Usability 101: Introduction to Usability

Summary: How to define usability? How, when, and where to improve it? Why should you care? Overview defines key usability concepts and answers basic questions.
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This is the article to give to your boss or anyone else who doesn't have much time, but needs to know the basic usability facts.

<mark>What</mark> — Definition of Usability

Usability is a **quality attribute** that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process.

Usability is defined by **5 quality components**:

- **Learnability**: How easy is it for users to accomplish basic tasks the first time they encounter the design?
- **Efficiency**: Once users have learned the design, how quickly can they perform tasks?
- **Memorability**: When users return to the design after a period of not using it, how easily can they reestablish proficiency?
- **Errors**: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
- **Satisfaction**: How pleasant is it to use the design?

There are many other important quality attributes. A key one is **utility**, which refers to the design's functionality: Does it do what users need?

Usability and utility are equally important and together determine whether something is useful: It matters little that something is easy if it's not what you want. It's also no good if the system can hypothetically do what you want, but you can't make it happen because the user interface is too difficult. To study a design's utility, you can use the same user research methods that improve usability.

- Definition of **Utility** = whether it provides the **features you need**.
- Definition of **Usability** = how **easy & pleasant** these features are to use.
- Definition of **Useful** = **usability + utility**.

Why Usability Is Important

On the Web, usability is a necessary condition for survival. If a website is difficult to use, people **leave**. If the [homepage](#) fails to clearly state what a company offers and what users can do on the site, people **leave**. If users get lost on a website, they **leave**. If a website's information is hard to read or doesn't answer users' key questions, they **leave**. Note a pattern here? There's no such thing as a user reading a website manual or otherwise spending much time trying to figure out an interface. There are plenty of other websites available; leaving is the first line of defense when users encounter a difficulty.

The first law of [ecommerce](#) is that if users cannot *find* the product, they cannot *buy* it either.

For **intranets**, usability is a matter of [employee productivity](#). Time users waste being lost on your intranet or pondering difficult instructions is money you waste by paying them to be at work without getting work done.

Current best practices call for spending about **10% of a design project's budget** on usability. On average, this will more than [double a website's desired quality metrics](#) (yielding an [improvement score](#) of 2.6) and slightly less than double an intranet's quality metrics. For software and physical products, the improvements are typically smaller — but still substantial — when you emphasize usability in the design process.

For internal design projects, think of doubling usability as cutting training budgets in half and doubling the number of transactions employees perform per hour. For external designs, think of doubling sales, doubling the number of registered users or customer leads, or doubling whatever other KPI (key performance indicator) motivated your design project.

How to Improve Usability

There are many methods for studying usability, but the most basic and useful is **user testing**, which has 3 components:

- Get hold of some **representative users**, such as customers for an ecommerce site or employees for an intranet (in the latter case, they should work outside your department).
- Ask the users to perform **representative tasks** with the design.
- **Observe** what the users do, where they succeed, and where they have difficulties with the user interface. Shut up and [let the users do the talking](#).

It's important to test users individually and let them solve any problems on their own. If you help them or direct their attention to any particular part of the screen, you have contaminated the test results.

To identify a design's most important usability problems, [testing 5 users](#) is typically enough. Rather than run a big, expensive study, it's a better use of resources to run many small tests and revise the design between each one so you can fix the usability flaws as you identify them. [Iterative design](#) is the best way to increase the quality of user experience. The more versions and interface ideas you test with users, the better.

User testing is different from [focus groups](#), which are a poor way of evaluating design usability. Focus groups have a place in market research, but to evaluate interaction designs you must closely observe individual users as they perform tasks with the user interface. [Listening to what people say](#) is misleading: you have to watch what they actually do.

==When== to Work on Usability

Usability plays a role in each stage of the design process. The resulting need for multiple studies is one reason I recommend making individual studies fast and cheap. Here are the main steps:

1. [Before starting the new design](#), **test the old design** to identify the good parts that you should keep or emphasize, and the bad parts that give users trouble.
2. Unless you're working on an intranet, **[test your competitors' designs](#)** to get cheap data on a range of alternative interfaces that have similar features to your own. (If you work on an intranet, read the [intranet design annual](#) to learn from other designs.)
3. Conduct a **field study** to see how users behave in their natural habitat.

4. Make **paper prototypes** of one or more new design ideas and test them. The less time you invest in these design ideas the better, because you'll need to change them all based on the test results.
5. Refine the design ideas that test best through **multiple iterations**, gradually moving from low-fidelity prototyping to high-fidelity representations that run on the computer. Test each iteration.
6. Inspect the design relative to **established usability guidelines** whether from your own earlier studies or published research.
7. Once you decide on and implement the **final design**, test it again. Subtle usability problems always creep in during implementation.

Don't defer user testing until you have a fully implemented design. If you do, it will be impossible to fix the vast majority of the critical usability problems that the test uncovers. Many of these problems are likely to be structural, and fixing them would require major rearchitecting.

The only way to a high-quality user experience is to start user testing early in the design process and to keep testing every step of the way.

Where to Test

If you run at least one user study per week, it's worth building a dedicated usability laboratory. For most companies, however, it's fine to conduct tests in a conference room or an office — as long as you can close the door to keep out distractions. What matters is that you get hold of real users and sit with them while they use the design. A notepad is the only equipment you need.