Internet and Intranet

This chapter includes interface design principles that apply specifically to Internet and intranet applications. Designers need to know screen design and layout principles and how to incorporate the user's needs into site design.

Contents

Site Design

Before you start creating Web pages, there are some overall site decisions to make. This section covers general principles of Internet and intranet site design.

Provide meaningful content

Ask anyone what they want on the Web and they'll say, "Content." Be sure you provide accurate, current, substantive information. Content's value is determined by what the audience wants to know—not by what you want to say. Analyze your audience's interests before creating the site.

Give people a reason to bookmark your site

Supply information in the first page or two that makes people want to return.

Keep usability a high priority

Do not let your design get in the way of the functionality of your site. Be original and creative, but never forget usability.

Create a unified design

Use page design, repeated images, and colors to unify the pages in your entire site and in individual sections of your site.

Use a hierarchical structure

People think in hierarchies. Sites with obvious hierarchy are easy for visitors to understand.

Consider a grabber page

Some sites start with introductory pages that lead a visitor into the site and create interest before they arrive at the home page.

Use a home page as the menu for the rest of the site

A home page not only identifies the site, but it also provides entry into the rest of the site. It may do this with text links in lists or paragraphs, or it may do this with an image map or individual images. A home page must be strong. It must convince visitors to stay by letting them know what they will find.

Provide redundancy in home page menus

Be sure your home page is accessible to all visitors—from those using text-only browsers to those on the most advanced tools. Don't assume visitors will understand your image map or images without textual help.

Use submenus for large sites

The home page has links to major content areas of the site. If the site has a lot of categories of information and each category contains a lot of content, consider using submenus to help visitors navigate to the specific information they need.

Understand the bandwidths of your target audience

If you are creating an intranet site with high bandwidth lines, you can use multimedia and large graphics quite freely. If, however, visitors will be coming in on modems you must respect their needs by emphasizing loading time in your design.

Keep your file size small

Most advise that a given file be under 50 kilobytes—some suggest 30. If you assume that it takes a second to load a kilobyte, a file size of 50 kilobytes would take 50 seconds to load.

Provide a printing option for long pages

If you believe your visitors will want to print out a document to read offline, design your site so they can print a useful amount of information with one click.

Provide cues

Provide cues such as site maps, frames, and headings to keep your readers from feeling lost within your site.

Use a site map to indicate the relationships of information

Site maps are a means of indicating the size of a site and the relationships of the information within the site, as shown in Figure 11.1. They can be either graphical or text-based. Visitors can see the major information areas and understand that there are many links between the areas.
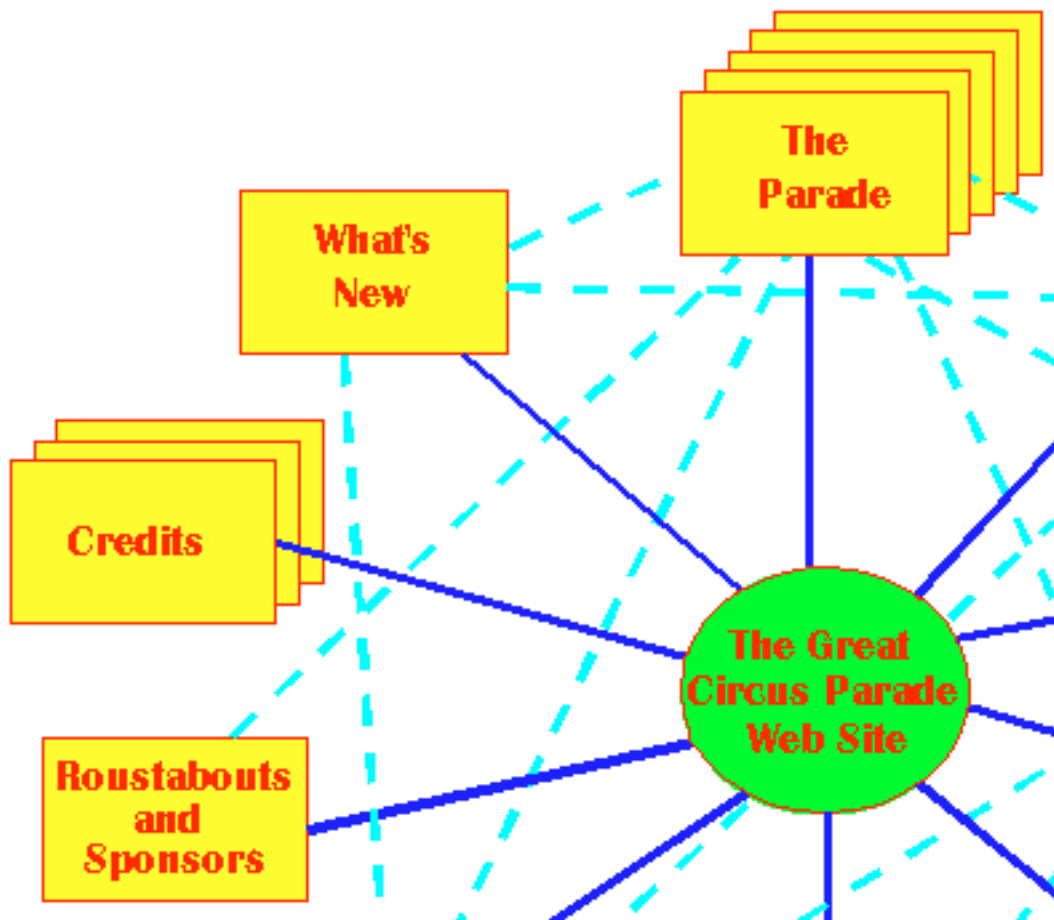
Main Contents   Section Contents

Figure 11.1 Part of the sitemap from http://circus.compuware.com used as an image map. © Compuware Corporation.

Make each item in a site-map a link to the topic

Figure 11.2 shows how each item in a text-based site map should link to that page. If the site map is text, it loads quickly. Change link colors after they have been browsed so that visitors can easily see where they have been.

Main Contents   Section Contents

The Great Circus Showgrounds

- **Daily event schedule**
  - ☐ Saturday Specials
- **Royal Hanneford Circus**
  - ☐ History of the Royal Hanneford Circus
- **Circus animals**
  - ☐ Horses
  - ☐ Elephant & camel rides
  - ☐ Petting zoo
- **Fireworks**
- **UWM College for Kids**
- **History**

Figure 11.2 Part of a text-based sitemap from http://circus.compuware.com used as an image map. © Compuware Corporation.

Use hierarchical text-based maps

Whether you use a graphic of the site or not, give visitors a familiar text-based map. This can be much like a table of contents, or it can resemble a tree or other form. Do not attempt to duplicate linked information under numerous headings—just include it once in its most logical spot.

