Information Architecture & Design
BOF: Navigation Systems and Design Rationale

October 1, 2002
What are Navigation Systems?

**Information Architecture** is “the structural design of an information space to facilitate task completion and intuitive access to content”

—Rosenfeld and Morville, Information Architecture for the World Wide Web, 2000

**Navigation** is a spatial metaphor used to describe the user’s process of selecting content and completing tasks in an information space

A **Navigation System** is the visual representation of the information architecture to the user, regardless of the topic or categorization

While Jupiter Consumer Survey data indicate that 71 percent of online users are satisfied with online navigation, 61 percent would use a given site more often if navigation were “easy and intuitive.”

### Types of Navigation

**Global Navigation**
- List Styles
- Horizontal Styles
- Vertical Styles

**Utility Navigation**
- Quick-access Pulldown
- User-type Navigation
- Task-focused Navigation
Global Navigation

Represents the main structure of the site to the user; should support user tasks

Users generally want to know:
- Where am I?
- Where can I go from here?
- How do I get back to where I was?

Hierarchy should generally be broader rather than deeper

Screen real estate should be allocated judiciously; users may not travel between sections using global navigation as often as you might think

For almost seven years, my studies have shown the same user behavior: users look straight at the content and ignore the navigation areas when they scan a new page.

Jakob Nielsen, Alertbox, January 9, 2000
Types of global navigation systems

**List styles**
- Menu List
- Circular List
- Directory
- Modular

**Horizontal styles**
- Horizontal Nav Bar/ Tabs
- Horizontal Pulldown
- “L” Shaped

**Vertical styles**
- Left Nav Bar
- Right Nav Bar
- Left Nav with Rollover
- Left Nav with Spillopen
List Styles

Menu List

- “Green-screen” CRT terminals commonly used menu navigation
- Used now usually for very small sites with only two levels of hierarchy
- Displays navigation options down the center of the page, sometimes with graphics or text descriptions associated

Circular List

- Design elements added to menu list create visual interest
- Navigation elements move to nav bar on subsequent pages

Directory

Modular
Welcome to the LEO online catalog!

ALPHABETICAL SEARCHES

Enter the number of the search you want. You may combine any of the first three searches by listing the option numbers: 1, 2 or 1, 3 for example.

1. NAMES (Alphabetical by last name)
2. TITLES (Alphabetical)
3. SUBJECTS (Alphabetical)
4. Children's Materials (All Words)
5. Keyword Searches Menu
6. Number Searches Menu
7. Return to Main Menu
8. Logoff

Enter your selection(s) and press <Return>:
S=Shortcut on, BB=Bulletin Board. ?=Help
Welcome to the LEO online catalog!

ALPHABETICAL SEARCHES

Enter the number of the search you want. You may combine any of the first three searches by listing the option numbers: 1, 2 or 3 for example.

1. NAMES (Alphabetical by last name)
2. TITLES (Alphabetical)
3. SUBJECTS (Alphabetical)
4. Children's Materials (All Words)
5. Keyword Searches Menu
6. Number Searches Menu
7. Return to Main Menu
8. Logoff

Enter your selection(s) and press <Return>:
S=Shortcut on.

Name (Last, First)

Examples:

ASIMOV, ISAAC (Full name)
HEMINGWY (OK to shorten name)

Enter Name (Last, First):  
SO=Start Over, B=Back, ?=Help
Absolute Lighting & Lampshades

Let's Go Shopping

Terms and Conditions
Lampshade Catalog - Design Your Own Shade

Finials - Decorative Lampshade Fasteners

Other Lighting Links
Coming Soon - Silk Lampshades
Lamps and Parts

For Information Call:
Toll FREE in the U.S. 888-208-8068
International 561-792-2257
Fax 831-303-2766
McDonald's USA What's New!

What's New!

> McDonald's USA - Comprehensive U.S. Business Plan Overwhelmingly Approved by McDonald's Owner/Operators

> McDonald's Corporate - McDonald's Investor Calendar Preview

> McDonald's Corporate - McDonald's Plans Aggressive Initiative to Drive U.S. Sales
McDonald's World Wide Restaurant Locator

Travel planning has never been easier with the McDonald's Restaurant Locator and Trip Planner. You can plan road trips and map out all the McDonald's restaurants along a travel route or in your hometown.

