for October 10th, 2017, with the title "Thanks Obama"

2.3.1 Learnability

holder

2.3.2 Errors

holder

2.3.3 Satisfaction

holder

2.3.4 Example for list (3*enumerate)

3 Mathematics

Let's display some math:

$$
\begin{aligned}
(x + y)^3 &= (x + y)^2 (x + y) \\
&= (x^2 + 2xy + y^2)(x + y) \\
&= (x^3 + 2x^2y + xy^2) + (x^2y + 2xy^2 + y^3) \\
&= x^3 + 3x^2y + 3xy^2 + y^3
\end{aligned}
\tag{3.1}
$$

$$
A = \begin{bmatrix} A_{11} & A_{21} \\ A_{21} & A_{22} \end{bmatrix}
\tag{3.2}
$$