



# Planning the Project

## Introduction

This chapter and Chapter 3 explain the Web development process. By “development” we mean the entire process of creating a website—from early planning through to final launch. As you can imagine, there are a great many tasks that make up this process. These tasks can be divided into three phases: (1) planning, (2) design, and (3) building. This chapter covers planning. Chapter 3 covers design and building. In both chapters we point out some important differences between developing a website and a CD/DVD title.

A summary of the complete Web development process is shown in Figure 2.1. You will very likely perform all or almost all of the tasks you see in this figure. The difference is that in some projects certain of these tasks may require just a few minutes of thinking or checking, while in other projects the same task may require substantial effort. Furthermore, the development process is too complex and variable for there to be a fixed sequence of tasks or for all these tasks to be entirely distinct from one another. For example, there is likely to be mixing of some planning and design tasks and some design and building tasks. Also, as we explain, evaluation tasks should be performed more than once during the planning and design phases.

## Formulating Your Purpose

As with almost everything else in this world, Web development will be much more successful if the site is designed for a realistic and clearly formulated purpose. Below we review the broad classification of purposes introduced in Chapter 1.

Planning	Design	Building
Formulating your purpose	Advancing the content list	Setting up the work environment
Analyzing and adapting to your audience	Working out the structure	Developing, revising, and reviewing content
Reviewing other websites	Creating design sketches and sample pages	Coding special features
Choosing a business model	Designing for change and future development	QA (quality assurance) testing
Establishing working relationships with the appropriate people	Building a prototype	Project documentation and reporting: The completion report
Determining and dealing with project constraints	Evaluation—especially user testing	Post-release evaluation
Establishing a theme and style—plus concept sketches	Project documentation and reporting: The design report	
Planning content and content acquisition		
Planning for ample evaluation and performing early evaluations		
Project documentation and reporting: The planning report		

**Figure 2.1.** A summary of the complete Web development process.

This list can be useful when you begin thinking about the specific purpose of your project or when you try to analyze the purpose or purposes of existing websites.

1. Education
2. Entertainment
3. Providing news, public information, and specialized information
4. E-commerce: Promotion/selling/support
5. Web portals
6. Persuasion
7. Building and sustaining community
8. Personal and artistic expression

As you know, projects are very often designed to achieve a combination of purposes. One special purpose, not mentioned above, is to improve your design and

implementation skills (and perhaps to fulfill a school assignment while doing so). This is a totally legitimate and worthwhile purpose. But even a practice exercise should simulate a real-life project with a real-life purpose.

It is an excellent idea to write a purpose statement for your project, to review it regularly, and if necessary to update it as the project progresses. The hypothetical website Asthma Horizons Northwest is intended to provide news and specialized information and to build and sustain community. The design team's statement of the specific purposes of the website appears below:

Asthma Horizons Northwest will be an important resource for asthma sufferers, their families, and friends. Focusing on the states of Alaska, Idaho, Oregon, and Washington, Asthma Horizons will provide background information about this medical condition, current information on treating and managing asthma, information about regional issues and concerns, and links to further resources. Although there will be references to the medical research literature, the site is not intended for physicians or other medical professionals. The site will include message boards that will provide a social space through which users can share their experiences and gain confidence and inspiration. Asthma Horizons will be an English-language website, but it will be designed to serve non-native as well as native speakers of English.

The site should project professionalism and objectivity. It should be visually pleasing and informal in style. Because Asthma Horizons is fully supported by foundations, there will be no advertising or other commercial activity on the site.

Often it is desirable, especially in a business setting, to formulate a project's purposes quantitatively. For example, you may specify goals in terms of number of site visitors, average visit time, and anticipated revenue. For an educational project you might specify specific learning outcomes.

### **The Evolution of Your Purpose**

As noted, you may need to revise the original purpose of your website. For example, the officials of the City of Centerville initially assumed that the only purpose of the city's website was to provide information useful to current residents and people working in Centerville. However, after looking at other municipal websites and talking with officials in other cities, the Centerville officials recognized other purposes such as attracting new residents and businesses and advertising the city's job openings. Often establishing the purposes of a project is a long and difficult process. The various stakeholders (people who are concerned about the outcome of the project) may suggest too many or even conflicting purposes for the project and argue about which purposes are most important.

### **Matching Purpose to Audience Needs and Motivations**

In order for your website to succeed, your purposes must be realistic. This means that your website must correspond to real needs and interests. For example, the senior managers of a corporation, recognizing that employees rarely consult the thick volumes of printed procedures, put the procedures on the corporation's intranet so that they will be much easier for employees to access. The employees,

however, still prefer their current practice of learning about the procedures from one another. The corporation will certainly save paper and shelf space, and the online procedures will probably stay more current. But the managers will not achieve their main purpose because it does not correspond to the needs of the employees.

Along similar lines, there have been many e-commerce websites that proudly offered services no one wanted. Go ahead, then, create a “Meet My Parakeets” website if you wish, but there may not be many people for whom this website holds any interest.

## **Analyzing and Adapting to Your Audience**

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In addition to formulating your purpose, you need to carefully analyze the intended audience of your website. A great many aspects of your design from the most fundamental design decisions down to the choice of individual words and the colors of particular buttons should follow from this analysis. Analyzing and adapting to your audience is, in fact, central to all forms of communication.

Analyzing an audience, however, is as complex as it is important. To give you a useful framework for analyzing website audiences, we distinguish between demographic categories of information and information specific to the subject of the website. Then we address the issues of conducting research, segmenting and prioritizing audiences, and taking full account of international audiences, cultural differences, and accessibility.

