STC Rocky Mountain Chapter
21 April 2005

# Trends and Issues in Information Architecture

Notes from the IA Summit

Laurie Lamar    www.laurielamar.com

## What is the IA Summit?

- **ASIST**
- **5 years**
- **402 attendees**
  - 72% from US
  - 28% from elsewhere (including Canada)
  - 1 attendee from Colorado

- **Attendees are a motley crew**
  - Mostly practitioners from large interactive agencies, large companies, and government agencies
  - Multidisciplinary backgrounds
  - Tech comm background is not unusual

Statistics: Dick Hill, ASIST. Photos: Tourisme Montréal.

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## What is Information Architecture?

Richard Saul Wurman — "Organiz[ing] the patterns inherent in data, making the complex clear; creat[ing] the structure or map of information which allows others to find their personal paths to knowledge…"

Louis Rosenfeld — "The combination of organization, labeling, and navigation schemes within an information system."

Tony Byrne — "The art and science of structuring, organizing, and labeling information so that content owners can better manage it and users can find what they're looking for more effectively."

• **Sound familiar to tech comm?**
• **Can anyone say "chunking?" "Single-sourcing?"**

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## What is Information Architecture?
### JJG model… do you agree?



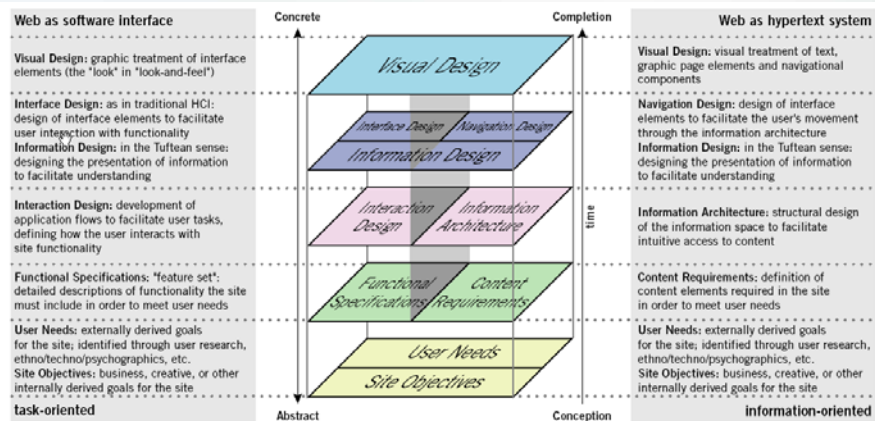| Web as software interface | Concrete | Completion | Web as hypertext system |
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| task-oriented | Abstract | Conception | information-oriented |

▣ Diagram: Jesse James Garrett, www.adaptivepath.com

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## What is Information Architecture?

- **What do IA's do?**
  - agency model:
    user advocate, make sitemaps, make wireframes
  - in-house model?

- **Who are IA's?**
  - all are analytical
  - most are curious about people

- **How are IA's different than Interaction Designers or UI Designers?**
  - tonight, IA and ID and UI will intermingle

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?

## Tonight's Roadmap

- Top-Down IA
- Bottom-Up IA
- Top & Bottom Issues/Trends

- International Issues
- Business Issues
- Other Issues

- Learning More

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## Top-Down IA

**Top-Down IA**

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**Top-Down IA:  Bigger Buckets**

- **focuses on:**
  site structure (site maps), navigation, webpage
  layout (wireframes)

- **… and loosely:**
  UI of interactive features like search engines,
  shopping carts (storyboard)

- **related fields:**
  visual design, information design, interaction design,
  marketing, UI design, usability

- **…and tech comm**
  because of attention to audiences

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## Top-Down Trend » rich internet applications

### Goal: "seamless" user experience
- Reduce the "page refreshes" the user sees
- Reduce page-level trips to the server

### "The page is dead...." again

### At least 3 ways to do it:
- Java - old fashioned?
- "Ajax" as promoted by Adaptive Path
- **R**ich **I**nternet **A**pplications as promoted by Macromedia

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## Top-Down Trend » rich internet applications

