CS-570 INTRODUCTION TO HUMAN-COMPUTER INTERACTION
SPRING 2017 | PROFESSOR LEWIS-WILLIAMS

PROJECT 2: MOBILE INTERFACES

Shaowen Liu, Laura Laidlaw, Sam Patterson, Evan Taddonio

The YouTube App 2.0

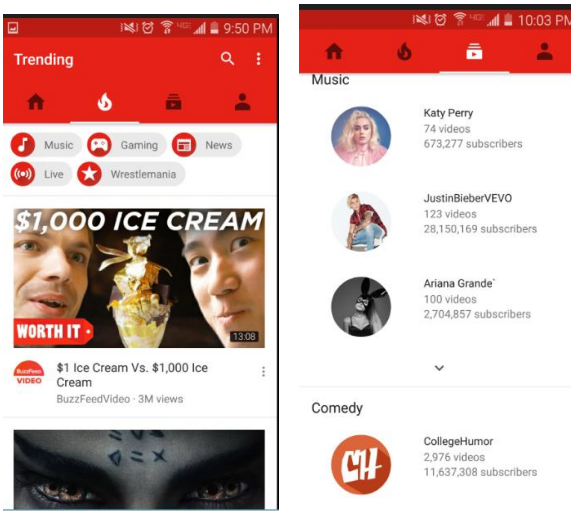
PROJECT 2: MOBILE INTERFACES

INTRODUCTION

We decided to conduct a contextual inquiry around the mobile app version of YouTube. We wanted to study YouTube because it is an app that is widely used by college students and we knew from our own personal experiences that there were flaws with the app.

Many people use the YouTube app to listen to music. Because of this we expected some people who participated in the study would be frustrated with the fact that the audio for the app stopped playing when a user turned off their screen or closed their app for a moment. We knew that in the YouTube Red version of the app a user could close the app or turn off their screen and continue listening to their video. We wanted to see how many participants were annoyed by this and if it affected how much they used the app.

We also thought people would like to see improvements made to how they could browse for new content. By comparing the YouTube apps on our own phones we saw that YouTube has a different layout on different phones. But most of our phones had a tab that showed us a few categories we could explore as well as popular videos. There is also a subscriptions tab that shows users a few popular channels in categories such as music, sports and comedy.



Trending and subscriptions tabs

We believed by observing what people used YouTube for and/or what types of videos they watched we could make the app more user friendly and make it easier for people to find content that interested them.

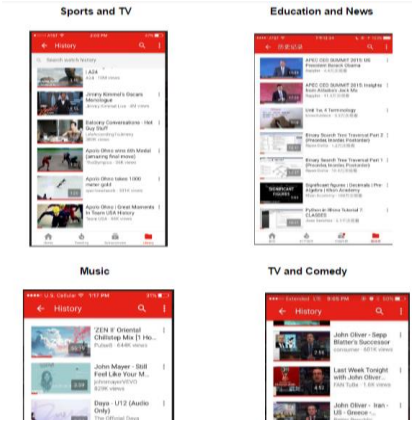
As we searched for people to participate in our study we found that there were many people who used the desktop version of YouTube religiously but rarely used the mobile app version. We were curious to find out why this was.

PROJECT 2: MOBILE INTERFACES

UNDERSTANDING

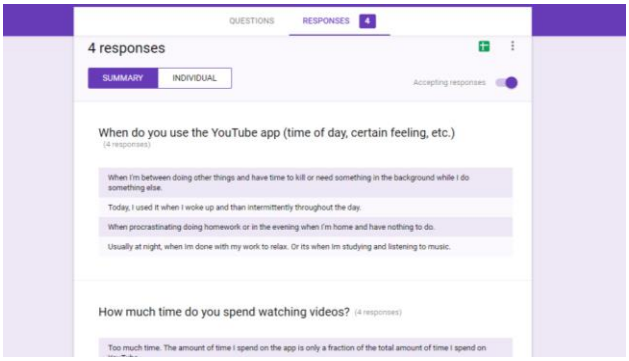
In order to discover what the problems with the YouTube mobile app were we decided to create a cultural probe. The four participants in our study kept a diary of their YouTube history in the form of screenshots. They sent us the screen shots of their viewing history each day that they participated in the study.

From these screen shots we saw that our participants used YouTube for a variety of things. On it they watched TV shows, the news, sports, academic tutorials and they listened to music.



