

InfoSpace Mobile Search Usability Report

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Executive Summary

This report documents the findings of a competitive usability study between InfoSpace and Google, two leading providers of mobile related content and applications. This study was sponsored by InfoSpace and was prepared, conducted and reported by students in the Technical Communications graduate program at the University of Washington.

The main purpose of the study was to compare the mobile search interfaces of InfoSpace and Google. Two mobile cell phone users were invited to participate in the usability study and were asked to perform 14 similar search-related tasks using both mobile search engines. Participants were given scenarios and tasks that were based on several of the most popular mobile search tasks, as documented in the current mobile research literature. Data related to task completion, task timing, think-aloud comments and user satisfaction was collected.

While usability issues were uncovered for both Google and InfoSpace, the research showed that all participants preferred Google as their mobile search provider.

- Participants ranked Google higher in terms of ease of use, satisfaction and meeting of expectations.
- On average, it took less time to complete tasks on Google than on InfoSpace.
- On average, participants required less clicks to complete tasks on Google than on InfoSpace.
- In a final evaluation, participants ranked Google as performing better than InfoSpace on a series of usability metrics, including ease of navigation, readability, visual design, ease of use and overall satisfaction.

The findings suggest that many of the issues uncovered in Infospace relate to the display of the search results. The categories and related search options on the InfoSpace results page was difficult for all participants to initially understand and use. While the category layout was found to be useful for browsing news in comparison to Google, it was found to be more cumbersome for other common mobile search tasks. Furthermore, there were several features offered by Google that the participants found particularly useful, including customizing the search page to include stocks and movies, and smart filtering of images and business contact information based on their search term. Our critical recommendation is to consider displaying some key results first rather than requiring users to determine which category will fit their current need.

There were several limitations of this study, one of which being that only two users participated. We recommend continuing this research to uncover a deeper understanding of some of the issues described throughout this report.

Introduction

This report documents the findings of a competitive usability study between Infospace's and Google's mobile search experience. The study was designed, conducted and analyzed by students in the Technical Communications graduate program at the University of Washington.

This report begins with a description of the study, including the purpose of the research, relevant background and a participant profile. We took certain preliminary steps to gain a deeper understanding of mobile search, including analyzing related studies and prior research initiatives. A cross section of relevant articles and a high level of their findings are included.

We then document the scope of the research and our methodology. The design of the study was based on our preliminary research, along with information collected from a meeting with the Infospace User Experience Director regarding their target audience and their own study goals. We selected participants and produced relevant tasks for a multi-search comparison study as a result of our initial discovery.

In the final two sections, we document the results uncovered in the usability study and suggest recommendations on how to improve upon certain usability and design issues. The report concludes with a discussion of next steps and an appendix of all the materials created and utilized for the study.

Description of Study

Purpose

The purpose of this study was to evaluate Google and Infospace across a range of usability measurements to determine how the two competing search engine providers compare. At their core, both products are relatively the same; they are both search platforms that wait for a user to perform a keyword search before returning results. The differences between the two products are found in the delivery and presentation of the search results. This usability study is interested in understanding how these differences in implementation affects the overall user experience of both tools.

Background

In preparation for defining our study goals, the team initially met with the Director of User Experience at Infospace to understand her goals and interests for the study. This provided us with a preliminary framework for determining the initial estimate of our scope. To further understand important issues and factors to take into consideration, we also conducted a literature review to learn about the domain and to identify known issues and concerns with mobile search-related activities. We reviewed the following three articles, which provided us with a framework for understanding the domain and for setting up our study design and methodology:

Kamvar, Maryam and Baluja, Shumeet. "Deciphering Trends in Mobile Search." IEEE Computer, vol. 40, no. 8 (2007), pp. 58-62.

Summary:

This article assesses the characteristics of mobile searchers in 2007 versus 2005 (when a similar study was made), and the characteristics of searches made on mobile devices versus those made on traditional web platforms.

Findings:

- Mobile searchers do not enter shorter or fewer search terms than wired searchers, despite the keyboard constraints of the mobile interface and the longer text-entry and response times.
- Mobile searches are more homogenous than 'wired' searches possibly because mobile searches are more task-oriented than their wired counterparts.

Church, Karen et al. "Mobile Internet Access: A Study of Emerging Search Behavior on the Mobile Internet." ACM Transactions on the Web, vol. 1, no 1 (2007): pp. 1-38.

Summary:

This research analyzed the usage patterns and search logs of a very large sample group of European cell phone users with mobile internet access. The researchers compared the session characteristics of users who retrieved information through search (on a variety of mobile search engines) versus users who browsed (using operator-provided portal features).

Findings:

- Browsing is still by far the dominant means of informational retrieval.
- Web users who include searches during their sessions tend to have “richer” online experiences in terms of the session length.
- Overall the usage strategies of modern mobile users (keywords used, popular categories, etc.) match up closely with early web searchers’.
- Mobile searchers also tend to modify their search terms more often than traditional web searchers do, suggesting that some aspect of the mobile web search experience makes it harder for users to find the results they want.

Jones, Steve., Jones, Matt., & Deo, Shaleen. “Using keyphrases as search result surrogates on small screen devices.” Personal and Ubiquitous Computing 8(1): 55-68 (2004).

Summary:

In this article, the authors presented a research study that looked to further determine how best to display search results on small, mobile interfaces. In their research, they compared participants’ ability to accurately categorize 45 web pages within pre-defined categorical hierarchies when given either the websites’ page title or a series of metadata keywords related to the sites’ content (what they termed as “keyphrases”).

Findings:

- Overall, the data did not show any significant differences between the participants’ ability to correctly categorize the pages when given page titles compared to keyphrases.
- Mobile search users, according to the research, can very accurately determine which content types fit into certain pre-defined categories (65).
 - While this research suggests that the difference should have little impact in finding appropriate content, the interest in our study will be the perception of these two displays from the user’s perspective once they have experienced both.

From this research and follow-up brainstorming sessions, we were able to determine potential usability issues to investigate in both Infospace and Google.

Furthermore, we were able to determine a set of real-world mobile search tasks that are commonly performed and could be utilized as our key tasks to include in our competitive study.

Participants Criteria

To align with data provided by InfoSpace, we set minimum criteria required for a participant to be a part of this study. The following is a list of our criteria:

- Male or Female, 18-34
- Currently owns a handheld, mobile cellular device (traditional, Smartphone or PDA) of any type or model
- Currently has a data services plan or is considering adding that service to their current phone plan within the next 6 months
- Currently is familiar with desktop/laptop web search functionality
- Runs at least 1 search query per month, regardless of search provider
- Has not utilized Google or InfoSpace mobile search on their own device within the last 3 months or runs less than 1 search query (*flexible 1-2*) per used search provider per week
- Any other search provider on their mobile device was considered acceptable

Participants Chosen

The two participants chosen for this study were selected because they both fit the criteria stated above and were available during our scheduled study date.

