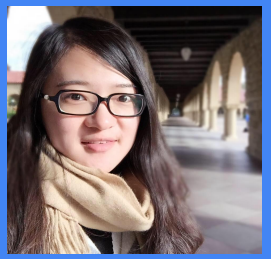
Shopping 2.0

James, Yolanda, Hao

Introduction

We aim at improving shopping experience with technology.

James Lyons



Yolanda Wang

Hao Wang

Selecting Initial POV

Price | Quality | Convenience | Social | Habits

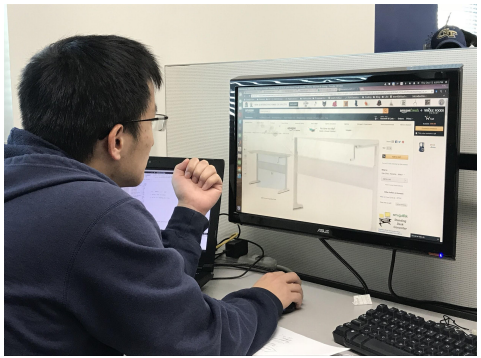
- **We met a housewife with two babies.**
- **We were amazed to realize shopping with babies is hard, but the mom would go in person to get good quality grocery and baby product.**
- **It would be game changing to provide quality reliable and convenient solution for everyday shopping.**

Additional Needfinding (1)

A Public Safety Department Employee from Stanford. He was shopping at the bookstore.

- We met a customer hanging around in the bookstore.
- We were amazed to realize it is very hard for him to decide buying a book, he even looked up the internet for more info.
- It would be game changing to make it easier to decide which books to buy in the bookstore.

Additional Needfinding (2)



A Graduate Student from Georgia.

- We met a graduate student who sometimes buys clothes online.
- We were amazed to realize it's hard to choose the right size online without actually trying it on.
- It would be game changing to have a convenient way to pick the right clothing size.

Selecting 3 Revised POVs

Price | Quality | Convenience | Social | Habits | Guide

We met... a man sometime buying clothes online
We were amazed to realize.. It's hard to choose the size even provided with the clothes dimensions
It would be game changing to... get a easy to helping online customers get the right cloth size

We met... an Public Safety Department Employee in Palo Alto.
We were amazed to realize... convenience and price are the single most important factors in a shopping trip for him
It would be game changing to... provide a way to satisfy both of those factors at the same time

We met... a man in the grocery store
We were amazed to realize.. It's hard for him to choose new product/ category never tried
It would be game changing to... recommend some product, and show him how to use (like the free try in costco)

We met... a housewife with two babies
We were amazed to realize... shopping with babies is hard, but the mom would go in person to get good quality grocery and baby product
It would be game changing to... provide quality reliable and easy solution

We met...a housewife with a 5-year-old daughter
We were amazed to realize... she sometimes intentionally make a detour to playground for her daughter
It would be game changing to... provide some family relationship building shopping / free

We met... a man only spend 10% on grocery
We were amazed to realize.. He thinks shopping housewives from grocery shopping to spend more quality time with kids
for grocery is a waste of time.
It would be game changing to... Find an easier and quick way to buy the everyday needs

We met... a nurse at a hospital in San Francisco
We were amazed to realize... it is very hard for him to decide buying a book, he even looked up the internet for more info
It would be game changing to... provide easy way of choosing books to buy

We met... a customer hanging around in the bookstore
We were amazed to realize... the social aspect of shopping is very important to her.
It would be game changing to... create a way to improve her social experience while shopping

We met...a IT professional from Beijing China
We were amazed to realize... Even though he has a car, he really prefers shopping online (99% of the time) and would still appreciate a more variety of goods choices and a more economical way to shop fresh food online.
It would be game changing to...have more regulations for online fresh food shopping to make it comparable to in-store grocery shopping.

We met...a 35-year-old housewife
We were amazed to realize... she do not try new tech for shopping
It would be game changing to... provide a low-cost way & motivation to adopt new technology

We met... a new graduate at Stanford
We were amazed to realize... how hard shopping could be without a car
It would be game changing to... provide fast, cheap shipping & returning service and free try

Branch 1

Revised POV (1)

- **We met** a man in the grocery store
- **We were amazed to realize** shopping at grocery store is a waste of time, but online shopping quality is not reliable
- **It would be game changing to** provide a convenient and quality reliable way to buy the everyday needs

Quality | Convenience

10-15 HMWs

- **How might we just provide items the customer has already bought in store?**
- How might we reduce queue time for check out
- How might we provide a way letting people see how the people choosing

- How might we leverage store layout?
- How might we provide a list, and there will be a man give you
- How might we build an automatic offline grocery store, which is as convenient as online shopping?
- How might we deliver online fresh foods in shorter time?
- How might we provide expensive and fancy foods online, which seem have better quality to customers?
- How might we let online stores provide limited number of selected items?
- How might we let offline stores provide their online shopping websites and guarantee the quality is the same?
- How might we provide a reason for people to want to spend longer in the store?
- How might we let the robot know what the man wants to buy and buy for him
- How might we make time spend in the store less important to the customer
- How might we make the store like a bar?

