Information Architecture

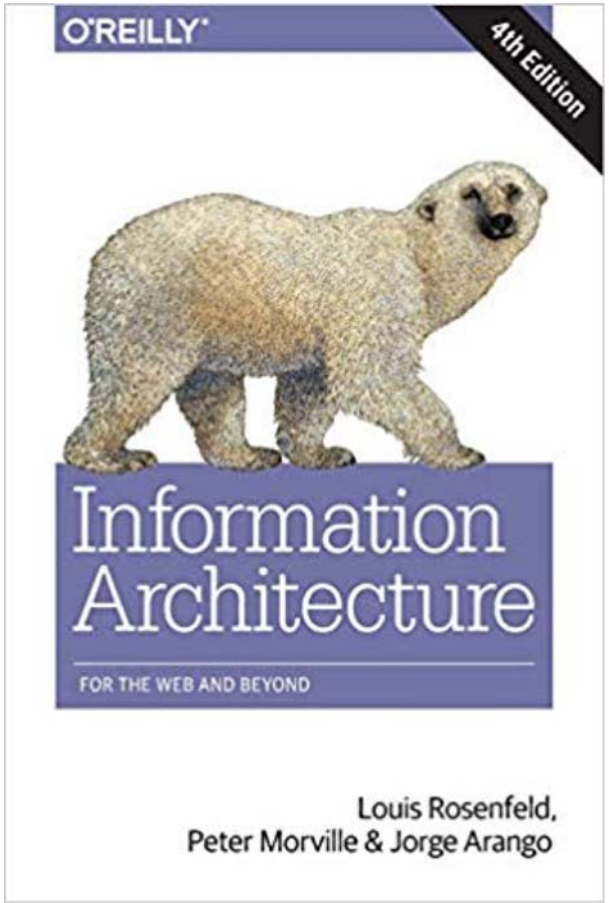
CS 6755
Lecturer: Prof. Henneman
9.20.2019

Information Architecture (IA)

A design discipline focused on making information **findable** and **understandable**

1. The structural design of shared information environments
2. The synthesis of organization, labeling, search, and navigation systems within digital, physical, and cross-channel ecosystems
3. The art and science of shaping information products and experiences to support usability, findability, and understanding
4. An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape

You can find this on-line at the GT Library. Make sure it is the latest (4th) edition.



Today

What makes IA interesting/ challenging?

Aspects of IA

- Organization
- Labels
- Navigation
- Search

Research methods

Documentation

Special topic: Search and navigation of large data sets

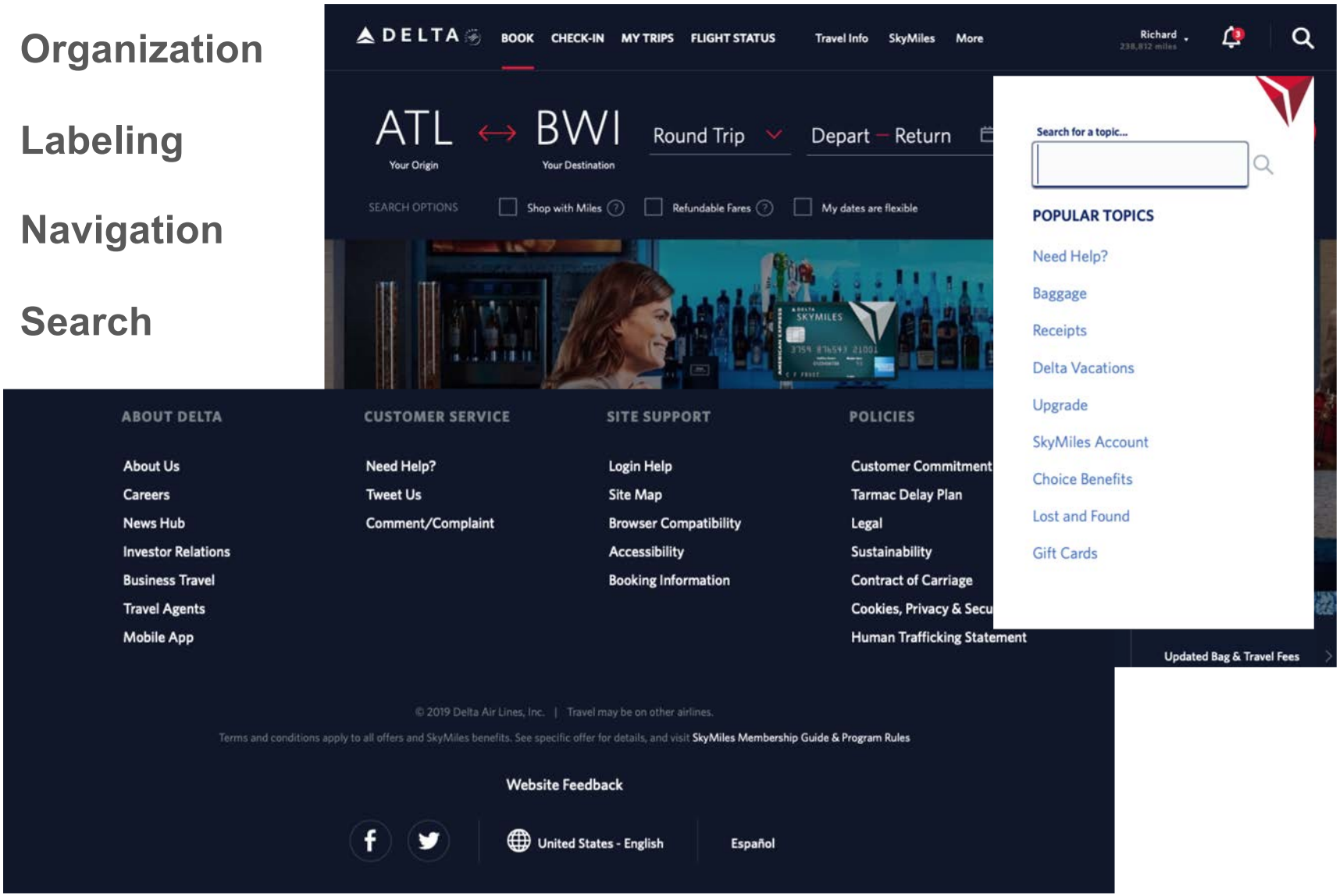
What constitutes the IA?

Organization

Labeling

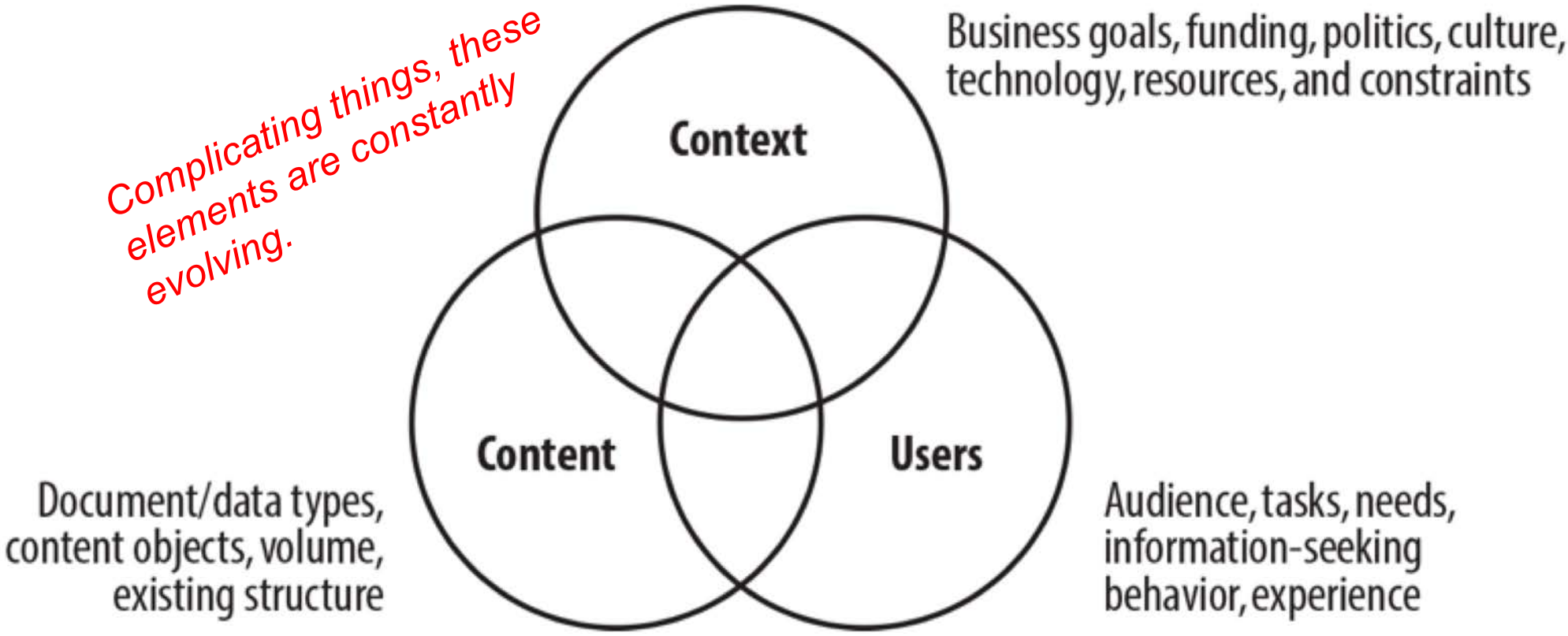
Navigation

Search



Crafting the Information Architecture

Designing an information architecture lies at the intersection of three elements.

