Top Ten Ways to Improve Your Web Site

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By Brad Gillespie

As with most things in life, the devil is in the details. The same goes for Web sites. Small changes can take a ho-hum Web page and make it sing.

Don't get me wrong. Content is still king. Providing useful, timely, and helpful information is the key to a powerful Web presence, but technology combined with the use of simple philosophies can take the dull and make it stunning.

This paper focuses on easy yet highly valuable improvements that can be made to any Web site.

1. Excellent Use of Entities

Entities—or character entities—are the use of codes to represent special characters. For Example, *™* represents the superscripted trademark symbol. But where to use it?
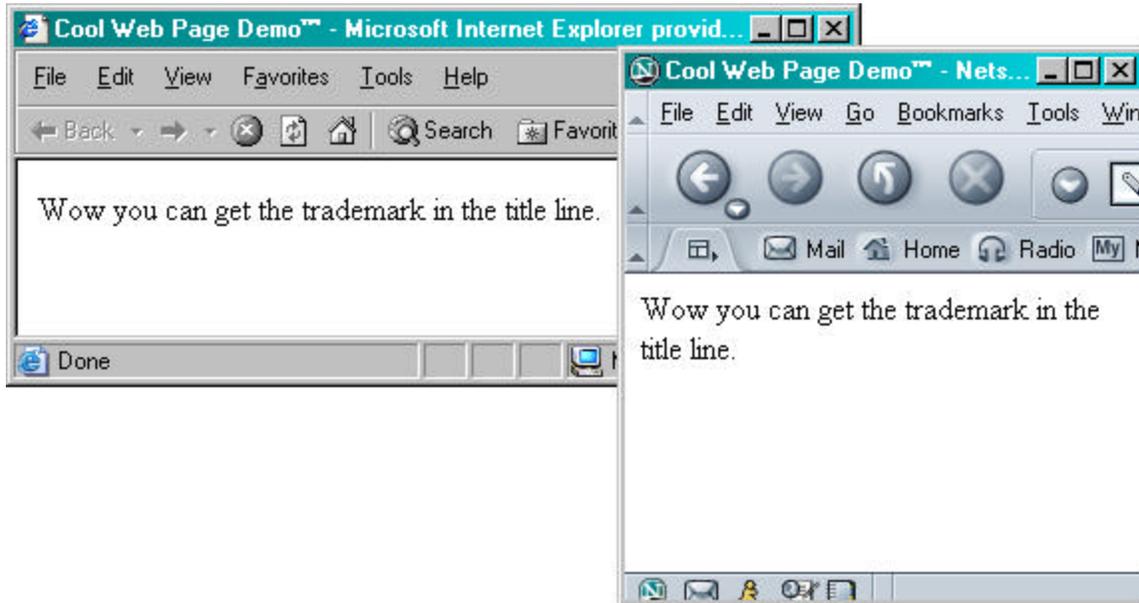
Try the following code in a page named trademark.html:

```
<html>
<head>

        <title>Cool Web Page Demo&#153;</title>

</head>
<body>
Wow you can get the trademark in the title line.
</body>
</html>
```
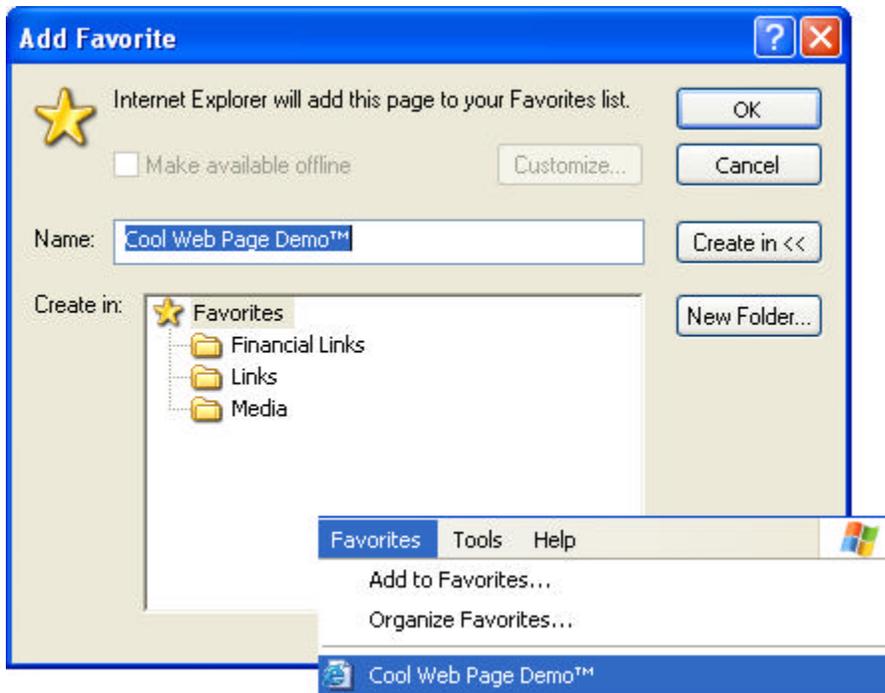
The superscripted trademark symbol can be seen in the title bar.

