Information Architecture

2. Navigation

(And a bit on design patterns)

These two lectures on IA

Last time:

A. Content Organisation
B. Labelling

[how the system is organised “behind the scenes”]

Today:

A. Navigation

[what the user actually sees/how they use it using a particular medium, e.g. web page, smart phone]

From Classification to Navigation

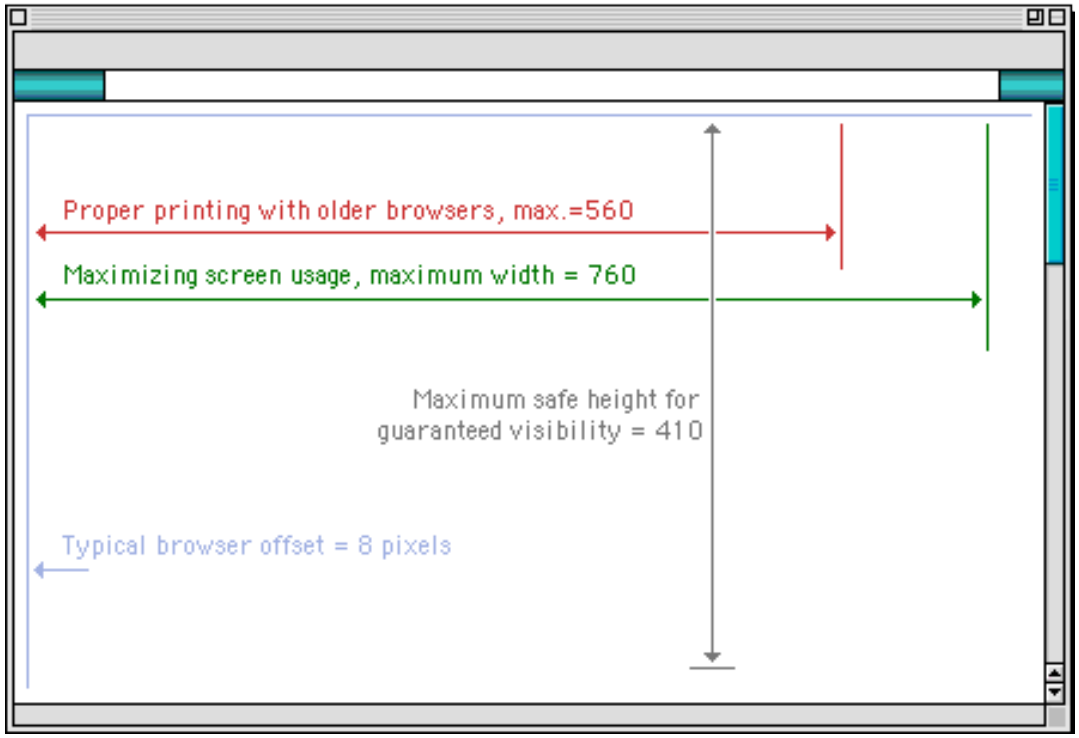
Mapping from raw information collections to **pages,** with **labelling,** must be designed to support user navigation (and printing)

Some issues:

- Hypertext linking
- Separate pages vs scrolling long page
- Page length / page design

Page Dimensions

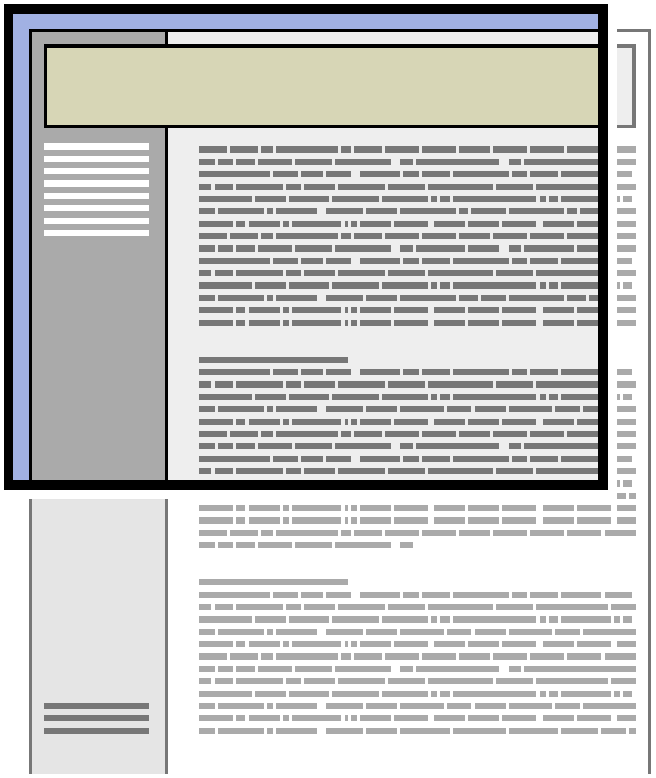
Graphic safe areas for 800x600 screens



Device screen height	Web site safe area	
	Width	Height
iphone portrait (480 px)	310 px	352 px
iphone landscape (320 px)	468 px	202 px
ipad portrait (1024 px)	750 px	920 px
ipad landscape (768 px)	1010 px	660 px
screen : 768 px	989 px	548 px
screen : 800 px	1245 px	580 px
screen : 864 px	1117 px	644 px
screen : 900 px	1405 px	680 px
screen : 1024 px	1245 px	775 px
screen : 1050 px	1645 px	825 px
screen : 1080 px	1885 px	860 px
screen : 1200 px	1885 px	980 px
screen : 1440 px	2525 px	1220 px

Page Dimensions

800x600 screen area

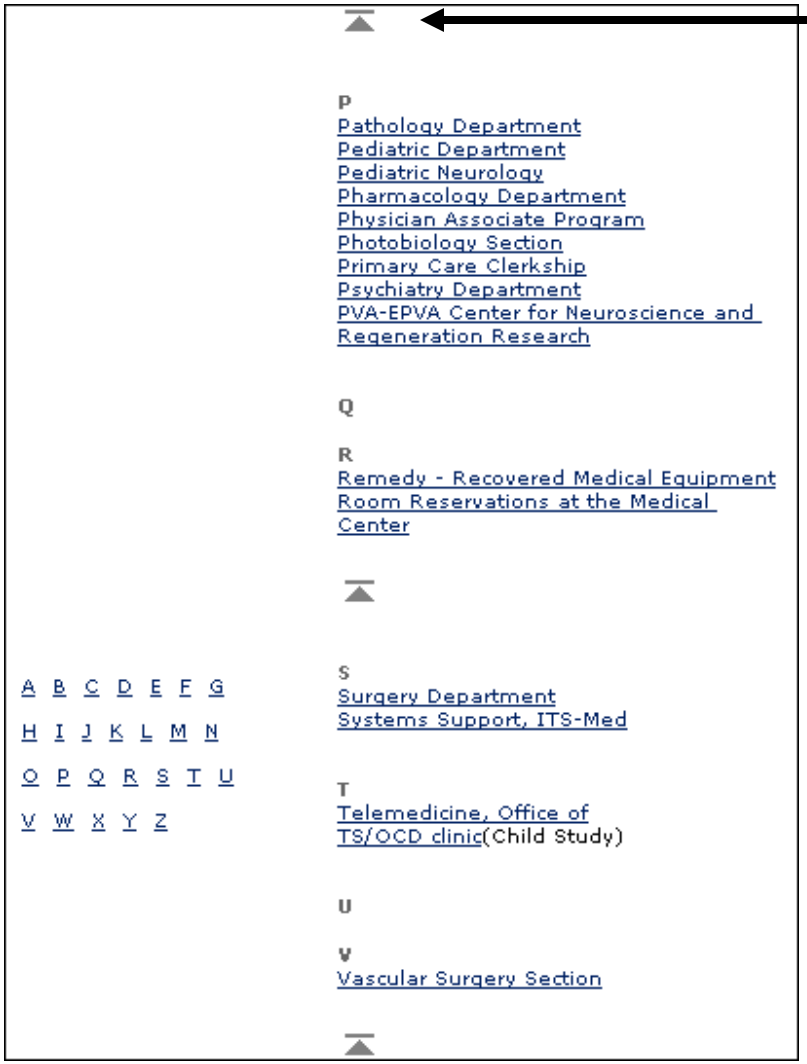


Page Dimensions

Bad: Too wide layout does not fit on 800x600 screen

Good: Single-screen design

Page Length



P
Pathology Department
Pediatric Department
Pediatric Neurology
Pharmacology Department
Physician Associate Program
Photobiology Section
Primary Care Clerkship
Psychiatry Department
PVA-EPVA Center for Neuroscience and Regeneration Research