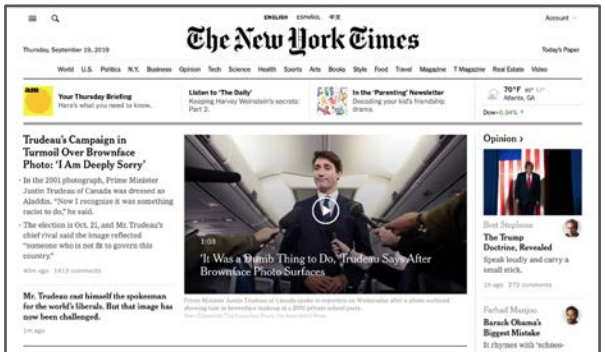


Importance of consistency

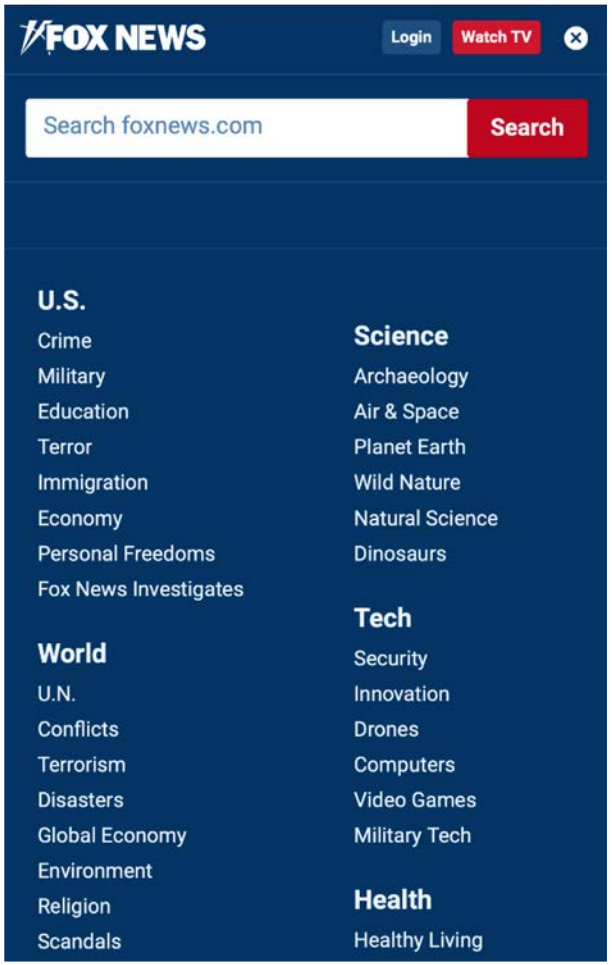
Internal consistency -- the Information Architecture serves the context it is designed for

External consistency -- the IA is preserved across different media, environments and uses

I.e., When using different channels, the users' experiences should be consistent and familiar.



Internal consistency

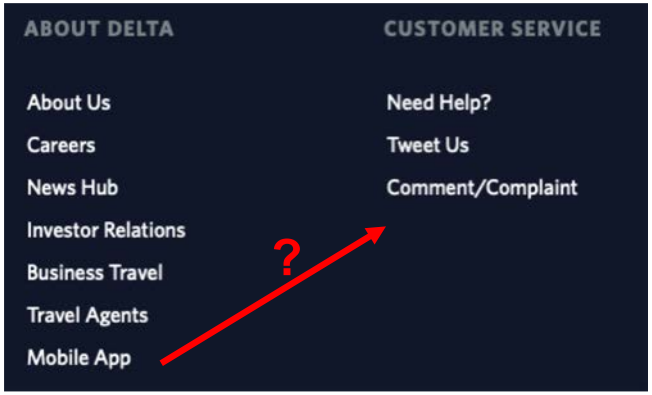


Challenges of Information Architecture

Ambiguity

- Words (labels) can have multiple meanings

- Where should content be placed?



Heterogeneity

- Most digital environments contain many different types of information

User differences in perspective

- Example: How I organize files vs. how you do it

Internal politics

Four elements of information architecture

Organization systems

➔ How we categorize information (e.g., by subject? Time? Geography?)

Labeling systems

➔ How we represent information (e.g., using specialized or generalized terminology)

Navigation systems

➔ How we browse or move through information

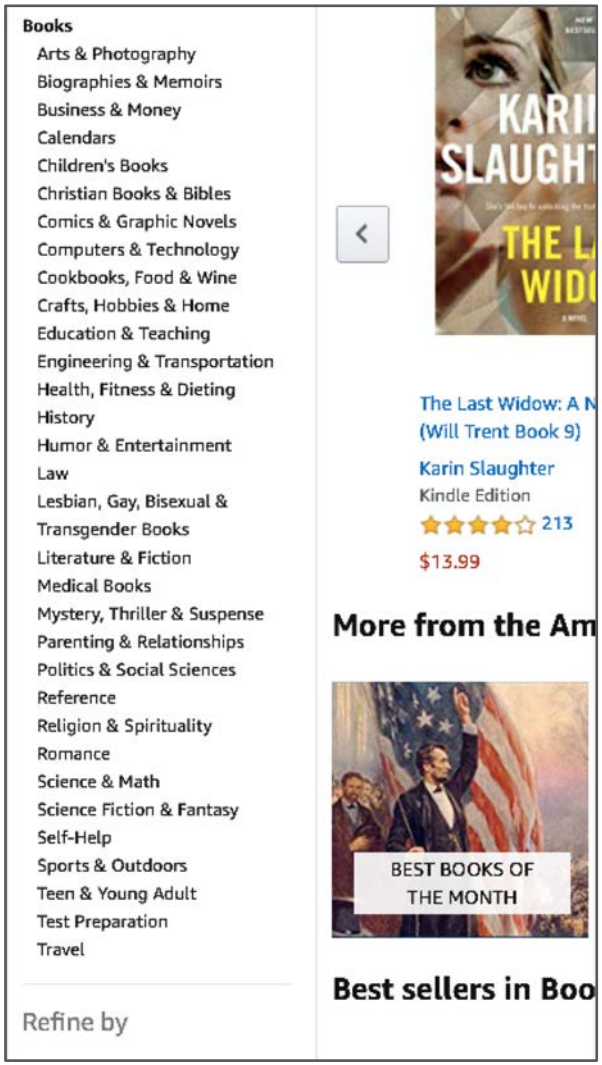
Searching systems

➔ How we search information

Organization scheme | **“Objective”** schemes

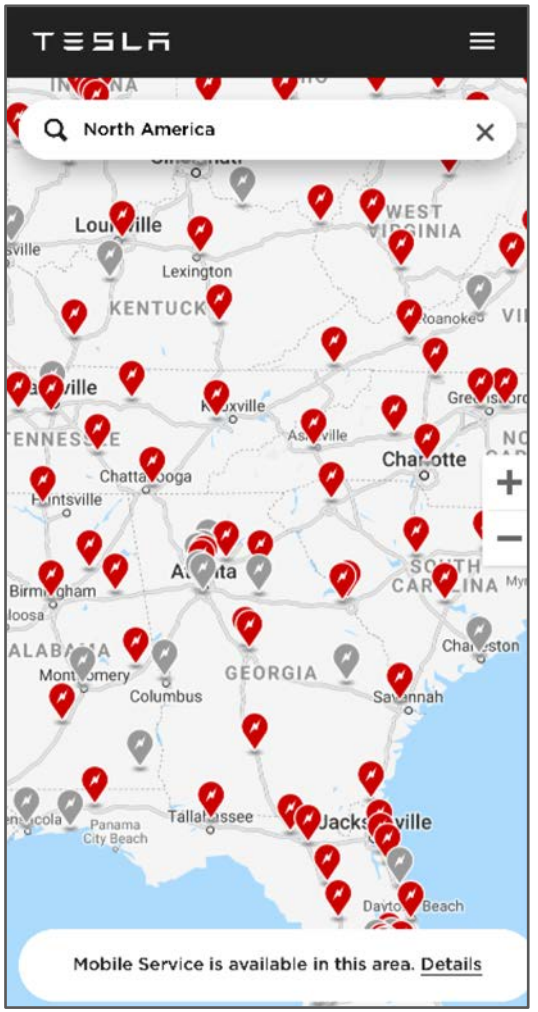
Well-defined and mutually exclusive | Easy to design and maintain | Easy to use when the user knows what she or he is looking for

Alphabetical



Chronological

Geographical



Organization scheme | **Ambiguous** schemes

Things are grouped in an intellectually meaningful way

Can be difficult to design and maintain

- New items may require redesign

Subjective due to

- Language
- Organization
- Human subjectivity

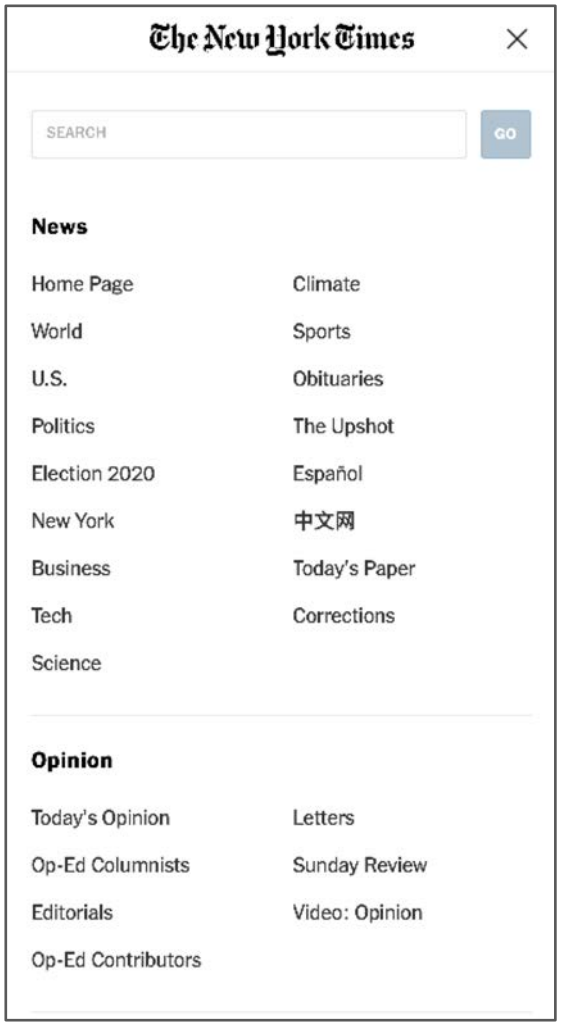
Why are these useful? Because we don't know what we are looking for

- Right label
- User has only vague info need that can't articulate
- Political - someone has made the decision that stuff should be grouped together