The trademark symbol will also show up when the page is bookmarked or when the dropdown to favorites/bookmarks is implemented.

Other entities such as the copyright symbol—***©***—can also be used throughout a Web solution.

A list of different character entities can be found all over the Web. Some lists contain word-based entities and others, numeric entities. For example:

http://www.cs.indiana.edu/elisp/entities-list.html
http://www.bbsinc.com/iso8859.html
http://www.w3.org/TR/REC-html40/sgml/entities.html

2. Flyaway Menus

Flyaway menus are the drop-down and slide-in menus seen on popular Web sites like:

www.cdw.com
www.msnbc.com
www.aa.com

Making these menus from scratch is challenging. Taking them from existing Web sites is a form of stealing. What if there was a place that would give flyaway menus for free for both non-commercial and commercial use? What if they also gave the code and comments on how to customize it?

The place to go is:

www.DynamicDrive.com

Specifically the "Menus and Navigation" section:

http://www.dynamicdrive.com/dynamicindex1/index.html

I have been using menus from this site for years. You don't have to link back to them (they do like it if you do) or pay any money. For the most part, all you have to do is leave the comment in the code that you got it from them. Be sure to read the rules/license.

3. Add Database Access

Static Web pages can be useful and helpful, but as a Web solution grows, the time involved for maintenance can be counterproductive. Database-driven Web solutions that are created correctly will update and generate links themselves.

Databases make it look like the developer is doing a lot of work when in reality it takes little effort after the development. As soon as information is updated in a database, the very next person to hit a page gets the most up-to-date data.

A site that offers 50,000 products could never maintain over 50,000 Web pages. Many times, these e-commerce sites are driven by as few as 10 or 12 detailed pages. An internal project may have as few as six pages. If there are only six pages to maintain, go the extra mile and add the detail. But you could never do that with a site with 450 pages.

A scripting or programming language must be chosen to implement a Web/database solution. Here are the key players:

Language
(OS) Operating System
Advantage
Disadvantage

ASP (Active Server Pages) using VBScript (Visual Basic Script)
Microsoft Windows based or Linux/Unix if Running Sun One Active Server Pages formally know as Chilisoft www.Chilisoft.com
"Free" and fast.
Very commonly used. (Easy to find developers)
Microsoft Web servers preconfigured to use.
Microsoft Web server focused.
Limited ability to reuse code

Java
Cross Platform but usually interact with Linux/Unix or Mainframe backend systems
Very fast between Web server and database.
Reusable code.
Hard to configure Web server for use.
Harder to learn.
More difficult to debug.

PHP (Hypertext Preprocessor)
Cross Platform but usually used on Linux systems.
"Free" and fast.
More popular in Europe (but gaining in US)
Web server takes some configuration.

