SHMAP Test Plan

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03/21/18

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INTRODUCTION/BACKGROUND

SHMAP, a mobile application, provides locations of store products on a digital map which can be easily accessed on a smartphone. The application was developed to allows users to search for items in two different ways (search and departments listing) and then visually displays the item's location on a map.

To ensure that our design affords these capabilities, we will be running usability tests in a real-life setting (the College Store). The following section describes the purpose of our test, scope, and size.

Purpose

The purpose of SHMAP is to create a more streamlined and efficient shopping experience for our users. The ability for the user to search for products through a search bar and department listings on our mobile app increases findability in stores. SHMAP will partner with multiple companies with a variety of store layouts.

The purpose of our usability tests is to evaluate the following elements of the app: search bar, locations screen, and tone/language. We also plan to evaluate the overall efficiency/perceived efficiency of the app through the use of a control group to determine if the app is successful.

Additionally, we will test our promotional video and style guide. To ensure users understand the value proposition of our promotional video, we will have users watch the video and respond to a series of post-test questions about understanding SHMAP's messaging. Users will also

compare the video's voice to our style guide to ensure brand consistency. To view the promotional video post-test questions see **Appendix D.**

Scope

The Blondes & Brunettes group will perform a usability test on the mobile application SHMAP. The test will cover important areas of the app including the location service, search bar, and departments listings. The group with gather quantitative data through metrics including errors and task completion, and qualitative data through post-test and post-task questions. After we gather the data, we will consider the results and make any necessary changes to improve the usability and overall experience of our app.

Size

We will be conducting a usability test with eight different participants from our secondary audience, end-users in a real-life setting (the College Store). Half (4) of the test group will complete the test using the SHMAP app and complete five test tasks. The other half will complete four test tasks on their own. Each user will be asked one follow-up question after each task. After the tasks are completed, the user will take a post-test. The post-test will consist of a System Usability Scale and four additional questions. Each usability test should take approximately 10-15 minutes.

PROBLEMS TO SOLVE

We will be conducting testing to identify issues related to the functionality of the SHMAP mobile application, specifically the search functionality, location services, and the language. We gather data on these areas through metrics such as errors, time on task and post-test and post-task questions. We will be determining if our app is navigable and user friendly.

In addition to the specific functions, we need to examine how efficient our app actually is overall. The whole point of SHMAP is to decrease the amount of kinematic and cognitive load needed to locate items in a store. If using our app, increases the amount of load needed, then it is not successful. We will examine the efficiency through time on task and perceived time on task.

METHODOLOGY

The methodology section includes the methods our group will use to test the SHMAP app as well as description of the participants who will take part in the usability test.

Methods

For our testing, we will be utilizing traditional usability testing to ensure that SHMAP's features meet the standards of our users late in our development process. We chose to conduct a traditional usability test because we would like to observe how our test subjects utilize SHMAP in stores. Because SHMAP will be primarily used while shopping within retail stores we would like to immerse our test subjects into this setting for our usability test. To ensure that SHMAP increases efficiency when shopping, we will compare 4 users who use SHMAP against 4 users who search for items without any assistance. The four users will perform the test tasks without

using SHMAP will be referred to as our control group. If we were to utilize a survey or online method, we would not be able to test the full functionality of SHMAP, such as physically finding the item once the test subject searches for it within the app.

Before we conduct our testing, we will utilize a screener to ensure that our test subjects are representative of our audience. For our tests, a moderator will be in the store with the user as they progress through the test. They will inform the user of each task as they complete them but will not provide any guidance that would influence the user. They will ask follow up questions after each task and after the completion of the test. Additionally, we will monitor the user's actions by recording them with a mobile device and cameras, for data analysis. We will administer a post-test to gather any additional qualitative data.

Users

For our usability test, we will be utilizing test subjects that fall into our secondary audience/user group (see persona in **Appendix A**). Our secondary audience consists of users who:

- Regularly shop at small to medium sized stores

- Own a smartphone

- Are between the ages of 20 and 50

- Have a desire to decrease their shopping time

For our testing, we will gather eight participants. Four participants will complete our test without the use of a location device or other app (control group) and four participants will complete the test while using SHMAP. We decided on the number eight, because we wanted to

have an equal number in each group and with four participants in each group, we will be able to identify 75% of our problems.

To gather participants, we will recruit college students over the age of 20, from Lebanon Valley College. Since we are sampling from such a small population and a small age range, there may be a sampling bias. To ensure that the users we are testing are representative of our audience, we will have them answer a screener. Below are four questions that we will use as a screener:

- Are you older than 20?

