

**EN.601.490/690 Intro to Human - Computer
Interaction**

Project 1: *outFIT* - Designing remote/hybrid
Interactions for Online Shopping (Group 15)

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1. Background

Online shopping has grown by leaps and bounds during the pandemic period, yet we still face many challenges. Our goal is to enhance the remote shopping experience by providing virtual fitting room and increasing interaction of merchants and consumers, and consumers and friends. Many people, especially girls, have the experience of buying clothes online, but they often buy clothes that don't fit them because they don't know what the clothes will look like on them. Another difficulty is jumping from one brand's website to another. Currently, shopping sites are mainly divided into e-commerce platforms such as Amazon, or the brand's own official website. There is not yet a product that can combine the two, while providing online fitting room services and improving the efficiency of communication between users and merchants, allowing users to quickly share products and pictures with their friends.

We aim to build an APP that collects different brands' official websites and implements the function of virtual fitting rooms to enhance users' experience of buying clothes online. Then mimics the interactions you'd likely have at a store by integrating the function of communicating with merchants and friends.

2. User Research

We know that there are many issues embedded with the online shopping experience, highlighted even more by the pandemic, but we need to know specific breakdowns in order to pinpoint what we can do to fix this. In order to gain the most insight, we decided to conduct actual contextual inquiry interviews with real consumers.

2.1 Contextual Inquiry

This approach was appropriate for problem understanding because it enabled us to learn from the perspective of an external user of the product. The insights that we were able to implement in our conceptualization)

2.1.1 Demographic

The participants for the contextual inquiry were 12 Hopkins students. We interviewed a group that was diverse in ethnicity, gender, and socioeconomic background. The age range of the group varied from 19-28 years.

2.1.2 Task

We asked participants questions about their online shopping experience to glean insights into the scope of a potential product in the space.

We asked the participant questions to understand their requirements as well as to vet design ideas (as discussed in the next section).

(a) Conceptualizing Online Shopping through outFIT

We asked the participants to use their personal computer to see if and how they shop for clothing online. Below are questions we asked during CI.

When asked **if they shop for clothes online**, all the participants *answered in affirmative*.

We then asked **what stores** they usually shopped from online and *Poshmark, ThreadUp, Depop, Zara, H&M* were some of the popular stores that were mentioned.

We also asked if they shopped from **any thrift stores** and *Savers, Goodwill, Love Me Two Times* were some of the local Baltimore stores they mentioned.

We then asked them to walk us through their clothing selection process, particularly why were some items they didn't select? Below are a few reasons they stated for not selecting an item:

- *price range* (This was a concern mostly for the men interviewed when they were shopping for clothes but not when they were shopping for shoes)
- *Style*
- *Color Palette* (wouldn't go with anything else in my closet)
- *Quality* (Couldn't gauge the quality of the material online)
- *Not for my body type*
- *Too revealing*
- *Too conservative*
- *No need for a special occasion outfit*
- *Not seasonally required*
- *Bad reviews*

We then observed that a few of the participants first added an item in the cart and then they it out, we also wanted to know why they rejected an item?

The participants rejected an item mostly due to financial considerations, and some said thrifting is more affordable option for the kind of item they were looking to buy.

Additionally we also wanted to know if there were any items you liked but didn't select or buy?

Most sent pics to friends and then took items out if their friends didn't like it or didn't think it was worth the expense; Some kept the items in the cart and said they'll come back to it later if they can't make an immediate decision. Some just ordered and said if the item didn't look good on them, they'll just return it.

3. Ideation

Based on the user research, we summarized the functional requirements below:

1. Virtual Fitting Room
2. Gateway to different fashion brands
3. Message center that could store the chat history
4. Share with friends
5. Contact with merchants

Then, we came up with two options for our design and chose option 1 to develop further.

Option 1: Mobile application (recommend)