The Restaurant Locator is now populated with Canada restaurant locations, in addition to restaurant locations for the USA!

Select a country to locate a McDonald's Restaurant!
List Styles

Menu List

Circular List

Directory

- Lists 1st and some 2nd level navigation options in columns in center of page
- Often known as “Yahoo!” style navigation
- Usually uses “breadcrumb” trail to show navigation path down the hierarchy (breadcrumbs are not exclusive to this style)
- Appropriate for sites where the taxonomy is the user experience

Modular
Google Directory

The web organized by topic into categories.

Arts
- Movies, Music, Television...

Business
- Industries, Finance, Jobs...

Computers
- Hardware, Internet, Software...

Games
- Board, Roleplaying, Video...

Health
- Alternative, Fitness, Medicine...

Home
- Consumers, Homeowners, Family...

Kids and Teens
- Computers, Entertainment, School...

News
- Media, Newspapers, Current Events...

Recreation
- Food, Outdoors, Travel...

Reference
- Education, Libraries, Maps...

Regional
- Asia, Europe, North America, ...

Science
- Biology, Psychology, Physics, ...

Shopping
- Autos, Clothing, Gifts...

Society
- Issues, People, Religion, ...

Sports
- Basketball, Football, Soccer...

World
- Deutsch, Español, Français, Italian, Japanese, Korean, Nederlands, Polska, Svenska, ...

Advertise with Us - Search Solutions - News and Resources - Services & Tools - Jobs, Press, Cool Stuff...

©2002 Google
List Styles

Menu List
Circular List
Directory

**Modular**

➤ Access to lower-level pages provided via modules (blocks) in page body
➤ Less emphasis on categorizing pages, more on user tasks
➤ Surfaces functionality to provide more context, fewer clicks
# Introducing PCS Vision

**Clarity you can see and hear.**

**Customer Sign-on**
- Check your minutes, view your bill, make payments
- Download PCS Vision ringer, games, screen savers
- Access and manage your vault

**Shop for Plans & Phones**
- View service plans & coverage areas
- Shop for phones
- See special offers

**Business**
- Business Center
  - Special offers & services for your business
- PCS Business Connection
  - Access your office email and calendar with your PCS Phone

**Activate your new phone**
- Need to activate your new phone?
  - Start here

**Special Offers**
- Save up to $100 instantly on select PCS Phones
- 3500 minutes for $34.99 a month

First time here or forgot your password?
[Get your password](#)
Types of global navigation systems

**List styles**
- Menu List
- Circular List
- Directory
- Modular

**Horizontal styles**
- Horizontal Nav Bar/ Tabs
- Horizontal Pulldown
- “L” Shaped

**Vertical styles**
- Left Nav Bar
- Right Nav Bar
- Left Nav with Rollover
- Left Nav with Spillopen
Horizontal styles

Horizontal Nav Bar or “Tabs”
- Navigation elements arranged in a horizontal strip across the top
- Sometimes buttons designed to look like folder tabs
- Reverse highlighting denotes current section
- 2nd level options can appear in second bar – “layer cake”
- Number of navigation categories limited by horizontal real estate

“L” Shaped

Horizontal Pulldown
Hello, Karen McGrene. We have Business & Investing, Computers & Internet, Entertainment, and other Books recommendations for you. (If you're not Karen McGrene, click here.)

New in Books

Blessings

The plot of Anna Quindlen's novel Blessings is constructed on the same model as E.T.: adorable orphaned creature is found by unlikely caregiver who against his or her better... Read more

More in Books

Paperback Picks

Discover a host of compelling novels, memoirs, histories, and self-help books in our selection of newly published paperback picks.

See our featured list

Book Recommendations

The Seville Communion

The Amazon.com 100

Save up to 40% on titles over $15 unless marked otherwise

Bible Study Center

Find a wide selection of study guides in the IVP Bible Study Center.

Master of Horror

Stephen King delivers another classic novel about boys, men, and a terrifying force only they can contain in From a Buick 8.

1. The Lovely Bones by Alice Sebold
2. Shrink Ray by
Horizontal styles

Horizontal Nav Bar or “Tabs”

“L” Shaped
- 1st level options arranged horizontally; 2nd level arranged vertically
- Color and shading can be used to show relationship between levels
- Very common in early days of web; used less frequently now

Horizontal Pulldown
Events

This section lists various new media industry events, from the educational and informative to the informal and fun. Whether you are a seasoned new media veteran, or someone hoping to learn more about Silicon Alley, this is your ultimate destination as part of the NYNMA Community.

