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CGI CA—> CAREMAIL PROJECT USABILITY TEST PLAN

DOCUMENT REVISION HISTORY

Version	Date	Author	Summary of Changes
0.01	5/31/2016	Nicole Tressler	Initial draft
0.02	6/3/2016	Nicole Tressler	Apply updates based on revised task descriptions and comments from internal review.
0.03	6/7/2016	Nicole Tressler	Update references to application name
1.00	6/8/2016	Nicole Tressler	Updated session tasks per Dry Run results.

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I USABILITY TEST PLAN

1.1 SCOPE

This usability test plan describes the approach for conducting usability testing during the development of the CA->CareMail application in support of the Agile Development Pre-Qualified (ADPQ) Vendor Pool solicitation requesting the development of a working prototype.

The California Health and Human Services (CHHS) Agency is seeking to establish a vendor pool that will provide CHHS with user-centered design and agile software development services. CHHS's goals are focused on improving usability, user experience, and driving user adoption. To assess the CA->CareMail application design meets CHHS's goals, usability testing will be performed. The objectives of usability testing include:

- Identifying potential design or ease of use concerns, or areas of confusion that may impact a user's experience, productivity or efficiency with the application. Potential error sources may include:
 - Navigation errors – failure or difficulty locating functions; excessive keystrokes to complete a function
 - Presentation errors – failure to find and properly use desired information on the pages; style concerns; labeling or icon ambiguities
 - Control usage problems – improper usage of menus, toolbars, or fields
- Exercising the application with representative users using a controlled set of test scenarios. Analyze data gathered during the test to assess whether usability goals have been achieved.
- Establishing baseline user performance and user-satisfaction levels of the application for future usability evaluations

The CA->CareMail application allows parents of foster kids to establish and maintain their user profile, view their children's residential facilities in their zip code, and communicate with the case worker via a private box. The usability testing effort for the CA->CareMail application will involve 2 methods conducted at different stages in the development lifecycle:

- Initial Assessment Survey: A short survey on the overall design features of the CA->CareMail application. Intended to obtain early user input on the look and feel of

the application, including menu structure, colors, fonts, and style. Conducted early in the design and development phase.

- Usability Test Session: Includes the collection of data while observing actual end users using the CA->CareMail application to complete realistic scenarios. Conducted later in the development phase when application features are functional.

Both methods will include a sampling of birth parents (or representative birth parents).

1.2 METHODOLOGY

This section describes the methodology used during usability testing including test participants, training participants will receive, where testing will be conducted, and the actual test procedure.

1.3 TEST PARTICIPANTS

The test participants' responsibilities include taking surveys, attempting to complete a set of representative tasks in as efficient and timely a manner as possible, and providing feedback regarding the usability and acceptability of the application. Participants will be directed to provide honest opinions regarding the usability of the application, and to participate in post-session exit surveys.

Birth parents (or representative users) are the target users for usability testing of the CA->CareMail application for purposes of this prototype. Users will be identified by the project team.

Up to 8 participants will be selected to participate in the various aspects of this usability test. Where possible, actual birth parents will be used for testing; however, the project team may identify individuals that will participate as a representative user to increase the user pool. Representative users will be people not directly involved in the design or development of the prototype.

It is expected that recruited participants will have fundamental familiarity or contact with computers, web applications, and mobile devices. Participants may also be familiar with the foster care system.

1.4 TRAINING

Participants will receive a combination of documented instructions and verbal orientation of the usability test procedures, expectations, equipment, and software used, as well as the names and roles of other individuals that will be participating in the testing session.

1.5 TEST ENVIRONMENT

Usability testing will be conducted using various methods. For the Initial Assessment Survey, participants will take part via email. For the actual Usability Sessions, participants with either participate in person at our testing center in Sacramento or remotely via remote screen virtualization technology (e.g., Web Ex, Go To, etc.). For those testing on site, the participant's interaction with the application will be monitored by the facilitator and observer seated in the same office. Notes will be taken and actions will be logged. For those testing remotely, participants will be seated in their work environment. Up to 4 participants will be test using a computer/tablet and up to 4 participants will be tested using their cell phone. Verbal communication will be supported via telephone.

