How to Organize a 1-Week, Customer On Location, User Study

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To-do for this page:

- Update with specific details on how to navigate the Contractor Sourcing Application page at https://w3.ibm.com/procurement/csa/common/enUS/index.html
- Update wtih specific details about how to process a CSA through a BOND cart (add reference to Jujuan / Ruth)

What is a User Study?

A “user study” is a test of a product with a sample of the product’s intended audience, known informally as "users". User Studies are very flexible and a study can be targeted to an extremely specific set of features, or a study can analyze the entire product lifecycle from purchase until the product is retired and no longer used. The objective of a user study is to observe the user of a product and develop insights about improvements to the product based on how the user interacts with and leverages the product. Because the purpose is to best understand how someone will literally use a product, the best possible user study is conducted in the actual environment in which the person will use the product in question. When it is not possible to conduct a user study in the actual environment of the user, a common alternative is to place the user in a structured simulation that best emulates what the user will experience when interacting with the product in their environment. Specifically, in the enterprise storage market the objective of a user study is frequently to allow the designers of an enterprise storage product to observe how the user uses the product in an effort to gain design insights, such as observing a customer use the product in a previously unknown way. These insights allow an enterprise storage designer to achieve various things such as: discover where the product is difficult to use or simply inefficient, identify code errors before they are released to the public with the finished product, and in general help the designer empathize with the user to a greater degree when creating the product.

What follows is a guide to conducting a 1 week user study where the customers come to a specific location to test GUI features of an enterprise storage product.

User Study Quick Start

1. Gain Approval

- Completion Time: 1 week
- This should be done: 6-12 months before the study

2. Update Purchase Order

- Completion Time: 1 week
- This should be done: 6-12 months before the study

3. Determine Study Logistics

- Completion Time: 1 week
- This should be done: 3-4 months before the study

4. Identify Features

- Completion Time: 1-2 weeks
- This should be done: 2-3 months before the study

5. Begin Acquiring Study Materials

- Completion Time: 1-2 weeks
- This should be done: 1-2 months before the study

6. E-mail Patricia Wayman (contractor)

- Completion Time: 3.5 months end-to-end. Begins before study, ends after study.
- This should be done: 1-2 months before the study

7. Finalize Study Materials

- Completion Time: 1-2 weeks
- This should be done: 1-2 months before the study

8. Find Volunteers and Test Study

- Completion Time: 1-2 weeks
- This should be done: 2-8 weeks before the study

9. Notify Customers of Selection
    - Completion Time: 1-2 weeks
    - This should be done: 4 weeks before the study
10. Conduct Study
    - Completion Time: 1 week
    - This should be done: during the planned study dates
11. Publish Findings
    - Completion Time: 1-2 weeks
    - This should be done: 1 week after the study
12. Track Product Impact
    - Completion Time: 1 week and onoing
    - This should be done: 1 week and ongoing after the study

1. Gain Approval

Ensure your planned study has been approved for funding. If it has not, your first step is to gain approval from Mike Casolari (Mike Casolari/Tucson/IBM). You will need to submit a justification statement which should include why the study is necessary and what could happen if the study does not take place, the amount the study will cost, and schedule a meeting with him to explain why the study is necessary – essentially your justification statement over again and in greater detail. Be sure to mention that this is a 5-day study that includes 5 different customers. The study amount will vary based on how far the participants will be traveling. To estimate cost, take:

- Cost of air travel from the furthest potential customer location (use actual known customers' locations) to the location of the study and back (check www.kayak.com)
- Cost of a typical 1 night hotel stay in nice accommodations
- Cost of 2 days worth of rental car coverage
- Cost of fuel (distance from airport to aforementioned hotel, hotel to study location, study location back to hotel, hotel back to airport all divided by average MPG of rental car, multiplied by current cost of fuel per gallon)
- Cost of food for 2 days (check IBM Per Diem for that city at http://w3-01.ibm.com/hr/web/travel/policies/per_diem.html, multiply by 2)

Add all of it together, multiply by 5.

