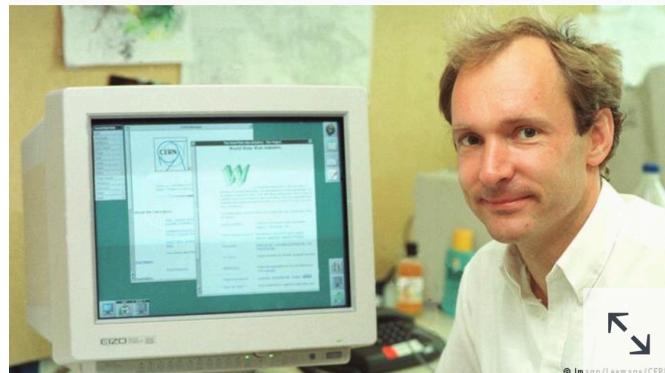


# **Information Architecture and Site Navigation**

# Web vs. Internet

WWW слави 30 роденден-  
Не сакавме ваков  
интернет!

пред 16 мин



© Imago/Leemage/CERN

Пред точно 30 години на денешен ден,  
Британецот Тим Бернерс-Ли го  
активираше ткн. http систем кој  
овозможуваше пренесување на текст и  
фотографии. Се роди интернетот.  
Неговиот творец не е задоволен од  
развојот

На зрела возраст од 30 години и користен  
од половина од планетата, World Wide Web  
(Светската глобална мрежа) се соочува со

# Introduction

- Information architecture and Web navigation deal with structure of Web site:
  - How information is organized so that users can easily find it.
  - How will various pieces of content be organized and arranged?
  - What approaches to site navigation will be taken?
  - What titles will be used for navigation?
- Information architecture is study of organizing large information spaces for optimal user interaction.
- Although information might be available on a site, users very often cannot find information they are looking for.
- Site navigation should make it easy for users to find site content.
- Site navigation -> map through Web site, providing guidance to users on how to get where they want to go.

# Outline

- 1. Information architecture**
2. Web site content objects
3. Web navigation
4. Technical requirements for navigation

# Information Architecture

The art and science of organizing and labeling the **CONTENT**  
(documents, web sites, blog posts, database entries, etc.)  
to support findability and usability



# No Governance

## Bad Naming:

Document1.docx

JoeLibrary

List1

## No structure

Uploading everything to “Shared Documents”

## Creating/Uploading content in the wrong place

MarketingCampaign2013.pptx in the  
Campaign2012 folder

Customer1.docx on the Customer2 site



# With Governance

## Naming convention:

Content Type: Marketing Campaign Template

Term: Europe / United Kingdom / London

## Use Structure

Content Type Hierarchy

Site Columns

Managed Metadata hierarchy

Keep your structure  
“clean”



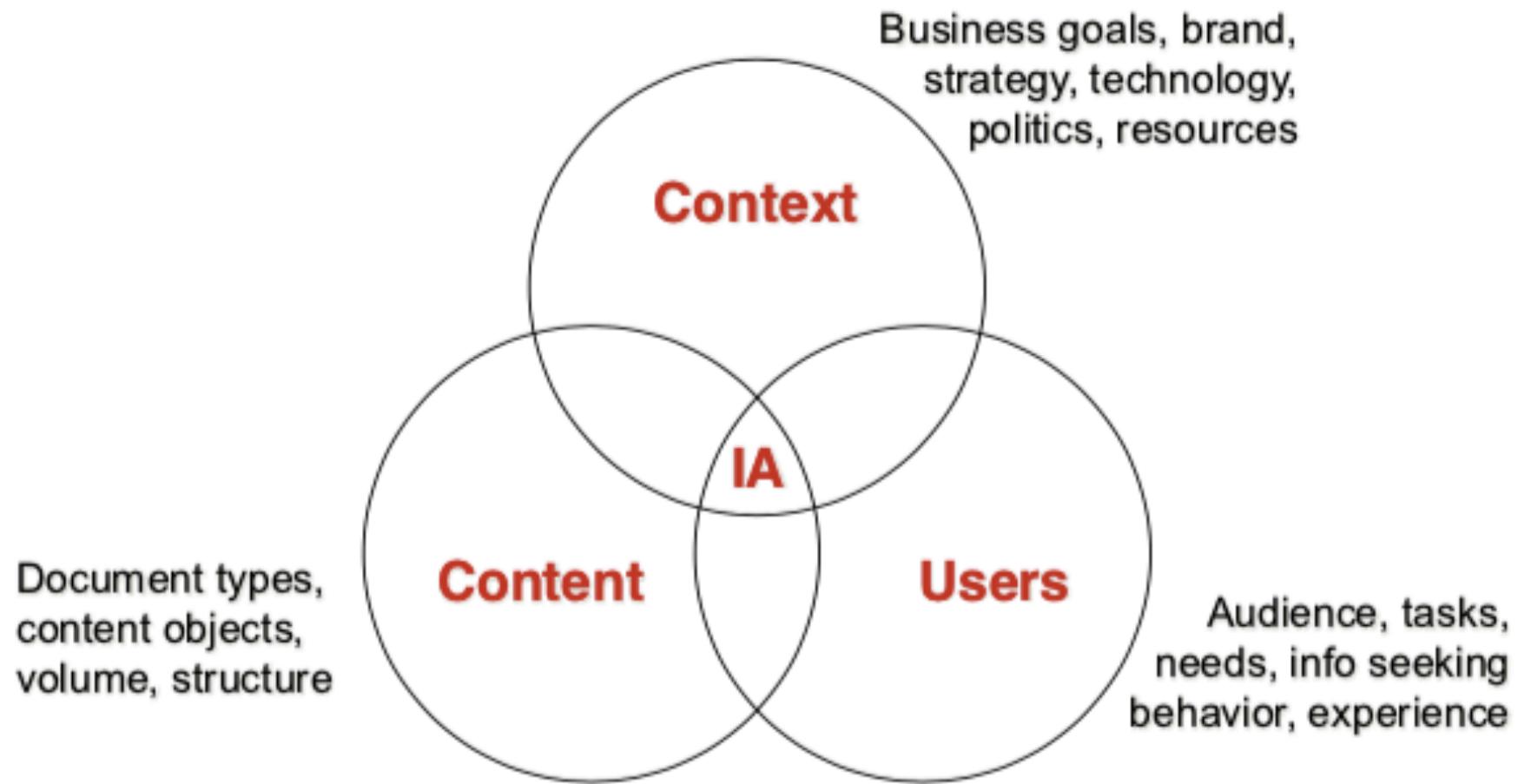
# Information and IA

Information Architecture  
manages information to  
make it findable

- Tagging with metadata
- Organizing with CV's
- Creating navigation systems
- Optimizing search



# Visual Definition of IA

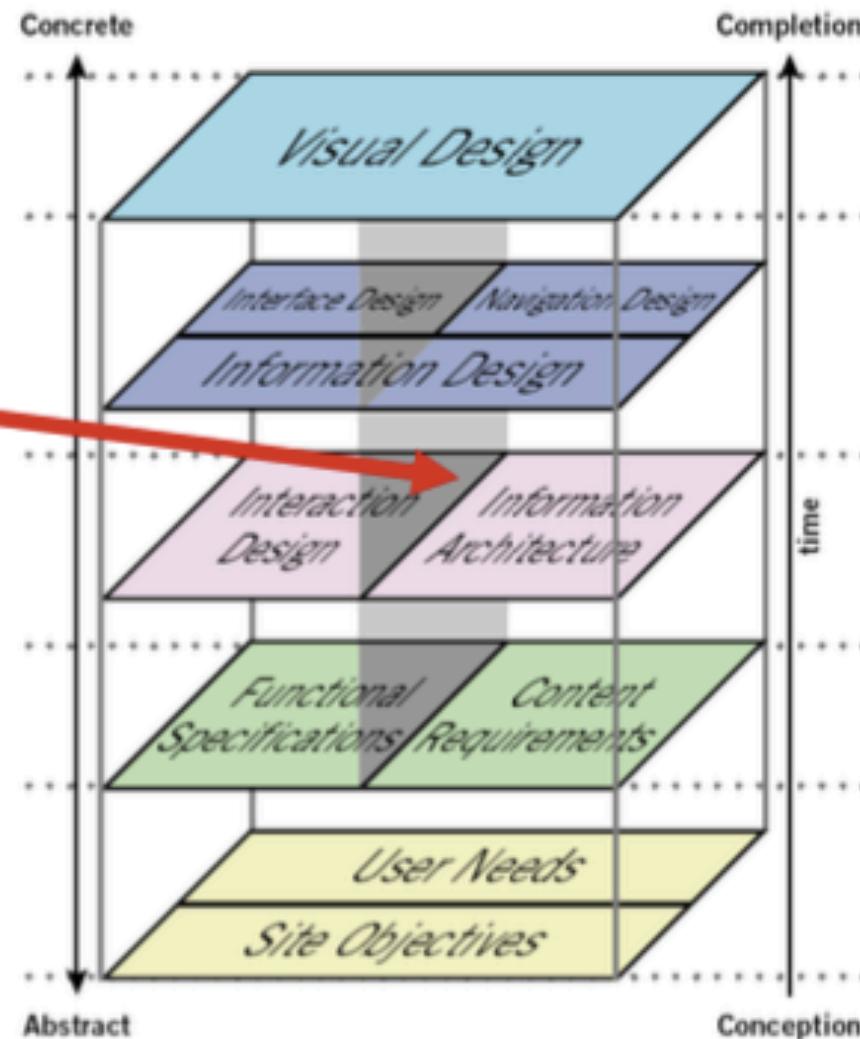


Based on Rosenfeld and Morville – *Information Architecture for the World Wide Web*

