Ready, Set, Go: Usability Testing

Usability testing, like any component of development, involves a certain amount of planning, thought, process development and execution. Encouraging and delivering a well-delivered process and execution for usability testing can help bring usable products to intended consumers.

Whether your organization conducts its own usability research or an outside agency handles it, each key person should be concerned with the process of conducting usability research.

Although we cannot exhaust the subject of usability research or testing here, this article offers up some topics of consideration and steps to follow when conducting usability research. You can make the following assumptions when reading this article:

- The particular focus of usability is on that of the user interface or design of a web site or software application.
- Our style of usability testing is qualitative in nature, gathering data from actual users though successive, in-person, one-on-one interviews.

Part I: Planning your usability test

Step 1. Start thinking about usability testing.
Usability testing should be a part of product development. Adding usability testing to the development process at the beginning of development will aid in the execution of usability testing. Devote ample time to determining a product's usability before you release it to the world. The expectations of usability testing should be determined in the process plan. Set the expectations of the product's usability ahead of time, involve key players and bring in the decision makers. Finally, set a schedule for each step in each iteration of user testing.

Step 2. Define the audience and the goals of usability testing.
Once the usability testing phase of product development begins, you'll need to define or redefine the audience demographics. Determine who will use your product, what their specific demographic characteristics are and how best to approach the testable individuals. Ideally, every product has a viable and definable target audience (why wouldn't it?), so that product should be made usable for the intended audience. The goals of usability testing should therefore be focused on determining whether this interface is usable and whether the intended audience, and anyone else who might come in contact with it, can use it. The needs and desires of the intended audience often drive the goals of usability research.

Defining the goals of usability testing isn't always as simple as addressing the most obvious things, such as "can they use it?" or "do they like the colors?" Other goals often address perceived usability problems for existing products, such as installation instructions, site drop-offs or customer complaints. For online stores, most existing site

stakeholders are concerned with users dropping off at certain points in the shopping or checkout process.

Develop your goals for the usability testing project by asking these questions:
- What should the intended audience be able to get out of the product?
- What do you want to know about your product?
- What do you already know about the usability of your product?
- Where are the known problems, issues and bugs? In particular, are there any issues that won't be resolved before you launch?

Perhaps this is the first question you should ask:
- Are the problems actually usability problems or are they product problems that go beyond usability?

Knowing the answer to that question is key. If the product crashes your user's machine, then it's probably safe to say that the issue goes beyond usability. For this reason, you should only test what is testable. Don't take the time to develop a usability testing plan that tests something that lacks stable functionality, isn't ready to be tested or is already planned to be significantly changed in development before the final release.

Be sure to set reasonable goals. Most of the time, you will not be able to achieve all your usability goals with one test. Conduct iterative testing projects and keep your goals focused and reasonable.

Step 3. Create the test script.
After you determine the goals of your usability test, turn them into a test script—the guide to be used by the moderator when interviewing potential or existing users. The test script is a critical step for getting good data. It should be written as though it will be read aloud to the testing participants. When writing the test script, you should include not only all the questions about the product's usability, but also any statements, phrases or verbiage that will actually help the person being interviewed.

The participant needs to be the focus of the test script. The questions asked, tasks presented and opinions sought should be written and spoken in a way that allows the participant to feel as though they are contributing to the project, rather than being tested by the moderator. When asking a participant how they would add something to their online shopping cart, check out and complete the order process, the task should not be a test of the participant's ability to use the computer to check out, it should be a test of the checkout process itself.

Before asking questions regarding the product, your test script should start with information to help participants understand what it's all about:
- Explain why the participant is there.
- Recap what the non-disclosure agreement means.

The script should ask participants questions about themselves to make them feel comfortable and help set the tone for the interview. Using questions where the answers are already known—such as "How long have you been using the Internet?" or "What kind of computer do you have?"—will help users through the remainder of the session.

Questions about the product's usability should not be a series of yes/no questions, nor should they be interrogative in nature. If they are, you won't get any good data because users will feel uncomfortable.