- Do you have a smart-phone?

- Do you go shopping in physical stores on a regular basis?

- On a scale of 1-5, with 5 being very desireable, how desirable is it for you to decrease your shopping time (spend less time in the store)?

TEST TASKS, GOALS, & METRICS

The following section will highlight the goals, tasks, metrics, and script for our SHMAP test plan.

Goals

The main goal of our usability test is to gain information on how users will interact with the SHMAP mobile application. We are interested in seeing how the users would actually use SHMAP in real life, as we have some preconceived notions of how it would be used, but no

evidence to support those ideas. We will be evaluating the following features of our SHMAP: navigation, search, location screen, efficiency, and the language.

Tasks

In order to ensure that SHMAP increases the efficiency of a shopping experience, we will compare two groups: SHMAP users and the control group. The SHMAP users will complete tasks with using the SHMAP application and the control group will complete tasks using a traditional shopping experience without any assistance.

SHMAP USERS

In order to test the usability our app, we developed five tasks based on our research questions. The three users who are completing the test with the SHMAP app will use the application to complete all of the tasks we provide. We will consider our usability testing successful if three out of four test subjects that use SHMAP can complete all test tasks without any critical errors and the time-on-task and qualitative data indicates that the app helped users be more efficient. We will consider a critical error when a user is unable to complete the task. After each location task we will ask the user how long it took them to complete the task. This will allow to see if they felt the 'shopping trip' was efficient with the use of SHMAP.

CONTROL GROUP

In order to test the efficiency of the app, we are creating a control group that will complete tasks two through five without the use of the SHMAP application. To complete the item location tasks,

the users will be given the name of the item and shown a picture of the item. While they are searching for the items, we will observe them and take notes on how they search. After each location task we will ask the user how long it took them to complete the task. This will allow us to compare how efficient they feel their 'trip' was to the reported efficiency of the SHMAP users.

Task 1 (SHMAP group only)

Task: Choose the Lebanon Valley College Barnes & Nobles Location from the location screen

Metrics: Errors

Research Question: Can users easily select a location?

Element(s) we are testing: Location Screen

Task 2 (Both groups)

Task: Find the Casemate Prints Collection Murra Coral iPhone 5s case. Once you find the item return to us.

Metrics: Time on Task, Errors

Research Question: How do users use SHMAP? Do they use search or departments?

Element(s) we are testing: Navigation/Search

Task 3 (Both groups)

Task: Find the Retro Brand Mock Twist long-sleeve T-shirt. Once you find the item return to us.

Metrics: Time on Task, Errors

Research Question: How do users use SHMAP? Do they use search or departments?

Element(s) we are testing: Navigation/Search

Task 4 (Both groups)

Task: Find the EOS Summer Fruit Lip Balm. Once you find the item return to us.

Metrics: Time on Task, Errors

Research Question: How do users use SHMAP? Do they use search or departments?

Element(s) we are testing: Navigation/Search

Task 5 (Both groups)

Task: Find the Champion Reverse Weave Hoodie. Once you find the item return to us.

Metrics: Time on Task, Errors

Research Question: How do users use SHMAP? Do they use search or departments?

Element(s) we are testing: Navigation/Search

After all of the tasks are completed, we will administer a post-test. Both the SHMAP group and Control Group will first complete a System Usability Scale (SUS) to evaluate their experience with SHMAP or searching for items without any assistance. After the SUS is completed, we will ask them four additional post-test questions:

- If you were to use this app, which search method would you be most likely to choose?
- On a scale of 1 to 10, with ten being highly recommend, how likely would you be to recommend this app to someone?

- Out of the following phrases, which do you prefer? (Item cannot be found)

- Out of the following phrases, which do you prefer? (Search bar placeholder)

The control group will answer questions four and five only.

Script

Due to the difference in tests, we will be creating a script for the SHMAP group and a slightly different version for the control group.

SHMAP SCRIPT

Introduction:

"Hi, welcome. Thank you for coming."

"I'm [name]. I am a member of a capstone group at Lebanon Valley College who is creating a start-up company called SHMAP. Our company is in the process of creating an app that features a shopping location service which would allow you to easily search for items and view them on a digital map. This is [name], who will be observing what we are doing today. We've brought you here to see what you think of the app, what seems to work for you, what doesn't, and how you interact with certain elements of the product."