Time | Quality

Selected HMW

How might we just provide items the customer has already bought in store?

Quality

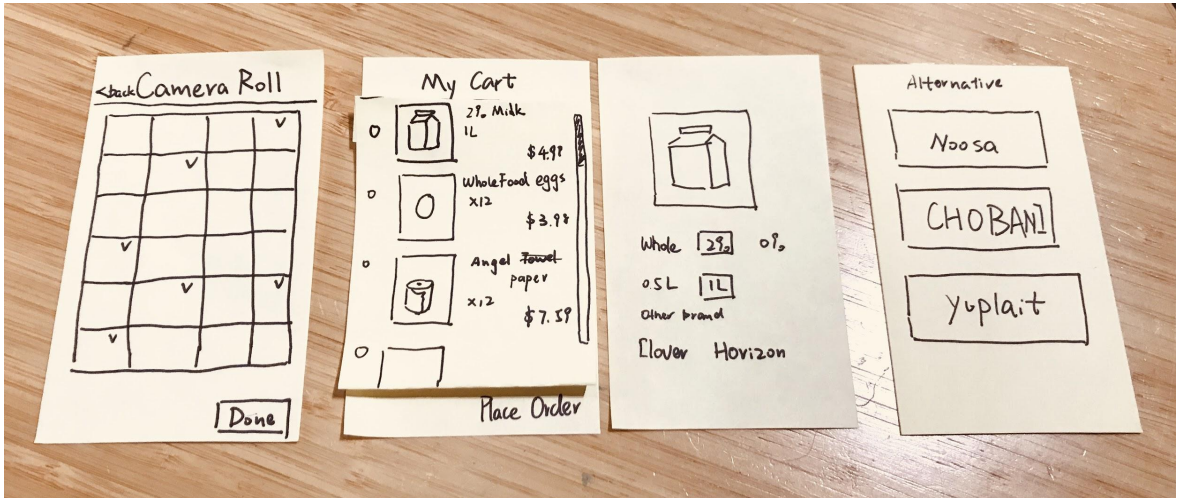
10-15 Solutions

- Camera take a picture
- Scan your receipt
- Customer get membership points / cashback by doing this
- **3 shopping lists: a)"I will buy if I run out of my old one", b)"I am still evaluating", c)"I don't have this product, I wish to try"**
- Or we can extent the items from items being bought, let customers to use app to mark their favorite items in the store
- Let the customer blacklist brands/items that were low quality in store, to prevent them from being shown online
- Camera take a picture
- **Use virtual assistant**
- Send notification, asking the customer if he has run out of somethings and would like to buy the refill
- Provide a filter in the online shopping store to only show items you have already bought
- New recommendations based on what your previous shopping list looked like
- **Provide limited amount (3) of alternative items that are shown, when the customer not want to keep using the one he've bought (Not 30 different types of milk at a time) based on quality or price or a combination of both**
- Social shopping list/ friend recommendations, friend share shopping list with each other
- Sent samples in your wish list

List | Buy | Explore

Experience Prototype (1): Prototype & Test

- Solution:
  - 1. Create list from product pictures
  - 2. Buy the “routine product” at home with just one-click.
  - 3. Show just 3 alternative recommendations when user wants try a new “flavor”.



Experience Prototype (1)

- Assumption: For buying standardized everyday commodities, users will appreciate our convenient solution rather than buying them in store.
- Result: Overall, our user appreciated this simple way of buying everyday needs, but concerned we cannot get certain self-brand products, e.g. Trader Joe's, in our app.

Test:

1. Build "routine product" list by taking pictures.
   it's not realistic to ask our user to add all the "resident products" before she actual need to buy. We might need to find easier ways to build the list, e.g. scanning the shopping receipt, adding products into the list while buying.

