

INFO 6410 - Homework 3

Title of Project

PicBuy

Value Proposition

PicBuy leads a new shopping process, which allows users to find desired items with a picture.

Team

Jing Dai, Julie Huang, Xiaoyang Ma, Yanjing Zhang

Problem and Solution Overview

Traditional keyword searching has a variety of limitations and causes inefficiency in online shopping. We propose to create PicBuy, an online shopping platform that integrates image recognition technology to ease the searching process for online shoppers.

Contextual Inquiry Customers

Our target customers are people who have more than half a year online shopping experience. For our CI, we chose two males and two females. In order to understand our target customers comprehensively, we carefully selected customers that come from different countries, have diverse background and have different online shopping habits. During the contextual inquiry, we first ask about their shopping experience. Then we let the participants walk us through a typical online shopping process and ask them questions along the way.

Junke, original from China, who is an undergraduate student at NYU majoring in Accounting. She has over 5 years online shopping experience in both China and U.S. She loves shopping online and buys various things online from clothing to daily use items. She is familiar with the features of various websites and knows well about how to find a specific item. She also keeps an eye on the best deals online. We did the interview at her home.

Jai, original from India, is currently a graduate student at Cornell Tech majoring in CS. He has one year online shopping experience. Usually Amazon.com is his first choice, and what he cares most is the delivery speed. He values friend recommendations while comparing similar products. We did the interview in Studio at Cornell Tech, and one of the important reason we choose him is that he's always willing to try new technology.

Missy, original from New York, is currently a MBA student working for MasterCard. She has 9 years online shopping experience. She's really into fashion. She loves to browse designer's fashion brands website(e.g. shopbop) and reads fashion blogs. She always purchases

notebooks and hair care stuffs online (especially Amazon). We did the interview via phone because she is not in the city these days.

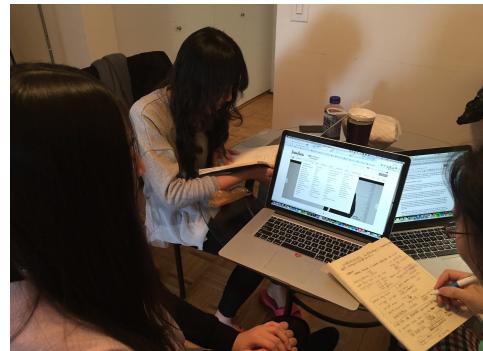
Alan, original from Hong Kong, is currently a graduate student at Cornell Tech majoring in CS. He has over 10 years online shopping experience. He usually purchases electronics and books online, and he is also experienced with buying second hand products. What he cares most in online shopping process is after-sale service and the website reputation. We did the interview in Fozzie at Cornell Tech.

Contextual Inquiry Results

Although online shopping behavior might vary from person to person, we find that the buyers still show the following process in common.

- find an online shopping website to begin the searching process (e.g. Amazon, Google)
- search, browse and pick the item that they want
- compare items with their prices, descriptions or the seller's reputation
- make transaction with dealers
- wait for delivery
- review and feedback (return if necessary)

Junke prefers shopping online, because it is more convenient than local stores. However, she complains that it usually takes her too much time to find the exactly item she wants to buy, and the recommendation on the websites never provide her with useful suggestions. There are too many websites selling similar products so she has to browse them one by one; the whole process usually takes her almost a whole night. She also complains about the after sale service. It costs her at least half an hour to make a call. The last thing is when she finds a desired item in a local store, but it's short of her size, she has no idea where to buy them.



Jai does not have much online shopping experience because it costs him a lot of time to find the specific items that he wants and he sometimes gets confused. Jai also mentions that he is comfortable with in-store shopping because he can actually feel the texture of the product. The situations when he chooses to use the online service are when the stuff is too heavy for him to carry or when it is cheaper online. When browsing the products he wants to buy online, he takes the reviews of the products and friends' recommendations into account.



When comparing different online shopping websites, delivery efficiency is the key point because he hates waiting.