Data used in the testing effort, except the foster family agency location data accessed through the HHS API, will be fictitious.

1.6 PROCEDURE

For the Initial Assessment Survey, participants will receive a copy of the survey via email outlining the instructions to complete the survey.

For the Usability Test Session, the facilitator will work from a scripted document to help ensure all participants receive the same instructions. The Facilitator will brief each participant on the CA->CareMail application, and remind the participant that he/she is evaluating the application, rather than evaluating the participant. Prior to their session, participants will be asked to sign a Consent Form acknowledging their agreement that sessions will be recorded; notes will be taken; recordings and/or notes will be shared, but neither will be individually attributed. The facilitator will confirm their consent and ask the participant if they have any questions.

Sessions may begin when all participant questions have been answered by the facilitator. Participants will respond to a set of demographic and pre-task questions followed by a series of realistic tasks. The facilitator will inform the participant that time-on-task will be measured and that exploratory behavior outside the task flow should not occur until after task completion.

The facilitator will read the task description aloud from a script and ask the participant to begin the task. Time-on-task measure will begin when the participant states “I’m ready” or the participant begins the task. The facilitator will encourage the participant to use a ‘think out loud’ approach so a verbal record of their interaction with the CA->CareMail application will exist. This approach will vocalize what path participants take to find information, what questions they have, and what surprises or difficulties they encounter as they use the application.

Facilitator questions will be open-ended, avoiding any leading questions. When participants identify a problem, the facilitator will ask them how they might fix it. Throughout the session, the scribe will document user comments, user behavior, and system actions.

After each session, participants will have the opportunity to take an exit survey where they can elaborate on their test session.

Test sessions are estimated to take between 30 and 45 minutes. The facilitator may end a session based on time constraints or other factors.

2 ROLES

The following roles will be involved in the usability test of the CA->CareMail application. An individual may serve multiple roles, and not all roles may be required for all tests. All persons involved with the usability test are required to adhere to the following ethical guidelines:

- The performance of any test participant must not be individually attributable. Individual participant's name should not be used in reference outside the testing session.
- A description of the participant's performance should not be reported to his or her manager.

All persons involved with the usability test will be provided a Consent Form to sign and confirm prior to their involvement in a test session.

Trainer

- Provides training overview prior to usability testing

Facilitator

- Provides overview of test to participants

- Defines usability and purpose of usability testing to participants
- Emails Initial Assessment Survey to participants with necessary instructions
- Conducts Usability Test Session
- Responds to participant's requests for assistance

Scribe

- Silent observer
- Records test participants actions and comments
- Records observations made, focusing on amount of clicks and time spent on each task

Test Observer

- Silent observer
- Serves as a note taker; observes and records spoken thoughts and comments the tester has, as well as obvious frustration level each tester experiences

Test Participant

- Participates in Initial Assessment Survey
- Receives training or instruction prior to usability testing
- Actively participates in Usability Test Session by following a script, performing an activity or task, describing their activities out loud
- Optionally participates in post-session exit survey

3 INITIAL ASSESSMENT SURVEY QUESTIONS

Early in the design and development phase, a short survey regarding the overall design of the CA->CareMail application will be emailed to test participants in an attempt to obtain early user input on the look and feel of the application. Users will be asked to review screen designs, rate the level to which they agree to certain statements pertaining to the layout, colors, fonts, and style of the CA->CareMail application, and then answer a few free form questions.

Rated Statements

The statements below are rated on a scale from 1 to 5 based on the level to which the participant agrees. (from 1=Strongly Disagree to 5=Strongly Agree).

1. The page layout is simple and organized.
2. I like the overall color scheme.
3. The font size, style and color are appealing and easy to read.
4. The amount of data shown on a page is reasonable.
5. I understand the purpose of the icons by looking at them.
6. I understand the functions of the links and buttons on each page.
7. The most important data to me is accessible on the Home page.

