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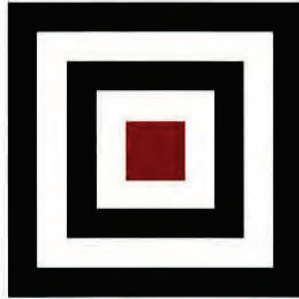
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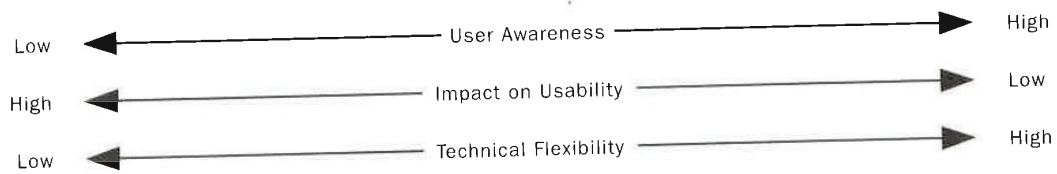
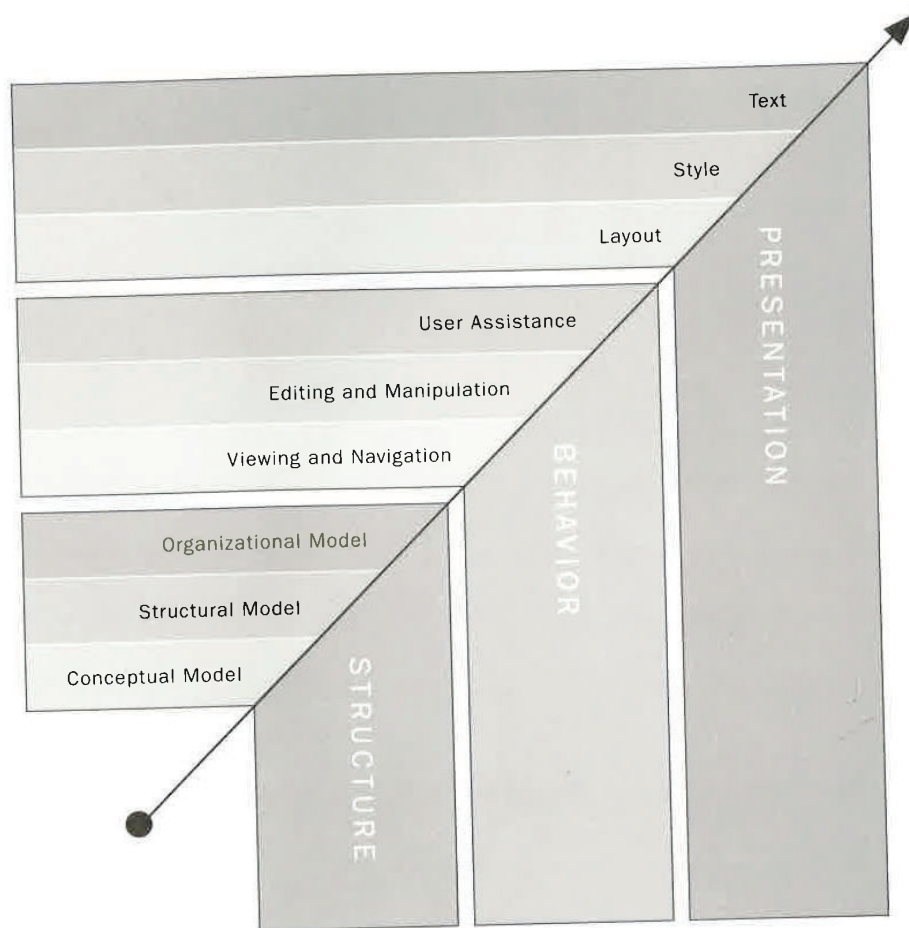
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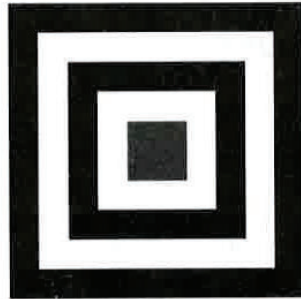
MAKING *the* WEB WORK

DESIGNING EFFECTIVE WEB APPLICATIONS





BOB BAXLEY



MAKING *the* WEB WORK

DESIGNING EFFECTIVE WEB APPLICATIONS



MAKING THE WEB WORK: DESIGNING EFFECTIVE WEB APPLICATIONS

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*To my little family—
Linda, Ian, and Nicole.*