Participant 1 was a 30 year old male who currently owns a smart phone with a data plan. He regularly utilizes the internet via his smart phone and runs multiple mobile searches per month. His most recent mobile search occurred within one week of the study.

Participant 1 was a contracts producer for a phone maintenance reseller He regularly interacts with the sales representatives and phone solutions providers like Nortel and Avaya. He relies on his phone and data plan when he is out of the office.

Participant 2 was a 32 year old male currently owns a smart phone (pearl) with a data plan. He regularly utilizes the internet via his smart phone and runs multiple mobile searches per month. His most recent mobile search occurred within several hours of the study.

Participant 2 is the owner of BHD Partners, a northwest consulting firm specializing in contract, contract to permanent and permanent placement in the fields of information technology and engineering medical/informatics. He is constantly in transit between offices in Missoula Montana, Spokane Washington and Seattle Washington and relies on his phone and data plan to assist in running his business.

Problems

Overall, we were fairly success in implementing the intended study design. The only issue worth noting is the fact that we were unable to utilize actual handheld devices for running the study. This was due to the team being unable to obtain an appropriate device in time for the study. To accommodate, we utilized a standard computer with the browser window scaled to the approximate size of a mobile viewing screen. We were successfully able to access the mobile version of both Google and Infospace, and we asked participants to imaging that they were viewing this screen on a mobile device. To recreate typical data input in a small mobile device, we requested that our participants use a two index finger input method.

Scope

The scope of this project focused around the interaction between keyword search input and the understanding/comprehension of the search results. Since our scope focused on interaction between search and subsequent results, we created a study comprising of multiple search initiatives from basic to advanced. Our secondary goal was to view what types of keywords our participants would use to receive their intended results and to gain insight into their satisfaction with those results.

We utilized the most common mobile-search related tasks, based on data from the literature review articles. Even though we were interested in the participants' satisfaction of the search results, and their ability to retrieve answers to questions used to initiate the search, we were not interested in the usability of the post-search content. That is to say, we were not testing the sites the search retrieved.

Methodology

The usability study was held on November 24, 2007, in the LUTE lab on the University of Washington-Seattle campus. Video and voice recording was collected throughout the session. The two sessions lasted between one to two hours each.

The entire study, minus the paper questionnaires provided post task, was conducted using a standard PC laptop. For the InfoSpace portion of the project, we had the participants interact with a simulator provided by InfoSpace. This simulator produced the mCore standard version of their product. For the Google portion of the study, we used Google's mobile search platform.

Participants conducted a set of 14 tasks, split between Google and Infospace. The tasks were split into two groups (Task Group A and Task Group B) with seven tasks each. Table 1.1 shows the search engine used for each task group and participant.

Table 1.1. Search engine by task group and participant

	Participant 1	Participant 2
Task Group A	Google	Infospace
Task Group B	Infospace	Google

Participants 1 performed Task Group A with Google, followed by Task Group B with Infospace. Participant 2 performed Task Group A with Infospace, followed by Task Group B with Google. This way, all tasks were performed by all participants in different search engines.

Furthermore, the 7 tasks in Task Group A were designed to complement the 7 tasks in Task Group B. Table 1.2 describes the tasks.

Table 1.2. Task pairs between task groups

	Task Group A	Task Group B
Task 1	Search for Weather	Search for Stock
Task 2	Search for Movie Time	Search for Schedule
Task 3	Search for URL	Search for URL
Task 4	Search for Ringtone	Search for Mobile Wallpaper
Task 5	Get Directions	Get Directions
Task 6	Find an Image	Find a definition
Task 7	Browse News	Browse News

The intent was for each task in Task Group A to require the same amount of effort and search behavior as the corresponding task in Task Group B. Participants performed all 14 tasks in the task group order, and answered post-test and post-task group questionnaires. A post-test questionnaire was also collected.

Findings and Recommendations

The following section details...etc, etc.

Overview

After completing all tasks, Google was selected as the preferred search engine for all participants. Google was rated as the better search engine related to ease of use, overall satisfaction and meeting of expectations. On average, the time to complete common mobile search related tasks took longer in Infospace than on Google. While the average time to complete all 28 tasks was 1 minute 52 seconds on Google, it took an average of 2 minutes 45 seconds to complete the tasks on Infospace. Furthermore, the average number of clicks on Google was less than the average clicks on Infospace (2.9 compared to 5.5 clicks).

In terms of successful completion of the tasks, the participants were able to successfully complete 12 of the 14 tasks, with 2 partial successes. With Infospace, 5 tasks were considered successfully completed, with 3 tasks partially completed and 6 tasks failed.

In this section, we will discuss various usability issues that were uncovered during the study that can help to further understand these findings. Within each issue, we discuss (1) what the issue was, (2) the evidence of the issue from the usability study, and (3) recommendations for InfoSpace on how to address the issues.

Scale for rating usability issue

- 1: Critical – Barrier to service
- 2: Serious – Significant disruption or confusion
- 3: Moderate – Noticeable difficulty for users
- 4: Minor – Minor usability issue

Hierarchical Categories

“I’m looking at a whole bunch of nothing.”

All participants experienced difficulty understanding and adjusting to the way InfoSpace displayed their search results. After entering initial search terms into InfoSpace, the results that are returned are initially split into several categories, including labels such as *News*, *Mobile Web*, *WWW Web*, *Images*, etc. Once clicked, then the user is brought to the results of their initial search criteria that fit under the category selected. Initially, this caused a great deal of confusion for both participants, particularly in the first three tasks completed in InfoSpace. Participant 1, after attempting to complete the first four tasks on InfoSpace, still did not understand that InfoSpace was returning a set of categories. On the task where the participant was asked to search for wallpaper, Participant 1 proceeded through a continuous loop of (1) entering search criteria, (2) viewing a set of categories based on the criteria, and (3) interpreting that the criteria entered was not pulling any

results. This loop continued over five refined search attempts with five different search terms with the participant repeatedly saying, “It’s pulling up nothing.” Eventually, the participant said, “I don’t know what else to put.”

Participant 2 had a similar experience. While proceeding through the first InfoSpace task and seeing the category list, Participant 2 stated, “it’s not what I expected.” He also proceeded through the same continuous loop on task 3, constantly saying “I’m getting the same (results) as last time.” After several attempts to find the URL to the Los Angeles Time, he stated, “to be honest with you, at this point, I’d probably give up.”