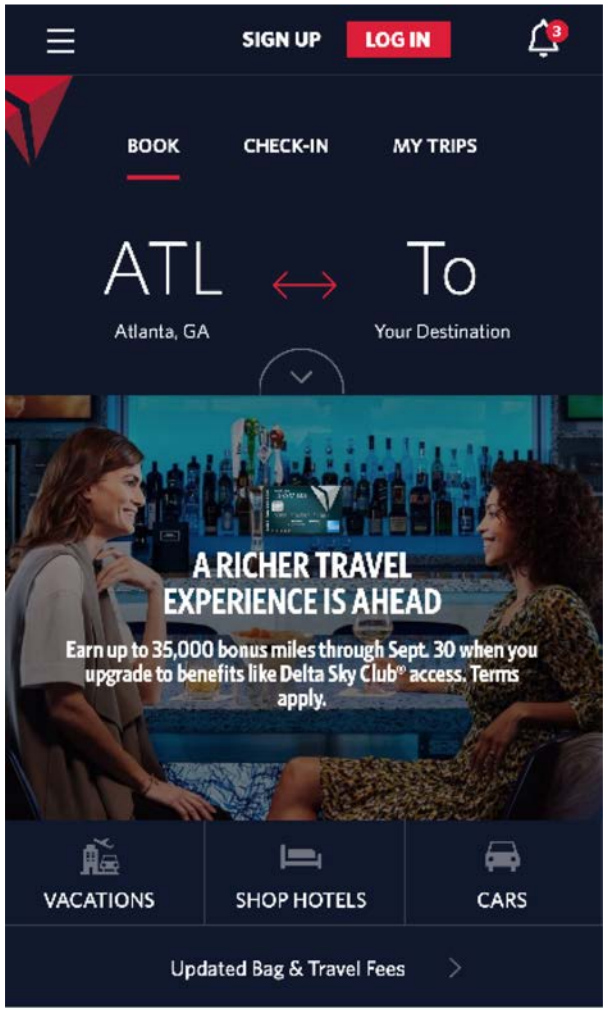
Success depends on the quality of the scheme and the placement of items in the scheme

Organization scheme | **Ambiguous** schemes

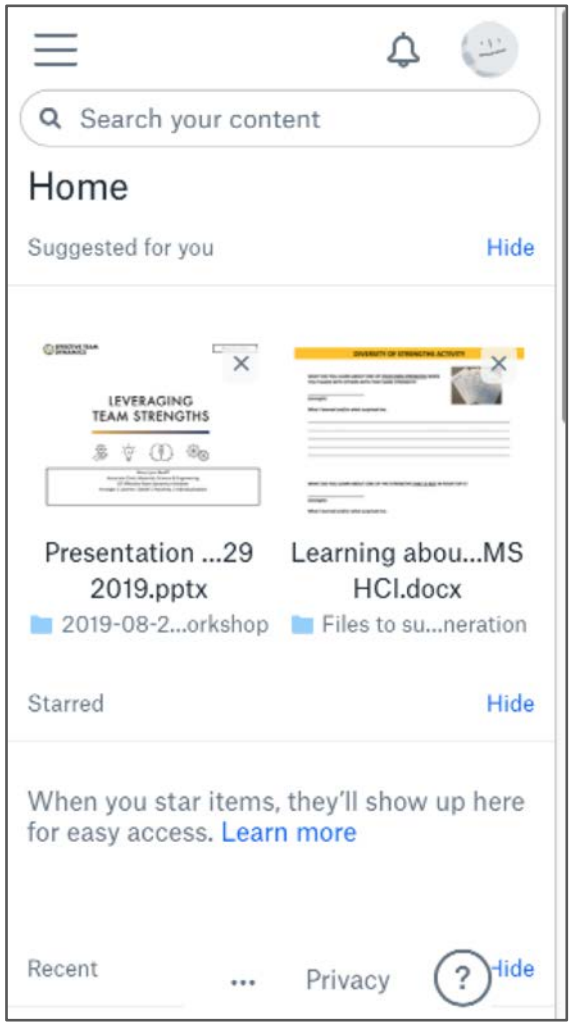
Topic



Task-Oriented

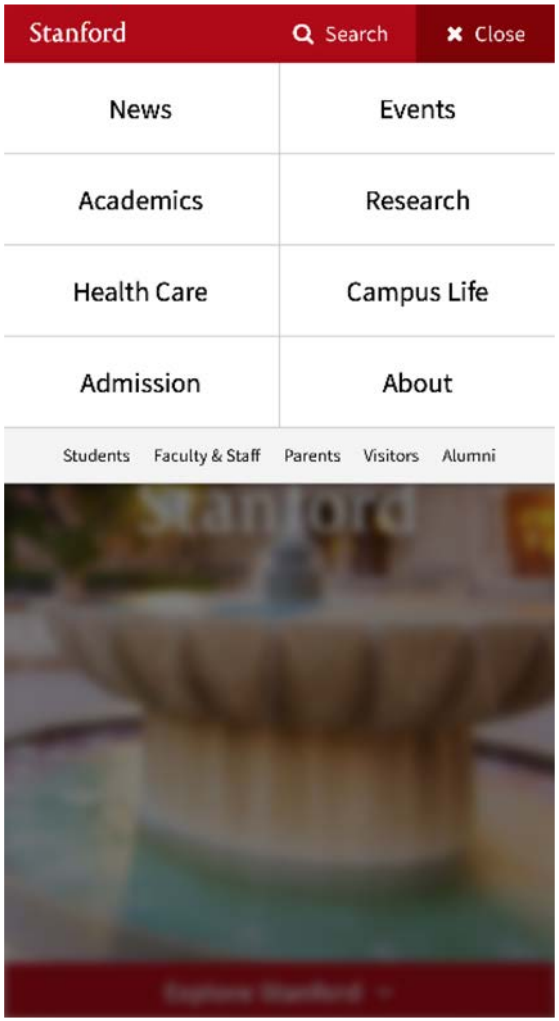


Metaphor



Organization scheme | **Ambiguous** schemes

Hybrid



Organization **Structure** | Hierarchy

A **hierarchy** is the most common approach to organizing information

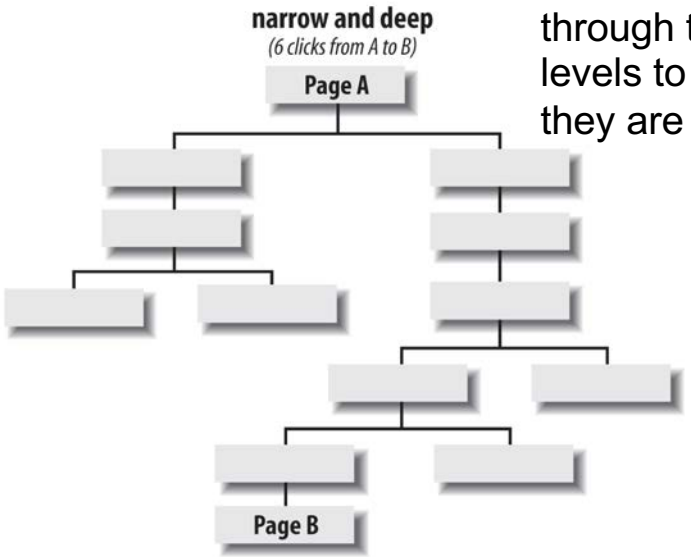
Mutually exclusive subdivisions and parent-child relationships

Usually a good place to start the information architecture process

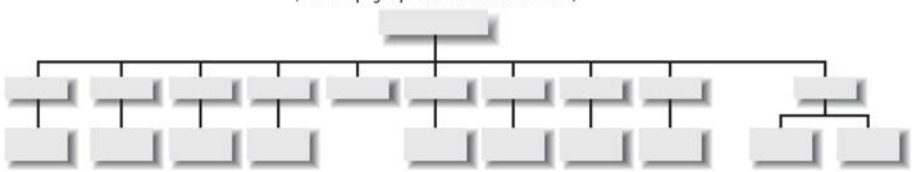
Balance breadth and depth

If too narrow and deep, users have to take too many actions to what they are looking for

If too broad and shallow, user is faced with too many options and can be surprised by the lack of content once they select an option



User has to click through too many levels to find what they are looking for.



User has to visually scan options and lowest level may not have much content

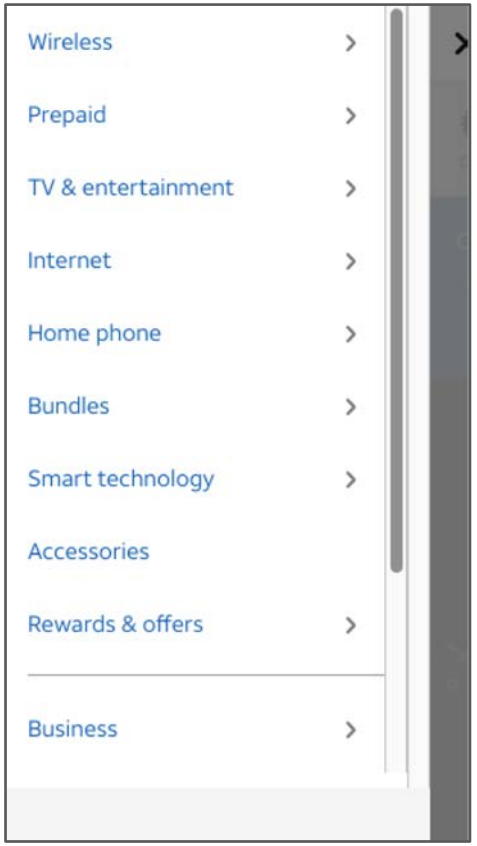
Labeling Schemes

Goal: Design labels that speak the same language as our users while reflecting the system's content.

Contextual Links

Headings

Nav System Choices



Icons

Labeling Schemes | **Guidelines**

Narrow the scope whenever possible

Develop consistent labeling systems, not labels

- Style
- Presentation
- Syntax
- Granularity’
- Comprehensiveness
- Audience

Sources of labels

- ➔ Your current information environment
- ➔ Good practice | *Create a table with label, destination identifier + <TITLE>. Are they consistent?*
- ➔ Comparable and competitive environments
- ➔ Thesauri, closed vocabularies

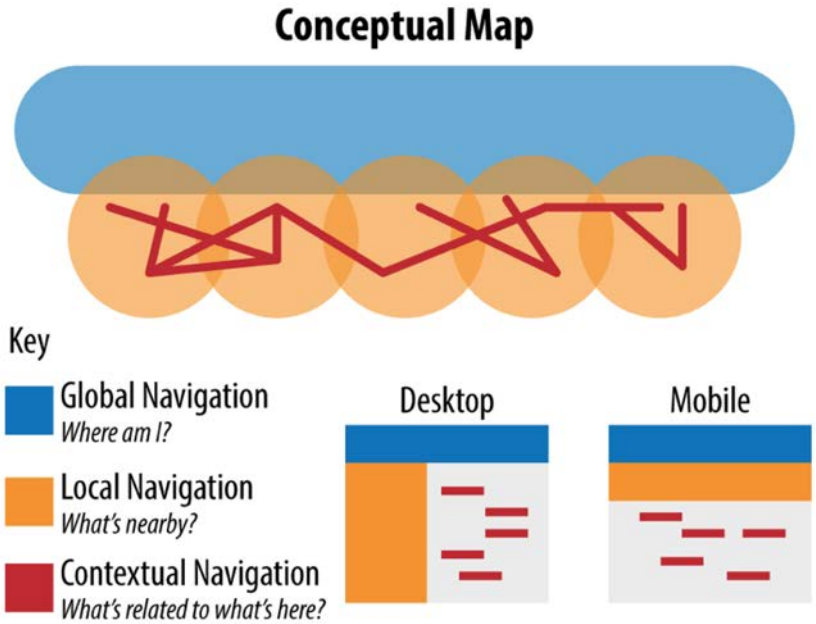
How to create labels? | Users!