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SUMMARY

As the first layer of the Behavior tier, the Viewing and Navigation layer contains some of the most used and most common interface mechanisms on the Web. Because many of these behaviors, navigation in particular, also apply to content-based Web sites, there is a fairly evolved set of visual and interactive conventions that should be followed. These conventions include the following:

- **Goals of navigation.** A navigation scheme should help users understand three things: what type of application they're using, where else they can go, and what about the application is important.
- **Navigation mechanisms.** Although tabs and trees are the two most common forms of high-level navigation, they are both limited in scalability, hide choices from the user, and fail to support lateral navigation. The impact of these limitation can be mitigated but not eliminated.
- **Selection of data objects.** Two conventions are used to relate commands with data objects in a list. The convention of shared controls allows users to select multiple items at a time, but the convention of dedicated controls more tightly couples the objects and commands.

- **Viewing and manipulating lists.** There are four established interactive conventions useful for manipulating lists of data objects: column set selection, sorting, paging, and filtering. Working in concert, these mechanisms give users with the power and flexibility to modify the presentation of their data.

Looking forward to the next layer of the interface, Editing and Manipulation, the interaction issues become more complex and the conventions less well established.

"In saying what is obvious, never choose cunning.
Yelling works better."

Cynthia Ozick
"We Are the Crazy Lady and Other Feisty Feminist Fables"
in *The First Ms. Reader*

8

EDITING AND MANIPULATION

Using HTML Input Controls to Accurately Capture Users' Data

In contrast to the Viewing and Navigation layer, the interactions in the Editing and Manipulation layer result in persistent changes to the user's data. Owing to HTML's limited interactive vocabulary and the complex nature of these interactions, the Editing and Manipulation layer contains some of the most challenging and difficult aspects of the overall design. In addition, the technical limitations of Web applications are particularly visible in this layer. In many cases, the ideal level of sophistication and interactivity is too difficult or costly to achieve, resulting in a variety of implementation tradeoffs and compromises. Therefore, the appropriate and practical design solution requires a delicate balance between users' needs and technical feasibility.

This chapter approaches the problem from three different angles: the overall goals and purpose of forms, the proper use of HTML input controls, and how to combine input controls to facilitate complex interactions.

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DESIGNING FORMS: THINKING IN TERMS OF THE WHOLE

Remember the chapter about structural models and the discussion about views and forms? When designing the structural model, the focus is on the flow of the site as a whole and how various types of pages contribute to that flow. After determining that a particular workflow requires a form, however, the challenge of the details still remains.

At the highest level, forms are essentially a mechanism for the application to ask the user questions: “When would you like to fly?” “What is your address?” and so forth. By contrast, views are essentially a mechanism for the user to do the asking: “What is the balance of my account?” “What do you have in the housewares department?” and so on.

As we all know, the rules of polite conversation are slightly different, depending on who’s doing the talking and who’s doing the listening. Therefore, the guidelines and conventions for form design are also slightly different from those for views.

PACE APPROPRIATELY

It’s hard to hold a conversation with someone who talks too fast or asks 16 questions before giving you a chance to answer. The same is true whether you’re interacting with another person or with a Web application. Therefore, determining the optimal length and density of information are two immediate concerns affecting the design of the overall form.

“We need to collect 67 fields of data. Should we create six really short forms, four medium-length forms, or one honkin’ long form?”

The answer is, of course, one of balance. If the user needs to see all the options at the same time, the form will necessarily be long. Similarly, if choices in one part of the form determine the available choices in another part, the form will need to be divided into multiple pages. It's a bit like feeding babies; you want to be sure each bite is big enough to keep them interested, and you also want them to know what's coming for dessert. The balance, however, is to not stuff so much in their mouths at once that they spit it back up all over you.

When you're considering this question, a good place to start is a careful review of the functional requirements. Do you really need all those fields, or could some be eliminated? Are any fields optional? Can those fields be moved to another page or grouped together so as not to distract from the form's main elements? At a minimum, are required fields clearly differentiated from optional fields so that users can quickly identify what information they do and don't have to supply?

Complex forms can have so many input elements that the sheer volume of controls is overwhelming. Although it's acceptable to make users scroll, that doesn't give you a license to create a form of any length. Long forms are as painful and intimidating as a mortgage application and should generally be avoided. Imagine how many potential sellers get scared out of eBay simply because the form for listing auctions is so overwhelming (see Figure 8.1).

Long forms do, however, have two important advantages: efficiency and ease of error reporting. They are efficient in that they require only a single page load and they allow users to view the full set of options without additional navigation. They also enable errors to be detected, reported, and corrected in a single page. These advantages, however, bring with them the high cost of confusion, intimidation, and bewilderment, particularly for users new to the application.