“I’m learning I have to take another step...I don’t like it.”

On task 4 in InfoSpace, Participant 2 eventually began to understand how the results were being displayed. This came after a series of trial and error attempts while clicking all the different categories and moving back and forth between the categories and the information listed under each category. He stated, “it is much faster now that I understand the device.” However, reflecting on his experience, the participant followed-up by stating, “I’m learning I have to take another step...I don’t like it.” This statement was made in recognition that the results were broken into different categories.

In comparison, Google’s result hierarchy was fairly flat throughout all the tasks. The results that were displayed after entering the search criteria in Google resulted in a list of websites or information that resulted in completion of the task. In the “movie time lookup” task, Participant 1 did not even need to enter in search terms to complete the task. After adding a “Movie Page” to the Google mobile home page, Participant 1 simply entering their zip code and saw the information he was looking for (see the “Front Page Usage” issue for more details). Many of the tasks were completed simply by viewing the results page without having to take additional clicks.

Severity: 1

Recommendation:

Overall, the display of the categories resulted in both initial confusion and persistent dissatisfaction. Without understanding the reasoning as to why InfoSpace implemented their results in this manner, our recommendation is to evaluate the necessity for including categories as a required 2nd level of refinement. As is apparent on many of the tasks performed by each participant, InfoSpace required the participant to define what category they believed would display the result they wanted. However, as is apparent in Google’s results interface, Google performs some logical algorithms to predict what the user is interested in viewing and displays that immediately. We recommend that InfoSpace follow a similar strategy.

It is also interesting to note that the majority of tasks completed on InfoSpace (9 out of 14) were done while the participant was in the categories “WWW Web” or “Mobile Web.” This data suggests that potentially many of the requests coming from mobile users can be found in these two categories. We recommend bringing some of the most relevant content under these categories to the first level of results in order to facilitate quicker access to information that would allow users to complete their tasks more easily.

Related Search Confusion

“I’ll try...that’s not right”

Findings:

Both participants were confused by how the “Related Searches” displayed below the categories on the results page functioned. After searching “stock” in a task which asked users to find the Starbucks’ stock price, Participant 1 *saw no immediate results (because all the categories were closed) and clicked “stock market” in under the “Related Searches” heading. The participant seemed unaware that he had initiated a new query because none of the result categories opened up in response—so the participant perceived that no results had been returned. Ultimately, the participant typed in “yahoo” in the search results box, followed the link and completed the search task on Yahoo.com.

Because the categories remained closed after many search queries, related searches were often the only immediately visible results the participant could find. Both participants clicked results displayed under “Related Searches” repeatedly on multiple tasks without first opening the categories to see what results were displayed there. This tendency persisted even after the participants understood that results categories needed to be clicked on to display results. On several tasks, participants got stuck in a frustrating “loop” of performing successive searches without viewing any results of their previous search.

Severity: 1

Recommendations:

We recommend opening up search results categories to display some results in each category, so that the results displayed under “Related Searches” are not the first thing the user sees on the results page.

Front Page Usage

“The reason I like it is because I can just add my stocks”

Findings:

On the InfoSpace front page, neither participant utilized or commented on the sample queries, the “InfoSpace Find It!” link or the “What can I search for?” link.

Both users utilized Google’s front page direct links and customization options to complete tasks. Participant 1 successfully used the “Add Movies” link to find a showing of Beowulf in his area without using the search box at all. Participant 2 successfully completed the stock lookup task by clicking “Add Stocks” after querying “Starbucks Stock Symbol” and entering the 4-letter stock symbol in lookup field. He expressed satisfaction that he was able to permanently add Starbucks’ stock ticker to his front page.

Severity: 3

Recommendations:

We recommend adding direct links for common search tasks such as stocks, local weather and movies to the InfoSpace front page. We also recommend allowing users to customize the InfoSpace front page to display commonly searched information that the user wishes to have immediately available.

Discoverability

“I would assume there would be a link to go to movie times”

Findings:

On InfoSpace, Participant 1 searched for “movie times Seattle beowulf,” which returned a top display containing the movie poster, title and rating—along with links to “showtimes” and “summary” above the search results. The Participant did not notice the “showtimes” link, as indicated in the quote printed above even though it was on the results page he was looking at.

The home page link on Google and InfoSpace is placed in areas of the site that was difficult for all users to find. Participant 2 did not discover the ‘Home’ icon in the top-right corner of the InfoSpace search results page until well into the task set. Up to that point, he used the browser’s “back” button to navigate back to the InfoSpace front page after every query. When he discovered the button to take him directly to the home page, he stated, “the home button is too small.” This was stated after the participant commented that he wished the site had a “back to home” button. Once he discovered it, he stated that he liked that it was there. Neither Participant used the “InfoSpace Search Home” link on the bottom of the results page.

When moving on to the Google tasks, the same participant expressed a similar concern with Google’s treatment of the back-to-home functionality, stating that “it’s not at the top.” Participant 2 discovered and used the “Google Home” link on the bottom of the Google results page, but said that he had expected a “Home” link at the top of that page (like in InfoSpace). He followed up by saying “that’s not

very nice.” This was in response to the participant needing scroll to the bottom of the results pages over several tasks to click the “Google Home” link to refine his search criteria. As mentioned in the Front Page Usage section, neither participant used or commented on the InfoSpace front page links.

Both participants were often confused while using InfoSpace when none of the results categories opened in response to their search queries. We believe that one of the reasons for this recurring issue was that our participants did not notice the number next to each category link that indicated how many results that category contained.

Another issue of discoverability related to the layout was also seen with the way that content was prioritized on the results page of Google. Participant 1 entered “Seattle Art Museum” in Google in an attempt to find the URL for the Seattle Art Museum. However, the results that were returned to the user at the top of the page displayed the address and phone number of the museum first. This required the user to scroll down to view the web pages to find the URL. This particular issue of content ordering and layout was also seen in InfoSpace, where certain search terms entered by the participants revealed a list of news results above the traditional categories.

Severity: 1

Recommendations:

We recommend that InfoSpace increase the visibility of the ‘Home’ icon, the front page links and other embedded links (such as movie times and the number of results returned per category), possibly by increasing text and icon size and choosing more contrasting colors for their links.

Browsing

“Very interesting”

Findings:

While browsing news results for the query “hurricane season 2007” on InfoSpace, Participant 2 seemed to become interested in the results and began reading the indexes out loud. One of the results he browsed sparked additional interest, and he refined his search query to “hurricane season deaths 2007” to find out more about that subject. Participant 1 expressed dissatisfaction about the results returned by InfoSpace for a news-related query on the Amazon Kindle e-book reader, saying “I see people talking about it, but not what it is.” Both participants seemed confused and frustrated that InfoSpace returned news results that did not contain the search terms they queried.