Navigation Systems

Context and comfort: We use **navigation systems** to chart course, determine position, and find our way back

The surface layer of navigation—what people interact with—is changing very fast - many new device form factors.

Common navigation subsystems:



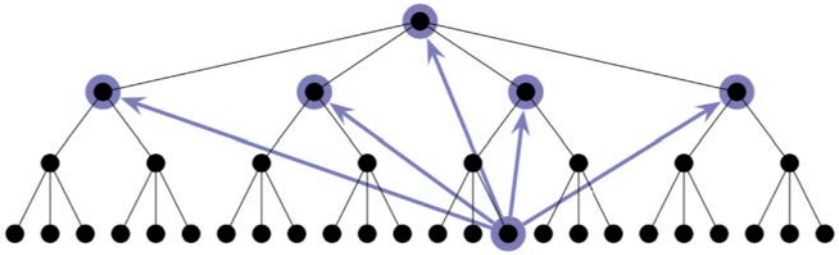
Building context—allowing users to locate their positions within the system—is a critical function of navigation systems.

➔ Testing suggestion: Put user in middle of site | Can you figure out where you are in relation to rest of site? Where the page will lead next? Etc.

Supplemental navigation systems can assist

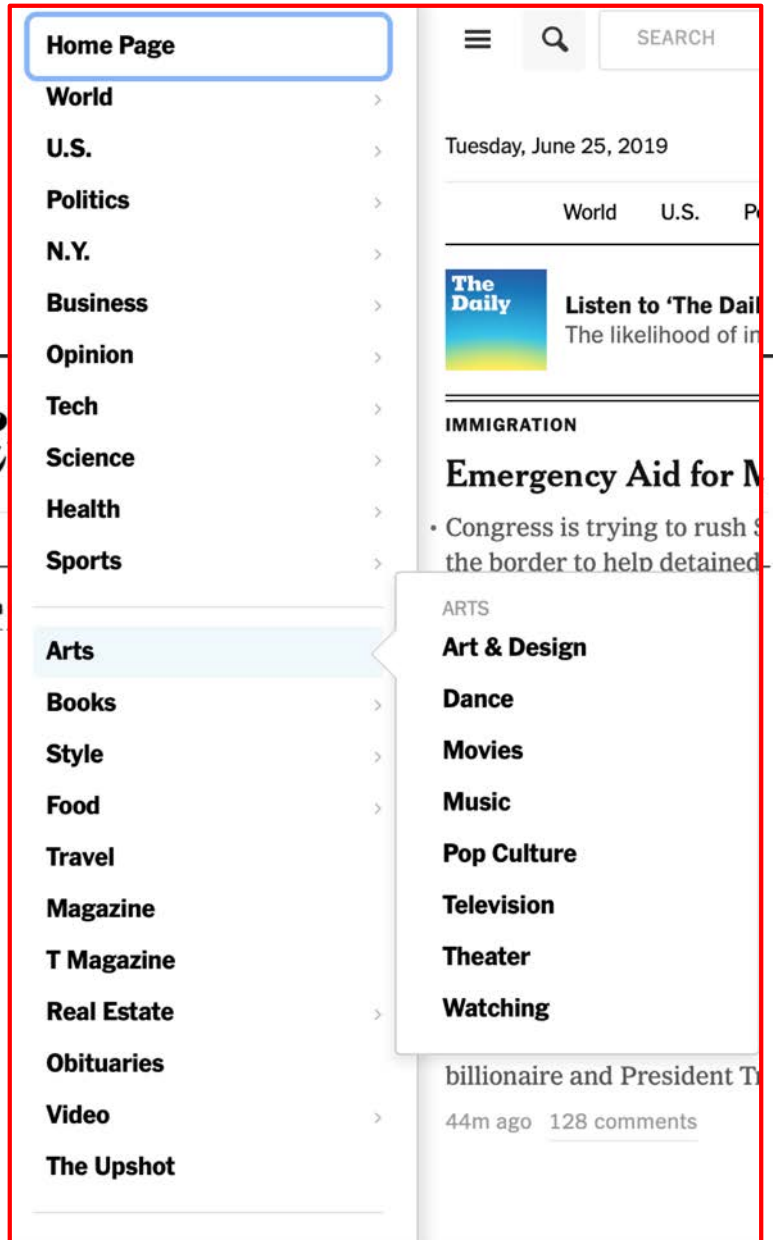
➔ Sitemaps, indexes, guides

Global Navigation

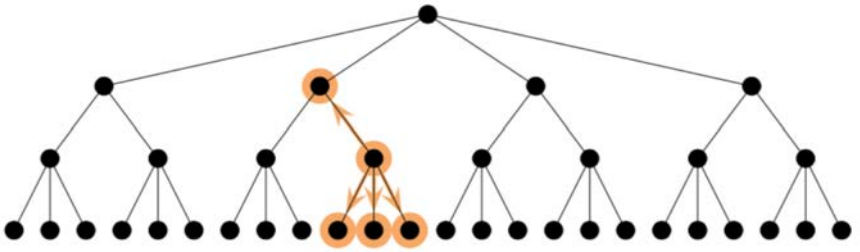


Global navigation provides access to everything

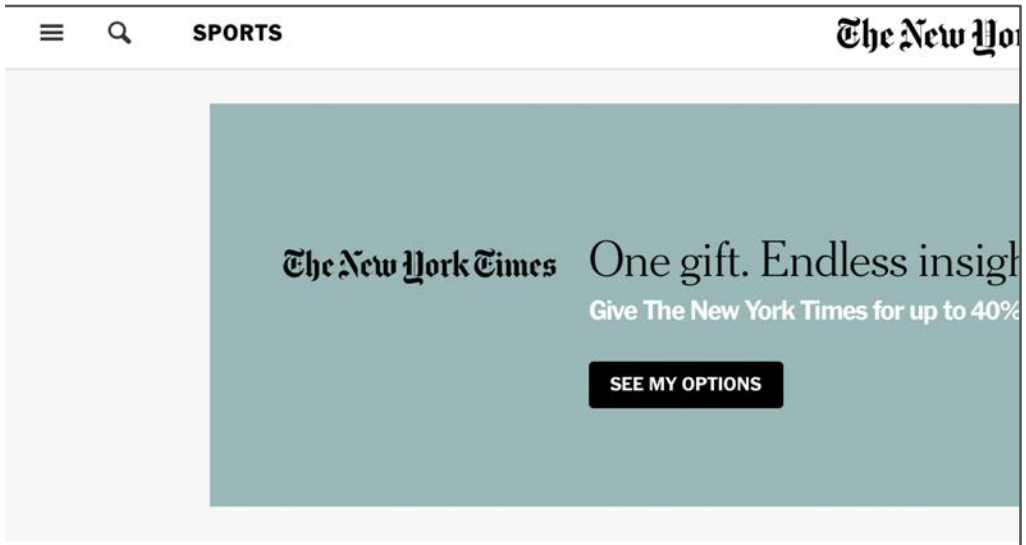
Example: Navigation bar that links to all main sections of a site.