NYNMA Cancellation Policy: No refunds will be granted unless requests are received in writing (fax or email) up to 48 hours before the scheduled event.

Featured NYNMA Events:

10.08.02 NYNMA’s Cyber-Suds™ and Wine Tasting
Hosted by Tocqueville

Upcoming NYNMA Events:

9.5.02 & 10.1.02 - NYNMA’s Free Agent SIG: “How to Get More Business in Two Easy Sessions”
With Adrian Miller, Sales Trainer Extraordinaire

9.05-12.05.02 NYNMA’s Sales Education Series, part of NYNMA’s e-Business Institute
Hosted by Datamonitor

10.09.02 NYNMA Sales & Marketing SIG presents: “Recession Marketing Tactics”
Hosted by Skyline Displays NY

10.15.02 NYNMA & Digital Media Wire in association with Interactive Advertising Bureau present:
“Interactive Marketing: Where Success Lies Now and in the Future”
Hosted by The Lighthouse International

11.07.02 NYNMA’s Technology Showcase
Horizontal styles

Horizontal Nav Bar or “Tabs”

“L” Shaped

Horizontal Pulldown

➤ Pulldowns at top of page mimic familiar software application design
➤ “Tools in the drawers” vs. “Paths through the landscape”
Right from your Desktop!
Thursday, October 3

Individual Forums

SPECIAL EVENTS       BEST OF SHOW       PRESS ROOM

Home :: ATTEND :: Individual Forums

General Sessions

In these conference sessions, discover techniques and tips from the experts on a variety of topics, from niche marketing to the next wave of Internet technologies.

Please scroll down for Wednesday's and Thursday's sessions.

Tuesday, October 1

10:00 AM  |  11:00 AM
Information Architecture and Design: Making Web Sites Easier to Use

Join our information architecture expert as she discusses how the practice of user-centered design can contribute to increased brand awareness, quicker user adoption and even measurable ROI. Learn how to translate user needs, tasks and goals into design and navigation systems that get your customers where they want to go. Creative -- and even innovative -- web designs can remain true to the vital principles of fact, useful and easily navigated web pages.

Karen McGrane, Director of Information Architecture, Razorfish, Inc.
Types of global navigation systems

**List styles**
- Menu List
- Circular List
- Directory
- Modular

**Horizontal styles**
- Horizontal Nav Bar/ Tabs
- Horizontal Pulldown
- “L” Shaped

**Vertical styles**
- Left Nav Bar
- Right Nav Bar
- Left Nav with Rollover
- Left Nav with Spillopen
Vertical styles

Left Nav Bar
- Navigation elements arranged vertically down the left side of page
- Most common navigation style
- Provides flexibility in number of navigation options

Right Nav Bar
- Navigation elements arranged controversially on right side of page
- Closer to scroll bar but breaks with common Western text conventions

Left Nav with Rollover

Left Nav with Spillopen
Zagat 2003 Marketplace Survey
Rates 1,250 Shops:
Sherry-Lehmann is #2 Overall &
New York's #1 Wine Shop!

Low prices - great service - perfect storage -
over $10,000,000 of inventory to choose from!

"Ten million dollars' worth of inventory hints at the
"mind-boggling" number of labels at this 'upscale'
East Side 'institution' that's rated the Survey's No. 1
Wine shop thanks to its "deepest selection" of 'hard-
to-find' bottles, including old Bordeaux and
Burgundies; a "suave, informed" staff, 'catalogs that
are works of art' and a sophisticated, 'civilized'
atmosphere fuel its 'great snob appeal', though
truthfully there are plenty of inexpensive options
too." - ZAGAT NEW YORK CITY MARKETPLACE
2002/2003

We have been named the best wine shop in the
U.S.A. by Decanter Magazine and New York's #1
wine shop by Zagat. Shop online and see why.

Most orders are shipped within 24 hours of
ordering, many on the same day.

It's easy to use our SEARCH to navigate our
extensive inventory. Or, if you prefer browsing the
world's great wine regions, click GO SHOPPING.