On Google, Participant 2 expressed satisfaction with the result ranking while browsing news-related results about the Amazon Kindle, saying “I like how it determines which ones I want.” Participant 1 commented “I’m seeing a lot on the news” while browsing for “hurricanes” on Google.

We noticed that on the “recent hurricane” search task InfoSpace appeared to return more relevant and recent results than Google.

Severity: 3

Recommendations:

We recommend refining result accuracy to return more pertinent results. We also recommend expanding news result summaries to make it easier for users to browse news results for both their search criteria and for interesting related content.

Mobile-related Searches

“I don’t know what else to put.”

Findings:

Participant 1 was frustrated with the results displayed on InfoSpace while looking for cell phone wallpaper for the television show *The Office*. He queried “office cell wallpaper,” “cell phone wall,” “wallpaper” and then clicked on related searches for “cell phone wallpaper” and “free cell phone wallpaper” without pulling up any satisfying results. After his initial query, the participant clicked the Images category but did not find any satisfactory results. The related searches seemed to confuse him (as mentioned in the Related Search Confusion section) because after clicking on the related search, all of the results categories remained closed and no new results were displayed. Participant 2 seemed confused that his query for “ringtone Kanye West” on InfoSpace automatically opened the news category even though none of those news results displayed his search terms in their indexes.

Participant 2 performed the cell phone wallpaper search task on Google, and before entering his search query remarked “right now, I’m just looking to see if it gives me options [on the home page] for wallpaper,” indicating that he expected cell phone wallpaper information to be available through a direct link. When he did not find the information there, he queried “the office show wallpaper” and found the results he was looking for under the Images category.

Severity: 2

Recommendations:

Since one participant indicated that he expected to see mobile-related search items on the front page, it might be helpful to provide a front page link to these items, or to give users the option of adding one by customizing their front page. Alternately,

common mobile-related search terms could be made to pull up a category of mobile-specific web results.

The table below summarizes the main issues uncovered and the recommendations of for each issue.

Table 1.3. Summary of Findings and Recommendations

Severity	Issue	Recommendation
1	Category Issues	<ul style="list-style-type: none"> • Minimize the reliance on categories and use them as secondary options. • Display WWW Web and Mobile Web content immediately after a search on the first result page.
1	Related Search Confusion	<ul style="list-style-type: none"> • Open up search results categories to display some results in each category.
3	Front Page usage	<ul style="list-style-type: none"> • Add direct links for common search tasks (stocks, weather, etc.) to the front page. • Allow users to customize the InfoSpace front page.
1	Discoverability	<ul style="list-style-type: none"> • Increase the visibility of the ‘Home’ icon, front page links and other embedded links (movie times, etc.). • Increase text and icon, size, add contrasting colors.
3	Browsing	<ul style="list-style-type: none"> • Refine news result accuracy. • Expand news result summaries.
2	Mobile-Related Searches	<ul style="list-style-type: none"> • Provide a front page link to mobile-related content categories. • Allow users to customize front page. • Add mobile-specific web results category.

Conclusions and Next Steps

Both of our participants expressed confusion and frustration while performing search tasks on InfoSpace. The time on task was also significantly greater using InfoSpace than using Google. On the Post-Test Questionnaire both participants rated Google as their preferred browser on a majority of satisfaction and ease of use criteria, and both users said that they would prefer to use Google over InfoSpace in the future.

Our study points to major usability issues regarding the way InfoSpace displays results. Participants were confused by the layout of the results page and did not initially understand that the closed categories contained the results they were looking for. The extra clicks necessary to open the categories and browse the results increased time on task, which is an especially important factor considering the bandwidth and interface limitations of mobile internet. In addition, discoverability issues on the front page and the results pages made completing search tasks more difficult.

Going forward, we recommend that InfoSpace open up the categories on the results page to display a “preview” of the search results. We also recommend that InfoSpace change the front page to provide more direct links to common mobile search tasks such as weather, movies and stocks, and that InfoSpace increase the visibility of links and navigation elements.

Self Assessment

Having designed, executed and reported on the usability study, there are certainly areas that, when reflecting on our experiences, could have been improved throughout the entire process. In the following section, we openly discuss some of the major issues and areas of improvement that we have taken as lessons learned from this process.

Preparation Stage

One of the areas that we certainly should have paid more attention to is the setup of the tasks. Initially, as stated in our test plan, certain tasks were chosen and ordered in a specific manner due to the assumption that certain tasks were related to each other. For example, we paired the “Stock Search” task with the “Weather Search” task, because we felt that these are both tasks that can be completed within the search engine. Similarly, we paired “Ringtone Search” with “Wallpaper Search” because we felt that since both are cell-phone specific queries, they would harbor relatable results. However, having reviewed the tasks and data, it is unclear as to whether the tasks that we paired are at all comparable. While the motivation was primarily to collect as much data as we could from two users, if we were to run this study again, we should take into consideration a breakdown of each of these tasks and determine (1) if they are comparable, and (2) what type of data are we going to collect that suggests that the two are comparable. By performing this additional step, we can have more assurance and evidence that would suggest that any differences in the participants’ performance can be attributed to the search engine (and not with issues related to the task).

Execution Stage

As mentioned in the report, we were unfortunately not able to utilize actual cell phones for our study. While we felt that we collected a great deal of good data, it is unknown what factors were influenced due to the fact that tasks were completed on a computer. We can speculate on several potential variables, including:

1. Search term length: *would users have typed as much as they did if requested to do so on a small device?*
2. Readability of the screen: *would readability issues come into play, which could modify the results?*
3. Window size of the screen: *did we accurately make the browser window the appropriate size for a mobile device? Would more or less scrolling occur?*
4. Time on task: *would the time to complete the task be longer than documented in this report?*

These are just several issues that may have been affected by the execution of the study that need to be taken into consideration when interpreting the results and when conducting future research. This is both a lesson regarding the importance of proper planning, the need to quickly adapt to unforeseen circumstances, and the understanding of one’s own limitations in the study and data.

Analysis Stage

During the analysis process, the team certainly learned about the importance of creating a usable data collection form. Clearly there were several issues with the form that, when taking notes during the study, was difficult to fill out. Both note takers hardly utilized the top portion of the form, which was intended to help document the various categories and results viewed and selected. These sections became additional overhead, as the note takers attempted to fill them out quickly after each task or entirely after the study. Furthermore, while listening to the participants and attempting to document actions and quotes, the team did not prepare any codes to document what terms were entered, clicked or commented on. This resulted in a great deal of additional coding after the usability study, where the note takers went through each task and determined and coded which documented statements were search terms, results, results that were only viewed, categories, related search links, etc. Clearly, there were usability issues with our own form, but once we completed the analysis, we recognized how we could improve the entire layout and use standard keys that we could utilize the next time around.