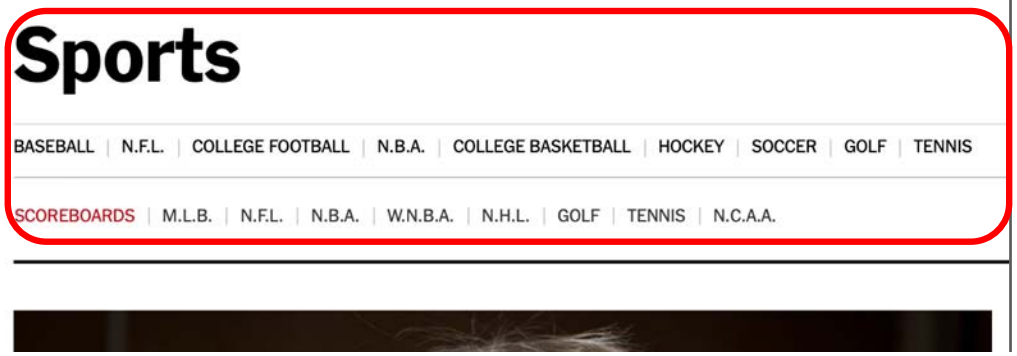


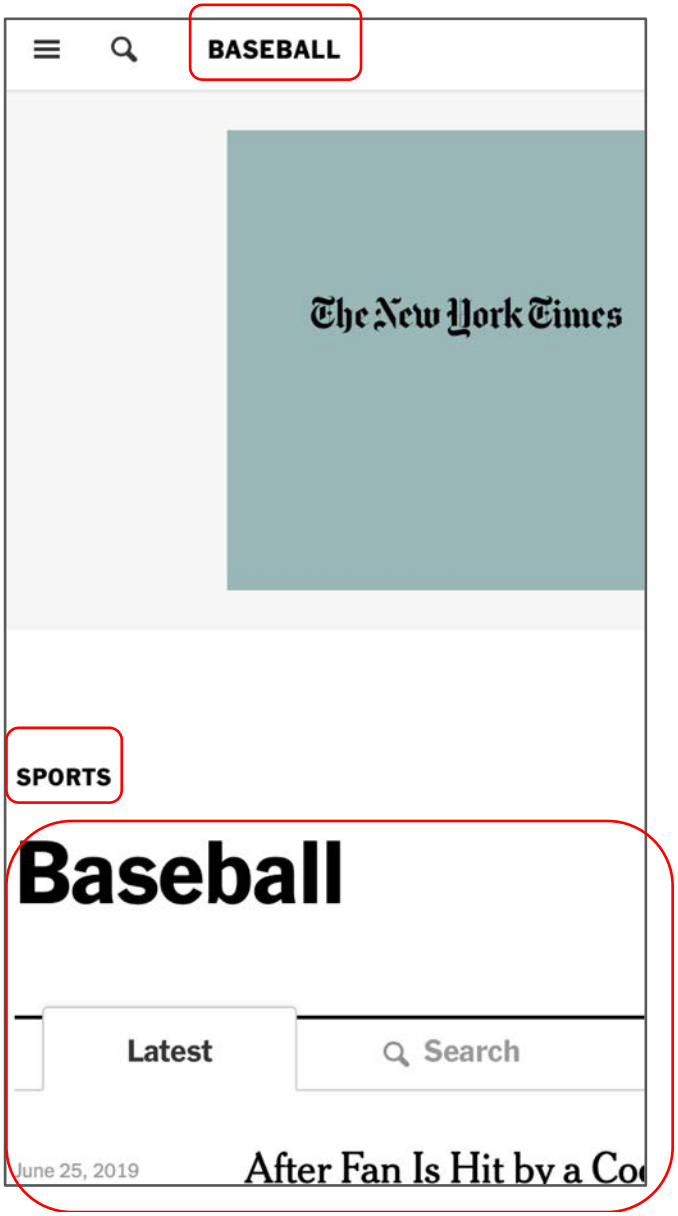
Local Navigation



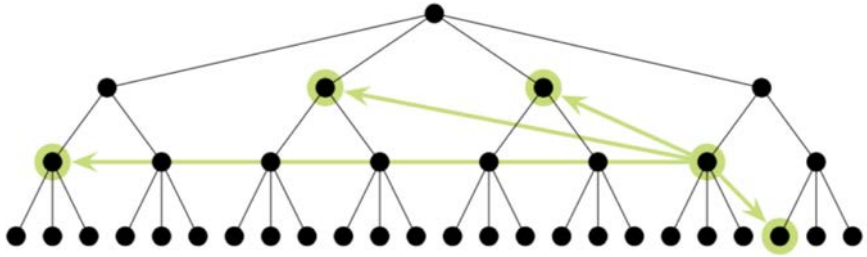
Provides users with access to what's "nearby"







Supplementary Navigation



Provides shortcuts to related content that might not be readily accessible through the global or local navigation

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a flight of fancy.

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Editors' Picks

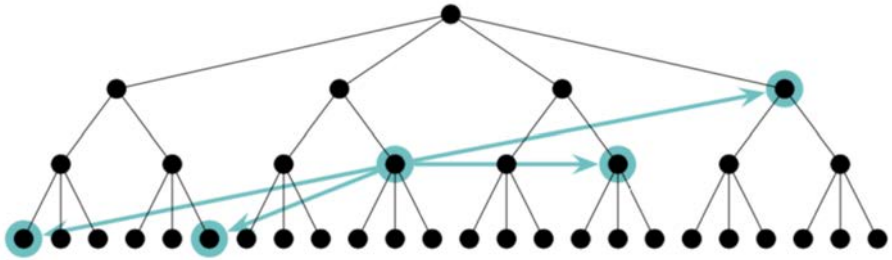
How a Dallas Photojournalist Captured an Image of a Gunman Mid-Attack

How 'Fleabag' Seduces Us, Then Accuses Us

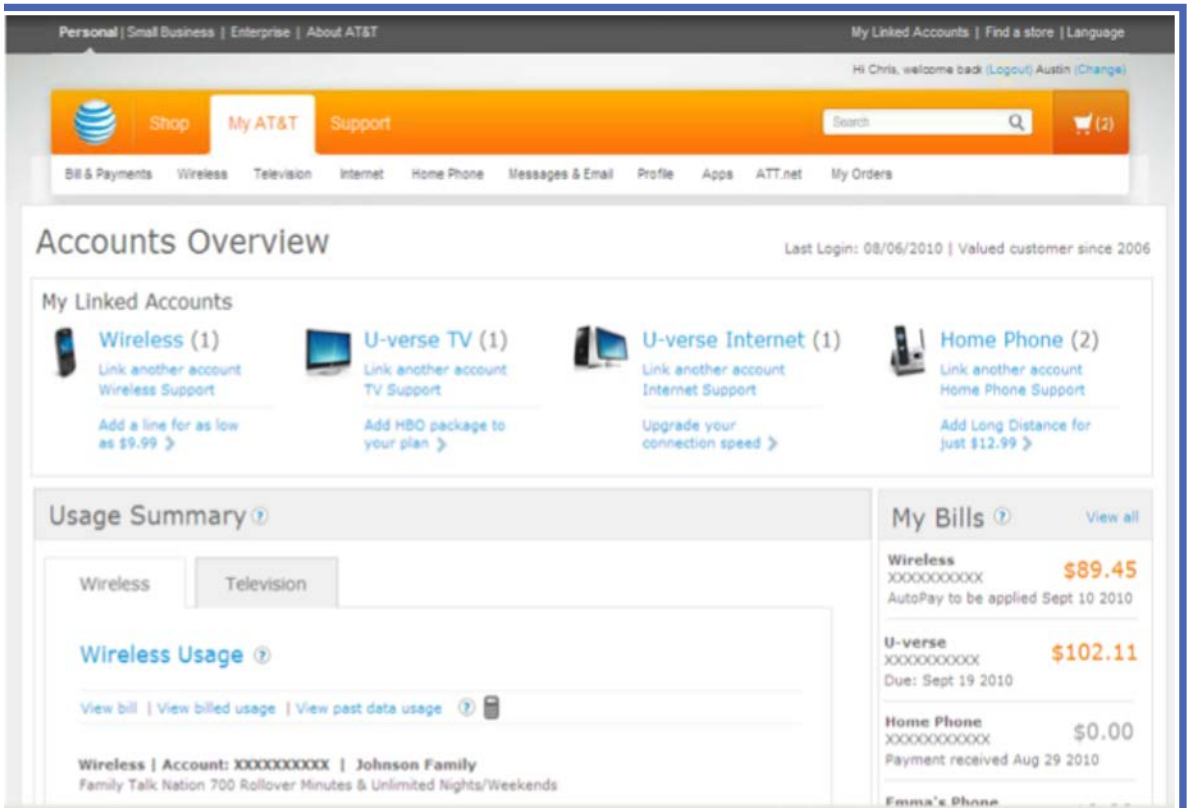
He's Your Destiny. Just Be Patient.

PAID POST: AUDEMARS PIGUET
A Japanese Artist Turns Data Into Art at the Venice Biennale

Contextual Navigation



- aka Inline Navigation
- Example: Link within a page
- Puts the additional information right where users may need it
- Can be misused



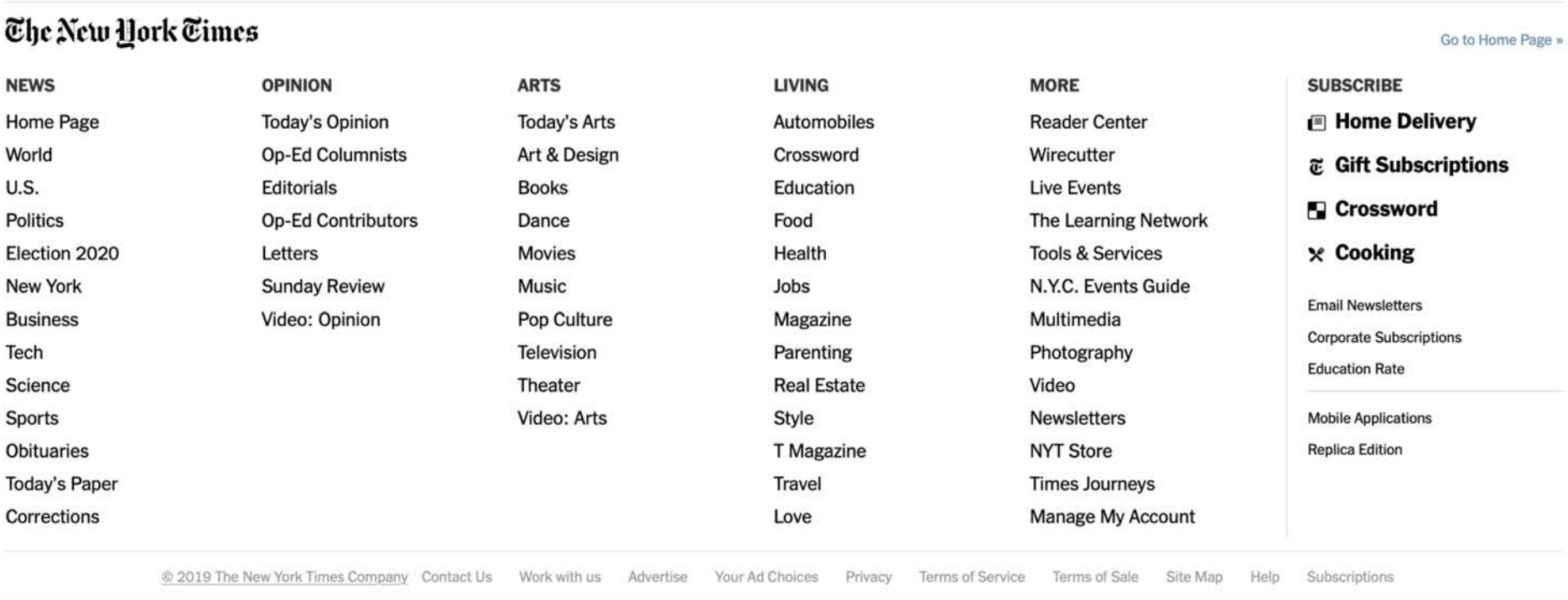
Climate change is now among the top three 2020 election issues cited by Florida Democrats, according to a new statewide survey. Some 71 percent of Florida voters, including 85 percent of Democrats, support government action to address climate change, according to the survey by Climate Nexus in partnership with the Yale Program on Climate Change Communication and the George Mason University Center for Climate Change Communication, which polled 1,558 registered Florida voters online this month.

"I don't think the base is going to be satisfied with candidates simply saying, 'I think climate change is happening; I think it's

Courtesy Navigation

Provides access to items that users don't need on a regular basis, but that are commonly provided as a convenience.

