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# ORANGE TEAM: EVALUATION REPORT

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# Orange Team: Evaluation Report

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## PROBLEM AND MOTIVATION

Cell Phones are very widely used in our society, and consumers can have their phones for anywhere from a few months, to a few years. Since technology moves so quickly, by the time a consumer is ready to purchase a new phone, the whole marketplace has likely changed which leaves them to find some way to decide on a new phone and or plan. Current ways of finding a phone and plan are doing your own research on tech review or comparison websites, and going in to a local store and talking to the people there which both cost time.

## RELATED LITERATURE AND BACKGROUND

We reviewed literature on website design and usability issues as well as the effectiveness of recommender systems. According to [2] an effective recommender system inspires trust in the system, and users are willing to give more information to system in return for more effective recommendations. From a design perspective the literature says that the website should be easily navigable. Structuring the site for quick scanning of the site and general efficiency of use are important. We need to structure information so that it is meaningful to the user and support throughout our application. The application should be predictable and what the user expects. Important options should be highlighted [1]. Branding the site is also important, and that is why we have a color-scheme is consistent with the logo. To design a cohesive website, we must predetermine and understand our target demographic, in our case, we focused on a non-tech savvy audience [3].

When designing a website, memory is also an important factor. Short-term memory is important when a user is currently visiting a website or using an application. The interface should be designed so the user can immediately recall how to do or find something. On the other hand, long-term memory is important for when a user comes back to the website or uses the application again. They should not have to relearn how to find or do everything every time they use the website or application again. User control of the interface, reducing the user's memory load, and making the user interface consistent are of high importance in capturing memory [4]. The aesthetic appearance of the website is a key factor for users when they decide if they

will spend time using a website, and this decision is made within seconds of arriving. (web pages with higher levels of aesthetics would appear more credible to users. They called this the amelioration effect and it worked during the first few seconds of a user's browsing (credibility judgment was made within 2-3 seconds) [5].

## DESCRIPTION OF OUR SYSTEM

Our prototype supports a specific scenario and its functionality is to only show off our scenario as well as having partial navigation built-in. We felt like this would best represent a typical user going through our application and would help us refine this path and the most important details. It represents a centralized system that provides personalized suggestions based on questions and filters to help the user make an informed decision. Having a single source of unbiased information streamlines the process of choosing a phone and/or plan by giving the user all of the tools that they need. We decided to have a guided questionnaire to help people understand the options available to them because people aren't always familiar with specs such as "GB" and "Megapixel". Additionally, we wanted to make sure that we didn't deviate too far from a normal search page because we still wanted more advanced users to find use in our site as well. While designing it we made sure that it was minimalistic and aesthetically pleasing because our information is useless if it is not readable. We also wanted to ensure that our system was flexible and intuitive to the average user.

## EVALUATION WITH USERS REPORT

The main goals of our evaluation were to discover pain-points in our system, verify that the user can easily navigate through the interface, and test the versatility of our application on different levels of users. We used a think-aloud approach since we believed that it would be best suitable.

We wanted to get a good variety of users to test our system; testing our system we have: Justin (21), a Computer Science major, Casey (21), a nursing student, and Katelyn (56), a non-tech savvy gymnastics coach. We went for quality over quantity since our protocol is very time intensive. But in relation to that, we wanted users to be as different as possible from one another (at least in tech

skills) to best represent the level of users that would be using our system.

We decided to stick with the Think-Aloud Protocol for our evaluation, but we diverged from the evaluation plan by adding questions at the end to gather generic data. The questions we decided to ask were:

1. Would you use this application to find a phone/and or plan? Would you recommend it to someone who is unfamiliar with phones?
2. Do you feel like the information on this website would help you make a final decision in searching for a phone or plan?
3. Are there any features that you would add or remove?

We chose these questions since we felt that they were hard to represent during the protocol, rather than after they finished and gathered their thoughts. The questions also provide real and meaningful data towards if our design succeeded.

From the three Think-Aloud sessions, we created a listed of common suggestions/comments that stood out (full transcripts in section A.2):

- People were often unclear about what the “Phones & Plans” button does
- It isn’t obvious that the system is location based at first
- It seems that adding a plans tab icon in the favorites menu was much less noticeable than straight up switching to the plans tab
- Plans tab is confusing and busy
- Colour scheme (blue, orange) was consistent and looked good
- Layout and design was good (use of boxes/containers)
- Colour coding the comparison specs red and green is helpful
- Unclear what the email button was used for
- Centralized system for this specific solution is useful

Using a Think-Aloud approach, we learned that people did not criticize enough and mostly commented on things they liked. Adding questions at the end really paired well with Think-Aloud because we can direct the user into giving more constructive criticism. Justin, coming from a technical background, criticized a lot more than the other two who have a lot less tech experience. Helping the testers during the Think-Aloud protocol was useful when they had no comments on the matter, we could get their input on the most important aspects of an interface; the drawback of this being that we might miss outlier cases, but we already stated that is fine because we were aiming to test the most common areas of our system.