A screenshot of eBay's selling form, showing a complex and cluttered interface with numerous input fields, checkboxes, and buttons, illustrating the overwhelming quantity of options mentioned in the text.**8.1**

The overwhelming quantity of options on eBay's selling form must intimidate any but the most determined of potential sellers.

In most cases, the better solution is to identify logical splits in the information so that the form can be presented in multiple pages. What could be presented as a single, lengthy form often turns out to be more manageable as a four-page wizard.

LIMIT NAVIGATION

As I mentioned in the context of structural models, Web applications are built from two fundamental page types: views and forms. Although a major function of views is navigation, such is not the case for forms. For all the reasons pointed out in Chapter 5, "The Structural Model: Understanding the Building Blocks of a Web Interface," the number of navigation options on form pages should be severely restricted. This applies to high-level navigation elements, such as tab bars or trees, as well as low-level navigation. If your form includes a navigational header or other ways to exit the form, at least some of your users are likely to fill out the form and then click one of the navigation paths without clicking the Submit button first. When this happens, it's impossible to know for sure if they meant to submit their changes but simply forgot to click the Submit button, or if they really meant to abandon the transaction. Even if the application is smart enough to trap every possible click out of the form and perform the submit behind the user's back, the basic problem remains: Exiting a form without using a command button creates ambiguity as to whether changes should be accepted or abandoned. Of course, you can't control the user exiting the form by way of the Back button, a bookmark, or typing in a new URL, but treating forms as modal dialog boxes with limited navigation and explicit Cancel and Submit buttons at least helps limit the problem.

INDICATE STATUS AND PROGRESS

If a form is part of a guide or a wizard, it should include clear indications of progress. If users are in step one of a seven-step process, it's only polite to let them know where they are and how many steps are left. Even when some steps are optional—choosing gift wrapping, for example—it is still important to inform users of the number of possible steps. The goal should always be to set appropriate expectations for users so that they feel some level of control over what is happening.

Figure 8.2 from the Opodo travel site is a great example of a progress indicator. Notice how the current step and all the possible steps are indicated in the progress bar.



8.2

A clear indication of where users are in the process sets appropriate expectations and keeps them in control of the experience.

SUPPORT INTELLIGENT FLOW AND KEYBOARD NAVIGATION

Well-designed forms also demonstrate balanced flow and intelligent ordering of elements. The user should be clearly drawn from the top of the form toward the bottom. Although a layout that draws the user across the page is possible, the established Web convention clearly favors vertical layouts.

In addition to enhancing their digestion of the experience, well-designed flow also enables users to quickly navigate through the form from their keyboards. This allows more sophisticated users to quickly progress through the form without having to move their hands back and forth between the keyboard and the mouse. For applications where users



MAKING *the* WEB WORK

DESIGNING EFFECTIVE WEB APPLICATIONS



- Develop a product list vision based on users' needs and goals
- Deconstruct an interface according to technical flexibility and impact on usability
- Identify and evaluate conceptual models
- Create logical task sequences
- Organize content and functionality
- Understand the pros and cons of various navigation schemes
- Correctly use HTML input controls
- Design online help and alerts
- Analyze solutions for sorting, paging, and filtering data
- Understand and use grid-based layouts
- Evaluate visual designs based on site goals and brand values
- Apply learned concepts to two popular Web applications

Most people involved in the design and specification of Web applications, whether they're visual designers, engineers, or product marketers, do not have a method for understanding or prioritizing design issues. These professionals tend to bounce between visual details and fundamental structural concerns without recognizing which issues are most important to the product's overall success. In addition, because there's no single governing authority for the Web, different applications implement the same functionality in different ways. As a result, users are often confused as they go from one application to another.

The purpose of *Making the Web Work* is to address these two basic problems: inconsistency in approach and inconsistency in implementation. The book tackles these problems on three levels. First, it describes a structured method for establishing a product vision and prioritizing design decisions to support the fulfillment of that vision. Second, it offers detailed analysis of design solutions to help the reader understand how to work through the logic and tradeoffs of design problems. Finally, it details a variety of best-practice solutions to common design problems. In this way, the book provides a consistent approach, examples of design reasoning, and solutions to design problems.

Bob Baxley is a practicing designer who lives and works in Silicon Valley. Specializing in interaction design for both Web applications and services, as well as desktop products, Bob has worked in a variety of corporate and startup environments. Bob began his career in 1990 as the designer for ClarisWorks, later working on a variety of projects for Adobe® Systems, Apple® Computer, Epiphany™, NetObjects, Ameritrade™, and others. Currently, Bob runs the Design and Usability teams at myCFO, a leading wealth management firm.

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