

Assignment 2: Technology Shopping Assistant

Needs and Requirements Analysis

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1. INTRODUCTION

1.1 Purpose

Before we design the web pages with HTML 5 for building a prototype of a Technology Shopping Assistant, we need to know what people usually do in their tech shopping, what the existing shopping assistants are, what the problems the users meet during their shopping, what they prefer and pay more attention on, etc.

Thus, I use some data collection methods to find users' needs and requirements. This report will introduce the whole process of finding and analyzing needs and requirements.

1.2 Scope

Our task is building graphical user interfaces, and it is an interaction design. Therefore, this report will focus on functional requirements, data requirements and environmental requirements for this interaction design.

1.3 Goal

Our goals are sensemaking tasks. Sensemaking is the process of searching for a representation and encoding data in that representation to answer task-specific questions. Our specific questions are that how users do tech shopping, what user characteristics are, what functions the shopping assistant should have, do they meet usability goals and user experience goals. Only after answer these questions, can we know what users want during their tech shopping and build a web with good GUI.

2. ANALYSIS OF EXISTING SHOPPING ASSISTANTS AND EXISTING DATA COLLECTION METHODS

Learning from existing shopping assistants is a good way to understand user habits and conclude specific aspects that users care more about. Analysis of existing data collection methods will help us to choose the most efficient ways to collect needed data and understand how to make use of them. So this section introduces the types, functions and breakdowns of existing shopping assistants, and analyzes existing data collection methods.

2.1 Existing Shopping Assistants

I. Types of shopping assistants

i. Website

There are three kinds websites perform as shopping assistants.

Number one is online shopping platform, which sells products, like Amazon.com, Bestbuy.com, eBay.com, etc.

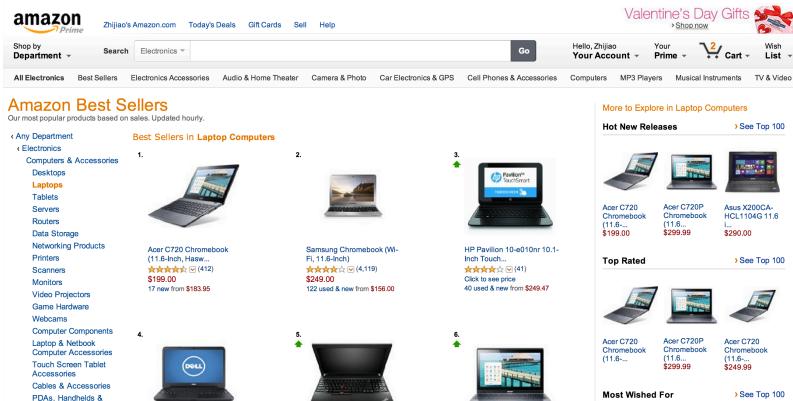


Figure 1 Amazon.com

Number two is review site, which provides products reviews and rankings to help users find appropriate product, such as Cnet.com, Zol.com.cn.

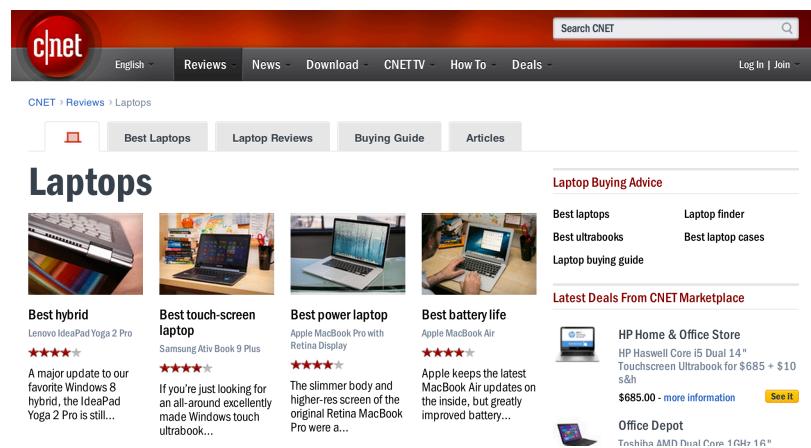


Figure 2 Cnet.com

Number three is coupon site, which gives users the promo codes or discount info, such as Coupons.com, Retailmenot.com.

