

Supplemental Documents

- Additional Needfinding Interview Notes
 - Planning/Brainstorming

Enoch Park Interview

1. How often do you shop?
 - a. Not much, doesn't like it
 - b. Goes clothes shopping with family
 - i. Outlets
 - ii. Banana Republic, Gap, Rip Curl
 - c. CVS and Target for medication/essentials
 - i. Couldn't remember what he last bought at Target, which really shows how little he shops (also, before/during interview he said that he didn't have much shopping experience or just kept repeating the fact that he doesn't shop much)
2. Do you shop online at all?
 - a. Yeah, shops on Amazon
 - b. Uses Amazon to check & compare prices to in-store prices
 - i. For example, goes to Dick's Sporting Goods in person and then checks Amazon to see if the price is better (which it usually is), and then buys the cheaper one
3. What kinds of things do you buy online?
 - a. School stuff, books, sports gear (lacrosse)
4. Do you ever look at reviews for things before you buy them?
 - a. Yeah, when buying things online, but not in person
 - i. Usually goes with best rated one, even if it's a little more expensive
 - b. When shopping in person, will ask employees for their opinions and recommendations (for example: customer favorites or least returned items)
5. Why don't you like shopping?
 - a. Finds it really boring, especially when shopping for other people's stuff (siblings, parents, etc.)
 - b. Exception is shoe shopping, really likes looking at shoes (Nike mentioned)
6. Would you shop more for clothes if you could do it online rather in person?
 - a. Yeah, but it's hard to get sizing right, especially if you're not a frequent shopper of that store
 - b. (said something that implied buying clothes online could be sketchy?)
7. (Not really relevant) Other types of shopping mentioned
 - a. Food
 - i. Goes to Costco and Trader Joe's
 - b. Tech
 - i. Bought iPhone from T-mobile store

Eleni Spanos Interview

1. So often do you online shop?
 - a. There is no limit. At the beginning of the year there are more things to buy. Lives two hours away but still forgets things so at start of the year 3-4 times a week
2. What types of things do you buy online?
 - a. Toiletries and sundries. Home décor , lights for room switch, books
3. Where do you buy your clothing?
 - a. Labels sites
4. Problems with buying clothes?
 - a. Generally don't, only if she knows the brand and sizing well enough
5. How often do you go out to shop?
 - a. Not on campus, because it's annoying to get off campus
 - b. If she is in the city she likes to go out
 - c. Once a week, max during the school year
6. What makes you want to go out?
 - a. If you don't know the sizing
 - b. If you don't know exactly what you want
 - c. If you know what you want or don't need to try on then she is comfortable shopping online.
7. Do you ever look at reviews?
 - a. If she's buying from amazing then she looks at reviewable products
 - i. Not clothing since it's about your personal style
 - b. If she doesn't know brand then she will look at reviews
8. Said most places don't have reviews, what places are you talking about?
 - a. Amazon can have things stocked consistently so there are a lot of reviews
 - b. A sight like rag and bones the stuff isn't around enough so there aren't reviews being generated
9. Does that matter to you?
 - a. Brands and companies that have reviews you're obviously going to review them
 - b. So sometimes you just sort of know what you want
10. Which one do you use the most?
 - a. Amazon.
11. Do you have a hard time navigating a site?
 - a. Some sites have a bad interface
 - b. Sometimes have things organized in a weird way in a brick and mortar store.
 - c. Websites are easy at times if you know exactly what you want
 - d. Stores are good for browsing
 - i. She doesn't like doing that
12. Do you consider yourself a social shopper?
 - a. If she's at home and knows the shops she goes by herself always
 - b. If she's here then shopping tends to be an outing so she will go with friends
 - c. So while at school is social and fun

13. How important to you if your friends opinion of the clothes your buying?
 - a. Friends opinion doesn't matter at all
 - b. Gets things that her friends will hate
14. How important is it being trendy?
 - a. Doesn't like trends because she feels she cant pull them off
 - b. Buys less things that are better quality instead of more cheaper things
15. Why do you feel like you can't wear trending clothing?
 - a. Even if she had all the money in the world she wouldn't wear trendy clothing
 - b. Implies a lack of confidence
 - c. Culotte, wide pants that hid mid calf were popular in 5th grade and everyone made fun of them but now they are back in fashion. She wouldn't invest in them cause she doesn't feel like they are fashionable
16. What are you biggest issues with online shopping?
 - a. They make it very easy to spend your money
 - b. When shopping from higher end websites and they make things very glossy
 - i. Place sent email since thing was sitting in your shopping bag and she forgot
17. How do you figure out what something would like on you?
 - a. Need to know how a brand fits, some are fitted some are boxier
18. Do you ever want to try things on?
 - a. Yeah sometimes but doesn't do that a lot
 - b. Could just order and return to try on

Tends to make less impulse purchases online but when in store she feels like she won't be there for a while

Since inventory fluctuates so much she feels an urgency to buy in store.

