Technical Communication
A Practical Approach:
Chapter 11: Web Pages and Writing for the Web

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Publish on the Web

- Web is becoming an increasingly important forum of publication (writing)
- Web pages and blogs
- Writing on the web in many ways is the same as writing on the paper: contents, structure, purpose, readership
- Differentiate from the writing on paper
  - Hyperlink (navigation)
  - Format (mark-up languages)
  - Visual elements (it is on the web, not as a piece of paper)
  - Interactivity (posting comments, execute program for dynamic show, among others)

Your Role in Web Publishing

- Subject matter expert to provide content
- Content editor to oversee the product
- Page designer to polish the look-and-feel of the web pages
- Develop team to manage the website
- Others

Summary of Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project manager</td>
<td>Serves as the team leader; establishes and manages timeline, finances, and resources</td>
</tr>
<tr>
<td>Programmer</td>
<td>Oversees the scripting, programming, publishing, and other technical issues</td>
</tr>
<tr>
<td>Graphics artist</td>
<td>Acquires and/or develops graphic content</td>
</tr>
<tr>
<td>Writer/editor</td>
<td>Writes and edits text content</td>
</tr>
<tr>
<td>Content provider</td>
<td>Provides contents, may serve as reviewers</td>
</tr>
<tr>
<td>Usability tester</td>
<td>Tests the site for usability and accessibility</td>
</tr>
</tbody>
</table>

Five-Step Process of Website Development

- **Planning**: Conceptualize the site, including analyzing the audience and defining the purpose, scope, and context
- Content development: Analyzing, writing, editing, and adapting content
- Structure: Developing a site structure and navigation systems
- Design: Designing graphic content and interface layouts
- Usability: Testing the project using usability and accessibility checks and guidelines

Step 1: Planning

- Two key questions:
  - Why am I developing this site?
  - What responses do I want from users of this site?
- Define your audience (compared to define readers in general writing)
- User-centered design
  - Usability
  - Accessibility
  - Technical limits of a website
Common Website Purposes

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td>Searchable databases or indexes of web sites</td>
<td>google</td>
</tr>
<tr>
<td>Sales, e-commerce</td>
<td>Sites developed to sale products and services</td>
<td>amazon</td>
</tr>
<tr>
<td>Informational</td>
<td>Sites that provide information on specific subjects</td>
<td>Internal Revenue Services</td>
</tr>
<tr>
<td>Educational</td>
<td>Sites that provide training, courses, tutorials and others</td>
<td>So You Wanna.com</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Sites that provide games or online entertainment</td>
<td>Comics.com</td>
</tr>
<tr>
<td>Social and personal</td>
<td>Social and personal websites that allow people to share information and stay connected</td>
<td>Facebook, YouTube</td>
</tr>
</tbody>
</table>

Step 2: Content Development

- **Content development**
  - Writing, editing, adapting both new and existing content for a web environment
  - Converting documents into readable formats for the web
  - Possibly involving audience and content provider directly

Guidelines for Writing Web Content

- Provide a summary of important points first, followed by specifics.
- Organize content chunks into main content areas that might serve as navigation links or sections of the website.
- Identify each content chunk or sections of chunks with meaningful headers
- Reduce the size of individual chunks to fit on a single screen if possible
- Break up larger chunks into smaller ones
- Provide links to individual sections on longer pages
- Develop a style sheet that establishes the sizes, fonts, colors and space
- Edit your content with a careful eye

Other Issues in Content Development

- Adapting content for the web: many forms of information such as text, graphics, audio, video need to be adapted to be published on the web
- Tools to author web pages: scripting languages, web developing tools such as FrontPage, Macromedia Dreamweaver and others
- Document converting issues and common file formats: popular file format, .txt, .html, .jpg, .gif, .png and others

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Step 3: Website Structure

- Information structure
  - Books: linear (page by page) and hierarchical (chapter, section, sub-section)
  - Movie, video, audio: linear
  - Newspaper: hierarchical, or random