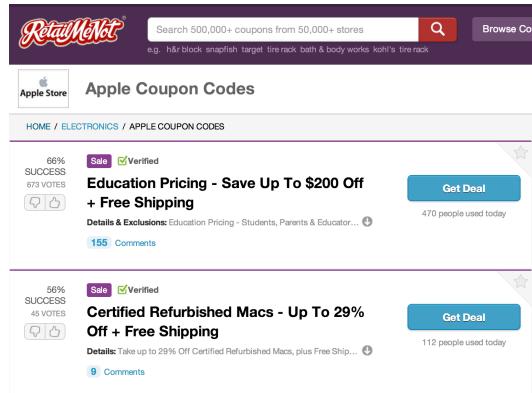


Figure 3 Retailmenot.com

ii. Software and add-on

Comparing website, shopping assistant software and add-on are not popular to users. Most of them prompt info about price or discount to remind you that you can save money before checkout. For example, Ookong is add-on for Chrome browser. It can tell you the lowest price of a product in the past 2/4/6 month and help you avoid spend more money on it because of the wrong buying time.

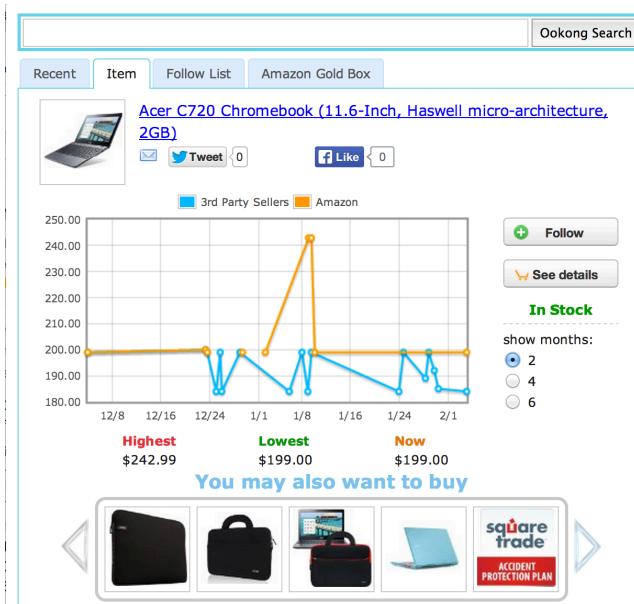


Figure 4 Chrome browser add-on - Ookong

II. Functions of shopping assistants

The main functions that shopping assistants have shown below:

- i. Compare prices
- ii. Compare specifications
- iii. Recommend products
- iv. Provide discount

We can conclude that the aims of those functions are helping users find their needed products and save money as much as possible.

III. Breakdowns of existing shopping assistants

From my experience and observation, the websites play more important role as a shopping assistant. The tech shopping process is easy and concise, but, for my perspective, the existing shopping assistants still suffer from several breakdowns.

For instance, they use hierarchical structure to categorize products. It is a good way to define the categories of millions of thousands of products, but for users, we need to click and click and click many pages to find something that we only know its category and appearance, but not know its certain name.

What's more, in order to attracting customers staying in one page for more time, so many contents are put in one page. Sometimes, customers easily ignore some info that they really need.

2.2 Existing Data Collection Methods

There are seven common data collection methods, such as interviews, focus groups, questionnaires, direct observation, indirect observation, studying documentation, researching similar products. Contextual inquiry is also a useful method for complementing data collection.