Example: In the physical world, a retail store will usually post its hours of operation at its entrance.



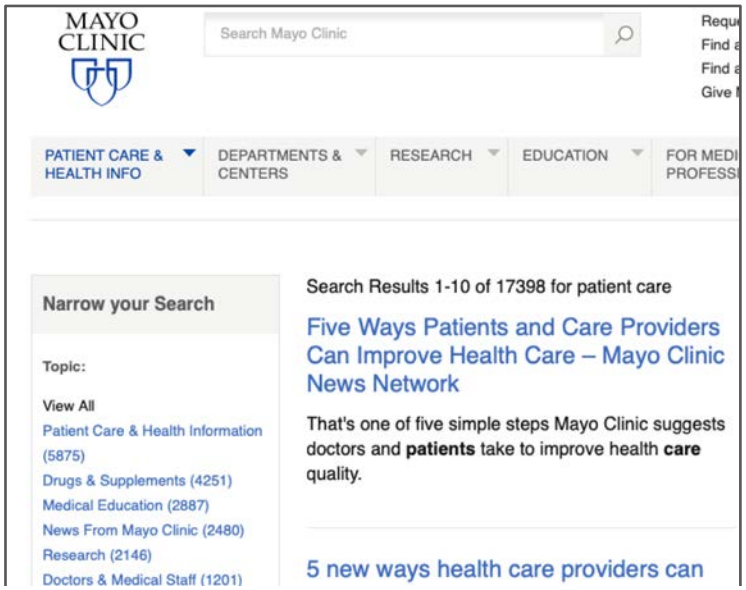
Search Systems

Does your system need search?

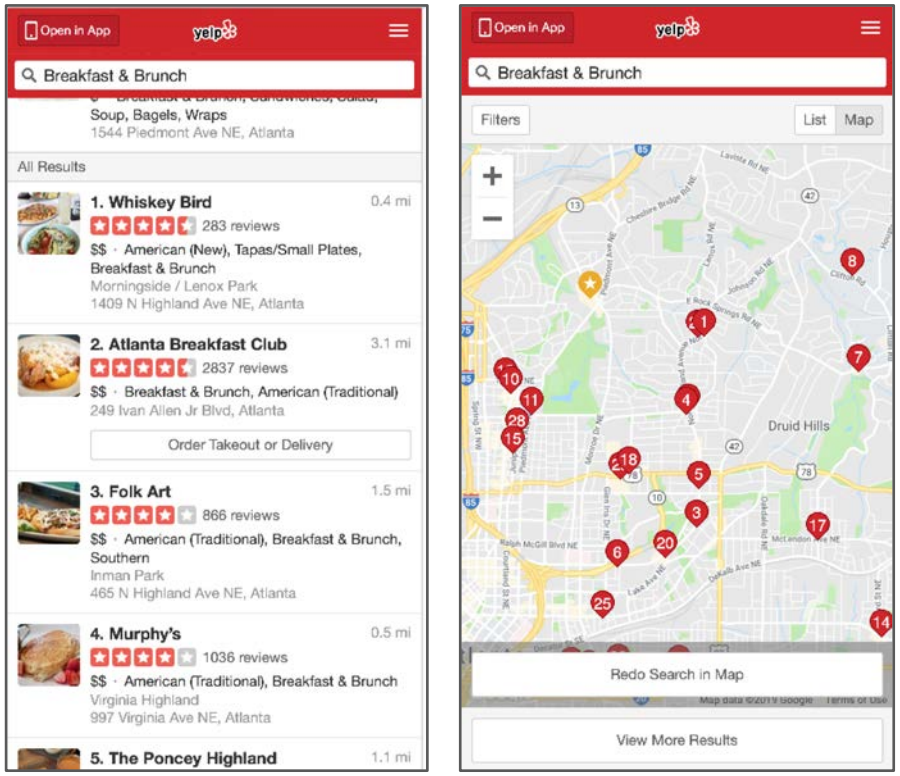
➔ Amount of content | Focus on more useful navigation systems | Your users may expect it to be there.

Search systems are not simple -- there's a lot going on under the hood.

You don't have to index everything

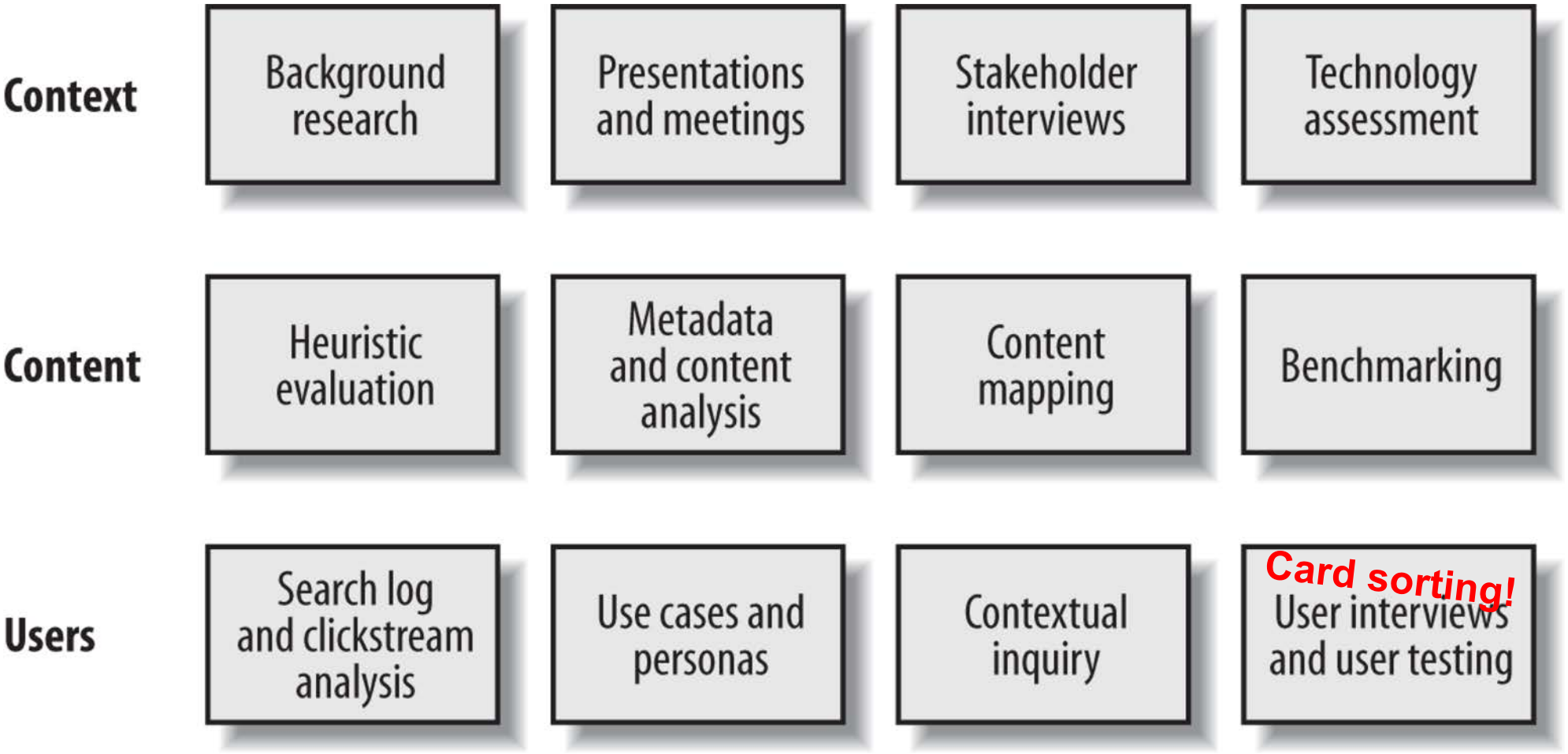


There are also various different ways of presenting results back to the user.



What to search, what to retrieve, and how to present the results—come together in the search interface.