## FINAL RECOMMENDATIONS

### *Conclusions*

Generally, design was found to be aesthetically pleasing across all respondents. The product worked overall, but lacked in very specific and almost nitpicky details. The results page was noted to be a bit too busy even though it needs to display a lot of information. Other than that, there were no major concerns with our system, only smaller ones regarding ambiguities. Buttons like the “Compare” button and the “Phones & Plans” button were not apparent to our tests and, so we should make sure our system is easy to use and transparent. Our system seems to have worked well for all our testers. The users responded very positively to the final questions regarding if they would use this system and/or recommend it to a friend. Our product seems especially good in catering to users with lower tech-related skills.

### *Recommendations*

Our design was generally validated. The users, almost always were able to guess where each element led when triggered. It was what the user expected. Very few minor adjustments are needed. First, the favorite system should not continue to light up after being pressed. It should simply put the specifically plan/phone into the favorites tab. Adding a phone or plan to the favorites menu should be more noticeable. The phones page and questionnaire should display some sort of notice that the application is location based.

### *Reflection of our Design Process*

We learned the importance of iteration in UI design especially in the initial phases, and that a design always has room for refinement. Starting out with a very vague and general idea and slowly adding more detail is a good strategy. It can be tricky to get useful information and feedback out of users because they don’t always know what they want or how to express it. Users can notice things about the design that we as designers have gotten used to and don’t notice anymore, which can be helpful in finding ways to improve the system. Things that were obvious and intuitive to us were sometimes not clear to the users. We also noticed that sometimes users are not picky about the design and will simply use whatever they are familiar with. Research from academic style papers did not play a big role in our design process, we preferred to generally come up with our own ideas or to simply look at websites that we thought had a nice design. On a related note, we didn’t feel that getting ideas from day-to-day travel would be very useful because we may see good building designs, but not necessarily website designs.

In hindsight, the methods and evaluations all had better choices. Particularly, the think-aloud protocol did not yield all the information that we wanted. This was most likely due to the fact that the respondents were not familiar with the protocol, as well as that they could not think of anything off the top of their head (and were generally nice). In relation, perhaps if we had done a horizontal approach in

designing our prototype, the think aloud protocol may have worked better as then we could let the respondent run off and think aloud, rather than us guide them. An interview (or two-way interview), would have been the better choice to go with our scenario protocol.

## APPENDICES

### A1: Evaluation Instruments

#### Introduction for Testers:

First off, are you okay with us recording the audio for this think aloud interview and privately uploading it to YouTube? If your contract is up and you are looking to buy a new phone and/or plan, it can be difficult to find what's best for you since technology moves fast and you probably haven't kept up with the markets. Currently, solutions to this are to look at long tech blog posts, use incomplete comparison websites, or to do your own research. What our application does is provide the tools that you need in one place to search for phones and plans. We are going through this website as a user looking to buy a phone, since this is a scenario there are tightly related interactions, so this is more like a presentation... we are going to stop at each slide to let you think aloud. Thinking aloud literally means just that. You give us your thoughts and opinions on each page of our application. For example: if we look at google, we see that the logo is large and present in the middle of the screen. Also, we can see that there is a search box immediately below with a microphone in it that implies the user can speak to search. There are also other features around the page that you can comment on, what you think they do, if you like them., if you can think of something better, if a feature is useless, or looks bad.

