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Web Usability Design Evaluation & Application

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Content

Chapter One Why Usability?

1.1 What is Usability?

Usability is a quality attribute relating to how easy something is a quality attribute relating to how easy something is to use. More specifically, it refers to how quickly people can learn to use something, how efficient they are while using it, how memorable it is, how error-prone it is, and how much users like using it. If people can't or won't use a feature, it might as well not exist.

Usability rules the Web. Simple stated, if the customer can't find a product, then he or she will not buy it. The Web is the ultimate customer-empowering environment. He or she who clicks the mouse gets to decide everything. It is so easy to go elsewhere; all the competitors in the world are but a mouse click away. If you are considering whether usability is useful to you, ask yourself: Are users trying to accomplish something when they visit my site? If the answer is "yes", then you should be concerned about usability.

People expect a lot of Web site today, and they are less and less tolerant of bad design. The guidelines we offer for better design in this book are based on behavioral research and observation, not on our opinions, Unlike market researchers, we do not simply ask people to speculate how they would use an interface because self-reported data is frequently unreliable and doesn't adequately answer usability questions. Instead, we employ user-testing methods that are based on observational strategies. We give people realistic tasks to perform on the Web and observe them as they

interact with various sites. This means that we discover what users actually do, not what they say they do. As a result of this overwhelming choice and the ease of going elsewhere, web users exhibit a remarkable impatience and insistence on instant gratification. If they can't figure out how to use a website in a minute or so, they conclude that it won't be worth their time. And they leave.

Focus groups and surveys are nice at assessing people's general preferences, but they are worthless for discovering whether people can use a site or what specific design elements to use. Only observational research can get valid answers to these questions. Our concern is how the user experience feels to the person at the other end of the cable. Ultimately, usability is bout your customers and what they need. Usability has assumed a much greater importance in the Internet economy than it has in the past. In traditional physical product development, customers didn't get to experience the usability of the product until after they had already bought and paid for it.

Interestingly, some of the early usability findings do hold true today because the fundamental interactions on the Web haven't changed as much as you might think. People still click on links to navigate through pages. And people's cognitive abilities don't change much from one decade to the next, so usability guidelines, which reflect human capabilities, evolve slowly. The people who use the Web haven't changed that much either. 80% will be using the site in next ten years are the same people who are using site now (except they will be older and need bigger font sizes).

What has changed is this: Web technology is less brittle, and extremely slow dial-up connections are getting to be rare, so many guidelines that aimed to alleviate early technical constraints are being replaced by equivalent (but different) guidelines that address the corresponding human constraints. For example, in the 1990s most users' connections were too slow to view video over the Internet, and those few who could

download video often faced crashes or system incompatibilities. So the main guideline for video was to avoid it. Today, video works form a purely technical perspective, so we can remove this guideline. Instead, we need new ones that address the fact that users watch Web-based video differently than they watch broadcast television.

The software industry has slightly more motivation than the physical product industry to improve usability. For software, users typically have access to a support center they can call then experiencing problems. Such support calls are very expensive to handle and more than half of the calls are due to poor usability. Unfortunately, the cost of running the support center is usually charged to a different account than the cost of improving usability, so the individual development managers are not overly motivated to ship great user interfaces.

1.2 Usability Then and Now

Designing Web Usability: The Practice of Simplicity (Jakob Nielsen, New Riders Publishing, 2000) appeared in print at the cusp of the first Internet bubble and was called a "landmark" because of its role in changing Internet professionals' attitudes toward Web design. Before DWU, most companies simply wanted cool sites. In fact, the best-selling Web design book at the time, *Creating Killer Websites*, advocated splash screens and other design atrocities. After DWU was published, many Internet managers realized that killer sites killed business. They discovered that the best way to do business on the Web was to create sites that their customers could use. The Web is not television. People don't go there to zone out. People go the Web with a specific purpose in mind. They have their hands on their mousse, ready to interact and be engaged.

Designing Web Usability was a manifesto. It strove to sell readers on the practice of simplicity over the cool design and complex user interfaces that dominated the Web at the time, and it did so partly by deconstructing many screen shots of miserable Websites in the style of the

day. Unfortunately, new mistakes have arisen to take their place. Overall, the Web has improved. We are now able to include many screen shots of designs that work well. Also measured usability has increased substantially in terms of how quickly and how well users can get things done on Websites. The most simple usability measure we collect is the success rate: Can people use the site at all ? On average, success rates are up and user failures are not nearly as common as they used to be. In other words, the usability movement has had measurable results in terms of improved user experiences.

The Web contained fewer than 10 million sites when DWU was published. That was certainly enough to make usability an important issue: If sites were difficult to use, people already had plenty of other places to go. At the time of this writing, the Web has 80 million sites and by the time you read these words, it will probably have crossed the 100 million mark—about ten times as many sites as before.

More important than the numbers, however, is the change in users' attitudes toward the web. DWU came out at the tail end of the time when the Web was interesting in its own right. It was exciting to be able to reach around the world and have information come to your desktop in an instant—or, more often, 30 seconds. Of course, you couldn't do that much on the Web, and whenever you found what you were looking for, you were grateful.