2. Update Purchase Order

Contact Jason Peipelman, Jujuan Mitchell, and Ruth Azevedo (Jason Peipelman/Tucson/IBM, JuJuan Mitchell/Raleigh/IBM, Ruth Azevedo/San Jose/IBM) and ensure that the purchase order (PO) gets updated with the approval and relevant information provided by Mike Casolari (Mike Casolari/Tucson/IBM). If you do not receive confirmation that the PO has been updated, e-mail Jason, Jujuan, and Ruth every week after your initial e-mail to ensure it has been done. This is a very crucial step and your study will be canceled if it isn't taken care of.

3. Determine Study Logistics

Determine the following information about your study:

- The exact dates the study will take place. The study should begin on the first day of the work week, host one user per day, and last no longer than 1 work week.
- The physical location where the study will take place.
    - Contact whatever authority is in charge of that physical space, ensure it will not be in-use during your desired dates, then reserve the space for your study.
    - Contact the security office for the site where you will be holding your user study and ask them about obtaining guest badges for your users. If any information beyond the name of the visitor is required, request that information in your Location Welcome Packet. Ensure you highlight the request so that the user sees it – the welcome packets can become quite long and sometimes are not read thoroughly.
    - Contact whatever food service handles the site that the physical space you will be using is located on. Schedule breakfast and lunch for each day of your user study. If this is an IBM site, check if it is covered by the Food Service Request Database (Food Service Request v5.8)
- The hardware necessary to conduct your study.
    - Contact whatever authority is in charge of that hardware, ensure it will not be in-use during your desired dates and reserve the hardware for your study. Ask whoever is lending you the hardware if you could also borrow it two or three times *before* the actual user study. Keep in close contact with this person to ensure that they will be able to lend you the hardware not only for the user study week, but also 2 or 3 times before the study for test runs of your entire study plan. As you begin to have a more clear picture of when the testing days will be and how long you will need the hardware, keep this person updated so that they are aware. The more advance notice they have, the more likely it is they will be able to work something out with you to get you the hardware that you need.

4. Identify Features

Identify the features that the user study aims to evaluate. This can be as simple as "all of the features new to the product", or as specific as "the features that we don't think people ever use". The specific features that will be evaluated need to be clearly identified.

Create a list of all of the features to be tested during the user study and for each one:

- Identify all possible ways that the user can interact with this feature and create a short, descriptive task for the user to follow to replicate that interaction.
- Ensure that the ways that the user will replicate interaction with the feature properly represent the actual experience an end user would have. Does this feature have changes which are planned to take place before the product is released? If so, make a note of that. You may need to explain this to the user during the study for the feature to make sense.
- Ensure that the hardware you have secured for the study is sufficient to allow the user to replicate all interactions with the feature
- Estimate the length of time you believe it will take the user to complete interacting with each variation of the feature

Add together the interaction time estimates for each of your listed features and ensure that you can fit all of the interaction, plus breakfast, lunch, and cordial chit-chat into one work day’s worth of time.

5. Begin Acquiring Study Materials

Start putting together the study materials that are relevant to your user study. Typical documents used include:

A participant screener (see Example User Screener attachment. Note that the screener file that is sent to a customer should be named “<product>_<year>Q<quarter>”, for example “XIV_2014Q2”. If you'd like you can add the specific customer name to the file.)
This document is sent out to potential participants to evaluate their eligibility to participate in the study. The document should briefly explain in broad terms what a user (or usability) study is and what you hope to accomplish by conducting the study. The bulk of the screener is a form which collects various information about the potential participant that serves to help you determine if that person would be a good candidate to select for participation or not. Ensure that this screener mentions the fact that the participant will need to agree to an NDA before participating in the study. Finally, the screener document provides contact information about the potential participant as well as allowing them to recommend others for consideration.