Sample Screenshots

We also sent our participants a Google survey which we asked them to fill out as often as they wished. We asked them questions such as "When do you use the YouTube app (time of day, certain feeling, etc.)", "What channels (if any) do you subscribe to?", and "Is there anything that frustrates you about the app?".



Survey Responses

The survey responses provided us with the most interesting information. We found that some people were dissatisfied with the recommendations YouTube provided them with. We also saw that one of our participants did not watch channels the subscribed to and another had only one subscription.

One user said they did not like that they could not add videos to a queue. In YouTube's current design you can only add videos to a playlist. You have to create a new playlist for every new string of videos you wish to watch and then delete the playlist when you are done watching.

As we predicted everyone in the study wished that they could continue to listen to the YouTube audio even if they closed the app for a minute. We knew that YouTube offered this option for a monthly fee but we wanted to know how much this kept people from using YouTube (and listening to their ads).

We conducted follow up interviews where we thanked our participants and asked them questions such as "If they were able to close the YouTube app and still be able to listen would they use it more?" and "Would they let ads play rather than reentering the app to skip the ad?". People said they would use the app quite a bit more and they would be willing to listen to ads up to 15 seconds long if they were able to close the app and continue to listen to it.

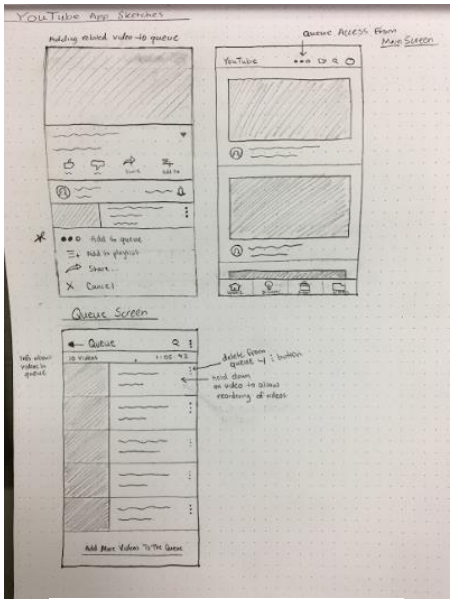
PROJECT 2: MOBILE INTERFACES

IDEATION

Once we had collected the data from our cultural probe and created an affinity diagram/models we began coming up with solutions to the problems that our participants had found with YouTube.

Artifact Model

One user said they would like a way to queue videos, so we came up with a design that allowed users to add videos to a queue by adding a queue option to the add-to button's menu. Users would be able to access the queue by pressing a three dot icon in the top center of their screen to access their queue. We had several different ideas on how users could manipulate their queue. Some of our ideas were a user could change the order of videos by dragging and dropping them, they could delete videos by pressing a button or by swiping left and users could record a video by holding down on it.

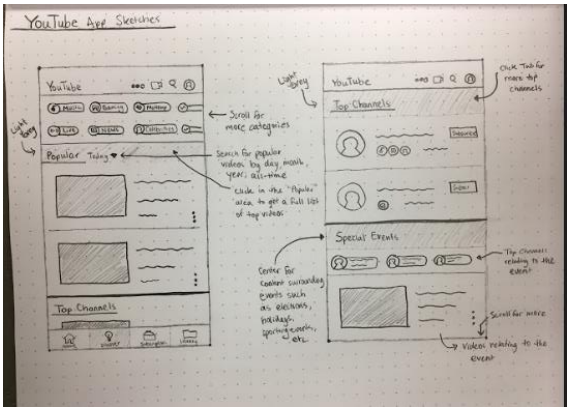


Queue Design Sketch

We noticed that some of our users were dissatisfied with YouTube's recommendations or rarely used the subscriptions feature. We thought we could change this by giving them the option of seeing recommended videos and by improving the trending/subscribe tabs.

We thought we could add more categories to the few that are already displayed in YouTube's trending tab. We also gave users the ability to select the time frame they wished to see the most popular videos from. For example, they could choose if they wanted to see the most popular videos from that day, that week, or that year.

Another feature we thought about adding was a current events section. Some of our users used YouTube as a news source so we wanted to give them an easy way to see important videos when there's an election, a crisis or some other noteworthy event.

