Information Architecture Tutorial

By Webmonkey Staff

Information architecture is the science of figuring out what you want your site to do and then constructing a blueprint before you dive in and put the thing together. It's more important than you might think, and John Shiple, aka Squishy, tells you why.

Why's Information Architecture So Important?

Information architecture (also known as IA) is the foundation for great Web design. It is the blueprint of the site upon which all other aspects are built – form, function, metaphor, navigation and interface, interaction, and visual design. Initiating the IA process is the first thing you should do when designing a site. This series of articles describes specific methods and processes for developing a site's information architecture.

Clients sometimes view the development of an IA to be impractical, both in terms of the time it takes and the skill needed to do it effectively. But this mentality is slowly changing. A good IA is incredibly effective, and knowing the basics of the IA process can save both time and money in the long run. Also, you don't need to be an expert to use it to your advantage.

This series will demonstrate how easy and powerful the IA process can be. We'll present two ends of the design continuum, which can be thought of as either the difference between developing a small and a large site or the difference between having little time and having lots of time to design a site.

Each article presents a portion of a **design document**. Upon completing this series, you will have the template for a complete IA design document; the record of the decisions made in designing the site. It serves as a road map for the site's construction. Additions and revisions are made easier by the presence of this document. Oh, yeah – and clients and management love this stuff.

Also, just about everyone these days is a proponent of ease-of-use. Well, ease-of-use starts here. It's practically guaranteed if you have a solid information architecture at the outset.

Define the Site's Goals

The first step in the IA process is to define the site's goals. It sounds obvious, but think of how many horrible sites are out there. Do you think the people who created them really thought about their goals? Maybe members of the marketing department went nuts and built a site without asking anybody how to do it. They just had to have a site because everyone else has one. Or maybe the site was designed by committee. If you don't know what you're trying to achieve, why bother building a site?

You want everyone in the company – or at least the most important people – to be involved. But you don't want everyone making decisions about what should be on the site. In other words, you want everyone to agree on the contents and purpose of the site that *you* are going to build.

Defining the site's goals solves all of these problems. It establishes a clear, well-documented idea of what you are about to do, and it ensures that everyone is participating. Group consensus can make or break the project.

To get the ball rolling, you need to do two things. First, determine who will be involved in defining the goals. Depending on the basic nature of the site, it's not hard to figure out who the key players are:the people who have to buy in to your ideas. You have to make them feel like they are contributing to the project. Listen to what they say. It's your job to make sure they are communicating with one another and that no single person controls the process (more on how to deal with that type of person later).

You also need to determine whether you have time to do a formal definition of the goals or whether an informal definition will suffice. A formal definition involves calling meetings with the key players. You have to prepare an agenda and questions. It is fairly time-intensive and much more demanding of your project-management skills. An informal definition involves walking around with a notepad and talking to people one-on-one.

You write down their thoughts and ideas, ask for their opinions, and come back to them when you need their approval. The scale of the project and the time that you have are the major factors in deciding whether to use a formal or informal process.

Ask Questions
After determining who will be involved in designing the site, you need to come up with a list of questions. These questions help you determine the site's mission and purpose by involving everyone in the creative process.

The basic set of questions should include:

What is the mission or purpose of the organization?

This is the most important question you face. Reading the client's mission statement and business plan will give you a good idea. Get your hands on as much of the client's literature as you can – you might find some valuable ideas that aren't explicitly mentioned in the mission statement or business plan. It is also important to note that the client's mission may change as he or she goes online.

What are the short- and long-term goals of the site?

Every person you talk to will have a different idea about the goals of the site. Many people might not be thinking in the long term; they may have an immediate need to get the site up and running. Looking toward the future will save you a lot of headaches in the long run, because you will be able to accommodate growth and change more effectively.

Who are the intended audiences?

Most clients do not even think about their audiences, which is perhaps the number-one mistake made in designing sites. This question often serves as an early wake-up call to your clients.

Why will people come to your site?

Are you selling a product? Do you have a unique service? Why will people come to the site the very first time? Will they come back? If the client already has a site, try finding answers to this question there.

Try to think of any other questions that will reveal the true purpose of the site. If other people have ideas for questions, consider including those, too.

After compiling the list of questions, ask them of everyone, including yourself. Be sure to write down everything that everyone says, no matter how trivial or mundane. You will refine the responses in the next step.