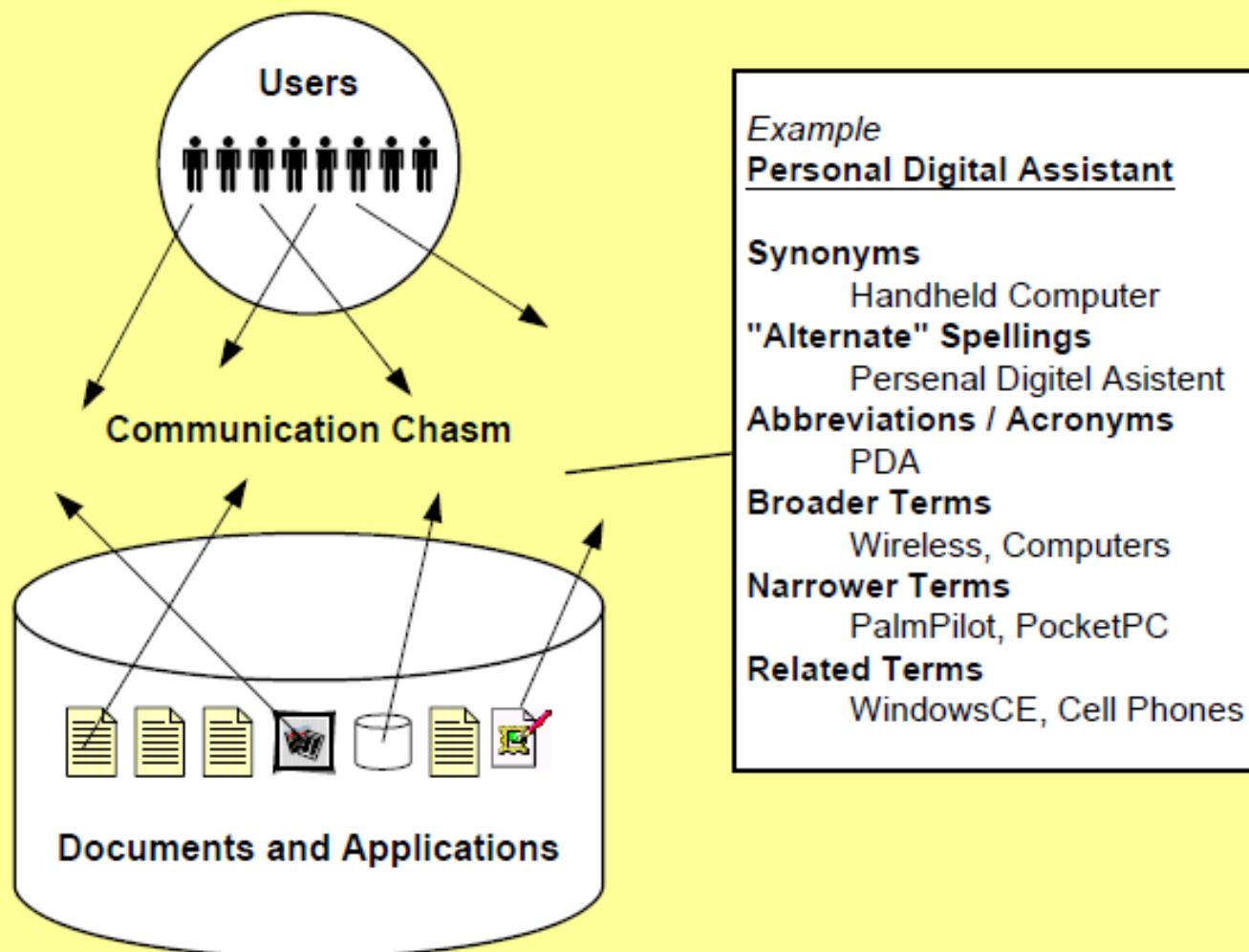
# Visual Definition of IA

IA is the layer between objectives and page level design

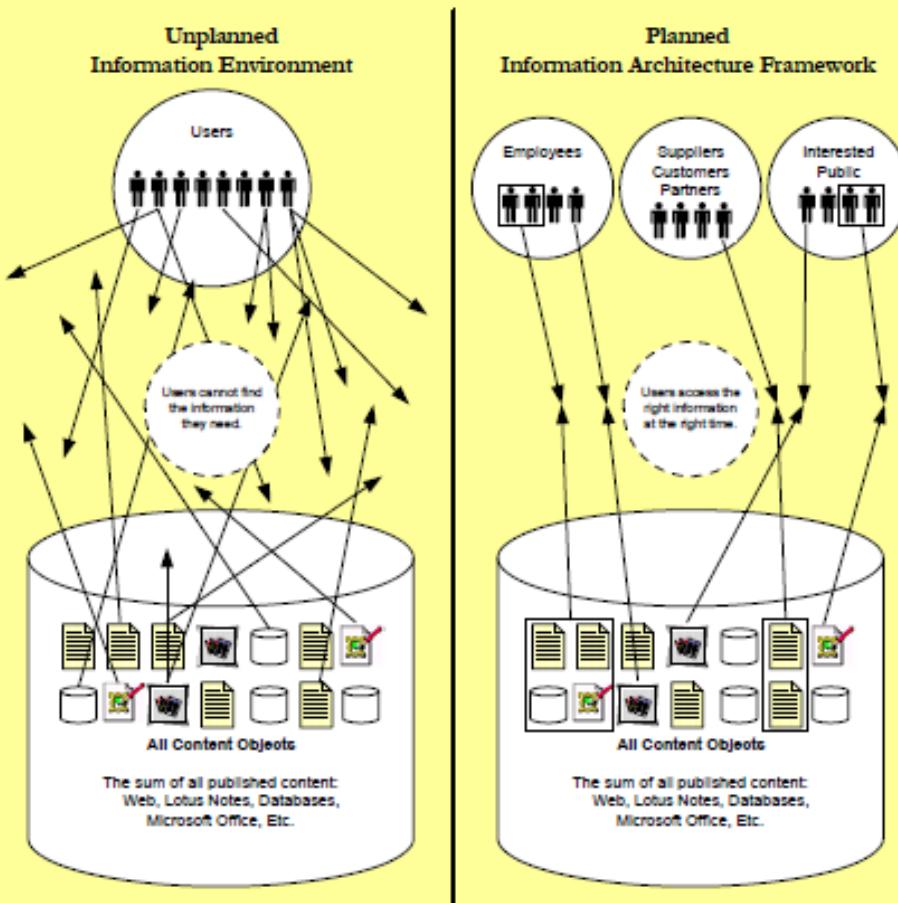
From *The Elements of User Experience* by Jesse James Garret



# Why is IA Difficult?



# Planned vs. Unplanned IA



# Understanding

How do you approach

- A redesign?
- A new site?

*Do you just  
open Photoshop?*



# When...

Up front: Create at least a basic plan as soon as possible.

Costs increase exponentially over time.

As you progress, implement iteratively

Treat it like governance

Meet regularly

What has changed?

What works/doesn't work anymore.



# How...

## Invite

Stakeholders must be involved  
Not too many

## Listen

Understand requirements (audience, legal, etc.)  
What do you mean by that?  
Keep an open ear for metadata

## Visualize

Existing environment  
Card sorts/whiteboard



# **How... (cont.)**

**Communicate**

**Options**

Pros and cons (there is always a trade-off, no  
'cake and eat it too')

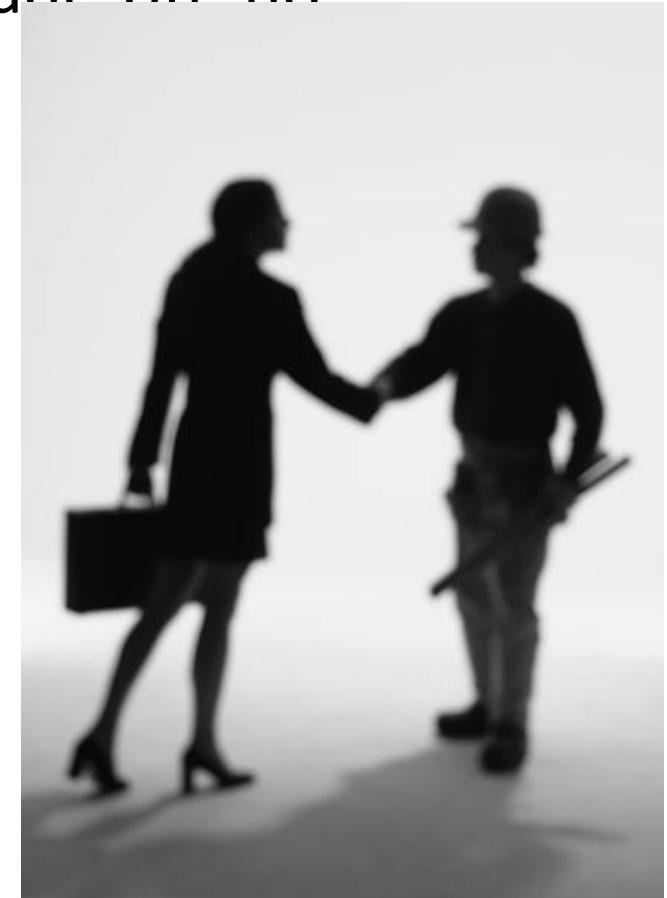
**Agree**

Build a consensus

Get it in writing

Stick to it

**Execute**



# Questions to ask...

- What needs to be stored?
- What is the lifecycle?

Content



- Why does it need to be stored?

Business Need



- How does it need to be secured?

Security



- How is your site organized now? (like it or not, folks are used to it)

Topology



- Who will be retrieving your information?

Customers



- Who/how will contribute?

Authors



- Who 'owns' this information?

Owners



- Who will maintain the information?

Administrators



# Questions to ask (cont.)



## Control

What is the cost of not finding information?

If it isn't available, how important is it?

Can the audience contribute to the architecture?  
(Open vs. Closed)

## Structure

Cost of creating content vs. finding content

# What to think about...

## Scalability

Limits – Number of site collections, items in a list query limits, total items, overall database performance.

## Usability/Findability

Two ways to get to data:

Search = Metadata

Navigate = Visualization

## Manageability

Authoring experience

Distribution

Centrality

Empower authors/content managers



# What to think about... (cont.)



## Security

### Granularity vs. Performance

Permissions need to be checked for all objects being rendered

Granular permissions can be a nightmare

## Design Resiliency

Under-plan: Won't survive the current solution.

Over-plan: Won't survive the next solution (e.g. too many content types)

Balance of priorities, volatility, and what 'can be known'

Future flexibility vs. current needs – Focus on building a solution for general flexibility, rather than trying to identify every possibility.