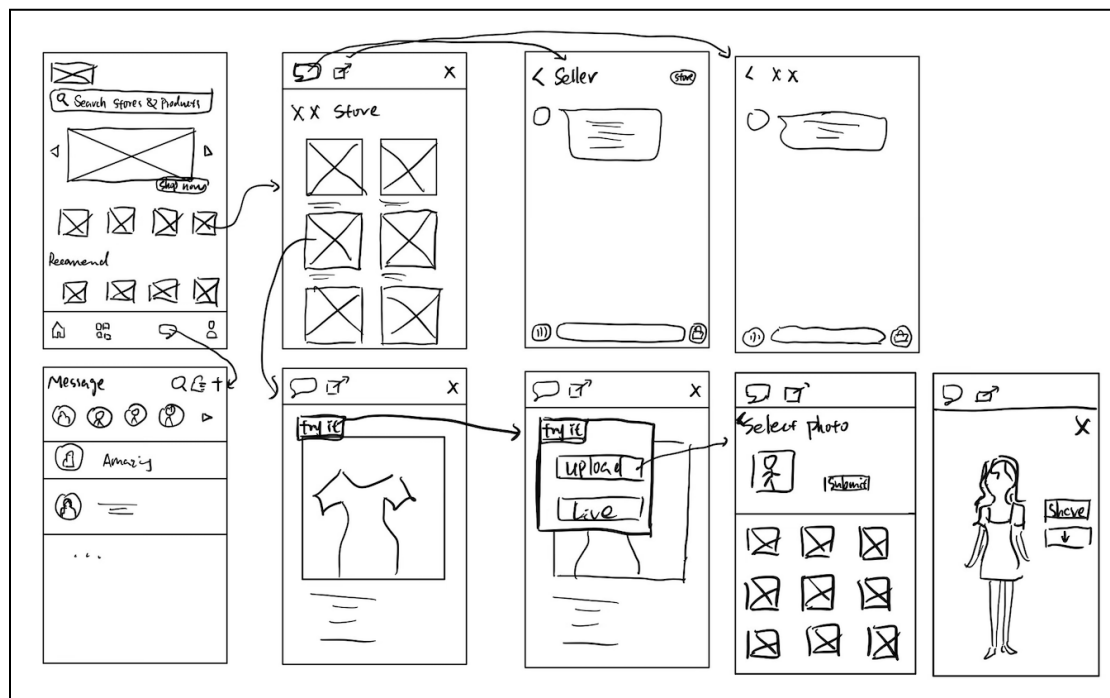


Fig1. Sketch of option 1

A mobile application that integrates all websites. Includes home page recommendations for different shopping sites and a message center. When users access our partner websites through our app, our chat, sharing, and virtual clothes-fitting features will be activated.

Pros:

An online "shopping mall" that integrates fragmented fashion stores, allowing merchants and consumers to eliminate the information gap. At the same time, it allows friends to share product information directly and exchange ideas better.

Cons:

When we want to chat through an app, all of our friends need to download the app, and sometimes, this affects the efficiency of sharing.

Option 2: Extension

An extension (e.g. Chrome extension) for all the websites. Once they access a fashion website that supports our extension, the extension will be activated to give the functionality.

Pros:

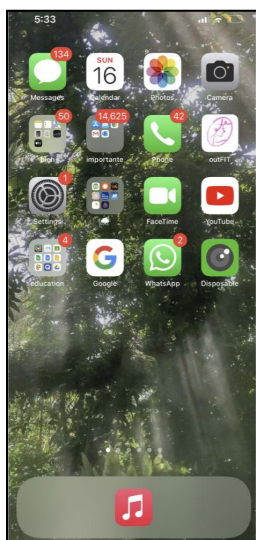
More lightweight.

Cons:

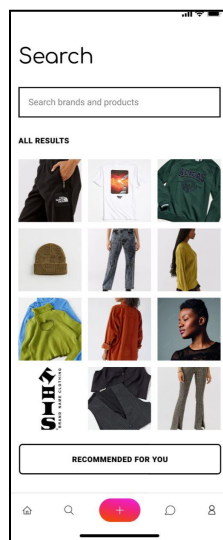
Extensions are mostly installed in the browser. It is hard for the mobile user to look through the webpage. Moreover, which browser they use and what version of their browser is uncertain.

4. Prototypes

4.1 High-Fidelity Prototype



1



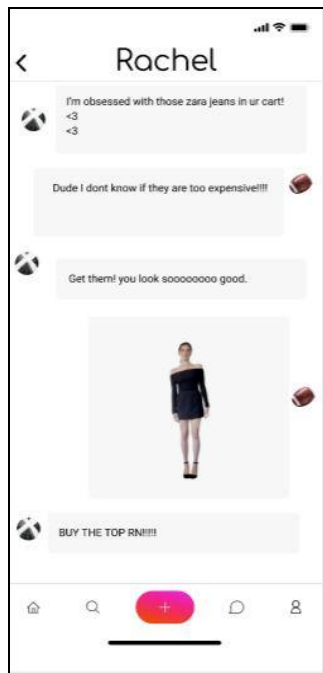
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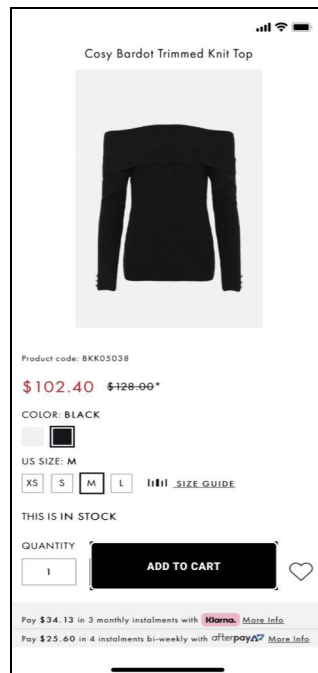
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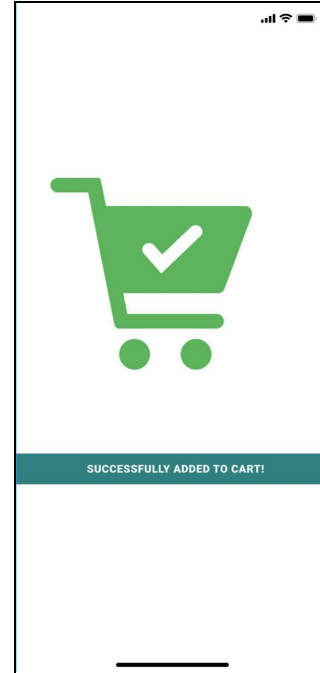
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6