Furthermore, it's worth mentioning that often in the analysis stage, we had several reflections that we wish we had asked the participant during the study. For example, on several occasions, the participant would not complete the task or misinterpret the task completely. The facilitator recognized during the analysis that perhaps he should have assisted the participant in such a way to help him get on track and to actually show us how he would perform certain actions rather than him saying "this is what I *would* do." Furthermore, the participant ranked certain items on the post test and task questionnaire that the team would have like more clarification. These issues are always inevitable; however, it is a good lesson to continue to learn regarding the role of the facilitator and the fact that there is always room for improvement.

Appendix

Screening Questionnaire

The screening questionnaire is to be conducted via email. We will collect different email addresses from potential participants that we know. We will ask them to fill out the following questionnaire and send it back to us. Based on their answers, we will determine if they qualify for the study.

The following is the criteria that must be met in the survey:

1. 18-25, 26-35: Acceptable.
2. Consumer research, Marketing, Software or Web Design: Acceptable
3. Informational only
4. Must answer yes
5. Informational only
6. Informational only
7. If no, see 8
8. Within the next 3-6 months or Within the next 3 months: Acceptable
9. If yes, see 10 & 11
10. If within the last 3 months or week, see 11
11. If #10 is “within the last 3 months or week” and #11 is Google, AT&T or Sprint, do not qualify. All other responses acceptable.
12. Informational only
13. If response is “I am not comfortable with it and I choose to not use the service,” do not qualify. All other responses acceptable.

Questionnaire

We are currently graduate students at the University of Washington looking for individuals to participate in a usability study. The following are some questions we would like you to fill out and send back to us so that we can proceed with potentially scheduling you for our study. The questionnaire should take no longer than 10 minutes to complete. Once finished, please reply to our email and attach this document.

1. What age group do you fit into? (select one)
 - 17 or younger
 - 18-25
 - 26-35
 - 36-50
 - 50 or older

2. Have you ever performed activities of any kind in any of the following fields? (select all that apply)
 - Consumer Research
 - Marketing
 - Usability
 - Software or Web Design

3. Which best describes you? (select one)
 - Student
 - Business person
 - Business person – Executive level

4. Do you currently own a mobile phone? (select one)
 - Yes
 - No

5. If yes, which make and model is it?

6. Who is your current service provider? (select one)
 - AT&T
 - Qwest
 - Nextel
 - T-Mobile
 - Verizon
 - Other _____

7. Do you have a data plan on you current phone? (select one)
 - Yes
 - No

8. If no, when do you think you will be getting a data plan? (select one)
- Within the next 6 month to a year
 - Within the next 3-6 months
 - Within the next 3 months
 - I do not want or have a need for a data plan.
9. Have you ever performed a web search on your mobile phone? (select one)
- Yes
 - No
10. If yes, when was the last time you performed a mobile web search? (select one)
- Within the last 6 months to a year
 - Within the last 3-6 months
 - Within the last 3 months
 - Within the last week
11. When you perform your mobile web searches, which search provider do you typically use? (select one)
- The one that comes with my mobile phone
 - Google
 - Yahoo
 - MSN search
 - Netscape Search
 - Other _____
12. What types of things do you search for? (select all that apply)
- Addresses
 - Entertainment
 - Stocks
 - Weather
 - Sports
 - News
 - Other _____
13. How would you describe your comfort level with performing a mobile web search? (select one)
- I am very comfortable with it and I do it all the time
 - I am pretty comfortable with it and I do it from time to time
 - I am sort of comfortable with it and I only do it when I have to
 - I am not comfortable with it and I choose to not use the service

Thanks for your time, and we look forward to speaking with you!

Facilitator Script

Facilitator Checklist

- Cell Phone Emulators
 - Note: prior to the session, be sure all memory is wiped from the interface, including all previous saved searches.
- Pencils (2)
- Task Booklet (1)

Facilitator Will Read This To Participant:

Before we get started, I want to thank you for participating in our study today. Just to let you know, I'm going to be reading from this script throughout most of our session today just to be consistent with all of the participants in our usability study. I'll be moderating the session, and my peers, <insert names here>, will be listening in as well and will be taking notes.

The purpose of this study is to examine two different products on a cell phone. We are interested in gathering information about your experience. We will supply the equipment for you to use during this study and will ask you to run through several scenarios with us. I will go through some more details of the study shortly. Before we begin we would like for you to sign this consent form, which essentially gives us permission to have you partake, in today's study. If you have any questions about the form, let us know.

(Provide consent form to participant)

Thanks for filling that out.

(Study Background)

So, now a little background information for you. We have been contacted by one of the mobile search companies in this study to understand how usable their product is when compared to other similar products. We are a third party who has had no hand in the design or development of the two products we will be interacting with, so feel free to be honest with us if there are any comments you have along the way.

(Study Set-Up)

The study will be broken up into a series of scenarios with tasks associated to them. At any point during the scenarios we may interrupt you with questions about your experience. We may also abruptly end a scenario if we have received enough data and would like you to try something else. This does not mean you were doing something "wrong" it just means we are happy with all the information we received for that particular task/scenario.

(Think-Out-Loud Instructions – Data and Text from E. Rose Instructions)

As you work through the tasks today, we would like you to think out loud. This helps us to understand what you are thinking about when you run through the tasks. Some simple things to think about when thinking out loud:

- When reading something, you will read it out loud and say anything that comes to mind.
- When you are working on a task, you'll talk your way through the task. Tell us what you are looking for or trying to do. You will also tell us what you expect to happen before you do a particular task (such as clicking a button).
 - An example of this may be "I am looking for this link... oh here it is... when I click this link, I expect to see this happen..."
- If you stop talking or your voice becomes too quiet to hear, we will ask you to start up again or speak louder. If you are drawing a blank on something, it is okay to tell us that.

(We are not testing the participant)

One final thing before we start the study is for you to understand that in no way are we testing you. It is important to understand there are no right or wrong answers today. We are interested in your experience with the two products for us to report back to our client. If there is something in the study today you find difficult or confusing, there is a good chance others will have the same issues.

Okay. Do you have any questions before we begin?

[answer any questions the participant may have]

Okay. Let's get started.

PRE-STUDY QUESTIONNAIRE

First, to get you used to talking aloud, we're going to have you fill out a short questionnaire, and have you read the instructions, the questions and your answers out loud.