"Huge selection and competitive prices. Search
the inventory of more than 3,000 wines by color and
country, style and vintage, appellation and price. A hunt
for sauvignon blanc from New Zealand served up 17
bottles, including the 1999 Lighthouse Marlborough for
$15.95. Use the pull-down menu to browse popular
choices like Port, Madeira and Sherries (110 choices).
The keyword function helps track down specific bottles or
wines whose names you partially remember. Most
listings come with a brief description, a picture of the
label and prices by the bottle or case. We especially like
the rich menu of magnums and half bottles."
Welcome to the Audi World Site

For your viewing pleasure
Download the new Audi A8, the Audi TT and other eye-catching motifs as wallpaper for your screen. Attractive screensavers are available for when you are taking a break from work. And plenty more besides...

Immaculate used cars from your Audi dealer - Europe
Your Audi dealers always have a large number of high-quality used cars in excellent condition. The Audi used car exchange allows you to look for the car of your dreams conveniently and in several languages.

Audi environmental protection
Environmental protection has a long tradition and is highly valued at Audi. Our production centres and cars are notable for their range of environmentally viable innovations. Find out more!

Audi worldwide
Language
Audi News

- Please select
- Continent
- Country
- Deutsch

- 2002 Interim Report Information on the first six months
- FC Bayern Munich drive Audi
- Read more news
Vertical styles

Left Nav Bar

Right Nav Bar

**Left Nav with Rollover**

- 2nd level options (and even 3rd level options) appear on mouseover
- Speeds access to lower level pages but users do not see content on 1st level page

**Left Nav with Spillopen**
Vintage Rose... the latest from our Nautica bedding collection. Click here to shop.

Just arrived... shop our latest circular!
Vintage Rose... the latest from our Nautica bedding collection. Click here to shop.

Just arrived... shop our latest circular!
Welcome to Bed Bath & Beyond. If you are not Karen, click here.

**PRODUCT FINDER**

**bedding**

**bath**

**kitchen**

**dining**

**home decor**

**electronics**

**storage & cleaning**

**seasonal**

**Vintage Rose**

Nautica bedding collection.

Just arrived... shop our latest circular!

**Gift Cards!**
always the perfect gift!

**fine tabletop & giftware**
Click to Shop!

**Purchase**
a wedding gift with a click!
Bed Bath & Beyond Product Categories - Microsoft Internet Explorer

Welcome Karen to bedbathandbeyond.com if you are not Karen click here

PRODUCT FINDER

bedding

shop online

Electric

Kitchen Electrics

categories

featured item

George Foreman™ George Jr.™ Rotisserie

Coffee
Espresso
Carafes/Filters
Cooking Electrics
Toaster/Ovens
Blenders
Food Processors
Hand/Stand Mixers
Slicers/Grinders

storage & cleaning

seasonal

Irons
Personal Care
Seasonal Electrics
Vacuums

Kitchen Electrics

Blenders

Food Processors
Hand/Stand Mixers
Slicers/Grinders
Specialty Electrics
Vertical styles

Left Nav Bar

Right Nav Bar

Left Nav with Rollover

**Left Nav with Spillopen**

- Visually communicates hierarchical relationships between pages
- If spillopen occurs on page reload, users may not see new navigation options
- Pushes anything below the left nav down the page
Welcome to the MSDN Library

The MSDN Library is an essential resource for developers using Microsoft tools, products, and technologies. It contains a bounty of technical programming information, including sample code, documentation, technical articles, and reference guides.

Want to get the latest MSDN headlines sent to you via e-mail? Sign up for the MSDN Flash Newsletter.

Most Recent Articles

- [Office XP Primary Interop Assemblies Known Issues](#) (September 27, Article)
- [Dr. GUI .NET #8: Conway's Game of Life as an ASP.NET Application](#) (September 27, Article)
- [Extreme XML: Reverse Linking Explained](#) (September 27, Article)
- [Ask Dr. GUI: Am I Losing My Memory?](#) (September 25, Article)
Welcome to the MSDN Library

The MSDN Library is an essential resource for developers using Microsoft tools, products, and technologies. It contains a bounty of technical programming information, including sample code, documentation, technical articles, and reference guides.

Want to get the latest MSDN headlines sent to you via e-mail? Sign up for the MSDN Flash Newsletter.

