THINGS ON THE FRONT PAGE OF A UNIVERSITY WEBSITE

- Campus Photo Slideshow
- Alumni in the News
- Promotions for Campus Events
- Press Releases
- Statement of the School's Philosophy
- Virtual Tour
- Letter from the President

THINGS PEOPLE GO TO THE SITE LOOKING FOR

- List of Faculty Phone Numbers and Emails
- Campus Address
- Academic Calendar
- Campus Police Phone Number
- Department/Course Lists
- Parking Information
- Usable Campus Map

Full Name of School

From: http://xkcd.com/773/
Information Architecture and Intranets

October 27 & November 3, 2015
Colin Furness MISt PhD MPH
1. What is Information Architecture?

2. Information Architecture Principles and Concepts
   I. Audience:
      i. Needs
      ii. Memory
      iii. Behaviour
   II. Information Design:
      i. Organization
      ii. Labels and Semantics
      iii. Navigation Regimes

3. IA and Intranet Development
   I. Intranets vs Web Sites
   II. Intranet Characteristics
   III. Getting Started

4. References & Resources
• Information architecture is new(ish) and interdisciplinary

• It can be approached from multiple theoretical and practical perspectives

• There is no generally accepted set of credentials for an Information Architect

• There is considerable disagreement about the boundaries between Information Architecture and related disciplines such as user interface design, graphic design, business analysis, systems analysis, project management, branding and marketing, and even programming

• Definitions and conceptualizations of information architecture vary considerably depending on the perspective adopted
Why is the conceptualization of IA so fragmented?

Usually, new terms migrate to industry from academia based in theory, with a reasoned discourse.

‘Information architecture’ for online systems seems to have originated in industry.

Term coined by architect and designer Richard Saul Wurman in 1976.

Referred to information design and graphical displays of information on paper and in physical space.

Term reappears in reference to the design of web sites in the mid-1990s.
What is Information Architecture?

- Rosenfeld & Morville (1998): the first (but flawed) “textbook” for IA

**Five functions of the Information Architect**

a. Clarifies mission and vision of the web site

b. Balances needs of the business and the audience

c. Determines what content and functionality the site will contain

d. Structures information for retrieval by organization, navigation, labelling, and searching

e. Maps out how the site will handle change and growth over time

*What’s wrong with this definition?*  
*(hint: the larger the organization, the bigger the problem here)*
What is Information Architecture?

- The “information architect” is an artificial construct to recognize that problems of information organization will not solve themselves.

- So, it is better to avoid defining “information architect” beyond stating that it is a person most responsible for structuring information resources for effective access by its users.

- But what about defining information architect _ure_?
What is Information Architecture?

• We can start by thinking about **information design**

• Information Design has *numerous* important dimensions, including:
  
  • Clarity
  • Readability
  • Legibility
  • Organization
  • Labelling and semantics
  • Navigation

  *for discussion today*

• For our purposes, information design is a **major component** of IA

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**A proposed definition of information design**

“Shaping the organization, presentation and retrieval of information to a task, person and context of use.”

• Information Design says nothing about **process** (how “shaping” is done), however.
A proposed definition of Information Architecture:

“The application of a design process to enact information design, explicitly focusing on users and context(s) of use, and implicitly applying a mental model of users moving through information spaces to complete tasks."

Note: an “information space” is a mental model of the structure, organization and function of one or more information systems.

Note: the use of ‘navigation’ and movement as a metaphor for browsing and searching seems to have originated with the invention of hypertext. Some don’t like it, but it is useful, even if only because it is ubiquitous – and therefore commonly understood.

• The cocktail party definition of IA: the person whose job it is to make sure that when you visit a web site, you don’t get lost, confused, frustrated and annoyed
Is this an IA problem?
If so, is it *only* an IA problem?

What is Information Architecture?
Two similar questions:

- What is good information architecture?
- What is good art?

