Assignment M2 (Summer 2020)

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Abstract—In this project I will be working on re-designing the search functionality of the 'HBO Now' (which is now re-branded as HBO Max) mobile app. The search functionality in the app is not very well designed and is difficult for the users to find the shows that they want to watch. The app does not store user's recent searches or categorize the search results. The absence of the 'Continue Watching' section on the homepage makes it difficult to look for the episodes which the user is currently watching. In this paper I will be discussing the problems and also brief the need-finding methods I will be performing to make the search functionality more user-friendly.

1 PARTICIPANT OBSERVATION

1.1 Placement of Search icon

My first instinct was that the button would be placed on the top right corner of the home page screen as with most of the apps. When I couldn't find it there, I looked at the bottom and found the icon.
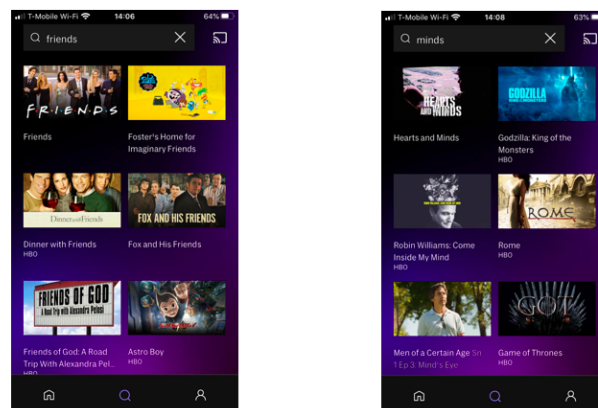
1.2 Search Results

Figure 1—The figure shows the search results when exact match is present and when exact match is not present.

The first screenshot shows the display of the search results when there is an exact match. But there is no mention of whether the search result is a series or a movie. For example, in the search result, *FRIENDS* is a series whereas *Fox and his Friends* is a movie.

The second screenshot shows the display of the search results when there is no exact match. In this case, the part of the result that matched the search keyword should be highlighted. Otherwise the user will not know why that result appeared for their search. For example, in the screenshot, when I searched for the word minds, one of the results was Rome which made no sense to me.

1.3 Performing a search operation while running or exercising

I performed the search while I went for a jog this evening and I had to stop multiple times to type the search keyword. Even if I managed to type it while running, I would have typed it wrong and hence was not able to get the desired results. I felt the availability of voice search will be very beneficial in this context.

1.4 Perform a search while watching a video

I had to close the video, come to home page and click on search icon to perform the search and later I had to again coma back to home screen to click on the *Continue Watching* to watch the video. I feel with the addition of minimizing the video feature, user will be able to perform this more efficiently while the video is playing in the minimized window.

1.5 Continue Watching

When I click on the video in Continue Watching, I was expecting that video will start playing from where I previously left off. But instead, it took me to the description page of that video an I had to again click the play button to play the video.

1.6 Control of Biases

In every step of the way, I challenged my thought process and searched for a way to accomplish the task taking another route.

2 EVALUATING EXISTING INTERFACES

2.1 Efficiency

2.1.1 *YouTube and HBO Now*

Please refer to Figure 3 in Appendices.

I performed search while watching a video on YouTube and HBO Now and below are my results.

As we can see in the figure, the user would be currently watching a video(1). Next he will just pull the video down to minimize it.(2). In the 3rd part the search option is available to the user while the video is still minimized. The user can use the controls to pause or play the video. To get back to watching the video, the user has to just click on the minimized section. So this is 3 steps in total.

In HBO Max, we have to close the video we are watching to go to the home page. Then we have to click the search icon which will take us to a different page. After the search, we have to again come back to the home page and click on the *Continue Watching*. This is 4 steps.

2.1.2 *HBO Now and Netflix*

In Netflix, as soon as open the app, the *Continue Watching* section is provided on the Home Page. It not only contains the most recently watched video, but a list of all videos we haven't finished watching completely. Clicking on the video will start the video. So this is just 1 step.