Q

R
Remedy - Recovered Medical Equipment
Room Reservations at the Medical Center

A B C D E F G
H I J K L M N
O P Q R S T U
V W X Y Z

S
Surgery Department
Systems Support, ITS-Med

T
Telemedicine, Office of
TS/OCD clinic(Child Study)

U

V
Vascular Surgery Section

Jump to top of page

Page Length

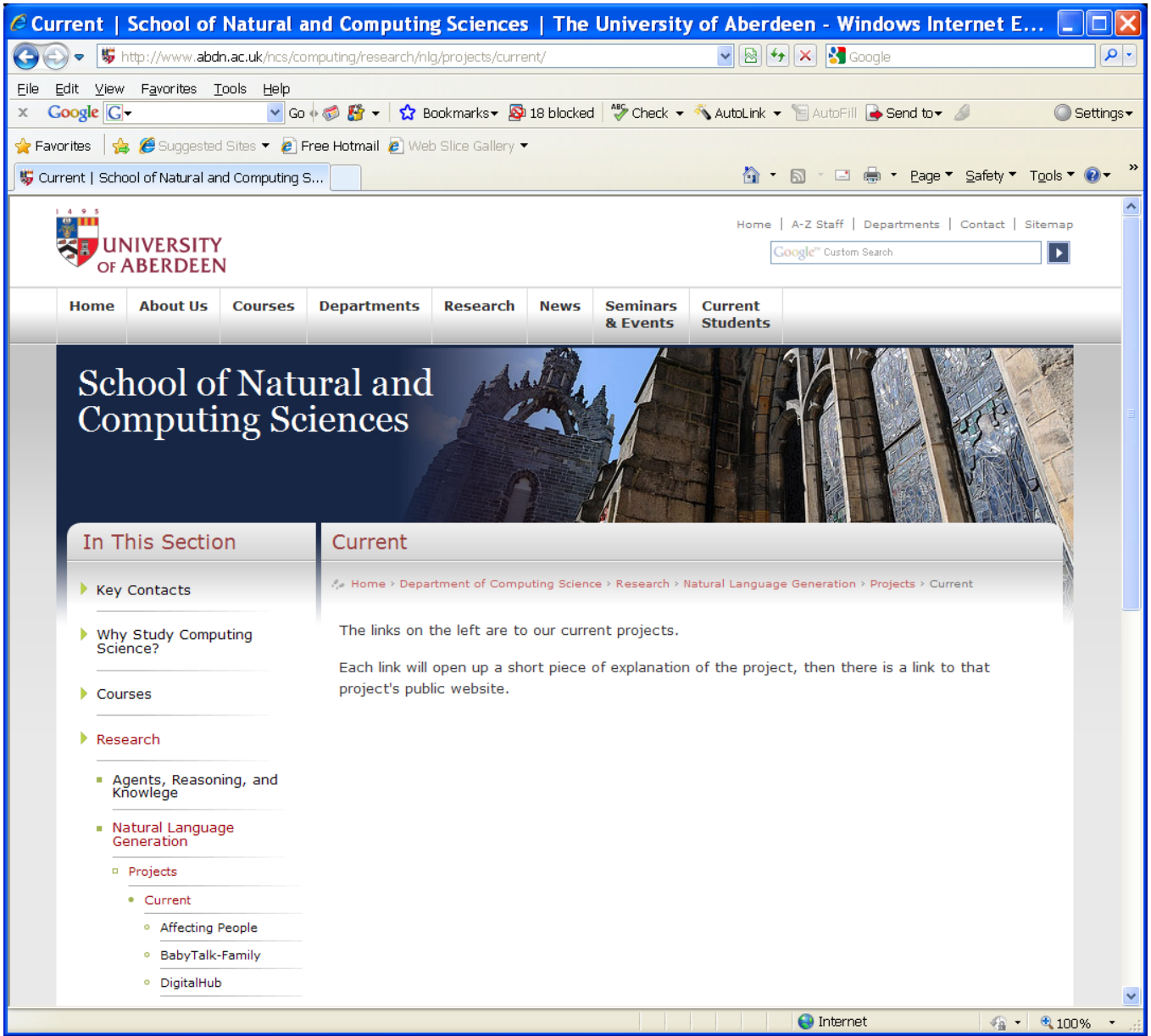
First screen
- Highest priority
- Highest density of links

"Above the fold"

"Below the fold"

Second screen
- Lower priority items
- Density of links less critical

Bad Example


Current | School of Natural and Computing Sciences | The University of Aberdeen - Windows Internet E...
http://www.abdn.ac.uk/ncs/computing/research/nlg/projects/current/
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Current | School of Natural and Computing S...
UNIVERSITY OF ABERDEEN
Home | A-Z Staff | Departments | Contact | Sitemap
Home
About Us
Courses
Departments
Research
News
Seminars & Events
Current Students
School of Natural and Computing Sciences
In This Section
Key Contacts
Why Study Computing Science?
Courses
Research
Agents, Reasoning, and Knowlege
Natural Language Generation
Projects
Current
Affecting People
BabyTalk-Family
DigitalHub
Current
Home › Department of Computing Science › Research › Natural Language Generation › Projects › Current
The links on the left are to our current projects.
Each link will open up a short piece of explanation of the project, then there is a link to that project's public website.
Internet
100%

What’s meant by navigation?

“exploiting Web site’s structure and content to find, browse and explore information”

How does navigation work in real life?

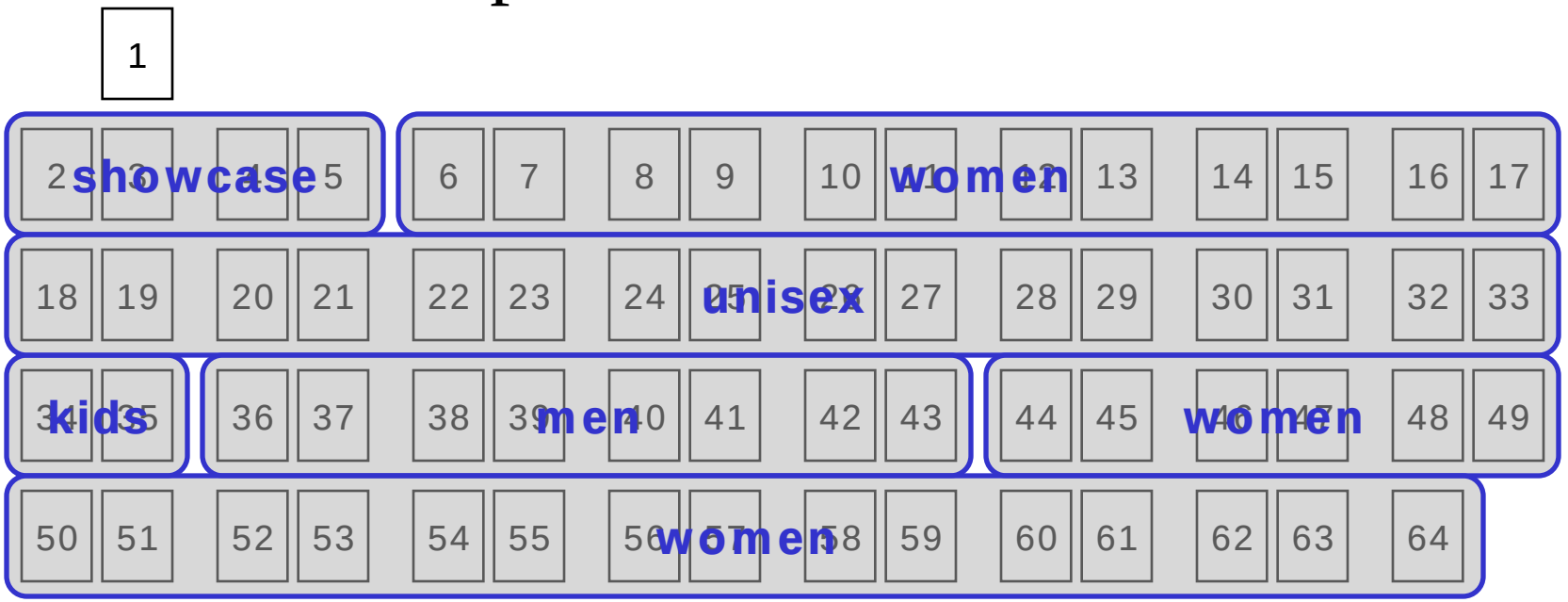
- Following signs, go to place marked for you
- “Automatic pilot”
- Landmarks
- Maps, floor plans
- Ask somebody directions or follow a recommendation
- Take a guided tour
- Follow step by step directions
- Go where you see other people you know
- Use a classification system, e.g. Dewey Decimal

How does “navigation” work in paper information sources?