### "Ajax" as promoted by Adaptive Path

- **Stands for "Asynchronous Javascript + XML"**
- **Examples:**
  - command completion: Google suggest
  - pan, scroll, zoom: Google maps

- **How it works:**
  - when user takes certain actions on webpage, webpage silently asks the server for a tiny piece of info
  - via XMLHttpRequest() object
  - portion of the webpage gets replaced on the fly... not the whole page

▣ www.adaptivepath.com/publications/essays/archives/000385.php
www.xml.com/pub/a/2005/02/09/xml-http-request.html

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## Top-Down Trend » rich internet applications

**Rich Internet Applications as promoted by Macromedia**

- **Business-related examples:**
  - Banner Engineering : winnowing task for product selection
  - Ford Vehicles Interactive Towing Guide : more complex
  - iHotelier : hotel reservations
  - TJ Maxx : shopping cart, increased conversion rate 50%
  - Airline Booking : click "search now" (Laszlo open-source XML variant)

- **How it works:**
  - Flash loads in browser, puts a little XML flat file onto user's hard drive
  - Flash UI pulls data from that XML file in response to user actions

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## Top-Down Trend » rich internet applications

**Issues for IAs**

- **Deliverables / prototypes for dynamic RIA's**
  - storyboard ?, or learn Flash
- **Metrics -** must build them in manually from the beginning
- **Security -** getting past corporate firewall

- **Convincing our clients and bosses to do an RIA**
  - Critical mass of business-oriented websites that use RIA for profit, not to be cool
  - Even White Castle is considering an RIA now

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## Top-Down Trend » Dashboards

- **Imagine a typical intranet homepage – tabs across the top**
  - Dashboard collects common tasks from every tab for that user, and puts them onto one screen

- **Intersects with RIA**
  - Joe Lamantia's exec dashboard
  - Laszlo dashboard

**Country-level Performance Indicators**

Karl Mochel, Oracle, Design Patterns for EUI, IA Summit presentation
Joe Lamantia, Poster on Executive Dashboards, joelamantia.com/downloads
page 15

## Top-Down Lesson Learned » Navigation

### Fine-tuning the nav templates makes a big difference

- **Vanguard.com > Personal >Planning & Education > Retirement**
  - this section has different 2ary nav than other sections
  - user testing: people got confused when nav areas went away
  - breadcrumbs only appear at lower levels
  - selectively reduce content at lower levels
  - lots of user testing and attention to exact labels – they made a difference

David Fiorito, Thinking Navigation on Vanguard.com, IA Summit presentation
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**Top-Down Lesson Learned » Navigation**

**Two-level breadcrumbs**
- Suppose you chose "South" tab, "System 12" on previous page…

2-level breadcrumb reflects the category "Manage Mainframes" and the individual selection "System 12"

Jessica Jackson, Interface Design for DB-Intensive Web Apps, IA Summit presentation  page 17