In HBO Now, by clicking on a video in *Continue Watching* section on the Home Page, the user is redirected to the description page of that video and then again the user has to click play to play the video. This is 2 steps.

2.1.3 *HBO Now and Hulu*

I tried to search for a movie with a long name on HBO Max and I got the results but I did not play it. Later when I came back and wanted to search for the same movie, I had to remember it myself as the app does not store recent searches. Whereas in Hulu, the recent searches is stored which takes off cognitive load from the user.

Whereas in Hulu, the matched part is highlighted and also the results are categorized which makes it easy for the users to select the search result they want.

2.2 Accuracy

2.2.1 *HBO Max and Hulu*

As we can see in Figure 4 in Section 8, the search results in HBO Now, doesn't really gives much details on what part of the show matched the search text. Neither does it categorize the results into Movies, Series etc. So there is a high probability of user selecting a wrong search result. Whereas Hulu gives well organized results.

2.2.2 *HBO Max and YouTube*

1. The availability of voice search in YouTube makes it easy for the user to search for a show when they have to split their attention with other tasks. The absence of that feature in HBO Now, results in user keying in the wrong search text.
2. There are lot of filters provided in YouTube while performing the search. But in HBO Max, there are no filters. Addition of filters can lead to more accurate search results.

2.3 Learnability and Memorability

From the above explained comparisons, it is quite clear that the user finds it difficult to interpret the search results. This results in user thinking more about the interface than the task itself.

2.4 Satisfaction

Given all the difficulties that a user has to undergo to even perform very basic tasks, we can gather that the satisfaction level will be low. The overall review rating for the app in App Store (WarnerMedia, (2015, April 6)) is 3.4/5 Whereas Netflix, Inc. (2010, March 31) is 4.1/5.

2.5 Control of Biases

To overcome the Mere exposure effect, I made sure to compare the HBO app with not just my preferred Netflix app, but also with other video streaming apps like Hulu and YouTube.

3 ANALYSIS OF PRODUCT REVIEWS

I used the AppAnnie (https://www.appannie.com) to analyze the product reviews. As planned in the previous assignment, I grouped the reviews based on keywords that will help me get the data I want. The keywords I selected were, *User Interface (UI), Search, Navigation, Voice Search*.
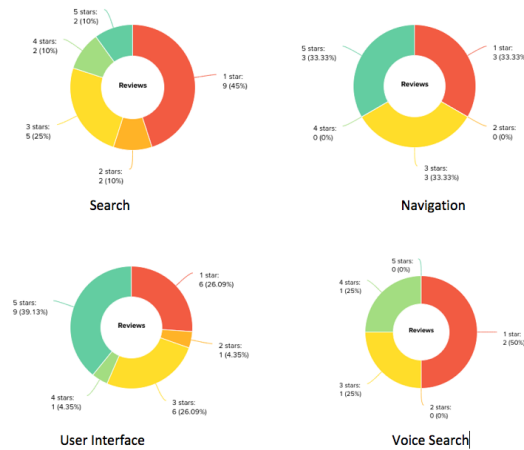
Figure 2—The figure shows the review ratings for the above mentioned keywords.

3.1 User Interface

From the reviews, I realized the users are happy with the content but they are unhappy with the interface. And also from the above graph, it is clear that many users have positive experience with the app's UI but there are people who have given 1, 2 and 3 star rating as well. From the above observations, we can gather that the UI needs to be improved.

3.2 Search

From the reviews, it is clear that the users want some modification to the current search feature. In many reviews, the users have requested for addition of filters. This can be seen in review number 6 in the Reviews table in Appendices. Talking about the graph, there are a lot of 1 star ratings. So the search needs improvement.

3.3 Navigation

From the reviews, I understood that the users are finding it tough to even find basic functionalities like *Continue Watching*. The graph shows that there are equal number of people happy and not satisfied with the feature. One reviewer mentioned it is difficult for his grandparents to navigate. Hence, I think it depends on the expertise of the user. This can be seen in review number 11 in the Reviews table in Appendices.

