

HF 710: Managing the Development of Information Products

**Prototype for the
Concord Communications, Inc. Web Site
Waltham Interactive Design**

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Appendix A

1.0 Introduction

This document contains a prototype of selected pages for the Concord Communications, Inc. Web site, prepared in anticipation of receiving a Request for Proposal (RFP).

The enhancements shown in the prototype reflect the findings and recommendations Waltham Interactive Design previously presented in an Assessment Memorandum, in which the project team determined how the site could more effectively communicate the company's strength in the network technology market to partners, clients, investors, and potential employees.

The specific pages and business issues addressed in the prototype are described in the following table.

Paper Prototype	Business Issue(s)
Home Page	Main navigation metaphor, better content organization, information consolidation
Site Map	Better content organization, information consolidation
Products	Missing information
Product FAQs	Consistency in terminology and labeling
About Concord	Consistency in terminology and labeling, information consolidation
Corporate Mergers	Information consolidation, consistency in terminology and labeling
Working at Concord	Missing information, better content organization
Engineering (Job Opportunities)	Missing information, better content organization, consistency in terminology and labeling

The prototype is suggestive, meaning that it is not meant to be a detailed description of the final product. However, the prototype clearly introduces new or revised functionality based on what our project team believes are the site's most important deficiencies, and will help enhance the overall user experience. This rationale is described in detail in Section 2.0, Prototype Rationale.

Section 4.0 contains relevant portions of Waltham Interactive Design's final Work Breakdown Structure (WBS). This section describes the materials used by the project team for project planning, including a task/responsibility matrix and project cost information.

2.0 Prototype Rationale

This section presents Waltham Interactive Design's rationale for the Concord Communications, Inc. Web Site Redesign Project. The purpose of this rationale is not to describe every function of the redesigned site or prototype, but to provide others within our organization with an understanding of our team's design decisions (Dix, 212). Where appropriate, the rationale includes information about the human factors/usability criteria the project team previously identified in our Assessment Memorandum.

The main objective of the Concord Communications, Inc. prototype is to improve the information architecture of Web site to address the navigational problems identified in our original assessment. As such, the project team decided to concentrate on grouping, labeling and general navigational aids because there were many comments about these particular topics (inconsistencies, redundancies, and so on). These issues were addressed for the Concord home page, the site map, and a number of internal pages.

2.1 Home Page Functionality

First, the original central graphical element (and thus the problematic sliding door metaphor) has been removed. In place of the sliding doors is a more commonly recognized navigational system of site categories, shown across a top frame that is always present. As indicated in our prior assessment, using widely known navigational controls not only draws upon visitors' prior knowledge of how these controls work to speed location of information, but also makes visitors feel comfortable when the site behaves in a manner that is consistent with their expectations (Berkun). Furthermore, the consistency created by having the same navigational structure present on every page throughout the site helps "create and reinforces the user's understanding of [the] interface" (Gonzales, 151). When a visitor places their mouse over a category, a drop-down list of subcategories appears, eliminating the need for intermediate pages and providing visitors with an immediate mental model of how the site is organized (Peterson). Additionally, we are leveraging navigational structures that may already be known; such structures are increasingly becoming the norm for many frequently visited Web sites, including MSNBC.com (Coe, 252). While this system response may not be immediately obvious to some visitors, the initial occurrence of the drop-down behavior on one category would create the bridge between stimuli and learning necessary for visitors to effectively and confidently move through the rest of the site (Coe, 36). Finally, the new navigational system allows us to consolidate the numerous conventions (sliding doors, and two different types of drop-down lists) that were originally offered on the home page.

Second, the home page improves upon existing functionality that we believe will greatly enhance the user experience. The search function is brought to a primary location on the home page, and is always available to visitors without requiring them to click to an intermediate page. Nielsen explains that, "search-dominant users will usually go straight for the search button when they enter a Web site; they are not interested in looking around the site; they are task-focused and want to find specific information as fast as possible" (1997). Similarly, the authentication mechanism that provides existing Concord customers with access into technical support or other special programs has also been given a higher priority on the interface. There is no reason why the site design

should require existing customers to navigate through a maze of links, when they should be treated as a primary visitor audience.

