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Homework 2

**Interaction Design Report on Wearables: Apple Watch vs. Google Glasses**

**Introduction:**

We compared the interaction design of the Google Glasses and Apple Watch. Both were innovations to each of their respective companies and had many different user interactions and designs. We asked people of varying ages and gender to try the Google Glasses and Apple Watch and recorded their thoughts on the metrics of learnability, errors, and satisfaction of both products. Around 30 people were recorded in this data.

We gave three tasks for each person to perform on their device.

* Task 1: User sends a text to a contact containing: “I’m sorry Dave, I'm afraid I can't do that."
* Task 2: User finds a navigation route to the Staples Center via driving from Loyola Marymount University.
* Task 3: User sets a reminder for October 10th, 2017, with the title "Thanks Obama"

Metrics Priorities

* Learnability: Time needed to complete task
* Errors : What type and how many errors were made
* Satisfaction: How happy/satisfied were people with the design of the product overall and during the tasks.

**Procedure:**

We asked each person to perform the tasks above, starting with the Apple Watch then the Google Glasses.

**Apple Watch:**

**Task 1:**

Learnability: The average time for completion was 2 minutes and 31 seconds which was the quickest out of the tasks for the Apple Watch. Most of the users were new to the Apple Watch but learned the mechanics quickly.

Errors: There were errors concerning the mic and Siri due to the microphone misinterpreting the user. Many users made the mistake of pressing the crown which returned the user to the home screen, delaying them in completing the task.

Satisfaction: Overall the users were satisfied with the performance of the Apple Watch during Task 1 since it was overall quick and easy to complete barring errors.

**Task 2:**

Learnability: It took an average time of 3 minutes and 52 seconds for the users to complete Task 2. It took longer since the users had to use an app which included small, time-consuming tasks such as opening the app itself. Many users struggled at first due to using incorrect buttons and commands. In addition, a user commented that “there should be some type of tutorial” to help learn the app to help expedite the learning process.

Errors: Many users tried to use touch commands for the map app which did nothing. Almost all assumed that pressing the crown would drop the pin which caused them to go back to the home screen.

Satisfaction: While many found the map app confusing and hard to learn at first, all found the navigation route and were overall satisfied with the interaction of the watch.

**Task 3:**

Learnability: An average of 3 minutes and 38 seconds were needed to complete Task 3. Most users found that it was easy to learn how to set a reminder after experimentation and fixing their own errors.

Errors: The two most common errors were forgetting to save the reminder and inputting the incorrect time.

Satisfaction: Some users were frustrated with having to resave the reminder but most were happy and satisfied with the procedure.

***(See Table 1 for more information)***

**Google Glasses:**

**Task 1:**

Learnability: It took 5 minutes and 46 seconds to complete Task 1. It took the testers a while since they were unsure on how to use the Google Glasses which took time to learn.

Errors: Almost all the errors were mis-taps and swipes which resulted in the user returning to the home screen or exiting the application all together.

Satisfaction: Many users had a hard time learning and found it took much longer than the Apple Watch. This caused many to be frustrated with the Google Glasses.

**Task 2:**

Learnability: The users’ average completion time was 6 minutes and 27 seconds for Task 2. Many users were able to get to the app itself but slowed down due to errors. However, most were able to find the destination quickly after errors.

Errors: Some users said “Staples” instead of “Staples Center” or the wrong location altogether, resulting in the wrong destination. In addition, a user became impatient with the app that they accidently exited the app due to constant pressing.

Satisfaction: Due to the slow load time and multiple errors, the users were mainly unsatisfied with the app and the design of the Google Glasses, claiming it got “hot” after waiting for the app to load.

**Task 3:**

Learnability: It took an average of 2 minutes and 20 seconds to complete Task 3 which was the fastest time out of any tasks form both products. Many noted that Task 3 was extremely fast and simple on the Google Glasses.

Errors: There were no errors for this task.

Satisfaction**:** The users were extremely satisfied since it was easy, quick, and familiar to them.

***(See Table 2 for more information)***

**Evaluation:**

**Apple Watch:** The Apple Watch was made with touch screen in mind by the developers and mostly succeeded with the users. While there were some complications with the users misusing the crown on the Apple Watch, the developers’ viewpoint and the users’ perspective aligned due to the efficiency of the Tasks when compared to the Google Glasses. The interaction system were particularly good because many users’ were already comfortable handling a watch and found that it was easy to navigate after learning the commands. Apple Watch followed some of their guidelines due to “text is easy to read and looks great at every size” (1). None of the users complained about text size and were overall happy with its clarity. The Apple Watch had “a key color gives users a strong visual indicator of interactivity” which helped the user find the correct route in completing the tasks (1). Users knew when to touch and where to touch due to the intuitive nature of the color of the Apple Watch. This helped users learn the Apple Watch quicker and made the Watch easier to understand.

**Google Glasses:** Likely, the Google developers thought that the Google Glasses would be the next innovation of wearable devices, however, it was ill received by this group of users’ because many of them found it unclear and uncomfortable due to the mis-taps, swipes, and buildup of heat overtime. In addition, the developers’ created the Google Glasses with the idea that many people would be more comfortable using their right eye, but some of the users stated that they would prefer to use their left eye. While this would not normally be a problem, the lack of customizable options for the Google Glasses didn’t appeal to some of the users. ”. In this study Google didn’t create a “unified experience across platforms and device sizes” integral to their guidelines due to the lack of customization and preference settings (2). Also, many of the commands for the glasses confused users, causing errors. In addition, the interaction system needed refining because, although many users were used to swiping and tapping, most users were not comfortable with the glasses themselves since some were unfamiliar with wearing glasses and found that “it was hard to focus on that small little screen”. Yet, Google successfully provided a “technologically advanced and open to imagination” product (2). Many users did enjoy the innovation to wearable devices claiming it was “cool” and “interesting”. The design of the Google Glasses made the experience almost as satisfying as the Apple Watch due to its innovations even though the Google Glasses suffered many errors and was slower overall.

(1)https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/MobileHIG/InteractivityInput.html#//apple\_ref/doc/uid/TP40006556-CH55-SW1

(2) https://www.google.com/design/spec/material-design/introduction.html#introduction-goals

**Conclusion:**

Overall, both devices have their merits such as the Google Glasses having the fastest time for Task 3 but otherwise slower than the Apple Watch in Task 1 and 2. While the Apple Watch was comfortable and easy to wear, the users, overall, appreciate the newer and more innovative design of the Google Glasses. In my opinion, the reason why the Google Glasses preformed worse than the Apple Watch in all the metrics were largely due to the Google Glasses being uncomfortable to use which led to a slower execution usually, too confusing which led to errors, and the screen was too small and couldn’t’ be customized which dissatisfied users. The design of the Apple Watch met most expectations and turned out better than the Google Glasses since it is very similar to smart phones. People would be more comfortable and receptive to the Apple Watch because they have intuitive commands on how to use the devices which were similar to the watch’s commands. The design of the Google Glasses held potential but fell short during the tasks because it lacked the ease and comfort of the Apple Watch. In the end, I believe that the Apple Watch’s design performed better than the Google Glasses because its overall faster execution time for the tasks, less errors committed, and the users were more satisfied when using the Apple Watch than Google Glasses. While the Google Glasses are interesting and different, the Apple Watch’s design help users learn quicker, make less errors, and were more satisfied with the ease of use during all the tasks and what was reported.

**Table 1 (Apple Watch)**

**Table 2 (Google Glasses)**