3.4 Voice Search

Many people have requested for the voice search feature in the reviews. Especially people who are visually challenged. This can be seen in review number 15 in the Reviews table in Appendices. The same can be seen in the graph.

3.5 Control of Biases

1. To overcome the Sequential Bias, I made sure not to order the reviews by the ratings. I randomly went through the reviews.
2. To overcome the Negativity Bias and Positivity Bias, I made sure to take into consideration reviews with all possible ratings. I did not go through only 1 star rating reviews to get an idea of what the users do not like. The 2, 3 and 4 star ratings also gave me valuable information.

4 DATA INVENTORY

4.1 Who are the users?

From the above 3 need finding methods, the users can be anyone who has subscribed to the HBO Max app. Some types I could gather from product reviews
1) Elderly (Aged 60+)
2) Visually challenged
3) People who work in technology industry and have good understanding of UI design.
From the survey I will get more details about the age range and profession of the users.

4.2 Where are the users?

From the above 3 need finding methods, I was unfortunately not able to gather much details about the user's demographics. I will be doing a survey as my next

need finding exercise to gather more data.

4.3 What is the context of the task?

From the participant observation, one of the contexts was when the user is exercising while using the app. I will gather more contexts through the survey.

4.4 What are their goals?

From the analysis of product reviews, I gathered that the goal of the user is
1. To have a pleasurable user experience while using the app. 2. To be able to find and watch the videos without any disruptions. 3. The paid subscribers want their money's worth.

4.5 What do they need?

From the product reviews, my observations were:
1. The users want more filters while they are searching. 2. The users want the voice search. 3. The users want better organization and categorization of the search results.

4.6 What are their tasks?

I analyzed the product reviews and found that the user's tasks is to perform search to search for the videos they want using the search feature in the app.

4.7 What are their sub tasks?

I analyzed the product reviews and found that the user's sub task is to key-in the search keyword and analyze the search result and click on the result they want to watch.

5 DEFINING REQUIREMENTS

Below are the requirements I formulated from my 3 need finding methods. I will further refine the requirements based on the survey responses.

5.1 Requirements in terms of Functionality

1. The addition of filters to the search functionality. The user should be able to select from a list of filters to be able to narrow down their search results.
2. Better organization and categorization of the search result. The search results should be grouped by movies, episodes etc.

3. The addition of voice search to make searching easier.

4. Addition of *Recent Searches* tab in the search window.

5.2 Learnability goals it must meet

With addition of filters and better organization of the search results, users need not spend much time trying to analyze the results to find the show they want.

5.3 Accessibility standards it must support

1. With addition better organization of search results and addition of recent searches, the app becomes easy to use for novice users.

2. With the addition of search filters, the experienced users can use this to narrow down the search results.

So this app becomes accessible to both novice and expert users.

5.4 Evaluation of the prototype

The users should spend less time on the search page and more time watching the video of their choice. I will also request my peers, friends and family to provide feedback on the prototype.

6 CONTINUED NEED FINDING

6.1 Remaining questions

I would like to perform a survey for answering the questions that I could not answer during the first round of need finding. In this survey, I will gather information about

1. The user's demographics - age, location, occupation.

2. The frequency of their app usage.

3. Their expertise with the application.

4. Better understanding of the different contexts.

5. User's level of satisfaction with the current search feature.

6. Which other video streaming app they prefer to HBO Max.

7. What the users need for a better experience?

The detailed survey questions can be seen in table 4 and 5 in the Appendices.