**Top-Down » Other Trends**

- **Continuing trend toward high-bandwidth web apps and sites**

- **Wider, larger screens**

- **Top-down IAs venturing into bottom-up territory…. and vice versa**

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# Bottom-Up IA

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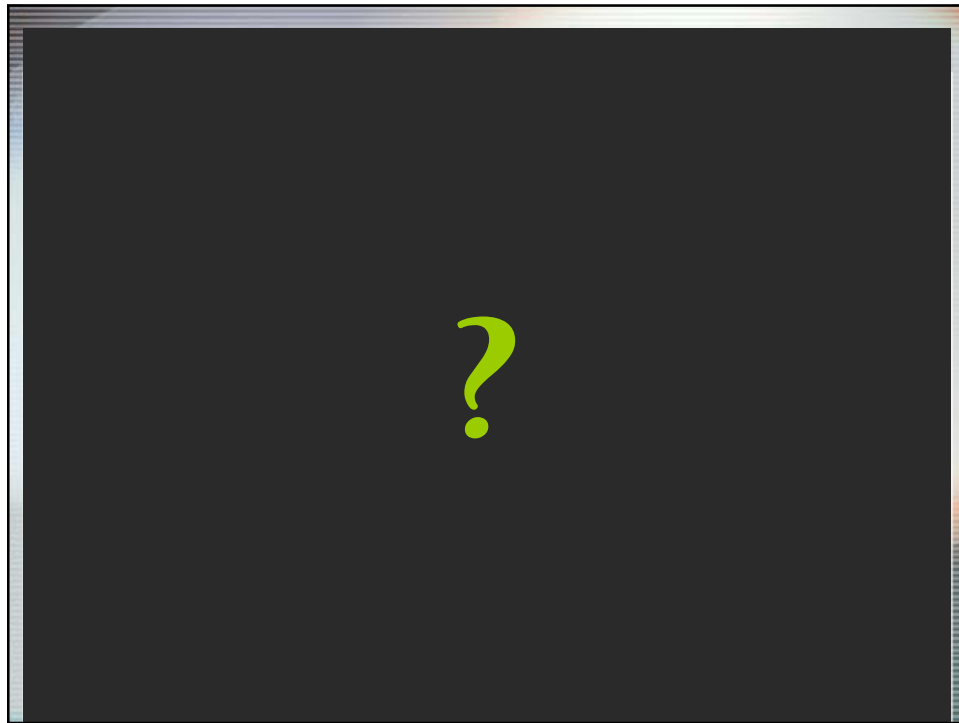
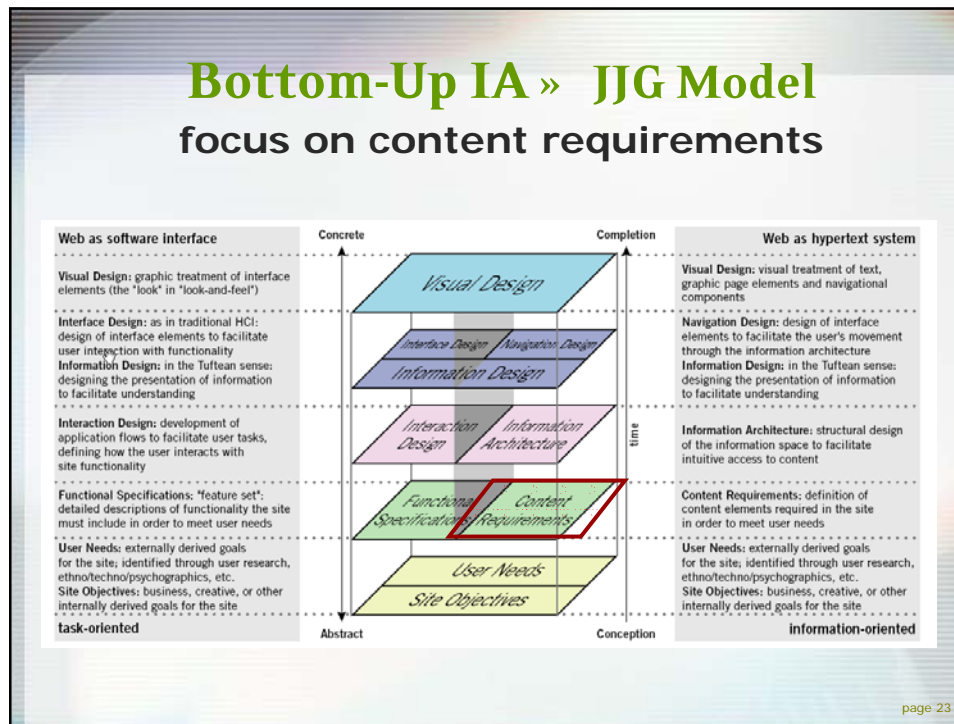# Bottom-Up IA:  Tiny Buckets

- **focuses on:**
  metadata, controlled vocabularies, taxonomies, thesauri
- **continuum with top-down IA**
  since all these things will propagate to the UI directly or
  indirectly

- **related fields:**
  library science, database design, information retrieval, content
  management, knowledge management
- **...and tech comm**
  because of single-sourcing, indexing, ...

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## Bottom-Up IA » JJG Model
### focus on content requirements

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## Bottom-Up IA » Metadata

- "Data about data"
- Information about a doc or a content chunk

- Shout out some possible metadata about this presentation you are watching now

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## Bottom-Up » Controlled Vocabulary

- **Tagging documents in a CMS**

  Often "structural" or "administrative" data

  Examples: Author, Date, Filetype (.doc, .jpg, .pdf)

- **Tagging the *contents* of documents in a CMS**

  Often "semantic" data describing the purpose and subject of the document.