### **Demographic Information**

Human beings can be grouped in regard to traits that we all possess. Everyone has an age, a gender, some kind of ethnicity and nationality, some kind of income and financial status. Everyone has an educational background and kinds of knowledge obtained outside of school. Many people adhere to a religious faith or follow a recognized set of philosophical beliefs. By and large, we can classify people as living in particular nations and in urban, suburban, or rural areas.

These categories of demographic information can be very useful in analyzing an audience. Let’s say, for example, you are helping to design a website for [Secondmarriage.com](http://Secondmarriage.com), a site with information and features for people getting remarried. We know that the audience for this website will be older than people marrying for the first time. We also know that these people, being older, will tend to have higher incomes and more assets. On the other hand, many other categories of demographic information will not be very helpful in analyzing this audience. For example, people who re-marry vary widely in education, ethnicity, and where they live, and so these categories of information will probably not figure significantly in the design.

Similarly, consider the website [Centervillestreams.org](http://Centervillestreams.org), a website intended as a resource for Centerville science teachers. These teachers have asked a local hydrologist and others with similar backgrounds to build a website providing

general information and specific data (flow rates, water quality, etc.) about local streams. The teachers hope to use this information to devise assignments and plan field trips.

Science teachers all have a high level of education (a college degree and probably further coursework). A designer, then, could confidently use a vocabulary appropriate for college graduates, whereas the editor of *Secondmarriage.com* might argue against using words such as “gastronomic” and “accoutrements” on the grounds that they may discourage a significant portion of the website’s audience from using the site. Other than education, however, science teachers are much like the general population, and in any case such demographic characteristics as age and ethnicity are not highly significant to their use of this website. In both of these examples, then, demography is useful but certainly does not provide adequate information for a designer.

### **Subject-Specific Information**

More directly useful than demographic information is subject-specific information. This consists of your audience’s background, beliefs, attitudes, and preferences in regard to the subject matter of your website and how they will use it. For *Secondmarriage.com*, you would want to learn as much as possible about people’s beliefs, attitudes, and preferences regarding their second marriages. What are their hopes and concerns? What are the arrangements, financial and otherwise, through which new households and families are formed? What kinds of weddings do they plan? What kinds of assistance are they seeking?

For *Centervillestreams.org*, the key information is also subject specific. The designers care most about the specific kinds of science training the teachers have and the kinds of assignments and projects they hope to devise.

### **Conducting Research**

Very often, we analyze our audiences by conducting research. The designers of *Secondmarriage.com* should seek out information regarding marriage, divorce, and remarriage. They want to learn as much as possible about the ages at which people re-marry, the usual durations of the previous marriage (or marriages), how marriages terminate (e.g., divorce, death), how long people remain single after a marriage ends, and the numbers and ages of the children of people who remarry.

Very possibly, designers of *Secondmarriage.com* will want first-hand contact with members of the potential audience. Why not conduct surveys on issues especially important to the website? Why not interview members of the target audience or conduct focus group meetings that would include soliciting their reactions to preliminary website designs, sample feature stories, and advertising? Gathering, analyzing, and interpreting this kind of information, especially as it pertains to consumer behavior, is a major part of the field of marketing.

Note that in contrast to *Secondmarriage.com*, the audience of *Centervillestreams.org* is extremely small and specific. Very likely the entire potential audience for this website could assemble in a single room to explain their backgrounds

and needs. Very likely these teachers would share their lesson plans and other teaching materials with the designers. Talking with the teachers, the designers of [Centervillestreams.org](http://Centervillestreams.org) may well uncover significant issues that would have otherwise escaped their notice. For example, they might learn that the teachers are concerned about the safety of students and the possibility that they might be trespassing along stream banks.

After a website is launched, designers should continue to gather information in order to evaluate the success of the site and guide its future development. It is important to learn who actually uses your website and what they are trying to accomplish.

### **Segmenting and Prioritizing Audiences**

Often when a website is intended for a broad audience, the designers will think of the audience as several subgroups, each with distinctive characteristics. In other words, they “segment” the audience. Sometimes, the segmentation of the audience appears explicitly on the website. For example, the home page of a university website might have separate branches for prospective students, current students, faculty and staff, alumni, and members of the local community. Each branch will provide information especially suited to each audience segment, though in some cases the different branches will converge on content that is relevant to more than one segment. More often, the segmentation is not explicit, but the designers are thinking about different audience segments and expecting each segment to prefer different content. So, for example, the designers of [Second-marriage.com](http://Second-marriage.com) might think about the audience in terms of several distinct age groups. They might also distinguish between the newly formed families with and without children living in the household.

It is not always possible or necessary to give equal priority to each segment. So, for example, if one segment does not seem to be making much use of your website, you can make extra efforts to appeal to this segment, but you can also shift your focus away from this segment.

### **Designing for International Audiences**

An important and complex dimension of audience analysis is designing for international audiences. English is to some degree the unofficial language of the Web, and many websites in non-English speaking nations provide complete or partial English-language versions of their site when their intended audience includes users from other nations and cultures. In contrast, many English-language websites, especially in the United States, make little effort to accommodate non-native speakers of English, even when their content is relevant to people in non-English speaking nations. The owners of these sites should think about cross-cultural issues: They should consider adding content in other languages and should accommodate international users by limiting North American cultural references and slang—though in certain cases North American cultural references may be essential to the website.

You should certainly work hard to avoid offending people from other nations and cultures. Consider, for example, an online store in North America that sells decorative objects imported from around the world. The website's graphic designer decides to incorporate Arabic script into the design of the pages advertising merchandise from the Middle East. The designer, however, unwittingly uses passages from the Koran and offends many Muslims in North America and other nations who do not want to see their sacred texts used in a secular context. To learn more about writing English for international audiences and cross cultural communication and marketing, see Nancy Hoft (1995), Lillian Chaney and Jeanette Martin (1995), Elisa del Galdo and Jakob Nielsen (1996), and Jean-Claude Usunier (1996).