- Table of contents
- Index
- Flicking through pages
- Tabs, coloured sections
- Turned down pages, bookmarks
- Looking for “landmark” e.g. photo inserts
- How much has been read so far?

Example: Lands' End Catalog

An implicit architecture



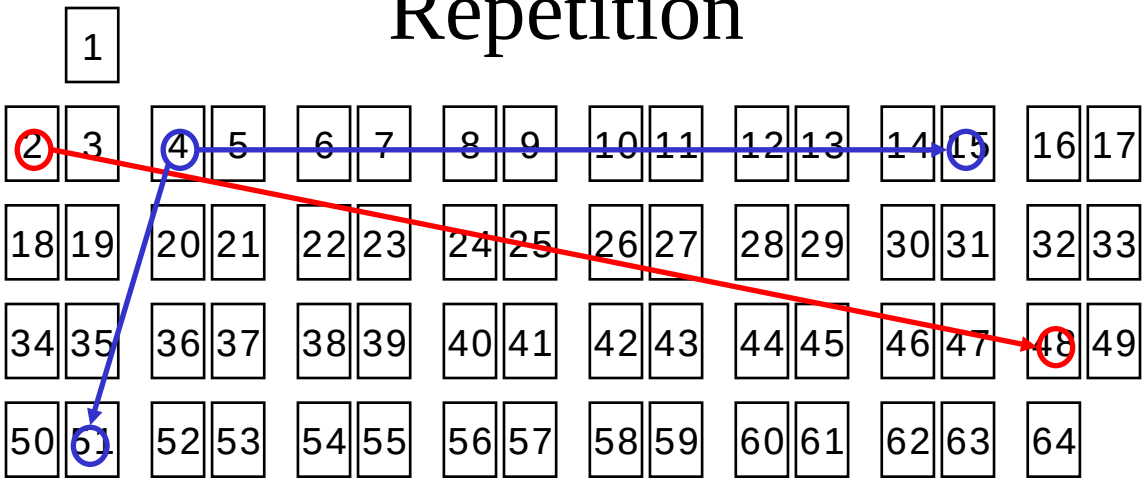
Example: Lands' End Catalog

1

An alternative view

2	3	4	5	6	7	**spring casual**						12	13	14	15	16	17
spring casual						22	23	24		**cool-weather casual**				30	31	32	33
kids		36	37	38	39	40	41	**dressy**				44	45	46	47	48	49
50	**summer casual**				55	56	**special purpose**				61	62	**shoes**			64	

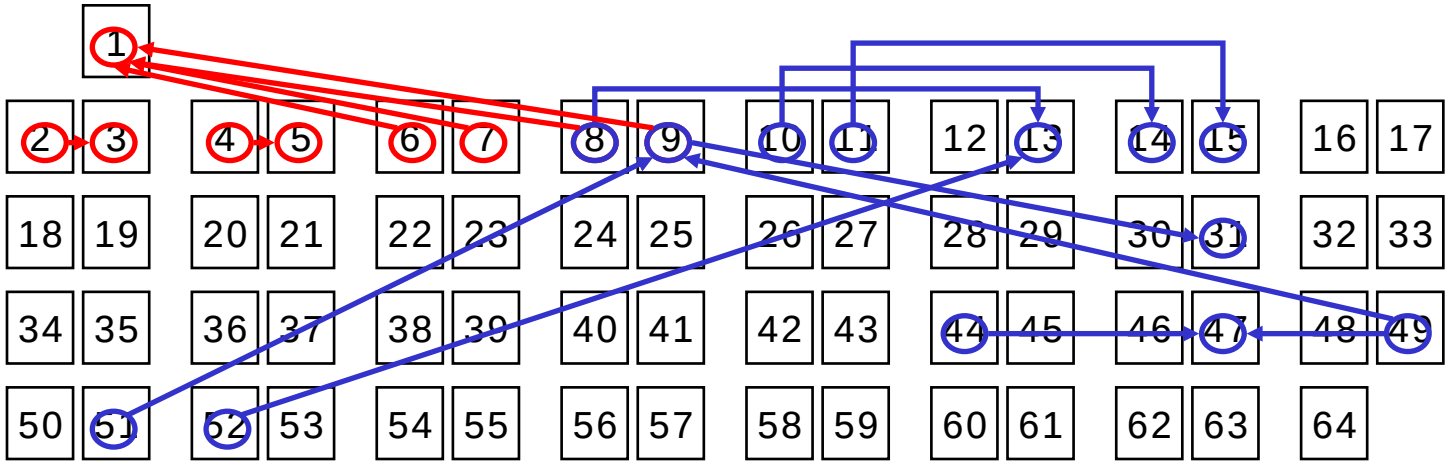
Repetition



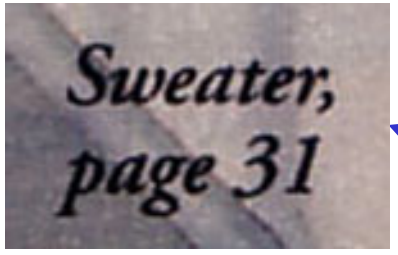
page 4

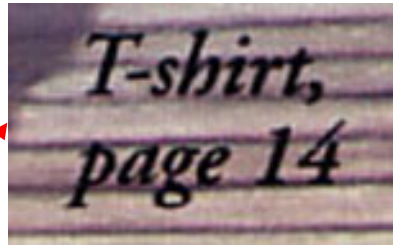
page 15

page 51



Reference and redirection





Translate into Web navigation aids?

- Navigation buttons = directions to sections/areas
- Sitemaps, Directory structure (e.g. alphabetical)
- Home as landmark
- Go to previous site = Breadcrumb trails
- Guided tours
- User group areas
- Graphically distinguished areas
- Favourites/bookmarks
- Back
- Search
- Visited links

Building context

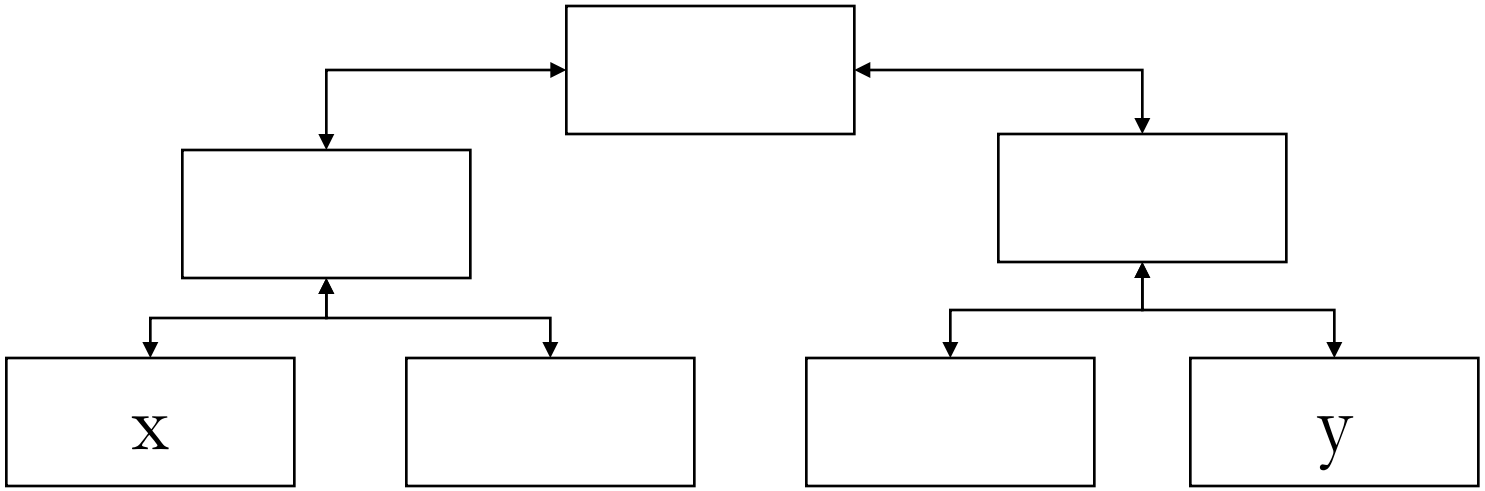
- Branding
- Navigation needs to present structure of information hierarchy
- Plan that any page could be the first page for users reaching the site from a search engine
- Give url on page
- Use breadcrumb technique, e.g.

  ```
  my studies/CS2506/course material
  ```