ASP.NET
Windows Web server running .NET framework
Many "built-in" objects to speed development.
Fast.
Reusable code
Microsoft Visual Studio .NET "required" (Web Matrix can be used www.ASP.net but most production in ASP.NET is created with VS.NET.)

Once a server-side script/language is chosen, you're off. The next part of this paper will offer Web resources to help you get started.

If you want to add database connectivity consider taking *Mastering Web Databases* from Global Knowledge. I wrote the course.

4. Web Resources

There are a vast number of resources on the Web to help improve Web sites. One was www.DynamicDrive.com from a previous point. Another is www.Deja.com. This resource stands out among the rest.

Deja.com was the interface to the archive created of newsgroup postings at Deja News. It has since been acquired by Google and is a special section of Google http://groups.google.com. This is not regular Google, but Google itself is a solid resource. Deja, now Google Groups, has been recording the textual posting in news groups since 1995. Deja is a Web-based window into this world. For non-database people, it is hard to explain the magnitude of this resource. It is over half a terabyte and searchable for free.

There is one important point when using newsgroups. It is called the "rule of 20 minutes." Being such a large resource, it will take 20 minutes or more to find a helpful answer. So, if the question is simple, look it up in a book or talk with a colleague. Looking on the newsgroups is not a productive way to spend your time. But, if you have a problem that has been vexing you for a week or even a month, it's worth 20 minutes of your time.

Over 90 percent of the time, whatever you have a question on is already answered in newsgroups. However, if after looking you cannot find an answer for free, then you can post a question through Deja/Google Groups. Within 24 hours you will usually get one to three technically correct answers.

I cannot stress enough how helpful www.Deja.com has been for me. I hope it can be of service for you too.

Other resources include:

www.Developer.com This is a solid resource for most scripting/programming languages and is top notch for Java.

www.CodeHound.com This is another language resource and is especially helpful with Microsoft .NET technologies.

www.4GuysFromRolla.com This is the definitive place to get ASP or ASP.NET information.

www.php.net A good resource for php.

Here are two other resources that IT professionals will find helpful.

www.news.com CNET news. This site keeps you up-to-date on IT news.

www.theinquirer.net This site will keep you on top of hardware. This doesn't cover today's hardware. Rather it provides an outlook for six months to a year and a half from now.

5. Fast Loading Pages

Almost nothing angers people more than slow loading Web pages. (Spam and pop-up ads might come in ahead, but slow pages rank right up there.) I hear all the time, "This is an internal site and everyone is on the network." What about all the management and salespeople with laptops? Or the people at home who don't have DSL or cable modems? Don't get me wrong. I still want a rich, image-filled Web experience, but I don't want to wait more than eleven seconds for a page to load. If you follow a few simple guidelines, your pages will sing over the wire.

First, what loads faster: text or graphics? The answer is text. You can add almost an unlimited amount of text to a page and not change the effective download speed. Use html tables and add JavaScript. Be sure to have alt text on all your images. It will not hurt.

Graphics on the other hand are another story. The rule of thumb is that no graphic should be more than 15k, hope for 10k, and shoot for 7k. I have made solid 400 x 40 pixel animated images that are less than 7k. It's not necessary to always hit 7k. If you need 18k or even 21k for an important image, do it. But no 87k images are allowed.

There are several image editors. The best for Web images is Adobe's Photoshop. One of the best tools of Photoshop is called Image Ready. You can do a lot with Image Ready. One feature is called 2-up or 4-up. This feature takes an image and shows you two or four compressed versions of the image. You choose the one that is small enough to fit your need, yet still looks good.

The second thing to consider is the total size of the page. Combining the text and images I shoot for less than 60k. Again, be flexible. The images need to be more compressed or a more logical way to break up the pages needs to be found.

Third, test each page on a dialup connection. Before testing, be sure to clear the cache on the browser. As far as speed goes, the experience of the first page in a Web solution is most important. If you don't have dialup, call a friend who does and have them check it. You will have much happier users if you do.