Consider image maps for graphical navigation

Image maps are clickable graphics used for navigation. With a graphic of your site you can help visitors conceptualize the site and its organization.

For visitors accessing your site via modems, image maps (a single graphic) are usually faster to load than an equivalent set of individual images. However, this may not be true on fast intranet networks. Also, if the segments of the image map are used elsewhere on the site, it is better to use them as individual images because the browser caches them and then retrieves them from cache.

Image maps can be confusing for some visitors. Since an image map is often a complete picture in itself, it is often not obvious where to click. Until visitors have been on your site for awhile they may not associate a given image with content. Also, they may interpret the image, and its metaphor, as meaning something other than you did. However, an image map creatively designed for its target audience can be very effective. Figure 11.3 is on the home page of a corporation's site. The site provides information to employees on a new building and its neighborhood.
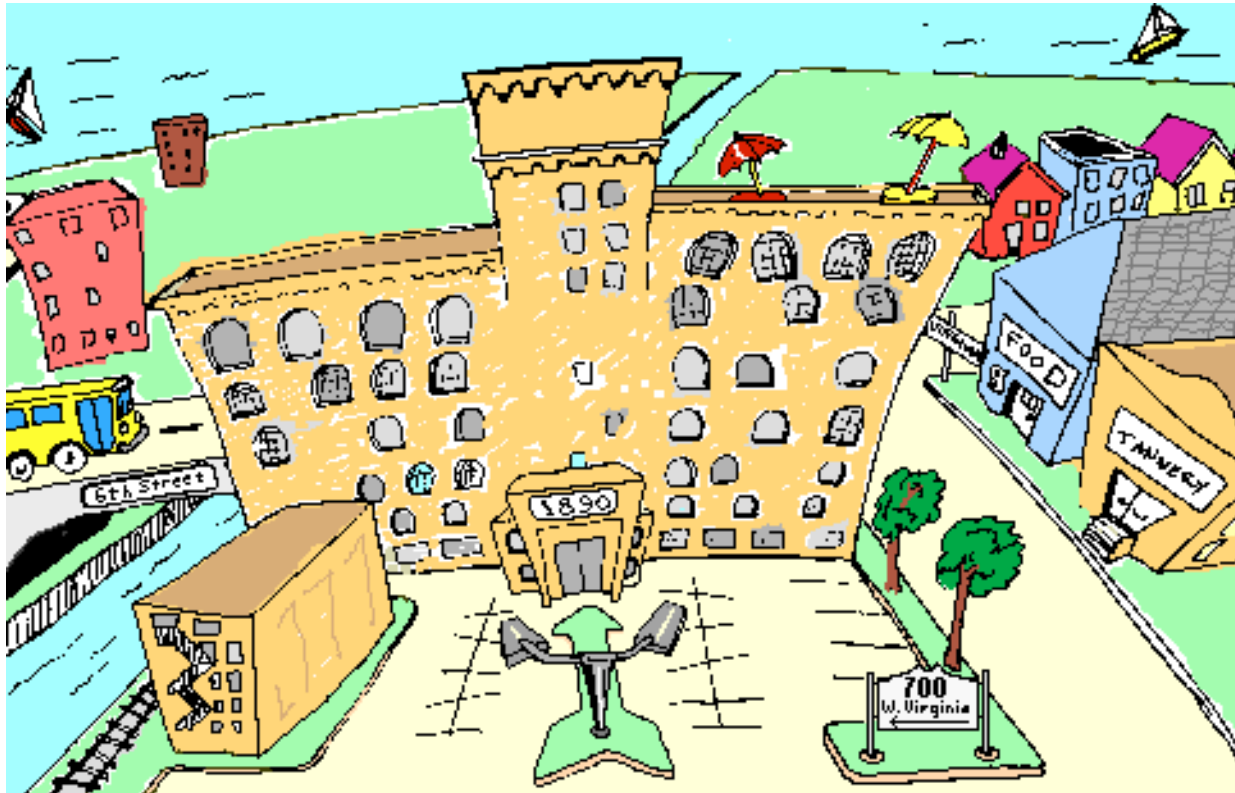

Figure 11.3 An example of an image map created by Ron Sova
©Compuware Corporation 1996.

Prepare your pages for external search engines

Be aware of the confusion a visitor may feel. Search engines can bring a visitor into your site at any page. All hierarchical references are lost. Prepare for this by always having a link back to the home page and by telling the visitor the name of the site, and perhaps the area of the site, that this page belongs to.

Add a search engine to your site

As soon as your site grows to about 100 pages, you need to start thinking about adding a search engine, just for your site. This way a visitor can type in a few key words and then view a list of all the pages containing those words.

Design for multiple browsing environments

Refer to your audience analysis before using new technologies. Be sure your target audience is using advanced browsers before you create high-tech elements such as Java or floating frames. Always work with both lower and higher technology audiences in mind or many people will be unable to use your site, or be confused by references to functionality they cannot see.

Navigation

Navigation is important because if visitors can't find your information, they can't use it. And if they can't use it, they won't come back. Visitors must know they are at your site and must know where they are in the site.

Follow the three clicks rule

Design your site so that visitors do not need to click more than three times to get to the information they need. Details on the information might be deeper, but the basic information should be quickly accessible.

Use progressive disclosure

Use heading levels just like you do on paper—to indicate hierarchical information. Typically, your page title is heading one, main content categories are heading two, and a heading three is used if necessary. If you need more than three headings, you should consider linking to a new page for the finer detail. Those visitors interested in it can drill down to it. This process is called progressive disclosure.

Make navigation cues consistent

Keep all navigational elements the same on all pages—words and images—and keep them in the same place.

In a large site provide two levels of navigation

In a large site provide global, site-wide navigation from every page in addition to links within the subject area. For instance, in a corporate intranet you may always want the visitors to be able to get to Home, Search, the site map, and major content areas or departments.

Don't tie navigation or content to graphics alone

Those who either choose not to use graphics or who can't will miss critical content or not be able to use your site.

Provide text links to your pages

Return visitors have seen your graphics. What they want now is to get directly to the information they need. Avoid irritating them by making them wait for your images to load before they can use your site. Give them text links. These will come up first on the page and visitors can click on them without waiting for the entire page to load.

Use links carefully

Focus on the primary function of the page. Too many links (except on a menu page) confuse your visitors. Links within text disrupt the flow of the reading. Unless your text is clearly meant to perform a menu function, pull links out and list them elsewhere on the page. Consider placing all the links for a paragraph in a list at the end of the topic.