- Use meaningful URLs and page titles

Building flexibility

- Hierarchies can be very restrictive
- Direct links can allow user to move around at will - but can be complex



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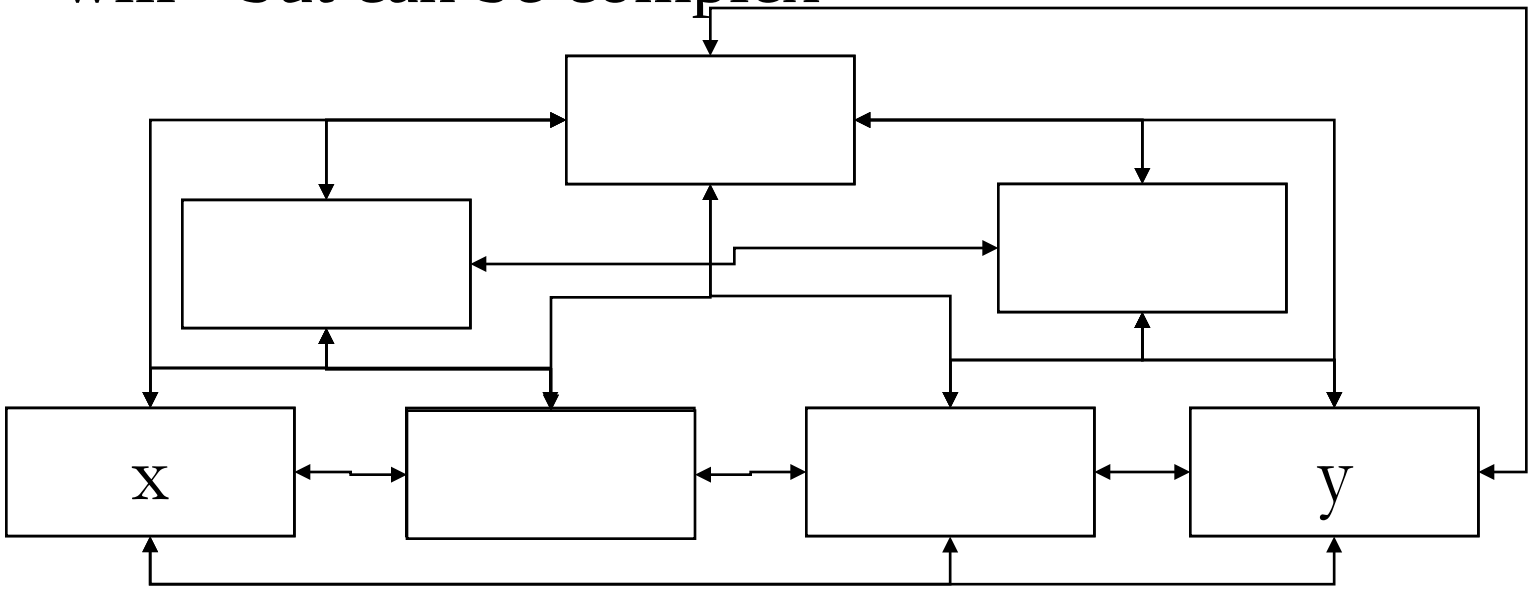


Building flexibility

- Often via in-text hyperlinks
- Users often don't see them
- If they're important, may be better to group them in indented list, e.g.
- The best football clubs:
  - Aberdeen
  - Arsenal
  - Barcelona

Building flexibility

Just make sure their meanings are obvious:

"The SAC was set up in 1999 by UBSU. We can advise you on topics such as unreturned deposits, properties in need of repair and any situation where you think you are being treated unfairly. The information on these pages is only intended as a guide; if you need further information or advice, please contact us."

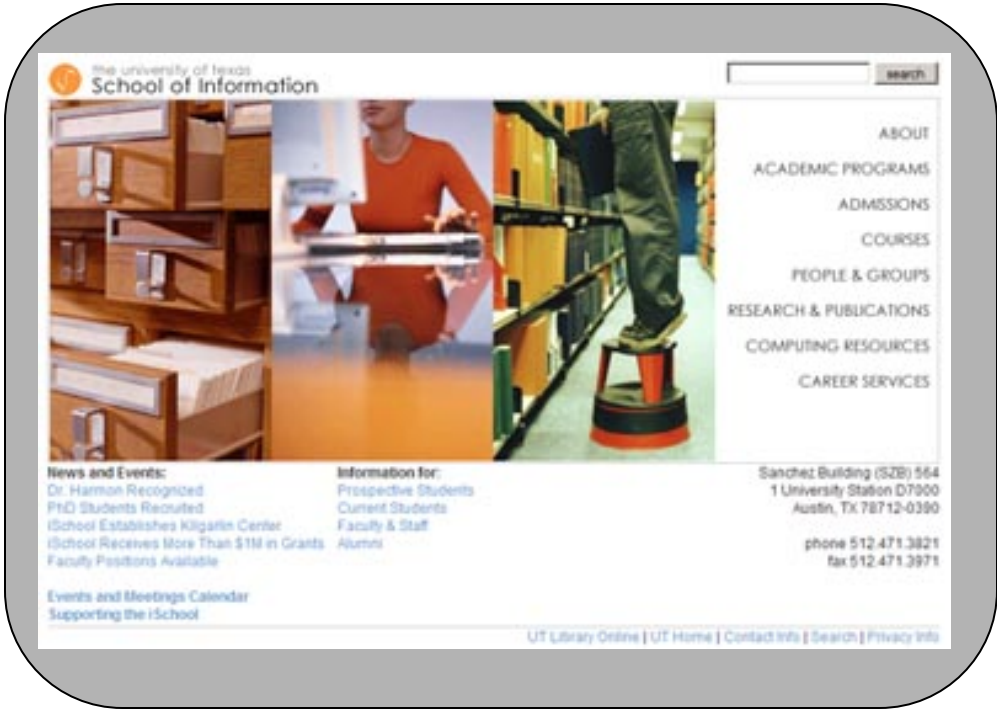
Navigation Systems

- Navigation systems need to:
  - Provide context (*Where am I?*)
  - Provide flexibility (*Where can I go?*)
  - Avoid wasting user's time (*Why should I go there? What will I find?)*
  - Provide guidance *(How can I get there? And get back to here?)*

1. Where am I?

- Well placed logos and up-front value propositions

- Obvious placement of navigation systems



2. Where are the things I am looking for?

- Global navigation systems
- Local navigation systems
- Contextual navigation systems
- Supplemental navigation systems

Global navigation systems

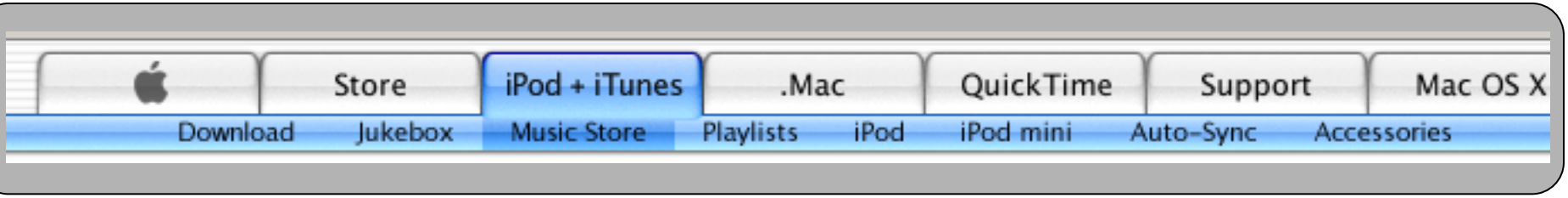
Site wide system, normally with main sections, referenced on every page via a navigation bar with buttons or tabs

