# How to Create Web-based Training (WBT)

*Scott DeLoach*

*The market for Web-based Training (WBT) products and services is expected to grow from $197 million in 1997 to $5.5 billion in 2002. Many technical communicators and trainers are already interested in creating WBT, but they do not know how to get started. In this session, I will explain the advantages and disadvantages of WBT, when to consider WBT, who is using it—and why, how much it costs to develop WBT, and design issues to consider. I will also share some WBT examples.*

## WBT OVERVIEW

Web-based Training (WBT) includes any training class or tutorial that is delivered over the Web. The majority of WBTs resemble traditional CBTs. However, Web-based training also includes live Web-based transmissions of traditional stand-up training classes.

### Advantages and Disadvantages

When compared to classroom training, WBT's advantages include around-the-clock access, the ability to reach remote and/or busy students, consistency across classes, and reduced cost and time when teaching large numbers of students. When compared to CBTs, WBT's advantages include lower distribution and maintenance costs, higher security, and platform independence.

The biggest disadvantage of WBT is that, like any new technology, it takes time to learn the tools. Some WBT software is expensive, so cost can certainly be an issue. WBT's big advantage—living on the Web—can also be a big disadvantage. Students can have very slow Internet access, so pages must be designed to download quickly. For most WBTs, video and audio files are too large and cannot be used. Finally, WBTs require space on a Web server and expertise in getting the files loaded and working correctly.

### WBT Development Costs

Companies are moving to WBT because it is cheaper than classroom training. Bill Raduchel, AOL's CTO, has estimated that by 2005 the cost of delivering an hour of instructor-led training will drop from $300/hour to 3¢/hour when delivered through the Web. As the following table shows, the higher development costs are quickly offset by reduced delivery costs:

|  | classroom | WBT |
| --- | --- | --- |
| per course | $20,000 | $160,000 |
| per class | $2,800 | $850 |
| per learner (200) | $465,000 | $170,000 |

(see www.horton.com)

These savings estimates are being realized by a number of companies. Sun Microsystems cut their sales training costs by $3.5 million, and Aetna reduced the cost for training 3,000 employees by $3 million—a savings of $1,000/employee. Hewlett Packard reduced their training costs on one project from $7 million to $1.5 million.

### Student Impressions and Results

The cost saving are obviously going to make management interested in WBT. However, is it good for the students? Do they like WBT? Merrill Lynch saw improved test scores for WBT over CBT, Toys "R" Us students preferred WBT's frequency and flexibility over classroom training, and Office Depot saw retention increase 25%, satisfaction increase 30%, and enrollment increase 100%. At the same time, their costs decreased 80% (see www.designingwbt.com for more information). Based on these projects, WBT seems to have potential benefits for both students and companies.

## DESIGN TIPS

To create a successful WBT, you will need to design around your students' needs, expectations, prior knowledge, and computing technology. A big challenge with WBTs is keeping the students motivated. Interactive exercises allow the user to "do" something and prevent them from getting too bored. Offering navigation choices—with suggested learning paths—allows students with different experience levels and interests to learn in their own way at their own speed. Also, make sure that the user can ask questions, either by providing a phone number or email address. You can't anticipate all of their questions.

# DESIGNING AROUND LIMITATIONS

WBT development includes the same limitations we often run into when we are developing documentation: we don't have enough time or money.
However, WBT development has to also deal with browser and experience limitations.

## Browser Limitations

Unfortunately, the major browsers provide varying support for the W3C HTML and CSS recommendations and the ECMA standard for JavaScript (or, ECMAScript). In many cases, you will have to code things completely differently for the two browsers. If you are also supporting pre-version 4 browsers, then you will have to avoid CSS, DHTML, and some JavaScript code.

Most users are now using version $4^+$ browsers. If at all possible, I would recommend setting a version 4 browser as a baseline. This baseline will support JavaScript 1.1 and CSS level 1 with basic DHTML. CGI and Perl are great choices for security and quizzes. If you are planning on using Java, make sure that your users can download Java applets. And of course, make sure to test everything in Netscape and Internet Explorer.

## Time Limitations

The best way to handle time limitations is to set realistic goals and expectations before you begin. If your goal is a five module, fully interactive WBT with quizzes, you probably can't develop it in a month. However, you can follow a phased approach and promise one module with a quiz after one month. If you have a development team, divide up the work by modules or task. For example, you could have one person handle the writing, another person create the graphics, and a third code the quizzes. Once you begin to develop the WBT, be sure to gather any existing documentation, identify and use your subject matter experts, and make sure to have technical and usability reviews.