[Hand the participant the task booklet]

This is our task booklet that has all of the questionnaires and search tasks that you will be performing today. So, please turn to the first page of the task booklet, and begin answering the questions while talking aloud.

[Participant fills out the questionnaire.]

Notes:

- *Remind participant if they are not reading/talking aloud*

- *Answer any questions they may have*
- *Be sure they do not move onto the next page after the questionnaire until you are ready*
- *Be sure to instruct the participants to navigate back to the search engine home page after every task*
- *Remind participants to continue to think aloud as they complete the post-task and post-study questionnaires*

TASKS AND SCENARIOS

[Proceed once the participant finishes the survey]

Okay. So, let's move on to the first task. Remember to read the instructions and scenarios aloud.

[Proceed through the first task]

Reminders:

- *Do not guide the participant in any way*
- *Do not answer any of the participant's questions unless necessary*
- *If they stop talking aloud, politely remind them to continue to speak*
- *If users spend too much time on external sites (external to the search results), then you may assist them or stop the task all together (depending on time)*
- *Make sure the participant acknowledges their completion of the task before moving to the questionnaire.*

[Proceed once the user completes the task]

Okay. Let's flip to the next page and answer a few questions about that task.

*[Once completing the questionnaire, repeat **TASKS AND SCENARIOS** for all 7 tasks]*

[Proceed once the user completes the first 7 tasks and questionnaires]

Okay. That concludes the searches you'll be running on <insert first search provider here>. Now, I'd like you to answer the following questions while thinking about the searches you just performed.

[Wait for the participant to finish the questionnaire]

Now, we're going to move on to a different search provider, <insert search provider here>. When you're ready, turn to the next page and begin the next task.

*[Repeat the **TASKS AND SCENARIOS** for the next 7 tasks]*

Okay. That concludes the task portion of the usability study. Please turn the page and answer the following questions about the searches you completed on <insert search provider here>.

POST-TEST QUESTIONNAIRE

[Continue once the specific search provider questionnaire is completed]

Okay. Now please turn the page and continue with the last questionnaire.

[Wait until the participant finishes all questions]

Alright. That concludes the usability study. Thanks for participating!

Consent Form

UNIVERSITY OF WASHINGTON CONSENT FORM FOR PARTICIPATION IN A USABILITY STUDY

Contacts: Emma Rose, instructor of TC517 (ejrose@u.washington.edu)
Student Team: Adonis Acuario, Charlie Claxton, Jonathan Morgan

You are being asked to participate in a research study examining a comparison between two competing search user interfaces. This consent form provides information about the study to help you decide whether or not you wish to participate.

Please read this form carefully. Feel free to ask questions about the purpose of the research, the procedures of this investigation, the possible risks and benefits, your rights as a volunteer and any other questions about the research or this form. When all your questions have been answered, you can decide if you want to be in the study or not. You are also free to leave at any time.

PURPOSE AND BENEFITS

As part of a graduate level course: TC 517: Usability testing, students researchers are conducting several pilot usability studies to investigate how to improve the design of their product. The results of this study will be used as a learning experience for the students and the data collected today may also lead to design recommendations.

PROCEDURES

As a participant in this study, you will be asked to do one or more of the following:

- do a set of tasks using a product
- think out loud while doing these tasks
- complete a questionnaire
- answer interview questions

In addition, the student research team will also be observing your use of the product and taking notes. In addition, you may be video taped.

VIDEOTAPING

We would like to videotape you as you use this product while thinking aloud. We will not loan or give the videotapes or copies of the videotapes to anyone else. Portions of these videotapes may be presented in educational settings or shared with product designers. While your name will not be included in these presentations, someone who knows you may recognize your voice or face. We request your permission for the research team to use the videotape in the following way:

- For the research team to review the results of study
- Internal presentations to the product designers or study sponsors
- None of the above

RISK, STRESS, OR DISCOMFORT

This study will not expose you to risk, stress or discomfort that exceeds using a computer, being videotaped, or completing questionnaires.

OTHER INFORMATION

Taking part in this study is voluntary and you can stop at any time. All information about your participation in this study is confidential.

Signature of Student Research Team Date

The study described above has been explained to me, and I voluntarily consent to participate in it. I have had an opportunity to ask questions and understand that future questions I may have about the research or about my rights will be answered by the researchers named above.

Signature of Participant Date

(please print name)

Task Booklet

Task Booklet

Please do not turn the page until instructed to do so

Participant #: _____

Pre-Study Questionnaire

PLEASE READ ALOUD

Please answer the following questions to the best of your ability.

1. Have you ever performed activities of any kind in one of the following fields? (select all that apply)
 - Consumer Research
 - Marketing
 - Usability
 - Software or Web Design

2. Which best describes you? (select one)
 - Student
 - Business person
 - Business person – Executive Level

3. Do you currently own a mobile cellular device? (select one)
 - Yes
 - No

4. If yes, which make and model is it?

5. Who is your current service provider? (select one)
 - AT&T
 - Qwest
 - Nextel
 - T-Mobile
 - Verizon
 - Other _____

6. Do you have a data service on you current phone plan? (select one)
 - Yes
 - No

7. If no, when do you think you will be getting a data service plan? (select one)
 - Within the next 6 month to a year
 - Within the next 3-6 months
 - Within the next 3 months
 - I do not want or have a need for a data service plan.

8. Have you ever performed a web search on your mobile phone? (select one)
 - Yes
 - No

9. If yes, when was the last time you performed a mobile web search? (select one)
- Within the last 6 months to a year
 - Within the last 3-6 months
 - Within the last 3 months
 - Within the last week
10. When you perform your mobile web searches, which search provider do you typically use? (select one)
- The one that comes with my mobile phone
 - Google
 - Yahoo
 - MSN search
 - Netscape Search
 - Other _____
11. What types of things do you search for? (select all that apply)
- Addresses
 - Entertainment
 - Stocks
 - Weather
 - News
 - Other _____
12. How would you describe your comfort level with performing a mobile web search? (select one)
- I am very comfortable with it and I do it all the time
 - I am pretty comfortable with it and I do it from time to time
 - I am sort of comfortable with it and I only do it when I have to
 - I am not comfortable with it and I choose to not use the service

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

Scenarios & Task List

TASK LIST A, #1

You are planning to go out for dinner and a movie tonight, and you want to know if you will need an umbrella.

Find out if it is supposed to rain tonight.

*Please inform the instructor when you feel you have completed this task.
Do not turn the page until told to do so.*

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

1. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

2. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

3. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST A, #2

You are in the mood for an action movie, and have heard good things about the movie *Beowulf*.

Find out where and when *Beowulf* is playing tonight in Seattle.