Global navigation systems

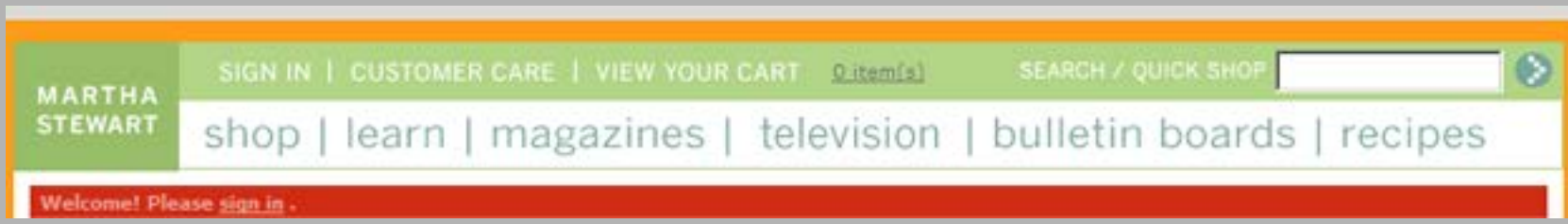
- Most commonly located on the top of all pages of a web site
  - links to important content, major categories, and search tools.
- Also can be located on the bottom of page
  - less commonly accessed areas linking to privacy policy, contact information, etc.
- Locations on mobile devices differs (see below)

Global navigation systems

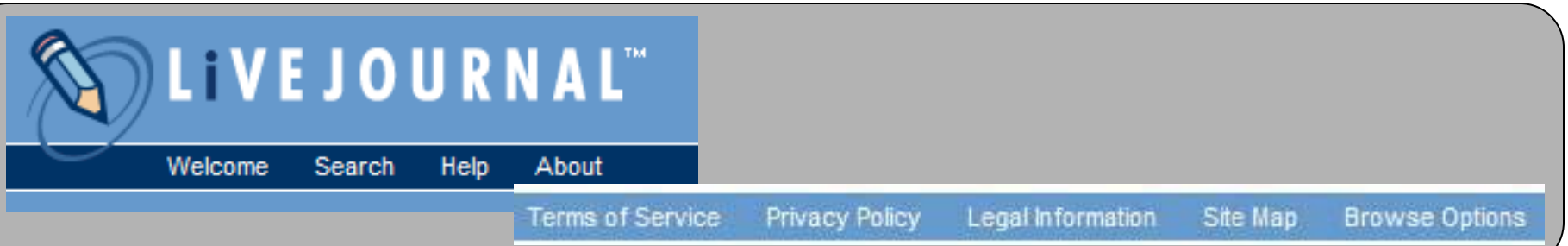
Tab Menu



Horizontal Menu



Bottom Menu



Explicit architecture

Architecture that is made apparent to the user

Very common for information retrieval tasks

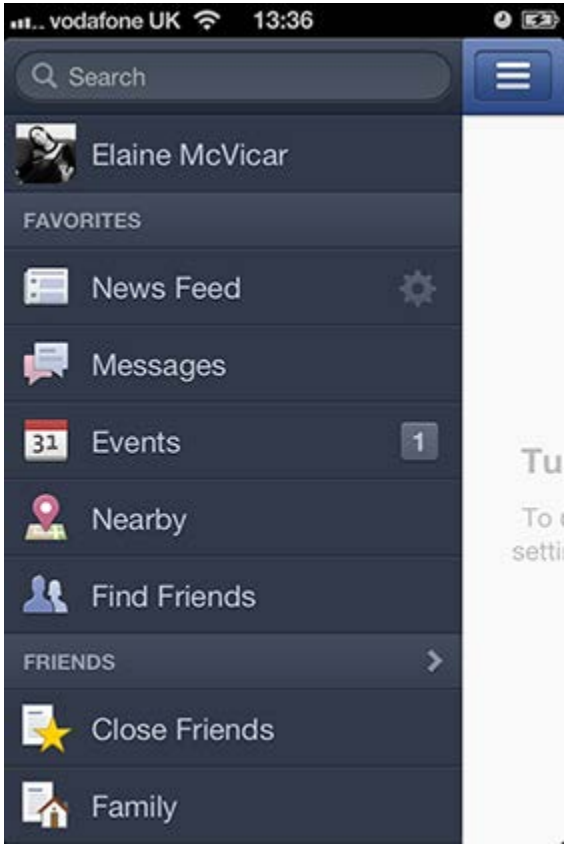
Labels can serve to make architecture explicit

But explicitness doesn’t ensure clarity

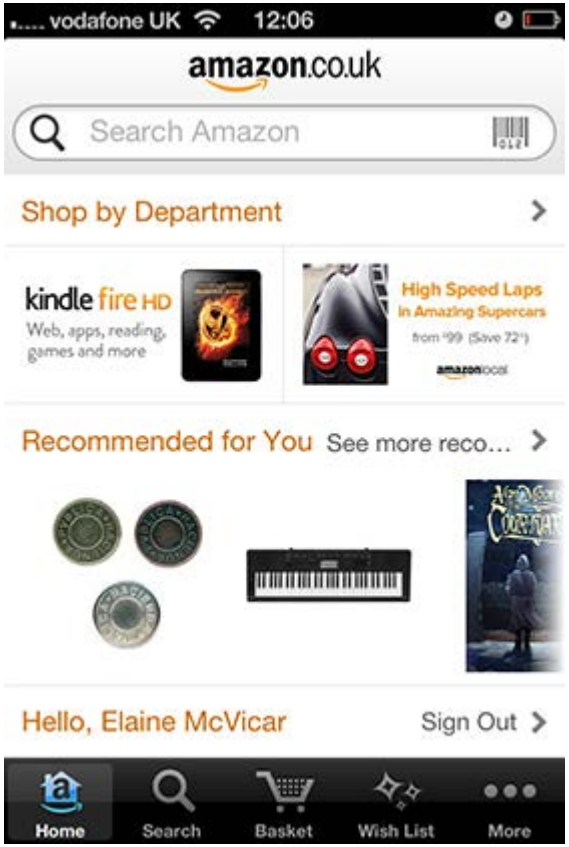
Example:

Global Navigation: Examples

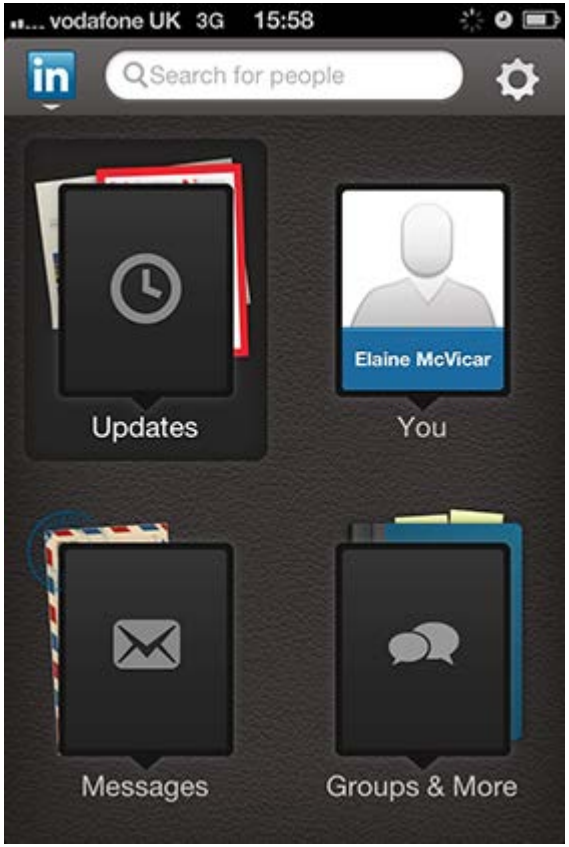
Facebook:
Side menu



Amazon:
Tabbed menu



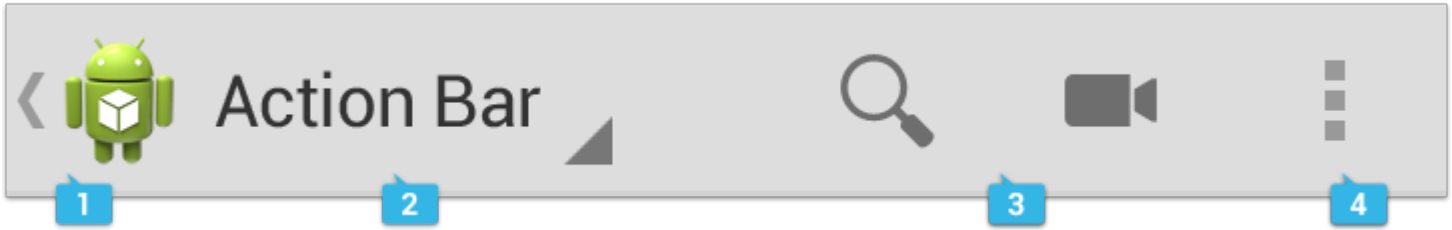
Linked In:
Hub-Spoke menu



Aside on Design Patterns

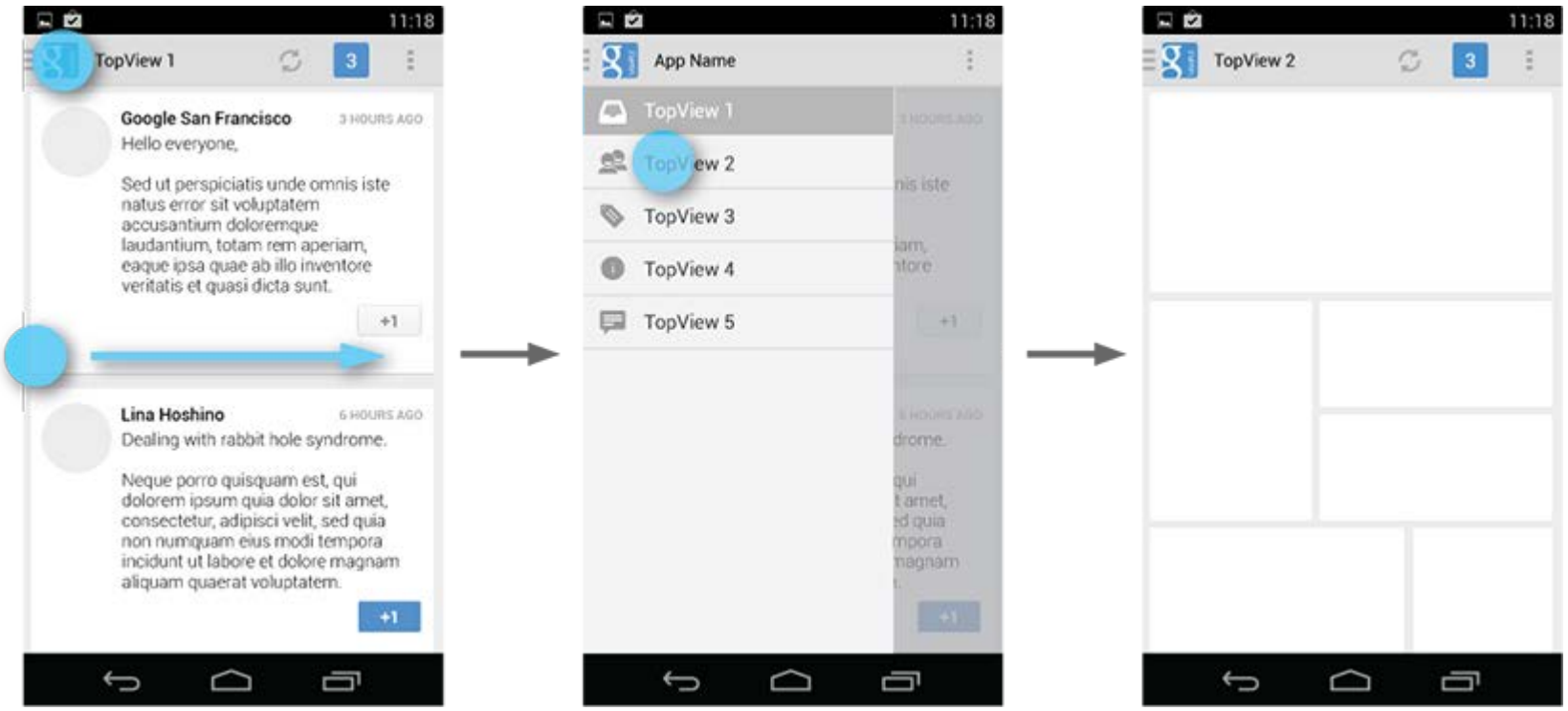
- Over time, conventions develop on ways for users to interact in a particular platform
- Called user-interface Design Patterns (not to be confused with design patterns used by programmers on how to design code)
- So, if designing for the web, Android phone, i-Phone etc, investigate design patterns!

Global Navigation: Android Design Pattern for Action Bar



1. App icon: establishes brand
2. View control (if users can switch views)
3. Action buttons: most important actions; number depends on screen size
4. Action overflow: less important actions

Global Navigation: Android Design Pattern for a ‘Navigation Drawer’



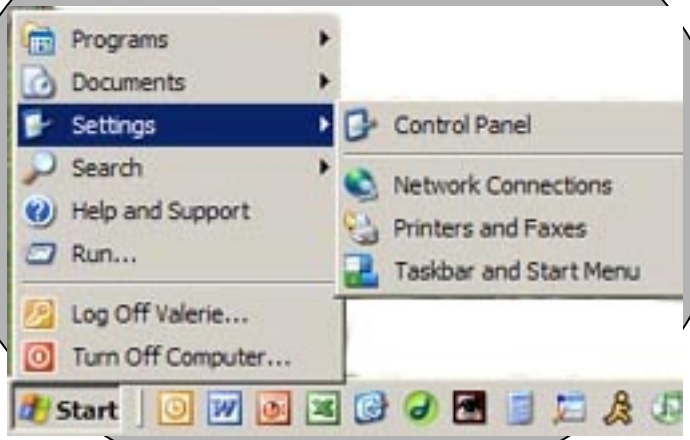
Local navigation systems

- Local navigation systems complement the global system by allowing users to explore the immediate area and its list of available categories