### **Making Websites Accessible**

A very important consideration is making your website accessible to people with visual impairments and other disabilities. For example, text-to-voice Web browsers, often used by people with visual impairments, can read HTML, but not graphics files. It is important, therefore, to annotate each graphic with a descriptive ALT tag in your HTML code. Also, designers often supplement graphical buttons and navigation bars with text-only navigation menus at the bottom of each Web page.

The World Wide Web Consortium (W3C), the official standards-setting organization for the Web, publishes complete information on website accessibility. Visit their website ([www.w3.org/wai](http://www.w3.org/wai)) for the most up-to-date information on the W3C accessibility guidelines, examples and explanations of how to implement them, and links to tools for evaluating the accessibility of web pages. See also Michael Paciello (2000) for good information on accessibility.

## **Reviewing Other Websites**

Most Web designers spend a significant amount of time looking at other websites for design ideas that they can borrow or adapt. For example, someone designing a city website might look at other city sites and get the idea of creating a section on the city's history. You don't want to slavishly copy other websites, but there is no reason to work in a vacuum either. In every field it is inevitable and natural for ideas to ripple through the professional community and for people to adapt these ideas in their own designs.

When reviewing other websites, think in terms of evolving Web genres. Think about what your users may be expecting and how you can fulfill these expectations and, at times, depart from them. Broadly speaking, designers should embrace conventions that help users understand how the website works and that help them achieve their goals, but should look to change accepted practices that are inefficient or irritating through over-use.

In addition, Web developers very often borrow ideas and tricks for implementation. In most cases you can use a Web browser's View Source command to

view the HTML code and figure out how some aspect of a website was constructed. Be careful, however, not to use a site's JavaScript, ActiveX, or other custom programming or a lot of a site's specific design ideas, for these are protected by copyright.

## **Choosing a Business Model**

The term "business model" simply means how a website will pay for itself or in some other way justify the work and money that's put into it. Most corporate sites don't generate revenue, but they advertise the company's products, maintain and strengthen relationships with existing customers, and contribute to the company's corporate image. Likewise, although intranets serve vital internal functions, they do not generate revenue. A great many websites, however, are intended to run as profitable businesses.

Finding a workable business model can be very tricky. First, it is often difficult and expensive to draw users to your website. You cannot count on Web-wide search engines to deliver large numbers of site visitors. Submitting your site to the search engines and taking other steps (such as including metatag keywords in the HTML code) do not ensure that the site will appear high on a results list when users type in relevant queries. In many cases, search engines sell the search terms that consumers type when they are shopping on the Web. In other words, if a company buys the search term "shoes," that company shows up high in the Search results list whenever a user types "shoes."

Even if you can draw significant numbers of people to your website, you don't necessarily have a workable business model. Online merchants have experienced difficult times. Many websites support themselves by selling advertising, but potential advertisers want to see proof that their advertisements are producing results. Some advertisers will pay just to have a banner advertisement with a link to the advertiser's site. Other advertisers want to pay only on the basis of the number of users who follow the link back to the advertiser's site. If you maintain, say, a gardening site, recommend a particular gardening book, and provide a link to an online merchant who sells the book, the merchant may pay you a commission for each person who navigates from your site to the merchant's site to buy the book.

Many sites charge for access to their content. These include the online version of the *Wall Street Journal* ([www.wsj.com](http://www.wsj.com)) and various financial investment websites (as well as most pornographic sites). These websites, however, compete with sites whose business model includes free access to similar content.

If you create a website purely for personal expression or to share a hobby or special interest or to make a contribution to society, you don't need a business model—which is perfectly fine. If the website benefits society in some way, you may be able to find an organization that is willing to sponsor the site. For good information about the business side of the Internet, see [Internet.com](http://Internet.com), especially the [Ecommerce/Marketing channel](#).

In most cases, the business model for CD/DVD multimedia is simply the purchase price. In some cases, CD/DVD titles are distributed without charge for cor-



porate promotion, or the cost is figured into the price of an accompanying product, such as a toy or book.

## **Establishing Working Relationships with the Appropriate People**

Unless you are working on a solo project, you will be interacting with people in an organizational setting. Some may be managers, who have a broad understanding of the role of the project within the organization. Some may be subject matter experts, or SMEs (pronounced "smees"). Some may be marketing specialists, who have insights about the impact of the project on the organization's customers. These people can help you greatly with the audience analysis and planning of your project, provide you with content, and check what you've created for accuracy and for its fit with the organization's broad goals and strategies. It is important to start communicating with all of these people early in the project and to maintain communication throughout the project. You don't want to put in a lot of work on something just to find out later that someone has a reason for rejecting what you've done. If you work for a client, you will probably have a single contact person during the proposal stage and access to other people in the organization once you've been hired for the project.

A difficult situation arises when people in the organization disagree strongly about what they want for the website. These people may have different notions about colors and fonts or, more likely, concerns about corporate strategy and the most appropriate content. Sometimes it is necessary to ask the person with ultimate authority to resolve these differences. In the next chapter we will look at the make-up and function of another group of people: your own development team.

## **Determining and Dealing with Project Constraints**

In almost every project you will deal with certain constraints. It is important to recognize these constraints early so you can plan accordingly. The constraints we cover here are money, time, style guides and design policies, and the user's computer technology.

### **Money**

One very common constraint is money. Ample funding means that you can use any content type that seems appropriate to the project, hire any specialists (artists, photographers, videographers, sound technicians, programmers, user testers, etc.) that are needed, and purchase state-of-the-art equipment. Usually, however, there are spending constraints. With limited funds, you will probably need to plan the project around the skills that your own team members bring to the project.

If you don't have a Java programmer, a skilled graphic designer, and first-rate hardware and software, there are certain things you just can't do.