While developing your participant screener you should identify specific criteria you want to use to evaluate potential study participants. Ensure that some logic has gone into the user selection process. Any criteria can be used to guide the selection of the users invited to the study, here are some common examples:

- Geographical Proximity
- Organization Size
- Organization Industry
- Number of Product Owned
- Product Experience (novice vs. expert)
- Expected Frequency of Use of Features

(optional) An introductory questionnaire (see Example Introductory Questionnaire attachment)
This document helps to collect initial information regarding the customer’s environment. By collecting this information before they begin to interact with the product you’ll have a better idea of what type of environment they’re used to, which will help you to empathize with the decisions they make and the logic they use throughout their time with the product. This introductory questionnaire also serves to help “break the ice” and help the user become comfortable in the study setting. Many users will have never participated in a user study before and will feel nervous, so by allowing them to discuss something they know a lot about (their environment) and shifting the focus away from something they are unfamiliar with and perhaps uneasy about (the user study), the introductory questionnaire helps to bring the user “out of their shell” and embrace the idea of being asked many questions and given various tasks.

A study test plan (see Example Study Test Plan attachment)
Aside from the users who will be interacting with the product, this is the most important part of the user study. The study test plan contains the instructions that the user will follow in order to provide you with feedback about your product. Care must be taken to not provide the user with too much information which may artificially simplify the task, and defeat the purpose of the user study. The study test plan should outline the tasks the user must complete during the user study, and provide the user with the same type and amount of information that they would be expected to have in their environment if they were to attempt the same tasks. Because many people involved with the study have spent a significant amount of time working on the product and want to see that their work has resulted in success they are sometimes inclined to help the user understand the design and aid them in completing their tasks. You must refrain from providing the user with assistance that they would not have readily available to them if they were to attempt the same tasks in their environment. It can be uncomfortable to sit and watch someone struggle to complete a task that you could explain to them in less than a minute’s time, however those instances are the most valuable insights because they highlight an area where the design is not as obvious to the user as it is to the development team and may need to be re-evaluated.

(optional) A task questionnaire (see Example Task Questionnaire attachment)
It can be very valuable to gather the participant's immediate reactions to the task they've just completed. If you include a simple sheet of paper with a rating scale between 1-10 where the participant can indicate the relative difficulty of the task they've just completed (1 being very simple, 10 being extremely difficult), and provide them some space to offer praise/criticism, you'll collect a lot of useful information that may otherwise go undocumented. You may consider using a digital form (User Zoom, Google Forms, or something else) to record the results in order to reduce the possibility of losing the physical papers, reduce the amount of work necessary to record the results (transferring / scanning them to a digital format), and ensure that the participant's results are legible (some participants have bad handwriting).

Product documentation
Any documentation which will be available to the product's customers should be made available to the users who will participate in the user study. In many cases the documentation used in the user study is still being reviewed and will be updated before the product's release, however it's still important to include the relevant documentation as a resource for the user to leverage when conducting the user study.

(optional) An ending-questionnaire (see Example Post-Study Questionnaire attachment)
Having the user fill out a questionnaire after they've completed the study test plan allows you to solicit general product feedback such as specific complaints the user may have about the existing GUI, concepts or features they would like to see in future versions of the GUI, etc. You may also include some of the questions which were asked in the introductory questionnaire in order to gauge how the user's opinion of the product or GUI has changed after interacting with it during the study.

6. E-mail Patricia Wayman

E-mail Patricia Wayman (pat.wayman@verizon.net) to inform her that you will be conducting a user stud. This will be your first contact with Patricia about this study and you will work with her throughout the study to coordinate customer recruitment, customer travel, and customer expense reimbursement. You will need to provide her with the following:

- what product you'll be conducting the user study for
- how many customers you plan on including in the user study
- the criteria you would like to use to select your study participants (from Customer Selection section above)
- the user screener you created (named "<product>_<year>Q<quarter>", for example "XIV_2014Q2")
- where the user study will be located
- the dates the study will take place

7. Finalize Study Materials

Re-examine all of the study materials that are already in a finished state from the previous step "Begin Acquiring Study Materials". Ensure that they do not need to be updated, and if they do then update them. If some of the study materials were unfinished in the previous step they should be finished by the end of this step, at least 1 month before the date of the user study. At this time you should also ensure that you've secured