Filter the Answers

At this point, you have either created a nice-looking set of questions and passed them out in a big meeting or spent some time walking around with a clipboard talking to people one-on-one. Either way, you should have a bunch of answers to your questions. Now you need to generate order from this chaos and filter the responses. You need to turn the answers into goals and figure out which goals are the most important.

First, separate the answers about your intended audiences and save them for later. Rephrase the rest of the questions as goals. Put those into a list. If you have a long list, group the goals into categories.

Take this list back to everyone and have them rank each goal's importance. If your goals are grouped by categories, have people rank the importance of each category separately. If they have any suggestions for the names of the categories, write those down as well.

Now comes the hard part. After collecting everyone's rankings, you need to distill them into a master list. Give more weight to the opinions of important people within the company, but use your judgment:Sometimes the Web-savvy mailroom clerk has far better opinions about the Internet than an out-of-touch CEO.

You now have a clear set of goals. Your site has a purpose! But wait. You still need to have the goals approved before proceeding. Run the list by a

few people just to make sure they're OK with it. Call a meeting if you must. Do whatever you need to do, but make sure the client agrees and signs off on the goals for the site.

Design Document – Site Goals

Once you have agreement from everyone involved, document the goals of the site and publish them where everyone in both your client's organization and your own can see them. If you have time, summarize the list and write a few paragraphs about the goals. A simple summary will do.

The list of goals is the basis for your **design document**, which we mentioned at the outset. After you have published the goals, use them to create the first chapter, called Goals, of your design document.

Define the User Experience

After figuring out why a site should be built, the second most important aspect of designing information architecture is determining who the audience is. This is an invaluable step that many people fail to grasp. Many sites do not even take into consideration who will be using them. How can you design a site if you don't know who's going to be seeing it?

Some people think an audience is defined by the technology it uses to access the site. This, too, is missing the point. That a user visiting the site uses a 28.8 modem is only a small part of the audience definition. A true audience definition consists of who the users are and their goals and objectives. Scenarios, or stories, are useful in visualizing the audience.

Oftentimes, a single department or group in a company takes the lead in putting together a Web site. The result is usually a site focused on that group's needs, which ignores the needs of everyone else. For a long time, MIS departments were responsible for putting together their corporate sites. These sites were utilitarian, and neglected important departments, like marketing. It is your job to prevent this from happening on your site.

Defining beforehand the user experience you seek establishes a clear,

well-documented definition of your audience, and it helps in understanding how users will react to the site.

To get started on this stage of the IA process, just as with defining the goals, you need to figure out who will be involved and how much time you will have. Generally, the same people will be involved. However, you probably will change how you weigh each person's opinion. For example, the marketing department should have a good idea of who your audience is. If that is the case, you'll want to listen to them more than to others.

Defining the audience takes less time than defining the goals, because you have already established how you will be working with people – whether formally or informally – and you are more familiar with asking them questions and getting responses.

Define the Audience

Remember that list of intended audiences that you compiled? You need it now. It is the basis for a list of all possible audiences. Add as many audiences as you can think of to the list, and ask everyone if they have any additions. If the list gets too long, you may have to break it down into categories.

Say, for example, you are building a site to sell cars. Audience categories might be Buyers, Sellers, Dealers, and Other. Buyers would consist of people who need a car right away, those who need a car within the next couple months, and people unsure if they need a car and are only doing research. The Other audience would consist of people trying to learn about who built the site, as well as possible investors in the site, and those searching for different kinds of information.

Have everybody rank the importance of each audience on the list. Gather the results, and create an audience list. Remember you will want to weigh each person's response appropriately when creating the list.

Then give the list of intended audiences to everyone so that they can write down what they think the most important needs and goals are for each

one. Once again, compile the results, and create lists. Have everyone rank the importance of each need and goal for each audience. Once you have processed all opinions, add the needs and goals to the list of intended audiences.

You can, of course, shorten this process if you want. You don't have to come up with the list of audiences, evaluate them, then come up with the needs and goals and evaluate those. You can do both of these at the same stage. It all depends on the urgency and time frame for building the site.

Now you are ready for the next step, one of the most fun in the entire IA design process.

