USABILITY TEST PLAN: TESTING THE DOLPHIN WEB BROWSER

RUCHA TEMBE

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AUTHOR'S NOTE: This usability test plan was created as a course assignment for ENG 508-Usability Studies in Technical Communication.

TEST PLAN RATIONALE

Dolphin is a leading web browser for the Smartphones created by Mobotap, Inc. It has many distinct features like gesture browsing (a user can create gestures for individual websites e.g. 't' for Twitter) and Dolphin sonar (a user can use voice input to search or open a webpage). The web browser market is highly competitive with many web browsers like Google Chrome, Mozilla Firefox and Safari having both desktop and mobile versions. Dolphin is mobile-only version. Dolphin offers many distinguishing features than the desktop versions of the popular browsers. The current usability test is planned to see how useful these distinguishing features are found by the users and whether they find the Dolphin browser lacking in some respect when compared to the desktop browsers that are used.

OBJECTIVES

The current study will investigate the usefulness of the Dolphin web browser on an Android operating system. In particular, following aspects of usability will be focused on:

1. The extent to which the users find it easy to locate the various features and functionality that Dolphin browser offers.
2. The extent to which these distinctive features (gestures, sonar) are considered useful.
3. Whether the users need to unlearn any of their knowledge related to desktop browsers to use the mobile only web browser or there is appropriate transfer of learning which facilitates the use of Dolphin browser.

Additionally, the user satisfaction with the browser would be measured and the problems while accomplishing the tasks would be recorded as well. The results from the

usability test would be used to arrive at recommendations to improve the usability and visibility of the features of the browser.

RESEARCH QUESTIONS

Researcher will attempt to answer following research questions:

- How easy or difficult the participants find to locate the different functions offered by the Dolphin browser?
- How useful and usable are these different features found by the participants?
- How similar or different is the web browsing experience on a mobile as compared to desktop?
- What do the participants think about the distinctive features of gesture browsing and Dolphin sonar?

The current testing phase will result in following quantitative data:

- Number of tasks successfully completed in the allotted time
- Tasks (if any) that could not be completed in the allotted time
- Estimate of time on various tasks (includes think-aloud time)
- Number of errors and detours
- Alternate routes used to accomplish a task
- Attitude towards the browser

Researcher will also collect following qualitative data:

- What are the initial impressions about the interface of the Dolphin browser? What do the users notice and think about the different icons on the interface?
- To what extent did they find the browser easy-to-use and intuitive? What worked? What needs to be improved?
- How different is the web browsing experience on mobile as compared to the web browsing on desktop? What are the pros and cons of both browsing experiences?
- Which browsing experience is superior? Why?

LOCATION AND SETUP

All the testing will be conducted at researcher's home. An android Smartphone by Samsung – Galaxy S III with the version 10.1.0 of the Dolphin browser will be used for testing (See figure 1). The researcher will see to it that the task conditions remain the same for all the users (e.g. the users will be asked to create same gestures for a the same website).

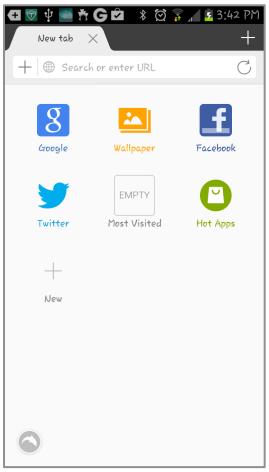

Fig. 1.: The 10.1.0 version of Dolphin browser as seen on Samsung Galaxy S III. The icons seen here are part of the speed dial.

TEST PARTICIPANT CHARACTERISTICS

The test participants will be drawn from the friends, family members and acquaintances of the researcher. The researcher anticipates testing 4 participants for the current phase of usability testing. The most important criterion for recruiting the participants is whether they use a Smartphone or not. The participants would be mostly android phone users, however participants using Smartphones based on different operating systems would be considered as well. For the initial round of testing, an equal representation of both the genders may not be considered. Another point of interest would be the amount of web browsing done using a desktop and a Smartphone as that may influence the results of this usability test. Prior to the test, following information would be elicited from the participants:

- Type of Smartphone they own
- Duration of owning the Smartphone
- Time spent browsing web daily on an average
    - Using desktop browser
    - Using Mobile Browser
- Browsers used for browsing
    - Desktop
    - Mobile
- Reason for browsing web
- Most visited websites
    - Desktop
    - Mobile

- Features that they like and dislike about the browsers that they use
    - Desktop
    - Mobile

A follow-up study may be conducted recruiting different types of users e.g. users who do not have an experience of using a Smartphone.