- Interview is used to get people to explore issues.
- From focus groups, we gain a consensus view and highlight areas of conflict and disagreement during the requirements activity.
- Questionnaires gives initial responses that can then be analyzed to choose people to interview or to get a wider perspective on particular issues that have arisen elsewhere.
- Direct observation helps us understand the nature of the tasks and the context in which they are performed.
- Indirect observation uses diaries and interaction logging.
- Studying documentation records the steps involved in an activity and any regulations governing a task. It helps use understand legislation and get some background information on the work.
- Researching similar products generates alternative designs. Looking at similar products is to help prompt requirements.
- Contextual inquiry is mainly used for uncovering requirements relating to the context of use.

Considering our goals, researching similar products, questionnaires and interview are chose to collect our needed data efficiently and help us to find users' needs and requirements.

3. IMPLEMENTING DATA COLLECTION METHODS

3.1 Researching similar products

As mentioned in section 2.1, there are different kinds of existing shopping assistants. Based on those examples, it is easier to define which aspects users care, and they help me to generate the questions for the questionnaires.

3.2 Questionnaires

Questionnaire has the characteristics of anonymity, fast-response, and large quantity, but it is not flexible and it cannot provide implicit messages. Thus, it is good for collecting basic thoughts of users and finding potential interviewees.

I use Google Form to build my questionnaire. You can find the questions in this link: <https://docs.google.com/forms/d/1rXITJcIxsyAwSLn5Ad2RSAr3HG8sd6t-XR5Xb4LdPOA/viewform>

My questionnaire focuses on online laptop shopping. I set up 6 pages questions to ask about users' basic info, the frequency of their online shopping, whether they bought laptop online, their preference of shopping online, whether they use shopping assistants to help me, whether they faced breakdowns of those shopping assistants, etc.

Questionnaire about online tech shopping

Basic Info - Gender

- Female
- Male

Basic Info - Age

- less than 15
- 15 - 20
- 21 - 25
- 26 - 30
- 30+

Where are you living now?

- North America
- Asia
- Europe
- Other: _____

Did you shop online before?

- Yes
- No

Why didn't you buy it online? Did you face some problems during your purchasing? (In searching info, comparing products, difficult process for checkout, or other aspects)
(If No only answer this question)

How did you buy it? Do you use any software/website/add-ons to help to find the one that you need? If you used, please specify its name.
(If yes please finish the following questions in this page)

How do you compare different PCs/laptops?

- Get info from their official websites
- Look at the reviews and ratings of previous buyers
- Use webs like Cnet, Zol, etc. to compare them
- Use some softwares/apps
- Use add-ons like Ookong, InvisibleHand, RetailMeNot
- Other: _____

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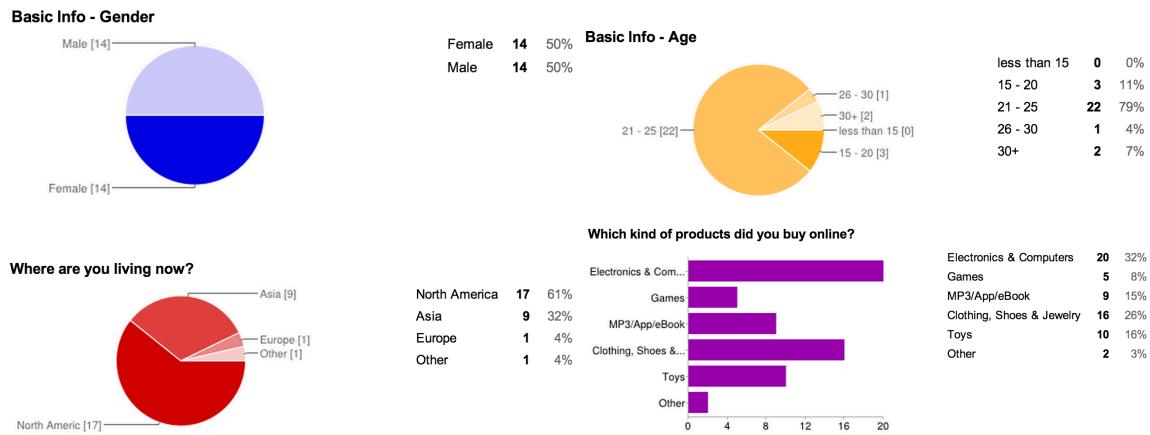
Figure 5 Questionnaire about online tech shopping