2. The user said "Hey siri, I need a new toothpaste". The corresponding item is placed into shopping cart.
3. Our user appreciate showing 3 alternatives when he wanted to try new

Branch 2

Revised POV (2)

- **We met** a customer hanging around in the bookstore
- **We were amazed to realize** it is very hard for him to decide buying a book, he even looked up the internet for more info
- **It would be game changing to** make it easier to decide which books to buy in the bookstore

Guide

10-15 HMWs

- **How might we conveniently show the customer online info about this book?**
- How might we trace customers in store behavior like online stores does?
- How might we connect the offline books with online information by a interface of object recognition or bar code scanning?

- How might we hold reading club in the bookstore regularly?
- How might we get a person/ robot ask you some question and give you the recommendation
- How might we remove the need to read the info in order to find books he/she likes, like music/ movies online recommendation, show top 10 maybe
- How might we show the sales volume for books in the bookstore?
- How might we let customers in the bookstore leave comments on books?
- How might we make the long process of finding a book you like enjoyable?
- How might we connect similiar readers in their search for good books offline?

Recommendation

Info

Selected HMW

How might we conveniently show the customer online info about this book?

Info

10-15 Solutions

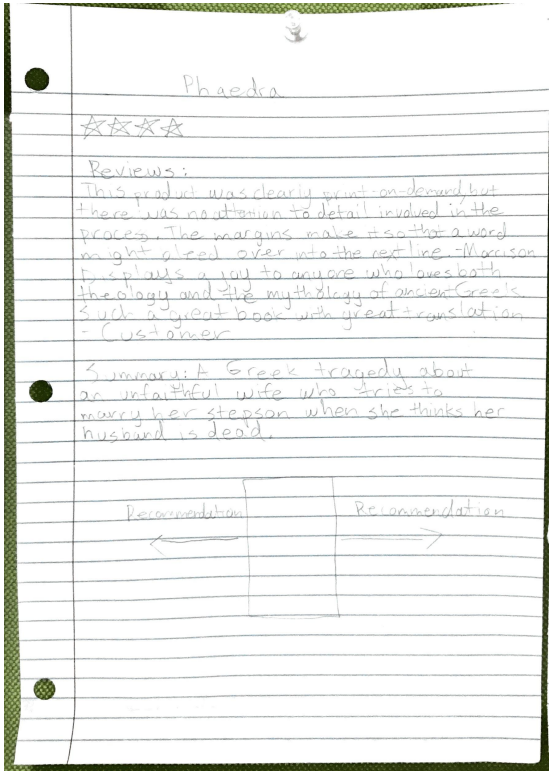
- How many copies each book has sold
- **Related books (Like a spatial recommendation system)**
- **Amazon's review score of a book**
- Use a holographic heads up display that shows the information of books that you seem interested in right in front of your face without picking up the book.
- Have a filtering system that marks which books seem like ones you might be interested in using a HUD (Blue tint = books you'd like, Red tint = books you don't like)
- Provide many screens beside the bookshelf where customers can scan their books to get more online info
- Robot like Siri, you say the book title and the robot reads a review and provides suggestions for other similar books.
- A phone app that uses the layout of the store to head you in the direction of books that you like in the store.
- A social shopping experience where you can scroll through people's reviews of a book you are interested in on a phone or heads up display (People filtered based on whether or not you liked the same sort of books in the past
- **Provide an app where customers can load online info of book by object recognition or bar code scanning**

Info To Show

How To Show

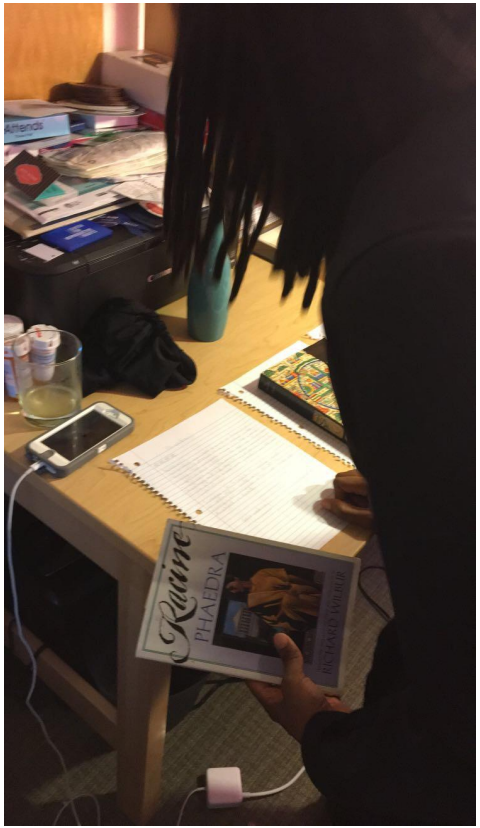
Experience Prototype (2): Prototype & Test