METHODOLOGY

The current usability study will collect quantitative data regarding the participants' ability to accomplish simple tasks using the product (e.g. bookmarking a website). Qualitative data from the participants would be collected in terms of the opinions about the intuitiveness, ease of use, effectiveness and efficiency of the functions of the browser to accomplish their goals.

RESEARCH DESIGN

A within-subjects design will be utilized for the present study. The current study is testing the usability of a single browser, thus there is a single condition (one browser) to be tested. If in a future study, a comparative study comparing more than one browser is designed, a research design decision regarding running a within-subjects or a between-subjects design might be made. Since there is only one browser to be tested, a within-subject design will be used for the present study.

All the usability tests will take place at the researcher's home. An attempt would be made to maintain good testing conditions (e.g. minimum noise and disturbance). The test will

be conducted as per each participant's convenience. The researcher will be using the same Smartphone with the 10.1.0 version of the Dolphin browser installed. Though all the participants may have a Smartphone and the Dolphin browser, each participant may have a different brand of Smartphone and different or no version of Dolphin browser. Using the same Smartphone and version of the product would standardize the conduct of the usability test.

PRE-TEST ARRANGEMENTS

The researcher will arrange administration time for each of the test after taking into consideration participant's schedule. The set-up would include a Smartphone assigned for testing with the appropriate version of the Dolphin browser installed. The researcher will audio-record the usability test using Audacity software installed on a MacBook Pro. The researcher would see to it that the set up is located in a room with minimal distraction and is ready before each session. Ideally the researcher would like to accomplish all the testing is a day or two. However, there is a possibility that all the user testing may not be completed in a single day on account of participants' busy schedules. The researcher will try to schedule the tests during weekends or in the evenings on weekdays to accommodate participants' schedules.

Testing will be performed with Smartphone users, mostly participants who are android users. There is a possibility that a participant with no experience of android Smartphone might be recruited. There will be no prior training involved. Participants who have used Dolphin browser earlier would be recruited as well. A mix of participants who have used Dolphin browser and some who have not used it at all, may give the perspectives and performance data of experienced and novice users. This may help to understand the underlying usability issues

more fully. A short script (~5 minutes) will be prepared as introduction to the test, giving the participants an opportunity to clarify any doubts/questions they may have. After the brief introduction, some demographic information (e.g. age, gender) and the pre-test information will be collected from the participants, like:

- Time spent browsing web daily on an average
- Browsers used for browsing
- Frequency of using particular web browser
- Reason for browsing web
- Comfort and confidence in web browsing

TIMING

It is estimated that the tasks would take approximately 30 minutes, which would exclude a brief introduction to the test, pre-test questionnaire, post-test questionnaire and a short debriefing after the test. The introduction would be written to orient the participants, give the participants' an idea about the procedure and provide an opportunity to clarify doubts and questions. The purpose of the debriefing would be to inform the participants about the purpose of the test and elicit participants' opinions about the product, thus collecting the qualitative data. It is estimated that all these other segments of the test would take around 30 minutes to complete.

Estimated total time to complete test (when all the tasks are completed without any interruptions) = ~ 1 hour

TASKS

The participants will be accomplishing tasks listed below. It is possible that as the participants attempt the initial tasks, they might become familiar with the product and thus accomplish subsequent tasks faster and with less errors. On account of possible learning effects, the order of the tasks will be varied. However, all the participants will always attempt the first task at the beginning as it is designed to elicit the initial impressions of the product and it would be meaningless to do this task later in the sequence.

- **Task 1:** Look at the interface of the browser and report your initial impressions about what you notice, what does the element that you see means and manner in which it would be used.
- **Task 2:** Add a website (Google) to the bookmarks. Add this bookmark to the new folder named 'Search' in the bookmarks.
- **Task 3:** Add an application (CNN News) to the homepage/speed dial.
- **Task 4:** Remove an application (Facebook) from the homepage/speed dial.
- **Task 5:** Clear Cache.
- **Task 6:** Add a gesture as a shortcut to visit a website (Twitter)
- **Task 7:** Use Sonar functionality to open a website (Facebook)

Time would be measured on all the aforementioned tasks. A task success would consist of accomplishing the task by achieving the goal within the allotted time for the task. After each task, the participant would be asked to rate the ease of locating the functionality, usefulness of the functionality, likelihood of using the functionality and the difficulty level of the task.