Create Scenarios

Scenarios are stories. They tell the tales of users experiencing the site, and they help you and your collaborators visualize the site and its users. Scenarios are also useful in validating the site's design once it is finished:If the scenarios match up with the actual design of the site, you did something right.

Using the previous definitions of your audience, try to come up with a set of users who represent the majority of visitors. The size of the site and audience determine how many users you will write scenarios for. Usually three to six scenarios are sufficient. However, you may need to come up with as many as 20 – really!

For each user, write a scenario. To get started on a scenario, you need to bring the user to life. Create a character for that user, and give him a name, a background, and a task to accomplish on the site. Use a task from your list of audience needs and goals. Then write a story about how the character uses the site to complete the given task. Scenarios will be important later on, when you are defining the content and functional requirements of the site. It may seem like a chicken-and-egg problem – if you don't know what is on the site, how can you write a story about it? Well, you already have an idea of what users will be doing on the site, so

use your imagination! The sky's the limit. Being creative here will push your design into places you may not have thought it could go. Creating scenarios isn't that difficult, and it can be a lot of fun (but be warned, it can be time-consuming).

Competitive Analysis
Knowing your competition is a good way to learn about your own site. Whether you are casually browsing your rival's site or seriously evaluating each and every competitor, you need to be aware of what other sites are doing.

To get started, make a list of your competition. Ask around, since you probably don't know all of the sites. Do a few Net searches as well; you may find some sites your client is unaware of.

Next, you want to generate a set of features and criteria to evaluate each site. Start with your goals, using them as the basis for a set of features in your competitive analysis. As you evaluate sites, be sure to add any features or functionality you find interesting. Criteria include things like download time, page size, layout, and look and feel. It is helpful to create a grid with the name of a site for each column and the features and criteria as the rows. This grid provides a rough, objective measure of how other sites compare. Here is an example:

You are now ready to evaluate each site. This is fairly easy to do, but you must be thorough. Every feature or criterion can be evaluated in two ways:a simple check mark or a number from 1 to 10. For example, if you are comparing whether sites offer free email accounts, that can be done with a simple check mark. However, evaluating the look and feel of a site is more subjective. Most important, take notes and grab screen shots of each site. They will serve to jog your memory in the future, when people ask you why some sites fared better than others. Don't forget to evaluate your existing site, if you have one.

Finally, document the results. For each site, write down the pros and cons,

and include your notes and screen shots. Bonus points go to those who can create a PowerPoint presentation for management. Create a schedule for revising the competitive analysis, since your site, as well as those of your competition, will evolve. Pick a good time frame for reviewing the analysis, which can be anywhere from six weeks to three months.

The competitive analysis can be a project all its own. Get some help if you can. Don't neglect the importance of reviewing your competition. If you don't have enough time to do a proper analysis, a quick and dirty one will do.

Design Document:Audience, Scenarios, and Competitive Analysis
It is time to document what you have just done. Create a new chapter in your design document called User Experience. Add the audience definition, and incorporate the scenarios. You could try to integrate the scenarios with the audience definition, but it is probably better to put them in their own section. Next, write up a summary of the competitive analysis and add it to the design document. The competitive analysis itself should be included as an appendix. Remember to publish these results so that everyone can see them.

Example:

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2 User Experience



2.1 Audience Definition



2.2 Scenarios



2.3 Competitive Analysis
Summary

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15
16
17 Appendix A:Competitive
   Analysis
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Site Content

Now that you know what your site is going to be about and who it is for, you are ready to pinpoint what it will contain. Everyone around you is starting to get ideas, and some of them may even have a mental image of what the site should look like. You need to harness this creative energy and channel it into a productive process. You already have an agreement on the goals and audience, and you will be using the process that everyone is familiar with by now.

The point of this part of the information-architecture process is to gather the pieces for creating the structure and organization of the site. You will need to answer two questions:What pieces of content does the site need? What sorts of functionality will be required? Think of it this way:If you want to build a spaceship out of Legos, you need to pick out all of the pieces you will be using. These pieces represent the content. If you want your Legos to do things, you need to choose which motors and processors you need (yes, Legos are computerized in this exercise). These pieces represent the functionality.

In order to harness all the ideas about how the site will work, create a list of the content and functional requirements. Then reach a consensus on how this content will be grouped and labeled. A side effect of this process is to create a content list or inventory, which is the basis for the site structure.