"We are going to be video recording what happens here today and taking notes, but it is for analysis only. It will only be seen by members of the testing team and our professor, Dr. Jeff Ritchie. During the testing it is important to remember that we are testing and evaluating the system, not you."

"The testing we are going to do today will go like this: We will provide you with a scenario and task, which you will then complete with the SHMAP app. After each task we will ask you a question that relates to the task you just completed. While completing the tasks, we would like you to "think aloud" as best as you can. We'd like you to speak your thoughts as often as you can. Just narrate what you're doing, sort of as a play-by-play, telling us what you're doing and why you're doing it. After all of the tasks are completed, we will ask you some follow up questions. Are there any questions?"

"Now I'd like to read you what's called a statement of informed consent. It sets out your rights as a person who is participating in this kind of research. As a participant in this study: You may stop at any time, ask questions at any time, or leave at any time. Your answers are kept confidential. Are there any question before we begin?"

"Now I'd like you to complete a couple of tasks with the SHMAP mobile application. Work just as you would normally, narrating your thoughts as you go along. Please indicate when you are done with a task."

Test:

For the following scenarios, imagine that you are taking a trip to the store to find a few items that you saw online.

Scenario 1: Imagine that you are relatively new to the area and you don't know where the closest Barnes & Nobles bookstore is. Use SHMAP to choose the closest location.

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 2: Once you are in the store, you decide to look for your first item. Using SHMAP, locate the Casemate Prints Collection Murra Coral iPhone 5s case. Once you have located the item, please bring the item back to us. (Hand Test Subject Product & Images paper. Once they receive it - start timing.)

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 3: For your next item, locate the Retro Brand Mock Twist long-sleeve T-shirt. Once you have located the item, please bring the item back to us. (Hand Test Subject Product & Images paper. Once they receive it - start timing.)

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 4: Using SHMAP, locate the EOS Summer Fruit Lip Balm. Once you have located the item, please bring the item back to us. (Hand Test Subject Product & Images paper. Once they receive it - start timing.)

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 5: Using SHMAP, locate the Navy Reverse Weave Hoodie. Once you have located the item, please bring the item back to us. <mark>(Hand Test Subject Product & Images paper. Once they receive it - start timing.)</mark>

- Follow-up: "How long do you believe it took you to find that item?"

"This concludes the end of the test. We will now have you take a post-test that asks you about your experiences during this test. Once again, there is no wrong answer. The information we collect will be not be attached to your identity in any way. Thank you for participating in the test. Do you have any questions or comments on the project?"

CONTROL GROUP SCRIPT

Introduction:

"Hi, welcome. Thank you for coming."

"I'm [name]. I am a member of a capstone group at Lebanon Valley College who is creating a start-up company called SHMAP. Our company is in the process of creating an app that features a shopping location service which would allow you to easily search for items and view them on a digital map. This is [name], who will be observing what we are doing today. We've brought you here to see how you go about finding a variety of items in the Lebanon Valley College Bookstore."

"We are going to be video recording what happens here today and taking notes, but it is for analysis only. It will only be seen by members of the testing team and our professor, Dr. Jeff

Ritchie. During the testing it is important to remember that we are testing and evaluating the system, not you."

"The testing we are going to do today will go like this: We will provide you with a scenario and task, which you will then complete. After each task we will ask you a question that relates to the task you just completed. While completing the tasks, we would like you to "think aloud" as best as you can. We'd like you to speak your thoughts as often as you can. Just narrate what you're doing, sort of as a play-by-play, telling us what you're doing and why you're doing it. After all of the tasks are completed, we will ask you some follow up questions. Are there any questions?"

"Now I'd like to read you what's called a statement of informed consent. It sets out your rights as a person who is participating in this kind of research. As a participant in this study: You may stop at any time, ask questions at any time, or leave at any time. Your answers are kept confidential. Are there any question before we begin?"

"Now I'd like you to complete a couple of tasks. Work just as you would normally, narrating your thoughts as you go along. Please indicate when you are done with a task."

Test:

For the following scenarios, imagine that you are taking a trip to the store to find a few items that you saw online.

Scenario 1: The first item you decide to look for is the Casemate Prints Collection Murra Coral iPhone 5s case. Please locate the item and bring the item back to us.

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 2: For your next item, locate the Retro Brand Mock Twist long-sleeve T-shirt. Once you have located the item, please bring the item back to us.

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 3: Please locate the EOS Summer Fruit Lip Balm. Once you have located the item, please bring the item back to us.

- Follow-up: "How long do you believe it took you to find that item?"