  Sometimes called "keywords."

  Examples: Feature/Function Matrix, Design Spec, Requirements

- **Navigation**

  Use in a browse hierarchy
  Use for a faceted browse

- **Search**

  Translate between "words that users search for" and "words that exist in or near docs."

  This increases the search engine's *recall* –
  Finding all the results, even if the user didn't specify the "right" search terms.

▣ Per Fred Liese, Boxes and Arrows

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## Bottom-Up IA »
## Different kinds of CVs

**Synonym Ring**

+ preferred terms =
**Authority File**

+ broader/narrower terms =
**Taxonomy**
*Hierarchy, Classification*
*Not an ontology*

+ related terms =
**Thesaurus**
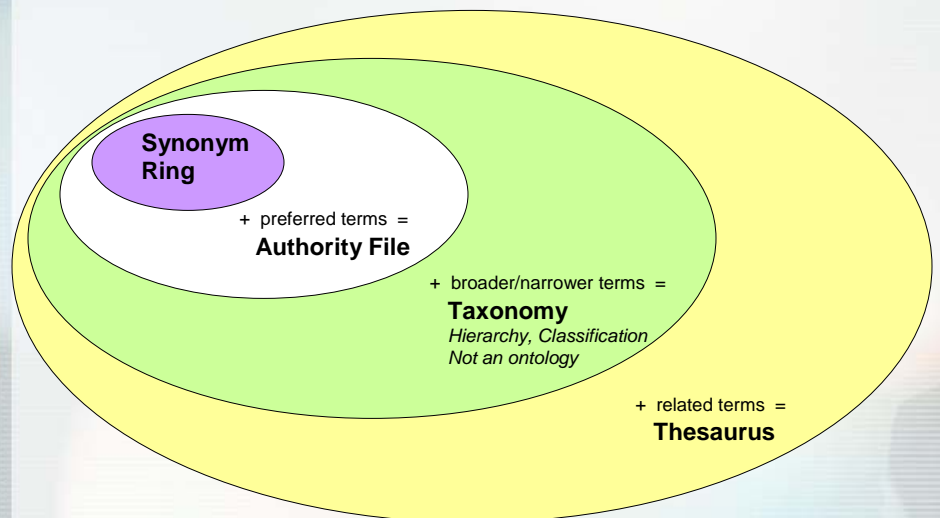
▣ After Fred Liese, Boxes and Arrows

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## Synonym Ring

**What it is:**

– List of terms that we think are
equivalent in our situation

– Tells the search engine to return
results for all synonyms

**Use it to:**

– Increase recall in search engines
that support synonym rings

– Help users get search results, even
if users did not specify the "correct"
word

```
town     =
village =
hamlet

CD-ROM   =
CD

author  =
creator =
writer
```

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## Authority File

**What it is:**

– Synonym ring plus **preferred terms**
("officially" sanctioned terms)

**Use it to:**

– Only allow CMS authors to tag
documents using the preferred terms

– Still let users search for unofficial
terms, even if those terms are not
found inside the doc

```
town      =
village =
hamlet

CD-ROM   =
CD

author  =
creator =
writer
```

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## Taxonomy

**What it is:**
- Authority file plus hierarchy
  (broader terms and narrower terms)
- Most people would call this a classification or hierarchy

**Use it for:**
- Traditional, hierarchical navigation
- Faceted navigation

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## Taxonomy

- **Traditional Hierarchical Taxonomy**
  - Every child term has one, and only one, parent
  - Every term only exists in one place in the "tree"
  - Relationships "is-a-kind-of" or sometimes "is-a-part-of"

```
                    fruit
            ┌─────────┴─────────┐
          tree               vine
          fruit              fruit
        ┌───┴───┐          ┌───┴───┐
     apples   pears     grapes   tomatoes
```
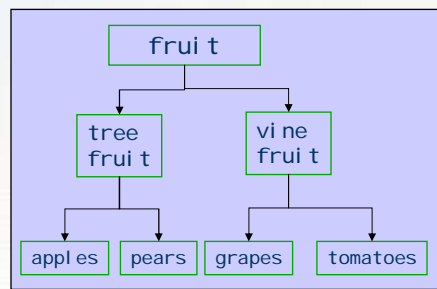
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## Taxonomy

