Chapter 9: BUG TESTING AND FINAL CHECKING

You want your Web site to look good and work without any problems, or "bugs." The way to ensure that people don't run into broken links, formatting anomalies, and other difficulties using your site is to go through the process of "bug testing" before you publish the site to the Web.

Conduct a Spelling and Grammar Check

Ask someone who is good at editing to proof-read every page at your site. Misspelled words, bad grammar, incomplete sentences, etc. will reflect poorly on your organization, projecting an image that you probably don't want users across the world to see.

Some Web tools may provide automatic spelling and grammar checkers, but don't rely on them entirely since they won't be able to spot semantic problems – usually with words that are spelled correctly but used incorrectly; "there" and "their," for example.

Test Browser and Platform Compatibility

You should have been spot-checking your site on different platforms using different browsers all during computer prototyping and user testing. If you haven't been doing so, now is the time to start and get serious about it. Don't assume that your site will look O.K. to everyone who visits just because it looks O.K. on the computer you use all the time with your favorite Web browser. Sloppy HTML coding may be "forgiven" on some browsers but not on others and certain HTML coding errors will even crash some older Web browsers. If you crash a visitor's system even once, they probably won't come back to your site.

As mentioned in the last chapter, Bobby (http://www.cast.org/bobby/) is a free Web tool that you can use to do this. Within Bobby, you can select several widely used Web browsers and different versions. Bobby will point out which HTML tags will not work on certain Web browsers. You can also select different HTML standards and test for compatibility.

This is really important if you expect your Web site to be viewed by users with a wide range of Web browsers and different computer systems. You should be aware that most people do not have the latest versions of Netscape or Internet Explorer Web browsers, or brand new computers with the fast processors and large, high-resolution video displays. Jakob Nielsen (1999) recommends waiting at least two years after the introduction of new HTML standards and Web browsers before using those newer features in your Web site. The reason this is so important is interoperability. You don’t want to turn people away from your Web site because they don’t have the latest technology. Even though you often have to make compromises in solutions to Web page design, the goal is to allow users to actually see the content your Web pages.
If you use Web page development tools, such as HomeSite, Dreamweaver, etc., these often contain options for testing the validity of HTML (syntax checking, version checking).

**Color Inconsistencies**

Pay special attention to the capability of various computer platforms to render colored images. The contrast between background and foreground colors may look just fine on one platform, yet on another be so poor as to make your text illegible. The only way to find out is to test your pages on a wide variety of different platforms with different monitors, monitor resolutions, and color settings. Be sure to test on both PC’s and Macintosh computers.

**Test Every Link**

Test all the links on your pages. A good way to be systematic about this is to clear all your recently visited links in the browser preferences. If you have used the standard colors for followed and unfollowed links, all your links will turn blue. Go through the site a page at a time and follow each link. You'll be able to tell which ones you've checked because they will turn magenta after you have followed them successfully. This technique also allows you to skip some links.
because if you have repeated links on different pages leading to the same destination, all of them will become magenta (the “followed link” color) provided the URL for each one was entered correctly. You'll be able to tell quickly if there are any that are either broken or point to the wrong content.

Another technique is to print out copies of your pages. Have your bug testers highlight the links on the paper pages as they test them, and make notes on the ones that result in errors. This technique works well when you have multiple testers working simultaneously. It also allows your testers to go back and “spot check” the corrected links quickly, working from the paper records, rather than having to check every link again.

Web development tools are available which will test all the links at your Web site (e.g., FrontPage, HomeSite). These tools can tell you which links are broken and need to be fixed, but they won't be able to tell you if a working link is pointing to the wrong material.

**When to Go On-line?**

You will have to put your site on-line (send the files to the Web server) before you start this final bug testing. At this point you have:

- finished usability testing your computer prototype
- made "polished" copies of all files for the site with final wording and standard HTML
- made an editorial check of the files off-line to be sure there are no factual or spelling errors.

You may want to contact a targeted group of people who will be interested in reviewing your site once it is on-line and before it is thoroughly bug tested. These people can be helpful in checking for problems, especially if some of them use browsers that you don't have easy access to. Don't expect them to do your bug testing, though. You need to do a systematic job of bug testing yourself.