Most Recent Articles

- [Office XP Primary Interop Assemblies Known Issues](#) (September 27, Article)
- [Dr. GUI .NET #8: Conway's Game of Life as an ASP.NET Application](#) (September 27, Article)
- [Extreme XML: Reverse Linking Explained](#) (September 27, Article)
- [Ask Dr. GUI: Am I Losing My Memory?](#) (September 25, Article)
Audio & Video

Microsoft's Audio and Video technologies enable product developers, content producers and device manufacturers to capture, edit and play back Windows Media-based content as well as audio and video in other leading formats.

Components discussed on this site include:

- **Windows Media SDK**
  Includes Format SDK, Player SDK, Encoder SDK, Services SDK

- **Microsoft DirectShow SDK**
  Media-streaming architecture that enables the high-quality capture and playback of multimedia streams; components include DirectShow, DirectShow Editing Services, Broadcast Digital Architecture, and more.

Windows Media Player 9 Series Software
Introduction

Today's vastly increased level of data communications compels enterprises and service providers alike to search for solutions that lower costs for existing services yet provide greater overall bandwidth capacity and flexibility for new and evolving applications and services.

Given today's economic realities, the need for profitability and productivity demands that enterprises and service providers use their network as a strategic investment.

The Cisco Complete Optical Multiservice Edge and Transport (Cisco COMET) portfolio of network solutions excels in satisfying these key requirements, from the metro edge to the long-haul network. As the next step in the evolution of IP+Optical networking.

Combining leadership and technology innovation in photonics, packets, protocols, and provisioning, Cisco COMET delivers unprecedented flexibility and capacity to allow enterprises and service providers to maximize profitability and productivity.

Find out more about Cisco COMET Solutions and Technologies.

Optical Solutions for Service Providers
- Long Haul Solution for Service Providers
- Metro Core Solution for Service Providers
- Metro Edge Solution for Service Providers
- Service POP Solution for Service Providers

Optical Solutions for Small/Medium & Large Enterprises
- Business Continuance Networking Solution
- Cisco CWM CMB Solution
Select an Area

Search:

Search All Cisco.com

Toolkit: Roll over tools below

Log In
Log in to access additional tools and content.
- New User? Register.
- Forgot your Password?

Useful Links
Partner Locator
Security at Cisco
Investor Relations
Government Affairs
Former Web Site

Technical Documentation

Technical Documentation on Cisco Connection Online
This link is intended to help you locate Cisco's Technical Documentation on their previous website.
## Introduction

Today's vastly increased level of data communications compels enterprises and service providers alike to search for solutions that lower costs for existing services yet provide greater overall bandwidth capacity and flexibility for new and evolving applications and services.

Given today's economic realities, the need for profitability and productivity demands that enterprises and service providers use their network as a strategic investment.

The Cisco Complete Optical Multiservice Edge and Transport (Cisco COMET) portfolio of network solutions excels in satisfying these key requirements, from the metro edge to the long-haul network. As the next step in the evolution of IP+Optical networking.

Combining leadership and technology innovation in photonics, packets, protocols, and provisioning, Cisco COMET delivers unprecedented flexibility and capacity to allow enterprises and service providers to maximize profitability and productivity.

Find out more about Cisco COMET Solutions and Technologies.

<table>
<thead>
<tr>
<th>Optical Solutions for Service Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Haul Solution for Service Providers</td>
</tr>
<tr>
<td>Metro Core Solution for Service Providers</td>
</tr>
<tr>
<td>Metro Edge Solution for Service Providers</td>
</tr>
<tr>
<td>Service POP Solution for Service Providers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optical Solutions for Small/Medium &amp; Large Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Continuance Networking Solution</td>
</tr>
<tr>
<td>Cisco CWDM CWX Solution</td>
</tr>
</tbody>
</table>
Charles Schwab Insurance Services

Life insurance is an important part of any financial plan. Schwab can help you meet your life insurance needs with straightforward answers and no sales pressure.

To find out more, select the state that you live in from the menu below, or click on your state in the map.