Site Structures and Types

- Linear structures: follow a designated order for pages; every user must read the same information in the same order
- Hierarchical structures: organize pages into a hierarchy of categories and sub-categories
- Hyper-textual structures: allow users to jump to other pages following contents, not the order of a page
- Customer structures: present a mixture of multiple structures; could use a searchable interface to allow users to go directly to any relevant pages

Factors to Consider

- Two important factors to consider in choosing a site structure
  - Breadth: the number of choices or content areas at any given level in the site’s structure
  - Depth: the number of levels where the lowest level contents can be accessed

Process of Developing a Structure

<table>
<thead>
<tr>
<th>The Four Steps of Developing a Site Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis</td>
</tr>
<tr>
<td>Labeling</td>
</tr>
<tr>
<td>Layout</td>
</tr>
<tr>
<td>Editing</td>
</tr>
</tbody>
</table>

1. Analysis

- Determine the major content areas and the types of documents to include.
- Place the following information in a index card
  - A one-sentence description of the chunk
  - The content type, e.g., definition or description
  - The file format, e.g., html page, PDF document, GIF graphics
- Try to identify patterns and relations among individual chunks

2. Labeling

- Select meaningful labels for all pages on your site
- Write a label that might serve as the title of the page on each index card
- Come up a label (title) for each group of index card (collection of pages)
- Decide the type of site structures
Comparison of Different Site Structures

<table>
<thead>
<tr>
<th>Structure Type</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear</td>
<td>- Easy for users to learn the structure</td>
<td>- Less flexible as links pages only in a specific sequence</td>
</tr>
<tr>
<td></td>
<td>- Users read contents in the same order</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Good for process descriptions, instructions, and training</td>
<td></td>
</tr>
<tr>
<td>Hierarchical</td>
<td>- Organize information into categories and sub-categories</td>
<td>- Can be complex and difficult to navigate larger structures</td>
</tr>
<tr>
<td>Hypertextual</td>
<td>- Accommodate multiple search terms or browsing contents by association or relevance</td>
<td>- May be difficult for users to discern site structure</td>
</tr>
<tr>
<td></td>
<td>- Are more flexible forms of searching and browsing</td>
<td>- Can become complex to map the site structure in larger sites</td>
</tr>
<tr>
<td>Customer</td>
<td>- Can accommodate multiple structure types</td>
<td>- May be difficult for users to discern site structure</td>
</tr>
<tr>
<td></td>
<td>- Is more flexible of structure</td>
<td>- Is time-consuming to design an effective structure</td>
</tr>
</tbody>
</table>

3. Layout

- Purpose: select and sketch a site structure that best fits the nature of the content and communicates the site structure to users
- In the labeling stage, you have identified major content pages, now link them together in a proper way

Examples of Websites
- www.abcnews.com
- www.cnn.com
- www.amazon.com
- www.ebay.com
- www.cnet.com

Some Examples in Academia
- Duke CS
  - http://www.cs.duke.edu
- Duke EE
  - http://www.ee.duke.edu
- Bucknell
  - http://www.bucknell.edu

4. Editing

- The purpose of the editing phase is to test the site structure to make sure it is organized properly and demonstrate good usability
- Ask a small group of users, not the original developers of the website to use the website and provide feedback

Navigation Design

<table>
<thead>
<tr>
<th>Navigation Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperlinks</td>
<td>Used in all site structures, serve foundation of other navigations</td>
</tr>
<tr>
<td>Toolbar menus</td>
<td>Provide multiple choices in a category, are less effective in search</td>
</tr>
<tr>
<td>Site maps</td>
<td>Provide a structural layout, assist as an index or table of contents for the site</td>
</tr>
<tr>
<td>Search fields</td>
<td>Provide direct links to contents, assist with sites that have large amount of information</td>
</tr>
</tbody>
</table>
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Step 4: Design