#### Think-Aloud Walkthrough:

1. You are trying to find a new phone, so you visit our website.
2. You select the '*phone*' option
3. Next you are presented with this question that you are going to answer
4. You click on any of the options
5. You are presented with another question that you are going to answer
6. You click on any of the options
7. You are presented with a third question, but you are curious about the results
8. You click on the '*skip to results*' link
9. You are brought to this page which is the main feature of the website and your interested in the Samsung Galaxy S8
10. You click the 'more' button under the Samsung Galaxy S8
11. This pop up happens, and you want to see the phone on SaskTel's website
12. You click the SaskTel icon, and once you're done, you exit back to our website
13. You then want to compare phones

14. You click the 'compare' button and search for the iPhone x
15. This side-by-side comparison is brought up and you compare the phones
16. You decide the Samsung is better and click the favourite icon
17. You exit out of the pop up and see that the Samsung is in your favourites bar. You now want to add the google pixel to your favourites
18. You click the favourites icon on the
19. Now you want to search for a plan
20. You click on the add plan icon
21. You see the pop up with 2 options
22. You click on 'I'll search on my own
23. You are brought to this page and want to view SaskTel's plans
24. You click 'go to website'
25. You are brought to SaskTel's website, you look around, and exit out.
26. You exit out of the tab
27. You like the SaskTel plans and want to add it to your favourites
28. You click the favourite icon
29. You have made your selections and your done on our website, so you want to email yourself your options
30. You click the email icon to finish the demo

#### Questions asked after the Think-Aloud Protocol:

1. Would you use this application to find a phone/and or plan? Would you recommend it to someone who is unfamiliar with phones?
2. Do you feel like the information on this website would help you make a final decision in searching for a phone or plan?
3. Are there any features that you would add or remove?

### A2: Raw Data

#### Interview #1 - Justin (4<sup>th</sup> Year CMPT Student, 21):

##### Observations

- Seems somewhat surprised by the look - "mobile site" feel to it
- Not fully sure about "phones & plans"
- Understands "skip questionnaire" what it does
- Seems hard-pressed to give feedback on the very simple questionnaires
- Mentions that expandable storage is not mentioned (pretty good point that we didn't think of)
- Seems slightly hard-pressed to give feedback on the filtering page
- "Reasonably good" (vague)
- He understood the favourites bar before ever seeing it in action

- **The pop-up page “would SaskTel be listed? Do you do geolocation?” (yes, we do)**
- **Doesn’t love plaintext (but he understands the reasoning)**
- Understands favourites button
- Doesn’t immediately get compare button - understands that it would bring up dialogue most likely
- Confused by the drop-down search-box on the phone-pop-up page
- Immediately understands the spec-highlights (red/green)
- Reads the info - confused by redundant size info
- Gets that the heart adds phone to fav bar
- Even gets that the heart button on the filter page will add to fav bar.
- Can tell that clicking plans tab would bring to plans page.
- He knows that “suggest me plans” will be a questionnaire
- **Search plan page has very big logos, feels mobile.**
- Seems to generally understand what the buttons do in terms of selecting data amount etc.
- Concerned about the backend functionality of fetching plans (not relevant) (also wrong about difficulty of scraping the info from carrier sites)
- Will fav button add a “shareMore plan” or will it be specific? He thinks it will be “shareMore plan”
- He is disappointed that it (apparently) only saves the data-amount
- Looks like a mobile page - how it is laid out, very simple
- Not quite sure what phones & plans exactly does
- Everything makes sense storage question - does it make note of expanded storage - is it intuitive?
- Scrolling may be hard to see initially
- Popup page. He knows about SaskTel.
- Is the phone's region specific (geolocation - since he saw SaskTel) - Where though?
- Specifications are listed, but it is not good looking. He does understand that it might be hard to make it pretty though, since the specs are so differentiated.
- Compare functionality is not immediately apparent.
- Knows to click on the SaskTel icon to go the SaskTel page
- Drop Down on pop out phone search... unsure what it does.
- Likes the highlighting between green and red information in the comparison.
- Storage and color are outside of the specifications (unsure why)
- Doesn’t like the redundancy in size is selected in the box and listed above in the header

- Understands the plans click icon and the options to where they go.
- Large logos on plans page make for mobile feel again.
- Concern is mostly hand updated - not sure how to fetch data. This is whatever (magic).
- Gets the plans options (i.e. suggest -> questionnaire, search by myself -> switch to plan tab).
- When favoriting the plan, he was also unsure if you get the plan as general or specific... he only noticed the data, but there was also a specific plan.
- One thing not clear is favorite shareMore plans or specific plans we are on will be selected when favoriting. Will the favorites still light up? What if you want to select another version of the set of plans?
- Suggests making the favorites button more closely bound to the options to know you are selecting the specific plan.

#### Questionnaire Results

1. Initially said he would **not** use it. He may look at it from curiosity. If it was up to date, and he verified that it was accurate, then he **would** use it. But not for a final decision.
2. Yes, it helps to decide
3. He feels that the feature-set is basically complete. Still doesn’t understand the search-box on the phone-pop-up page. He would make the favourite button clearer as to it being a specific plan, or a general thing. Same applies to the fav button on the phone-page.