Free-Form Questions

The questions below allow users to provide additional comments regarding the application.

8. Is there any data on the Home page that is missing or not needed?
9. What do you like most about the pages?
10. What do you like least about the pages?
11. Are there any additional comments you would like to share?

4 USABILITY TEST SESSION TASKS

Usability tasks are derived from test scenarios developed from use cases and with assistance from subject-matter and functional experts. Due to the short time each participant will be available, the tasks selected for the Usability Test Session represent a cross section of functions most common in the application. The tasks are identical for all participants within a given user group. The tasks, along with the responses from the Initial Assessment Survey, will help the project team answer overarching user experience questions such as:

- How well do users understand the terminology and icons used in the application?
- What do users think about the screen layout, fonts, and colors used in the application?
- How successful are users in navigating the application?

- How successful are users in completing their tasks?
- What paths do users take to complete their activities?

The task descriptions below are required to be reviewed by the product manager, development owner(s), and/or delivery manager to ensure that the content, format, and presentation are representative of real use and substantially evaluate the primary tasks for the target user group.

4.1 TASKS FOR BIRTH PARENTS

This section outlines the pre-task questions and tasks scripted for the Birth Parent user group.

Pre-Task Questions

- Without clicking on any buttons or links, what is your first impression of the application? What's the first thing you notice?
- Just from looking at the application, can you tell what the application will be used for or what information might be available to you?

Test Scenario Description

You, Jane Austen, are a birth parent with 2 children in foster care: Walter and Lilly.

Task 1

You recently bought a new cell phone and your phone number has changed. You want to update your cell phone number so your case worker can reach you. Using the application, show how you would update this information. When you feel you've completed the activity, please say so.

Task 2

You want to send your case worker a message about your next visitation. Using the application, how would you do that? When you feel you've completed the activity, please say so.

Task 3

You have a service (named 'Service 1') scheduled for you and your child, Walter. How would you view notes related to that service using the application? When you feel you've completed the activity, please say so.

Task 4

You want to view contact information for your child's case worker. Using the application, how would you do that? When you feel you've completed the activity, please say so.

Task 5

You have recently moved. You have already updated your address in your user profile. Using the application, how would you view the residential facilities available within your new zip code? When you feel you've completed the activity, please say so.

5 USABILITY METRICS

Usability metrics refer to user performance measured against specific performance goals necessary to satisfy usability requirements. Task completion success rates, adherence to dialog scripts, error rates, and subjective evaluations will be used. Time-to-completion of tasks will also be collected.

5.1 SCENARIO COMPLETION

Each scenario will request participants to obtain or input specific data that would be used in a typical task. The scenario is completed when the participant indicates the scenario's goal has been achieved (whether successfully or unsuccessfully) or the participant requests and receives sufficient guidance as to warrant scoring the scenario as a critical error.

5.2 CRITICAL ERRORS

Critical errors are deviations at completion from the targets of the scenario. Obtaining or otherwise reporting of the wrong data value due to participant workflow is a critical error. Participants may or may not be aware that the task goal is incorrect or incomplete.

Independent completion of the scenario is a universal goal; help obtained from the other usability test roles is cause to score the scenario a critical error. Critical errors can also be assigned when the participant initiates (or attempts to initiate) an action that results in the goal state becoming unobtainable. In general, critical errors are unresolved errors during the process of completing the task or errors that produce an incorrect outcome.

5.3 NON-CRITICAL ERRORS

Non-critical errors are errors that are recovered from by the participant or, if not detected, do not result in processing problems or unexpected results. Although non-critical errors can be undetected by the participant, when they are detected they are generally frustrating to the participant.

These errors may be procedural, in which the participant does not complete a scenario in the most optimal means (e.g., excessive steps and keystrokes). These errors may also be errors of confusion (e.g., initially selecting the wrong function, using a user-interface control incorrectly such as attempting to edit an un-editable field).