True counterbalancing is not feasible since with 6 tasks to randomize there are 720 possible task orders. Thus for this initial study these 4 task assignments will be used:

	Task Assignments
Participant 1	1,2,3,4,5,6,7
Participant 2	1,4,3,5,7,2,6
Participant 3	1,5,4,3,2,6,7
Participant 4	1,7,3,2,4,6,5

POST-TEST DEBRIEFING

At the end of each test session, the participant would be asked to complete a post-test questionnaire consisting of series of questions designed to elicit qualitative impressions of the ease of use of the browser, intuitiveness and usefulness of it's features (e.g. locating the functions, efficiency of the functions). The participants would be specifically asked about any difficulties they experienced as they completed the tasks. It is estimated that the post-test debriefing will take approximately 15-20 minutes following the test session. The completed questionnaires will be collected immediately after the test session and the researcher may ask few questions verbally and record the responses intended to elicit qualitative data in addition to the post-test questionnaire.

TEST SESSION SCHEDULE

The test session schedule will be determined after consultation with the participants. It would be ideal to conduct all the test sessions in a single day or two. However on account of

participants' busy schedules, it is anticipated that the testing may be completed over the course of a week.

TASK-LIST

Task #	Task Description	Task Steps	Success Criteria	Time Estimate*
1	Impressions about the interface of the browser	• Talk about what they notice and understand • Talk about what they expect to do, see	No specific success criteria as the responses will be subjective	3-5 minutes
2	Add 'Google' to the bookmarks folder named 'Search'	• Create a folder 'Search' in the bookmarks • Open Google website • Add the website as a bookmark by clicking on the 'plus' sign to the left of the address bar	Creation of folder called 'Search' in the bookmarks and adding Google website to that folder	2.5 minutes
3	Add the application for CNN News to the speed dial/ on the homepage of the browser	• Tap on 'New' icon • Search for CNN News in the Apps list. The participants would need to tap on 'load more' button to find CNN News app • Tap on the plus sign besides CNN News to add the application to the speed-dial • Check the speed dial/homepage to confirm the addition	Addition of CNN News to the Speed dial	2.5 minutes

4	Remove the application of Facebook from the speed dial/homepage of the browser	• Tap the application and hold till the two options of 'sending to desktop' and 'remove' appear at the top and bottom of the browser window respectively • Drag and drop the 'Facebook' application in the 'remove' section • Check the removal	Removing the Facebook application from the speed dial	3 minutes
5	Clear Cache	• Tap on the left button on the cellphone to display the menu • Alternative way to display menu is taping on the Dolphin icon in the bottom left and then taping on the icon of menu from the three icons • Tap on Settings in the menu • Search and tap on 'Privacy and personal data' • Search and tap on 'clear data' • Check the box for 'Clear Cache' • Tap on the button for 'Clear selected Data'	Clear the cache of the browser	4 minutes
6	Add a gesture 't' as a shortcut to visit 'Twitter' and open the twitter page using the gesture	• Tap on the left button on the cellphone to display the menu • Alternative way to display menu is taping on the Dolphin icon in the	Assigning 't' as a gesture for Twitter and after assigning the gesture, use the gesture to open the webpage	5 minutes

		bottom left and then taping on the icon of menu from the three icons • Tap on Settings in the menu • Search and tap on 'Gestures and Sonar' • In the gestures list, enter the url in the provided field and tap on 'add' button • Tap on 'clean' to clear the current gesture and add 't' as a gesture • Tap on done once the gesture is assigned • Another alternative way is to click on Dolphin icon on the bottom left on the homepage and select the icon for gesture. • Click on the settings icon on top right • In the gestures list, enter the url in the provided field and tap on 'add' button • Tap on 'clean' to clear the current gesture and add 't' as a gesture • Tap on done once the gesture is assigned • Draw the assigned gesture for Twitter and open the

		webpage		
7	Use sonar/voice functionality to open Facebook webpage	• On the homepage, click on Dolphin icon on the bottom left and select the icon for gesture. • On the displayed page, if gesture is displayed, use the slider bar at the bottom of the screen to move from gesture to sonar functionality • Speak Facebook loudly so that sonar detects the command • Facebook page is opened	Accessing the sonar functionality and opening the webpage for Facebook	2 minutes

NOTE: * Includes time for think-aloud protocol.