## Web Site Content Objects

- Two concepts help to transition from process of requirements gathering to early stages of conceptual design.
- At this point, a Web site can be characterized as being either static (with a fixed number of Web pages), or database-driven.
- Requirements gathering can help to determine which Web content objects (content that was identified as important from requirements gathering) should exist on site.
- **Fixed content** is content that changes only when someone changes data in files.
- **Database-driven** site (larger) allows users to search for and request specific data, and most Web pages are created "on-the-fly" by DB. Templates=bones HTML pages that include layout and navigation information but no content. When data requested, DB supplies content and a template page layout presents it.
- If a user clicks on a link one level down in a hierarchy, it doesn't make a difference if page is a static page or a database-driven page.

# Determining Web Content Objects

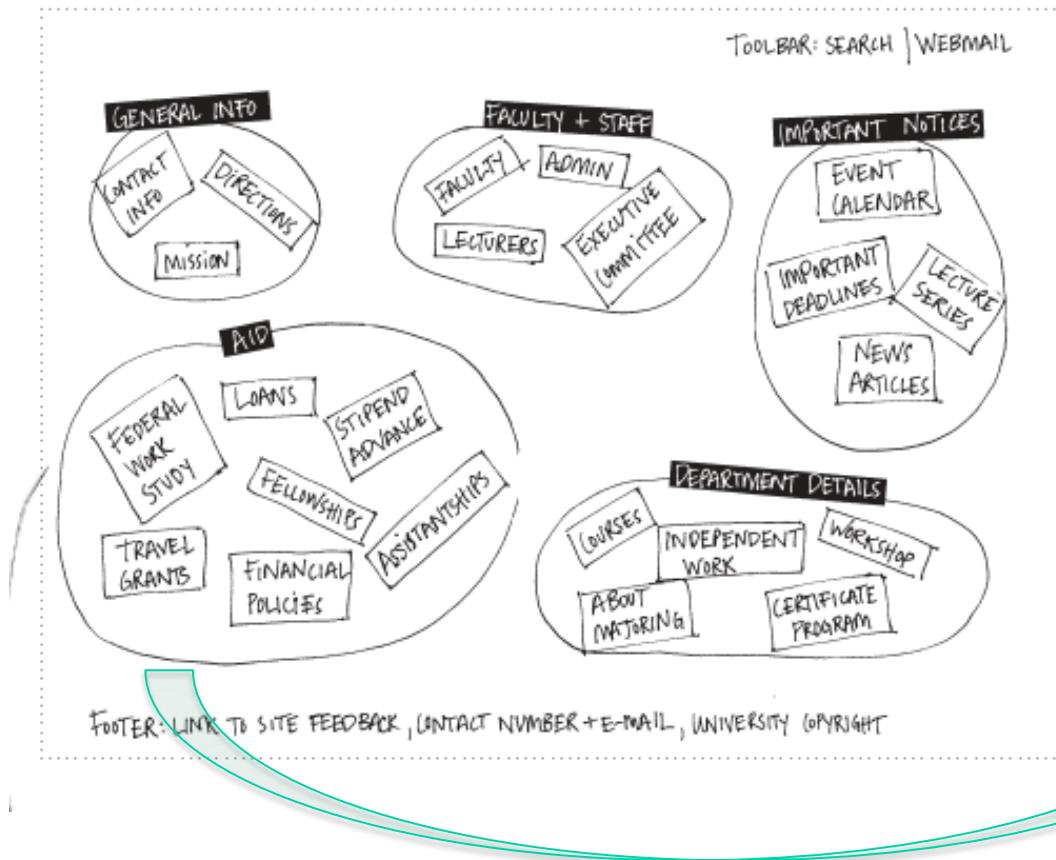
- Content object is a well-defined piece of content (smallest granularity of content). CO can take up an entire Web page, or multiple, related content objects can share same Web page.
- Data from user requirements gathering should lead to a list of potential COs.
- It's possible for instance, that content of "company employees" could be split further into three different types of employees (e.g., public information officers, sales staff, and internal employees).
- To add database-driven sections to a Web site, they can be added to list of potential content. For instance, if there is a database-driven portion of a Web site to respond to users' requests for information about staff members, page layout will be same, regardless of user request. Only data will change, and combination of query requests and responses can be considered a category, or class, of content.
- For determining WCO data from requirements gathering should be analyzed. Not realistic to include all Web content requested by users. Prioritize requests from clients and users → count how often they were requested in requirements gathering; threshold percentage.
- E.g. a WCO might be included on Web site if 50% or more of targeted users indicate that they are interested in resource.
- Based on requirements gathering, possible WCO can be divided into three categories: mandatory, desirable, and optional.
- Mandatory COs are those that are necessary for a successful Web site
- Desirable COs are those that might be useful, but will not affect overall success of site.
- Changes in time or money allocated for Web development project might mean that more (or fewer) desirable and optional Web site objects will be included.
- Theoretically, all content desired by users should be developed for a Web site. But time limits, resources, and conflicting design goals. Content=compromise.

# Organizing Web Content Objects

- Once a list of COs exists, it's important to determine how these various WCOs are organized.
- Next step organize COs into Web pages.
- Make a list of all of Web pages that will need to be developed for site.
- While a WCO can take up an entire Web page, various WCOs can be grouped together on a single Web page, especially if requirements gathering activities indicate that users tend to organize these content objects together.
- Develop a table that lists all of Web pages to be developed, as well as pertinent information about each Web page (where content comes from, how often it's updated, etc.). Example in Table 5.1.
- Many Web sites have hundreds or thousands of pages.
- Important to understand how users organize information in their minds
- Techniques such as paper prototypes and card sorting can help to gain a better understanding of how information is organized in users' minds, and can determine what content should be organized together on a page, and how pages should be grouped.