Make links to substantive content

Do not link to pages that are incomplete. Put the text in the source page, but don't create the hypertext link until the target page is complete. If you are linking to an external site, be sure that the link is significant to your audience.

Be sure the link text is clear

Links are the key to Internet documents. They allow visitors to decide where they want to go and what they want to read. They allow you to keep your files small, thereby making them quick to load. Write link text so that it clearly and accurately indicates the target content.

Make only a few words the active link

Linked text must be read quickly. Make only a few key words active.

A poor example:
> <u>Placing links in a paragraph can make it easy to suggest the real content of that link, and the context in which you are recommending the link be followed.</u>

A good example:
> Placing <u>links</u> in a paragraph can make it easy to suggest the real content of that link, and the context in which you are recommending the link be followed.

Be careful with Previous, Back, Next, and Forward

These terms can be confusing to visitors. Do they mean the previous and next pages in a linear path through your site, or do they mean the previous and next pages in the order the visitor browsed your site? Your path and the visitor's path are probably not the same.

Also, if you are using these terms to represent a linear movement through your site, remember that if you add or remove a section you have to recode these links on the pages preceding and following the page you have changed.

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Avoid "Click Here"

Try to make your links a natural part of a sentence. Also, remember that the term "click" implies the use of a mouse. Some people may be using keyboard equivalents, not mice, to navigate.

Do not say:
    Click here to learn about links.
Say:
    Links allow the visitor control over what they learn.

Avoid "Return to…"

Don't use phrasing that indicates a certain page order or flow. You do not know how a visitor came to the page, so do not assume that the word "return" is meaningful.

Be sure visitors can distinguish between visited and new links

If you do not use the standard link colors (magenta and blue), be sure that the colors you select for regular text and links—visited and unvisited—are different enough from each other that visitors are not confused.

Annotate all links to large files

Two forms of annotation are helpful. First, warn visitors about the size of any large file. Second, explain what they will find at the link if they take it (see Figure 11.4).
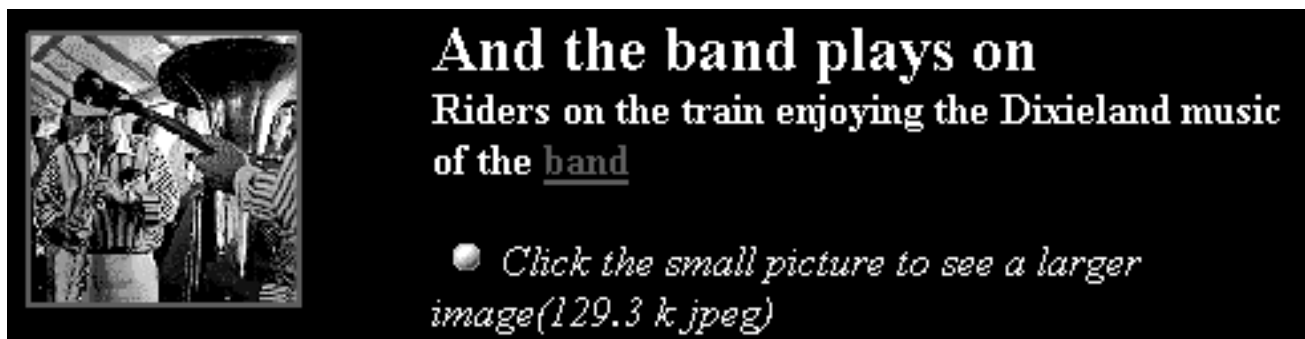

Figure 11.4 Example of annotation on file size from
http://circus.compuware.com/ © 1996, Compuware Corporation.

Use internal links for long pages

On a long page, place a list of links to content chunks at the top of the page. Visitors may not even be aware that they are linking within a document. They just know that these links are very fast.

Maintain correct internal links

As you add to and delete from your site, your links may need to be revised. Be especially careful about adding and deleting pages if you use Next and Previous page buttons.

Bury external links

You probably don't want people leaving your site to follow an external link until they have really experienced what you are offering. Therefore don't put external links near the first part of the site. Bury them several layers in and down.

Check and correct external links frequently

Sites change location, cease to exist, or change their content. Check your links regularly and update them as needed.

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Page Layout

Designing the layout of Internet and intranet screens is different from designing hardcopy layouts and from other computer applications. This section covers page layout principles specific for Internet and intranet applications.

Place the most important content at the top

Very few people scroll below the information displayed on the page's initial screen so you must place what you really want them to see at the top of the page. Important links should also be at the top of the page.

Include standard page elements

Figure 11.5 shows the standard elements that every Web page should contain. These elements are:

- Page title in browser title bar
- Title of page
- Links to main topic areas in site
- Link to corporate identification
- Link to home, search, and site map
- Link to copyright page
- Email link to webmaster

Figure 11.5 Page with standard elements from http://circus.compuware.com/ © 1996, Compuware Corporation.

Keep the home page to one screen

Display the important part of your home page on one browser screen, without scrolling, at 640 x 480 resolution, as shown in Figure 11.6.

Main Contents   Section Contents

*Figure 11.6 Keep the home page to one screen. http://www.ywcaogm.org/ © 1996,
YWCA of Greater Milwaukee*

Additional information may be included on the home page below the window break line
if it is not important to the use of the site, as shown in Figure 11.7.

Figure 11.7 Place additional information below the window break line.
http://www.ywcaogm.org/ © 1996, YWCA of Greater Milwaukee

Pay attention to probable page breaks

Even though you cannot control much of the page layout, you must pay attention to where your pages will probably break—in other words, where the bottom of the browser's window will cut off the page when it loads.

If your pages appear to totally fit in the visible area, but they really extend down, it is likely that your visitors will never see the rest of the page. They will assume that what they see is all there is to the page. Arrange a text block or a graphic to extend below the break point so they will know they need to scroll. Test your layout on many different setups.

Decide on long pages versus short pages

Look at how visitors will use each page when you decide how long it should be. Long pages load more slowly than short pages. But if your visitors will need all the information and have slow modems, long pages probably load faster than many small pages (see Table 11.1).

If your visitors…	Then you should…
Want to find specific information quickly	Create many links to short pages
Need to understand an entire concept without interruption	Present the entire concept in one page with internal links to subtopics
Want to print all or most of the content to read offline	Use one long page or prepare a version that uses one page
Will be loading over slow modems but don't need all pages of information	Create a comprehensive contents page with links to many short pages

Table 11.1 Determining page length.

Break a long page up into smaller units

Use chunking and blocking writing techniques to break a page up into small units. Do this whether you leave the chunks in one long page or link to them as separate pages.

Use a grid

Use a grid to design each type of page on your site so that similar types of pages have a similar look and feel. Creating grids for page types during the planning phase of your project saves you development time and helps ensure consistency throughout the site.