Missy follows fashion trend, she loves to browse fashion websites and blogs. But she does not actually purchases online much, because she has some concerns about the products online including the size and color. She also mentioned the situation that she could not find where to buy the products she saw on the fashion blogs because usually those blogs does not provide enough information about the products. Stuffs she's always purchasing online are textbooks and personal care products. The reason why she buys personal care(e.g., shampoo) online is that the brand she gets used to is hard to find in any supermarket nearby.

Alan prefers to buy books and electronic products online because there is almost no risk of getting unsatisfied items and websites usually provides better deals than local stores. When comparing similar products, he cares about the reputation of the sellers therefore he reads comments and ratings from other customers. He doesn't buy clothing online because he only purchases a certain brand and wants to actually try them before purchasing. He also involves in the second-hand market to buy electronic products most of the time, and because of some bad experience of buying second-hand stuff, after-sale service is also an important part he takes into consideration.



After the interviews, we found some problems that exist in the online shopping process. There are too many websites with similar items, which could cause low searching efficiency. There are some special scenarios that customers feel confused to find an item that is short of stock in store or lack information in blogs. Some people don't usually buy clothings online because actual item and picture online may be unmatch or lack of physical touch and feel. After shopping, after-sale service may be another concern for customers especially for expensive items. Among the problems, communication dissatisfaction can be the most important problem. It is quite difficult to communicate online versus face-to-face and often takes enormous patience and tenacity to achieve satisfaction. This may due to or cause untrust between sellers, buyers and the online shopping website.

Analysis of New and Existing Tasks

The following are the analysis of the tasks that we brought up.

- **Search for a specific item**

This task is performed every time when customers need to find something online. Now customers use keywords they believe that describes the item well and most of the time they need to adjust the words they use according to the returned results. Our CI

participants have all met the situation when it was difficult to find suitable keywords for products like clothing in those cases this task is very time-consuming. For foreign customers, it involves a learning process due to language. They need to figure out what the usual words are used to describe an item through engaging in the same activity many times. Customers just stop searching when the process exceeds a certain amount of time and end up choosing some alternatives which may lower their satisfaction to the website. The sellers may also lose potential customers if they do not support powerful searching tools.

- ***Find the best deals***

When customers figure out their desired product, they always look for find the best deal. Depending on the value of the product, customers spend certain amount of time on this task. This task is performed both online and offline. Customers want to compare the prices provided by the local stores with the shopping websites, and also among different websites to check the bargains and deals. Some customers make use of search engines that support price comparison to accomplish this task or directly go to the websites that they think usually offer lower prices from their past experience. But some customers still manually check the websites they are familiar with one by one and end up spending a lot of time on browsing many websites. When customers miss the best deal, they feel regretful and probably spend longer time during the next purchase.

- ***Determine whether the seller is reliable or not.***

This task is performed frequently when customers need to buy something from a retail websites involving different sellers (e.g.: Amazon, ebay). Most of these websites have a given points of satisfaction, customer reviews and comments at the bottom of the item. From the reviews that is given by other buyers, customers can often gather a lot of information and decide whether to buy or not. But some customers still have some concern about the subjectivity in strangers' comments. Customers tend to trust a seller more if they receive friends' recommendations but this is usually performed offline.

- ***Decide which size will fit well***

Finding your perfect size is a general problem for almost all customers. This task is performed every time when customers are buying clothings or shoes from an unfamiliar brand. Nowadays, shopping websites often provide some measurement or some reference in the description of the item. However, it is still hard to get enough information about the size that fit you most from just measurement and reference. Without trying it on, customers still feel uncomfortable or concerned about the size when buying the item. Most customers end up purchasing only stuff from the websites they are familiar with and this largely limits their range of choice.

- ***Get useful recommendations***

This task usually happens when customers searching items they want to purchase. During this process, customers might find some similar products or related products recommended by the shopping websites. In some circumstances, besides the original product customers want to buy, these recommendations will motivate continual consumption. Nearly every shopping website provides recommendations based on customers' search now. However, the quality of the recommendation still needs improving. A lot of websites usually provide customers with the items they already bought.