MEASURES

QUANTITATIVE MEASURES

To assess the usability and intuitiveness of the Dolphin browser, quantitative measures regarding the success/failure for each of the task, time on task and number of errors, if any would be collected. These measures would help to determine:

- Ease of use of the browser
- Ease in locating the functions of the browser
- Understanding of the features

Additionally the post-task ratings would also result in quantitative data shedding light on the aforementioned factors.

QUALITATIVE MEASURES

Qualitative data would be collected in addition to the quantitative data. The qualitative data will be collected as part of the pre-test and post-test questionnaires in addition to the think-aloud exercise during the tasks. This qualitative data may be supplemented by asking few open-ended questions to the participant based on the observations during the usability test. The qualitative data will be collected regarding following issues:

- Perceived usefulness of the browser
- Perceived usefulness of different features (gesture, sonar)
- Satisfaction with the browser and the features
- Problems faced while understanding and locating the features
- Preference for using this browser
- Comparison between desktop web browsers and Smartphone web browsers

REPORT

On conclusion of the testing, a study report will be prepared consisting following components:

- A brief summary of the study including the purpose of the study, the research questions along with brief description of the methods, results and implications.

- A detailed discussion of the study findings consisting the quantitative measures as well as qualitative measures
- Explanation of the study findings and it's implications
- Recommendations based on the study findings to improve the usability of the browser.

APPENDIX

PARTICIPANT SCREENER

Smartphone Web Browser Study

Study Dates: October 12- 18, 2013

Study Times: 9.00 AM to 5.00 PM

Recruiting Goal: 4 Participants, plus 1 Pilot participant

Special Notes for Recruiters:
- Equal gender distribution
- Age range between 18-50 years
- Minimum High School diploma
- Ability to express oneself in English language.

Participant's Name: _____
Recruited by: _____

Recruiter Introduction:
Hello, my name is _____ from the North Carolina State University in Raleigh, North Carolina. We are conducting a study on web browsers used in Smartphones and would like to ask you few questions. If you qualify for the study, you would get an opportunity to participate in an one-hour study and would be compensated appropriately for your time.

Will you be okay if we videotape your session?
☐Yes (continue) ☐No ***(Terminate*)***

Screener Questions:

Since the study is related to Smartphones and web browser used in Smartphones, we are looking for people who currently own a Smartphone. Do you own a Smartphone?
☐Yes (continue) ☐No ***(Terminate*)***

What type of Smartphone do you own? (E.g. Android, Iphone, Windows)
☐Android (continue) ☐Any other type ***(Terminate*)***

How long have you owned the Android phone?
☐More than 6 months (continue) ☐Less than 6 months ***(Terminate*)***

Do you browse web using your Smartphone?
☐Yes (continue) ☐No ***(Terminate*)***

How long do you browse web using your Smartphone?
☐More than 2 hours (continue) ☐Less than 2 hours ***(Terminate*)***

What web browser do you use on your Android? *[2 participants who have not used Dolphin at all and 2 participants who have used Dolphin as well]*
☐Chrome (continue if the requirement of 2 participants is unmet)
☐Firefox (continue if the requirement of 2 participants is unmet)
☐Opera (continue if the requirement of 2 participants is unmet)
☐Dolphin (continue if the requirement of 2 participants is unmet)
☐Other _____ (continue if the requirement of 2 participants is unmet)

Demographic/Other questions:

Gender of the participant: M/F

We wish to have participants from different age groups. Of the following age groups, where would you fit?
☐Less than 18 years ***(Terminate*)***
☐18-25 years (continue)
☐26-35 years (continue)
☐36-45 years (continue)
☐46-50 years (continue)
☐51 years and above ***(Terminate*)***

Which category from the following would best describe your race/ethnic background?
☐American Indian or Alaskan Native
☐Asian
☐African American
☐Hispanic

☐Caucasian
☐Other _____

Highest education level:
☐Completed high school
☐Some college
☐Bachelor's degree
☐Master's degree

Thank you for your time. We will inform you whether you qualify for the study soon with next steps and session details. If you are recruited you would be compensated appropriately for your time. If you are selected, you would have to sign a release form that would allow us to videotape your session and use it for research purposes.

How would you like us to contact you to inform about the selection and next steps?

Contact #: _____
Email: _____
Suitable time to contact: _____

NOTE:* If the participant does not qualify and the screening session needs to be terminated, the recruiter can stop the interview by saying, " I am sorry, we need people who are/have _____(mention the requirement). I would like to thank you for your time and we will definitely contact you for other study. Thanks once again!"