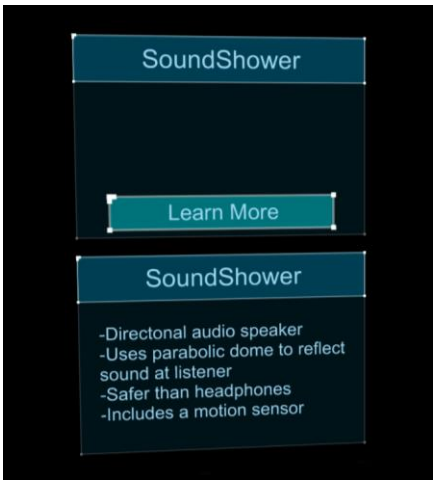
AR Sprint #2 – Usability Testing Report

Filip Jadczak

Summary

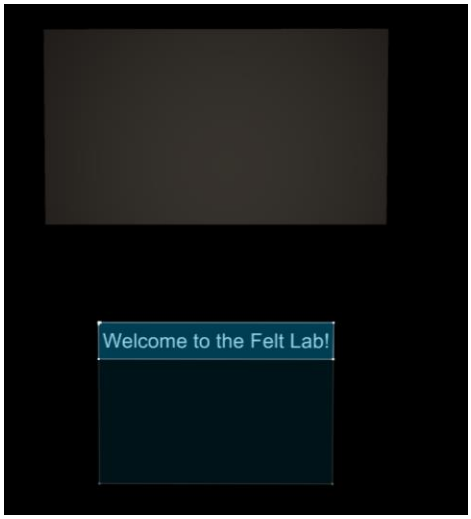
The purpose of conducting these usability tests was to see if ultimately it is worth continuing to develop for the Meta 1 headset, or if it would be better to shift focus to other, more easily accessible platforms. The version of the Meta we have in the lab is the first available version, which came from the Meta Kickstarter campaign. This means the headset is still in the early stages, and isn't completely refined yet. By conducting these tests, I wanted to find out if the technical capabilities of the Meta were at a level that would warrant the time needed to develop an AR app for it.

App Development



I did this by creating a small Meta app, developed from the location-based AR app I created in my previous sprint. In it, I developed three different ways for people to learn about the technology in the lab.

The first is text-based, and involves the SoundShower. When the user looks over at the physical location of the SoundShower in the lab, it is highlighted with a label. Underneath, there is a button with the text "Learn More". When pressed, a text box appears with a few points on the features of the SoundShower.



The second method involves video-watching. When the user looks up from their original position, there is a video panel floating above them. When they reach out and grab it, a video showing the features of the Meta begins to play. Repeating this motion pauses the video. Originally, my intention was for the video to play when touched, but I ran into an issue in the code when developing, so I opted for the grabbing motion instead.

The third method involves interacting with a 3D model, in this case a model of the Oculus headset. The user can reach out and grab it with one hand to move it around. Grabbing with two hands allows the user to rotate the model in different directions. This method is much more interactive and hands-on that the first two methods, as I really wanted to test this feature with the Meta.

Testing Method

In total, I tested the Meta app I created with six different users. Each was an employee from Quarry. Joy helped me find people who were available to help out. Since we took in people based on their availability, I wasn't able to be picky about any kind of specific demographics I wanted to test with.

For each test, I began by explaining what the Meta is, and what the purpose was of the app we were testing. I would help them get settled with the headset and then open the app. After waiting for the calibration to complete, I would make sure they are seeing what they are supposed to. Then, I would guide them through each of the three methods of learning about the lab. If the user ran into any problems or was confused on what to do next, I would give them further guidance on what to do. Unfortunately, in a few cases the Meta did not work properly for some of the methods, resulting in the need to skip them. Once all the tasks were completed, I gave the user a bit of time to play with the app before concluding the test.