- Commonly observed web design conventions
  - Place a hyperlink on the title banner or logo to the home page.
  - Place the site’s main navigation in the left-hand or top margin.
  - Use consistent font faces, sizes, and colors.
  - User descriptive titles and headers.
  - Provide contextual cues

Web Design Conventions (2)

- Commonly observed web design conventions – continue
  - Maintain a consistent graphic identity
  - Provide redundant navigation links to supplement graphics links
  - Provide alternative descriptions of graphic content
  - Use no more than three font faces for text in your site
  - Use colors that contrast well

Gestalt Theory

- Gestalt theory provided a basis for visual design:
  - things are affected by where they are and by what surrounds them...so that things are better described as “more than the sum of their parts.”

Gestalt Based Design Principles

- Consistency in the use of elements in repetitive and similar ways on a page create a unified look.
- Contrast in the use of visual elements, such as colors, lines, or shaded regions, draws the eye to those elements and creates visual emphasis.
- Group elements together through the use of space, color, or other graphic elements.

Good Examples

- Internet Archive: Live Music Archive
- Mindful Employers
  - [http://www.mindfulemployer.net/index.html](http://www.mindfulemployer.net/index.html)
- Cnet.com
  - [http://www.cnet.com](http://www.cnet.com)
- Google
  - [http://www.google.com](http://www.google.com)
Finding a Theme and Developing Graphic Content

- Establish a graphic identity or design theme.
- Select a theme that is appropriate for your users, purpose, content, and the tone you want to convey.
- Use it consistently throughout your website.
- Question: Bucknell’s website graphic theme?

Graphics File Format

- Commonly used graphics formats
  - GIF: Graphic Interchange Format
  - JPG: Joint Photographic Experts Group format
  - PNG: Portable Network Graphic format
  - Graphic file formats with less compression
    - BMP: Windows Bitmap
    - EPS: Encapsulated PostScript
    - TIF: Tagged Image File Format

Graphic Format Comparison

<table>
<thead>
<tr>
<th>File Format</th>
<th>GIF</th>
<th>JPG</th>
<th>PNG</th>
</tr>
</thead>
<tbody>
<tr>
<td># of colors</td>
<td>256</td>
<td>16.7 millions</td>
<td>16.7 millions</td>
</tr>
<tr>
<td>Transparency</td>
<td>Yes</td>
<td>No</td>
<td>yes</td>
</tr>
<tr>
<td>Animation</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Interlacing</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Three design principles

- Consistency
- Contrast
- Grouping

Sample Layouts (1)

Single-frame

Two-frames

Sample Layouts (2)

Three-frame

Custom-frames
Guidelines for Interface Design (1)

- Use site maps, indexes, breadcrumb links, and consistent graphics to help users identify the site’s structure and major content areas.
- Follow the design principle of contrast to signal which elements readers should focus on.
- Use animation or mouseovers in navigation toolbars to indicate functional or clickable items.
- Emphasize elements visually that are most important, to focus readers’ attention.
- Group navigation links into toolbars and place them in consistent locations to suggest the major content areas.

Guidelines for Interface Design (2)

- Highlight information pathways for readers by using descriptive headers, site maps, and indexes.
- Provide contextual cues throughout the site, but more frequently at higher levels, to help users understand the structure and organization of the site.
- Use familiar shapes, icons, and other visuals to suggest concepts to users.
- Pair graphics used in unfamiliar contexts with text descriptions, to help users understand them.
- Group related visual and textual content using visual shapes or space, so readers can understand their relationship or function in the whole.

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Usability and Publication (1)

- Usability reviews
  - Ask a small group of users to evaluate
  - Navigation links
  - Contents
  - Graphics
  - Provide your reviewers with background information on the site, including its subject, purpose, and location.

Usability and Publication (2)

- Quick usability checks and system settings
  - Test the site using a variety of platforms, browsers, and different system settings.