

Usability Testing on a Shoestring Budget

If you can't afford professionals, do it yourself.

Usability testing is the best way to make sure that your products and services – and the knowledge required to use them (installation instructions, quick start guides, user guides, help systems, and so on) – meet your customers' needs.

Professionals

If your budget permits, hire usability testing professionals. They will recruit appropriate test subjects, design and conduct valid tests, report objective results, and recommend both immediate and long-term improvements to the product and the knowledge required to use it. If possible, attend the usability testing sessions as an observer. You will learn much more by watching test subjects as they attempt to perform tasks than you will learn by reading test reports.

Do It Yourself

If your budget does not permit you to hire professionals, don't give up. Conducting usability tests yourself is much better than not testing at all.

Choosing the Test Subjects

Recruit test subjects who share the characteristics of typical product users. Colleagues, friends, family, and students are potential recruits. Do *not* recruit people who have worked with the product prior to the tests. Offering a gift certificate is thoughtful and often encourages people to volunteer.

Conducting the Tests

Many professional usability tests are conducted in a room with a one-way mirror that allows the testers to watch the test subjects. A one-way mirror, however, is not necessary. You can conduct a test

in a normal room. Stay in the room with the test subjects and watch as they perform the tasks. The first few times you conduct a usability test, you will be tempted to help the test subjects. Don't do it! We all feel frustrated when test subjects are unable to perform tasks. The purpose of a usability test is to learn *why* the test subjects can't perform tasks. As you watch the test subjects, observe where they are having difficulties. You can ask them to tell you what they are thinking as they perform the tasks. Listen to them, but don't give them any help!

Providing Technical Support

Ask a person who is familiar with the product to act as a technical support representative. Give the test subjects that person's telephone number to call for help if they need technical support.

If another person is not available to act as a technical support representative, you can perform this role yourself. Answer the test subjects' questions in the same way that a technical support person would answer them. Don't use a question as an excuse to explain what the test subject is doing wrong.

Making Improvements and Re-testing

When you understand what is causing the test subjects' difficulties, correct the difficulties by changing the product or the knowledge required to use it. Test the revised product or knowledge on new test

subjects. If test subjects still have difficulties, make another round of revisions and conduct more tests.

Fixing Usability Problems

The best way to fix usability problems is to improve a product's design. If you do not have time or resources to improve the product, make changes to the knowledge required to use the product. The product's developers can then improve the next version of the product.

Don't discount usability testing because you do not have time or resources to improve a product. When a product is difficult to use, the knowledge required to use the product is critical. Test the knowledge.

If you are testing the knowledge required to use a product, don't tell that to the test subjects. Tell them that you are testing the product. If you tell them that you are testing a help system, for example, many of them will make a special effort to use the help system. If typical customers won't use the help system on their own, you need to know that!

While you are testing the knowledge required to use a product, you may identify improvements to the product that will make it easier to use. Recommend those improvements to the product's developers. If the developers question the value of the improvements, invite them to watch the usability tests.

A word of warning!

If you believe that typical computer and electronics users read technical publications thoroughly and thoughtfully, usability testing will quickly dispel that illusion. Some users refuse to read technical publications that provide the knowledge required to use a product. Many do not read technical publications until they run into a problem that they can't solve. Most users who do read technical publications read them quickly and superficially.

Tips for Communicating the Knowledge Required to Use Products

These tips are based extensive usability testing. Several hundred test subjects attempted to install a DSL (digital subscriber line) modem and connect to DSL service. Few test subjects were power users; most had rudimentary to average computer skills.

The tips include lessons from the DSL usability tests. Several lessons show why one method of organizing information worked better for test subjects than another method. In some instances, the results were dramatic: more than twice as many test subjects successfully completed the test after the method of organizing information was changed.

Users want clear, easy-to-follow tasks.

Write instructions with numbered steps. Don't overload individual steps with too much information. Don't digress! Choose your words and the ideas you communicate wisely. The more you write, the less users will read.

Give users feedback so they know where they are in the process. Don't assume that users will follow your instructions step by step. They may stop following the instructions and return to them only if they become confused.

If most of your users will install or use a product in a certain way, make the instructions that explain that way as clear and simple as possible. Instructions that few users need are less important.

Lesson from DSL testing: To keep the instructions for the most common installation procedure simple, we put instructions for infrequently used installation procedures in an appendix. Although technical support calls for assistance with the infrequently used instructions increased, our approach cut the total number of technical support calls in half.

Many users prefer illustrations to text.

Most users follow clear illustrations better than they follow instructions in a large block of text.