Non-critical errors can always be recovered from during the process of completing the scenario. Exploratory behavior, such as opening the wrong menu while searching for a function, will be observed but not coded as a non-critical error.

5.4 SUBJECTIVE EVALUATIONS

Subjective evaluations regarding ease of use and satisfaction will be collected via questionnaires. The questionnaires will utilize free-form responses and rating scales.

5.5 SCENARIO COMPLETION TIME (TIME ON TASK)

The time to complete each scenario, not including subjective evaluation durations, will be recorded.

6 USABILITY GOALS

This section describes the Measurement Objectives of the CA->CareMail application.

6.1 COMPLETION RATE

Completion rate is the percentage of test participants who successfully complete the task without critical errors. Note: If a participant requires assistance in order to achieve a correct output then the task will be scored as a critical error and the overall completion rate for the task will be affected.

A completion rate of 100% is the goal for each task in this usability test.

6.2 TIME ON TASK

The time to complete a scenario is referred to as "time on task". It is measured from the time the person begins the scenario to the time he/she signals completion.

6.3 SUBJECTIVE MEASURES

Subjective opinions about specific tasks, time to perform each task, features, and functionality will be surveyed and collected. At the end of the test, participants will rate their satisfaction with the overall system. Session notes and survey responses are combined to assess attitudes of the participants.

7 PROBLEM SEVERITY

To prioritize recommendations, a method of problem severity classification will be used in the analysis of the data collected during evaluation activities. The approach treats problem severity as a combination of two factors - the impact of the problem and the frequency of users experiencing the problem during the evaluation.

7.1 IMPACT

Impact is the ranking of the consequences of the problem by defining the level of impact that the problem has on successful task completion. There are three levels of impact:

- High - prevents the user from completing the task (critical error)
- Moderate - causes user difficulty but the task can be completed (non-critical error)
- Low - minor problems that do not significantly affect the task completion (non-critical error)

7.2 FREQUENCY

Frequency is the percentage of participants who experience the problem when working on a task.

- High: 37.5% or more of the participants experience the problem
- Moderate: 12.5% - 37.5% of participants experience the problem
- Low: 12.5% or fewer of the participants experience the problem

7.3 PROBLEM SEVERITY CLASSIFICATION

The identified severity for each problem implies a general reward for resolving it, and a general risk for not addressing it, in the current release.

- Severity 1 - High impact problems that often prevent a user from correctly completing a task. They occur in varying frequency and are characteristic of calls to the Help Desk. Reward for resolution is typically exhibited in fewer Help Desk calls and reduced redevelopment costs.
- Severity 2 - Moderate to high frequency problems with moderate to low impact are typical of erroneous actions that the participant recognizes needs to be undone. Reward for resolution is typically exhibited in reduced time on task and decreased training costs.
- Severity 3 - Either moderate problems with low frequency or low problems with moderate frequency; these are minor annoyance problems faced by a number of participants. Reward for resolution is typically exhibited in reduced time on task and increased data integrity.
- Severity 4 - Low impact problems faced by few participants; there is low risk to not resolving these problems. Reward for resolution is typically exhibited in increased user satisfaction.

8 REPORTING RESULTS

An Initial Assessment Survey Results Report will be compiled once the responses from the participants has been received and analyzed. The report will include a summary of each of the rated questions as well as the comments and specific recommendations based on those comments for the free-form questions. The report, including the specific recommendations, will be reviewed with the project team. The recommendations will be sized by development for future implementation where necessary.

A Usability Test Report will be provided at the conclusion of the usability test sessions and data processing phase. It will consist of a presentation of the results summarizing the key points or findings, including subjective feedback from participants, specific usability problems, and recommendations for resolution. The recommendations will be sized by development for future implementation where necessary.

9 REFERENCED DOCUMENTS

The following template was leveraged in the development of this plan:

Usability.gov: “Usability Test Plan Template”: [<http://www.usability.gov/how-to-and-tools/resources/templates.html>] : [retrieved May 26, 2016]