Third, we believe that the home page redesign, which is carried throughout the rest of the Web site, alleviates some technical issues that were discovered during the evaluation. In his book *Designing Web Usability*, Nielsen recommends that the goal for page loading response times should be no more than 10 seconds (44). Even with the JavaScript or other Web programming that may be required to display the drop-down navigational links, we believe that the download time will be greatly reduced from that of the original home page. Moreover, because the navigation is provided in a frame that is only loaded once, the time it takes for internal pages to load will be minimal. (This of course depends on the visitor's connection speed and on the content Concord Communications, Inc. chooses to display in the main content area). The redesigned home page also makes full use of screen real estate for the "standard" resolution of 800 x 600, based on Statmarket.com studies indicating that 53% of Web surfers now use this resolution (Kalbach). Thus, the initial disorientation that most visitors of the old Concord site may have experienced because of the off-centered content and large amount of white space has also been eliminated.

2.2 Site Map Functionality

The site map functionality shown in the prototype addresses a few issues from Waltham Interactive Design's original Web site evaluation. The site map no longer is displayed in a separate pop-up window that requires extensive visitor scrolling; instead, it is displayed in the main content area like any other internal page. Moreover, the site map shows links to all main and subcategory information that is available on the new Concord Communications Web site. Although we attempted to organize site information according to how visitors with a particular goals would imagine it (Sterne) and in groupings that would be meaningful to visitors (Mandel, 415), this organization may need further examination in the way of a user and task analysis. Even if the redesigned site map does not exactly fit all visitors' mental models, it provides visitors with an immediate and comprehensive look at how the site is structured that will aid in navigation.

2.3 Internal Page Functionality

The improvements to the Concord Communications, Inc. Web site's internal pages also center on improved navigation and information foraging. First, as recommended in our evaluation, the project team incorporated breadcrumb trail navigation in the upper portion of each internal content page (Nielsen, 206). This simple breadcrumb trail shows the visitor's location relative to the Web site as a whole, and helps reinforce the site's overall navigational structure. It also provides a way for visitors to correct navigation errors by allowing visitors to backtrack through their last few clicks.

Another improvement that is present on the home page but is perhaps more important on the internal pages is the use of associative links. Associative links are used to give visitors "see also" hints about pages that may be of interest to them because they are similar to the current page. Considering the three link types, the project team believes that the improved top navigation bar addresses structural links; Concord's use of

embedded links depends upon the nature of the page's content (Nielsen, 195). However, the use of associative links on each page gives visitors the option to learn more about a particular topic if such investigation is warranted.

2.4 Limitations of Prototype

The following items describe some limitations of the prototype:

- The project team expects that this prototype will not be considered a final design, but rather, will be used as part of an iterative design process and be refined according to newly uncovered usability goals (Rantzer, 108).
- Once again, the project team stresses the importance of conducting a comprehensive user and task analysis to ensure that the proposed redesign is in line with visitor expectations (potential investors, customers, partners, employees, and so on). Only after this type of analysis is complete can Concord Communications, Inc. be certain that their Web site is providing their online audience with a beneficial and comfortable user experience (Hackos and Redish, 7-8).
- Naturally the prototype is not a full graphic mock-up of all Concord Web pages, and the prototype only makes suggestions for links based on the team's current knowledge of Concord's business strategies and target audiences.
- Not all system behaviors can be shown through the prototype, thus this report explains some of these reactions (such as the drop-down lists in the top navigation bar).

In sum, the prototype presented here is only the beginning of a more complex project that Waltham Interactive Design may undertake. Our project team expects that we will collaborate with Concord Communications, Inc. to meet agreed-upon design objectives.

3.0 Prototypes for the Concord Communications, Inc. Web Site

Please refer to Appendix A for the project team's prototypes of specific Concord Communications, Inc. Web pages.