- Solution:
  - An app that can quickly load online information from books
  - Provides Rating, Reviews, Summaries, Spatial relation to other similar books



Experience Prototype (2)

- Assumption #1: People don't like the long process of finding a good book to read
- Assumption #2: People would appreciate online info for in-store books
- Test: The participant received books both with and without our interface and gave us feedback on how useful the interface was.
- Feedback #1: Assumption is not true, some like the process and some do not
- Feedback #2: Assumption is true, participants liked this



Branch 3

Revised POV (3)

- **We met** a graduate student who sometimes buys clothes online
- **We were amazed to realize** it's hard to choose the right size online without actually trying it on
- **It would be game changing to** have a convenient way to pick the right clothing size

Guide

10-15 HMWs

- **How might we let the algorithm know the shape of the customer and recommend the right size?**
- How might we create virtual avatar of each user by entering parameters, and demonstrate the size of clothes?
- How might we show the difference between actual sizes and labeled sizes?

- How might we directly send the customer multiple sizes to try and provide free return for the unfitted ones
- How might we eliminate the problem by reducing reasons for online shopping.
- How might we leverage the inventory of nearby stores to provide sizing for nearly-identical clothes?
- How might we provide an incentive for companies to standardize sizes (Companies provided with a reason to make all sizes the same)?w
- How might we provide the actual dimensions of each cloth, rather than an average guide?
- How might we deliver some sample clothes made with plastics to customers in advance?
- How might we keep the price of online stores same as offline stores?

Algorithm

Try

Selected HMW

How might we let the algorithm know the shape of the customer and recommend the right size?

Algorithm

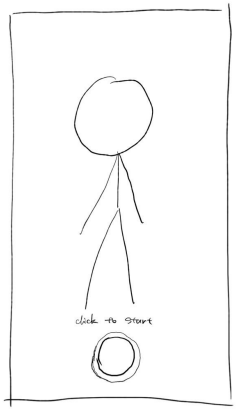
10-15 Solutions

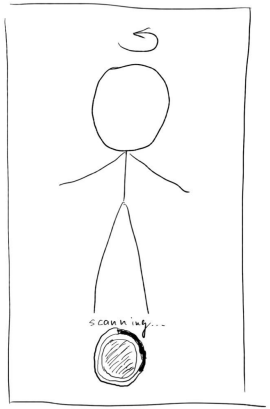
- Let the person turnaround in front of the camera, and measure the size/ shape of the person
- **And we can use AR technologies (ARKit) to get the actual size through camera**
- Infer the shape of the customer through the clothes that they bought and were satisfied with
- Tell the customer how to measure, and type in the numbers
- Provide in store measurements, he can later use this for online
- Just let the company provide the actual measurements for the cloth
- Size recommendations based on company (Since for each company every size means something different)
- Build the size convention database by using NLP technology to extract related words in customers' reviews
- Create 3D virtual avatar of each user by entering parameters, and demonstrate the size of clothes? (realistic CG rendering)
- **Simple 2d picture of how clothes lie on your body**
- **Tightness heat map (2d picture of locations where clothes might be too tight)**

Measurement | Data | Decision

Experience Prototype (3): Prototype & Test

- Solution:
  - Measurement by phone camera
  - Plot 2D demo (tightness heat map, etc.)





Experience Prototype (3)

- Assumption 1: users generally don't have an accurate and convenient way to measure the shape of their bodies
  - Limited memory of body measurement
  - Didn't have ruler (surprise)
  - Insufficient data from clothes he bought
- [True]

Method	Time	Result
say some measurement of their body only by recalling them	20s	Height: 175cm. Weight: 60cm. He didn't know waist and others.
use rulers to measure some key scale of their body	5s	He didn't have a ruler.
get measurement from clothes they bought	30s	Jeans: 31, 170/76A
(virtually) try the app and get a 3D model of their body	10s	(virtually) Get every detailed measurement of his body

- Assumption 2: labeled size of clothes (S, M, L, XL, etc.) is not sufficient for users to make a decision
  - Could make decision with labeled size
  - Size guide is hard to understand
  - No industrial standard for labeled size
- [Not That True]

Method	Time	Result
show some labeled size (S, M, L, XL, etc.) to the user and let him pick one	1s	M
show the size guide provided by the store	30s	M
(virtually) show the 2D pictures of our app and let him pick one	13s	M

Summary

- “Routine Product” was the most successful prototype (potential, novel, assumptions)
- We were able to gain valuable experience through testing “the Bookstore problem” and the “Right Size” Problem
- We improved our teamwork as a group