It's a good idea to place temporary notices on the main pages of your site indicating that they are being tested. Remember to remove those notices as soon as the site has been checked though. People assume that all Web pages will continually be updated and revised, but they will think you aren't maintaining the site if the pages continue to say "under construction" indefinitely.

**Issues on Access to People in Your Organization**

**Personal Privacy**

The Web is world wide. Anybody can visit your site, and many people will. You are suddenly making information more available to the public than has ever been readily available to such a wide audience from your organization or institution before.
Get Permission Before You Publish Information about People

You need to be careful about the information you display about people in your organization. They need to know – and they have a right to know – ahead of time that information about them will appear in public. They have the right to decline permission for that information to be published.

Encourage Information Providers to Exercise Caution

You may want to make it possible for people in your organization to make their own personal home pages, professional resume pages, or departmental "people" at your Web site. If you do, you should warn individuals against including too much information about themselves – photographs of themselves and their family members, home telephone numbers and addresses, and anything they consider to be personal information. Be sure they understand that they are publishing this information to the world.

If at all possible, include a feature in your Web site that allows people to control the information about themselves that would otherwise be published automatically. Anyone who does not want their office phone number, address, or e-mail address published has the right to refuse permission and they should be able to do so easily.

Of course, if you are publishing a Web site for a K-12 organization, you should never publish information about minors without the express permission of a parent or guardian. Don't wait for an unfortunate incident or lawsuit.
Never Publish Confidential Information on the Web

Depending on how your server is configured some search programs will be able to find documents at your Web site even if there are no links to them on any other pages. Simply keep confidential files off your Web server unless you are able to build secure "fire walls" or implement secure login procedures for your confidential information. Educate information providers in your organization about the dangers of posting confidential information. They may do so innocently because it is an easy way to share documents with each other, but they put your organization at great potential risk depending on the nature of the information that is posted.

Copyright and Plagiarism

Copying images and text is extremely easy on the Web – as easy as clicking and saving. If you are publishing a Web site you almost certainly know that copying and republishing the work of others is both plagiarism and a violation of copyright law.

Let information providers for your site know that they place themselves and the organization at risk if they use other people's published work on their own pages. Even if they use "clip art," they should be sure to read the fine print on the pages where they get it because some producers of clip art expect royalties if you publish their work as part of yours.

Don't assume that everything you see on the Web has already been checked for its copyright-free status. The student who has created a
Mickey Mouse (TM) Home Page may be entirely unaware of copyright and trademark law and her own infringement on the rights of Walt Disney, Inc. However, Disney is not unaware and has an obligation to pursue those who infringe on their trademarked properties, else they may lose the right to their own trademarks.

**Publishing a Web Site Is Publishing on an International Scale**

Student term papers are usually read by one teacher who may or may not recognize plagiarized material in them, but since so many people can access the Web the chances are good that someone (perhaps the original author!) will discover an instance of inappropriate use of copyrighted material. Authors and organizations can use search engines to find out who is referring to them, using trademarks or key phrases. You will be hearing from larger companies about copyright and trademark violations if they occur in your site, and you are very likely to hear from individuals as well. It's a good idea to educate as many people as possible who are publishing at your site before you get a letter or an email message from a corporation's lawyer or an academic ethics officer.

**Adding Links That Point to Other Web Sites**

When you add links to your pages that point to other sites make it clear in your Web pages that the link goes somewhere else by acknowledging the organization or author it belongs to. Otherwise, users may not be aware that they are jumping from your site to a completely different one, and may unconsciously assume that the new page belongs to you. It is also a good idea to include acknowledgments with your links is also good Internet etiquette since it encourages legitimate sharing of information and rewards the time and effort countless authors put into their pages. If you want to include portions of someone's work in your Web pages, obtain the same kind of written permission from them that you would seek if you were reproducing their work in print.