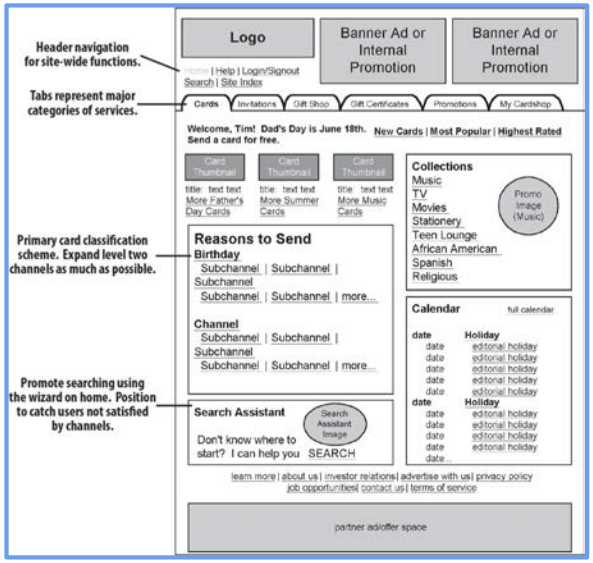
Research Methods

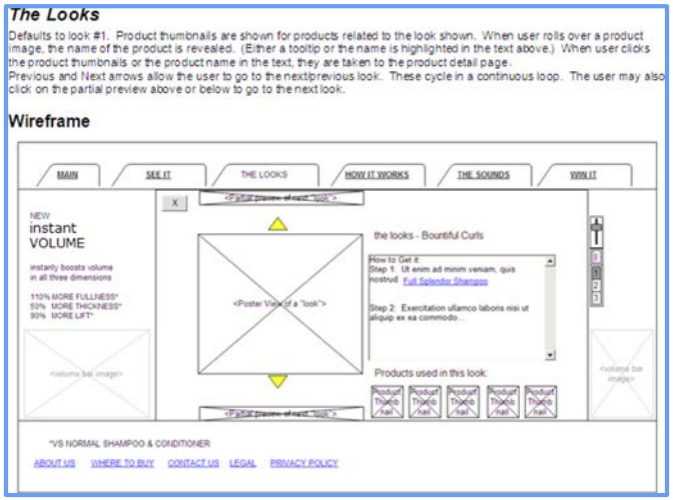


Deliverables + Documentation

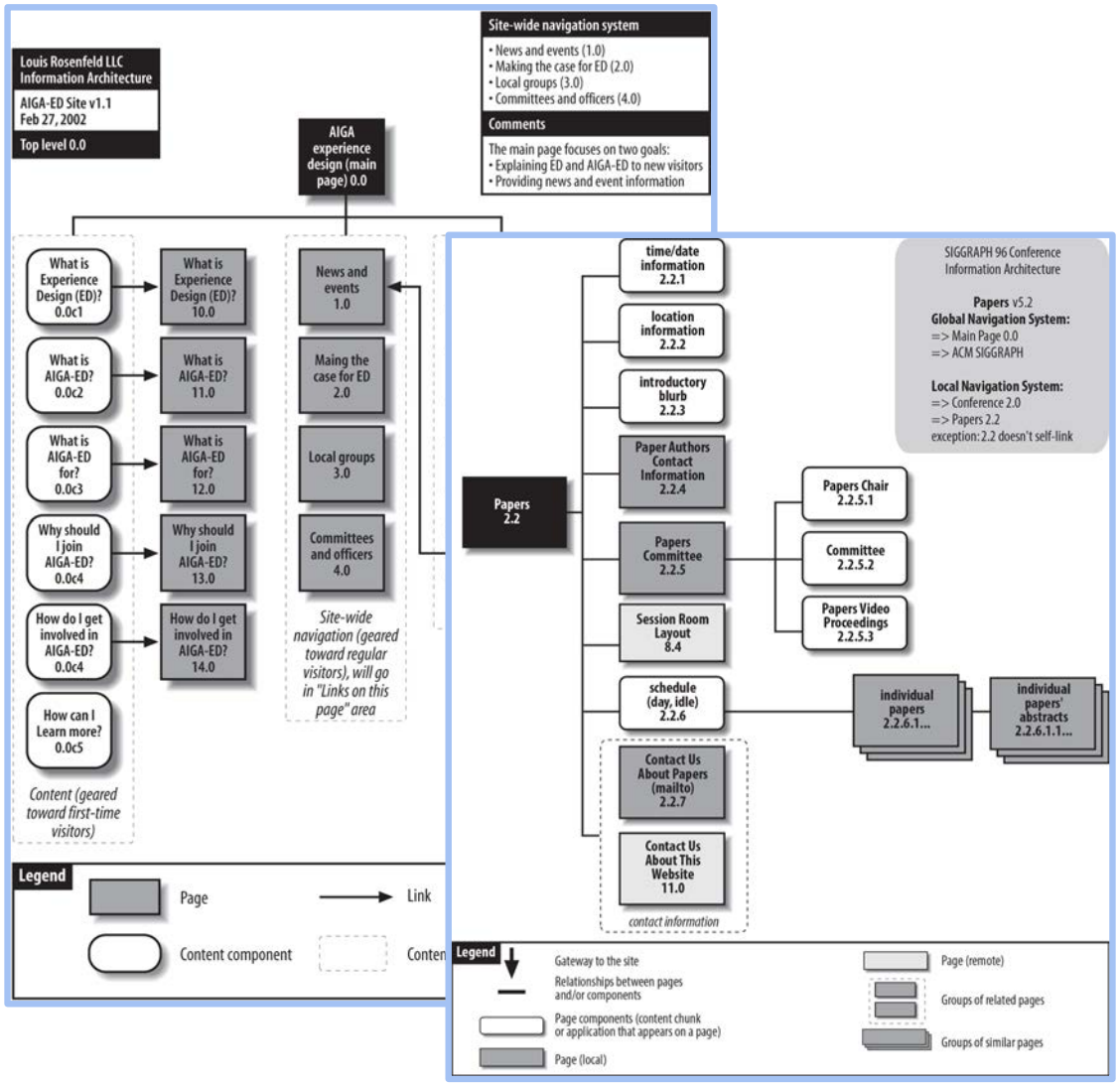
There are approximately 1 bazillion variations on wireframes and sitemaps. Use the least complex option that communicates what you need to communicate.

Wireframes





Sitemaps



Recap

Aspects of IA

- Organization
- Labels
- Navigation
- Search
- Some we didn’t discuss: Thesauri, Controlled Vocabularies, and Metadata

Research methods - covered in Carrie’s class

Bonus topic?: Search and navigation of large data sets

Zappos 20 YEARS

Richard, search for shoes, clothes, etc

SEARCH

MY CART

Women Men Kids Departments Brands Sale Favorites My Account

Men Brown Oxfords

16 items found

Sort By Best For You

Results are sorted based on your Preferences. Turn off

Narrow Choices

Your Preferences

Your Size (13-14)

Men's Size

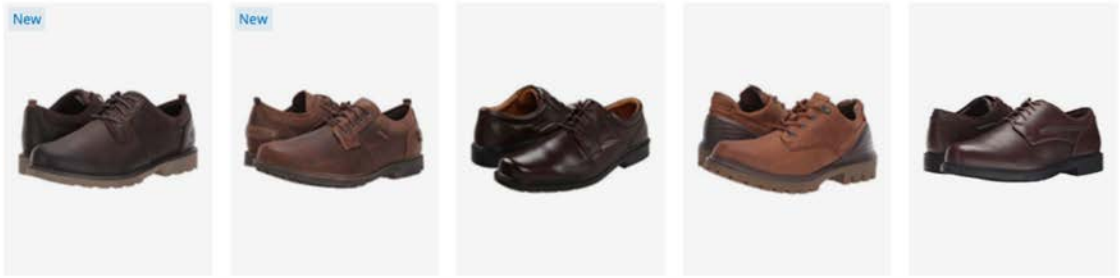
Search Men's Size

5	5.5	6	6.5
7	7.5	8	8.5
9	9.5	10	10.5
11	11.5	12	12.5

Your Selections

Shoes Oxfords Brown Men Waterproof 13 $200.00 and Under Water R

Do these items match what you were searching for? YES NO



Brand

- [ ] Dr. Martens (1)
- [ ] Dunham (6)
- [ ] ECCO (1)
- [ ] Hush Puppies (1)
- [ ] Johnston & Murphy (2)
- [ ] Rockport (2)
- [ ] Sperry (1)
- [ ] Timberland (1)
- [ ] Wolverine (1)

Price

- [ ] $100.00 and Under (4)
- [x] $200.00 and Under (16)
- [ ] $200.00 and Over (1)

Color

- [ ] Black (34)
- [x] Brown (16)
- [ ] Tan (4)
- [ ] Neutral (1)
- [ ] Red (1)

Occasion

- [ ] Casual (12)
- [ ] Office & Career (4)
- [ ] Dress (3)
- [ ] Work & Duty (1)

Search and navigation of large data sets

Faceted Metadata-driven Navigation and Search

Integrate browsing and searching seamlessly

Support exploration and learning

Avoid dead-ends and getting lost

From "Faceted Metadata for Information Architecture and Search" (Marti Hearst, Preston Smalley, and Corey Chandler), tutorial given at Conference on Human Factors in Computing Systems, San Jose, CA, April 2007.

2018 Nobel Prize in Physics

Nobel Prize Winners

1901 to 2004

Powered by Flamenco

Save Search | History and Settings | Return to Search | New Search | Logout

search

Username default Password Log In

Create a New Account

Show tooltip previews of subcategories

GENDER

female (33)
male (698)

COUNTRY

Argentina (5)
Australia (6)
Austria (12)
Belgium (11)
Burma (1)
Canada (9)
Chile (2)
China (2)
Colombia (1)
Costa Rica (1)
Czechoslovakia (2)
Denmark (13)
more...

AFFILIATION

Allied Reparation Commission (1)
Argentina (3)
Australia (2)
Austria (6)
Belgium (7)
Berlin University (1)
Briand-Kellogg Pact (3)
Brussels (1)
Canada (6)
Committee for the Defense of National Interests and International Conciliation (1)
Conseil national économique (1)
Costa Rica (1)
more...

PRIZE

chemistry (138)
economics (55)
literature (101)
medicine (182)
peace (108)
physics (166)

YEAR

1900s (57)
1910s (40)
1920s (54)
1930s (56)
1940s (43)
1950s (72)
1960s (79)
1970s (103)
1980s (97)
1990s (98)
2000s (56)

http://flamenco.berkeley.edu/index.html

Main ideas

Flexible navigation

Previews of next steps

Results organized in a meaningful way

Search is easily expanded and refined

Facets

Facets are a way of labeling data

Facets v. Categories

- Items are placed INTO a category system
- Multiple facet labels are ASSIGNED TO items

Create INDEPENDENT categories (facets)

- Each facet has labels (sometimes arranged into a hierarchy)

Lots of examples

Zappos

Best Buy

Wine.com

Mayo Clinic

Using facets

- Multiple ways to get to each item

Preparation Method
- Fry
- Saute
- Boil
- Bake
- Broil
- Freeze

Desserts
- Cakes
- Cookies
- Dairy
  - Ice Cream
  - Sorbet
  - Flan

Fruits
- Cherries
- Berries
  - Blueberries
  - Strawberries
- Bananas
- Pineapple