# Content objects and their groupings

Sample of content groupings



Sample of subcategory grouping

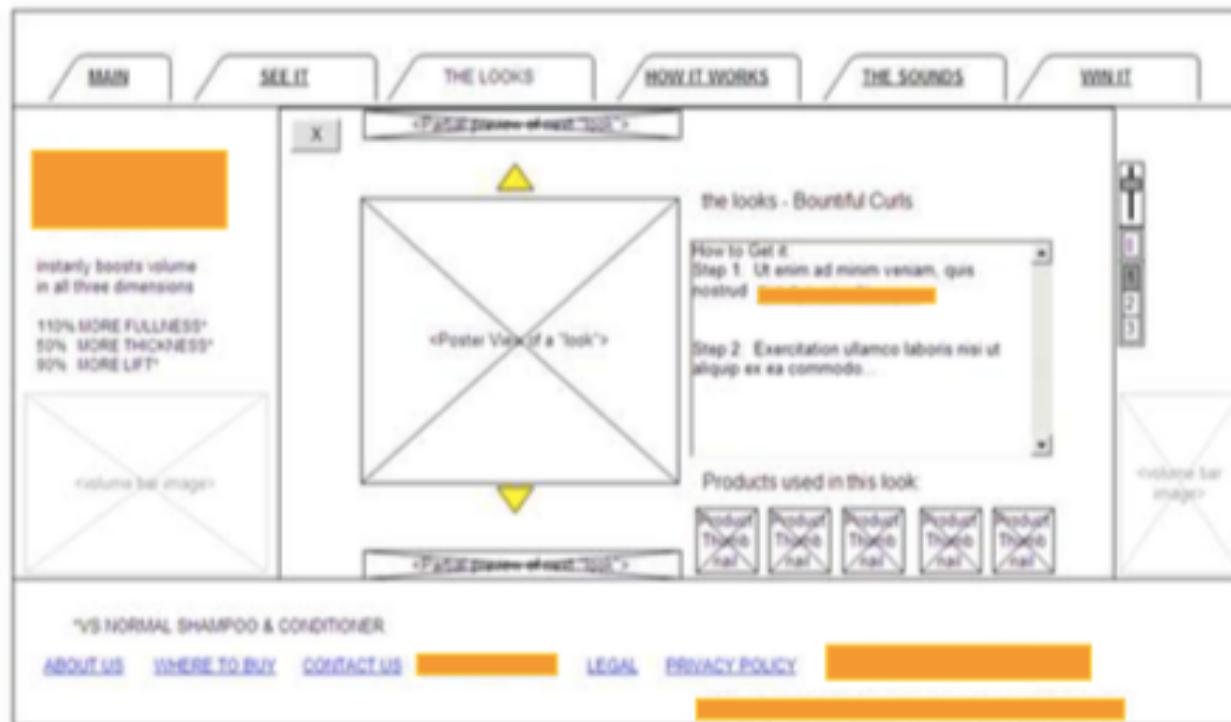


# Wireframes

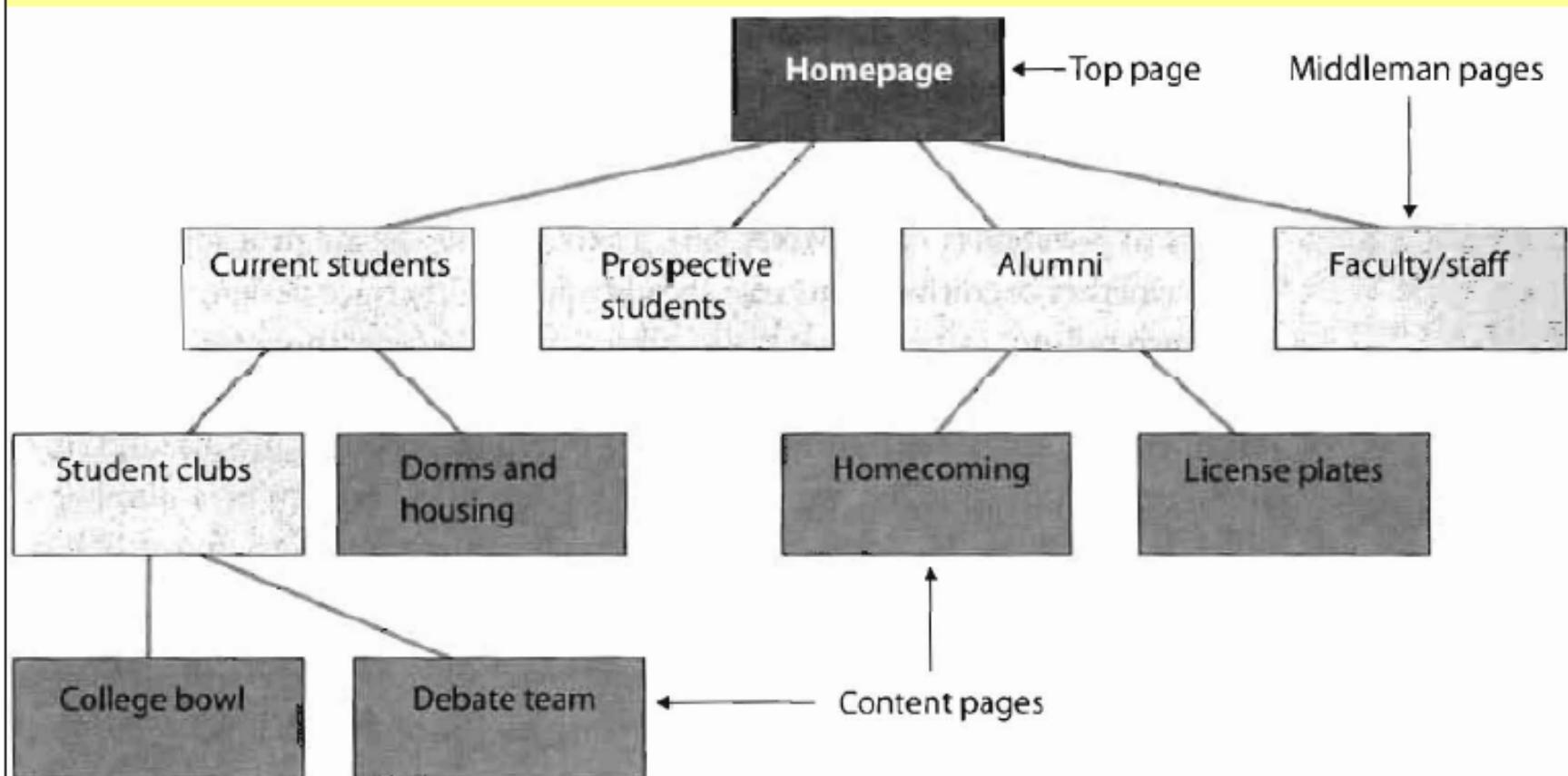
## The Looks

Defaults to look #1. Product thumbnails are shown for products related to the look shown. When user rolls over a product image, the name of the product is revealed. (Either a tooltip or the name is highlighted in the text above.) When user clicks the product thumbnails or the product name in the text, they are taken to the product detail page on [REDACTED] in a pop-up. Previous and Next arrows allow the user to go to the next/previous look. These cycle in a continuous loop. The user may also click on the partial preview above or below to go to the next look.

## Wireframe



**Figure 5.1** Most Web sites use a top-down hierarchy, with homepage at top, and middlemen pages, which help users find content pages.



## Theoretical Foundations/Relationship to Menu Design

- List of choices (menu) to click on a Web page is means by which a user navigates up or down through levels in site architecture.
- Great research on menus related to designing links and information hierarchy on a Web site. E.g. better more choices on a single menu level, rather than numerous menu levels with fewer choices.
- Menu structure as a tree → two aspects: depth (number of menu levels) and breadth (number of items on a menu).
- If increase number of levels, then decrease number of menu items per menu level and users can lose sense of where they are in overall information architecture of site, harder for them to find content they are looking for.
- Actual architecture of site is rarely visible to users;
- User model of site architecture may or may not match actual site architecture.
- Research findings indicate that users may give up if they are required to go through more than four or five clicks to get to desired content.
- Too many choices can frustrate users by overwhelming human cognitive limits: humans process information in chunks of 5-9 items ( $7\pm2$ ) (Miller magic number).
- In most current interfaces, choices, menus, and links are organized, or chunked, into groups of 7-9 items.
- There can be a number of different groupings. However, having 50 links organized into 5 groups of 10 links each is far superior to a plain list of 50 items.

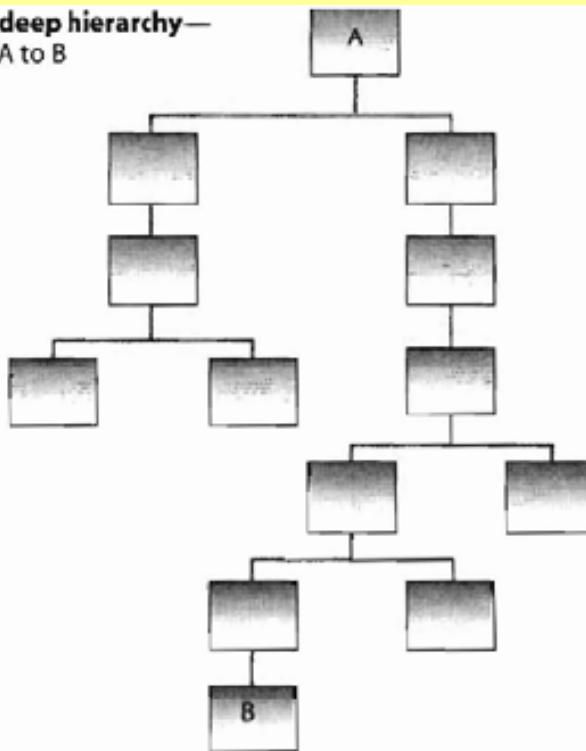
## Theoretical Foundations/Relationship to Menu Design (cont.)

- Balance between need to limit number of levels in information hierarchy and need to limit long lists of unorganized choices.
- E.g. restaurant menus. If hundreds of options available for order, a simple list of 500 food items would be overwhelming and would not support customer's goal of finding what he or she wants to order. If providing four or five separate menus, one for appetizers, wines, desserts, and entrees, where customers would have five separate menus on their table, could also be overwhelming. preferable method is to provide one menu with all of items, but with all of food choices categorized and presented in logically ordered groupings (appetizers, salads, meat, seafood, dessert). This allows for maximum number of food items per menu and shortest time to find a particular item because all of items are logically arranged.
- Similarly, for Web sites, a broad, shallow hierarchy structure is superior to a narrow and deep hierarchy structure by providing more choices per level (with choices organized into groups, of course), and fewer levels in overall information architecture.
- More choices per level and fewer levels, requires fewer clicks by users and reduces likelihood that they will be overwhelmed and lost in structure.

**Figure 5.2 Comparison of two types of information architecture:  
narrow/deep and broad/shallow.**

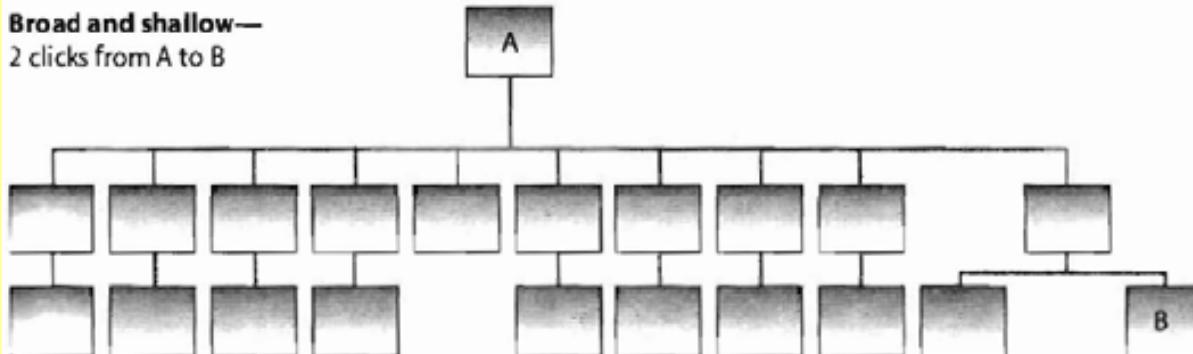
**Narrow and deep hierarchy—**

6 clicks from A to B



**Broad and shallow—**

2 clicks from A to B



# Outline

1. Web site content objects
2. Information architecture
- 3. Web navigation**
4. Technical requirements for navigation

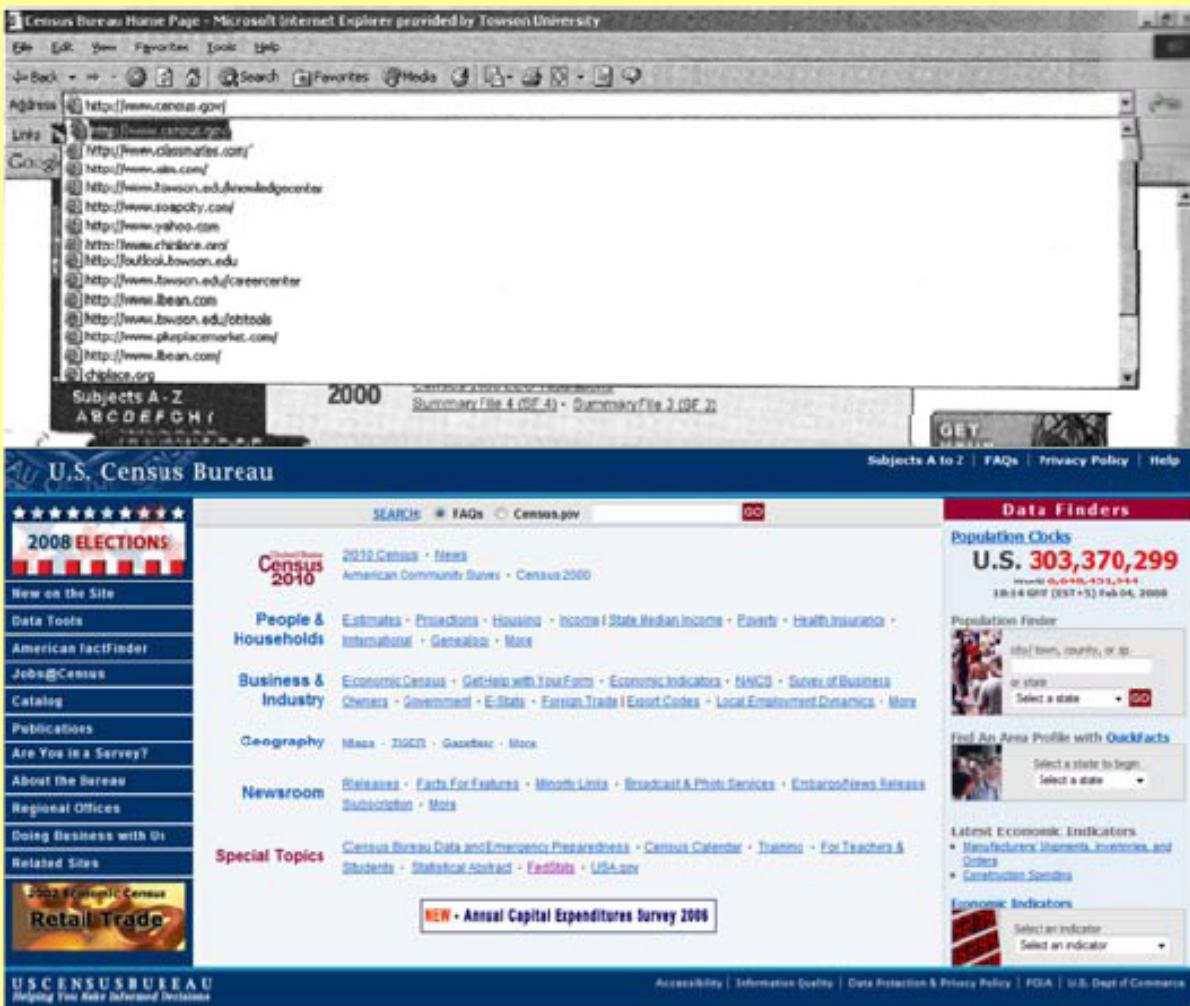
## **Types of Web navigation available to users**