Identify Content and Functional Requirements
Use the list of goals, the needs of your audience, and your competitive analysis – all of which you've already collected – to start two new lists:one of content elements and one of the functional requirements for the site. Add any potential Web pages or types of content that you can think of to

each list. Types of content include static, dynamic, functional, and transactional. Copyright notices, privacy statements, and membership rules are examples of static content. Member logon pages, signup pages for email newsletters, and other pages involving forms or transactions should be included on your list of functional requirements. Browse the sites of your competition, and add any pages that are not on these two lists.

While you are generating these two lists, have everyone create their own lists of desired content and incorporate them into your content list. Have everyone review this list in order to get a sense of how important each piece of content is. Revise your list if you need to. You now have what's called a "content inventory." Some people claim that gathering content is their number one bottleneck. The content inventory can be used to start this process early.

Using the content inventory, revise your list of functional requirements. If the content inventory has pages for canceling purchases, the system had better be able to cancel purchases. Work with the technology and production people to determine the feasibility of each requirement. Do you have the technology and the skills to meet each requirement? Do you have the time and money to buy or build the functionality? Rank the importance of each requirement. You may have to get rid of some in order to meet your deadlines. Other requirements might become overshadowed by more important ones and drop off your list.

Group and Label Content

Order out of chaos – that's what this step is all about. Here you organize the content and define the basis for the site's structure. Begin by writing each element of the content inventory on an index card. Take the cards and organize them into groups. (You will want a big table to do this.) Try organizing them in different ways. When you are satisfied with how you have grouped things, name each group; try to be as descriptive as possible, and avoid being verbose. Record the name of each group and the elements within it.

Repeat this process with everyone involved. It is important to record how

each person organizes the information and names each group. Be sure to tell everyone that there is no right or wrong answer. All opinions are valid. Excellent ideas often come from the most unlikely sources.

After everyone has gone through the exercise, compare and contrast how each person organized the information. Depending on how you want to do this, you might call everyone together to discuss the pros and cons of each layout, work one-on-one with the most intriguing people and their ideas, or just organize all of the thoughts on your own.

When you decide on the final groupings and names, use them as the basis for defining the major sections of the site and the names of each section. This is the basis for your site structure. Be warned, though:Consider the major sections as transient – their names and content may change in the next stage of the IA process. Be sure to run the sections and their names by a few key players to make sure they are OK with them. Finally, revise the content inventory, if necessary, to reflect the new organization of the information.

Design Document – Content and Functions
Create a new chapter in your design document called Content and Functional Requirements. Include a summary of the content inventory. Add a section about how the content is grouped and named. Add the list of functional requirements with a summary, if you like. The content inventory should be included as an appendix to the design document. Remember to publish these results so that everyone can see them.

Example:

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3 Site Content



      3.1 Content Grouping and
Labeling

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07
08
09      3.2 Functional Requirements
10
11
12
13      Appendix B:Content Inventory
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By now you have a good handle on your site's goals, who the audience will be, and what kinds of content and functionality you'll need. It is now time to define the site's structure, which is the foundation on which you build everything else.

Think of the site structure as a skeleton that holds the body together. Without it, your site will be a jumbled up, confusing mess – kind of like an amoeba. Do you want an unorganized, hard-to-use, crappy site? No! You want an evolved, highly structured, and easy-to-use site that can walk upright on its own two legs.

After creating a good site structure, everything else will fall into place. It can't help but do so! A well-designed structure makes it easy to define a navigation system, and the two together make designing page layouts and templates a snap. This is the last step before you can actually get into building things.

Metaphor Exploration
This next step, which is called "metaphor exploration," can help refine your vision of the site's structure, but it's important to remember that this step is only an exercise. It will give you many good ideas, but they may be impractical, at best. Don't let that discourage you, though – it can be a lot of fun.

It's useful to explore various metaphors in trying to determine the site's structure. A good metaphor can go a long way in helping users understand how to use and navigate the site. However, no metaphor is perfect, so don't feel that you have to adhere rigidly to just one. You could take the

best parts of several metaphors and roll them into one (or you might not find any useful metaphors at all).