**Documentation for the Future**

**Document for the People Who Will Come after You**

When you are in the middle of production, you may be rushing to get the site finished. Your team may be working together closely – whenever you need to know a detail from another team member a quick phone call or e-mail message answers your question. Your team will just know lots of details about the Web site by virtue of being immersed in the work.

However, when the site has been up and running for a while, new folks may come along to continue the work on it and additional staff in your organization may need to be trained to do some of the routine
maintenance of files for it. You need to document the Web site for these people.

Document for Yourself

Although it may not seem that way now, a month from now you'll have forgotten many of the details regarding your site that were on the "tip of your brain" during the development and production process.

Where Should You Document?

Don't rely on comments in the HTML files themselves to document your site. Remember that users can view your HTML source code. You may not want to give away information about the physical structure of your Web site on your server for security reasons. Instead, use a word processor and print the documentation for distribution. You might put the documentation on the Web itself as an HTML file but if you do remember to make the document secure.

What Should You Document?

File and Directory Names: Directory Structures

Describe your conventions for naming files and directories, and map out your directory structures for the site. When different groups are responsible for maintaining their own parts of the site, they need to know where their files should go and where they should not go.

Standardized Language

You should have standardized your language in titles, index lists, menus and links. Describe conventions for listing people's names, titles, dates and departments. If your usability tests have lead you to adopt wording that is meaningful to your target population but different from the internal names for parts of your organization, document those differences. For example, "answers to computing questions" may be the meaningful phrase that your target audience understands, but the service may be known internally as the "computing knowledge base". Check with stakeholders to be sure that you are using terminology that meets their approval. You may have to negotiate some terms when you know that users do not understand the official ones, but you should not assume that your team will know all the intricacies of terminology used by different parts of the organization.

Decisions for Design Standards

Document the decisions you have made regarding headings, subheadings, text, graphics, navigation, links, annotation for links, and page footers in the standard or recommended templates for your site. Describe these specifications thoroughly because they may not be obvious to others, even though they are to you. Describe the standards for any identity graphics representing your organization – not only what the graphics themselves look like, but how they may be used and in what ways, if any, they may be altered.
Quirks and Exceptions

Be sure to mention any "quirks" at your site – anything that does not follow the standards for whatever reasons. For example, file names that predate the site's redesign may have to be left alone because a department cannot afford to break links on pages at numerous other Web sites that pointed to these files. If this happens, take care to explain not only the anomaly but the reason for it in your documentation so that anyone revising the site later understands the implications of making that "quirk" conform to the rest of the standards.

Lists of Directories and Files

Make lists of files which are the contents of computer directories. This ongoing documentation process ensures that files aren't overlooked in the event that a change must be made to every page in the site, or a section of the site. You can investigate site management software to help with this process or devise a simple procedure to be carried out at regular intervals, for example:

- copy the directory trees and files from the Web server to your local drive
- print the file structure names from the folders on your local drive
- save the files you have downloaded as a backup copy of the site

Clips and Other Odds and Ends

You may have "clip files" of text and graphics that represent the standard elements for your site. These are the pieces that you merge to create the final versions of HTML documents or graphics. When you want to want to change one of those pieces and reconstruct certain documents or graphics, or when future developers want to create additional pages at the site, these clip files will be the starting point.

What Do I Do Next, after the Web Site Is Built?

Celebrate!

You've really worked hard to get to this point. You have done your homework to make a useful and usable Web design. You have brought your site on-line, and it is now up and running. A celebration is in order. You deserve it.

This is also a good time to acknowledge all of the people who have made contributions to the effort. It's a good time to show off your completed site to the organization too.

Advertise the Site

Contacting Web portals to let them know about your site (e.g., Yahoo, Lycos, Excite, AltaVista). Without listings in such portals, people won't know your site exists unless they happen to find it with a Web search engine. Inform everyone you can think of about your site.
Ask them to add a link from their site to yours. If you have built your Web site well and you are truly meeting needs of your target population, they will visit your site. The word will spread; you can count on it.

**Prepare for the Long Haul**

A new Web site is a little like a new baby. When it first arrives there is a lot of excitement in the family. When the dust settles, you'll need to get serious about caring for and feeding your site over the long haul.