## Money Limitations

If you are developing your first WBT, the initial costs can be expensive. However, there are a few easy ways to save money. Once you select a tool, check the product's website. Most tools have a trial offer. It's a great way to get started while the purchasing department processes the order. Also, many tools offer competitive upgrades. If you have a remotely similar tool, you will often qualify for the competitive upgrade. Your WBT will need to have some graphics beyond screenshots. Some of the nicer clip art packages and web sites might fit your needs. Or, consider hiring a graphic design student.

## Experience Limitations

It can be quite a challenge to learn while you work. The easiest way to get up to speed quickly is to outsource part of the WBT development. You might outsource the more difficult coding or an entire module to help you focus on one skill or module at a time. You should also consider taking a few traditional or web-based classes. If you want to add a specific feature to your WBT, check the Web for free JavaScripts. Finally, don't forget about the resources that are included with your software. WBT software often includes design templates. I hear that they also include instruction manuals….

# EXAMPLE: DESIGNING FOR OLDER BROWSERS

DigitalThink's "Java 2 Fundamentals" WBT was created to teach novice programmers how to program using Java. It has a simple design based on the DigitalThink WBT template. The WBT supports HTML 3.2, so it's compatible with older browsers.

Since this WBT teaches Java, the designers used Java to provide interactive graphics. These graphics could have also been created as animated GIFs or with DHTML, but by using Java the course developers provided excellent examples of Java programming.
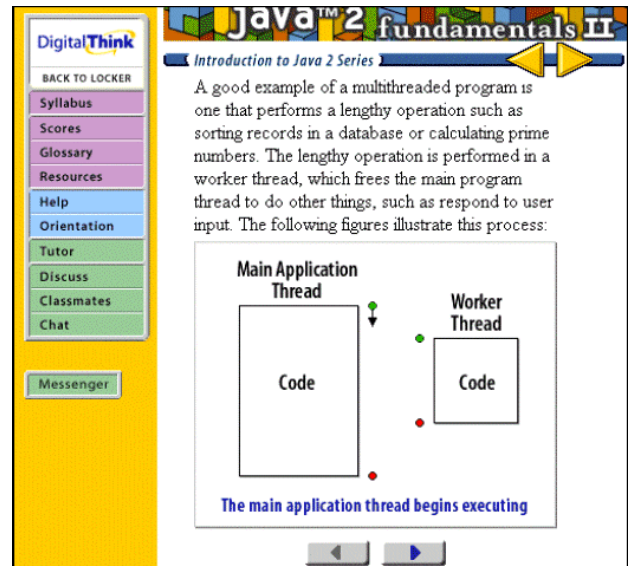


**Figure 1. Java 2 Fundamentals WBT**

# EXAMPLE: PROVIDING USEFUL FEEDBACK

The Epson Stylus printers WBT is designed to teach Epson salespeople about the latest Epson printers. Since salespeople are often extremely busy, Epson creates numerous short WBTs and posts new ones about every two months. These WBTs feature short quizzes, layered information for technical details, and contests for students who complete the WBT. When the salesperson takes a quiz, the WBT provides examples and layered feedback to explain key concepts.


**Figure 2. Epson WBT**

The Epson Stylus printers WBT was created for version 4$^+$ browsers using Adobe GoLive and Adobe PageMill. It uses image maps to provide interactive images and JavaScript for quizzes and content management.

# EXAMPLE: INTERACTING WITH STUDENTS

The XcelleNet Connect:Manage WBT was designed to teach internal system administrators how to set up and maintain the Connect:Manage software. The WBT developers knew the target audience members and decided to use a "superhero" guide based on their manager. This approach made the WBT fun for the system administrators while poking fun at their image around the company. The design proved very effective in motivating the students to explore the WBT.
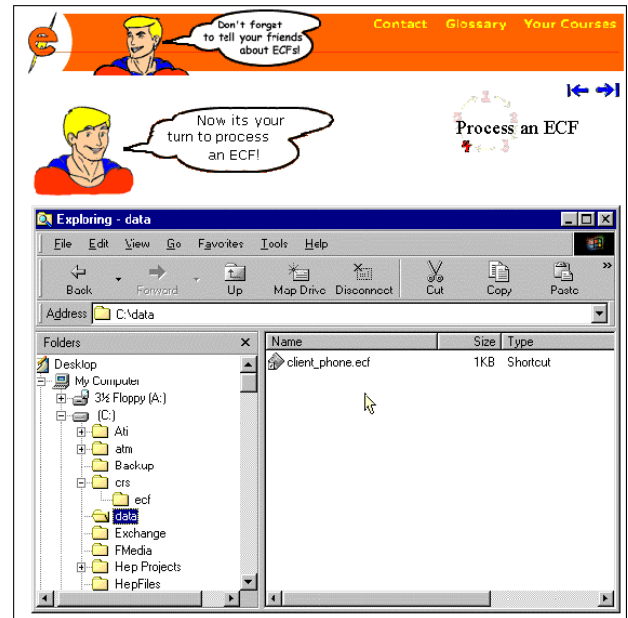