- ***Avoid purchasing unsatisfying product***

This task is the bottleneck of online shopping process, because the whole process is based on the Internet. Compared to face-to-face interaction, there is much inconvenience. As for clothing and accessories, how does it look like when customers try it on? How do the clothes feel? Do the items look exactly the same with the images provided by the website? There are always unavoidable problems such as different customers use different devices which provides different quality images. All the information customers are able to get is just the description of the products and comments from other consumers. It's all virtual and there's no real feeling of the real products. What's more, customers might face with fitting issues. All the above will probably lead to unsatisfying shopping experience.

- ***Get friend comments and style guidance***

This task is often performed (or desired) when shopping for specific type of items, especially frequently for clothing. Customers look for recommendations about fashion trend and matching style. When shopping in local stores, customers feel that comments from friends and salesmen are helpful in selecting the products that could match up with some of their existing items. However, there is no existing services that directly support this for online shoppers. Customers browse fashion websites and blogs to gain recommendations and sometimes reach out to their friends for suggestions but this can help only before shopping. Some customers receive negative comments from their friends after they have already bought an item which causes bad shopping experience. This task is often performed online but it also applies when the customer is shopping alone in the store.

- ***Return an unwanted product more efficiently***

After sale service may be a big concern when people are choosing an online shopping service. Currently, when people want to return an unwanted product, they just need to send back the item and they will receive the full refund in their credit card. But, this happy case only happens when the item doesn't require a lot of money. If it comes to expensive products, buyers sometimes are required to take the item to a third party to authenticate the item. After the third party had proven it is broken, then the shopping website will finally send you back the full refund. Such tedious and inefficient process

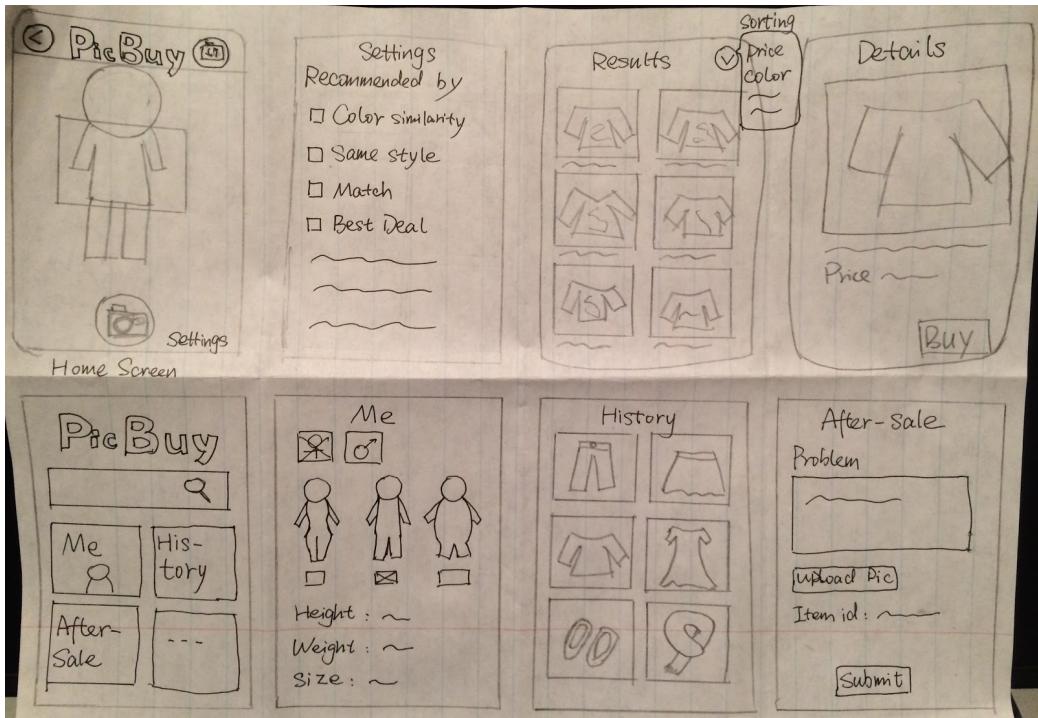
may require additional cost and time and customers usually avoid using the service anymore.