Consider using tables

Tables are the best way available in HTML to control your page display. You can align objects and text, create vertical and horizontal space, and control the placement of images. Most browsers now support tables, however, you may still have to create nontable versions of your pages for visitors using text-only browsers.

Keep line lengths short

It is important to keep line lengths to no more than about two alphabets. This means two iterations of the lower case alphabet in the font style and size you have chosen. Remember that visitors can use any font style and size they desire.

Use tables to keep lines short

Tables, now understood by most graphical browsers, are one of the easiest ways to control line lengths. Use a fixed table width to keep the table from becoming wider when viewed on large displays. You can use blank columns to create white space or to hold graphics.

A drawback to tables is that text browsers cannot interpret them. For those using Lynx or other nontable-capable browsers, words and sentences in tables become jumbled. These visitors are not able to understand your information.

Consider using style sheets

If your browsers support style sheets, you have more control over page appearance. However, remember when you are using style sheets that you are designing for online, not paper.

Use enough white space

Only fill about 30 percent of your page with text. The rest of the space should be white space and graphics. Even if you use a lot of graphics, still leave enough open space to make your page comfortable and inviting.

Use enough horizontal spacing

Be sure to use enough horizontal space to allow your visitors to easily see logical groups of information, such as a chunk of text, its heading, and its related image.

Keep images and related text close to each other

One of the principles of design is proximity—visitors will assume a connection between objects, including text blocks, that are closer to each other than to other elements on the page. Therefore, place images close to their text and remember the reverse—if an image is close to text it will be assumed to relate to that text.

Use horizontal rules sparingly

Horizontal rules break up the flow of the page. Only use them when this is what you want to do, for instance, to separate standard header and footer information from page content, or to mark the beginning and end of a form.

Group the items in a form

Group related entry fields in the form and lay out the form so that it has a clear and logical flow.

Group long lists

Divide a long list of links into logical groups. Remember the "seven plus or minus two" rule—humans can only remember between five and nine items at a time—try not to exceed seven items in each group (see Figure 11.8).

- **Background**
- How developed
- Purpose of the YWCA NET Program
- Lack of information about skilled trade careers

- **Challenges**
- Lack of role models
- Harassment and Discrimination Issues
- Lack of financial resources
- Lack of skills and experience
- Retention issues

- **Programs**
- Minority Apprentice Recruitment Program
- Transportation Allied for New Solutions (TrANS)
- CNC Machine Tool Training
- Model Road Construction Initiative
- Community Liaison Group top the OFCCP (with jump to Mission statement)
- Replication of the NET Program--Collaborative Development Process

Figure 11.8 Grouped list. © 1996, YWCA of Greater Milwaukee.www.ywcaogm.org.

Use hanging indents

Hanging indents are an important tool for Web designers. They allow clarity in separating list items, allow nested information, and help create additional white space. There are multiple ways of creating hanging indents—tables, blockquotes, list tags, list tags without the list item tag, clear GIFs as spaceholders, and definition lists. For an example, see the grouped list in Figure 11.8.

Consider the design of bullets

If you use graphics for bullets, use an asterisk for the alternative text so that the image shows up as a bullet for nongraphical browsers. Use tables in order to be sure you retain a hanging indent, no matter what size of browser window or typeface a visitor may select.

Minimize vertical scrolling

Although this will depend on your audience and what they want from your page, research shows that people tend to lose interest if they have to scroll beyond three pages. If they are interested, they will seldom read this much online and will print it to read later.

Do not use horizontal scrolling

If Web visitors don't like vertical scrolling, you can be sure they will hate horizontal scrolling. Design for a 640 x 480 display setting and test. Be sure that tables and graphics fit in this area.

Page Titles and Headings

With all the Web pages in existence, paying attention to your titles and headings helps visitors notice and return to your specific location.

Make each title unique and meaningful

Be sure the titles that you choose accurately reflect the site name and the page content. Meaningful titles help prevent feelings of being lost or buried in your site.

Give each page a title

Each page needs a title that clearly explains the content of that particular page. These titles are usually coded in HTML as <H1> (heading one).

Use a name that labels the entire site and the specific page

In HTML a title code designates the text that displays in the title bar of the browser. Most search engines list the page title when they return the results of a query. It helps if visitors see the site name in this list rather than having to go to your page to read the headings. In addition, because visitors may come to your pages from anywhere, they need to know what site this particular page belongs to (see Figure 11.9).
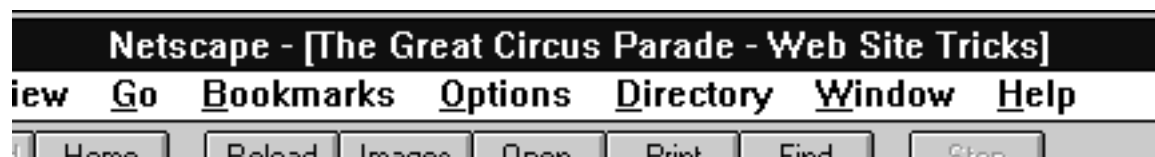

Figure 11.9 Title bar includes site name and page name, from http://circus.compuware.com. © Compuware Corporation.

Use headings to help visitors scan for information

Visitors want to quickly scan a page for the specific information they need. Help them by writing in small chunks and putting a label, or heading, before each chunk of text. Be sure these headings accurately reflect the content of the following text.

In long documents include document and chapter names on each page

To help visitors maintain their sense of location, indicate, in smaller text underneath the page title, what larger document the page is a part of.

Frames and Windows

Frames are a method of dividing the screen into panels. Each frame area operates separately, so while one window scrolls, another can remain visible and stationary. You can create any number of frames, of almost any rectangular shape. Multiple windowing can also be provided by JavaScript. Frames are controversial. If you use them, be sure to subject them to extensive usability testing.

Use frames with caution

Many Web users find frames confusing. How frames work depends partly on the Web browser version the visitor is using. It may be hard for users to find the right scroll bar, and there may be too much scrolling required. Visitors may not know how to go back to a previous page. Printing can also be problematic. Visitors trying to place a bookmark will find that it only saves the site; frames don't allow visitors to bookmark an individual content page.