Select a state

Not all policies and product features are available in all states. This is not an offer or solicitation in any jurisdiction where the policies are not approved for sale.
Types of Navigation

Global Navigation
- List Styles
- Horizontal Styles
- Vertical Styles

Utility Navigation
Quick-access Pulldown

User-type Navigation
Task-focused Navigation
Utilities are tools or functions that are not part of the overall site taxonomy

Common examples include:

- Shopping cart
- Store Locator
- Profile
- Contact Us
- Help
- Customer Service
- Site Map

Often utilities are generic options that could appear on any site; differentiated from global navigation which is site-specific

Placement on page should be visually distinct from global navigation; often utilities are set in small type and placed in the upper right corner
West Marine - The world's largest boating supply source! - Microsoft Internet Explorer

Keyword or Model #

Shop Online
Anchor/Docking
Boat Care
Clothing
Electrical & Ventilation
Electronics & Navigation
Engine Systems
Fishing
Interior & Books
Plumbing
Safety
Sailboat Hardware
Sailing & Covers
Boats/Motors/Trailers
Watersports

Shopping Areas
Specials
Clearance Outlet
WM Brand Store
Winterizing Store
Auction
Gift Certificates
Gift Registry

West Advisor
Services
About West Marine

Home | Store Locator | West Advantage | Your Account | Cart | Customer Service

America's Favorite Boating Supply Source

FEATURE PRODUCTS:

- Big B Fonda:
  - Save 25% from $17.24
- Soft Side Ice Chest:
  - Save 15% from $12.99
- Atlantic Handheld VHF:
  - Save $20.00 from $99.99
- Garmin Handset GPSMAP775:
  - Reduced Price $284.97
- Sirius Satellite Radio:
  - Reduced Price $349.99
- Flex-Vane Oil Changer:
  - Save $10.00 from $129.99

Top of Page | Home | Site Map | Contact Us | Store Locator
Shop Online | Specials | Clearance Outlet | Auction | West Advantage
Gift Certificates | Cart | Affiliate Enrollment | Catalog Request | eCatalog

Terms of Use | Privacy Policy | © 2002 West Marine All Rights Reserved
Rediscover the open road!

Alamo has the right car at the right price! Book a car now.

FLORIDA, CALIFORNIA, HAWAII OFFER

Compact/SUV Special!

starting at $25/day

$130/week

Alamo features GM cars like this Chevrolet Cavalier

Click here now!

more great offers

- Last Minute Specials
- Up to 15% in Latin America
- Save in Hawaii

New locations - right next door.

Alamo Neighborhood

Click here to search for a location near you

Hot Deals on Wheels

Special Offers e-mail program

Click here to enroll
Introduction

Today's vastly increased level of data communications compels enterprises and service providers alike to search for solutions that lower costs for existing services yet provide greater overall bandwidth capacity and flexibility for new and evolving applications and services.

Given today's economic realities, the need for profitability and productivity demands that enterprises and service providers use their network as a strategic investment.

The Cisco Complete Optical Multiservice Edge and Transport (Cisco COMET) portfolio of network solutions excels in satisfying these key requirements, from the metro edge to the long-haul network. As the next step in the evolution of IP+Optical networking.

Combining leadership and technology innovation in photonics, packets, protocols, and provisioning, Cisco COMET delivers unprecedented flexibility and capacity to allow enterprises and service providers to maximize profitability and productivity.

Find out more about Cisco COMET Solutions and Technologies.

Optical Solutions for Service Providers
- Long Haul Solution for Service Providers
- Metro Core Solution for Service Providers
- Metro Edge Solution for Service Providers
- Service POP Solution for Service Providers

Optical Solutions for Small/Medium & Large Enterprises
- Business Continuance Networking Solution
- Cisco CWDM GWG Solution
Optical

Introduction

Today's vastly increased level of data communications compels enterprises and service providers alike to search for solutions that lower costs for existing services yet provide greater overall bandwidth capacity and flexibility for new and evolving applications and services.

Given today's economic realities, the need for profitability and productivity demands that enterprises and service providers use their network as a strategic investment.

The Cisco Complete Optical Multiservice Edge and Transport (Cisco COMET) portfolio of network solutions excels in satisfying these key requirements, from the metro edge to the long-haul network. As the next step in the evolution of IP+Optical networking.

Combining leadership and technology innovation in photonics, packets, protocols, and provisioning, Cisco COMET delivers unprecedented flexibility and capacity to allow enterprises and service providers to maximize profitability and productivity.

Find out more about Cisco COMET Solutions and Technologies.