4.0 Work Breakdown Structure (WBS) Information

This section contains the project planning materials used for the Concord Communications, Inc. Web Site Redesign Project. Waltham Interactive Design hopes that this information will help all parties understand the work effort involved, and the timeframes and costs associated with developing this paper prototype.

4.1 Task/Responsibility/Schedule Matrix

Task	Team Member(s)	Date Due
Identify prototypes to include in the report.	All	March 14, 2001
Identify components of the report.	All	March 14, 2001
Assign team members to be responsible for prototype creation and report.	All	March 14, 2001
Create preliminary schedule.	Judy	March 14, 2001
Create preliminary WBS and send WBS draft out for review.	Judy	March 18, 2001
Return comments on WBS.	Jen/Bob	March 19, 2001
Create detailed WBS schedule.	Bob	March 19, 2001
Integrate comments from team and update WBS and mail out to team.	Judy	March 19, 2001
Return further comments.	Jen/Bob	March 20, 2001
Integrate comments from team and update WBS and mail out to team.	Judy	March 20, 2001
Print out WBS for class.	Judy	March 21, 2001
Discuss Home page and Site map during class.	All	March 21, 2001
Discuss Assignment 3 in more detail.		
Conference Call	All	March 25, 2001
Prepare new schedule and distribute to team.	Bob/Judy	March 25, 2001
Home Page Redesign		
Develop new groupings including submenus	Bob	March 17, 2001
Review assessment memo for navigation comments	Bob	March 17, 2001
Layout Page in PowerPoint	Bob	March 18, 2001
Distribute draft for review	Bob	March 13, 2001
Team review	Jen/Judy	March 18, 2001

Task	Team Member(s)	Date Due
<i>Home Page Redesign (continued)</i>		
Revise	Bob	March 17, 2001
Distribute draft final for review	Bob	March 20, 2001
Team review	Jen/Judy	March 25, 2001
Finalize for report	Bob	March 31, 2001
Distribute to team	Bob	March 31, 2001 April 1, 2001
<i>Site Map Redesign</i>		
Develop New Groupings including submenus	Bob	March 18, 2001
Draft layout for team review	Bob	March 18, 2001
Distribute for team review	Bob	March 18, 2001
Team Review	Jen/Judy	March 19, 2001
Revise	Bob	March 20, 2001
Distribute draft final for review	Bob	March 20, 2001
Team Review	Jen/Judy	March 25, 2001
Finalize for report	Bob	March 31, 2001
<i>Internal Page Template Design</i>		
Draft Template with groupings from homepage	Bob	March 18, 2001
Review draft template	Jen/Judy	March 18, 2001
Revise draft template	Bob	March 20, 2001
Distribute draft final for review	Bob	March 20, 2001
Team Review	Jen/Judy	March 21, 2001
Finalize template for team use	Bob	March 22, 2001
<i>Internal Page Redesign (7 Pages)</i>		
Layout page in PowerPoint	All	March 22, 2001
Distribute draft for review	All	March 23, 2001
Team review	All	March 23, 2001
Revise	All	March 24, 2001
Distribute draft final for review	All	March 24, 2001
Team review	All	March 28, 2001
Finalize for report	Bob	April 1, 2001
Send final to Jen	Bob	April 1, 2001