Fruit>Pineapple
Dessert>Cake
Preparation>Bake

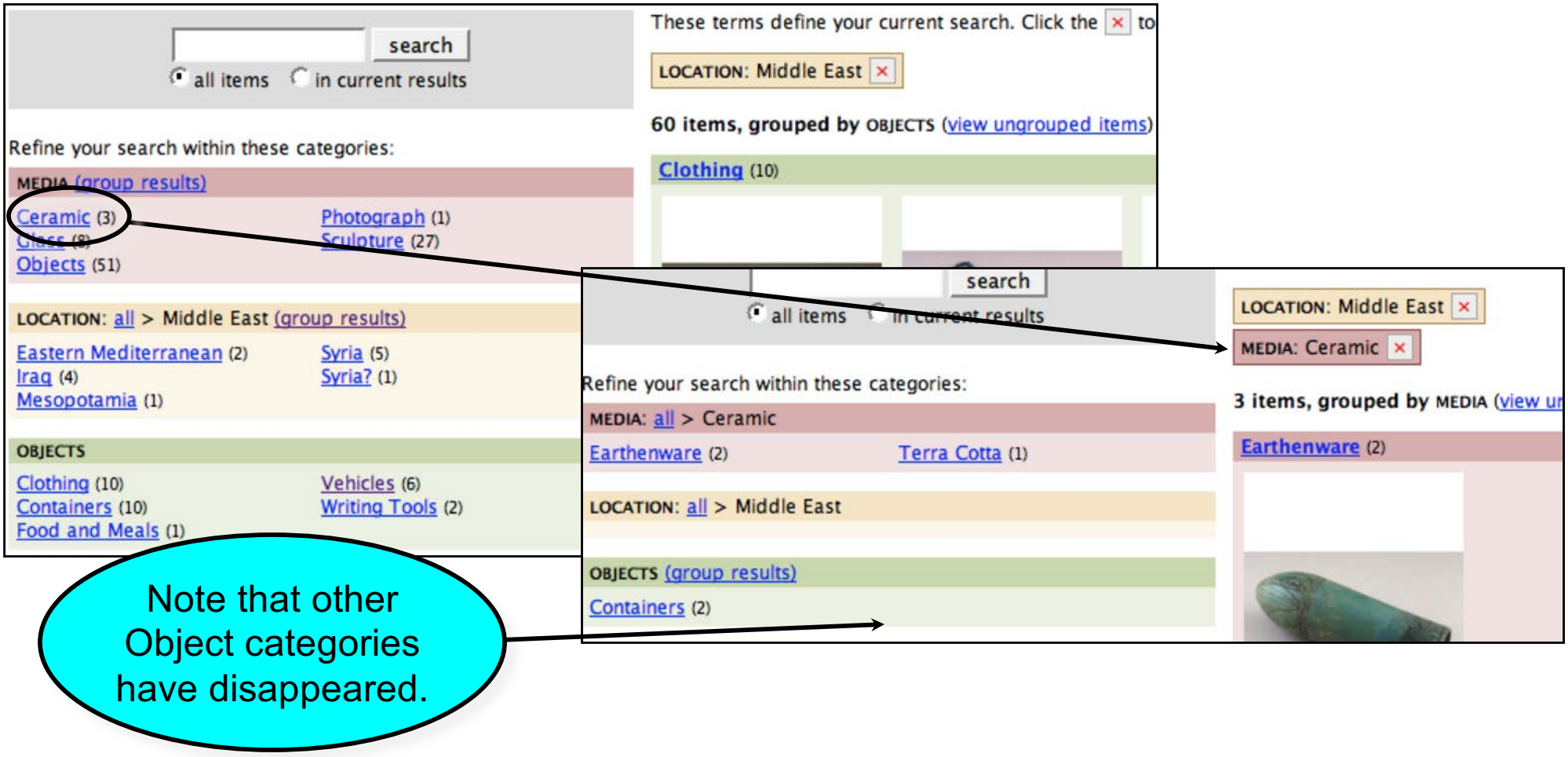
Dessert>Dairy>Sorbet
Fruit>Berries>Strawberries
Preparation>Freeze

Advantage of facets

User can decide how to start, and how to explore and group.

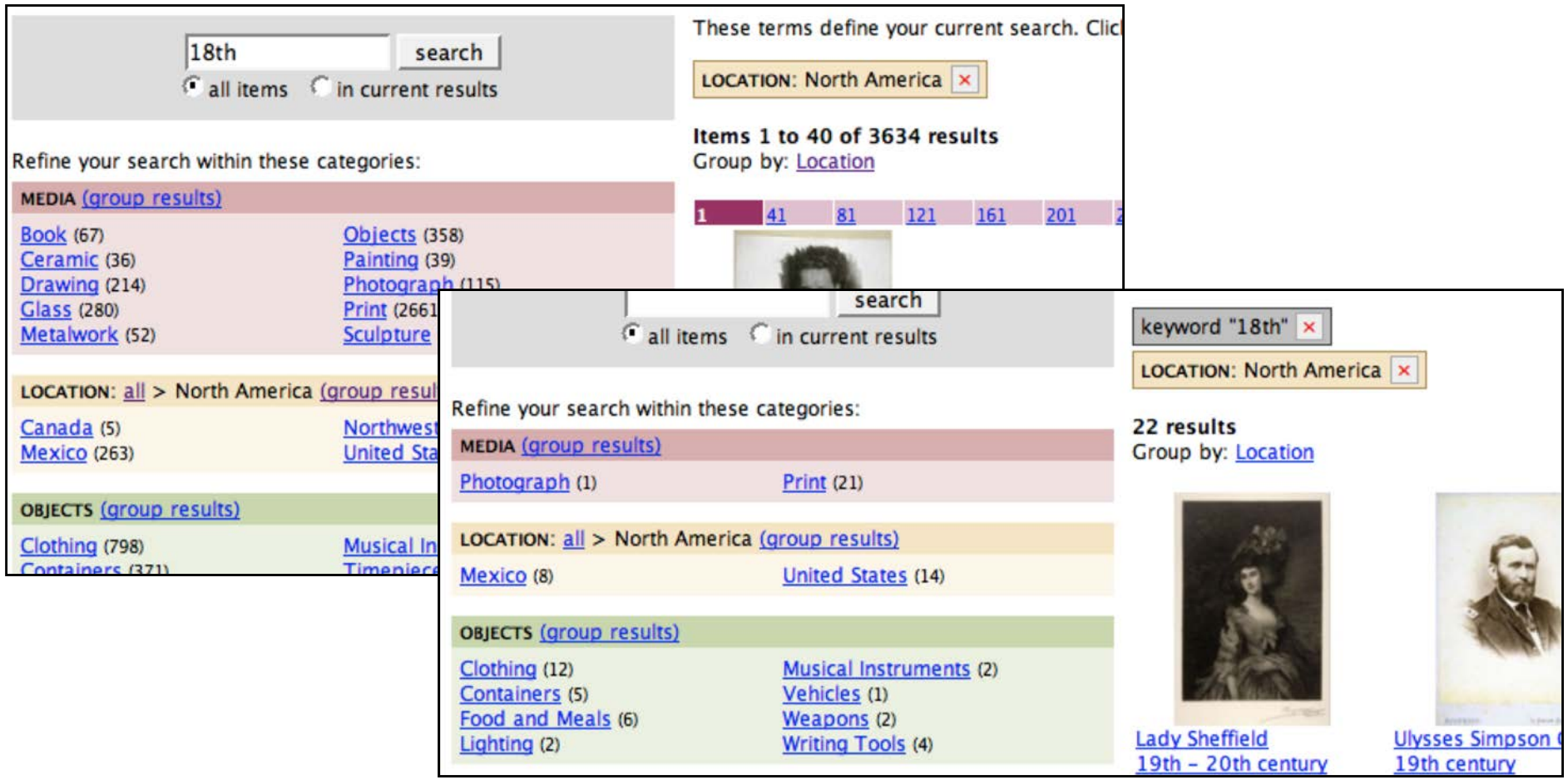
Advantage of facets

After refinement, categories that are not relevant to the current results disappear.



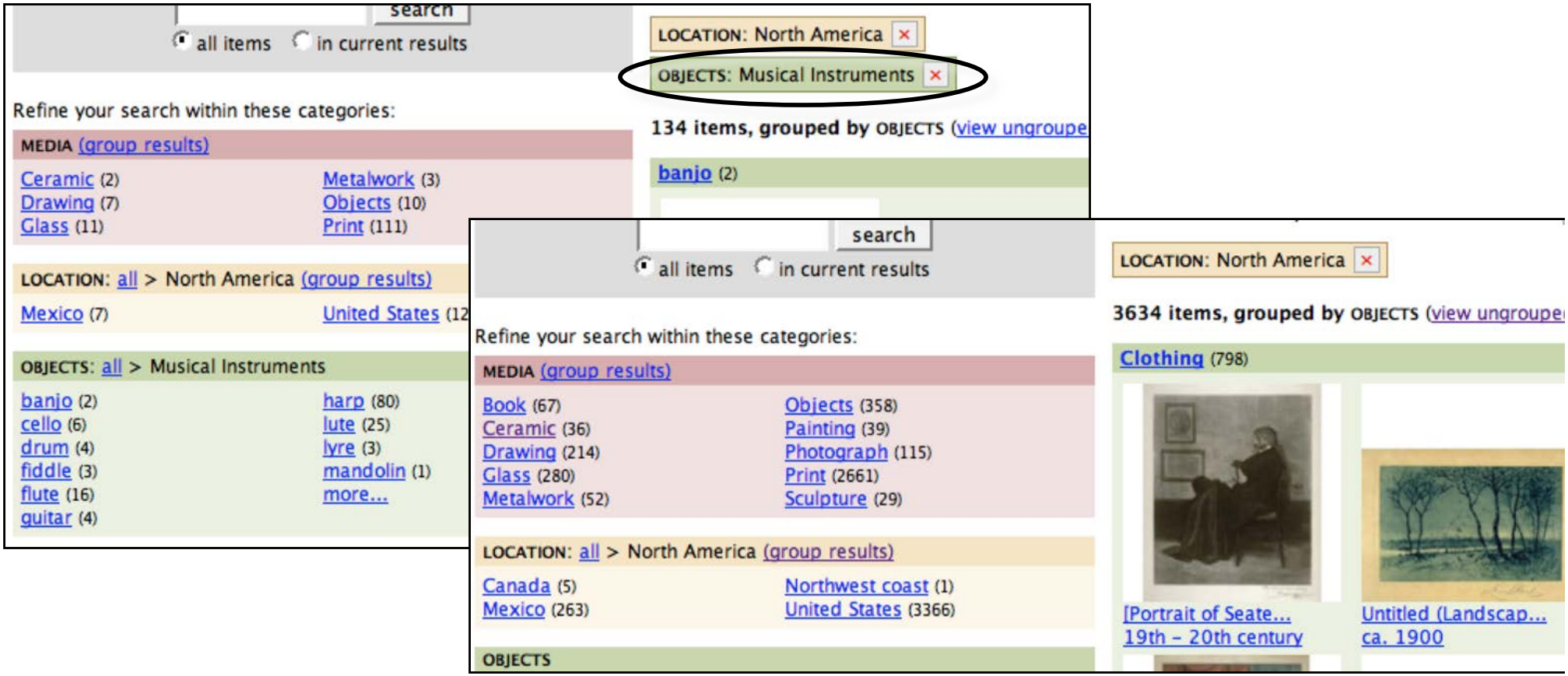
Advantage of facets

Seamlessly integrates keyword search with the organizational structure.



Advantage of facets

- Ease to expand out (Loosen constraints)
- Easy to build up complex queries



Advantages of facets

Can’t end up with empty results sets (except w/ keyword search)

Helps avoid feelings of being lost

Easier to explore the collection

- Helps users infer what kinds of things are in the collection
- Evokes a feeling of “browsing the shelves”

Is preferred over standard search in usability studies (if interface is designed properly)