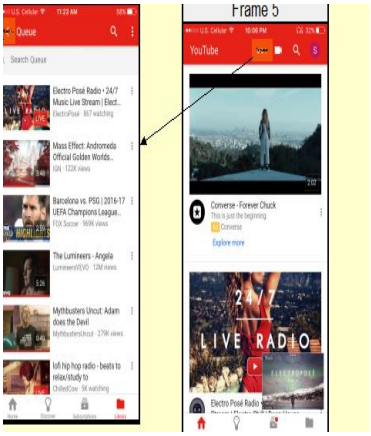


Trending Tab Sketch

PROJECT 2: MOBILE INTERFACES

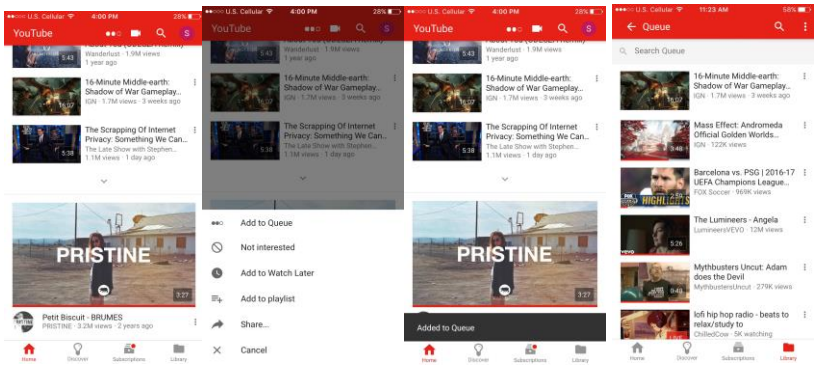
PROTOTYPING

After we had met and sketched out several of our ideas we began to model our new queue design in Cogtool. The first queue idea we modeled allowed users to add a video to their queue after they had selected and begun to play the video. The second queue idea we modeled allowed users to search for videos and add the videos that appeared in the search results directly to the queue. In both of these designs the users could access the queue by selecting a three dot icon in the top center of their screen.



Icon to Access the Queue

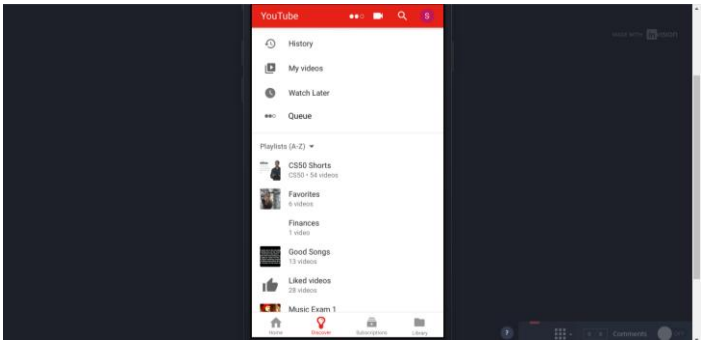
We began this prototype by editing screenshots of YouTube in Photoshop. We added the icon in the top center of the screen, placed an add-to queue option in the add-to menu and changed a screenshot of a playlist to be a screen shot of a queue.



Screenshots for our Second Design Option

Next we uploaded all of these images to CogTool where we established the order of the images and where the user should click in order to move on to the next screen.

We also created a hi-fi prototype in Invision. Our Invision prototype included our new design for the "Discover" tab as well as shows how to access the queue from the profile screen. We also mocked up the queue idea where the user clicks on a video and then adds it to the queue.



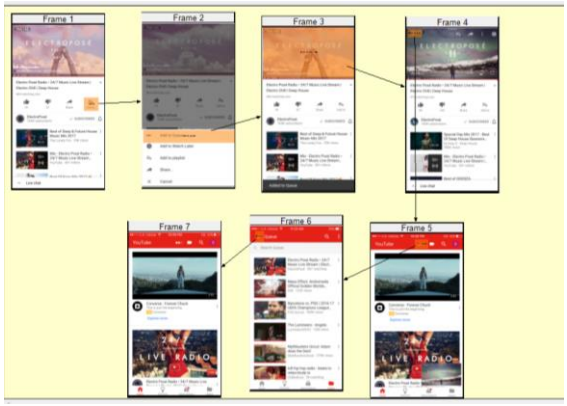
Screenshot of our Invision Prototype

PROJECT 2: MOBILE INTERFACES

EVALUATION

Because we were unsure of what queue design idea was better we decided to model our ideas in CogTool. Cogtool allowed us to see which design allowed a user to add a video to the queue faster.