Today the situation is quite the opposite. People's expectations have expanded with the massive expansion of the Web. People just assume that the Web has what they want. They turn to search engines with all kinds of questions, and usually something comes up that has the answers. They assume that sites work. They assume that they will find whatever they are looking for and can buy almost anything online.

The Web is a tool. Consider the way that people think about that other onetime-dazzling invention, the telephone. They don't wake up in the morning and think, " Today I will experiment with my telephonic appara-

tus and place a call to somebody so that I can assess the sound quality of the connection. " Their use of the telephone is driven by their real-world needs. The same is true for the Web, as far as average users are concerned. One of the goal of *Designing Web Usability* was to shake up the world of Web design and make it pay attention to human needs, It succeeded, but only in part. Most Web projects today pay lip service to user experience, and it's rare to find Internet managers who don't list usability as a top goal for their sites. Unfortunately, in practice sites continue to violate many well-documented usability guidelines and as a result do not reach even a fraction of their business potential.

1.3 Art Versus Engineering

There are essentially two basic approaches to design: the artistic ideal of expressing yourself and the engineering ideal of solving a problem for a customer. We acknowledge that there is a need for art, fun and a general good time on the Web, it is believed that the main goal of most web projects should be to make it easy for customers to perform useful tasks.

Treating a web project as a software development project will make it easier meet schedules and to ensure the quality of the site. In particular, pervasive application of usability engineering methodology throughout your web project will lead to continuous improvement of the site, both with respect to the initial design and subsequent redesigns.

The engineering approach has one major benefit: When you are in doubt about whether to choose one design or another, you can pose an empirical question that can be resolved by gathering real data from your customers. Can people find information faster with design A or design B? Do users rate design A or Design B best on a standard customer-satisfaction questionnaire? Pick the one that gets the biggest scores and not the one you personally like the best.

Of course, the scientific method can only take you so far. There is still a need for inspiration and creativity in design. A simple usability engi-

neering method that anybody can follow can tell you that users have problems navigating your site or that everybody overlooks the search button on your home page. Taking these results and coming up with a better navigation scheme or a better look or placement of the search button is not simply a matter of following a series of easy steps. You also need some design inspiration to strike. However, remember that innovation is 10% inspiration and 90% perspiration. The way you get appropriate design ideas is to watch users and see what they like, what they find easy, and where they stumble. Their way to get good design ideas is quite often to follow usability engineering methodology and steep yourself in user reactions and data.

This test book has some screenshots of real web designs and the examples and comments refer to the sites the way they were the day of visit. Web usability changes less rapidly than web technology, so the methods and concepts you will learn from this book will be useful for many years, even if the implementation of design will change quite a lot. Many of the principles presented in chapters will continue to hold into late 21st century.

1.4 Bad Usability Equals No Customers

Fundamental errors are common on all levels of web design:

- Business models: treating the Web as a Marcum brochure instead of a fundamental shift that will change the way we conduct business in the network economy.
- Project management: managing a web project as if it were a traditional corporate project. This leads to an internally focused design with an inconsistent user interface. Instead, a website should be managed as single customer-interface project.
- Information architecture: structuring the site to mirror the way the company is structured. Instead, the site should be structured to mirror the users' tasks and their views of the information space.

- Page design: creating pages that look gorgeous and that evoke positive feelings when demo's inside the company. Internal demos do not suffer the response time delays that are the main determinant of web usability: similarly, a demo does not expose the difficulties a novice user will have in finding and understanding the various page elements. Instead, design for an optima user experience user realistic circumstances even if your demos will be less "cool".
- Content authoring: writing in the same linear style as you have always written. Instead, force yourself to write in the new style that is optimized for online readers who frequently scan text and who need very short pages with secondary information relegated to supporting pages.
- Lining strategy: treating your own site as the only one that matters, without proper links to other sites and without well-designed entry-points for others to link to. Many companies don't even use proper links when they mention their own site in their own advertising. Instead, remember that hypertext is the foundation of the Web and that no site is an island.

In every one of these case, the natural way people go about doing web projects based on their non-web experience turns out to be wrong. The Web is a new medium and requires a new approach. In the network economy, the website becomes a company's primary interface to the customer. Indeed, for e-commerce companies the site is the company. The user interface becomes the marketing materials, store front, store interior, sales staff, and post-sales support all rolled into one. In many cases the site even becomes the product itself. Thus having bad usability is like having a store that is on the 17th floor of a building (so nobody can find it), is only open on Wednesday between 3 – 4 o'clock (so nobody can get in), and has nothing but grumpy sales people who won't talk to you

(so people don't buy too much) .

Exercise

Compare these 4 tools: Twist (http: //studio. thoughtworks. com) and AutoHotKey (http: //ahkbbs. cn/Help/); Abbot (http: //abbot. sourceforge. net/doc/overview. shtml); Squish (http: //squish. froglogic. com); write up a report of those functionality testing tool pros and cons.

Chapter Two The Web User Experience

2.1 How Well Do People Use the Web?

Web users are extremely impatient: In our study, they spent an average of 27 seconds on each Web page. Why the rush? Because there's too much irrelevant junk on the Internet. If people carefully studied everything they came across online, they would never get to log off and have a life.