The format of the test script should include qualitative questions and directed tasks regarding the product. Give users tasks to complete and ask them questions about what they're seeing. Here are some examples:

- Do you like the colors?
- Can you read the text?
- Where would you click to get information on the company?
- You're being shown a list of steps to complete the installation of the product. Could you read that list and tell me if the instructions are clear? Do they make sense? Do you know what you're supposed to do next?
- Why are you being asked to register?
- Could you please show me how you would buy [name of product]?
- How did you feel about that order process? Was it easy? Hard? Did it take too long?

The final step in the test script development should include a test drive that's conducted with the most key player in the organization concerned with the product's usability. This could be the information architect, designer, developer or marketing manager. The test drive helps determine the organization of the test script, length of the test, flow of the questions and scope of the usability research.

In addition to writing a test script that works well for the participant, please keep in mind that participating in a usability test can be a nerve-wracking experience. Participants arrive at a place they've probably never been to, they're asked to sign non-disclosure agreements, they're brought into a somewhat sterile environment and then they're sat down with a camera pointed at them. They usually figure out they're being watched, too.

Step 4. Recruit your users.
This phase of usability testing can be conducted in conjunction with your script development. Look at your intended audience and fine-tune it based on the logistics and practicality of the usability testing. For example, if user testing takes place in San Francisco, you'll probably only want to recruit participants in the San Francisco Bay Area.

Figure out also how many participants to interview. Although this topic is often debated in usability circles, we recommend no fewer than eight for any usability testing project.

Five users help develop trends in a product's general usability as reported by the participants, and three more help qualify those findings. So eight is the bare minimum.

Develop a screener that helps you find the participants you want. If you make it broad or too vague, you'll end up spending more time weeding out inappropriate respondents. Use the screener as an e-mail message or phone script. Examples of screener information/questions include the following:

- Name
- Phone number
- E-mail address
- Age (or age range)
- Income level (or range)
- Do you use a PC or a Macintosh?
- What is your connection speed?
- Job title or occupation
- Do you use [name of product] for your job?
- How long have you been using [name of product]?
- Have you used other similar products? If so, which ones?

Recruit users far enough ahead of time to allow for cancellations, schedule reorganizations and for any focus changes. Allow enough time to get at least three times the number required for your usability testing project. By doing so, you'll weed out many respondents. Receiving a good number of responses gives you the luxury of picking and choosing appropriate participants for your study.

Part II: Conducting your interviews
Now that you've finished your goals, test script, test drive and recruiting, it's time to test. The moderator should be comfortable, healthy, focused and mentally ready for a day or two of usability testing sessions. Things to keep in mind when moderating and gathering data include the following:

- **Set up and conduct interviews in a comfortable space.** Make sure the room is quiet and private. Provide snacks and beverages. You may want to use contextual spaces such as an office environment.
- **Set up the video equipment correctly.** The user should not be staring down the camera's lens. The video camera should not be pointed at the screen, either. Use an angle that incorporates the screen and some part of the user. You may wish to consider picture-in-picture videotaping.
- **Be aware of the time.** Interviews should last their intended time and not much longer. If the session lasts too long, the user will be become agitated or bored.
- **Stay flexible.** Don't go into "clinician" mode. Users are unique and the moderator should do his or her best to be comfortable so that the comfort level and ease are conveyed to the participant.
- **Don't place any importance on one user.** One participant may present the most compelling data about your product. However, one user's comments will not solve a product's usability. As exciting as the user's comments may be, stay focused on each user's comments.

- **Be opportunistic.** If a participant says something interesting or compelling, ask them to clarify it. For example, if a participant says "I didn't see that. Why is it over there?" when probing the interface, ask where they think it should be. Seek help from their expectations of the interface. Similarly, if a user hesitates it often means that something is confusing or unclear (unless they're reading!). Follow up on these hesitations by asking if the information makes sense or if they know what they're supposed to do next.
- **Take notes.** For many user testing projects, employ a separate note taker to observe the user testing sessions. We recommend that the moderator be the primary note taker. The moderator is the person who interacts directly with users. The data that the moderator gathers is possibly more valuable than other data (such as a note taker one step removed from the interview or the videotape itself).
- **Be attuned to observation bias.** Users are being tested and want to give the "right answer." Let users structure tasks whenever possible. Encourage participants to talk freely.
- **Respect participants.** Be patient and considerate. Keep in mind their confidentiality as well as the product's. Makes sure users know that the information they provide is confidential. Make sure they know that their information will not be provided for any further purpose beyond the session. Remember to thank them for their participation.