**Figure 3. Xcellenet WBT**

This WBT features interactive images to teach tasks. The user can interact with the image to practice performing the task without fear of causing problems with the actual software.

The Connect:Manage WBT was developed for version 4$^+$ browsers using Dreamweaver and Asymetrix Librarian. It uses DHTML to show and hide information, JavaScript to provide interactivity, and CSS for formatting.

# EXAMPLE: EMBEDDING THE TRAINING

The eBay bidding tutorial was developed to teach novice Web users how to bid on an item at eBay. Rather than providing a sample tutorial, eBay has embedded the tutorial in every item. The embedded tutorial provides item-specific information and keeps the user focused on their task.
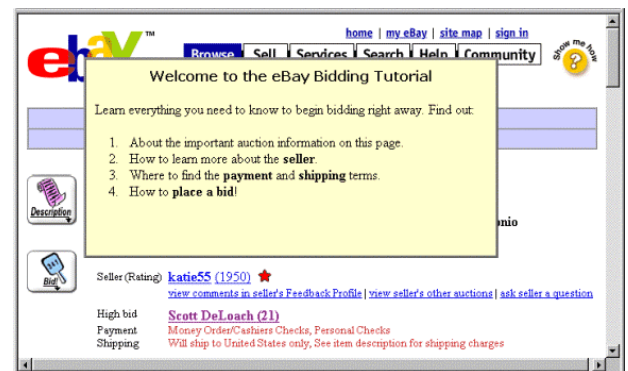

**Figure 4. eBay Tutorial**

The eBay tutorial was created for version $4^+$ browsers. For some reason, eBay has only coded it to work in Internet Explorer, but it could be modified to work in Netscape. The eBay pages are created "on the fly" using CGI scripts. The tutorial uses JavaScript and DHTML.

# LEARNING MORE ABOUT WBT DEVELOPMENT

To create WBTs, you will need to be comfortable using a popular HTML editor such as Dreamweaver or HomeSite. You should also have at least an intermediate knowledge of HTML tagging—sometimes you have to do things by hand. If you understand the basics of JavaScript and the Document Object Model (DOM), you will be able to add features such as quizzes and interactive lessons.

If you are developing for version $4^+$ browsers, you should take advantage of Cascading Style Sheets (CSS) and Dynamic HTML (DHTML). CSS allows you to store your formatting information in one file, so making formatting change is much easier. DHTML allows you to add page transitions and to show and hide information.

Ready to learn more about WBTs? Check out the following resources for more information.

# RECOMMENDED RESOURCES

## Example WBT Sites

www.digitalthink.com
knoware.epson.com
www.xcellenet.com/public/training/remoteware/recf.asp
www.ebay.com

## Recommended Web sites

www.epss.com
Research on EPSS and great "how to" information.

www.epssinfosite.com
Great information about EPSS tools and design guidelines. Also hosts the annual EPSS design contest.

www.lguide.com
Online training review site. Good place to find WBT classes.

www.filename.com/wbt
Surveys about WBT and links to WBT examples.

## Recommended WBT Books

*Designing Web-based Training*
William Horton

*Dreamweaver Visual QuickStart Guide*
J. Tarin Towers

*Director and Lingo 8 Authorized*
Phil Gross

*Authorware 5 Attain Authorized*
Orson Kellog

## Recommended Technology Books

*Designing with JavaScript*
Nick Heinle

*JavaScript Complete*
Steven Holzner

*Dynamic HTML Reference and SDK*
Microsoft Press

Scott DeLoach
Founding Partner
User First Services, Inc.
45B South Peachtree Street
Norcross, GA 30071
404.520.0003

Scott DeLoach is a founding partner of User First Services, Inc, an Atlanta-based consulting company that specializes in designing and creating user assistance. Scott has received two STC International Online Competition Awards for interactive user assistance systems, and he currently serves as the STC International Online SIG Manager. He holds a Master's degree in Technical and Scientific Communication from Miami University.