In some cases, you are given a maximum figure at the start of the project. In other instances, you may need to do some planning and design work before you gain approval for a project and negotiate a fee. This is especially true when you are trying to get work from a potential client.

However you are funded, you will very likely be required to prepare a proposed budget and a final budget and to document your expenditures. Even when it is not required, you will need a budget (though perhaps a very simple one) just to manage your funds.

### **Time and Scheduling**

Another constraint is time. This constraint may be a deadline or simply a decision about the total amount of time you or your organization wants to invest in the project. This too may be subject to negotiation. Whether you face a deadline or just a maximum time allocation, you should estimate early on how many person-hours the project will take and when it will be finished.

Unfortunately, accurate time estimates are extremely difficult to calculate in the planning stage. The tendency is to significantly under-estimate the time that will be needed. To come up with your estimate, break the complete project into separate tasks, estimate the time required for each task, and devise a schedule for the project. As the project progresses, you should re-calculate the estimated times for tasks and update the project schedule.

Many project managers create a timeline (or "Gantt chart"), a simple representation of the key tasks that need to be undertaken, along with their starting and ending dates. Managers also need to recognize which tasks cannot begin until other tasks have been completed or have reached certain milestones. The planning report, shown in Appendix C, "Reports," includes a schedule in the form of a timeline.

### ***Unexpected Delays You Should Expect***

In almost all projects there are factors that will cost you extra time and could disrupt your schedule. For example, there are often delays getting information from subject matter experts (SMEs) who are not on your team. Your project may not be their highest priority. There are also delays in getting review comments and authorizations from managers and people who are over-seeing your project. If you anticipate and plan for these problems, you will be more likely to stay on schedule. User testing and other forms of evaluation are often very time consuming, and there can be long delays in getting permissions for copyrighted material.

You are also apt to encounter unexpected technical problems, especially if you are using unfamiliar tools and technologies. The best strategy is to prepare a technical demo (or "technical prototype") through which you will be able to uncover and address any technical glitches early in the project.

### ***Managing Scope***

For various reasons but especially due to time constraints, don't be overly ambitious in your planning. In your initial enthusiasm, it's very easy to commit to a design you will not be able to complete. One way to limit the project's scope is to narrow your intended audience or the purposes you will fulfill. You can often build links to websites related to yours and thereby reduce the work required to build and maintain your site. The developers of Asthma Horizons chose to link to the medical research literature rather than to assume responsibility for providing and continually updating this content on their website.

You may also want to develop your website in stages. Get the first stage up and running and then begin the next. Your first stage may not have everything you ultimately intend, but at least you will have a functional website without portions that are clearly missing.

For student projects, a reasonable strategy is a demonstration project in which the intent is to build only representative sections of the whole.

### **Web Style Guides and Design Policies**

Many organizations have established design requirements for their intranets and public websites. These requirements often include particular color schemes, specified variations on the use of the organization's logo, and design elements such as a standard navigation bar at the top of each page. These design requirements are usually described in the organization's "Web style guide" along with various communication rules and policies (for example, requirements for non-sexist language). Web style guides are valuable because they lead to consistent design. Also, designers benefit when they can quickly find out what they must do and can't do.

### **Your Users' Technology**

You need to consider the very different computer technologies your users are probably working with. What follows is only a brief, non-technical overview of the three most important issues. For more information, consult up-to-date technical references as well as the websites listed below.

Regarding browsers, you need to recognize that even the most current versions of Netscape, Microsoft's Internet Explorer, and other browsers (Opera, Lynx, HotJava) support various Web technologies (e.g., DHTML) differently or not at all. Also the same browser may behave somewhat differently in its Windows, Macintosh, and Unix implementations. Finally, many users do not upgrade from older versions of a browser, creating still more severe compatibility problems. Therefore, you need to pay close attention to these compatibility issues, avoid non-standard HTML tags and other non-standard authoring technologies, and decide which browsers you will fully or partially support. You can find up-to-date comparisons of browser capabilities on the Web. In the reference list, see WebMonkey, BrowserWars, and BrowserWatch.

Equally important is the speed of the user's connection to the Internet. Although fast connections are becoming much more common, many users are still connected to the Internet through ordinary phone lines with data transfer speeds of 28.8 Kbps (or slower). Slow connections cause delays in displaying large and complex graphics (the key factor is file size) and may cause still greater delays and loss of quality in playing dynamic content such as video files. You should therefore minimize the file size of graphics and avoid burdensome dynamic content, though these constraints are less applicable to most intranet websites or sites specifically geared to high-tech users.

A final issue is the user's monitor and underlying video technology. Monitors vary, of course, in size and overall quality, and the user's video card and other computer capabilities affect image quality and determine what screen resolutions the user can display. Increasingly, designers expect users to display websites at a screen resolution of at least 800 x 600 pixels, but keep in mind that if users can only display at 640 x 480, your Web pages will be wider than their display area, forcing them to scroll horizontally as they view your site.

Here are two key points that emerge from this discussion: First, it is necessary to plan and test for a broad range of user technologies. Second, if you design around high-end technology, you will be excluding or at least discouraging significant numbers of users—many of them less affluent individuals and people living in nations in which the technological infrastructure is less developed. You should work hard not to exclude people from your website.

Finally, we will mention the emergence of hand-held, wireless devices that can display Web content, often in conjunction with email and telephone capabilities. Because they have such very small screens and are, to a large degree, limited to displaying text, these devices require specially designed websites.

## **Establishing a Theme and Style— Plus Concept Sketches**

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Establishing the theme and style are very important planning tasks with far-reaching consequences. Theme and style directly affect the overall appearance of the website, how the text is written, and the selection and design of all the website content.