- **Polyhierarchical Taxonomy (Faceted Classification)**
  - Child terms can have one parent, or more than one parent
  - Any term can exist in more than one place
  - Tomatoes are in the Fruit category and the Vegetables category
  - Facets are attributes of a term
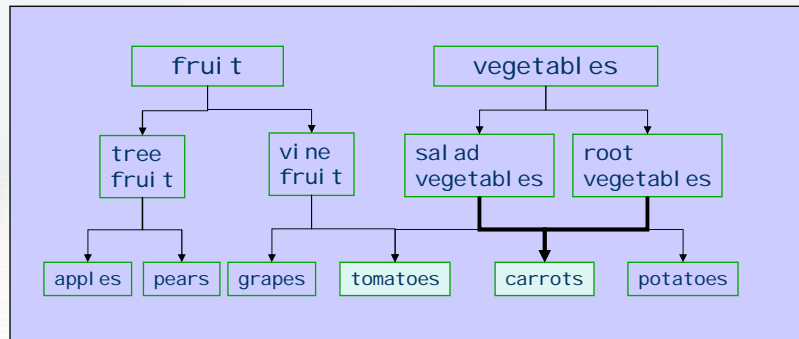


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## Bottom-Up IA » Thesaurus

### What it is:

- Taxonomy **plus** related terms
- Shows "associative relationships," but may not define them explicitly
- May not explain why two terms are related

### Use it for:

- Suggesting "see also" terms and links
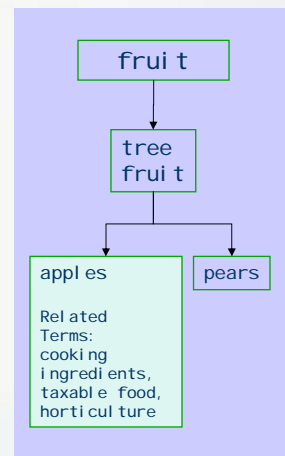


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## Bottom-Up IA » the "O" word
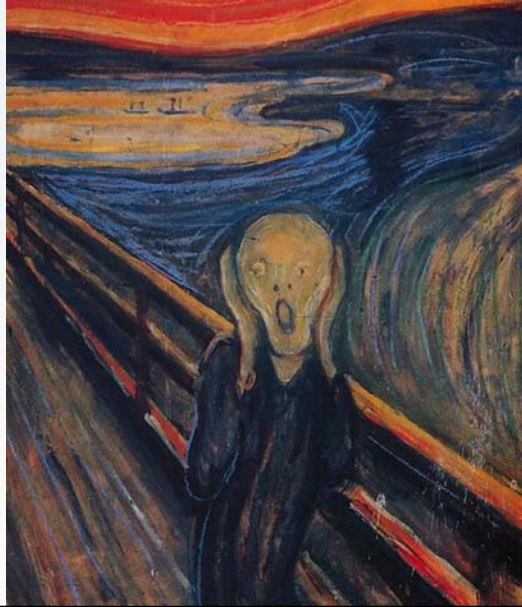
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## Bottom-Up IA » Ontologies

**Philosophy:**
Metaphysical study of the nature of being and existence.

**Common loose usage:** The study of classifications.

**AI community:**
An explicit formal specification representing objects, concepts, and relationships in some area of interest, along with axioms that constrain the use of these terms. Used to develop inference engines.

**KM community: definitions vary...**
A classification structure that takes into context a larger body of knowledge and meaning. An ontology about a domain might contain multiple taxonomies and the relationships between those taxonomies.