Task	Team Member(s)	Date Due
<i>Report (Assume 2 Pages Text)</i>		
Review WBS and decide what to include	All	March 21, 2001 March 28, 2001
Prepare draft for team review	Jen	March 24, 2001 April 1, 2001
Team review	All	March 25, 2001 April 1, 2001
Revise schedule included in report and send to Jen	Judy	March 27, 2001 March 31, 2001
Revise report	Jen	March 31, 2001
Team review	Judy/Bob	April 1, 2001
Revise report	Jen	April 1, 2001
Incorporate Home page, Site Map, and Internal pages	Jen	April 2, 2001
Distribute draft final for team review	Jen	April 2, 2001
Team review	Bob/Judy	April 2, 2001
Finalize report	Jen	April 3, 2001
<i>Post-implementation</i>		
Do PEAT	All	March 31, 2001
Send Judy your hours	Jen/Bob	March 31, 2001
Prepare PPT presentation	Judy	March 31, 2001
Circulate for review	Judy	March 31, 2001
Team review	Jen/Bob	April 1, 2001
Revise	Judy	April 1, 2001
Finalize presentation	Judy	April 1, 2001
Circulate for review	Judy	April 1, 2001
Return comments	Jen/Bob	April 2, 2001
Revise presentation	Judy	April 2, 2001
Prepare journals	All	April 4, 2001

4.2 Project Costs

Based on our original Work Breakdown Structure, Waltham Interactive Design initially estimated the Concord Communications, Inc. Web Site Redesign project as shown in the following table.

General Admin (Con Calls & E-mails)	WBS	Web Site Prototypes	Report Writing	Post-Project Assessment	Total Hours
13	6	34	17	11	81

Based on the information described in the Work Breakdown Structure (WBS), Waltham Interactive Design has arrived at the following (actual) cost breakdown:

Core Team Member	General Admin (Con-calls)	General Admin (E-mails)	WBS	Web Site Prototypes	Report Writing	Post-Project Assessment	Total Hours
Jen	3.00	2.00	1.50	0.75	5.00	0.75	13.0
Judy	3.00	2.00	6.00	4.00	0.50	2.00	17.50
Bob	3.00	1.00	1.00	6.00	1.50	0.50	13.00
Subtotals	9.00	5.00	8.50	10.75	7.00	3.25	43.50

4.2.1 General Administration

General administration tasks include, but are not limited to, in-class project time, phone and other virtual conferences, processing and transfer of project-related files, and e-mail communications. It was estimated that the project team would spend a total of 13 hours on general administration tasks, at a cost of \$1,300. Our actual general administrative time was 14 hours at a cost of \$1,400.

4.2.2 Paper Prototyping and Design

Paper prototyping tasks include, but are not limited to, Web site evaluation, design of the paper prototype, layout of prototype into Microsoft PowerPoint, team review of prototype, and prototype revisions. It was estimated that the project team would spend a total of 44 hours on paper prototype and design tasks at a cost of \$4,400. Our actual paper prototyping and design time was 10.75 hours at a cost of \$1,075.

4.2.3 Reporting

Reporting tasks include, but are not limited to, the organization and writing of the Work Breakdown Structure (WBS), this deliverable project report, and the deliverable project presentation. It was estimated that the project team would spend a total of 17 hours on reporting tasks at a cost of \$1,700. Our actual reporting time was 15.5 hours at a cost of \$1,550.

4.2.4 Post-Project Assessment

Post-project assessment activities include, but are not limited to, the PEAT process, discussing the PEAT question the project team wanted to cover in our presentation, discussing the content of the final presentation, revising the prior PowerPoint presentation for this project, and reviewing and revising the presentation. It was estimated that the project team would spend a total of 11 hours on post-project assessment activities at a cost of \$1,100. Our actual reporting time was 3.25 hours at a cost of \$325.

4.2.5 Total Costs and Fees

Based on these time estimates, and a fee of \$100 per hour per resource (with a total of 3 resources), the Concord Communications, Inc. Web Site Redesign Project team estimated that the project cost would be approximately \$8,100 for 81 hours of work. Our actual project cost was \$4,350 for 43.5 hours of work. We overestimated our hours by approximately half of the initial estimate.

5.0 Conclusion

Waltham Interactive Design is excited about our prospects for expanding our relationship with Concord Communications, Inc. As Concord makes choices regarding human factors/usability issues that will enhance and grow their organization, it is important that Waltham Interactive Design maintain a level of professionalism and quality that can only be achieved through an effective knowledge management process. The Concord Communications Web Site Redesign Project team hopes this document is a step in the right direction.

6.0 References

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Appendix A