### **Theme**

Early in the project you need to define your theme. The theme is the core message that connects your website to your audience. It is how the website presents itself and the organization it represents.

Theme is separate from purpose. The websites for automobile manufacturers, for example, have the same basic purposes: promoting and perhaps directly selling automobiles. But the theme that will be expressed for an exotic sports car will be different from the theme for a practical family car. The theme of Asthma Horizons is this:

Asthma can almost always be effectively managed and asthmatics, especially when they take an informed role in managing their condition, can live active, happy lives.

If the purpose of your website is to promote composting, your theme will be something like this:

Composting is easy to do, it benefits the environment, and you will have a supply of rich soil enhancer or mulch for your garden and lawn.

The theme will be expressed in your project's content: the words, images, and overall appearance. So, for example, if you are talking about emptying compost from a compost bin, you would, in keeping with the theme, note: "This will not create a mess." You should formulate your theme early in the project, and keep it clearly in mind right through to launch and as you update the site.

## Style

Style is a general term for a wide range of specific decisions that focus and shape content and thereby help to express the theme. As you will learn in Chapter 4, "Content Types," each content type has attributes that can be controlled to produce a particular style. It is convenient to talk about style as something that modifies content or is added to content, but style and content are ultimately inseparable: A change in style is a change in content. The term "mood" is closely related to style but focuses on the overall effect rather than on specific techniques. So, for example, we might speak of the somber or joyful mood of a graphic or animation sequence.

Let's reconsider the theme of Asthma Horizons and examine how it is expressed through various stylistic decisions:

Asthma can almost always be effectively managed and asthmatics, especially when they take an informed role in managing their condition, can live active, happy lives.

The content on this site inherently expresses the idea that asthmatics benefit when they take an informed role in managing their condition. Most of the content provides just this kind of information. In addition, writers can try to evoke the theme as they make highly specific decisions about their style. This includes using a positive tone when describing the prospects of managing asthma successfully—though they cannot unduly downplay the difficulties that severe asthma can cause.

At this point in the project the designers have only talked casually about graphic design. They are thinking about a strong geometric design with bright colors to evoke an upbeat, positive mood.

## Concept Sketches

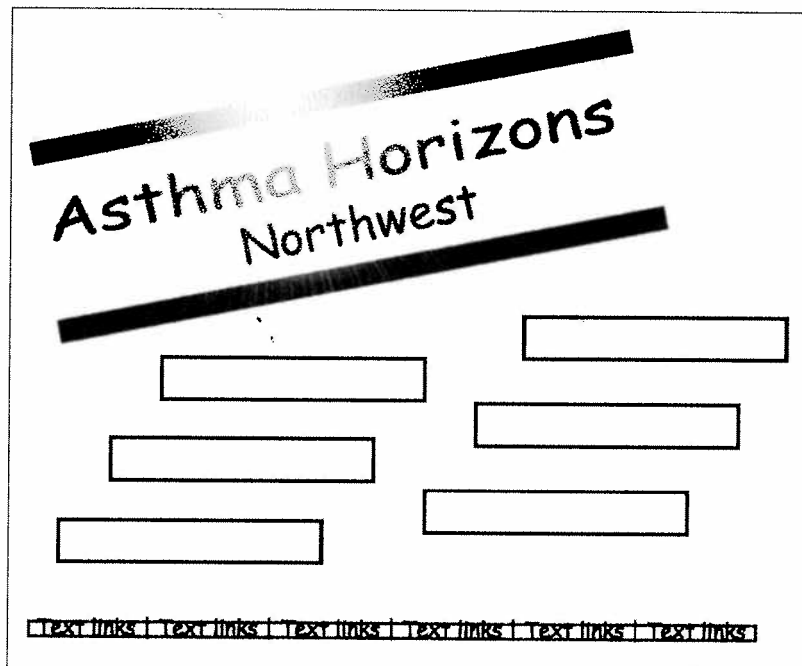
It is perfectly good practice to describe your ideas for a website's visual appearance in words only during the planning stage and to begin sketching (by which we mean any quick rendering whether using a pencil or computer software) in the design phase. On the other hand, human beings tend to think and plan visually,

and so it may not be long before someone involved in the project has the urge to go beyond the discussion of theme and style and attempt some rough sketches of the home page and other key pages.

Sketches produced at this stage are only concept sketches. They can help the team visualize the ultimate appearance of the website and think about theme and style. Actual design sketches and sample pages, however, must wait until the design stage when you know more about the content of your pages and what the navigational interface will be like. Figure 2.2 shows a concept sketch someone on the Asthma Horizons design team created for the home page. In keeping with the discussion, the design is geometric and employs bright colors. Thinking about the name of the website, the designer has also added a clever new idea: a bright spot (or “sunburst”) on the top diagonal line to suggest the sun coming up over the horizon. Although the home page design will change greatly, this sunburst motif will stay. Note that the creator of this sketch can only guess about the number of links on the home page.

## Planning Content and Content Acquisition

Once you understand your purpose, audience, theme, and style, it is time to begin planning the content you will include in your website. This means putting to-



**Figure 2.2.** A concept sketch of the home page of Asthma Horizons Northwest.

gether a content list and thinking about how you will obtain or create the items on this list.

### Putting Together a Content List

A content list is a rough and very tentative roster of the major content elements that you will probably include in your website: text, graphics, animation, video, and audio. The list should be the product of creative thinking, very likely during several brainstorming sessions. A very small team might work around a table with a paper and pencil. Larger teams will want to use a whiteboard or type directly into a spreadsheet or word processing file that is projected on a large screen for everyone to view.

Because the list is just a starting point, there does not need to be any particular sequence to the items. During the design phase, team members will identify new elements, decide to drop elements from the list, and redefine the nature of certain elements on the list. In the process, the content list will be transformed from a rough listing of possibilities to a well-defined and well-organized list of Web pages.