6. Newspaper Model

The basic look and feel of a Web solution should be like any newspaper. The most important information is "above the fold," or on the first screen. Still important, but not as important, is the front page of the paper that is "below the fold." On Web sites, "below the fold" would be compared to content found by scrolling down a little. The front page of a newspaper is not nine feet long. Don't make a user scroll 10 screens down. Some scrolling is fine, but not a lot.

Many times there is a lot of critical information that needs to be on the first page. How do they do it at newspapers? They use columns. To get columns in HTML, we use tables.

Think about www.USAToday.com or www.NationalGeographic.com. They have a great deal of information in a small space. This includes with white space or open areas. This is all done with tables.

Below is a simple table that would be used to start a page. Some navigation will go on the right and left. Key information is in the middle.
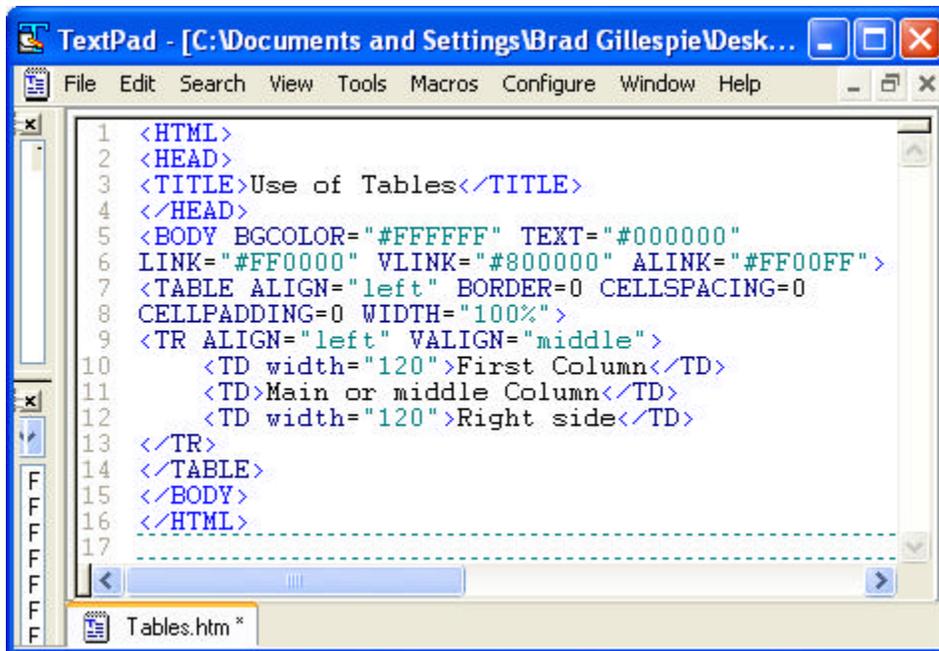

```
1  <HTML>
2  <HEAD>
3  <TITLE>Use of Tables</TITLE>
4  </HEAD>
5  <BODY BGCOLOR="#FFFFFF" TEXT="#000000"
6  LINK="#FF0000" VLINK="#800000" ALINK="#FF00FF">
7  <TABLE ALIGN="left" BORDER=0 CELLSPACING=0
8  CELLPADDING=0 WIDTH="100%">
9  <TR ALIGN="left" VALIGN="middle">
10     <TD width="120">First Column</TD>
11     <TD>Main or middle Column</TD>
12     <TD width="120">Right side</TD>
13  </TR>
14  </TABLE>
15  </BODY>
16  </HTML>
17
```

It is acceptable to put tables within tables. This gives the illusion of columns and rows just like a newspaper.

7. Rule of Three Clicks

Many usability studies have been conducted on computer use, specifically for Web pages. One rule based on this research is "The Rule of Three Clicks." This rule states that any major section of a Web site should be accessible from any page within three clicks. Drop-down menus that were discussed before can be helpful in this area.