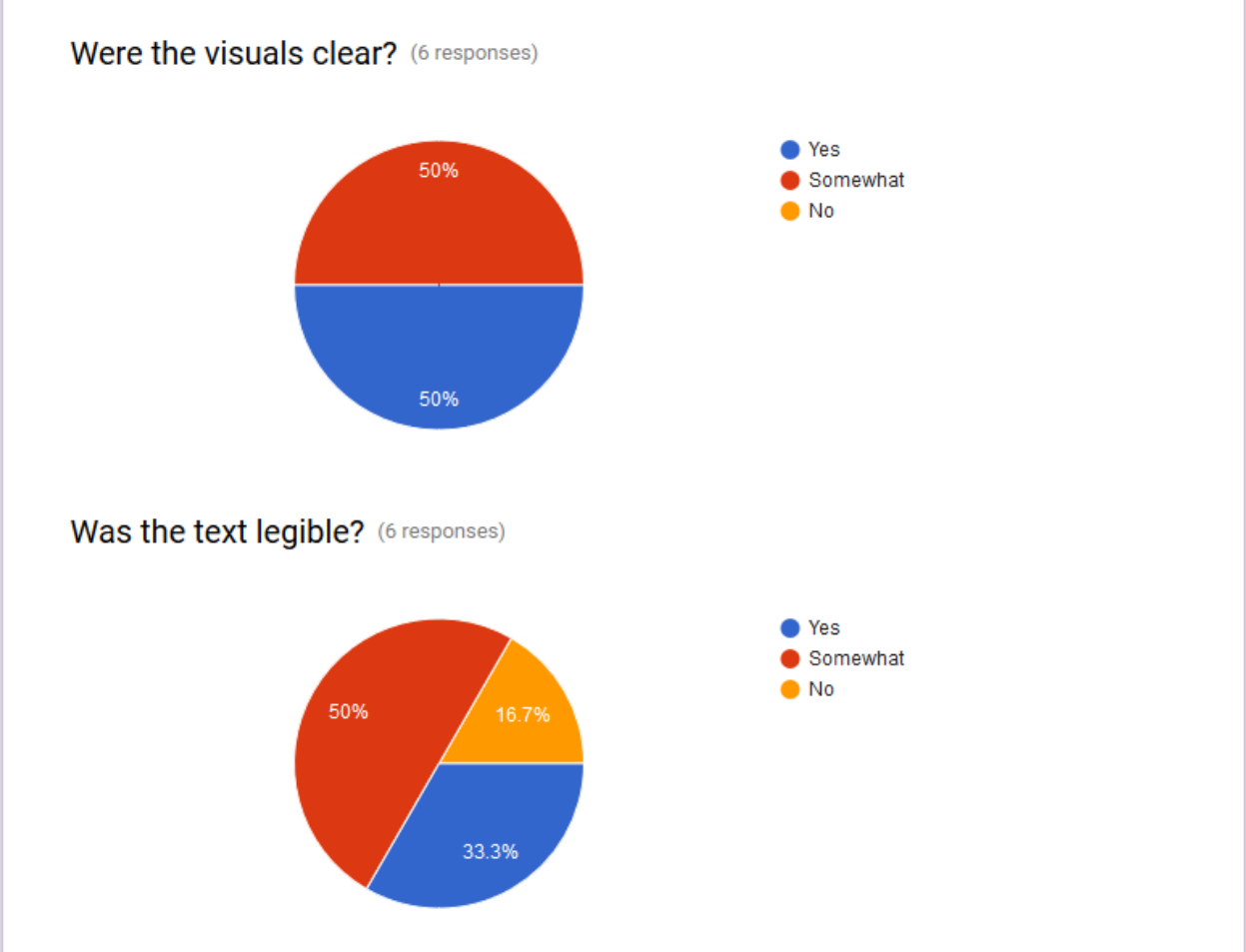
Afterward, I gave each user a survey on an iPad to fill out. The survey asked a few multiple choice questions and two text-based questions (one being optional). The results of this survey and the notes I took during the tests are presented below.