Do not use multiple windows unless they add functionality

Use secondary windows to add functionality to your site. Figure 11.10 shows how to use them for more detailed information, an illustration, or for a menu.
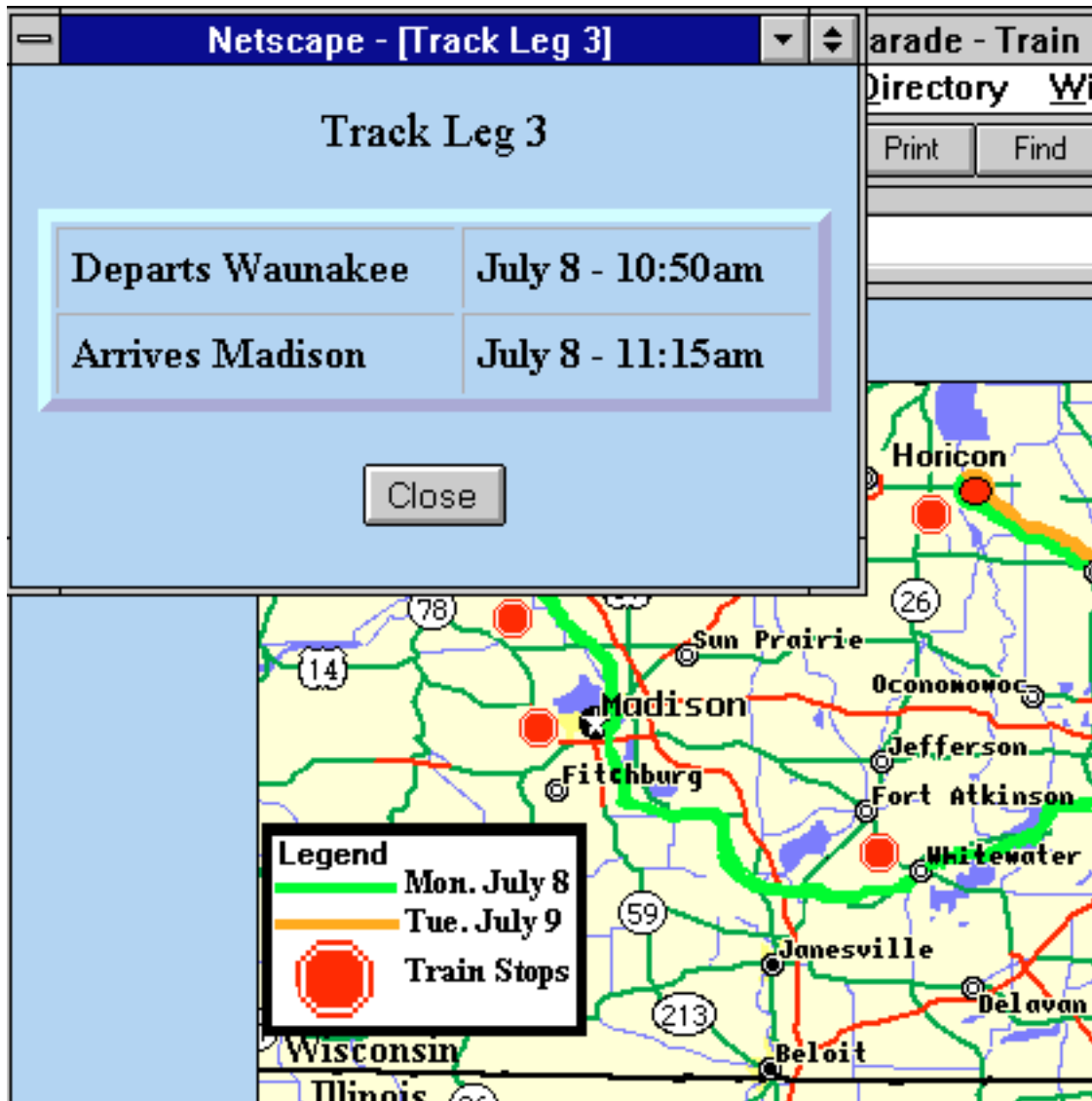
Figure 11.10 In this application, the reader clicks on any part of the train route map and the JavaScript secondary window opens giving information on that part of the route. © 1996, Compuware Corporation. http://circus.compuware.com/.

Limit the number of windows or frames to two

On a 640 x 480 monitor you have limited real estate. If you break the display area up into more than two windows or frames, you reduce the content viewing area too much. The visitor feels like they are looking through a peep hole.

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Consider frames for global elements

All global elements, such as global navigation, corporate identification, and mail to links, can be placed on frames that remain no matter what content window is displayed. Content windows are freed from displaying this information. However, you should include some standard information on every page. If someone comes to your framed site from a search engine they view the pages without their accompanying frames. Provide a site name and a link to your home page so that these visitors will not be lost (see Figure 11.11).

Figure 11.11 The menu in the left frame is stationary. The content in the right frame changes with selections made on the left.

Consider frames for pop-up text

You can design your frames so that a link from the main content page displays a small amount of pop-up text in a smaller frame, as shown in Figure 11.12.
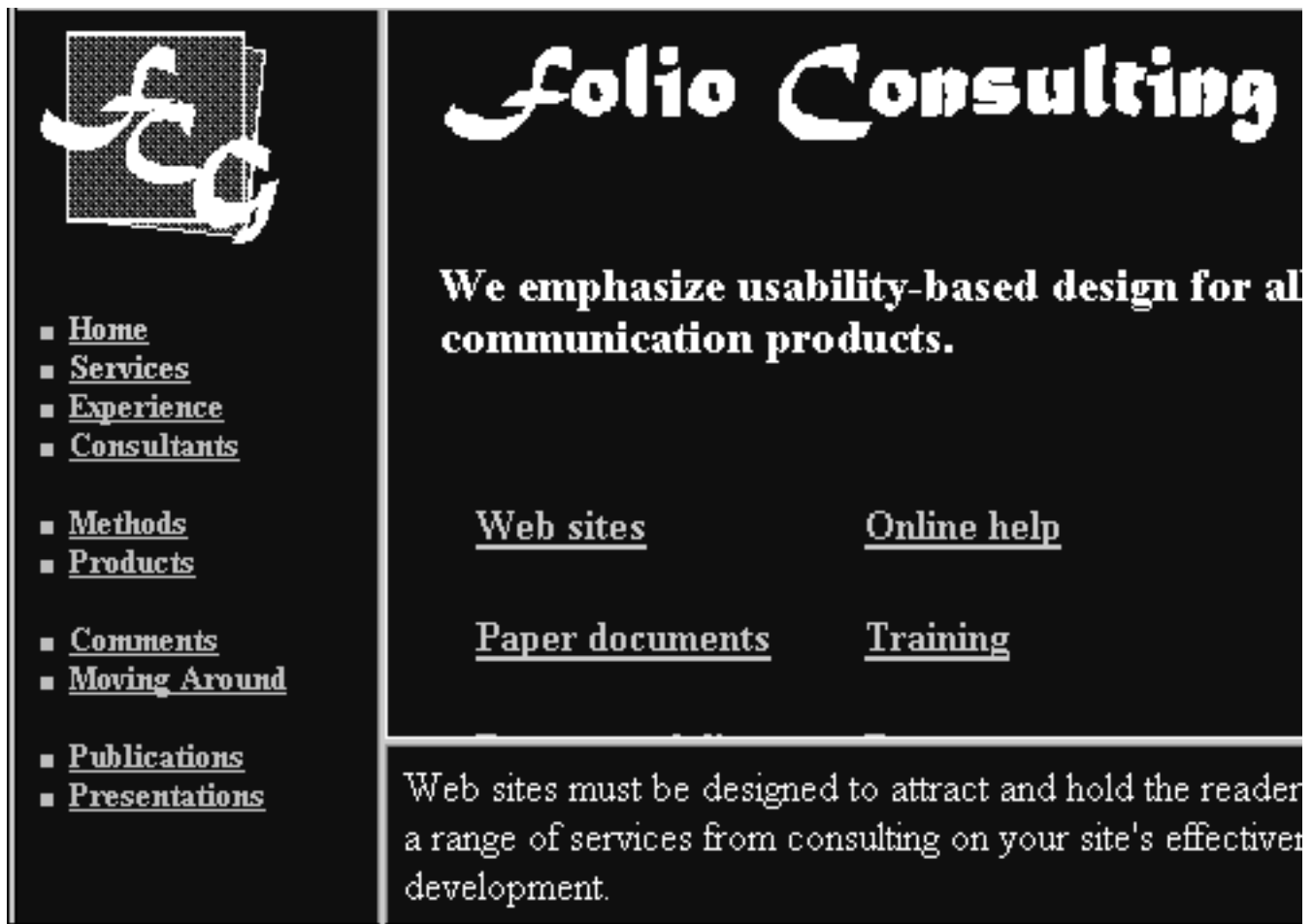
Figure 11.12 The lower right window changes as the reader clicks on
options in the main window.

