

1 Introduction to Web Analysis and Design

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Imagine you have been called into your boss's office. Your boss says, "We've just received a directive to develop a corporate Web site. It has to be done in one month and it has to be done right! No shortcuts and no quick and dirty approach that will lead to endless reengineering and retrofitting. The directive indicates that the methodology used to develop the site must be as rigorous and thorough as that used to develop and deploy software systems. Our corporate Web standards group has mandated we use Macromedia Dreamweaver 3 as an implementation tool. Any questions?"

Don't panic! You will be able to develop, test, and implement the corporate Web site using a solid methodology. You will also be able to learn Dreamweaver 3 quickly so that you can use this powerful tool successfully. Let's get started with the basics!

◆ Web Design Difficulties

The Web presents unique design difficulties. These include

- too much information
- impatience of Web readers
- limits to short-term memory
- tendency to get lost
- reading from screens more difficult than paper

Too Much Information

The Web consists of volumes of information, which is sometimes disorganized and difficult to get through. In order to make any sense out of the information, the reader must often resort to trial and error to ferret out logic that should have been organized and made obvious by the author.

Impatience of Web Readers

Web pages can render slowly, causing the user endless frustration. Users will leave a Web site in about two to four seconds if they do not see something useful at the outset. Often, the reason for this quick exit is that the information is presented in a disorganized or confusing way.

Limits in Short-Term Memory

Coupled with user impatience, are limits in short-term memory (STM). STM is the throwaway memory that we use every day to function, and it is fragile. For example, suppose that you have just looked up a telephone number and are about to dial the phone. Someone comes into your office and asks, "Would you like to go to lunch?" It is likely that the phone number will pop out of your memory and you'll have to look it up again.

There are real limits to STM that are independent of culture, intelligence, and gender. Generally, people can handle about four to six items of information at one time. Presenting information into groups of four to six items is essential to enable readers to scan a Web page quickly and find information. Reading pages on the Web is slower than reading from a paper document.

Tendency to Get Lost

Web pages are not always well organized. Readers have difficulty, since they are often dealing with different formats.

With disciplined, logical thinking, a designer can build an interface that will guide users through a site so that every click adds value to the user's task. Links and navigation on a Web site should be intuitive; that is, the user should be able to use the site without having to resort to trial and error.

Reading from Screens More Difficult

For a variety of reasons, reading from screens is more difficult than reading from paper. Fonts are not as clear and crisp. Readers generally see one screen in front of them at one time. The space available to the designer is limited. Therefore, the designer must create an efficient and lean screen design that facilitates scanning and finding critical information. My experience is that continually reading from a screen is tiring, so keeping text short and lean should be an overall objective.

◆ Summary: Web Design Difficulties

We've seen that designing for the Web presents these challenges:

- too much information
- impatience of Web readers
- limits to short-term memory
- tendency to get lost
- reading from screens is slower and more difficult than reading from paper

As we said, there are solutions and this book will present them!

◆ Transition to Analysis

Web analysis and design is an iterative process. Through prototyping our Web site (including alternative designs), we can dramatically increase our odds of success. But to really achieve success, we need to employ a user-centered design,¹ which states that

- The user is the center of the design universe.
- Design decisions are made based on making the user's tasks easier.

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Implementing this approach requires a thorough understanding of

- who the users are,
- what tasks they will be performing,
- how they will be using the Web site.

◆ The Web Development Cycle

Figure 1-1 shows the iterative nature of Web Development. We will first focus on conducting a thorough and complete analysis so that a clear set of requirements can be developed. Then, in Chapter 3, “Design,” we will look at efficient ways to organize the navigation and content so that a user of our Web site will be able to access critical information, quickly and painlessly. In Chapter 4, “Implementation and Testing,” we will use Macromedia Dreamweaver 3 to build the Web site. Then we will conduct usability tests to ensure that the Web site meets the needs of the users.

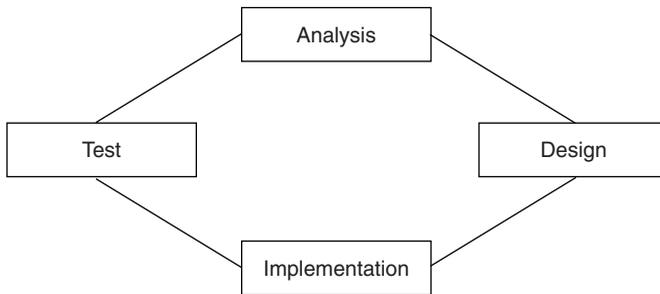


FIGURE 1-1 The Web development cycle.

◆ Differences in GUI and Web Design

A unique challenge in Web design is that the developer does not have full control over the final presentation of the site. Readers can resize windows and change default fonts and colors. Moreover, different hardware and software platforms render the same Web page differently.

◆ The Prototyping Cycle

Figure 1-2 shows the iterative nature of the prototyping cycle.

The prototyping cycle can be used throughout the Web development cycle. Early on, we can develop paper prototypes and show them to the user. This helps us to get inside the mind of the user better than if we just ask abstract questions. We can use Macromedia Dreamweaver 3 to build a quick prototype that provides some interactivity, which helps the user express his or her ideas more clearly.

So we see that a developer can build a prototype, test it with the user, modify the prototype based on the user's input, and continue this cycle, thereby helping to ensure a successful implementation. Additionally, the developer can test various prototype versions with the user and compare performance. For each alternative, how fast did the user perform and how many errors were made? In this way, the most efficacious alternative can be selected for further development. Prototyping is an excellent way to analyze and define the Web site's requirements.

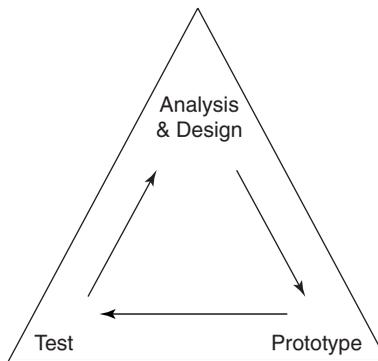


FIGURE 1-2 The prototyping cycle. (Source: Human Factors Curriculum, Learning and Performance Center, Lucent Technologies, 1999)

◆ Source of System Errors

For some time now, we have known where the source of system errors is in the systems development life cycle (SDLC). At least 60 to 80 percent of the errors in a system can be traced back to faulty

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requirements being developed in the requirements-definition phase. The remaining 20 to 40 percent of errors are attributable to all of the other phases combined.

It is imperative, therefore, that a thorough and rigorous analysis be performed to reveal the requirements of the Web site. Otherwise, the developers and programmers are set off on the wrong azimuth, and the eventual site implementation, while technically correct, bears little resemblance to the needs of the users, since these needs were not identified early on.

Notes

1. Human Factors Curriculum, Learning and Performance Center, Lucent Technologies, 1999.