Local navigation systems

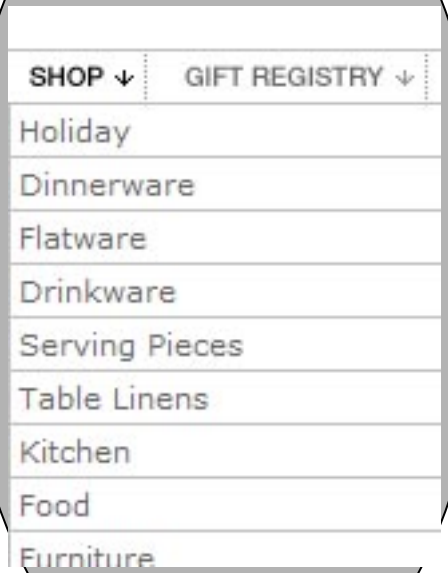
Sidebar

Cascading Menu



Drop-down Menu

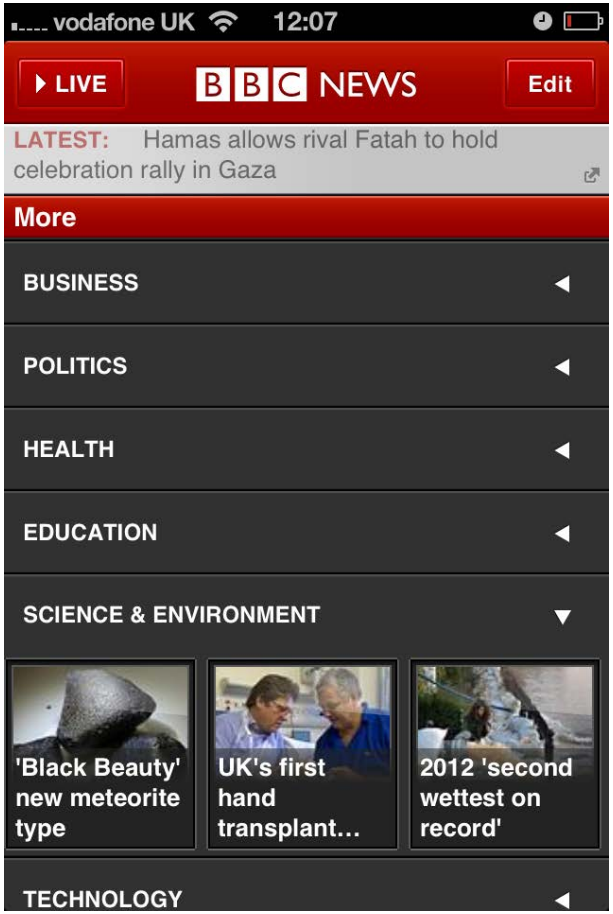
Fly-out Menu



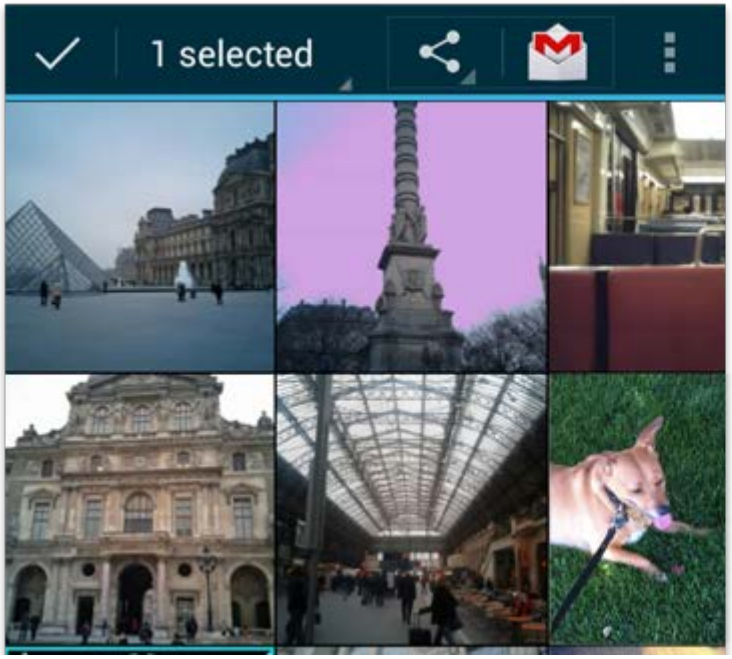
Local navigation: Examples

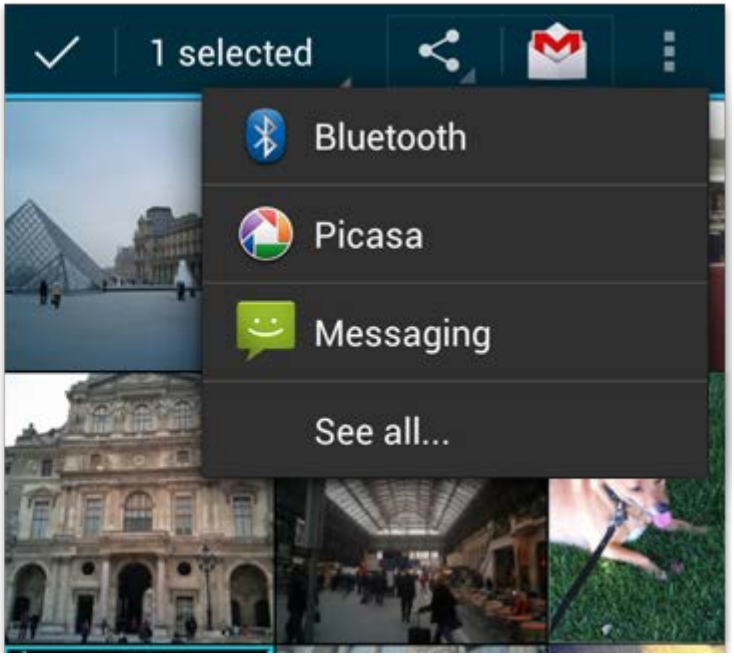
DuoLingo (iPhone): Hub-Spoke

BBC News



Local navigation: Android design pattern for Sharing data



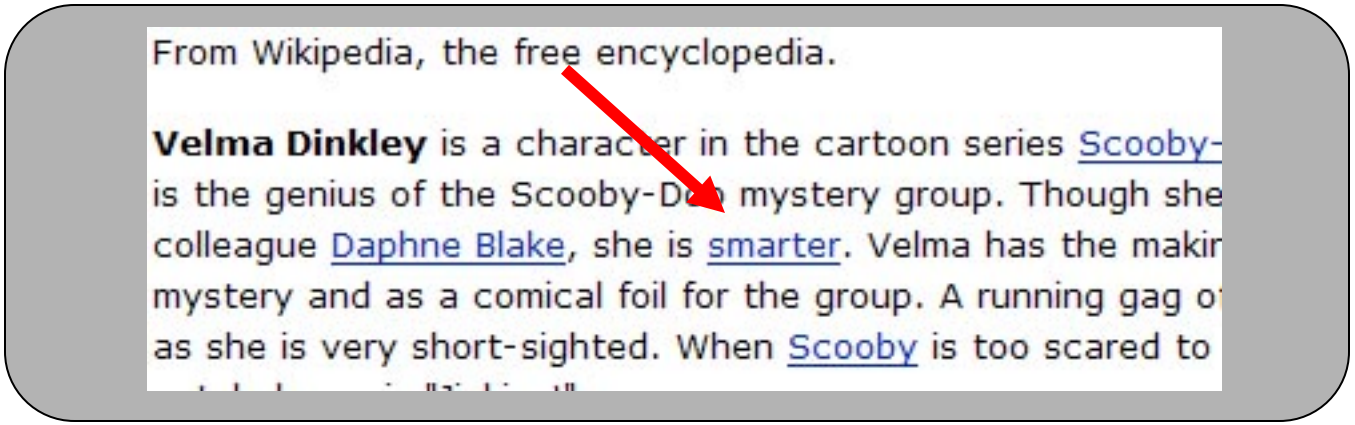


Integrated navigation elements

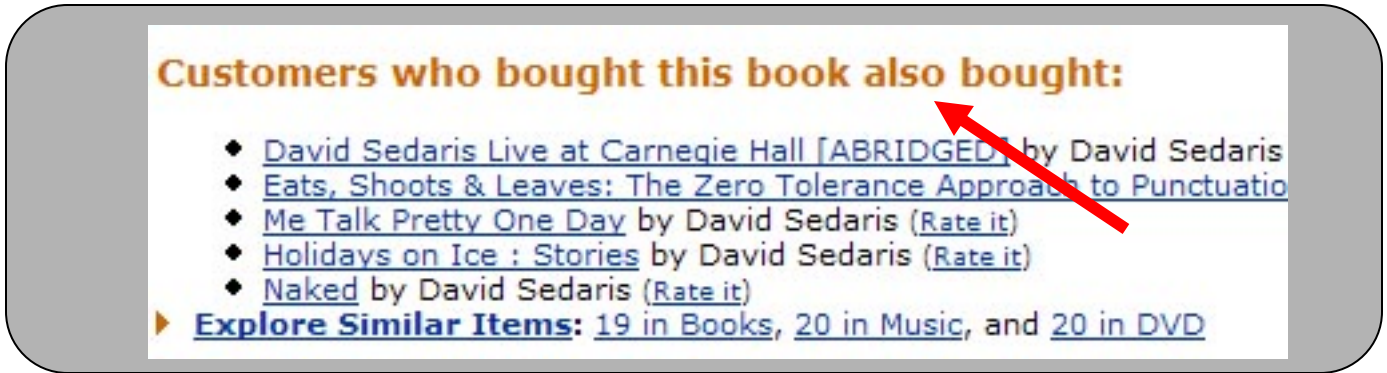
- Navigation bars
  - Text vs Graphical?
  - Button or (expanding) Menu?
  - Side vs Top vs Bottom of screen?
  - Current page?
- Frames
  - Real estate
  - The page model
  - Ever tinier page displays

Contextual Navigation Systems

- **Embedded or ‘in line’ hypertext links**

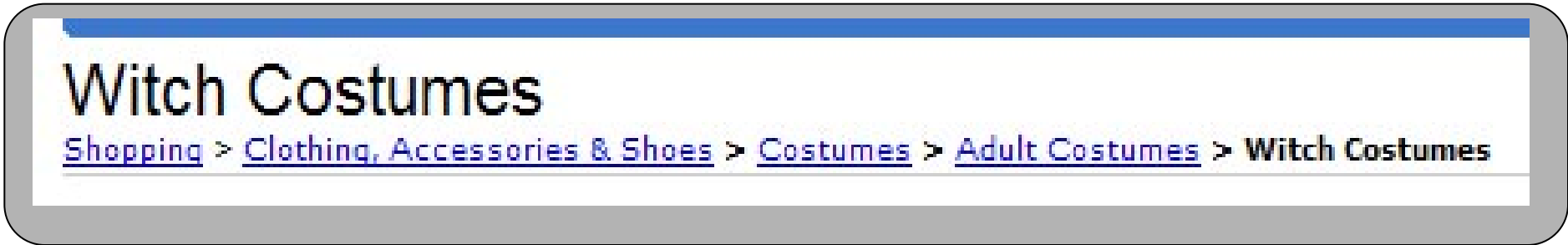


- **Associative links**



Supplemental Navigation Systems

- Site Maps
- Site Indexes
- Guided Tour
- Search
- Pagination
- Breadcrumbs



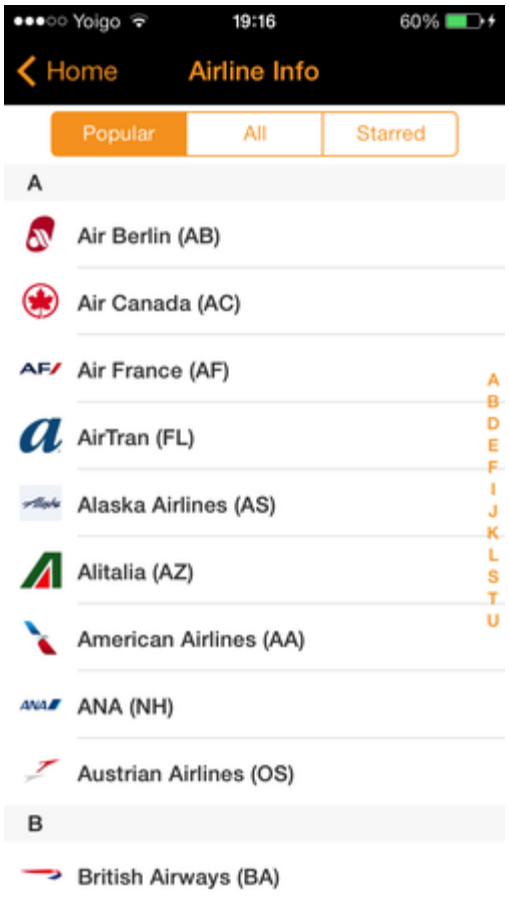
Supplemental Navigation Systems

- Site Map / Table of Contents
  - Reflects site's organisation system (*mental model*).
  - Gives reassurance of completeness