Users who do not read extensive text in a user guide may read a small amount of text in a well-illustrated quick start guide with an attractive design.

Lesson from DSL testing: A few test subjects refused to read the text in the installation guide. They looked at the illustrations and did everything else on their own. Those users failed the test. On subsequent tests, we provided both the installation guide and a brief quick start guide with lots of illustrations and minimal text. All of the test subjects read the minimal text in the quick start guide.

Users are more likely to follow instructions when a heading describes an installation or usage task.

Avoid headings like “Pre-Installation Steps” and “Before You Start.” Users often skip introductory information.

Lesson from DSL testing: Our installation process involved several important pre-installation tasks. We put these tasks in a section called “Before You Install the DSL Modem.” The test subjects glanced at the information but did not start to follow the instructions until they reached the next section: “Unpack the Box.” We tried variants like “Important Pre-Installation Steps.” Nothing worked until we added the pre-installation tasks to “Unpack the Box.” The test subjects then performed all the steps even though some steps had nothing to do with unpacking the box!

Make the consequences of a mistake clear when users don't understand a concept.

When typical computer and electronics users read information that they don't understand, they seldom take the time to figure it out. They follow the

instructions mechanically and make mistakes that prevent them from successfully installing and using the product. To avoid this problem, make sure that users understand the consequences of a mistake. For example, when users reach a point where they must make a decision, make sure that they understand that they will fail to accomplish their task if they make the wrong decision.

Lesson from DSL testing: One of our biggest problems was getting users to install the proper software for their DSL service. The installation procedure differed depending on whether users had a “PPP” or “bridging mode” connection to their Internet service provider. The majority of users had no idea what PPP and bridging mode were. Understanding the differences between the two connections was not necessary. To choose the proper procedure, however, the users had to know which type of connection they had.

The first installation guide had three sections:

- Hardware, which everyone had to install
- Bridging Mode Software, which users with bridging mode connections had to install
- PPP Software, which users with PPP connections had to install

Users installed the hardware with few problems. At the end of the Hardware section, users with a bridging mode connection were told to go to Section 2. Users with a PPP connection were told to go to Section 3. First, we tested users installing bridging mode software. All of them went to Section 2, and most successfully completed the installation. Next we tested users installing PPP software. Most of them went to Section 2 and followed the instructions for bridging mode. We watched them closely. They all read the instructions that sent PPP users to Section 3. Instead of stopping and figuring out whether they had a bridging mode or PPP connection, they simply went to the next section.

We solved the problem by asking users “Do you have a PPP or bridging mode connection?” and explaining how to check their connection type. Immediately following the question, we put the PPP and bridging mode instructions in two adjacent columns so users could see that the instructions varied based on their connection type.

If a product is simple to install and use, users won't read instructions until they have a problem.

Usability testing not only shows how well users understand and follow instructions, it also shows *when* users consult the instructions. The organization of the information should match how users work with the instructions.

Lesson from DSL testing: When we tested the installation guide for a user friendly DSL modem with a wizard to simplify the software installation, we discovered that users stopped following the instructions in the installation guide once they started the wizard. When the wizard prompted the users to choose PPP or bridging mode, they did not know what to do. At that point, they picked up the installation guide and looked for an illustration that matched the wizard. The installation guide originally had a separate set of instructions for each connection type. Users followed the instructions for the first illustration they saw that matched the wizard, regardless of the connection type.

To solve the problem, we combined the PPP and bridging mode instructions so that only one illustration matched the wizard. The instructions next to the illustration emphasized the importance of choosing the right type of connection and told users how to check their connection type.

Put important information where users need it.

This tip is obvious, but many installation guides, user guides, and help systems don't always follow it.

If important information is in the front matter or an appendix, many users won't read it.

For example, many users will not read the safety information in a “Safety” section. Although such a section may be important to avoid legal liability, always repeat important safety information at the point in the instructions where it applies to users.

Test subjects' actions are more important than their comments.

The highest priority is successful installation and use of a product. Test subjects who easily install and use products occasionally complain about minor problems. Failure to successfully complete a usability test is a much more serious problem than a complaint during the successful completion of a test.

Lesson from DSL testing: The instructions in some of our installation guides varied depending on how a user's computer and operating system were configured. At those points, test subjects sometimes complained that the instructions were complicated, but they had no problem following the instructions.

About the Author

Al Kemp is an expert at capturing and communicating the knowledge required to develop, market, install, and support technical products and services. In 1990 he founded Impact Technical Publications, a technical and marketing communication consulting company that helps clients create the knowledge they need to improve their products and processes.

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