The rule of three clicks is a philosophy. It becomes especially important as Web solutions grow. In the beginning, Web pages may be used by a small number of people and have a small number of pages, but as things grow they can get out of hand.

Look at any Web project you are working on and make sure that the rule of three clicks is being followed even in the "lower" levels of a site.

8. Slick JavaScript Tricks

JavaScript came out with Netscape 2.0 and has been a major part of enterprise-level Web pages ever since. HTML itself can't handle logic, JavaScript is required to have logic on the browser, or client-side. JavaScript is text imbedded in the html of the page and is run on the client/browser side.

Because JavaScript is only text, it flies across the Internet, you can add as much JavaScript as you want without greatly affecting the loading speeds.
A classic example is a user name password form. JavaScript can be used to make sure the boxes are not blank or at lease two characters are used for the user name. Java script can also be used to make sure the cursor always comes up in the appropriate box.

JavaScript has event handlers like onClick, so something happens when you click on it. Or onSubmit, the script is run just before a page is submitted to a Web Server. Or onLoad. The good thing about JavaScript is that it's very literal.

One thing to be careful of with JavaScript is its case-sensitivity. If you name something Form1 you better not try to call it using form1.

Here is an example of focusing the cursor in the username box of a form.
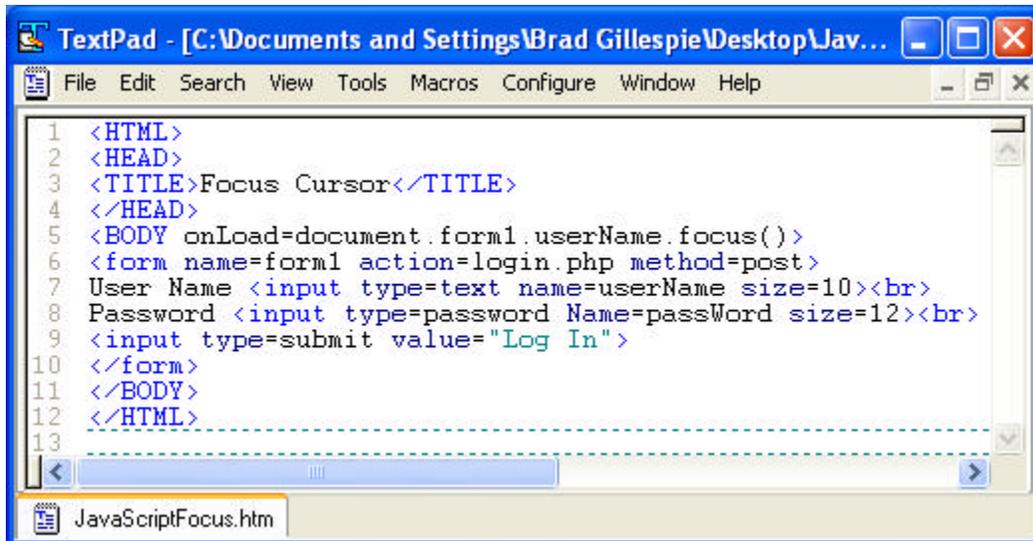

```
1   <HTML>
2   <HEAD>
3   <TITLE>Focus Cursor</TITLE>
4   </HEAD>
5   <BODY onLoad=document.form1.userName.focus()>
6   <form name=form1 action=login.php method=post>
7   User Name <input type=text name=userName size=10><br>
8   Password <input type=password Name=passWord size=12><br>
9   <input type=submit value="Log In">
10  </form>
11  </BODY>
12  </HTML>
13
```

JavaScriptFocus.htm

The key parts are the onLoad event handler in the body tag. The document keyword that means the document or page you are on, the name of the form, the name of the input box, then the method focus.

9. Look at the Web Server Log (with the help of a tool)

When a Web site is built—an internal intranet or external Internet—there are expectations on how many visitors there will be and where they will go. Without examining the Web server logs with a little help from a tool, you can never be sure.