Three types of metaphors are useful to site design:

Organizational metaphors

Organizational metaphors rely on the existing structure of a group, system, or organization. For example, if you are creating a site to sell groceries, your metaphor could be a supermarket, where products are grouped logically by type (canned vegetables, dairy products, cereal, snacks, household items, etc.). Beware that copying the organizational hierarchy of your client company is usually not a good idea – grocery customers couldn't care less about a supermarket's corporate structure.

Functional metaphors

Functional metaphors relate tasks you can do on the site with tasks you can do in another environment. Photoshop, a graphics program, relies on a lot of functional metaphors:You can figuratively "cut," "copy," and "paste" graphics on a computer – as though you were using real-world scissors and glue.

Visual metaphors

Visual metaphors are based on common graphic elements familiar to most people in our culture. If you are designing a music site that allows users to play songs, you might want to use the traditional "start," "stop," and "pause" icons found on CD players everywhere.

To begin exploring metaphors, gather your people and brainstorm ideas. Review and evaluate each metaphor. Try not to discourage any suggestions you do not like, at least not right away. A metaphor's punch might not be obvious right away. Try to map out the major sections of the site by connecting elements from the content inventory to each metaphor.

After what was probably a lively and entertaining experience, you must choose a metaphor or a rationale for the site's structure. Remember, no metaphor is perfect. The overall site might not be explainable as a metaphor, but perhaps the navigation system (or smaller subsets of the site) can be.

Set It in Stone

Now that you have a rationale for the site structure, you'll want to set it in stone. You can start off by creating a text-based, hierarchical map of the site, called the "site structure listing."

The major sections you decided upon earlier are the "roots" of the site structure listing. Fit them to your rationale or metaphor. Next, map out the organization of each section with items from the content inventory. As you go deeper into the site, indent the lower levels. You will repeat this process several times. Over time, focus on smaller parts of the site. You should end up with a list looking like this:

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Section 1

    Section 1.1

        Section 1.2

Section 2

    Section 2.1

        Section 2.2

        Section 2.2.1

        Section 2.2.2

        Section 2.2.3

            Section 2.3

                Section
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    2.4
22
23  Section 3
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Next you will want to visualize this list. Many people have a hard time seeing something like the site structure listing and translating it to the way the site will work. Architectural blueprints can help. Here is an example:

Architectural blueprints are visual representations of the site structure. They are diagrams showing how elements of the site are grouped and how they link or relate to one another.

You'll need to make up a legend that defines how on- and off-site links, page components, pages, and groups of pages are represented in the blueprints. You might want to distinguish among parts of the site that perform a function or transaction, parts of the site that are generated dynamically, and pages merely comprised of text. If your site is large, you may have to make several architectural blueprints, starting with a generalized overview of the site and working toward diagrams with a finer and finer grain.

Define Navigation

How will users use the site? How will they get from one place to another? How do you prevent them from getting lost? Defining the navigation system for the site solves these problems.

Take a look at the site structure listing. What are the major sections? These are excellent candidates for the global navigation system, which appears on every page of the site and enables users to quickly jump between sections. If at all possible, try to limit the number of global navigation elements to between five and seven. Another good idea is to incorporate the branding of your site – the company logo – into the global navigation as part of the link back to the site's homepage.

Local navigation can take a number of forms. It can be a list of topics, such as those found at Yahoo and GeoCities. It can take the form of a menu of

choices such as the GeoCities members area. Or, it might be a list of a few related items, such as this lesson's page titles that you see farther down this page.

It is essential that you document the global navigation system and as many of the local navigation systems as you can. This can be as simple as compiling a list of elements that make up each system.

For example, Webmonkey has a global navigation system that can be documented as a list:"The global navigation device contains links to all the major sections of Webmonkey:design, HTML, dynamic HTML, etc." A local navigation definition for Webmonkey might be:"For a multi-part article, a list of links to each section appears at the end of each page. Use the title of a section as a link to that section."

Design Document
Design Document:

Documentation time! Create a new chapter in your design document called "Site Structure." Write a summary or metaphorical explanation about the driving rationale behind the site structure. Add the site structure listing. If the site structure listing is too long, add a shortened form and include the rest as an appendix. Compile the architectural blueprints and add them to the design document. Document the global and local navigation schemes. As always, publish these results so that everyone can see them.