#### **Interview #2 – Casey (Nursing Student, 21):**

##### Observations

- “I like the big pictures, but they might be too big” (landing page)
- Likes the “Help Me Compare”
- “It gets straight to the point of what basically your website is about”
- Likes the range system of the questionnaire
- For less young consumers, the questionnaire gets to the point
- Likes the highlighted “spend” for quickly understanding what the questionnaire page is about
- Size may be an awkward option - wants to feel the phone and get a sense if it is fit for herself
- Elaborate on the storage is nice (much more straightforward than size)
- Confused by gifs
- Understands the results given from the questionnaire results selected
- Pictures are nice. Individual boxes for separation is good. Size and color are relevant.

- Not sure what the hearts do immediately.
- Likes this page more than the questionnaire page
- Likes the companies - very good
- Unsure what would happen when you click compare - if she had to guess - she would say that it would bring up the phone side by side (which it does)
- Plans favorite was hard to see since it was grey on grey
- Understands “suggest me plans” and “I’ll find my own” options and guessed what they did
- Everything is very organized, very nice page
- Likes the more plans in one box rather than many plans in many boxes
- Guessed the sending email correctly - was unsure at first how to save
- icons might be too big
- straight to the point
- unclear about the landing page
- looks like a game (incentivising)
- appreciates that we highlight important words in the questions with blue
- needs to physically feel the phone size to be able to tell which size one wants
- storage details help the user more than the size question
- still gives results even though we did not finish the questionnaire
- good use of boxes to separate phones
- showing different carriers for the phones is useful
- loves the phone comparison page
- likes the idea of tooltip mouseovers (would be good to help parents find a phone)
- “Not everybody speaks tech”
- colour coding the comparison specs is helpful
- notices that favourite button links items to the favourites bar
- would use the plans tab over using the ‘+’ button (easier to notice)
- loves the box layout
- understands that the email button sends your favoured information
- likes that we stuck with the colour scheme of orange and blue

#### Questionnaire Results

1. Yes, she would use it. The fact that it is a centralized solution makes the process a lot easier, which is the main reason she would recommend it.
2. She feels that it would help in making a final decision because “you can gather what you want and then compare prices”.
3. She comments that the results page is a little busy, she recommends making it a little cleaner while

maintaining all the important and necessary information.

#### **Interview #3 – Katelyn (Gymnastics Coach, 56):**

##### Observations

- Her usual method of choosing a phone/and or plan is to go to a phone store and take what they give you (to some degree) and see what is affordable.
- Likes the phones & plans option. “Some are particular about both finding a phone that works with the plan”
- Likes the aesthetics. “The orange draws your eyes”.
- Good idea with the questionnaire (thinks it’s good for her generation. Notes that the gaps may be too large for prices (i.e. 0-399 is a big difference to most people).
- “Size does matter.... When it comes to phones”
- Likes that (in storage questionnaire) they actually tell you the sizes instead of small, medium, and large, since people have different views of the relative sizes of those key words.
- Likes the breakdown of the storage page with the average songs, movies, etc per gb range - easy to understand. Notes that it is potentially missing games, something very popular these days with phones.
- Likes the color differences when selecting a phone - some people care.
- First person to notice that the phones are sorted by popularity.
- Thinks that navigating to the plans tab is very straight forward - guessed what it would do.
- Knows that favorites are to check and compare stuff - “very good”.
- Likes the specification and that it details things like the non-removable battery.
- Loves the coloring between the specification comparisons of the phones (red and green differences for bigger and smaller).
- Also thinks that the plans tab is far more noticeable and intuitive for picking out a plan than the add plans plus button in the favorites bar.
- Suggest me plans “brings up the phones available for the plan” she would guess. Not technically wrong, but the QA is the main purpose.
- Suggest me plans should have a feature that pins based off of currently selected phones and location.
- I’ll search on my own is to “bring up the different options for the different carrier, then search specifically what you are looking for”. It takes you to the plans tab.

- Plans might be too complicated - seemed loss on the page and unable to comment.
- Likes that the “link to go to the website goes directly the specific SaskTel plan page - the site can usually be stupidly hard to navigate”.

### Questionnaire Results

1. “Heck yes I would if there was one available. So much easier than trying to deal with someone that is trying to sell you this specific thing”. More tailored towards me.
2. “You bet yah”.
3. One thing to add would be, for her and her mom, is a durability field. Notes that phone cases might would be interesting to add in combination with the site for this field.

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