- information on where they have been,
- information on where they are
- information on where they can go

## Knowing Where Users Have Been

- Browsers have built-in features (history feature) to tell users where they have recently visited.
- E.g. pull-down menu in address bar (cf. Figure 5.3).
- Users can also see where they have recently been by using Back button.
- Unvisited links appear as blue underlined text
- Visited links appear as underlined red or purple links.
- Users frequently use Forward and Back buttons to navigate through sites, and this can sometimes lead to results that developer did not anticipate!

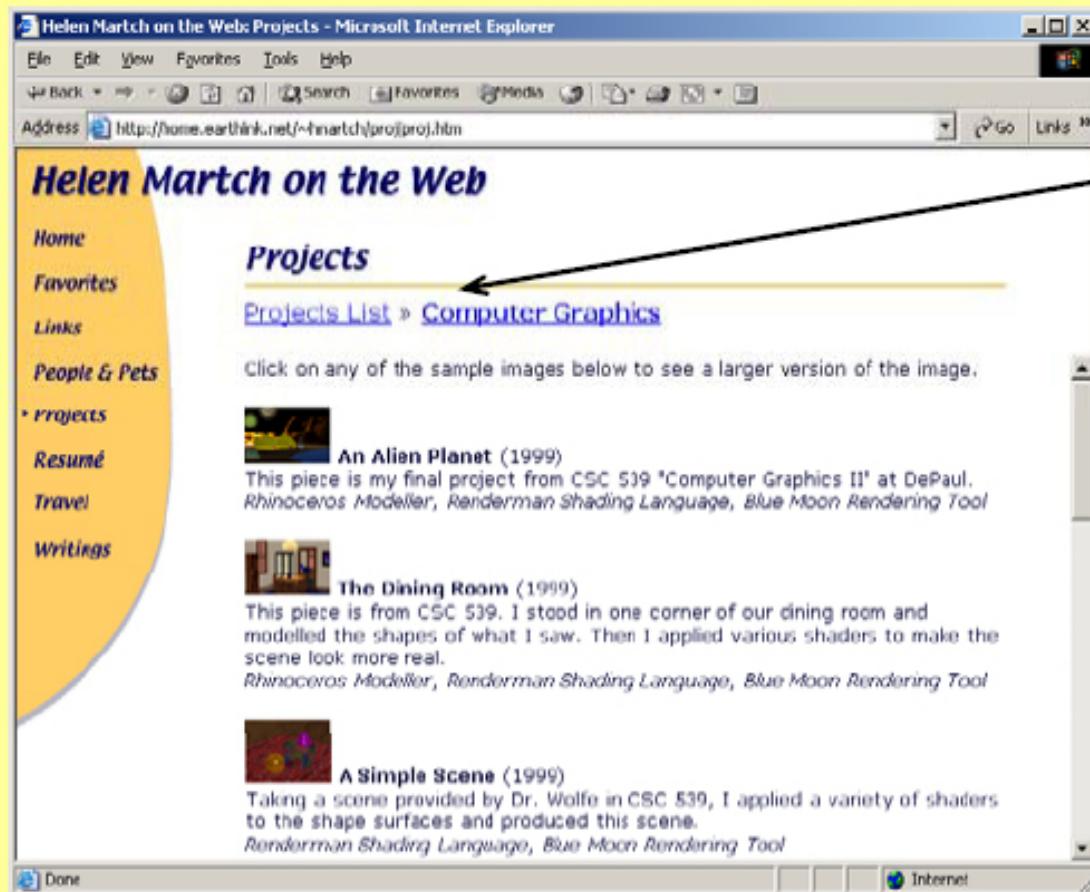
**Figure 5.3 Browser features, such as history, let users know where they have been.**



# Breadcrumbs Navigation

- Another way to provide navigation is to show user path that was used to reach current page being viewed.
- Instead of just letting users know what main sections of site are, path analysis navigation informs them how they arrived at specific page within site.
- This approach is called breadcrumbs navigation because users leave telltale breadcrumbs on their path to reaching a certain page.
- For instance, a path analysis on a university Web site might be following:  
[www.towson.edu](http://www.towson.edu) → Campus Life → Student Activities → Leadership Program
- Path analysis shows user path to get to page for Towson University Leadership Program.
- Page listed on left (the Towson University home-page) is highest level, and as user moves to right, each arrow represents one level lower in Web site hierarchy.
- Moving from left to right in path analysis, user moves from homepage (broad) to current Web page (specific) for Leadership Program.
- Each Web page mentioned in navigation ([www.towson.edu](http://www.towson.edu), Campus Life, and Student Activities) should be a hypertext link, so that user can click to return to that particular page.
- Additionally, if a user reaches Leadership Program page from an outside site without having visited other Towson University Web pages, path analysis provides navigation guidance about how to access information on student activities, campus life, and Towson University as a whole.
- To use path analysis effectively, Web site must be organized hierarchically, with only one specific path to reach a certain Web page.
- Benefits of path navigation: can help users from getting lost.
- By seeing path navigation, it reinforces information architecture and helps users identify where they are in overall site structure.
- Path navigation sometimes cut down on number of clicks required to move from one content page to another within a site.

# *Breadcrumbs show user “This is where you are how you got here”*



- When breadcrumbs are links, as they almost always are, they also give the user another way to move about the hierarchy.
- The little bullet in the global navigation bar is now beside Projects. Another answer to, “Where am I?”

## Figure 5.12 Yahoo! uses path navigation on Web page, title bar, and URL

http://dir.yahoo.com/Education/Academic\_Competitions/College\_and\_University/

The screenshot shows the Yahoo! Directory interface. At the top, there's a navigation bar with links for 'Yahoo!', 'My Yahoo!', 'Mail', 'Welcome Guest', 'Sign In', 'Directory Home', and 'Help'. Below the bar, the 'YAHOO! DIRECTORY' logo is on the left, and a search bar with options 'the Web', 'the Directory', and 'this category' is on the right. The main content area has a purple header 'College and University Academic Competitions' with a 'Search' button. Below it, a breadcrumb trail shows the path: 'Directory > Education > Academic Competitions > College and University'. On the right, there are buttons for 'Email this page', 'Suggest a Site', 'Advanced Search', and 'Save to My Web'. The main content area displays several site listings and sponsor results. Site listings include 'Tsongas Mock Trials' (www.Tsongas.com), 'Formula Society of Automotive Engineers (FSAE)@' (formula.fsaemotorsport.org), 'Teams' (teams.fsaemotorsport.org), 'American Mock Trial Association' (www.collegemocktrial.org), and 'National Criminal Justice Trial Advocacy Competition' (www.abacrimtrial.com). Sponsor results on the right include 'Trial Behavior Consulting, Inc' (www.trialbehavior.com) and 'RandD Jury Research and Legal Consulting' (rd-ds.com). An 'Amazon.com' logo with the text 'Mock Trials at Amazon.com' and 'Low prices on Mock trials.' is also present.

- Example of path analysis provided by Yahoo! that shows hierarchical path taken to reach current Web page.
- Yahoo! also provides path in page title (see title bar).
- Additionally, Yahoo! set up its directory structure so that users can determine path taken from URL of Web page.
- Path analysis is displayed on Web page, title bar, and URL.

## Knowing Where Users Are

- Since Web site navigation provides a map of a site, navigation schemes must provide some way of telling user "You are here"
- Users need to know where they are in overall structure of a Web site.
- If user does not access site starting from homepage, but, links from another Web site and enters site one or two levels down in site hierarchy.
- Links change colors once users have clicked on them. This is not sufficient to show current location. Once user has followed all navigation links on a Web site, links are all same color. With all links displayed as "visited," users know where they have recently been, but they have no information about their current location.
- Users need information about where they currently are in overall structure of Web site. This can be done in a number of different ways:
- If navigation links are textual, then when user is viewing a certain page, link to that page should be deactivated. → user knows current location and is unable to repeatedly click link, which could cause confusion.
- When user is on homepage, navigational link to homepage is deactivated, and appears as plain text (cf. Figure 5.4).
- Other ways to signify current location of User include small symbols or graphics, but ensure that users assistive technology, who may be browsing with text-only or some other method, are able to determine where they are.

**Figure 5.4 CHI 2001 homepage has deleted "home" link so that users know where they are.**

The figure displays two screenshots of the CHI 2001 website. The left screenshot shows the main homepage with a prominent 'CHI 2001 anyone. anywhere.' banner. The right screenshot shows the 'Introduction & Overview' page, which has removed the 'Home' link from its navigation menu.