Use frames to keep lines short

If you design your site with frames, you can use them to keep text lines short in the
main window of the site.

Watch out for window size

Many visitors complain that frames reduce the content window size too much. This is
especially true when the designer has used more than two frame areas.

Main Contents   Section Contents

Graphics

Graphics, used correctly, not only enliven the text, but also make the intended meaning clearer. Graphics and text, when molded together, form a synergy—a whole that is greater than its parts.

Use graphics for a purpose

Graphics slow down your pages, so make sure they add value to the page. Never use them just because you think the page needs an image. However, people associate the Internet with fun as well as with content. Use this to your advantage by including images that make people enjoy your site. Pleasure is an important part of the Web experience.

Use text with graphics

Most graphics are not immediately clear to people, no matter how well designed. Add text to graphics used for navigation so that visitors do not have to guess where a click takes them. Use text to ensure that the graphics are communicating the intended meaning. If you omit text, conduct thorough and extensive usability tests.

Use alternative text

Many people browse the Web with graphics turned off, and a few people are still using text-only browsers. Use alternative text with all graphics so these people do not miss out on important elements of your pages, as shown in Figures 11.13 and 11.14.

Figure 11.13 Page with images on from http:// circus.compuware.com/ © 1996, Compuware Corporation.

Graphics

Figure 11.14 Page with images turned off © 1996, Compuware Corporation.

Different browsers treat alternative text differently. Internet Explorer shows the visitor the graphic and the alternative text. The text appears just like the help text that displays when your cursor is over an icon in a Microsoft product. You can use this to add value to the image, as long as you don't put critical information in it.

Netscape does not show the alternative text if the graphic is being displayed. You only see it if you have graphics turned off.

Nongraphical browsers display the alternative text in line with other text. If you are aiming your pages at this audience, phrase the alternative text so it flows well with your regular text.

Reuse images

When a browser loads an image it is saved on the local hard drive in a cache. When it is needed again it is recalled from the cache, eliminating another load.

Use images to help with navigation

Graphics can help visitors conceptualize the site and its organization.

Use graphics to represent content areas

You can use images to represent the major content areas of your site. Once visitors become familiar with your site they find the images faster to use than text. Be consistent and use the same images for the same content areas throughout the site (see Figure 11.15).

Main Contents   Section Contents

Figure 11.15 Key image used on home page as a menu item and on content page as an icon. http://www.ywcaogm.org/ © 1996, YWCA of Greater Milwaukee.

Use graphics for special headline fonts

If you want to use an artistic or special font you can create it in a graphics program and then place it in your file as a bitmapped image. This technique allows you to use any typefaces you desire, whether they are on the visitor's system or not.

Use graphics for lists

Provide some graphics to help visitors identify each group. A graphic clearly associated with the content of a list helps visitors quickly understand your organization scheme.

Remember the many limitations of images

Limitations such as 16-color monitors, low memory, restricted network bandwidths, color blindness, and poor vision affect the impact your images and backgrounds have on your audience.

Use thumbnails

Create a small version of an image (don't just rescale a large image in the HTML code). To keep the file size small, use the lowest quality GIF you can get away with. Link this small image to a large, high-quality version of the image. The small image loads quickly because it has a small file size. The visitor can choose whether or not to go to the large, higher quality image. Let the visitor know the size of the linked file (see Figure 11.16).

Figure 11.16 Thumbnail image linked to larger image from http://ywcaogm.org./ © 1996, YWCA of Greater Milwaukee.

Size the image to fit on the screen

Remember that many visitors use a resolution of 640 x 480. In order to be sure that these people can see your graphic without horizontal scrolling, limit your image to 600 pixels across or less.

Some browsers allow you to set the dimensions of an image as a percent of the browser window. For instance, you can say that you want the image to be 80 percent of the window width (leave the height unspecified). Test this in other browsers before implementing it.

Use as small an image as possible

Background patterns are images—GIFs or JPEG files. They can be slow to load. Make them as small as possible so they load quickly.

Simplify drawings

Drawings with minimal detail are easier to view online and they load quicker. If some visitors need more detail, offer them a link to a more detailed version of the image.

Use a low source image

Netscape supports an image tag that allows you to load a small image, such as a black and white version of your graphic first. Then it loads the color version. This tag is another way to give visitors quick results while loading a page. Browsers that do not understand the tag just ignore it. For JPEG images you can use a low-resolution version of the image as the low source and then have a high-resolution version come in over it.

Use interlaced GIFs

This technique allows images to start appearing in one-fourth of the normal time. The images are sent to the browser a few lines at a time so the visitor initially sees a very blurred image that gradually clears. This creates a page that feels like it is loading more quickly than if they had to wait for the entire image before seeing anything.