Although you want to be as inclusive as possible when putting together your content list, you should nonetheless take into account the project constraints. So, for example, you should be able to figure out early on if you do not have the funding or time for video sequences or if your audience is not well equipped to display them.

Figure 2.3 shows a three-column content list that the Asthma Horizons team is developing. The Content Element column describes the element very briefly ("New trends in asthma treatment"), the Notes column further explains the content element ("Feature these news items on the home page"), and the Source column records ideas about acquiring the element ("Need to monitor print and online sources").

### Acquiring Content Elements

Once you have a tentative content list, you should make plans for acquiring or creating the various content elements. If you are working within or for an organization, there may be quite a bit of existing content that you can use directly or adapt for use on the website. It is often a good idea to enlist members of the organization in the task of sifting through existing content and selecting appropriate material for the website. Not only will this help you to get the best content, but you may well build support and enthusiasm for the project. Much of the time, however, you will face the time-consuming and challenging task of creating your own content.

In the case of text, you can distinguish between content elements that require a significant research effort (e.g., compiling a list of allergens prevalent in the Northwest) and introductions, general descriptions, and other content elements that require writing skill and a general knowledge of the website's subject matter but not extensive research. Regarding graphics, some graphics, of course, will be

Content Element	Notes	Sources
New trends in asthma treatment	Feature these news items on the home page	Need to monitor print and online sources
Animated GIF showing the function of the lungs	Keep it very simple--no need for big graphics files	Can do this in-house
List of support groups in the Northwest		Mike is starting this
School district policies concerning asthma and asthma management	Maybe these are state-wide policies rather than district-level policies	Talk with Karen in WA State Education Office
List of allergens and possible allergens specific to the Northwest		Dr. Jeff Altman can help with this
Map showing the Northwest region	Probably should show up in the NW Focus area	
Air quality statistics by city		Can link to the Nat'l. Air Quality Control Website
Basic information on asthma, testing, and treatments	Needs a consistent writing style	
Graphics showing use of an inhaler	Use line drawings	Can do this in-house
Warning signs of an episode	Each warning sign will need a brief explanation	We may be able to adapt material from the Lung Association--ck with them
Review of current research projects	We don't have the expertise to monitor and summarize the research	Will link to the Journal of the Am. Medical Assoc. (JAMA) site for this
Information on volunteering for clinical drug trials		Will link to the Mothers of Asthmatics site for this
What you can do to manage your environment	We may divide this into ideas for home and school	
Monthly feature	Let's start with a profile of Seattle Seahawk Chad Brown. Could incorporate photos, an audio	Assign to a staff writer or use occasional guest writers

**Figure 2.3.** A content list created with a spreadsheet software application.

much easier to create than others. As discussed in Chapter 4, "Content Types," audio, animation (other than simple animated GIFs), and especially video are the most difficult content elements to create.

Another set of considerations relates to quality level. In many cases you will have the option of capturing content at different levels of quality. For example, you can digitize sound at different sampling rates (44 KHz, 22 KHz, or 11 KHz) and sample sizes (16 bits vs. 8 bits). High-quality content requires more storage capacity and may be more difficult to work with, but—if it is feasible—you



should capture and store at the highest level of quality that you might possibly want to use. Once you've dropped from high-quality to lower-quality content, you can't go backwards.

One special problem with video is that you often need to "over shoot" to make sure that you have all the raw footage you need. There are two reasons for this. First, it is often time consuming and expensive (rental costs, etc.) to gear up for a video shoot, and you don't want to have to do it more than once. Second, it is often impossible to re-create the situation of your initial shoot. The street fair is over, the summer landscape is now covered with snow, and so forth.

One crucial issue regarding content acquisition is copyright. Most content created after 1922 is protected by copyright and cannot be used legally or even adapted without permission of the copyright holder. You can't legally appropriate graphics, motion graphics, or sound you find on the Web or on a CD or DVD. The problem of copyright is sufficiently important and complex that we treat it separately in Appendix B.

You can, however, license photographs and dynamic content from "stock" media companies. Companies such as Eyewire ([www.eyewire.com](http://www.eyewire.com)), Corbis ([www.corbis.com](http://www.corbis.com)), PhotoDisc ([www.photodisc.com](http://www.photodisc.com)), The Music Bakery ([www.musicbakery.com](http://www.musicbakery.com)), Artbeats Digital Film Library ([www.artbeats.com](http://www.artbeats.com)), and Stock Video (<http://members.aol.com/stockvideo/main.html>) have large, easily searchable collections and generally moderate fees.

There are also a great many images (including Web icons, buttons, and backgrounds) that, with certain restrictions, you can copy or download from websites free of charge. To find many of these sources, type "free clip art" into a Web-wide search engine, such as Google.com or Altavista.com. Also, Microsoft offers a collection of images, animation sequences, and sound sequences without charge to registered owners of various Microsoft products at <http://dgl.microsoft.com>.

If you are intent on using a well-known piece of recorded music, you can set about obtaining the license to do so. Very likely, however, this will be an expensive and time-consuming effort. A good starting point is the website of the National Music Publishers' Association, at [www.nmpa.org](http://www.nmpa.org).

## **Planning for Ample Evaluation and Performing Early Evaluations**

In Web design (as in many other kinds of projects) we need to periodically stop and evaluate our work to be sure that the project is headed toward success. A general principle is that we want to perform evaluations as early as possible. The sooner we know that we are off-course, the less effort is wasted. One part of the planning phase, therefore, is to schedule evaluation tasks at appropriate milestones during the project. Another part of the planning phase is to perform evaluations that pertain specifically to the planning tasks.