Rarely goes into brick and mortar store and leaves empty handed

Definitely goes against the grain in this respect and she acknowledges that.

If she doesn't know the availability of an item she might not want to talk to an employee

Would rather have information shown her such as color choice, size availability than talking to an employee

This applies to higher end stores since the employees are more pressuring

If you want something out of stock then you can buy it regardless

She has never done this

What other info would you like to see?

Color, availability

Story behind the item

Things for socially conscious people
Thinks this is a niche market

Hates when people hug her or hover her in a store
Hate hate hate
Even in a restaurant

Would consider herself an extreme user of online shopping
Even gets simple and basic stuff (shampoo)

Instacart - groceries

Interview with Rachel Berryman

Main points:

- lot of people go to Macy's website then come into store
- online shoppers = if we have what they're looking for usually they buy it 50/50 of the time
- it's super disorganized and people steal things cuz of system inventory
- a lot of people come in for sales
- "sales days are the worst: people are so demanding, and we sell out of things and it's hard to believe. They also get really upset when they can't use their coupons. Not everything in life is cheap and or free."

Travis Interview

Following the girl

Not really interested in here

In person shopping - to feel the material, know what I'm buying

Asking relatives or close friends about what they think

No reviews - don't like bias

Dining - doesn't like Yelp

Few times where I feel like I missed out

Grew up here

Must be credible in a new city

Online shop for things i know will fit me (Nike shoes)

Online sales

(Guy)

Kelly

- Visiting family from Hawaii
- Wants to go to stores they don't have in Hawaii
 - Pottery Barn
- Shops at Amazon a lot
 - Doesn't always ship to Hawaii
- Goes to shop to see what they have
- Does not look up reviews online
 - Sometimes have deals online & not in store
- Does not care about design name
 - As long as it's cute
- Issues with online shopping
 - Color
 - Size → Clothing
 - "Fit or min"
- Prefer going to store
- Sell online for cheaper

Melanie & Jose

- Loves to shop on lunch
- Here just to shop, nothing specific
- Shops both online & in person
- Shops online if she's super busy
 - But only if she knows sizing
- Never finds stuff online that is in store
- Sometimes looks at reviews of products online before
 - Uses Amazon

10/29

Brazil Guy

- Shopping for toys for daughter
- Shop mostly online
 - User Amazon, brand niter, & toys R US
- Sometimes looks at reviewer
 - Most of the time will just look and determine for himself
- Never buys clothing online
 - Hard to measure quality
 - No sizing standard
- Buys electronics online
- Worried about reliable reviewer
 - Sometimes reviewer are biased or doesn't trust them

III

- dr. appt, ended early
- works @ Stanford
- just walking around
- will normally go to GAP for son
- otherwise only comes when she knows what she wants
- shops online → toys, books for son
- clothing - must find fabric for quality (Gymboree)
- always read reviews for books & toys
- no reviews for clothing
- hardly buy books from store
- first checks library then if she really likes it, Amazon
- very curious kid → likes touching, smelling items
- asks to buy this, buy that (sometimes if price reasonable)
- color, squeaky
- will buy online from other stores

- Brazil Day
- ~~book~~
- ~~book~~ more than you needed
- mostly online
 - Amazon, Books, Toys R Us
- sometimes look at reviews online, pretty just look at toys
- but buy clothes online
 - harder to tell quality
 - sizes are not standard
- Electronic online
- how reliable are reviews?
 - sometimes they are biased so does that they are reliable
- then their into it

Planning

Narrowing our focus:

- Amazon items in room
- Review of objects without typing
- SHOPPING
- Geotag around city, 360 bubbles - recorded clips from the past
 - Overlay past on present view
- Navigation

Demographic: people who shop in person for products (w/ barcodes)

Types of people to interview:

- Online shoppers
- Someone w/ smartphone but not as online-shopping savvy
- People who like to shop in person
- Store managers/employees
- CVS type people
- Target type place
- People who know about psychology behind shopping

Interviewees:

- Go to stanford shopping center to talk to strangers
- I can make calls to Target/Walmart/CVS and schedule an in-person interview with a manager
- Rachel Berryman - former Macy's employee
- Enoch Park - non-shopper (someone who doesn't shop much)
- Eleni Spanos - frequent shopper

Initial point of view

- **Lauren Kim**
 - **Learned about how she needs to play and see a course before actually playing in a tournament**
 - **Solution: give people a way to visualize something before actually seeing or experiencing it**
- Chrystal
 - Learned about how doctors used AR to help them do surgery and stuff
 - Solution: It would be game changing if students could use AR to learn about anatomy and stuff without having to open up a cadaver.
- Mollie
 - Learned about how it was hard to visualize the final product
 - Learned about it was hard to get inspiration for a project
 - Solution:

1. Using Lauren's POV as our initial POV going into this assignment
 - a. We met Lauren, a professional golfer
 - b. We learned that the decisions that she makes during a tournament depends on her knowledge of the course beforehand
 - c. It would be game changing if we could use mixed reality technology (being able to visualize something before actually seeing or experiencing it) to help people like Lauren make better-informed decisions
2. We want to narrow down our domain of interest from a way of using technology (informative visualization) to an actual problem domain that we can address.
 - a. Being able to visualize something before actually seeing or experiencing it would be really useful in online shopping
 - b. Problem domain (for additional needfinding): Shopping
3. Needfinding & Revised POVs
 - a. Rachel Berryman - former Macy's employee
 - i. We met Rachel a Macy's employee
 - ii. We learned that the shopping experience for many Macy's customers can be disorienting and frustrating, especially when a customer has a specific item in mind but is unable to find it in the store in a timely manner.
 - iii. It would be game changing if we could remove that frustration from the customer's shopping experience and expedite the process.
 - iv. 10-15 HMWs:
 1. Create a guide for customers to navigate through the store
 2. Have a way to easily find specific items
 3. Make shopping a more enjoyable experience
 4. Help customers ensure their coupons work with what they want to buy before getting to checkout
 5. Make customers want to come to the store even when there isn't a sale
 6. Make customers want to spend more time in the store rather than less
 7. Let consumers know of what is in stock at a given store
 8. Help employees/managers keep track of inventory and relative clothing locations
 9. Get customers addicted to our product
 10. Eliminate lines in stores
 11. Have virtual models of every item of clothing in the store, not just the ones on mannequins
 12. Not let people leave stores until they buy something
 - b. Travis - boyfriend
 - i. We met Travis waiting outside of Victoria's Secret for his partner.

- ii. We learned that Travis does not enjoy shopping at all, but he prefers in-person shopping to online shopping since he does not trust online reviews.
 - iii. It would be game changing if we could develop a system which people like Travis could use to minimize the amount of time that they spend in a store.
 - iv. 10-15 HMWs:
 1. Direct shoppers like Travis to exactly what they want
 2. Help people like Travis learn to trust online reviews
 3. Make a system for improving the reliability of online reviews
 4. Make shoppers feel like they are not wasting time in stores
 5. Make the shopping experience more enjoyable for people who would rather be somewhere else
 6. Find stores that would appeal to people like Travis better (i.e. a store with exactly what Travis is looking for and nothing more)
 7. Make shoppers feel like they are on an adventure
 8. Help Travis reduce the amount of time he spends in a store
 9. Make online shopping more appealing to people like Travis
 10. Help Travis feel like he is buying an experience, not a product
 - c. Eleni Spanos - frequent shopper
 - i. We met... Eleni Spanos a frequent online shopper
 - ii. We learned... that she has a difficult time purchasing clothing online since the sizing is unpredictable
 - iii. It would be game changing if... we could just determine how clothing would fit on you before purchasing it online
 - iv. 10-15 HMWs:
 1. Make it easier for customers to try on clothes
 2. Be able to scan your body and get clothing sizes that fit you
 3. Make it easier for people to find clothes online that fit
 4. Help shoppers visualize the items before purchase
 5. Make every store use the same sizing system
 6. Make online shopping more fun
 7. Crowd source sizing information
 8. Make online shopping a social experience
 9. Help her find stores that sell clothing that fits how she likes
 10. Make shopping feel like a video game
 11. Get stores to install body scanning machines that will let you know the sizes of products that fit you
 - d. People shopping at Stanford Shopping Center
 - i. ??
4. Three best HMW statements:
- a. HMW make it easier for people to find clothes online that fit?
 - i. 10-15 solutions:

1. Crowdsourcing information on sizes
 2. Create a universal sizing metric by converting raw measurements
 3. Create some kind of AR paste feature that someone can "put on" an item and the camera will detect the size that the item would need to be to "fit"
 4. Redirect them to a local store that has that item or some item that is similar to it
 5. Design a virtual fitting room
 6. Scan clothes in our closet/in store to share with friends to virtually try on
 7. Create a social platform where people share sizing info or virtual clothing models
 8. Input information on body type to create a virtual model of your body that you can use to find clothing that fits
 9. Find a way to compare clothing online to items that the person already owns
 10. Have a person who is your size at the store in person try it on for you
- b. HMW make shopping more bearable? HMW gamify the shopping experience?
- i. 10-15 solutions:
 1. Make shopping like a video game!
 2. Scavenger hunt in stores
 3. Add social aspect to scavenger hunt
 4. Connect people who are in the same store to "spot each other"
 5. "Easter eggs" to discover while shopping
 6. Points/Rewards for visiting stores or spending time in stores
 7. Insert some kind of point system for collecting an item of clothing that rewards the customer with online coupon codes
 8. Kill the customer on a point system -10000 points
 9. Make it like a pokemon go type deal where people "capture" clothes
 10. Make it like sim city where you can customize your avatar with the clothes you pick up
 11. Make it like a race "collect 5 items in 5 minutes"
- c. HMW make it easier for customers to find items in stores?
- i. 10-15 solutions:
 1. Machine learning map of store created from customer tracking data
 2. User inputted map from customers who have already been through the store
 3. Tracking devices in items
 4. Someone can specify the type of item they are looking for and the program will generalize their description to some term

5. In store chat system where people can ask questions to other customers in store
 6. Give employees some kind of “in demand” list of items that customers have recently been searching for based on user input so that they can easily direct people where to go
 7. Let the customers browse through an online catalog first which indicates where they can find these clothes when they are at the store in person so they don’t have to wander around
 8. Display where the most frequently bought items are
 9. Let store know you are coming and give it design preferences and the employees will hand pick something for you
 10. Make a google docs sheet for in store items that is made by customers with reviews for items
 11. Make mannequin that has virtual clothing on it that users can swipe through to see different clothing options.
5. Three best solutions & experience prototypes:
- a. Scan clothes in our closet/in store to share with friends to virtually try on
 - i. Assumptions:
 1. We are assuming that people are interested in their friends’ clothes
 2. We are assuming that people would want to “try on” outfits from friends’ closets or in stores
 - ii. Use paper cut-outs of clothing and paper mock-ups of screens in app. We will have the user either use their phone camera in front of a mirror or use the front-facing camera.
 - iii. Start with having the user look through various clothing choices from people in their friends list
 - iv. After they choose an item of clothing to “try on”, have them open the camera on their phone. Use the paper cut-outs of clothing on their screen so it looks like they are trying on the clothes.
 - b. Crowdsource information on products
 - i. The setting will be by a mirror with We will start off by asking them to, “Recall the last time you tried something on that you were dissatisfied with.”
 - ii. Give them a piece of paper and ask them to draw the item to the best of their ability.
 - iii. Show them the piece of paper and say “This is the item that you had wanted; let’s pretend that you are wearing this item now.”
 - iv. Hold the piece of paper in front of them standing front of the mirror, giving them time to examine it.
 - v. Take the paper back and tell them “In 10 seconds, I will add something to this piece of paper that will change the way you think about this item.”

- vi. Draw on a list of reviews that pop up like bubbles around the side of the paper.
- vii. Hold the piece of paper in front of them again and ask, "What's different this time as you are trying this on?"
- viii. Wait for them to say something like the bubbles.
- ix. Respond, "That's right; there are pop up reviews around the virtual item that you wearing."
- c. Make mannequin that has virtual clothing on it that users can swipe through to see different clothing options.
 - i. We will have someone act as a mannequin and have our test user open their phone to their camera. While they are looking through their camera we will put different clothes on the mannequin and tell them they have the ability to swipe. When they swipe we will change the article of clothes that they swiped on and/or the whole set. We can gauge their reaction to the interactive AR simulation and see what else they would like to get out of this set up.
 - ii. We are assuming that people want to see different clothing combinations
 - iii. We are assuming that people would like their outfits put together for them
 - iv. We are assuming that people take time to look at mannequins
 - v. Results: 1-2 bullets on each of: Things that worked, things that didn't work, surprises, and new learnings
 - vi. Validity: Was the assumption valid? Why or Why Not? Any new assumptions that emerged?