3.3 Interviews

Interview is more flexible way to collect data. We can dig out more implicit info during the talking. For every interview, I asked my interviewees to provide a scenario – a short story about their tech shopping experience. From those stories, I not only got the info about their shopping process, but also figure out some user patterns and user habits.

4. ANALYSIS OF COLLECTED DATA AND SURVEY RESULTS

Finally I got 28 responses from the questionnaire, and most of them are young adults who have the tech shopping experience and like to shop online. According to the initial responses from the questionnaire, I chose 3 of them to do semi-structure interview. My interviewees are a Chinese girl now living in China, a Chinese guy now living in U.S. and an American guy now living in U.S. The average interviewing time is 30 minutes.



These figures shown above are the basic info of respondents. It tells that tech shopping is the top one category of online shopping, no matter for female or male.

Based on other data and answers, the analysis is described in 3 parts as follows.

4.1 User experience

I. Where they bought their laptops



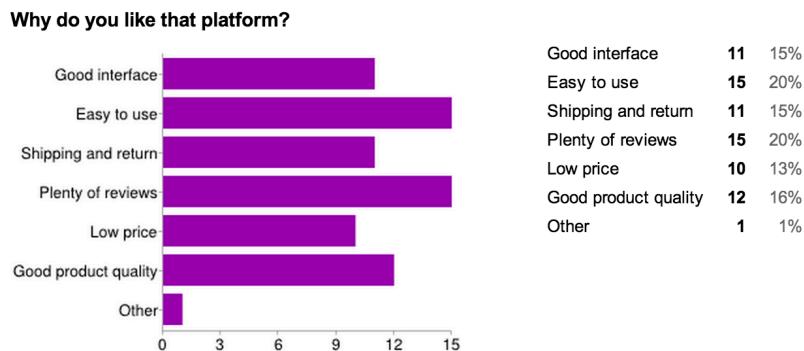
It can be defined as 3 different types.

First, most of the respondents choose Amazon or Taobao, these online shopping platforms, to buy their laptops.

Second, a few respondents buy their laptops directly on the official websites, like Apple.com, Lenovo.com.

Third, the others prefer to buy offline in the real stores, but they also use some review websites, like Zol.com.cn, or search engines, like Google, Baidu to help them determine the model.

II. Why they choose online tech shopping



From the figure we can see that “easy to use” and “plenty of reviews” are the top reasons that people love to do tech shopping online. Besides that, amount of online reviews, ratings, and videos can help them choose the most appropriate model for themselves. What’s more, some websites like Zol, Engadget, even though they don’t sell products, but they provide professional testing and comment for laptops, which are very helpful shopping assistants.

III. Advantages

Respondents mention more about convenience on online tech shopping, especially about those online shopping platforms. They think the checkout is the easiest part of the whole shopping process, maybe because they want you pay your order as soon as possible. Lots of reviews and ratings is another advantages, because based on previous buyers’ comments, customers can easily filter out good products. The most advantage is that people can get products’ info easily and comparing a lot of products with different models at the same time. Another point shows that customers don’t need to deal with salesmen to have a low price.

IV. Breakdowns

Although online tech shopping has those benefits, it also suffers from several breakdowns. For example, sometimes, needed info is missing or not easy to find or reach. For some new-launch products, there are no enough reviews. Products’ info sometimes is not matching with their real specifications. Online tech shopping is not only a time saver, but also a time killer. Customers need to spend lots of time on selecting products and reading reviews. What’s more, some shopping assistants show annoying advertisements. Last but not the least, for basic users, not enthusiasts, putting those specifications with numbers and words in tables is not intuitive to understand whether the product is good or not.