7 REFERENCES

1. WarnerMedia. (2015, April 6). HBO Max: Stream TV & Movies. Retrieved from https://apps.apple.com/us/app/hbo-now-stream-tv-movies/id971265422
2. Netflix, Inc. (2010, March 31). Netflix. Retrieved from https://apps.apple.com/us/app/netflix/id363590051

8 APPENDICES

Table 1,2 and 3 contains the Product Reviews and table 4 and 5 contains the Survey Questions.
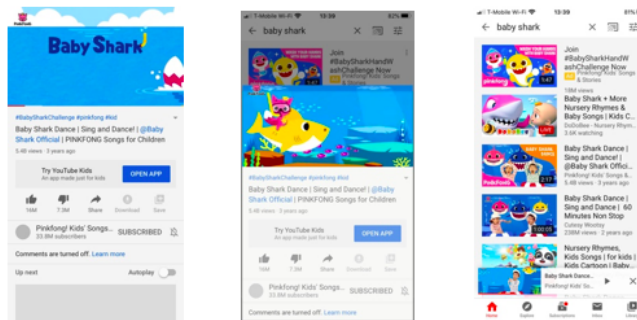

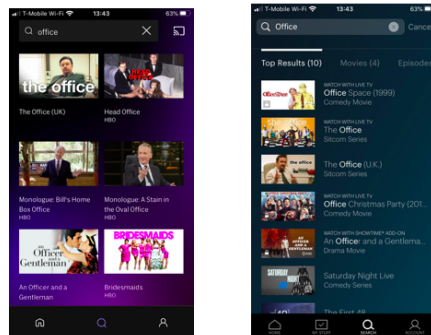*Figure 3*—Searching while watching video in YouTube.

Figure 4—Search results in HBO Max and Hulu.

Table 1—The table contains product reviews.

No	Keyword	Rating	Review
1	UI	3	The content is great, however, the UI could use some major work. The video controls are very ugly and there are many glitches within the app. Disney+ has a much more beautiful and sophisticated UI.
2	UI	1	Developers need to go back to UI class-The UI is a travesty. All this content and a horrid user interface.
3	UI	1	HBO Max continues with HBO Go/Now's awful streaming quality (low bit rate, noticeable compression artifacts). This is unacceptable for the price and even more so when when compared to rival services. The interface is simplified from HBO Go/Now and is cumbersome to browse.
4	UI	1	Not a user friendly app at all. Not even available on Roku. I'll be cancelling due to this.
5	Search	1	It's near impossible to select a movie to view more info or add it to your watchlist. Occasionally if you click and hold, the move info will pop up, but 95% of the time it starts to play the movie. Then, if you click the X, it goes to the main menu and you have to enter your search criteria again instead of being brought back to the search results you were on. Shame, because there are a TON of great movies and shows to choose from.
6	Search	1	You should add a clutter free; option. JUST a search box and ;continue watching; no other suggestions.
7	Search	3	Fast and pretty clean. App needs feedback option and better search than just by title (eg, ability to search and sort by year released)
8	Search	2	This is nothing more than prior app with more content which makes it even harder to find. Can't use on Roku or fire stick. Big disappointment given they want to compete with Netflix
9	Search	1	I really can't believe this an HBO app. They must have fired all of their product managers because this app is seriously unusable. Takes way too long to load, scrolling is impossible when browsing through content and forget about the search and layout. Fellow PM here. Hire me to save y'all cause this is not it.