Example:

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4 Site Structure

4.1 Site Structure Listing (or Summary)

4.2 Architectural Blueprints

4.3 Global and Local Navigation Systems

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09
10
11 Appendix C:Site Structure Listing
   (optional)
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Visual Design

By now you know a number of things about your site:why you are building it, who the audience is, what will be on the site (i.e., the content), and how the whole thing is structured. You are now ready to work on the visual design, which is often the most satisfying aspect of site design.

One of its main purposes is to provide users with a sense of place. They need to know where they are on the site, where they have been, and how to get to where they want to be. A good site structure combined with an effective visual design enables users to construct a mental map of the site.

The goal of this lesson is to take the site's structure and map it onto the visual design. A number of tools are useful in creating the design. The first step is to make layout grids that define the structure and organization of the site as it will show up on the page level. Then design sketches will establish a general look and feel. Layout grids and design sketches together lead to page mock-ups, which in turn lead to the construction of Web-based prototypes.

At this point, you'll need the help of graphic designers, art directors, and creative directors, as well as your production crew.

Layout Grids

Layout grids are templates that describe Web pages. Content – the focus of every page – requires prominent placement. You'll need to block out space for global and local navigation and integrate other aspects of the site that may not be part of the site structure. The company's brand must be present on each page. Advertising and sponsorship deals should be incorporated into the design. Here is an example of a layout grid:

To get started, take the site structure listing and make a list of all the possible page types. Individual pages within the site should be very similar in form across all the major sections. Review the content inventory, then try coming up with two or three generic page types. You'll start by designing these and then use them as the basis for all the other page types.

To begin, break out your sketch pad or favorite graphics program. Create a rectangle representing the page, and block out the elements of your design. Since content is the most important element, start with that – even though it's a little tricky, since you won't yet know what else will be on the page. Several other elements must be considered:branding, advertising and sponsorship, navigation, page titles, header graphics, and footers, which include copyrights.

Branding plays a prominent role on every page because it informs users that they are still on the site. A common place for the branding is in a page's upper left-hand corner.

Advertising and sponsorship can be integrated in a number of ways. Perhaps you have a full-sized ad banner (typically 468 by 60 pixels) on every page. Do you put it at the top? Do you put it under the title of each page? How do you integrate sponsorship? Is sponsorship integrated into the graphics headers on each page? Is there a small sponsorship logo at the bottom of each page? These are all questions you need to answer.

Finally, navigation also has to play a prominent role. Global navigation must be consistent across every page of the site. Local navigation systems can change, depending on the content, but try to be as consistent as possible.

This is an iterative process. You will need to revise the layout grids several times. You will probably want to do two or three different styles for the layout, if you have time.

Design Sketches and Page Mock-ups

Design sketches are used to establish the look and feel of the site. They can be integrated with the metaphor or site structure rationale, but this isn't always necessary. Often, they are done concurrently with the rest of the information-architecture process, so you may already have the design sketches worked out and approved by the client.

The sketches don't necessarily need to represent structure or organization. However, the graphic designers do need to know the size of the graphics files, as well as any technical constraints.

The next step is to create page mock-ups, which represent the actual site, by integrating the design sketches with the layout grids. These should be as close to the actual pages as possible. Use your favorite graphics program to break up your sketches. Try cutting and pasting the pieces over their respective parts of the layout grids. Another option is to build the page mock-ups in HTML, using the pieces of the design sketches as the graphics.

The page mock-ups are the basis for a Web-based prototype or, if your site is small enough, the basis for building the actual site. Page mock-ups need to be approved by the client, although it may be sufficient to have approval on the site structure and design sketches in order for you to move forward with the prototypes.

You have now completed the steps in shaping the information architecture for your site! You have all the materials you need to construct a prototype, and everything else should fall into place. Before you dive into prototyping, add one last entry to your design document.

Design Document

You are almost done. You just need to document the visual design of the site. Create a new chapter in your design document called Visual Design. Document the layout grids, and be sure to include the diagrams you made. Compile the design sketches, and add those, as well as the pictures of the page mock-ups, to the document. Include snapshots from the Web-based

prototype, if you can. The design document is now complete, providing a thorough description of the site's design. It will be useful in constructing the site, for adding content, and in revising the site when the time inevitably comes.

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Example:

5 Visual Design

5.1 Layout Grids

5.2 Design Sketches

5.3 Page Mock-ups

5.4 Web-based
Prototype
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