7

High-Fidelity Key:

- 1: The outFIT app showing as an icon on homescreen.
- 2: Home to search for the online site of brands and products, also app recommendations.
- 3: Option to try something on using, a body scan, a live camera feed, or input measurements.
- 4: You wearing the item of clothing selected shows on screen as you shop.
- 5: Messaging center to send generated icon to your friends, or retailers for their opinion.
- 6,7: After deciding, buy the item directly in the outFIT app.

4.2 Video Prototype

<https://drive.google.com/file/d/1tg6I-ExEHtUWpF0zQkWuwl3Bo8brsujk/view?usp=sharing>

5. Evaluation

Evaluation Method

Show 2 subjects our video prototype and interview them with the following questions.

- What is your initial reaction?
- Can you see yourself using this?
- Are there any changes you would like?
- Is there anything you expected to happen that didn't?
- Do you have any other thoughts or concerns?

User Background

Subject 1: Undergraduate, girl, experienced online shopper.

Subject 2: Graduate, girl. She often buys household items online but can get tangled up in buying clothes online.

Subject 3: Graduate, male, who relies heavily on online shopping.

Evaluation Outcomes

The interview notes could be found in [Appendix A](#)

- **Positive Feedback**

- Users think this is the next “it” thing and want to use this app.
- Users are satisfied with the try-on feature and think it provides a good reference for purchases.
- Users liked that it didn't feel like social media, but a personalized addition to shopping.
- [Learnability] Users found it was really easy to understand and use.

- **Negative Feedback**

- It is unsatisfactory that the messaging is exclusive to only other people who have the app.
- The APP should provide the front and back of both sides of the try-on chart.
- Worries about “cold start”. What if a user has no one to share with at the beginning?
- [Privacy] Worries about personal information.
- [Learnability] Worries about how long it will take to select an appropriate image.

In general, users are satisfied with the functionality of our app, but still mentioned many areas for improvement. We will elaborate in the conclusion part.

6. Conclusion

Through the tenure of the project we were able to ideate a lot of details that went into the prototype creation. Future idea development:

1. The app can consider different types of inputs for eg., having a camera within the app, uploading a photo, and inputting measurements to create a virtual mannequin in case the first two options are not feasible or preferred.
2. In case the users decide to use the camera, the app can do some post-processing on the image to improve lighting conditions, and also can show the image of the subject with different backgrounds to see how it'll look with different lighting.
3. We can upgrade the function of sharing with friends to the community, which can solve the concern that if a person doesn't have enough friends to use the app, then it will be hard for her/him to get feedback from others. Also, community experts can provide some dressing ideas and set links to related products.

Appendix A: Interview Notes

Subject 1 Interview

What is your initial reaction?

I can see this being the next “it” thing.

Can you see yourself using this?

I will definitely use this, especially for the trying-on function.

Are there any changes you would like?

It seems that only people who have this app can send messages between them, and I don't like this feature. I wish I could share it with more people.

Is there anything you expected to happen that didn't?

No, I think I would definitely use it, even without the pandemic.

Any other concerns?

No.

Subject 2 Interview

What is your initial reaction?

The first reaction is awesome, it's so cool to try it on online.

Can you see yourself using this?

I think I'll use it because the simulated real-life fitting will help me find the best fit, and the sharing feature makes it easy for me to communicate with friends in real-time to get advice.

Are there any changes you would like?

Can it be rotated? If it can not rotate, a front and back photo is enough.

Is there anything you expected to happen that didn't?

Can be added with the function, dress pants together with a try-on.

Any other concerns?

No.

Subject 3 Interview

What is your initial reaction?

Overall, I like this idea very much!

Can you see yourself using this?

I will use this if there are enough retailers to support this API, just like how amazon has this feature for furniture and electric appliances to see them in AR.

Are there any changes you would like?

No, but I have some concerns.

Any other concerns?

How long will the setup process be? It seems like it might take some time to set up my personal information (image, height, weight, shoulder/arm/leg length).

Will this app make me buy too many outfits?

What if I have no one to share my new outfit with? It would bum me out if no one could give me feedback.