Don't put borders on the image in a drawing program

You can give an image borders via HTML code. These borders are supplied by the browser. Borders added in a drawing program add unnecessary size to the file.

Use transparent images over a patterned background

If you have an image that should float on the page, make its background transparent. For instance, a round image indicating a content area on your site will display as a round image inside a square box, because the bitmap is square. Make images like this transparent so they will float above the background. Test on different platforms and monitors.

Specify image dimensions in HTML

Browsers will calculate image placement by the Height and Width dimensions in the code and then quickly show the text on the page. The images will fill in as the visitor peruses the text.

Remember that search engines ignore images

Search engines do not find any text that is part of an image. Use alternative text and include the important words from image text in the HTML keyword meta tag so that search engines can find the page.

Backgrounds

Effective backgrounds add value to your site without distracting the visitor. Look for background patterns that support the message of the content.

Use light-colored backgrounds of low intensity

High-intensity colors, such as red, cyan, magenta, and bright green cause extreme eye fatigue when they must be viewed in large expanses for any length of time. White text on black backgrounds is also difficult to read. Reserve this for special effects or for pages that are primarily graphics.

Avoid patterned backgrounds

Patterned backgrounds can distract the visitor and interfere with the visitor's ability to read the text. Keep any patterns very light and conduct usability tests to make sure they do not make your pages difficult for your visitors.

Pick a random background pattern

Random patterns are more likely to tile smoothly across the screen. Nonrandom patterns often look tiled, which can be a distraction to your visitor.

Avoid watermarked text

Using text as a watermark pattern behind your content can seriously impact the readability of your pages. You can minimize this by spacing the watermarks out and placing them at an angle, but they still compete with the text for attention (see Figure 11.17).

transportation and budgeting, as well as assistance with industry
the areas of tool usage, terminology and industry expectations.

The first year's training resulted in 45 individuals starting work. 3-
were African Americans, 5 were Native Americans, 13 were wome
Hispanic.

An employers' "survey" "that   was developed to determine if the
properly trained was administered in winter of 1995. The results i
all employers found an increase in applicant quality, as well as a
long-term retention.

The DOT renewed funding for a second year. There have been
applications for the 60 training slots available. This training has b

Figure 11.17 Watermarked background competes with text. This example
is from http://ywcaogm.org./ © 1996, YWCA of Greater Milwaukee.

Use a background color when you use a background image

While the visitor is waiting for the background image to load, the background color fills
the screen letting the visitor know that something is about to happen. Use a color that
goes with your image so that the visitor is prepared, not surprised by, the image when it
appears. Without a background color, changes you make to default text and link colors
do not work.

Remember that visitors can set a default background color

Users can change the default background color with their browser to any color or
background image they want. They may be able to choose to have their background
override your document settings. Don't assume visitors are viewing the colors you
chose.

Test backgrounds

Different monitors and platforms use different techniques for rendering color, so that
backgrounds appear differently on different monitors and platforms. You must test your
background on a variety of displays.

Color

Internet and intranet applications make liberal use of color. Make sure you are effectively using, not abusing, color.

Maintain high contrast

Black text on a white background has the most contrast and is the easiest to read. As you select colors with less contrast your text becomes harder to read.

Use large areas of uniform color

Large areas of the same color compress well and are an efficient use of the GIF format. Clean up solid backgrounds on scanned images so that they are a uniform color.

Reduce color depth

Reduce the number of colors in a GIF image to the lowest number you can and still retain acceptable quality. In many cases 50 colors give acceptable results. In JPEG images you cannot reduce the color depth, but you can try a low-quality version of the image and see if that is acceptable.

Use colors from the 216 supported by most browsers

Current browsers only support 256 colors, and most visitors use monitors set to 256 colors. Windows itself uses some of the colors, leaving only 216 actually available for Web images. Load the color cube (known as the CLUT, or color lookup table) from the Web and use this as the palette in your graphics program.

Use the same palette for all images on a page

Browsers load images faster, and the page size is smaller, if you use the same palette for all the images on a page. If the combined number of colors on your page exceeds 216, you may see some unexpected color substitutions in some of the images because the browser only has 216 colors to use for an entire page.

Avoid dithering except in photos

Dithering is a process in which the computer reduces colors by combining other colors to approximate the new color. Because of this blending of adjoining colors, dithering creates blurred text and line drawings and it makes it harder for the GIF process to compress the image. Reserve its use for photographs and continuous tone images.

Test colors

Different platforms and monitors use different techniques for rendering color, so that colors appear differently on different monitors and platforms. Test your color choices on a variety of displays. Also remember that some visitors are partially or completely colorblind. Take color blindness into account when you make color choices.

Fonts

There are opportunities in Internet design to use different fonts. Follow these font guidelines to ensure your pages are readable and interesting.

Use sans serif fonts for online reading

The "little feet" on serif fonts, as well as other embellishments, are often lost onscreen because of the screen's relatively low resolution. Reserve using fancy fonts, designed for high-resolution paper printing, for headlines.

Use bold text for emphasis only

Bold text is a cue that something is more important than the surrounding text. If you bold all your text you lose this valuable cue. If you feel you need to bold text to make it stand out on a background, consider changing the background.

Use italics with care

Follow normal typographical standards for italics—use it for book titles and words used as words. Avoid italics for blocks of text because it is very difficult to read online.

Do not use underlining

Most browsers are set to automatically underline links. This is an important text attribute as it provides a cue to visitors who may be colorblind. If you use underlining with text that is not a link it may confuse a colorblind visitor. In addition, it is harder to read underlined text online.

Design for changes in font sizes

Web visitors can change the displayed typeface and its size. This can throw off your carefully aligned input fields and cause awkward breaks in field labels and instructions. Consider using tables with a fixed pixel width to set the alignment of a form so it won't be changed by different display fonts. You could also put the labels above the input boxes.

Use font tags to control text size

Use the font size tag to control the relative size of fonts on your page. Don't use heading levels to control text size because they are presented differently by different browsers—for instance, a heading six is very small in Netscape but very large in Mosaic. As style sheets become widely supported by browsers, learn how to control fonts using cascading style sheet codes.

Use fonts to express corporate identity

Fonts can express your corporate identity. Certain fonts create a modern, high-tech image, while others signify a more classic, traditional approach. The effect a font has on a visitor is hard to measure and is sometimes even subliminal. Choose fonts that help you create the image you want to portray, but coordinate fonts with content. Remember that your identity won't come across if the user can't (or won't) read your page.

Main Contents   Section Contents

Readability

Usability research shows that people don't like to read online, so you must make it easy for them. Reading online is much more difficult than reading from paper—glare from the screen, low resolution of fonts, longer line lengths, screen flicker, eye strain, and the relative lack of comfort are some of the reasons.