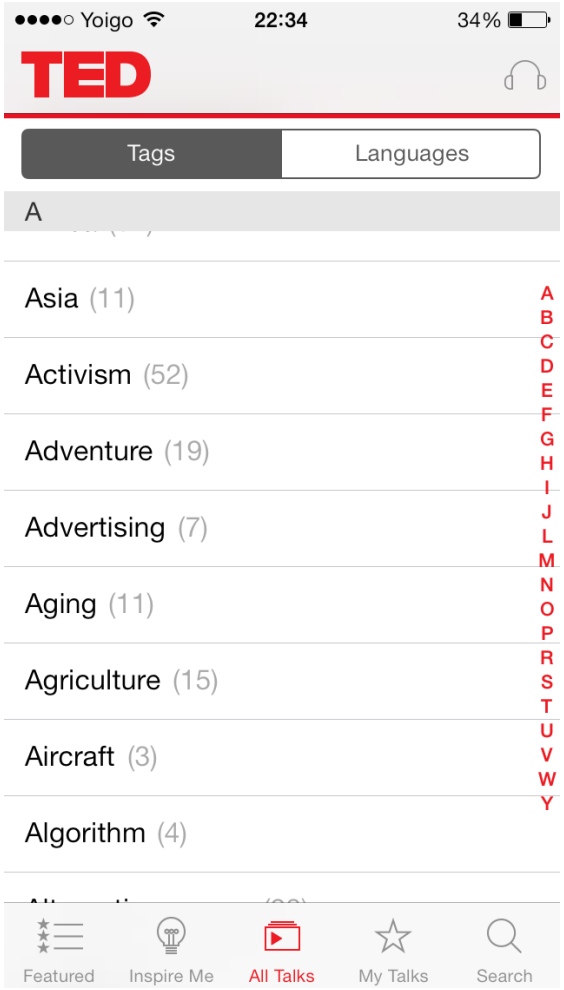
- Site Index
  - Flattens organisation system (*greater granularity*).
  - Supports known-item searching.
  - Often not directly available - use via search facility

Index: Examples

Kayak



TED



However: Not supplemental when only way to reach info

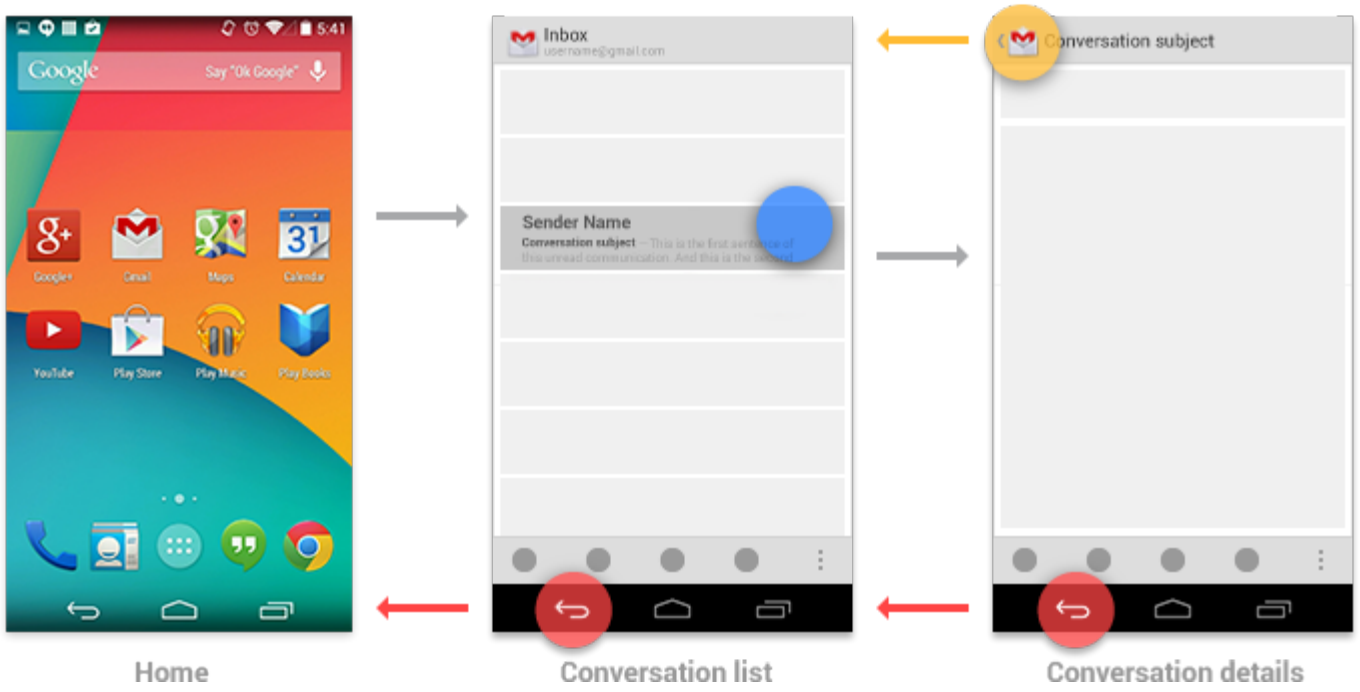
Supplemental Navigation Systems

- Guided Tour
  - Highlights a few of the site's resources for a specific audience, topic, or task.
  - Good for introducing users to especially relevant aspect of the site's content.

Supplemental Navigation Systems

- Search
  - "Search is one of the most important user interface elements in any large web site...Our usability studies show that more than half of all users are search-dominant." (*Jakob Nielsen)*
  - But don't take user off site
  - Think about scoped search

Android design pattern for “Back” and “Up”

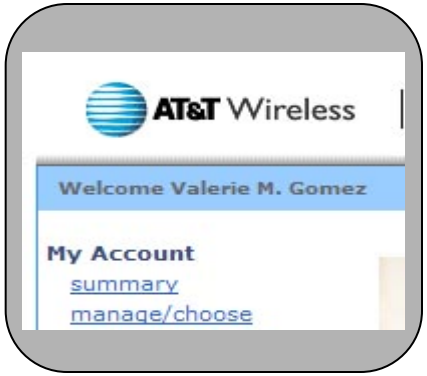


3. How do I get to what I am looking for?

- Links should look ‘clickable’
  - Transference -“expectations about an interface’s behavior based on their previous experience with other interfaces” (Withrow)
- Labeled with clear expectations of what lies beneath
- Visual perception
  - group links to gain meaning through context
    - ‘The Gestalt rule of proximity indicates that items closest together are perceived as being related/associated.” (Withrow)

Advanced navigation

- Personalization
  - website remember user's name, credit card info, address, etc.
  - attempt to guess as to what users want



- Customization
  - the user tells the site what she wants
    - local weather, scores for favorite teams, etc.

Rosenfeld & Morville, 2002, p. 127

Conclusion

- When planning and designing a navigation system, we can’t always anticipate all the paths users will take.

Conclusion

- When planning and designing a navigation system we can’t always anticipate all the paths users will take.

- But with user testing, we can come close!
  - testing is essential both before designing a navigation system and often once the website is launched to improve on it

Learning outcomes

Given a description of a system

You should be able to

- Provide examples of how global, local, contextual, supplemental navigation systems can be used
- Explain the role of user-interface design patterns
- Design appropriate navigation systems