Between sessions, take time to think about the data that the user provided. Organize your observations toward an analysis of the results. Remember to get all the data from the participants before making any final determinations.

Part III: Organizing data, analyzing data and presenting your findings
After completing the sessions, review the data and make a list of the top issues you discovered. From there, start flushing out the usability concerns and the recommendations for improvement.

When analyzing your results, keep the users' comments at the front of the analysis. It's too easy to incorporate your own biases and expectations here. Try not to do so. Marry the users' comments with the analysis. To illustrate:

> *Observation*: Five users tell you that the search box is in the wrong place on the page because they don't see it. Two of them say the colors are too similar to the rest of the page; two of them don't see it because it's in the lower-right corner of the page.
> *Correct analysis*: Because the users report that they cannot see the search box, it should be moved to a place on the page where they can see it. The designer may want to rethink the colors used in that area as well.
> *Incorrect analysis*: The users are simply not accustomed to the placement of the search box, but after using the site for a certain amount of time they should become comfortable with it.

Pay attention to patterns. After a few interviews, you may receive very similar information regarding the product. It's important to notice these patterns, along with any deviations from them. If four of eight participants believe the text in the content area is easy to read, but the other four complain that they cannot read it, you should investigate further and analyze what specifically they could not read and why. Was the font size too small? Did those four complain about other text on the page? Were those four trying to get through the task (too) quickly?

Keep a perspective. Remember that even if the data gathered consists mostly of complaints about the interface or design, those complaints can help. Don't take it personally and don't negate the comments. The users, no matter how cynical or whiny, provide the most useful information for the product's usability.
Present the results to the key members of the product's development and ownership teams. Keep in mind the audience for this presentation. Remember their goals as well as the product's, along with the original goals of the usability project. Make recommendations based on the findings and help provide positive information wherever possible.

As you've probably figured out by now, conducting usability tests takes time. Executing a well conceived and well though-out project will help you get great data and hopefully improve the product's usability. Careful considerations towards a product's goals and the intended audience(s) need to be made before designing and planning usability testing. Comments and feedback provided by user testing participants can really make the difference in a product's usability. There really is no substitute for direct user feedback.

Resources
Association for Computing Machinery Special Interest Group on Computer-Human Interaction

Usability Professionals' Association

Usable Web

UseIt: Jakob Nielsen's Website

User Interface Engineering

Usability First

WebWord.com: Usability and Human Factors

About the authors
Elizabeth McLachlan, CTO, manages usability, cross-browser and functional testing at OTIVO, Inc. Sometimes she's systems administrator, sometimes operations manager, and always an all-around asset to the company. Elizabeth maintains the elements of the technology required for OTIVO's work—from the mundane turning of a screw to making

the day-to-day technology hum, to stirring the pot of long-term technology goals. Elizabeth gets a big endorphin rush from things that work. You may speak to her in English, Spanish, HTML, SCSI, SMTP, and boxes with red x's through them. She also reads and understands blank stares. Elizabeth has a BA in Business Management from San Francisco State University.

Leanne Waldal, CEO and Chief Scientist, spearheads and maintains OTIVO's life and vision. Prior to founding OTIVO in fall of 1997, Leanne was a free agent advising companies on QA strategies during the summer of 1997. She was the quality manager at Electric Minds, a startup Web community company, until it was acquired in the spring of 1997. Before Electric Minds, she was the quality manager at San Francisco's Organic Online, Inc. She has degrees in Statistics and Economics from the University of Washington. Before landing in the Web industry, she worked for McCaw Cellular as the lead statistician in their corporate marketing department. McCaw was bought by AT&T in 1994, and Leanne developed the first business plan for an AT&T Wireless Services commerce and customer support website before she left to join the web industry. During bouts of insomnia, Leanne, the quintessential troublemaker and rabble rouser, trolls the web and sends bug reports to sites where she finds cross-browser trouble and usability problems. (Why does an e-commerce site make their checkout process more than three steps long?)