8. Find Volunteers and Test Study

Contact coworkers who you think will be willing to help you test your user study. Keep in touch with the person who will be lending you the hardware to test the study and inform them of the prospective test dates you are considering. After identifying volunteers to help you test your study you should have your study materials finalized, your physical space reserved, your hardware reserved, and you're almost ready to conduct your user study. The purpose of testing the study is to go through the exact steps of the actual study in order to expose and possible flaws in the study and refine them before bringing in a real customer. Do not skip any steps or do anything that you do not plan to do with the actual customer. Conducting the entire study from start to finish, following all steps, will present areas where the study can be refined or improved. After conducting all of your test studies, re-analyze your study materials one final time to ensure they are in the best possible form they can be in for the real user study.

9. Notify Customers

Notify your final selection of customers that they have been chosen to participate. Include a location welcome packet in your e-mail notifying customers of their selection. The location welcome packet will be different for each geographical location where a user study can be held. The packet should contain any information the participant would need to quickly become familiar with their surroundings such as a map, information regarding when and where they will be expected to attend the study, how they will be reimbursed for their expenses, useful phone numbers (such as the travel agency, the hotels we normally use, etc). You should include your contact information here with a cell phone so that the user can reach you in the event they become lost. Patricia Wayman (pat.wayman@verizon.net) will usually supply this document, however if she does not then you must create one. Please view the "Example RTP Welcome Packet" attachment. Ensure this is done at least 1 month before the actual date of the study to give the selected users enough time to plan their necessary arrangements.

10. Conduct Study

At the beginning of your user study before anything else has happened ensure that you have a signed copy of the Non-Disclosure Agreement (NDA, see the Example NDA attachment for a general purpose UCD NDA). After you ensure you have a signed copy of the NDA, introduce yourself while optionally eating breakfast with the user, then begin the study. Refrain from divulging too much information about the specific features which will be evaluated in order to ensure that the user doesn't have any information that they wouldn't have in their actual environment. Use the introductory questionnaire document you created to help gain an appreciation for what their environment is like, as well as to help them become more comfortable with the user study – something they may be a little uncomfortable with at first.

After the introductory questionnaire is completed allow the user to take a short break. During the test plan and throughout the day it's a good idea to suggest periodic breaks to ensure the study remains an enjoyable experience for the user. Follow along with the user as they complete the study test plan and make notes to yourself which will help to streamline each successive user's progression through the test plan.

When the study is complete take approximately half an hour of time to discuss the study and the product with the user. This is a good time to get the actual opinion of the user as they tend to reserve some of their harsher judgments during the actual user study itself. Keep in mind that the user's opinions or feelings should be considered with all other user's opinions and not simply accepted without later scrutiny, however at this time it is pertinent that you record as much of the user's feedback as possible. This is also the time to present the user with the post-study questionnaire which will help to facilitate the collection of the user's opinions and product desires.

11. Publish Findings

After the study refine the feedback received, both passive feedback which is where the user performs an action that is telling however doesn't actually verbalize a remark, and active feedback which is where the user specifically states their opinion about something. Separate personal preferences which are representative of one user's opinion from user trends which are greater behavior patterns exhibited in some capacity by the majority. Develop suggestions which detail actionable changes to the product based on the feedback obtained and outline them alongside their justifications in a publication which summarizes the results of the user study. If necessary produce a presentation which further refines the results of the study into a brief, consolidated result.

12. Track Product Impact

Monitor the result of the suggestions ensuring that they are either acknowledged and rejected, or if they are accepted that the resulting change upholds the core ideal of the feedback which caused it.

Attachments / Resources

Screen Recording Software:

CamStudio (some IBM laptop images have problems installing this)

Rylstim (some IBM laptop images have problems installing this, use the portable edition here if there is a problem)

Audio Recording Software:

Audacity

Example User Screener.doc

Example Study Test Plan.doc

Example Task Questionnaire.doc

Example Post-Study Questionnaire.doc

Example NDA.doc

Eaxmple RTP Welcome Packet.doc

Example Task Questionnaire.doc

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