All Web servers keep a log of every page delivered, when it was sent, and the browser used. The logs are text files. These text files are very dry and boring, but they have the wisdom of the world in them.

The tool I recommend is Web Trends www.WebTrends.com. This tool will create charts and graphs that any manager would love. They also compile the hard numbers required to improve a Web site. Free log file analyze tools are available from sites like www.tucows.com but Web Trends is the best.

For example, if the average number of pages viewed per user is over 10, then you have incredibly good content or rotten navigation. If the average number of pages viewed is below five, you have incredibly well organized, informative content or terrible navigation and useless connect.

For an internal Web site that is only supposed to support Internet Explorer you might still have eight percent Netscape users.

With these tools you can also answer questions about your site, such as what day of the week is most popular? What time of day? You may be very surprised by the answers.

10. Compliance with Section 508, Americans with Disabilities Act

This section is not only for U.S. readers since most countries have laws similar to the Americans with Disabilities Act. The act basically states that, at the very least, all government agencies must be accessible to people with special needs. This includes Web pages. Even if you don't work with a government agency, you should make your Web-based information accessible to people with special needs. This comes into play for people that are visually impaired, hearing impaired, or impaired in other ways.

Many visually impaired people use the Internet. Most use a program called Jaws that reads Web pages aloud. There are also Braille readers and other programs. If you have never heard Jaws work, you can try something similar by installing Acrobat Reader 6.0 or above. Open a pdf file in Acrobat Reader 6.0. Under View there is an option, "Read Out Loud." Give it a try.

The most important aspect of this is the use of alt text on images. Every image will have alt text.

```
1  <HTML>
2  <HEAD>
3  <TITLE>Have alt on Images</TITLE>
4  </HEAD>
5  <BODY BGCOLOR="#FFFFFF" TEXT="#000000">
6
7  <img scr=images/123.gif
8  height=40 width=45
9  alt="Xeon 1280 Web Server">
10
11  </BODY>
12  </HTML>
```

For sighted people, the alt text will show up as tool tips if they hover over the image. This is better Web design, but most importantly, if you are visually impaired Jaws will read the alt text out loud.

There are several other things like using <th> table headers with tables of information, not just placeholders. Be careful of using the colors red and green together because of red/green colorblindness. Use sounds with care since not everyone can hear, nor does everyone have speakers set up on their computers.

There is a place to test your Web site to see if accessibility issues exist.

www.Cast.org/Bobby. At this site, it is free to test up to once a minute. This limit is enforced so the site won't get overwhelmed. You can pay to test more often if you need to.

Please test any Web solution you are making. The adjustments are usually easy and help everybody. I always strive to make the Web pages I create available to everyone.

To Summarize:

1. Use Entities to add details like trademark and copyright symbols.
2. Add flyaway menus to increase usability and add pizzazz.
3. Database access is key to modern Web solutions. Be careful in choosing a server-side scripting language. It is likely you will be stuck with it for a long time.
4. No one can know everything. Use Web resources like www.deja.com.
5. Be sure pages load fast even over dial-up connections.
6. Control placement using HTML tables to get the newspaper look-and-feel.
7. Follow the rule of three clicks. All major sections of a Web site should be accessible within three clicks from anywhere in the site.
8. Add JavaScript to forms to focus the cursor onLoad.
9. Examine the Web server logs and look for patterns that need to be addressed.
10. Make your Web site accessible to people with special needs. Go to www.Cast.org/bobby for more information.

If you follow these simple rules, yours too can be an EXCELLENT Web site.

Brad Gillespie is an IT consultant/instructor/author with WSDFirm, based in the Chicago area. He focuses on Web database solutions in Java, Microsoft's .NET, and PHP using a variety of databases. Brad is also the author of the Global Knowledge course, *Mastering Web Databases*. In this course, you'll learn how to take your Web pages to the next level with database connectivity. You may contact Brad directly at Webmaster@WSDFirm.com. To register for Mastering Web Databases or any other Global Knowledge course, visit www.globalknowledge.com.