## Profile: Points West Kayak Tours

Annie Sokolow and Peter Hayes own Points West Kayak Tours, one of several small guide services that take visitors on day-long and longer excursions around Homer, Alaska. Most of their customers are tourists, and most are not experienced kayakers. During their three years in business, Annie and Peter have marketed their company through a storefront (open during the tourist season), a full-color brochure (available in local restaurants and motels), and advertisements in the *Homer Visitor's Guide*. Now they are building a website. Let's take a close look at how they plan their site.

### Purpose

Annie and Peter quickly decide that the main purpose of the website is to advertise their company to tourists. More specifically, they hope that potential clients will visit the site, email or phone for more information, and book a trip. Another purpose is that potential clients who do not contact Points West before arriving in Homer will still visit the Points West storefront (rather than that of a competitor) and book a kayak trip. A possible future purpose is to enable customers to book trips right on the website and complete the financial transaction online.

### Audience

Annie and Peter know a lot about their audience and do not need to conduct further research. Still, they spend some time reviewing their knowledge and taking notes. The key points of their analysis appear below.

The people who take kayak tours in Homer like nature and the outdoors and often take part in outdoor activities at home. For the most part, they are not the same folks who come to Homer to fish for halibut on the charter boats. Most have little or no experience with kayaks. They range in age from twenty-year-olds to people in their fifties

and beyond. Some bring teenage children. They usually have the following questions on their minds:

- Will I see special scenery and get really close to wildlife?
- Do I need to have experience with kayaks, and do I need to be in top physical shape?
- What is the cost?
- What about rainy weather?
- Is this a safe activity, even for my kids?

Annie and Peter currently address these issues in their brochure and plan to address them on their website as well.

### Review of Similar Projects

Annie and Peter look at other websites offering kayak excursions in Alaska and other parts of the United States and Canada. They immediately see interesting possibilities. The website can provide the same basic information that the brochure does, but now potential clients can choose to learn much more about Points West and the trips they offer.

### Theme and Style

Annie and Peter derive the theme from their audience analysis and their purpose. Stated briefly, the theme is this:

We provide safe, relaxed kayak outings. No experience is necessary. You will have an active day of adventure and get a really close-up view of the wildlife and some of the finest scenery in Kachemak Bay.

Their ideas regarding style include writing in a personal style, conveying their deep appreciation for the natural beauty of Alaska, and expressing their commitment to providing a memorable experience for every guest. They expect to use vivid color photographs and make extensive use of blue and green in their design.

### Project Constraints

Annie and Peter have talked to friends and have done a little reading about HTML and Web development, and they recognize that one project constraint is that most of their clients will be visiting the Points West website from home, where their Internet connection may be slow. Both Annie and Peter agree that color photographs really sell people on kayak trips. But they will have to pay some attention to the file sizes of the photos that will appear on the website.

### Content Acquisition

Annie and Peter do some brainstorming about content elements they may want to use. Their content list is divided into a text section and a graphics section.

#### Text Elements

- A welcome paragraph that briefly describes Kachemak Bay and their tours
- A two-paragraph personal statement that talks about their backgrounds and philosophies as tour guides. This includes comments about safety and protecting the environment.
- A paragraph describing Homer's generally sunny summer weather with a comment that rain does not spoil a good kayak trip
- Descriptions of each of the four trips they usually offer, with prices
- A list of what to bring on a trip and what's provided
- A page describing the wildlife their guests usually see on trips plus a list of local birds

#### Graphics Elements

- A road map of Homer, with a close-up of the famous Homer Spit, where their storefront is located

- A map of Kachemak Bay showing the many islands and inlets
- A scenic photograph of kayakers paddling across Kachemak Bay with snow-covered mountains in the background (from the brochure)
- A close-up photo of kayakers paddling close to an island (from the brochure)
- A photograph of Seal Rock, where thousands of seabirds nest each year
- A photo of kayakers enjoying lunch on a sandy beach
- A close-up of a female otter swimming on her back with a baby sleeping on her belly

Annie and Peter don't have to worry about obtaining these content elements. The text elements can be easily written or adapted from their brochure. Three graphics can be taken from their brochure. Also, Peter is an accomplished photographer with a good collection of photographs for them to draw upon, and the Homer Chamber of Commerce provides maps and other graphics to local businesses.

Annie suggests adding a whole section for birders. They decide to put this idea on hold until the site is up and running. For now, they will provide a single page listing local species.

### Evaluation

Because their brochure has been well received, Annie and Peter feel confident about the effectiveness of their overall theme and their ideas regarding style. Therefore, they do not include evaluation tasks in the planning phase, but they begin thinking about how to get evaluations from knowledgeable peers and potential users during the design phase. We will revisit Peter and Annie in later chapters.

There are many forms of evaluation. One of the simplest is to ask for reactions from knowledgeable peers and whatever experts may be available. Another form of evaluation is to systematically review your design against a good set of design guidelines or existing websites that you admire. In many respects, however, the most revealing and reliable form of evaluation is getting feedback from the kinds of people who will actually be using your website.

In the planning phase you can ask potential users whether your website meets a real need. You can explain the theme you have in mind and get their response. You may even be able to get reactions to your ideas regarding style, though this may need to wait for the design phase. It is very important to determine the usefulness of the major content elements and to find out what useful content elements you may have omitted. If your business model entails generating revenue, you need to know how many users will potentially subscribe to the site, buy merchandise on the site, or take whatever actions you are counting on for revenue.

User testing is a form of evaluation in which potential users actually work with a paper or clickable prototype of a website. As the users work, testers observe and take notes on the problems that arise and often collect quantitative data. User testing is performed primarily on the prototype during the design phase, and so we discuss user testing in the next chapter.