Answer:

“it depends”: it is in the eye (and context) of the beholder

But we can measure quality on five dimensions of usability:

- ease of learning
- efficient/ergonomic use
- minimal errors
- retention over time
- subjective satisfaction

How might these dimensions differ for intranets vs public web sites? (we will come back to this question …)
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Audience: Needs

- The Target User: a homogeneous group of users in a given context
- If the group is not homogeneous, then there are >1 distinct groups
- The more that is known about the target user, the more effective IA can be
- Some of the information we would want to know about target users:
  
  i. What are their information needs, preferences and behaviours?
     a. Are users likely to be searching, browsing, or both?
     b. Are users likely to be skimming (foraging) or reading (learning)?
     c. What is the users’ vocabulary?
     d. What skills and expertise do users possess?
     e. What limitations do users have?
  
  ii. What current purpose(s) or tasks does/will this information system serve?
  
  iii. What content/resources are to be made available?
Audience: Memory

- Short term memory capacity: 7 +/- 2 items

- A unit item depends on the knowledge and experience of the user:
  - All the days of the week = 1 item
  - Provinces in Canada = 1 item
  - A random list of names = 1 item for each name
  - A word written in an unfamiliar alphabet = 1 item for each letter/element

- The more expert a person is, the higher the short term memory capacity

- There are significant implications for the size of lists (especially navigation options!)
Audience: Memory

- We can easily illustrate the effect of expertise/experience on memory:

Memorize the following digits

1 4 6 5 9 0 7 4 6
Audience: Memory

- We can easily illustrate the effect of expertise/experience on memory:

  Can you remember them?
Audience: Memory

- We can easily illustrate the effect of expertise/experience on memory:

- What if we organized the information to lever your expertise/experience?

\[
416, 905, 647
\]

“Toronto-region telephone area codes” = 1 item!!

(But what about 213, 562, 323?)
Note the contrast in audience behaviour between intranets and public web sites:

**Intranets:**
- clearly defined motivations
- ”experts” who use the system daily

**Public Web Sites:**
- range of possible motivations
- orient toward newcomers

Recall the five dimensions of usability:
- ease of learning
- efficient/ergonomic use
- minimal errors
- retention over time
- subjective satisfaction

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Information Design: Organization

1. Information Shape:

2. Classification:

Two golden rules:

(a) Mutually exclusive categories
(b) Collectively exhaustive categories
Information Design: Labels and Semantics

• Labels and semantics: a cornerstone of information architecture

Labels are crucial:
  • they can support or undermine an information organization scheme
  • they can properly define a functional feature or can disguise it

• Effective labeling leverages the audience’s knowledge

• But this isn’t enough on its own – consider one company’s intranet:
  • Programs
  • Projects
  • Products/Initiatives
  • Strategy
Information Design: Labels and Semantics

- Semantic confusables:
  - Consider these elevator control buttons:
    
  - Things that are cognitively very similar require considerable additional mental processing to discriminate
  - Example: Flooz (internet “currency” from the 1990s)
    
    | SPEND FLOOZ | SEND FLOOZ |
    |-------------|-----------|
    | (use Flooz) | (buy Flooz) |
Information Design: Navigation Regimes

- Do you remember Gopher (the precursor to the Web)?
  - hierarchical, text-based lists
  - navigation is up and down only

- But the Web is non-linear: the greatest curse in the history of humanity?

1. Global navigation:
   - Links that are persistent across every page in the site
   - Usually across the top and/or the left pane and/or across the bottom

2. Local navigation:
   - Links that appear “globally” within a section of a site
   - Local navigation can be secondary, tertiary, even quarternary
Information Design: Navigation Regimes

3. Opening windows & interleavable tasks
   a link can open a new window (e.g. a pop-up)
   can swap between multiple windows/tasks (or not)

4. Navigation Sign-Posts: Knowing where you are
   a. “Breadcrumbling”
      A linear representation of depth and place in a hierarchy
   b. “On-state”
      The link representing the section currently viewed is displayed differently
      (e.g. no longer a link, or shown in a different colour)
   c. “Footprints”
      A visited link permanently changes colour for the duration of site visit
Information Design: Navigation Regimes