Scenario 4: Please locate the Navy Reverse Weave Hoodie. Once you have located the item, please bring the item back to us.

- Follow-up: "How long do you believe it took you to find that item?"

"This concludes the end of the test. We will now have you take a post-test that asks you about a few elements of the app we are developing. Once again, there is no wrong answer. The information we collect will be not be attached to your identity in any way. Thank you for participating in the test. Do you have any questions or comments on the project?"

APPENDICES

- Appendix A: End-User Persona
- Appendix B: SHMAP Group Post Test
- Appendix C: Control Group Post Test
- Appendix D: Video Testing Questions

Appendix A: End-User Persona - Cal Davis

Cal Davis is a white, 21-year-old male, college student. Cal is a busy full-time college student who makes weekly trips to the store to pick up products he needs. Cal has a very busy schedule since he is taking 6 classes and has to practice every day for the tennis team. He already has to make time to study for his classes, complete homework, and complete other activities that pertain to his college lifestyle. In his free time, Cal enjoys attending sporting events and playing Dungeons and Dragons. He owns an iPhone 7, and like most people his age, he keeps up with the latest technology

Taking a weekly trip to the store is difficult for Cal to fit into his busy schedule. He hates wandering around the store to find the items that he needs. He can never find someone to assist him and gets easily frustrated with how much time he wastes searching for individual items out of the large inventory. Even though Cal goes to the same store every week he gets easily overwhelmed by the amount of products available and ends up leaving without products he needs because he doesn't have enough time.

The ideal shopping experience for Cal would be:
Cal drives 15 minutes to the store in order to pick up items that he needs. He pulls out his iPhone and looks up the first product that he needs on a mobile app. He immediately goes and picks up that product and then types in the search for his next product. Cal's shopping experience takes only 15 minutes because he was able to locate his desired items within a matter of seconds. Cal checks out of the store and heads back to school to make it to the basketball game on time. He is relieved that his shopping experience was so simple and fast.

Quotes:
"Trying to find all of my items on my own is a waste of time because I am not sure where everything is. I am very busy with homework and I just want to get in and out as quickly as possible."

"Shopping isn't my ideal 'free time' so being able to get that over and done with makes me able to fit in activities that I actually like to do, such as playing Dungeons and Dragons."

Appendix B: SHMAP Group Post-Test:

1. **If you were to use this app, which method would you be most likely to choose?**
   a. Search for items before going to the store
   b. Search for multiple items in store at a time
   c. Search for one item at a time

2. **On a scale of 1 to 10, with ten being highly recommend, how likely would you be to recommend this app to someone?**

3. **Out of the following phrases for the "item cannot be found screen", which do you prefer?**
   a. "SHWELP, looks like we cannot find that item."
   b. "That item is not on our shelves."
   c. "That item took the "in" out of our inventory."
   d. "More like an OUTventory. lol . We don't have it."
   e. "Guess you are saving some money today because we don't have that item."

4. **Out of the the following phrases for the search bar placeholder, which do you prefer?**
   a. "SHWAT can we help you find?"
   b. "What do you want?"
   c. "Let's take a gander…"
   d. "Let's search!"
   e. "Tell me what you want, what you really really want…"
   f. "Lemme find it for ya.."

Appendix C: Control Group Post-Test

1. **Out of the following phrases for the "item cannot be found screen", which do you prefer?**
   a. "SHWELP, looks like we cannot find that item."
   b. "That item is not on our shelves."
   c. "That item took the "in" out of our inventory."
   d. "More like an OUTventory. lol . We don't have it."
   e. "Guess you are saving some money today because we don't have that item."

2. **Out of the the following phrases for the search bar placeholder, which do you prefer?**
   a. "SHWAT can we help you find?"
   b. "What do you want?"
   c. "Let's take a gander…"
   d. "Let's search!"
   e. "Tell me what you want, what you really really want…"
   f. "Lemme find it for ya.."

Appendix D: Video Questions

2. On a scale of 1-5, with 5 being very interested, how interested were you while watching the SHMAP Promotional Video?

3. Based on this video, what is the value of SHMAP?

4. What was the most attractive/interesting part of the video?

5. What was the most disinteresting part?

6. Based on the promotional video, on a scale of 1-5, with 5 being high understanding, how well do you feel as though you understand what SHMAP is?

7. Based on the promotional video, on a scale of 1-5, with 5 being high trust, how well do you feel as though you trust the SHMAP brand?

8. On a scale of 1-5, with 5 being the two fit very well, how cohesive do you think the promotional video fits with the style guide?