There is no silver bell that alerts users to a page that is worthy of their attention. You need to convince them. How well do people use the web? In the beginning, the question was whether people were even capable of using Websites. Today the answer is "yes", at least most of the time. When we told people to go to a specific site in the user testing for this book, they completed their tasks successfully 66% of the time. Of course, they also failed 34% of the time, but on average people did succeed.

Why do people use the Web if they fail a third of the time? Because in reality, they don't fail that often. The failures occur when people use new sites, but most people spend a lot of their time on sites that have proven useful in the past, so their success across a day of Web use is actually higher. Because users choose sites to spend time on based on their prior experience with them, those with high usability have a better chance of being selected. Furthermore, success breeds success: Users get better at using sites that they visit habitually. For example, if you have already bought nine books on Amazon. com. it's easier for you to buy the tenth than it was to buy the first.

It may be little comfort to learn that users' overall experience is better than indicated by our statistics, though, because a site's only hope of attracting new customers depends on how easy it is to use during that all-important initial visit. There are more than a billion users on the Internet, so any site that has less than ten million customers has not tapped into 99% of the potential audience.

The 66% success rate we measured in our study is actually a great advance over the miserable usability that characterized the Web in the 1990s. At that time usability studies regularly measured success rates at around 40%, meaning that more people failed than succeeded at using the Web.

So we have come long way in just a decade. When will we see success rates of 100% ? Probably never, because there will always be some bad sites that almost nobody can use. But if current trends continue and sites invest more in usability, we should approximate 100% around 2015. Does this mean that the Web will be perfect by then? Certainly not. Success rates only measure whether it's possible for people to use Websites, not whether it's pleasant or efficient to do so. Furthermore, because the Web is the ultimate competitive environment, once people can use almost all Websites they will still tend to use the ones that serve them best.

How to measure Web-wide success rates? People succeeded 66% of the time when we tool them to a homepage and gave them tasks that were possible to do on that site. But when we gave them a blank browser screen and told them to go anywhere they wanted to complete a task, the average success rate dropped to 60%. This makes sense because users first have to identify a site that will solve the problem and then use that site to accomplish the task.

If you are collecting usability measures for your own Website, you should measure your numbers against the success rate we recorded for site - specific tasks, assuming that you too start your test participants on your homepage. This is the most common way to run usability studies be-

cause it maximizes the time users spend on the site that you are in charge of redesigning. If your users can perform 70% of reasonable and representative tasks on your site, you have above-average usability. Conversely, if their success rate is 50%, you have abominable usability and you will need to improve by about a third to bring your usability rates up to the average of 66%.

The 60% success rate we recorded for the Web-wide tasks is more representative of the overall Web user experience, when users are trying to do something new and they don't already know what site to go to. The lower success rates for Web-wide tasks is a measure of the difficulty of using the Web as a whole and the features that the Web provides to help users identify Websites (mainly via search engines). So there's still plenty of room for improvement on the Web.

For those usability testers, we divided them into two groups according to their Internet experience. All had at least a year's experience using the Web, but there was still a broad range of expertise among them. For the purposes of this analysis, we divided them into "low-experience users" and "high-experience users", according to a variety of issues:

- How many years they had been online.
- How many hours per week they used the Web, not counting time spent in email.
- How many advanced behaviors they exhibited, such as Web chatting, changing the labels on bookmarks, upgrading their browser and designing their own Web pages.
- Whether they fixed problems with their computer equipment themselves.
- How much they followed current trends in technology—for example, if they subscribed to computer magazines or were considered by friends to be a source for computer advice.

In general people were considered "low experience" if they had

been online for no more than three years, used the Web for less than ten hours per week, exhibited less than a third of the advanced behaviors, asked somebody else to fix their computer problems, and weren't consulted for advice on technology. Conversely people were scored as having high experience of they had been online for at least four years, used the Web for more than ten hours per week, exhibited more than a third of the advanced behaviors, fixed their own computer problems, and were a source for tech advice for others. Of course, some people were advanced on some of the rating scales and less advanced on others. In those cases, their final designation as low or high experience depended on their average score.

As the table below shows, the gap between the low- and high- experience users was 13% for the site-specific tasks and 15% for Web-wide tasks. In other words, experience was a stranger advantage when users had to navigate the entire Web instead of being told what site to use. This difference indicates that freedom of movement is more of an advantage for skilled users and more of an impediment for less skilled users.

Success Rates and Experience

Web Experience	Site-Specific Tasks	Web-Wide Tasks
low	59%	52%
High	72%	67%

Table 2 - 1 Referring to "Prioritizing Web Usability"

Less experienced Web users have more difficulty than more experienced users accomplishing standard tasks online. Both groups scored lower in completing Web-wide tasks than they did on site specific tasks.

In general, subjective satisfaction ratings are not a very telling usability measure because users tend give generous scores even when they have great difficulty using a design. One reason for this is the general human desire to be polite and fit in. Another reason is that users often don't know how poorly they performed when they tested a site. If they found some information about their problem, they think that the site was help-