4.2 User preferences

- Comparing to low price, for tech shopping, customers concern more about reliability and product quality.
- Buying different kinds of electronics, people those different online shopping platforms.

For instance, people prefer buying laptop in Amazon rather than in Taobao because Amazon is product-based interface, while Taobao is shop-based interface, which means for one model product, in Amazon, you will see one link for that product, while in Taobao, you will see plenty of shops selling this model. However, for buying small electronics, like earphones, people prefer Taobao than Amazon.

Figure 6 Chromebook Pixel in Amazon

Figure 7 Chromebook Pixel in Taobao

- For different products, people have different user buying habits.
One interviewee mentioned that he booked his iPhone 5s and Macbook Air online, but he picked up it in offline Apple Store. Because he thought picking up is faster and safer than shipping. While, for other small products, like sounders, or heavy products, like TV, he preferred to sign them at home.

- Online tech shopping may trigger more potential buying behaviors.
The recommendations in online shopping websites always suggest customers to buy more things.

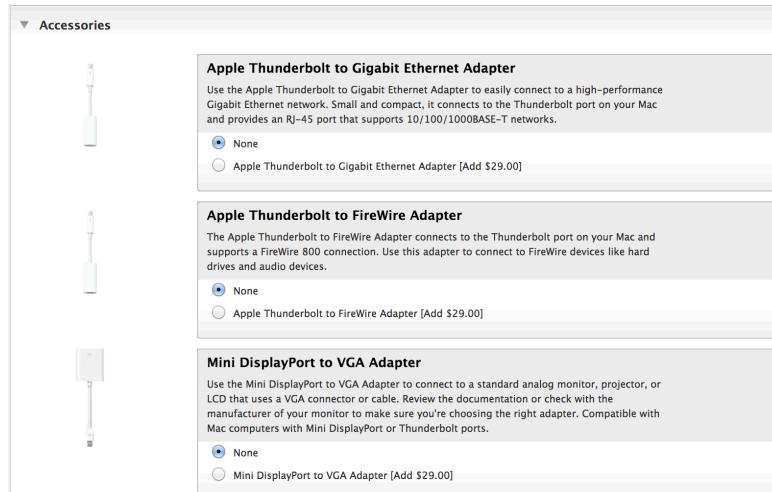


Figure 8 Macbook Pro Accessories

- Customers not always remember to provide reviews.

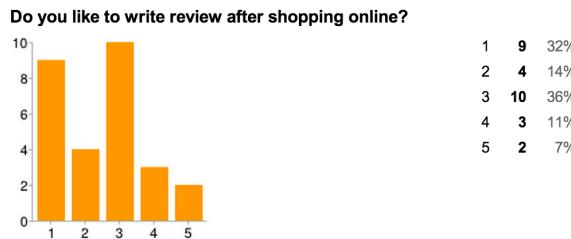


Figure 9 Respondents' attitudes towards writing reviews

4.3 User needs and requirements

I. Functional requirements

- Filter products based on parameters
- Compare different models
- Provide accurate product info
- Provide enough reviews

II. Data requirements

- Sufficient product data
- Updated product data
- Show useful reviews and hide useless reviews

III. Environmental requirements

- Social environment: can link to friends' comments
- Technical environment: need to be ran in the browser

IV. Usability requirements

- Easy to use
- Good user interface
- Data visualization of product info

5. CONCLUSIONS

This report introduces 4 sections about the needs and requirements for tech shopping. In introduction, it tells the purpose, scope and goals. In the second section, it analyzes existing shopping assistants and existing data collection methods. In the third section, it describes how to implement the selected data collection methods, researching similar products, questionnaire, and interview. In the last section, it shows the survey results and discusses the needs and requirements.

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