5. Sitemaps

• A sitemap is like a table of contents
• A sitemap is like the index at the back of a book

• A sitemap is helpful for showing the ‘bird’s eye view’ of the site
• A sitemap is a crutch to compensate for poor IA

Sitemaps CAN

• Provide filtering on many different attributes
• Provide an alternate organization for information on the site
• Be personalized
• Act as a navigation learning tool
• Be a useful shortcut to deeper areas of the site
• For unusual examples, see www.powermapper.com
  (e.g. http://try.powermapper.com/examples/maps/skyscraper/map.htm)
• For concrete examples, see the last page of this presentation
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Intranets vs Web Sites

**Web Sites**

- Usually a broad, vaguely defined audience
- Information needs are diverse
- Usefulness of functionality is often guesswork
- Domain knowledge cannot be assumed or leveraged
- Often aim for the “lowest common denominator”
- Branding issues (‘public face’) can take precedence over effective use
- Future growth can be difficult to predict

**Intranets**

- Always a finite, known and accessible audience
- Information needs can be mapped
- Useful functionality can usually be defined
- Domain knowledge can be leveraged
- Effective use can be a *real* primary goal
- Future growth often predictable
Intranets vs Web Sites

Leveraging the Audience

• The intranet audience is “expert”

• Tradeoffs between designing for novices and experts:
  • Easy to learn vs powerful functionality
  • Constraining errors vs speed and efficiency
  • Managing a diverse vocabulary vs a controlled vocabulary
### Intranet Characteristics

<table>
<thead>
<tr>
<th>Personalization</th>
<th>vs.</th>
<th>Customization</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.k.a. “adaptive interface”</td>
<td></td>
<td>a.k.a. “adaptable interface”</td>
</tr>
<tr>
<td>The information system automatically behaves</td>
<td>The information system can be configured</td>
<td></td>
</tr>
<tr>
<td>differently for different individuals and/or different</td>
<td></td>
<td></td>
</tr>
<tr>
<td>job roles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System adapts to user</td>
<td>User can adapt system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>But is this a good idea?</td>
<td></td>
</tr>
</tbody>
</table>
Intranet Characteristics

Personalization and Role-Based Approaches

One valid approach is to define different “roles” that intranet users have. Each role may be presented with a different information architecture to optimize what that user type needs to get done.

Examples:

• Law firm partners may have access to billing information that junior associates do not have;

• Those who are able (or who are required) to maintain content may need different functions, such as reminders, or quick access to a variety of pages unrelated to their other job tasks.

• Someone needs to administer the intranet, regarding user accounts and receiving error reports and other kinds of feedback.

NB – to be role-based is a decision based on assessment, not a premise
Getting Started

1. Enumerating Content
   a. Interviewing participants:
      e.g. who gives you information, and to whom do you give information?
      How do you get it, and what problems do you have?
   b. Scouring shared/public drives
   c. Brainstorming!

2. Enumerating Functionality
   a. What electronic tools are in use?
   b. What electronic tools may be developed in the future?
   c. What are the technical limitations (e.g. security)
Getting Started

3. Mapping Information Flows

Can be done graphically:

If a role-based approach is used, then this is necessary!

Even without a role-based approach, this is a good exercise to visualize and validate your understanding of how information moves around the organization, from whom to whom – this will help ensure that you have a complete account of what will be included in your intranet – and why!
Getting Started

4. Words of Caution:

1. It is usually difficult for people to imagine the impact of new tools, so asking them directly will not usually yield valid answers.

2. You can ask people how they do things now and what the problems are.

3. You can show people mockups, sketches or diagrams of future states. (more on this in a minute …)
5. Sorting out Semantics

- In most organizations, there are “subcultures” (e.g. members of a particular trade, profession, or department)

- Subcultures may influence individuals to see, say, do things differently (e.g. X as a project, program, programme, strategy, initiative … )

- Some approach to validation is needed: card sorting

  - Two varieties: exploratory and confirmatory
Questions?

(“The Bench”, Wm. Hogarth, 1758)