User Testing Results

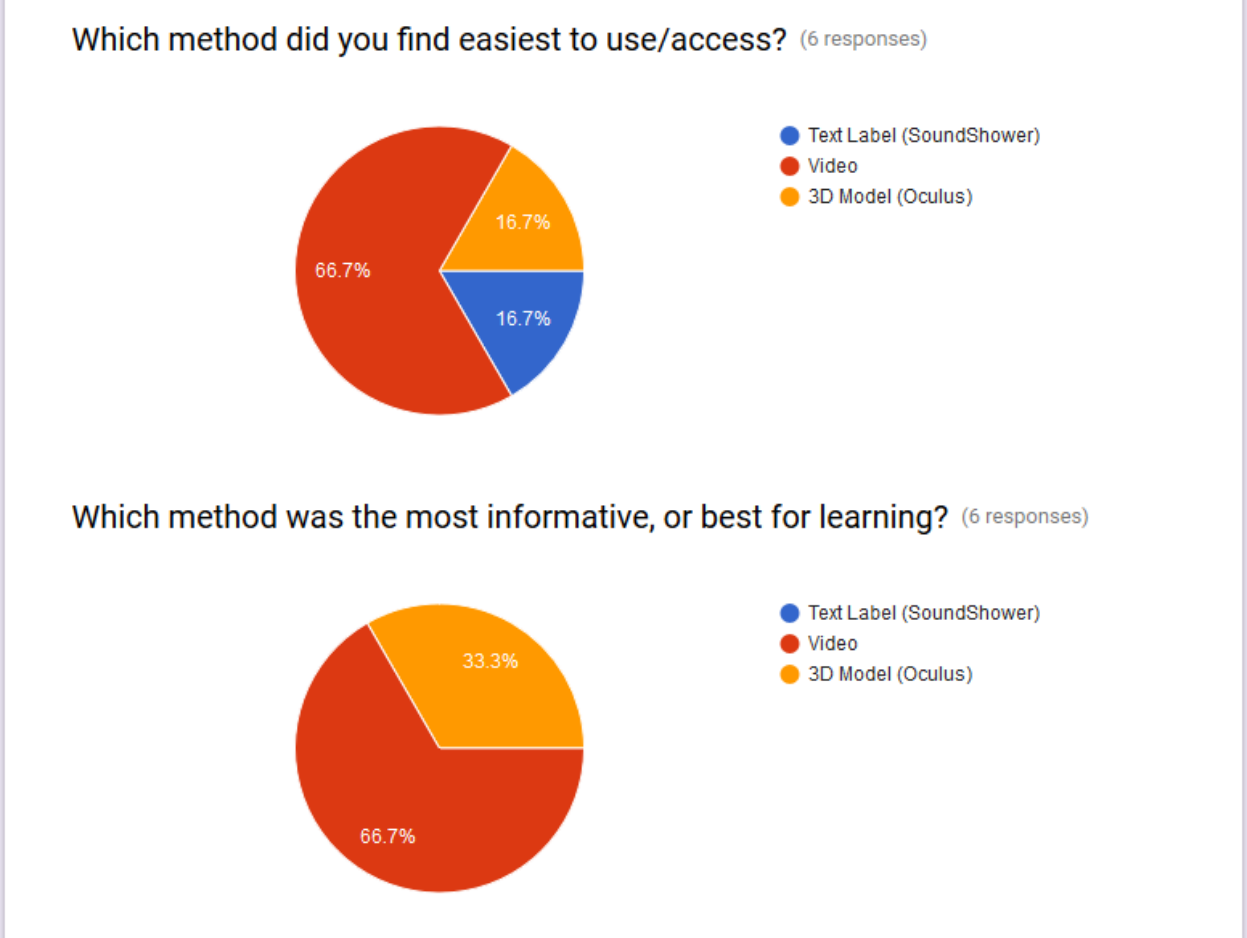
During testing, I noted several paint points that occurred. There were a few occasions where at least one of the methods wouldn't work properly. User 1 was unable to activate the video at all, and user 5 also had difficulties activating it. User 5 was also unable to activate the button for the SoundShower, and a few of the others also had difficulty activating it.

Another issue was that the users often weren't aware of what exactly they needed to do for each method. Based on my instructions, they were often able to activate the video and interact with the 3D model with the grabbing motion. On the other hand, they didn't often know how far they had to reach out in order to reach the virtual items (ex. The button for the SoundShower, the Meta video). One user told me that there wasn't enough visual feedback based on their actions, and that more visual cues would be helpful to know what exactly to do.