**OK, but what does ontology mean to us?**

▣ After Lars Garshol, http://jis.sagepub.com/cgi/content/refs/30/4/378

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## Bottom-Up IA » Ontologies

**What it is, really:**

- Thesaurus **plus** specifically named relationships
- Like a thesaurus on steroids
- Very difficult

**Use it for:**

- High-end "rules-based" apps, AI inference engines, or AI agents
- AI agent uses the ontology to answer questions like "Are these apples expensive?"

```
                    fruit

                    tree
                    fruit

apples                          pears

Related Terms:
cooking ingredients,
taxable food, horticulture

Apple: Noun. Apples: Noun
plural. Price: $1.09/lb.
Supplier: Amy's Fruit
Wholesaler.  Delivery
area: 80112. When apples
are a fruit, expensive
means Price > $2.25/lb.
```
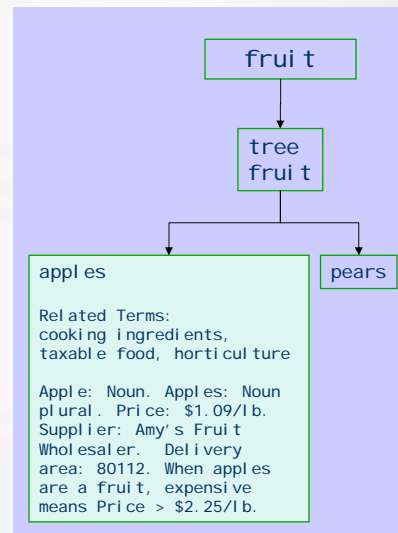
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## Bottom-Up Lessons Learned »

### taxonomies

- No "best practice" for taxonomies in large business environments
- Prescriptive approach does not work any more
- Can never make everyone happy with a monolithic taxonomy
- Start small with limited controlled vocabularies, perhaps by business unit or website function

- It takes a lot longer than you think
- Don't chunk your terms too small
    - need just enough structure for content re-use
    - but too much structure overwhelms users who aren't librarians

☑ Wendi Pohs (IBM) per Seth Earley, Taxonomy Jumpstart.
  Margaret Hanley (BBC), IA Summit workshop.

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## Bottom-Up Lessons Learned »
### getting users to comply with a CMS

- **Important to gather user expectations about the CMS**
- **Training took 2 years and didn't sink in as well as expected at first**
  - Now we do lots of roadshows with plenty of hands-on exercises
  - Also one-on-one training.

☐ Margaret Hanley (BBC), IA Summit workshop.

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## Bottom-Up Lessons Learned »
### getting users to comply with a CMS

- **Users hate to add metadata, even weblinks**
  - Consider allowing users to type free text, even though that makes librarians cringe (see folksonomies)
  - Hunt for abuses of the content templates – that will teach you what aspects of the CMS your users hate

- **How to convince users that metadata is valuable?**
  - Wait till there's a critical mass of metadata
  - Then the benefits will become clearer

- **Spent too much emphasis crafting a workflow that nobody follows**

☐ Margaret Hanley (BBC), IA Summit workshop.

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## Bottom-Up IA » Trend: Folksonomies

- **Taxonomy where users create their own terms**

- **Purest form:** metadata consistency via peer pressure instead of centralized control

- **Example:** dreamstime.com
  - photographers upload photos and tag them at will
  - designers search or browse for tags
  - designers add photos to a collection, and tag it too

▣ "Sorting out Social Classification," IA Summit panel discussion.

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## Bottom-Up IA » Trend: Folksonomies

- **Major, major buzz. Why?**
  - Morville:
    "we are guilty of designing CMSes that were too rigid"
  - backlash to corporate big-brother CMSes –
    "we want you to use *these* words to think"

- **UE:** excitement
  **Librarians:** fascination and horror

- "A folksonomy is nearly useless for searching out specific, accurate information, but that's beside the point. It offers dirt-cheap, machine-assisted herd behavior; common wisdom squared; a stampede toward the water holes of semantics." (Sterling)

▣ "Sorting out Social Classification," IA Summit panel discussion.
Bruce Sterling, wired-vig.wired.com//wired/archive/13.04/view.html?pg=4

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## Bottom-Up IA »  Trend: Folksonomies

**Jury is still out for now**

**Take-home messages:**
- Make it in users' best interest to tag stuff
- Consider hybrid approach –
  let users tag at will, but then normalize it
- Be careful – BBC tried this, and they got buried