*Please inform the instructor when you feel you have completed this task.
Do not turn the page until told to do so.*

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

4. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

5. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

6. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST A, #3

A friend of yours mentioned to you the other day that the *Los Angeles Times* had a good movie review section.

Find their website.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

7. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

8. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

9. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST A, #4

While you are waiting for your date to get ready, you remember that new Kanye West song you heard the other day.

Find a ringtone by Kanye West.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

10. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

11. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

12. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST A, #5

Before the movie you plan to meet friends at the restaurant Thai Ginger downtown. You want to make sure that you know how to get there.

Find directions to Thai Ginger from your home.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

13. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

14. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

15. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST A, #6

During dinner, you and your date talk about the most recent Democratic debate.

Find a picture of Barack Obama from a recent presidential debate.

*Please inform the instructor when you feel you have completed this task.
Do not turn the page until told to do so.*

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

16. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

17. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

18. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST A, #7

You heard that this hurricane season has been a bad one.

Find some information about recent hurricanes.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

19. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

20. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

21. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

Infospace Questionnaire

PLEASE READ ALOUD

This concludes the searches you will be performing on Infospace. When answering the following questions, please reflect on all the searches you performed and your experience and perceptions on completing the tasks **ONLY WHEN USING INFOSPACE**.

1. How dissatisfied or satisfied with how your search results were displayed?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

2. Overall, how well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

3. The look and feel of Infospace is:

Very Unappealing	Somewhat Unappealing	Somewhat Appealing	Very Appealing
1	2	3	4

4. Rate the following on your experience using Infospace:

	Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
Using Infospace was:				
Navigating through the search results was:				
Completing the tasks with the search result categories was:				
Scanning the				

search results was:				
The readability of the results was:				

5. List 3 things you liked the most or found useful when using Infospace:

6. List 3 things you disliked the most or found less useful using Infospace:

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #1

It is a nice day and you decide to spend an afternoon downtown. You walk into the nearest Starbucks for a drink, and notice how busy it is.

Find out how much Starbucks' stock is currently worth.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

22. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

23. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

24. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #2

You notice a lot of traffic going south from downtown, and wonder if there might be a basketball game going on.

Find out when the Sonics are playing this week.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

25. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

26. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

27. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #3

You see a poster for the Seattle Art Museum and realize that you have not been there recently, and you would like to know more about their collection.

Find their website.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

28. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

29. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

30. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #4

Your friend mentions what happened on the most recent episode of *The Office*, your favorite show.

Find some *The Office*-themed wallpaper for your cell phone.

***Please inform the instructor when you feel you have completed this task.
Do not turn the page until told to do so.***

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

31. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

32. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

33. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #5

You and your friend are ready for lunch and decide to walk over to P.F. Chang's, but you want to call first to make sure they can seat you.

Find the phone number for the P.F. Chang's downtown.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

34. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

35. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

36. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #6

Around Thanksgiving every year, you hear people talking about something in Turkey meat called “tryptophan” that makes people tired.

Find out what the word “tryptophan” means.

*Please inform the instructor when you feel you have completed this task.
Do not turn the page until told to do so.*

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

37. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

38. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

39. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

TASK LIST B, #7

You are curious about Amazon's new Kindle electronic book reader.

Find out some information about the Kindle.

Please inform the instructor when you feel you have completed this task.

Do not turn the page until told to do so.

Post-Task Questionnaire

PLEASE READ ALOUD

When answering the following questions, please reflect on the task you just performed.

40. How difficult or easy was it to complete the task?

Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
1	2	3	4

41. How dissatisfied or satisfied are you with the search results you were given?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

42. How well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

Google Questionnaire

PLEASE READ ALOUD

This concludes the searches you will be performing on Google. When answering the following questions, please reflect on all the searches you performed and your experience and perceptions on completing the tasks **ONLY WHEN USING GOOGLE**.

1. How dissatisfied or satisfied with how your search results were displayed?

Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4

2. Overall, how well did the results meet your expectations?

Not at All Well	Not Very Well	Fairly Well	Very Well
1	2	3	4

3. The look and feel of Google is:

Very Unappealing	Somewhat Unappealing	Somewhat Appealing	Very Appealing
1	2	3	4

4. Rate the following on your experience using Google:

	Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
Using Google was:				
Navigating through the search results was:				
Scanning the search results was:				
The readability of				

the results was:				
------------------	--	--	--	--

5. List 3 things you liked the most or found useful when using Google:

6. List 3 things you disliked the most or found less useful using Google:

PLEASE WAIT FOR INSTRUCTIONS BEFORE TURNING THE PAGE

Post-Test Questionnaire

PLEASE READ ALOUD

This concludes the task portion of the usability study. When answering the following questions, please reflect on all the searches you performed and your experience and perceptions on completing the tasks **BOTH ON INFOSPACE AND GOOGLE**.

1. For each of the following, place an **X** under the search provider that you felt was better in each of the search qualities listed below:

	Infospace	Google
The ease of completing each of the tasks:		
The ease of navigating through the search results:		
The ability to easily scan the search results:		
The readability of the search results:		
The overall visual design of the site:		
Overall satisfaction of the results:		
Overall ease of use:		
Ability to refine search results:		

2. Was there anything you really liked about Google or Infospace?

3. Was there anything you really disliked about Google or Infospace?
4. What feature would you like to see added to either search provider?
5. After your experience today using Infospace and Google, select which mobile search provider do you feel more comfortable using for your personal use?

Infospace

Google

**THIS CONCLUDES THE USABILITY STUDY.
THANK YOU FOR PARTICIPATING!**

Data Collection Forms

Participant #:		Participant Comments:
Task #:		
Attempt #:		
Search Terms Used:		
Categories Viewed:		
Category Selected:		
Results Viewed:		
Results Selected:		
# Clicks:		
Scroll? Y/N		
Refine Search? Y/N <i>(if yes, begin new form)</i>		
Time	Participant Action	

Logistics

Roles (during the session):

- Jonathan: Facilitator
- Adonis: Equipment Manager
- Charlie: Lead Note-Taker

Date & Location:

- These usability studies will occur sometime between 11/25-12/1.
- The current plan is to schedule the sessions in the UW LUTE Lab (pending space availability).
- We are targeting evening studies on Thursday or Friday or weekend studies throughout the day.

Equipment Needs:

- We will require video recording over a surface to record the handheld screen and the participant's interaction.
- We will require a video camera focusing on the participant's face to gather facial expressions.
- No computer is necessary.
- We are currently coordinating with our contact at Infospace to get us cell phones to utilize during the study (TBD).
- We will require blank recordable media.