We saw pros and cons with both designs. A pro of the first alternative is that the users can add a video to the queue once they have seen a snippet of it and determined that they like it. However, the advantages of the second design are that the user can add a video to the queue without disrupting a video they are currently playing and it eliminates the necessary action of clicking on a video to add it to the queue.



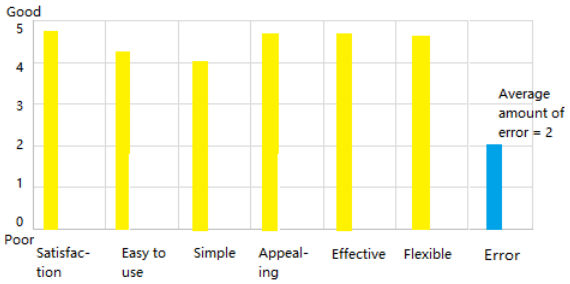
CogTool Model for Design 1

Cogtool gives us the time it takes the average person to move their mouse, click on an icon etc. but it leaves the thinking time as a variable which we can fill in. In order to appropriately fill in these thinking time variables we had a few people try using both of our CogTool mockups.

We found that design 1, which has users start to play a video before they can add it to queue, takes 22s on average and design 2, where users can add videos to the queue directly from the search results takes about 14s on average.

Even though design 2 runs much faster than design 1 we decided that we include both options in our final product because both options have their pros and cons and both options are offered for adding videos to a playlist. We thought it was best to keep the formatting similar to the formatting of the playlist option because YouTube users are already familiar with it.

We also had a few people rate their experience after they had performed two tasks with our CogTool model. The tasks were to access the queue from the home screen and add a video to the queue. The participants then rated aspects of the design (ease of use, flexibility, appeal, etc.) on a scale of 1 to 5. We also kept track of the number of errors that occurred while the participants performed the tasks we asked them to. The following image shows our results.



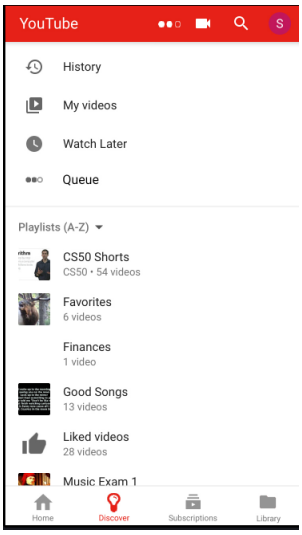
Data from Usability Tests

PROJECT 2: MOBILE INTERFACES

FINAL SOLUTION

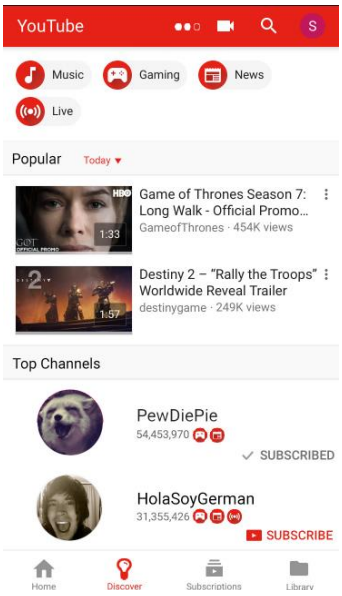
For our final solution we decided to include both queue options. The user can add videos to the queue via search results or by clicking on the add-to button as the video plays. This way they can sample the video before they add it to the queue or they can add a video to the queue without interrupting the video they are currently playing.

We also changed the profile screen to show the users a link to thee queue. And allowed the users to access the by pressing the three dot icon in the top center of the screen.



The New Profile/Home Screen

We decided to change the discover tab as well. In our new version users can see the most popular videos of the day, week month or year depending on what they select. We also changed it so the user can see what the top/most popular YouTube channels are. We hope this will make it easier for people to find content they like and channels they want to subscribe to.



The New Discover Screen

Though we couldn't show it in our mockup we wanted to change the app so that when the user leaves the app for a minute or turns off their screen the audio from the video they are watching will keep playing. However, when a user goes leaves the app or turns off their screen a 15 second ad, which the user cannot skip, will play. If the user does not re-enter the YouTube app in 5 minutes the audio will stop playing. We believe this solution will be more convenient for users, allowing them to check a text or email while still listening to their video. However, this solution will still encourage people to subscribe to YouTube Red because they will wish to get rid of the time limit and automatic ad.