**Left Screenshot (Homepage):**

- Header:** Anyone. Anywhere. - CHI 2001 - Windows Internet Explorer, URL: http://www.sigchi.org/chi2001/
- Navigation:** File, Edit, View, Favorites, Tools, Help
- Search:** Google
- Title Bar:** Anyone. Anywhere. - CHI 2001
- Content:**
  - Keynote Speaker:** Bill Gates, Chairman, Microsoft Corporation
  - CHI 2001** anyone. anywhere.
  - Date:** Seattle, Washington USA \* 31 March-5 April
  - Text:** The CHI 2001 Conference on Human Factors in Computing Systems took place in Seattle, Washington, 31 March-5 April 2001. [Photos](#) from CHI 2001 are available, showcasing conference activities such as the opening plenary by Bill Gates. A [transcript](#) of the opening plenary is also available.
  - Text:** The annual CHI conference is the leading international forum for the exchange of ideas and information about human-computer interaction (HCI).
  - Text:** CHI 2002 will be held in Minneapolis, Minnesota, from April 20-25, 2002.
- Left Sidebar:** INTRODUCTION & OVERVIEW, CALL FOR PARTICIPATION, CONFERENCE SCHEDULE, CONFERENCE REGISTRATION, LOCATION & ACCOMMODATIONS, FACILITIES & SERVICES, PRESENTERS, SPONSORS, EXHIBITORS, NEWSROOM, CONTACT.
- Bottom:** Shortcuts: Conference schedule, Sponsorship Opportunities, CHI 2001 logo, SIG CHI logo, ©2000 CHI 2001. All Rights Reserved., Privacy Statement, Site Map, Contact.

**Right Screenshot (Introduction & Overview):**

- Header:** Introduction & Overview - CHI 2001 - Windows Internet Explorer, URL: http://www.sigchi.org/chi2001/introduction/index.html
- Navigation:** File, Edit, View, Favorites, Tools, Help
- Search:** Google
- Title Bar:** Introduction & Overview - CHI 2001
- Content:**
  - CHI 2001** anyone. anywhere.
  - Section:** Introduction & Overview
  - Text:** The annual CHI conference is the leading international forum for the exchange of ideas and information about human-computer interaction (HCI). Diverse members of the global HCI community meet at the CHI conference to share the excitement of discovery and invention, to make and strengthen professional relationships and friendships, and to tackle real-world problems. Come to CHI 2001, and be part of laying the foundations of our discipline and identifying the challenges yet to be solved.
  - Section:** Topics
  - Text:** CHI 2001 invites submissions on the full range of HCI related topics, including but not limited to:
  - Universal access and usability
    - Portable, wearable, and wireless computing
    - Internalization and implications of culture on design
    - User profiling and individual differences between users
    - Visions of HCI in the future
    - New, integrative, or forward-looking perspectives on HCI
    - Analysis, design, and evaluation methods
    - HCI and Its societal Implications
    - Theoretical foundations of HCI
    - Devices and display systems, tools, and interaction techniques
- Left Sidebar:** HOME, INTRODUCTION & OVERVIEW, Welcome Letter, What's New?, Conference Themes and Special Areas, Conference Committees, Conference Partners, About ACM and SIGCHI, Conference Posters, Call for Participation PDFs.
- Bottom:** CALL FOR PARTICIPATION, CONFERENCE SCHEDULE, CONFERENCE REGISTRATION, LOCATION & ACCOMMODATIONS, FACILITIES & SERVICES, PRESENTERS, SPONSORS, EXHIBITORS, NEWSROOM, CONTACT.

## Knowing Where Users Can Go

- Site designers inform users about where they can go using site navigation.
- Site navigation is a description, most prominently displayed on homepage, of where users can go within a Web site.
- Most users enter a site through homepage which serves as front door of site.
- Homepage provides information on how users should navigate through site to find what they like. Similar to a phone call to a company and get a voice mail menu.
- Navigation should be provided on all pages on site, and should be at least somewhat consistent (if not totally consistent) with homepage.
- Card sorting during requirements gathering phase should strongly influence how Web site navigation is presented.
- On a homepage, four most common types of navigation schemes for logically organizing content are:
  - topical,
  - audience splitting,
  - metaphor, and
  - organizational structure.

# Topical Navigation.

- Homepage can be split into topics such as history, leadership, products, and so on.
- Most common type of site navigation is topical navigation based on top-level sections of site.
- Each of these top-level navigation topics should be defined based on results of requirements gathering, including card sorting. Labels should be clear.
- For **larger Web site**, main content areas provide information and links to Web pages in that topic area. For instance, top-level content areas on an art museum Web site might include exhibitions, permanent collections, calendars, volunteer and membership information, museum store, programs, and events. When exhibitions link is selected, user receives a list of 10-15 pages that relate to different temporary exhibitions at art museum. These middleman pages serve as gateways to actual content pages.
- For a **smaller Web site**, these might be only content pages out of perhaps 10-15 pages (see Figure 5.5).
- Regardless of purpose of Web site or number of pages involved, some type of navigation must remain present on all pages of site.
- Users need navigation choices in order to know where they can go. There shouldn't be dead-end pages without information about navigation choices.
- Navigation should not be provided back to homepage only; rather, to all major topic areas of site, so that users don't need to return to homepage every time they want to find other content.

## Figure 5.5 CHIplace.org uses a topical navigation scheme

<http://chiplace.fxpal.com/>

- CHIplace is an online community for people who work in field of human-computer interaction
- Provides topical navigation to help users find information among hundreds of Web pages
- Navigation is consistent throughout all pages on site.

**CHI place**

**CHI 2002**  
Minneapolis, Minnesota USA  
April 20-25, 2002

This site captures the state of CHIplace at the end of the CHI 2002 conference. [CHIplace](#) is now maintained by the CHI 2003 committee.

Hello. [Sign in](#) or [create an ID](#) to participate in discussion groups.

>We have some pictures from the [CHIplace booth](#) at the conference.

Find out what's happening at CHI 2002 through [CHIlogs](#).

If you do not elect to receive our newsletters via email (email checkbox in your account info), you can [read them here](#).

HCI Techniques Article: [Examining the Rigor of Usability Theory and Practice from a New Media Curriculum Development Perspective](#)

From time to time, we will re-run older articles and stories until we receive new ones. If you have any one to share, please send them to us.

Goodbye. Now that CHI 2002 is over, we relinquished our co-chair role for CHIplace. We had a lot of fun creating CHIplace and we hope that you enjoyed it, too. CHIplace will live on for CHI 2003. Please share what you have found to be valuable and useful and your ideas for taking CHIplace to the next level with us and with the CHI 2003 Co-chairs [Kia Höök](#) and [Martin Svensson](#) ([chi2003-chiplace@acm.org](mailto:chi2003-chiplace@acm.org))

**Contribute**

[Sign-up for a CHI 2002 walk-in demo](#).  
[Post a question for Jakob Nielsen to answer](#).  
[Share a CHI trivia](#).  
[Leave a story about a CHI Experience](#).  
[Tell about HCI activities at your organization](#).  
[Provide your input about CHI 2002 or CHIplace](#).

**Ask Jakob**

  
[Jakob Nielsen](#) serves up answers to your questions

**Quick Poll**

How many CHI conferences have you attended?

None  
 One or Two  
 Three to Five  
 Six to Nine  
 Ten to Fifteen  
 More than Fifteen  
[View results](#)

Web site hosted at [EX-Palo Alto Laboratory](#).  
Copyright © 2001-2002 CHI 2002. All rights reserved.  
[Privacy Policy](#) — [Site Map](#) — [Contact Webmaster](#)

## Audience-Splitting Navigation

- Another way to organize homepage.
- AS is a good way to approach Web site navigation if number of target user populations that are unique and well defined from requirements gathering.
- User groups might be looking for different types of information: set up links and Web site sections for each unique user group.
- E.g., on university Web sites separate sections for faculty/staff, students, alumni, and prospective students. Some of content might be same for different user groups, each user group may define content differently (using different terminology) or organize content differently.

**Figure 5.6 Towson university web site uses an audience splitting navigational scheme (<http://www.towson.edu/>)**

Text Only

My TU | Directory | Calendars | Marketplace | Library | Maps | SEARCH

ABOUT TU ACADEMICS RESEARCH ADMISSIONS LIFE @ TU ARTS & CULTURE ATHLETICS OUTREACH SUPPORT TU

**THINKING OUTSIDE**  
Towson University is forging partnerships, shaping lives and sharing successes.  
[read more >](#)

> INFORMATION FOR  
Prospective Students  
Current Students  
Parents  
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## Metaphor Navigation

- Metaphors relate interface to objects and concepts in user's everyday life, and they can sometimes assist user with understanding structure of a Web site.
- E.g. a baseball team web site could use graphical metaphor of a stadium, where users click different graphical objects that represent content, such as a graphic of a seat to learn about purchasing tickets, a graphic of a dugout to learn about team players, a graphic of concession stand to learn what food and memorabilia are available, or a graphic of a parking lot to get directions to stadium.
- Metaphors can be limiting for site navigation, which must encompass an incredible amount of information and work well for all user populations.
- E.g., if an entire site structure is based on a baseball stadium metaphor, it might limit future growth of site or may hinder users from finding information. For example, where do you find information about community service performed by baseball players if entire Web site is based on baseball stadium metaphor? Where do you learn about stadium access for people with disabilities?
- Metaphor-based site navigation was popular in past, however, today it's used infrequently.

## Be careful with metaphors: what do these mean?



*Test Users' Interpretations:* World, global view, planet, the world, Earth.