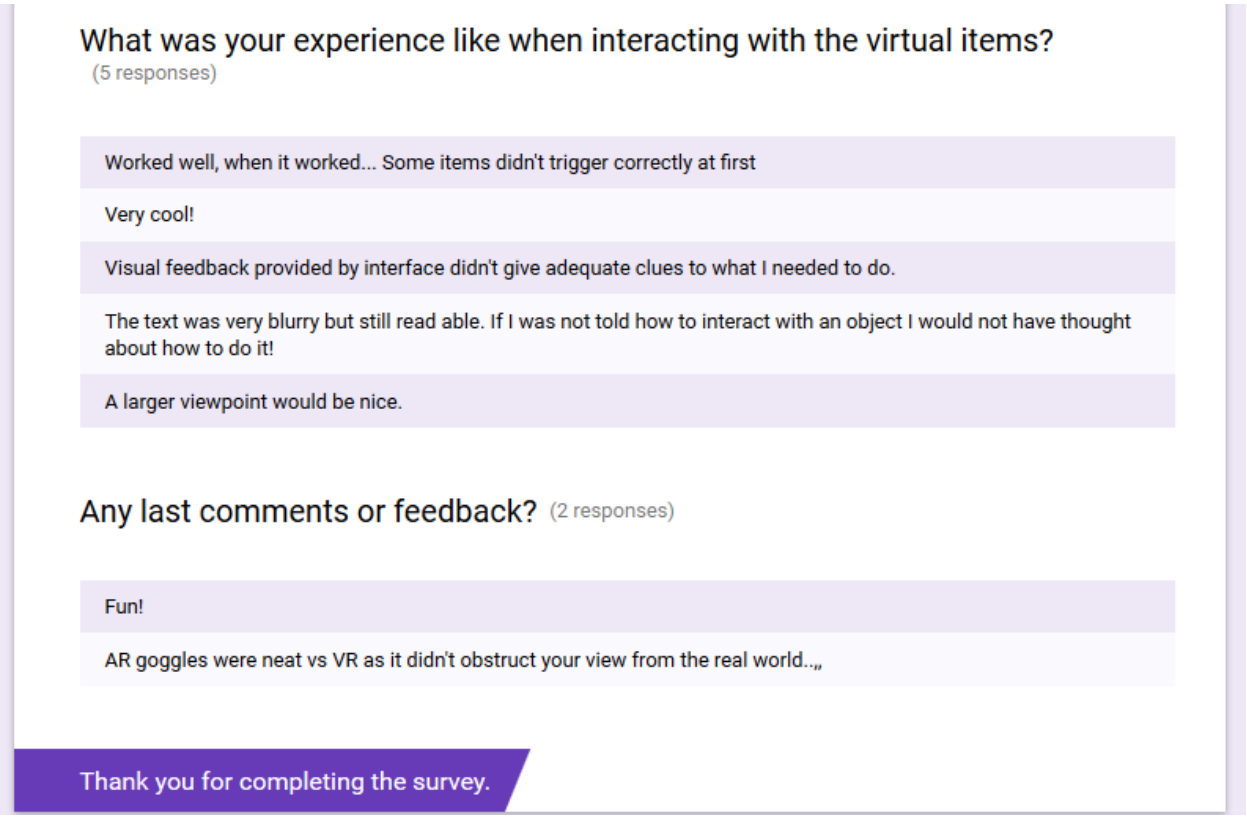
The results of the survey are as follows:



When asked if the visuals were clear, half the users responded 'somewhat' and half responded 'yes'. Similarly, when asked if the text was legible, half responded 'somewhat', two responded 'yes', and one responded 'no'. My original assumption was that the visuals of the Meta may be too blurry for users, but I found it wasn't too much of an issue for the most part. In terms of the text, each of the users was able to read it aloud when asked to.



When asked which of the three methods of learning was easiest to use or access, a majority of the users (four out of six) said it was the video. Four of six users also said that the video was the most informative or best for learning, with the other two saying it was the Oculus model. These results went against my original assumptions. I was under the impression that the easiest to access would be the text-based method (with the SoundShower) because it only involved pressing a button and presented information very factually. It is understandable however, that the video is easiest to access as it only required the grabbing motion and worked more consistently than the button. I was also surprised that users found the video most informative. I thought that the Oculus might be the most informative since it provides a model of the real technology, but users found that method to be the most difficult to use.



Above are the comments left by the test participants. One of the participants brought up something I hadn't thought of while I was creating the Meta app. They said that if there had been more visual feedback on what to do next, then I wouldn't have had to guide the users so explicitly through each task.

One other issue I noticed in every test apart from the feedback was that all the virtual models in the Meta app would slowly rotate counter clockwise around the user for the duration of the test. Unfortunately, I do not know why this occurred – this would require further research to understand the cause of the issue.

Conclusion

Overall, from my usability testing with the Meta I've found that there are still a few factors that hinder the user experience of the product that cannot be fixed through app development alone. Some hardware issues including inconsistent hand-gesture recognition and the size of the viewport prevented users from being able to complete the tasks quickly, or to complete them at all in some cases.

For anyone who wants to pursue app development for the Meta, it is important to remember that users need visual feedback from the virtual interface, as mentioned above. Since AR headsets are an emerging technology, it is important to design with first-time users in mind. They will need explicit instruction on how to interact with this virtual environment, and they will need feedback from the interface to know when they've completed a task.

At this stage, I would recommend that anyone involved with REAP not try to develop Meta apps that involve a large amount of interactivity. More passive apps work well, as evidenced by the video-watching task in my test, but users may find it more difficult to complete tasks that involve directly interacting with virtual objects, as seen with the Oculus 3D model test. The Meta can be used to show what AR technology is leading up to, but at present it is still too early on to develop complex applications for this platform.

On a final note, most users did enjoy using the Meta despite any difficulties faced trying to use it. The "cool" factor was very evident in the product and for this reason it is a good tool to get people excited about where AR is heading in the future.