Write for visitor control

Understand that the Web visitor wants to control the reading experience. You must make it easy for them to read only what they want by making your writing concise and your main ideas easy to find. Give them links to pages with more detail. Do not force the detail on them.

Say it once, quickly

People don't like to read online. Make sure your sentences are direct and short. Eliminate all redundancy and paragraph transitions. Eliminate all unnecessary words and phrases. Use bulleted lists. Write for quick comprehension.

Design for scanning

Online visitors scan for the information they need. Visitors use headings, graphics, and colored or bolded text to find what they need.

Write in short chunks

Write in short chunks of no more than four or five sentences. Visually these chunks (paragraphs) should give the feeling of being short and to the point. Include only one topic in each chunk and make sure that no extraneous sentences sneak in.

Create clear concise labels for text chunks

Make sure that each heading, or label, for each chunk is short and clear. It must accurately represent the content of that chunk.

Use an active writing style

Write directly to your visitors by using the second person. Use the present tense—it is shorter and more direct. Avoid the passive voice. The active voice creates shorter sentences, is easier to comprehend quickly, and names responsibility.

Write positive messages

Write all your messages in the affirmative. Be nonjudgmental and be sure the message includes constructive information on what the visitor needs to do.

Use normal writing conventions for lists

Follow normal writing conventions when using lists. Keep phrasing consistent—have all items in a list sentences or phrases, but don't mix them. Be consistent in punctuation and capitalization.

Netiquette

There are certain principles of etiquette that designers should follow when working on the Web.

Keep information current

Keep content current, and let visitors know what is new or updated. A common way of doing this is to have a "What's New" page or to put New icons next to new information on existing pages.

Put a "Last Updated" date in your footer

Currency of information on the Web is critical. Because the ability to keep information up to date is one of the Web's primary attractions, it is also an expectation of your visitors. Let them know when you last updated the information.

Give visitors something to do while they wait

If you provide enough text on your site to hold their interest, visitors will be more patient while your images load. Having text links appear quickly also helps visitors use your site.

Provide a way for visitors to talk back to you

Provide either a response form or a way for visitors to send you email. People want to tell you things about your site. Be sure to capitalize on this valuable feedback. Visitor feedback can give you excellent clues about what needs changing—navigation problems, slow-loading pages, and inaccurate or old content are just a few of the elements people communicate to you.

Answer your mail

If people send you mail, answer it if at all possible.

Don't use other's material or code without permission and credit

Although copyright law for the Internet is still under development, we should all remember to use common courtesy, basic ethics, and the established practices of paper copyright. If you can see it on the Web, it is copyrighted unless the creator of the object has specifically said it is free for everyone's use. If you use someone else's work, ask permission and give credit.

Ask permission before linking to someone's site

It is common courtesy to ask permission before linking to someone's site. They will probably be glad for the link, but it is possible they may refuse if they feel your site is too different in style or content from theirs.

Get permission to use trademarks and logos

Be very careful about using trademarks, logos, and trademark-type images. Corporations closely guard them and prosecute if you use them incorrectly. Get permission first.

Indicate that your information is copyrighted

It is best to remind your visitors that your information, images, and code are yours, not theirs for the taking. Create a copyright page and link to it from your other pages.

Be careful about humor

Be very careful in your use of humor. Most humor is very culturally dependent. People from other cultures may either be offended or not understand it.

Consider the needs of disabled visitors

Many people with physical challenges spend a great deal of time on the Internet. Even though they may form a small part of your potential audience, you may want to consider their needs in designing your site. Visit the Web site run by the Center for Applied Special Technology (http://www.cast.org) for more information.

Multimedia

Multimedia is commonly defined as communication achieved through the combination of two or more media—printed words, spoken words, music or other sound, images, animations, VRML, and interactivity. This area of communication is changing so fast that guidelines specific to a new technology may become out-of-date quickly. Use basic design and user interface knowledge in creating pages with multimedia.

Consider multimedia

Use multimedia when it will best meet your visitor's needs, such as:

- When a nonverbal medium is the natural way to express a concept
- To reach an audience that does not read or for whom reading is not a primary way of learning
- For an international audience
- To reinforce learning and aid retention through providing more than one channel
- To attract attention to an element on the page
- To provide feedback
- To show how things work

Keep the focus of your page

Visitors must know what to look at on your pages. Be sure that you do not confuse them by animation or sound that draws them away from the purpose of the page, rather than working with that purpose to make the page stronger. In addition, do not put so many things on one page that the user must decide what to focus on between conflicting elements.

Consider a simple slide show

Using the meta tag "refresh" you can create a simple slide show within your site or as an introduction to the site. Make a short series of simple files that load very quickly. Then set the timing in the tags. Each file loads, displays briefly, and then is replaced by the next file.

Consider simple animations using GIFs

Animated GIFs are simply a series of images combined into one file, much like a child's simple animation flip book. These images load more quickly than Java and provide effective simple animation.

Avoid repetitive animation

Avoid using small animations that provide constant movement in some part of the screen, unless it serves the purpose of your site. The human eye is drawn to constant movement, so your visitors have trouble concentrating on the content if, while reading, their eyes are constantly drawn to some repeating image.

Another problem with these animations is that they can interfere with a visitor's attempts to click on a link. The visitor must time their click in between the execution of the animation, which can cause extreme frustration.

Provide a way to turn off background sound

If you use a repeating background sound, provide a means of turning it off.

Main Contents   Section Contents

International Issues

Pay attention to the effects your content and design have on an international audience.

Think globally

Keep in mind that you are now communicating internationally. Design forms for an international audience. Consider other countries when setting the labels for and the length of address and phone fields.

Give the location of times

When indicating any time of day, indicate the time zone that you mean. Because not everyone understands time zone abbreviations in other countries, indicate what your target time is in scattered key sites around the world (New York, London, Sidney, Hong Kong, and so on). Also indicate whether you mean morning or afternoon. If you are using a 24-hour time system, say so.

Include state and country when indicating locations

Do not just say a city name when giving a location. For example, is Portland in Maine, Oregon, or England?

Avoid using hands as graphics

Any hand or finger position means something negative in some culture. It is best to avoid using hands as icons or graphical buttons.

Use English for an international audience

If you are writing in English and you are consciously writing for an international audience, keep your use of English simple and clear. Avoid unusual words, jargon, and clichés. Provide definitions and examples. Use graphics. Avoid humor, which is usually based in a specific culture—this includes avoiding visual jokes. Be cautious about using culturally based metaphors, such as football (USA) or rugby (England). A valuable site is "Words that could be confusing and embarrassing in the UK & US" at http:/www.dur.ac.uk/~dgl3djb/ukus.html.