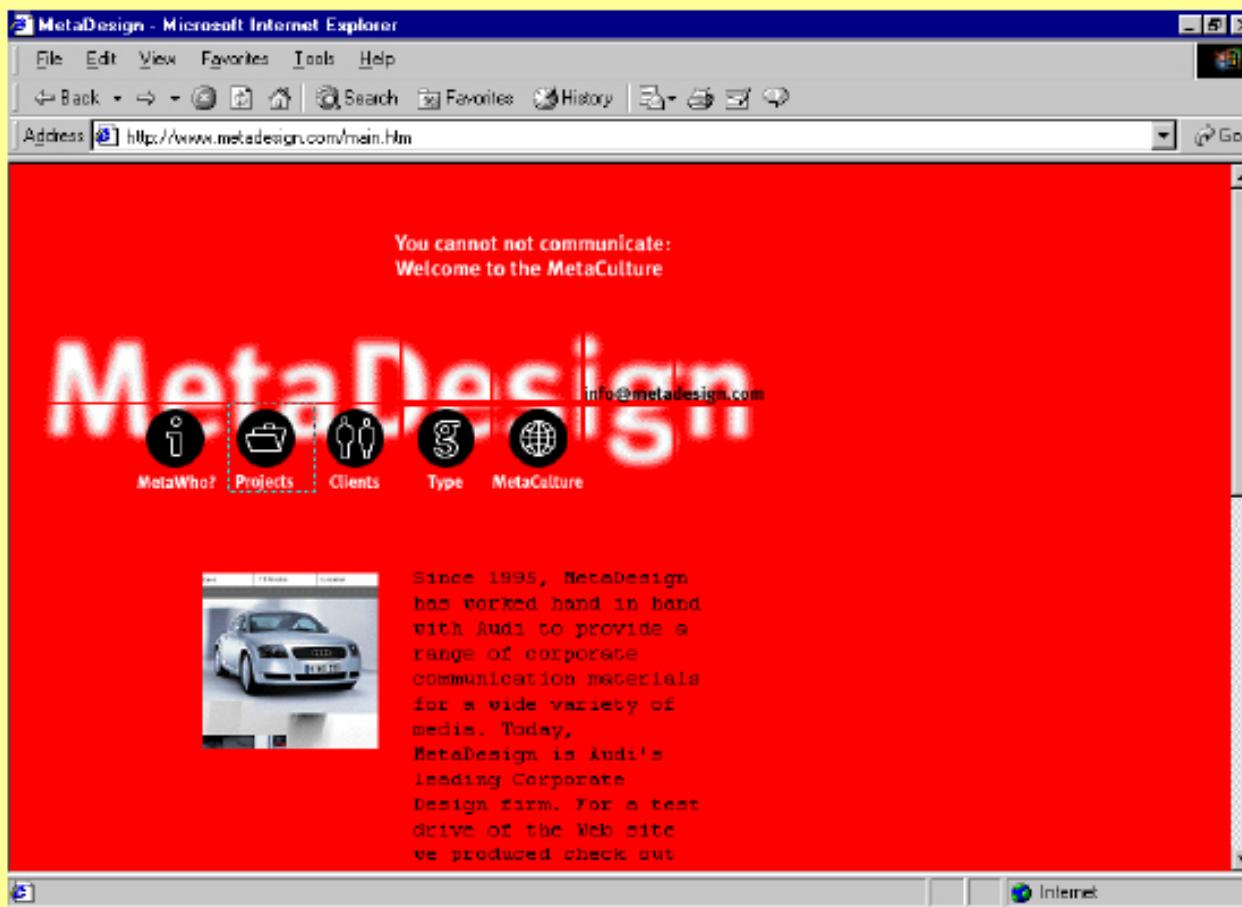
*Test Users' Interpretations:* Health field, money, health care is expensive, Clinton's health plan, hospital, don't know, benefits.



*Test Users' Interpretations:* TV set, video, TV, TV, TV.

- These were planned for a Sun Microsystems intranet, available only to employees, a reasonably homogeneous group.
- The icons were devised by professional graphic designers. Fortunately, Sun did user testing—and dropped these icons

## So add words!



- A couple of these icons would convey nothing at all without words.
- Not sure any of them would convey the intended meaning.
- They are essentially decoration.

# Organizational Structure Navigation

- Most organizations have an internal structure, where different tasks are broken down into departments, divisions, or offices.
- In some cases, each division has a figurehead (such as a vice president or chairperson).
- Organizational structure used for navigation only works if all users are familiar with structure, which is rare.
- E.g., if Web site is only used by employees within an organization (such as a password protected intranet), then using organizational structure for navigation might be appropriate.
- For most external user populations (where target user population does not consist solely of employees of an organization), using organizational structure to present navigation is likely to fail.
- Users typically do not know structure of organization, and therefore cannot determine in which division or department content they seek will appear. Studies of government Web sites have determined, for instance, that users perform better when navigation is organized based on task (what users want to accomplish) rather than by office or division.

## Sitemaps

- While not technically a form of site navigation, SM can be helpful because it provides information to user about how site is structured.
- SM is a graphical or textual representation of information architecture.
- SM provides an alternative way to present information and indicates how information is structured on site.
- Helpful to users who know that a certain piece of content is available, but cannot find appropriate link to that content.

**Figure 5.9 sitemap for Cadbury's, which uses bullet points to show level of various content in information architecture** <http://cadbury.co.uk/en/CTB2003/sitemap.htm>

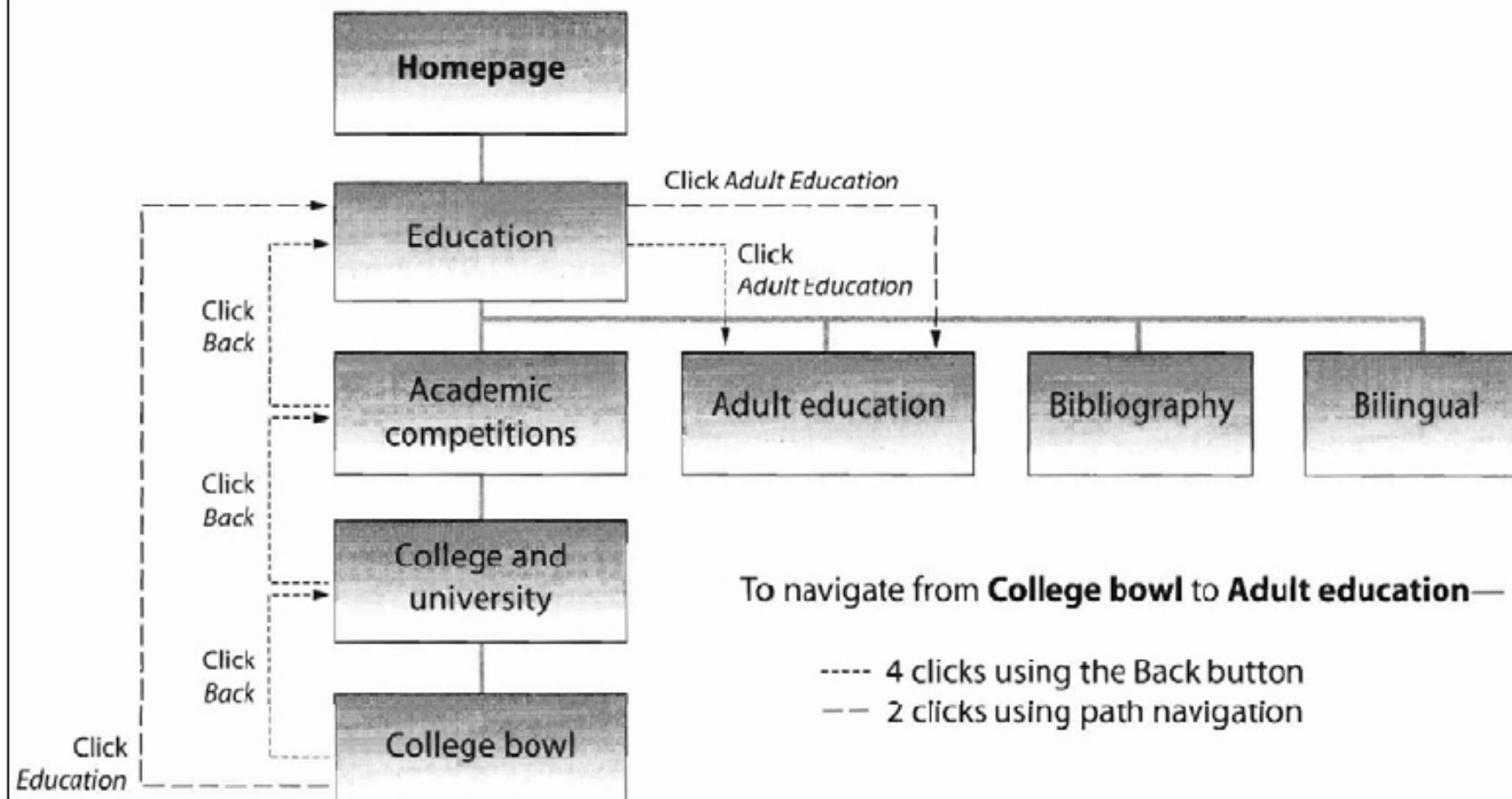
The screenshot shows the Cadbury website's homepage with a navigation bar at the top featuring links like 'About Chocolate', 'Our Products', 'Fun & Stuff', 'Kitchen & Lifestyle', 'Learning Zone', 'Information & Careers', and 'Talk To Us'. Below the navigation is a large image of a man wearing glasses looking down at a tray of chocolates. To the right of the image is the 'Sitemap' section, which lists the site's structure using bullet points:

- Home
- Search
- Sitemap
- About Chocolate
  - History of Chocolate
    - Cocoa And Maya Civilisation
    - The Aztec Empire
    - Don Cortes
    - First Cocoa Makers
    - Chocolate Across Europe
    - Chocolate Houses
    - Drinking Chocolate
    - First Chocolate For Eating
  - History of Cadbury
    - Cadbury - Social Pioneers
      - The Founding Of The Cadbury Business
      - The Victorian Industrial Scene
      - Moving To Bournville

## Client Feedback

- If a team outside of client organization is developing a Web site, it might be useful to consult with client about a list of Web pages, information architecture, and site navigation.
- List can be a simple document sent to client for approval.
- If client signs off on conceptual design of Web site, a subsequent misunderstanding between client and development team can possibly be avoided.
- It's also possible that some content requested by users, cannot be included (either because it's impossible or because client is not in favor of it).
- Client approval of high-level conceptual site design avoids possible future problems.

**Figure 5.13 Path navigation on Yahoo! site allows users to jump around site easily, decreasing number of clicks required.**



- Figure 5.13 displays how path navigation can cut down on number of clicks.
- Instead of having to use Back button to return to homepage, and then click forward to find new content, which takes four clicks, by using path navigation, user can jump to correct middleman page and access content they want with only two clicks

## Search Engines for Navigation

- Search engines to help users find what they are looking for.
- No conflict between hierarchically structured Web site and including a search engine.
- Users typically have problems using search engines effectively.
- Forming queries correctly is a highly technical skill, and different search engines use different approaches, which can confuse users more.
- A search engine should be considered as a secondary means of navigation if users cannot find what they want by using site navigation.
- If users use search engine to help them find Web page they are looking for, path analysis information is useful because it shows them where page is in hierarchy, and it provides context information about similar pages on site.
- Navigation can be provided in multiple ways by offering two navigation schemes:
  - one displaying main topic areas of site
  - another offering a path analysis.
- Users may have references for how information is presented and different mental models of a site.
- Topical area navigation and path analysis navigation can be provided by navigation links that expand and collapse (cf. Figure 5.14).