Recruitment:

- We are currently recruiting personal contacts and working colleagues to participate in our study.
- Recruitment will begin next week (the week of 11/11).
 - Because of the timeframe of this project we will only recruit two participants for the study
- All researchers will be actively recruiting and coordinating potential participants.

Participant Response Data

Task Set A		Participant # 1 (Google)	Participant # 2 (Infospace)
1	Easy of Use	4	4
1	Satisfaction	4	4
1	Expectations	4	4
2	Easy of Use	4	2
2	Satisfaction	4	2
2	Expectations	4	2
3	Easy of Use	4	2
3	Satisfaction	4	2
3	Expectations	4	2
4	Easy of Use	3	4
4	Satisfaction	3	4
4	Expectations	4	4
5	Easy of Use	4	4
5	Satisfaction	3	4
5	Expectations	4	4
6	Easy of Use	3	4
6	Satisfaction	4	4
6	Expectations	4	4
7	Easy of Use	2	3
7	Satisfaction	3	3
7	Expectations	3	3

A			
Questionnaire	3 things liked		
	Easy of Use	4	3
	Satisfaction	3	3
	Expectations	4	3
	Using Google/InfoSpace was:	Very Easy	Somewhat Easy
	Navigating Though the Search Results Was:	Somewhat Easy	Somewhat Easy
	Scanning the Search Results Was:	Very Easy	Somewhat Easy

The Readability of the results was:

Very Easy

Very Easy

3 Things You Liked Most or Found Most Useful

"No Ads"
 "Most Website are for Mobile Viewing"
 "Ease of Use"

"Multiple Search Criteria Avenues (i.e. - www, ".....", etc.)"
 "It Gives Immediate Search Engine Access"
 "Somewhat User Friendly"

3 Things You Liked Least or Found Least Useful

"Not Sure"

"Gui - home"
 "Search Engine Not As Strong As I Would Like"

Task Set B		Participant # 1 (Infospace)	Participant # 2 (Google)
8	Easy of Use	2	4
8	Satisfaction	3	4
8	Expectations	3	4
9	Easy of Use	4	2
9	Satisfaction	4	3
9	Expectations	4	2
10	Easy of Use	2	4
10	Satisfaction	2	4
10	Expectations	2	4
11	Easy of Use	1	4
11	Satisfaction	2	4
11	Expectations	2	4
12	Easy of Use	4	3
12	Satisfaction	4	3
12	Expectations	4	3
13	Easy of Use	3	4
13	Satisfaction	3	4
13	Expectations	3	4

14	Ease of Use	3	4
14	Satisfaction	3	4
14	Expectations	3	4

B			
Questionnaire	3 things liked		
	Ease of Use	2	4
	Satisfaction	2	4
	Expectations	2	3
Using Google/InfoSpace was:	Somewhat Difficult		Very Easy
Navigating Though the Search Results Was:	Somewhat Difficult		Very Easy
Scanning the Search Results Was:	Somewhat Easy		Very Easy
The Readability of the results was:	Somewhat Easy		Very Easy
3 Things You Liked Most or Found Most Useful	"Related Searches"		"Strong Search Criteria - It gave me what I wanted [on] 1st shot rather than multiple tries" "I like that it gave all results in a stream of data" "my data (saved data) is in front of me - saves me time"
3 Things You Liked Least or Found Least Useful	"Did Not Bring Up The Websites only news about product" "Had to Go to the Competitor's Website to answer questions" "was not easy to use"		"Home page at bottom rather than top"

Post-Test Questionnaire	Participant # 1	Participant # 2
Was there anything you really liked about Google or Infospace?	"Google - same front page as normal website"	"Infospace - home link at top of page" "multiple search options after 1st attempt (web, pictures, mobile web)"

	"Infospace - Related Searches"	"Google - I can make the home page my own" "I felt the engine was stronger - better results"
Was there anything you really disliked about Google or Infospace?	"Infospace - News only on Searches. Just gave news as results"	"Google - home page link at bottom" "didn't save search criteria" "Infospace - homepage small but nice." "not the best search results" "not as user-friendly - based on ability to make the homepage your own"
What would you like to see added to either search provider?	"Back to Home Button"	"Infospace - something to make it your own and save time" "stock quotes and movies" "Google - home page link at top"

Which provider was better in each of the separate qualities listed below:

Ease of completing each task:	Google	Google
Ease of navigating through the search results:	Google	Google
Ability to easily scan search results:	Infospace	Google
Readability of the search results:	Google	Same
Overall visual design of the site:	Google	Google
Overall satisfaction of the results:	Google	Google
Overall ease of use:	Google	Google
Ability to refine search results:	Google	Same
Which search provider do you feel more comfortable using?	Google	Google

Assignment 4 Criteria List

Content

Part One: Report of Findings

- Does the report contain an adequate executive summary that substitutes reading the entire report?
 - for the most part, but an exec summary should also include key recommendations. I only see one here.
- Is there a clear description of the product to be tested?
 - yes, but I missed the term “mobile” in there a couple of times.
- Is there a clear definition of audience and does this audience make sense for this study?
 - yes
- Is there a clear statement of study goals?
 - Yes
- Is there a clear organization to the reporting of results?
 - Yes, good.
- Have results been summarized effectively?
 - yes, I had some comments (see body of report) but for most part good. Think if you can tweak your heading slightly so they can sound more like findings instead of just categories.
 - Also think about how your report structure would change if you were reporting on the results of a full blown study – it doesn’t seem like you would want to detail what happened with each participant.
 -
- Have results been used as evidence for recommendations?

Yes, for sure. At times there was lots of specific details. Perhaps adding a screenshot or two of the interfaces would have helped demonstrate what problems the participants ran into.
- Are the results communicated to designers in a way that highlights how severe or widespread the usability issues are? Does the report give guidance on what should be fixed first?
- Is the test kit attached, is it complete?
 - Yes

Part Two: Self Assessment

- Is there a set of recognized areas for improvement?

- Have the investigators accounted for major areas of concern in the study?
- Are their concrete recommendations for improvements on the study?
 - Yes on all three. Really good thoughtful assessment of what'd you'd change.
 -

Document Design

- Is the report professional, attractive, and employ the basic tenets of good technical writing (adequate white space, headings, bullets, tables and figures labeled appropriately, etc)?
- Yes, looks good – professional looking.
- Is the tone professional and respectful? Even when delivery negative results, are does the tone of the report respect the designer, producer, programmer of the product?

Yes a good tone. I'm glad to see that you worked on this aspect based on the feedback from some of the previous assignments. It's respectful and written (for the most part) in a positive and active way. Keep an eye out for passive voice!

- Is the report free from grammar, punctuation and spelling errors?
 - Yes

Points: 154/160

Grade: 3.85