## **Project Documentation and Reporting**

Web developers document projects to keep track of the decisions that have been made and the current plans and design ideas. Even the smallest projects require some documentation. At a minimum, the team should keep a project notebook (which can be maintained as computer files rather than on paper) that will serve as a record of decisions regarding purpose, audience, theme, and style and will include the concept sketches, content list, schedule, and budget. Most projects require more extensive documentation in the form of memos, progress reports, and other reporting documents. If plans change, which is very likely, the project documentation should reflect these changes. Resist the temptation to let project documentation get out of date.

Why is documentation so important? It fights “drift,” the slow, unnoticed deviation from the project goals. In other words, it helps all members of the team stay focused on the audience, purpose, schedule, and other considerations. Finally, documentation is an important way to communicate beyond the project team, in particular with managers or clients who must approve the project at various stages.

It is very likely that the team will be required to prepare a report at the end of the planning phase. There are many ways to organize and write a planning report. Figure 2.4 shows a list of sections that are frequently included. A sample planning report with a timeline and budget appears in Appendix C, “Reports.”

## Planning Report

Statement of Purpose  
Audience Analysis  
The Business Model  
Comparison with Similar Websites  
The Design  
    Theme and style  
    Early concept sketches  
    Early design reviews  
Plans for Content Acquisition  
Plans for Project Evaluation  
Requirements: Staffing, Equipment, Schedule,  
and Budget

**Figure 2.4.** Possible section headings for a planning report.

## Summary

1. The many tasks that comprise the Web development process can be divided into three phases: planning, design, and building. These tasks are performed very differently depending on the project.
2. Begin by determining your purpose(s) and writing a clear and specific purpose statement.
3. Carefully analyze your audience, possibly by conducting research. Your knowledge of the audience will guide a great many design decisions. Demographic information is important. Still more important is subject-specific information. Often you will design for specific audience segments.
4. Whenever possible, accommodate international audiences. Also, English-language websites should accommodate non-native speakers of English. Be careful to avoid offending people from other nations and cultures.
5. Make your website accessible to people with visual impairments and other disabilities. In particular, design for text-to-voice Web browsers. Follow the accessibility guidelines of the W3C.
6. Without copying, review other websites looking for ideas about design and implementation. Stay attuned to evolving Web genres and the expectations they create.
7. Many websites are intended to generate revenue or otherwise pay for themselves. However, finding a workable business model is tricky. In particular, it is often difficult and expensive to draw users to your website.
8. It is very important to establish good communication with key people—subject matter experts, marketers, managers—in the organization for whom the website is being developed.

9. Important project constraints are time (either a deadline or a maximum time allocation), money, style guides and design policies you must adhere to, and limitations in the user's technology. There are many unexpected delays in a project; therefore, schedule carefully and avoid overly ambitious plans. You may also want to develop your website in stages.
10. Early in the project you need to define your theme. The theme is the core message that connects your website to your audience. Also, begin thinking about style and mood.
11. You can begin making concept sketches of key pages, but these sketches are very tentative until you know much more about the website's content and navigational interface.
12. Put together a content list. This is a preliminary roster of the content elements that you think will find a place in your website. This will later be transformed into a well-defined and well-organized list of Web pages.
13. Once you have a content list, make plans for acquiring or creating the various content elements. If you are working within or for an organization, there may be existing content you can use directly or adapt. If you obtain content, avoid violating copyright. You can license content from stock media companies and use free stock content.
14. Evaluation tasks must be undertaken periodically throughout the development process to ensure the project is on track. In the planning phase you can ask potential users whether your website meets a real need, whether the theme generates a positive response, and whether specific content elements will be useful to them. You should also plan the evaluation tasks for the design and building phases.
15. Every Web development project requires documentation. Documentation fights "drift," the slow, unnoticed deviation from the project goals, and is an important way to communicate beyond the project team. Minimally, the team should keep a project notebook. Very often memos and reports are required.

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## **Discussion and Application**

### **Items for Discussion**

1. Look at a website for a utility company (electricity, water, etc.). How many audiences does the site seem to address? What are the information needs of these audiences?
2. Make a list of business models that websites employ to justify the money and effort required to create and maintain them.
3. What effect does selling advertising space on websites have on the user's experience? What are the better and worse ways to present advertising on a website?
4. Look at three websites for food products. What theme is expressed in each of the sites? How are the themes expressed through stylistic choices? Three possible websites to examine are: [pepsi.com](http://pepsi.com), [benandjerrys.com](http://benandjerrys.com), and [hickoryfarms.com](http://hickoryfarms.com).
5. An online, for-profit business university was using the name Unnexus University until they were forced to choose a new name due to a trademark dispute with another online learning company, UNext.com. The new name is Lansbridge University. The university's administrators are fully aware that this is a very different kind of name. They know that it will change the way the university is presenting itself to the public and affect the theme of their website. Describe this difference. Which name do you prefer?
6. What colors might you consider for a website that promotes composting? What colors might you consider for the website of a radio station that plays rock music? Why?
7. What might be the benefits of transforming a traditional print magazine into a CD magazine that would be mailed to subscribers and sold in stores along with conventional print magazines? Can you envision individuals who would prefer CD magazines to either print magazines or "Webzines," magazines that exist only on the World Wide Web?

8. Visit the websites of various stock media companies. What differences can you find in regard to the kinds of content available, the ways in which you search their collections, the ways in which the content is licensed or sold, and the restrictions on the use of the stock content?

### **Application to Your Project**

1. Write a purpose statement for your project.
2. Define your audience. What do you know about your audience? What information do you need to gather about the audience? What design decisions or issues are immediately apparent now that you have determined your purpose and analyzed your audience?
3. Write a statement of your website's theme.
4. What are your plans for making the site accessible to people with disabilities?
5. Are you hoping to draw international audiences? If so, is your website designed for their use?
6. Write a planning report summarizing the early plans you have made for your website.