Optical Solutions for Service Providers
- Long Haul Solution for Service Providers
- Metro Core Solution for Service Providers
- Metro Edge Solution for Service Providers
- Service POP Solution for Service Providers

Optical Solutions for Small/Medium & Large Enterprises
- Business Continuity Networking Solution
- Cisco CWDM GM Solution
Quick access pulldown

- Some sites use a pulldown menu to provide quick access to 1<sup>st</sup> and 2<sup>nd</sup> levels of the taxonomy.

- Can provide navigation access to many pages using very small amount of real estate; but hides options and forces users to click to see what’s there.

- Useful for large sites that are visited frequently by expert users; these users will become familiar with the site structure.

- Not useful for smaller sites or those with infrequent visitors; requires too much recall.

- Should use exactly the same structure as global navigation to avoid confusion.
Introduction

Today's vastly increased level of data communications compels enterprises and service providers alike to search for solutions that lower costs for existing services yet provide greater overall bandwidth capacity and flexibility for new and evolving applications and services.

Given today's economic realities, the need for profitability and productivity demands that enterprises and service providers use their network as a strategic investment.

The Cisco Complete Optical Multiservice Edge and Transport (Cisco COMET) portfolio of network solutions excels in satisfying these key requirements, from the metro edge to the long-haul network. As the next step in the evolution of IP+Optical networking.

Combining leadership and technology innovation in photonics, packets, protocols, and provisioning, Cisco COMET delivers unprecedented flexibility and capacity to allow enterprises and service providers to maximize profitability and productivity.

Find out more about Cisco COMET Solutions and Technologies.

Optical Solutions for Service Providers
- Long Haul Solution for Service Providers
- Metro Core Solution for Service Providers
- Metro Edge Solution for Service Providers
- Service POP Solution for Service Providers

Optical Solutions for Small/Medium & Large Enterprises
- Business Continuance Networking Solution
- Cisco CWDM CW & Solution
User type navigation

- Sites are beginning to offer navigation by user type as well as through the categories of global navigation.
- Users may not be able to identify if what they need is in “Office” or “Business Solutions,” but can identify that they are part of an “Educational Institution.”
- Useful for sites who want to address the needs of particular customer groups; evidences a stronger user focus.
- Requires additional pages to address needs of specific audiences; those pages often have links back to the overall taxonomy.
This General Motors concept car runs on hydrogen.

HERE IN MY CAR...
The automobile is often sited as one of the
Products and Services

To access Island’s Products and Services, please select the option best suited for you.

If you have any questions, please do not hesitate to contact us at: subscriber@island.com

To best serve you, we have listed our services by the type of subscriber you are, or would be: Broker-Dealer, Institutional Firm, Futures Professional, Developer.

Subscribing Services

Island ECN offers its services to broker-dealers. Institutional Firms access Island ECN through an affiliate, Island Execution Services.

Trading Services
Task-focused navigation

- Global navigation systems often structure information without directly addressing user tasks
- A user who wants to “attend a seminar” would not know whether to look under “Products,” “Services,” or “Support”
- Task-focused navigation addresses this problem directly by identifying most common user needs and listing them using active verbs
- Requires additional pages to address needs of specific audiences; those pages often have links back to the overall taxonomy

Your homepage should offer users a clear starting point for the main one to four tasks they’ll undertake when visiting your site.

Jakob Nielsen, Alertbox, January 9, 2000
Avaya At The Forefront

Avaya provides communications systems, applications and services to more than 90% of the FORTUNE 500®. Read what we have to say about solving the enterprise communication challenges of today, and tomorrow. More

Find Out More

Avaya Management and Operations Services for enterprise communications

Technology Commitments
Learn about Avaya’s focus on innovation and latest commitments to the future of technology. More

Strategic Alliances
Come read about the latest Avaya strategic alliances and continuing partnerships. More

Communities
Business Partners
Alliances
Developers
Consultants
Small to Mid Businesses
Service Providers
Government
Investors
Journalists
Customer User Groups

I Want To...
Work at Avaya
Learn What’s New
Attend an Avaya Event
Get Product Documentation
Explore the Resource Library
See Special Offers

News Releases
Get timely news and notes about Avaya’s latest challenges and innovations. More

For the 2002-2006 FIFA World Cup™
Register now for regional INAAU conference,
November 10-14, 2002, click here