Three Tasks Our Application will Support

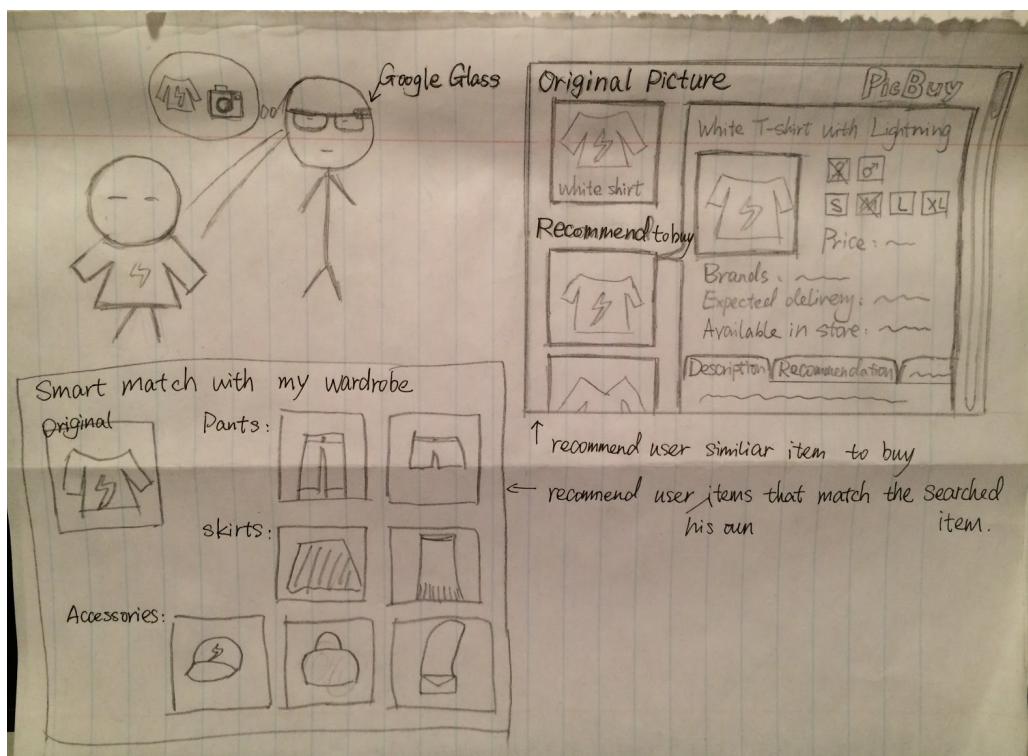
- **Search for a specific item to buy** (*moderate, moderate importance, moderate frequency*)
Most our CI participants say the online shopping is more convenient than in-store shopping, but they all complain about investing too much time on searching for the right item they want. Using our application, users will be able to take picture of their desired items to search instead of thinking of the correct keywords to describe them, which will hugely decrease their time spent on searching. Finally, users will get satisfied with both perfect match results and the efficiency to find the right items. This task is performed very frequently when customers have a clear idea about the items they want to buy though there are also some situations when they are just browsing.
- **Find the best deal/ best match/ same style** (*high, high importance, high frequency*)
From the interviews, we found out that almost everyone mentioned about the inefficiency in finding the best deal. This confirmed that gathering information from different platform and filtering is still an important task for our customers. Although filtering is a task that currently exists, our app will streamline the process for our target audience.
- **Get fashion guidance and suggestions from friends**
(*simple, moderate importance, moderate frequency*)
Our task analysis shows that customers want to gain comments from friends and family members when shopping online. We also want to support connections with fashion guides to give customers recommendations. This task can be simply achieved technically but it is important as for improving the shopping experience.

Sketches of important screens

1. An mobile application customers view



2. Apply Google glass to search items and match with items in his own wardrobe



3. A forum-based interface that encourages communications with other customers