No	Keyword	Rating	Review
10	Search	1	Updated from HBO Now, which deleted my entire watchlist. Buffering issues, poor organization of titles, the "Search" function returns irrelevant results, etc. Same crap the other HBO app did. Disappointed.
11	Navigation	1	Navigation is horrible - Playback/playability is fine. But the app is horribly unintuitive. I need to search my shows on the app to continue watching from where i left off. The recently added section is stupid and doesn't take me to where i was last but instead it takes me to the episode where i first bookmarked the show. Its designed very poorly, the ease of use is bad.
12	Navigation	3	1) no Spanish dubs for the movies and series, something common in every streaming platform.2) Navigation is quite unfriendly for some users, for example my grandparents. Netflix, Hulu and D+ have a friendlier interface.3) this is not a critical one, just wish subtitles were tweakable, like change color and stuff.
13	Navigation	3	I like this streaming app because it has some of the content that I want to watch. I think it just needs better organization. It also needs a trending list and a recommendation list. The HBO, DC, Adult Swim, Looney Tunes and TCM buttons should be near the top like the other services to better guarantee navigation. Also, there's not a lot of content in the DC section. Or original content. Which I know is hard for a service that just launched. But there isn't a lot of older content for DC. Other than the content, organization and navigation issues, I will still continue to stream HBO Max. There is enough to enjoy for a while.
14	Navigation	1	I got this app for my ps4. The constant freezing and pausing makes it impossible to watch anything. It's the worse. Not to mention by the time the app loads and navigating through the app to get to the show I want to watch I'm already thinking about Hulu. I may just cancel my membership. It's not worth it. I can't believe I've been paying for a non watchable app
15	Navigation	1	HBO now service justifies its overly high price with only a few good shows. To get to these shows you have to dig through the industries' worst designed menu so you can watch videos on the industries' worst video player... HBO you are better than this...

Table 3—The table contains product reviews.

No	Keyword	Rating	Review
16	Voice Search	1	This app is absolutely horrendous when it comes to voiceover. Usually I swipe left or right to navigate any certain page that I'm on. This absolutely removes that fix it please. As blind people would enjoy your content as well.
17	Voice Search	3	Would be nice if the app was Integrated with Apple TV voice search, when searching a movie or show in the search option.
18	Voice Search	2	No alternative language tracks. No Video Description track. No option to skip the intro in series. And blind users need not apply. This app doesn't work at all with VoiceOver. I'd be giving HBO Max zero stars if it wasn't for the content. The content is what gives it two stars.
19	Voice Search	4	The app and content are wonderful. This definitely seems like the long waited update to the HBO viewing experience. However, a lack of voice search in the Apple TV app makes finding specific shows kinda hard.

Table 4—Survey Questions.

No	Question	Options	Purpose
1	What is your age?	1) Under 18 2) 18-29 3) 30-49 4) 50-59 5) 60+	To gather user's age
2	Where are you located?	Free Text	To gather user's location
3	What is your occupation?	1) Software Engineer 2) Businessman 3) Homemaker 4) Student 5) Military 6) Retired 7) Other	To understand what the user does socially, cognitively
4	How many times in a week do you use the HBO Max app?	1) 1-5 2) 6-10 3) 10+	To gather information about user's frequency of app usage
5	On a scale of 1(Not Familiar) - 5(Familiar), how familiar are you with the HBO Max app?	Drop down	To learn about user's expertise
6	What other tasks are you performing while using the app?	1) Running 2) Exercising 3) Cooking 4) Watching TV 5) Speaking to someone 6) Listening to Music 7) None (Just using the app) 8) Other	To understand the context better
7	On a scale of 1(Very efficient) to 5(Not efficient at all) how efficient is the search mechanism of HBO Max app?	OPtions 1-5	To understand user's opinion on the current search functionality

Table 5—Survey Questions.

No	Question	Options	Purpose
8	How often do you search for the same show every time you open the app ?	1) Often 2) Rarely 3) Never	To analyze how many users will benefit from the addition of Recent Searches
9	Would you benefit from the better organization of the search results by category (Like movies, episode etc.)	1) Yes 2) No 3) Not sure	To analyze what user wants
10	Would you benefit from the Voice Search feature?	1) Yes 2) No 3)Not Sure	To analyze what user wants
11	How satisfied are you with the app?	1) Highly Satisfied 2) Satisfied 3) Neutral 4) Dissatisfied 5) Highly Dissatisfied	To get details about user's level of satisfaction with the app
12	Which other Video Streaming app do you like better and why?	Free Text	To understand what aspects of the interface we can adapt to HBO Max
13	Are there any difficulties with using the search functionality? If yes, please mention the difficulty	Free Text	To get information about user's problems
14	How can the app be improved?	Free text	This will answer the question- what the user wants?