IBE101: Introduction to Information Architecture

Hans Fredrik Nordhaug © 2008
Objectives

- Defining IA
- Practicing IA
- User Needs and Behaviors
- The anatomy of IA
- Organizations Systems
- Labelling Systems
- Navigation Systems
- Search Systems
- Thesauri, Controlled Vocabularies and Metadata
Some Definitions

- Architecture
- Information

Can you tell what Information Architecture is from these definitions?
Definitions of IA

- The combination of organization, labelling, and navigation schemes within an information system.
- The structural design of an information space to facilitate task completion and intuitive access to content.
- The art and science of structuring and classifying web sites and intranets to help people find and manage information.
- An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape.
Basic concept of IA

- Information
  - IA sits between data and knowledge management
- Structuring, organizing and labelling
- Finding and managing
- Art and science
What isn’t IA?

- Graphic design alone isn’t IA, but…
- Software development alone isn’t IA, but…
- Closely related disciplines:
  - Graphic design
  - Interaction design (HCI)
  - Usability engineering (HCI)
  - Experience design
  - Software development
  - Content management
  - Knowledge management
Why IA Matters?

Why should a company spend time/money on IA? What is the ROI (if any)? It matters because:

• The cost of finding information.
• The cost of **not** finding information.
• The value of education.
• The cost of construction.
• The cost of maintenance.
• The cost of training.
• The value of brand.
IA Concepts

Concepts

Complex systems

Context
Content
Users

Information architecture

Invisible work

Search
Ask
Browse

Knowledge networks

Information seeking behavior
Content, Context, Users

- IA must uniquely match their context
- Content – the stuff that makes a site
  - Ownership
  - Format
  - Structure
  - Metadata
  - Volume
  - Dynamism
- IA must match the users’ needs/behavior
Users Needs and Behaviors

- The “too-simple” information model
- Information needs
  - Everything (exhaustive searching)
  - A few good things (exploratory searching)
  - The right thing (known-item seeking)
- Information Seeking Behavior
The Anatomy of an IA

- Visualizing IA
  - Look for the IA systems/components – organization, labeling, navigation and search.
  - Examples:
    - Select any site on the web
  - Problems: What’s the difference between organization and labeling?
Alternative categorization of IA

- **Browsing aids**
  - Organization systems, site-wide and local navigation, sitemaps/TOCs, site indexes, guides and wizards, contextual links.

- **Search aids**
  - Search interface, query language, retrieval algorithm, search zones and results,

- **Content and task**
  - Headings, embedded links and metadata, chunks, lists, sequential aids, identifiers

- **“Invisible” components**
  - Controlled vocabularies, thesauri, rule sets.
IA Systems

Systems

User's Query → Search interface → Search engine → Content → Results

User will ask, browse, or search again until they succeed or give up

Searching systems

Global navigation

Local navigation

Contextual navigation

Navigation systems

Semantic networks

Broader

Synonym

Acronym

Related

Narrower

Related

Ranking and clustering algorithms

Metadata

Controlled vocabulary

Query languages

Query builders

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Organization systems

- Challenges of organizing information
  - Information growth
  - Ambiguity
  - Heterogeneity
  - Differences in perspective
  - Internal politics
Organizing Web Sites and Intranets

- Organization systems consists of organization schemes and structures.
- Organization is strongly connected to navigation, labeling and indexing.
- Even so, working with organization separately is useful, (possibly) making a fundament for navigation and labeling.
Organization schemes

- Exact schemes
  - Alphabetical
  - Chronological
  - Geographical

- Ambiguous schemes
  - Much harder, but useful – we don’t always know the label, related items are grouped together…
  - By topic, task or audience
  - Metaphors
  - Hybrids are common, but troublesome.
Organization structures

- The structure defines the primary way users can navigate.
- Hierarchy - top-down approach (taxonomy)
  - Take care when designing them – narrow and deep, or broad and shallow.
- Database – bottom-up approach
  - Really the use of metadata, enabling (powerful) searching and browsing
- Hypertext
  - Not useful as primary structure
Labeling Systems

- Labeling is a form of representation.
- Some (random) problems with labels:
  - They aren’t representative and don’t differentiate
  - They aren’t user-centric
  - They waste money
  - They don’t give a good impression
- Labels do matter!
Varieties of Labels

- Labels as
  - Contextual links – very easily misused (click here)
  - Headings – often depending on hierarchy
  - Navigation system choices – should adhere to some “standards”
  - Index terms

- Iconic labels – any good?
Designing Labels

- Narrow scope whenever possible
- Develop consistent labeling systems, not labels. Consistency is affected by:
  - Style
  - Presentation
  - Syntax
  - Granularity
  - Comprehensiveness
  - Audience
Source of Labeling Systems

- Your own site – use the existing labels as a starting point
- Comparable and competitive sites
- Controlled vocabularies and thesauri
Navigation Systems

- Embedded navigation systems
  - Global
  - Local
  - Contextual

- Supplemental navigation systems
  - Sitemap
  - Indexes
  - Guides

- Browser navigation features
Navigation cont.

- Building context
  - Your users should know where they are without walking the complete way

- Improving flexibility
  - Vertical and lateral navigation
  - It’s a balance

- Advanced navigation approaches
  - Personalization and customization
  - Visualization
  - Social navigation
Search Systems

- Does your site need search?
  - Enough content?
  - Will investing in search steal resource from navigation?
  - Enough time and know-how to optimize the search?
  - Better alternatives?
  - Will the search be used?

- When do your site need search?
  - Too much content
  - Your site is fragmented
  - Your users expects it
  - Tame dynamism
Choosing What to Search

- Search zones
  - Content type, audience, role, subject/topic, geography, chronology, author, business unit
  - Navigation versus destination
Search Algorithms

- Recall and precision
  - Recall = # relevant documents retrieved / # relevant documents in the collection
  - Precision = # relevant documents retrieved / # total documents retrieved

- Stemming
  - “computer” has common root “comput” with “computation”, “computing”, “computers”, …
  - Weak stemming is to only include plurals of a words in the search.
Presenting Search Results

- How much info to present
- How many results
- Listings results by
  - Alphabet
  - Chronology
  - Ranking (many types)
- Grouping results
- Exporting results
Metadata

- “Data about data” - Definitional and descriptive documentation/information about data…
- From Free On-line Dictionary of Computing:

Data about data. In data processing, meta-data is definitional data that provides information about or documentation of other data managed within an application or environment.

For example, meta-data would document data about data elements or attributes, (name, size, data type, etc) and data about records or data structures (length, fields, columns, etc) and data about data (where it is located, how it is associated, ownership, etc.). Meta-data may include descriptive information about the context, quality and condition, or characteristics of the data.

- (Some other definitions.)
Controlled Vocabulary

- Any defined subset of natural language
- List of equivalent terms (synonym rings)
  - Use search logs.
- List of preferred terms (authority files)
  - Commonly also include variant terms
  - Educating users, enabling browsing
- Classification scheme / taxonomy
  - Hierarchical relationships (narrower/broader)
Thesauri

- Book of synonyms, often including related and contrasting words and antonyms.
- In the this class:
  - A controlled vocabulary in which equivalence, hierarchical, and associative relationships are identified for purposes of improved retrieval.
- Technical lingo …
- Thesauri standards: ISO 2788, …
Summary

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