## Figure 5.14 main Web page for men's apparel at L.L. Bean

http://www.llbean.com

The screenshot shows the L.L. Bean homepage with a green header bar. On the left, there's a sidebar with 'HOME' and 'QUICKSHOP OR SEARCH' sections, and a 'DEPARTMENTS' section listing Men's, Women's, Kids', Footwear, Outdoor Gear & Apparel, Luggage & Travel, Home & Outdoor Living, and Gift Cards. Below that is a 'MORE WAYS TO SHOP' section. The main content area has a banner for 'Sale' and navigation links for 'Shop', 'Explore the Outdoors', 'Customer Service', and 'My Account'. It also features a 'Log In' link, a 'Satisfaction Guaranteed' badge with a USA flag, and a phone number '800-441-5713' with a call icon. The central part of the page displays categories for 'Outerwear', 'Shirts', and 'Sweaters', each with a sub-category link and a small product image.

**Sale**

► [New to Sale](#) ► [New Men's Apparel](#)

Outerwear	Shirts	Sweaters
► <a href="#">Trekking Jacket</a>	► <a href="#">Sunwashed Canvas Shirt, Short-Sleeve</a> ► <a href="#">Mini-Waffle-Knit Crewneck</a> ► <a href="#">Carefree Unshrinkable T-Shirt with Pocket</a> ► <a href="#">Sunwashed T-Shirt, Long Sleeve with Pocket</a>	► <a href="#">Double L Cotton Sweater, Crewneck</a> ► <a href="#">Double L Cotton Sweater, Fair Isle Crewneck</a> ► <a href="#">Shetland Wool Crew</a> ► <a href="#">Shetland Wool Vest</a>

- At first, user is presented with a list of main sections of site (men's, women's, kids, and so forth).
- When user clicks for more information on men's clothing, and then clicks for men's shirts, navigation menu on left expands to provide path information on how user got to that point (see Figure 5.15).

**Figure 5.15 When a link is selected, menu expands, providing both detailed navigation for shirts, as well as path navigation.**

L.L.Bean

Shop Explore the Outdoors Customer Service My Account

HOME Log In Satisfaction Guaranteed 800-441-5713

QUICKSHOP OR SEARCH item # or keyword GO Quickshop multiple items

DEPARTMENTS

Men's  
Women's  
Kids'  
Footwear  
Outdoor Gear & Apparel  
Luggage & Travel  
Home & Outdoor Living  
Gift Cards

MORE WAYS TO SHOP

Sale

New to Sale ▶ New Men's Apparel ▶ Shirts

Outerwear  
▶ Shirts  
Sweaters  
Pants & Shorts  
Sleepwear & Underwear  
Accessories

Showing 1-5 of 5



[Sunwashed Canvas Shirt, Short-Sleeve](#) [Mini Waffle-Knit Crewneck](#) [Golf-Style Unshrinkable T-Shirt with Pocket](#)

**New Sale Item** **New Sale Item** **New Sale Item**

was \$29.50 now \$21.95      was \$24.50 now \$17.95      was \$12.00 now \$9.95

Техника за подобрување на рангирањето на сајтот(страницата)

4-54

## Location of Navigation

- Navigation is important to user and needs to be consistently present.
- Web site developer has challenge of not knowing how much screen space is available—users may have different monitor sizes and different screen resolutions.
- Complicating things further, users may resize browser window to any size they like, and they may have their fonts set differently from how Web developer desires.
- Navigation needs to be easily visible, regardless of size of monitor being used or how browser window is sized.
- Navigation should be provided on either top/bottom or left/right side of page, or some combination of two.
- In most western cultures, people read from left to right, and navigation should always be first thing they see (cf. Figure 5.16).
- If navigation is placed on right side or bottom of page, it's possible that user might never see it and be confused as to how to navigate through site.
- Most valuable screen space is space in left and top of page.

**Figure 5.16 Pike Place Market Web site has navigation on bottom and right side of page** (<http://www.pikeplacemarket.org>)

- There is a lot of wasted valuable space that could be used for navigation or other important information

The screenshot shows the Pike Place Market website. At the top is a large banner featuring a night photograph of the market's iconic neon signs: "PUBLIC MARKET CENTER", "FARMERS MARKET", and "MEET THE PRODUCERS". Below the banner is a decorative background pattern of small red and gold floral motifs on a cream-colored field. On the right side, there is a vertical sidebar with the following sections:

- EVENTS**:
  - Feb 7, 2008: Lisa Harris Gallery February Show
  - Mar 6, 2008: Care for the Market Luncheon
- PROPOSED RENOVATION PLANS**
- DONATE**: An image of a piggy bank with the text "In the MARKET FOUNDATION".

At the bottom of the page is a dark footer bar containing the Pike Place Market logo, navigation links for "EXPERIENCE THE MARKET", "LOCATION", "SHOP & DINE", and "COMMUNITY RESOURCES", and links for "CONTACT", "SEARCH", and "MAP".

**Figure 5.17 old homepage of American Recorder Society wastes a lot of space and does not display navigation clearly.**

The screenshot shows the homepage of the American Recorder Society (ARS) from 2008. The left side features a large white sidebar with the ARS logo and a mission statement. The main content area has a dark background with a large image of a recorder. Navigation links are scattered across the page, and there's a sidebar for 'Play-the-Recorder-Month'.

**AMERICAN RECORDER SOCIETY**

**ARS**

*The mission of the American Recorder Society is to promote the recorder and its music by:*

- Developing resources and standards to help people of all ages and ability levels to play and study the recorder
- Presenting the instrument to new constituencies
- Encouraging increased career opportunities for professional recorder performers and teachers
- Enabling and supporting recorder playing as a shared social experience

**Search**

americanrecorder.org

About Events Membership Learn More Resources Order

**Make a Note**

**Play-the-Recorder-Month**

Details on how you can celebrate can be found by clicking [here](#).

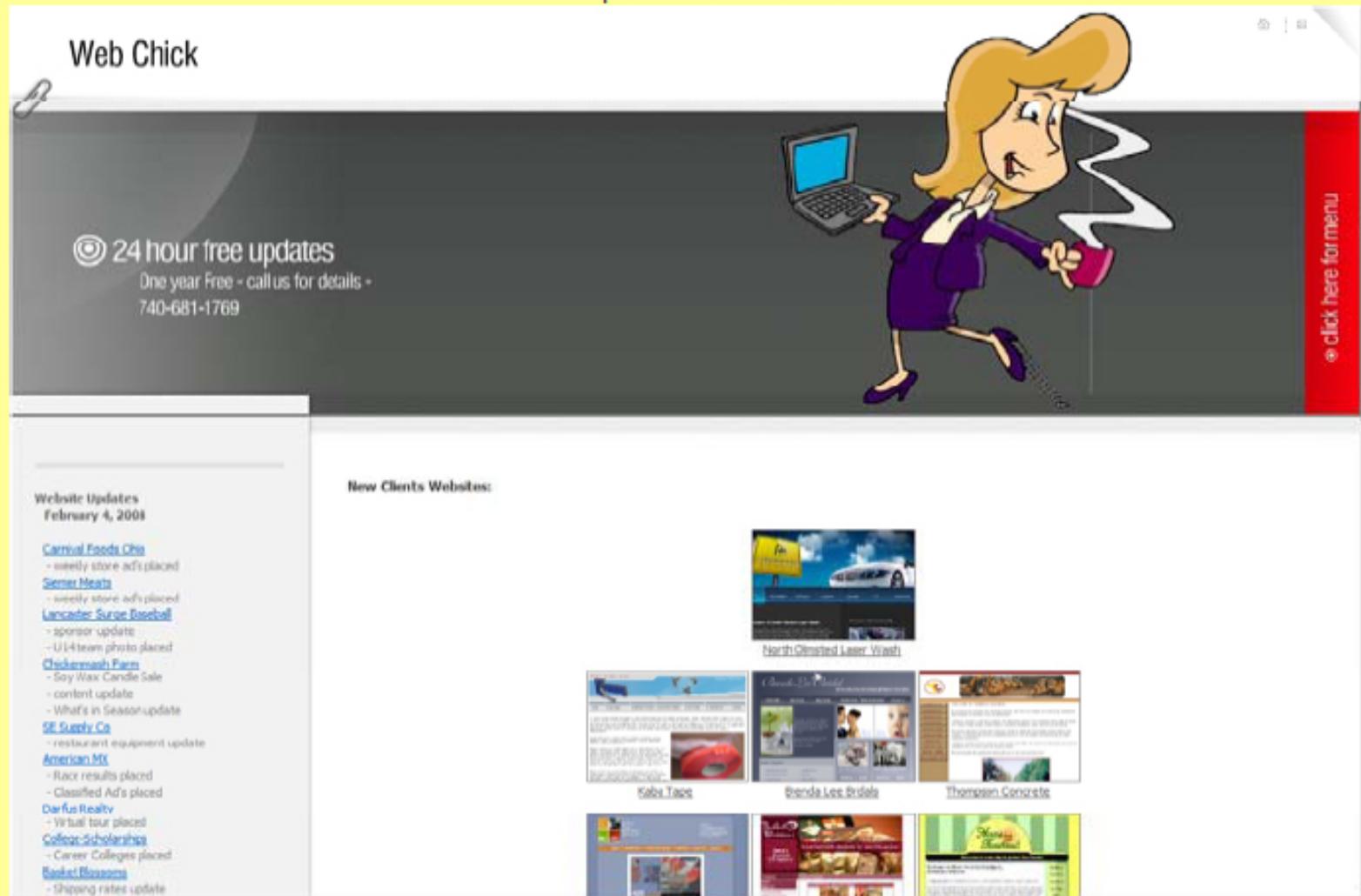
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Fax: 314/966-4649 E-Mail [CONTACT](#)

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Site Design [Command Design & Graphics](#) ~ Site Maintenance [American Recorder Society](#)

**Figure 5.18 homepage for Kevin's Candy had navigation after clicking menu right of page, which was not clearly apparent to users looking at top**

<http://www.webchick.com/>



**Figure 5.19 Navigation is located at right after click**