© 2002 Avaya Inc. Use of this site indicates you accept the Terms of Use and the Privacy Statement
Other Systems

- Animated Systems (flash/dhtml)
- Non-euclidean Hyperbolic Trees
Other Systems

- Animated Systems (flash/dhtml)
- Non-Euclidean Hyperbolic Trees

plumbdesign Visual Thesaurus (www.visualthesaurus.com)

Hyperbolic data from Young Hyun of CAIDA, San Diego Supercomputer facility
Investigating Navigation Directions

- There is more than one solution.
- There is not always a solution that outweighs all other directions.
- Tradeoffs and decisions during the design process are made for many reasons:
  - Software Limitations
  - Screen Real Estate
  - Stakeholder preferences
- This is rarely a formalized process during design.
Design Rationale

- Based on work done on Process Oriented Design Rationales
  - Graphical Issue-Based System (gIBIS), Conklin & Yakemovic, 1991

- Issues are stated
- Positions are put forth as a “potential” solution(s) or response to the issue
- Arguments Support Positions
- Sub-Issues can branch off of the main issue
Design Rationales come in handy...

- When a proposed solution has an unanticipated limitation during development or evolution.
  - Rapid “backtracking”
  - Documentation of Design revisions

- When an external party wants to see the reasoning process that led to decisions
  - Shows Accountability
  - Shows as many avenues were examined as possible
  - Lets the client participate in the design process by decision tree
Redesign Example

When a proposed solution has an unanticipated limitation during development or evolution

- Rapid “backtracking”
- Documentation of Design revisions

Issue: Redesign for a system that was not intended to scale and that must deal with software limitations.
Redesign Example

Issue: Redesign for a system that was not intended to scale and that must deal with software limitations.

Enter the contents of your email below. You can type a message to anyone in your address book or to any contacts. You can mail them appointments from your calendar or tell them about books that you would like to read.

To: 

Subject*: 

BCC: 

From*: 

Reply To: 

Message*: 

Done Cancel

Page is rendered below this line
Browser cutoff
Redesign Example

Positions: Initial Solutions and design artifacts

Solutions:

Issue:

[User] - [Page Title]

<table>
<thead>
<tr>
<th>Address Book</th>
<th>Calculator</th>
<th>E-mail Messages</th>
<th>Graphs</th>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Play</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games</td>
<td>Notes</td>
<td>Calendar</td>
<td>Appointments</td>
<td></td>
</tr>
</tbody>
</table>

[User] - [Page Type]

<table>
<thead>
<tr>
<th>Profile</th>
<th>Address Book</th>
<th>Status</th>
<th>E-mail Messages</th>
<th>Graphs</th>
<th>Notes</th>
<th>Print</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play</td>
<td>Games</td>
<td>Notes</td>
<td>Calendar</td>
<td>Appointments</td>
<td>Books</td>
<td>Contacts</td>
</tr>
</tbody>
</table>

[User] - [Page Content]

<table>
<thead>
<tr>
<th>Address Book</th>
<th>Calculator</th>
<th>E-mail Messages</th>
<th>Graphs</th>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Play</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games</td>
<td>Notes</td>
<td>Calendar</td>
<td>Appointments</td>
<td></td>
</tr>
</tbody>
</table>

Print
Redesign Example

Positions: Initial Solutions and design artifacts

Solutions:

Arguments:
Supporting
Objecting:

Supporting
Objecting:

Arguments:
Supporting
Objecting:

Arguments:
Supporting
Objecting:

Supporting
Objecting:

Supporting
Objecting:

Supporting
Objecting:
There are more formal methodologies established for larger projects.

Decision Representation Language
- Quantifiable weights to criteria (arguments)
- Can be used to inherit relationships so that design changes are automated.
- Not very feasible for quick decisions or small projects
- Requires a formal semantics system
Recommendations

- Follow widely-established conventions for global and utility navigation
- Create broader, shallower hierarchies that enable users to see a wide range of options
- Consider how users will want to cross-navigate when allocating screen real-estate to navigation
- Use rollovers to speed users to lower level pages – but don’t neglect the underlying information architecture and interface design
- Consider using supplemental navigation systems, like user-type or task-focused navigation, if your site is large enough or your content supports them
- Document Design Rationale when possible for accountability and direct representation of design direction.