▣ Karen Loasby, Growing Pains of a Controlled Vocabulary

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**?**

## Top & Bottom » Faceted Classifications

- **Facet = an attribute of an object**
  - some terms can have more than one broader term
  - polyhierarchy
- **epicurious.com**  browse, advanced search
- **IBM Notebook Finder**

```
        fruit                    vegetables

   tree      vine          salad         root
   fruit     fruit       vegetables   vegetables

apples  pears  grapes  tomatoes    carrots   potatoes
```
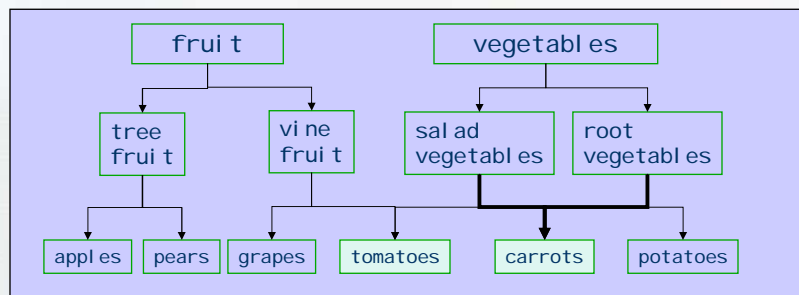
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## Top & Bottom » Faceted Classifications

**More sites that use facets:**

- bn.com: books about music in the Civil War
  Browse books by subject
  - Nonfiction > Music Books > History > Military History > Civil War  *or*
  - Nonfiction > History > 19th century > Music

- staples.com

- kohler.com

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## Top & Bottom » Faceted Classifications

### Case Study: PC Connection

- Good fit for faceted nav

- But Endeca did not increase conversion rate or sales
  – usab testing: users did not see facets or their little ▶
  – people aren't used to facets, so place them prominently

- More usab testing for current design
  – use both bullets and underlines to emphasize  • links
  – show choices like this:  less than $50 (19 choices)
  – users don't use breadcrumbs
  – they don't distinguish between searching and browsing
  – don't call it "Advanced Search"
  – animated flyout DHTML tested very well

◻ Steve Mulder, Faceted Interface: PC Connection, IA Summit presentation       page 45

## Top & Bottom » Faceted Classifications

### Case Study: Softchoice.com

- B2B customers – act differently than B2C
  – repeatedly purchase same products
  – need detailed specs
- User mistrust due to
  – cryptic abbreviations
  – missing photos
  – missing technical details

- Added CV with custom Best Bets for certain customers
- IA team convinced management with hard data

◻ Joanna Briggs, Building on User Testing: Softchoice.com       page 46

## Top & Bottom » Faceted Classifications
### Case Study: Softchoice.com

Control/Impact Analysis of Findings

| | | Does the X have a high/medium/low impact on Y? | | |
| | | High Impact | Medium Impact | Low Impact |
| --- | --- | --- | --- | --- |
| Is the X within or outside the team's control ? | In our control | Repeat purchases are important to me | Abbreviations are confusing | |
| | In our Sphere of Influence | | | |
| | Out of our control | | | Third party sites have outdated licensing information |

Joanna Briggs, Building on User Testing: Softchoice.com, IA Summit presentation       page 47

## Top & Bottom » Faceted Classifications

### Case Study: a chemical company
- Combined traditional bottom-up IA with top-down user studies
- Found lots of synonyms, but facets too granular
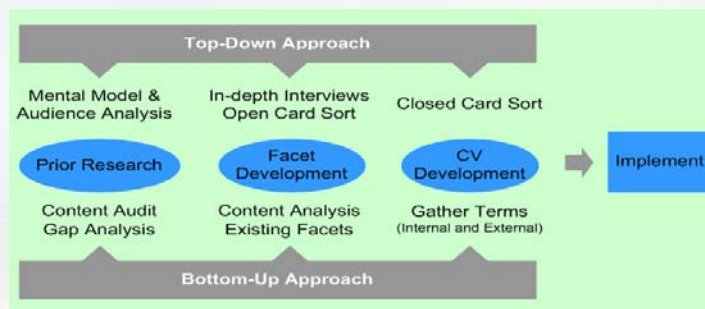


Fred Leise, Developing a Faceted Classification: Case Study

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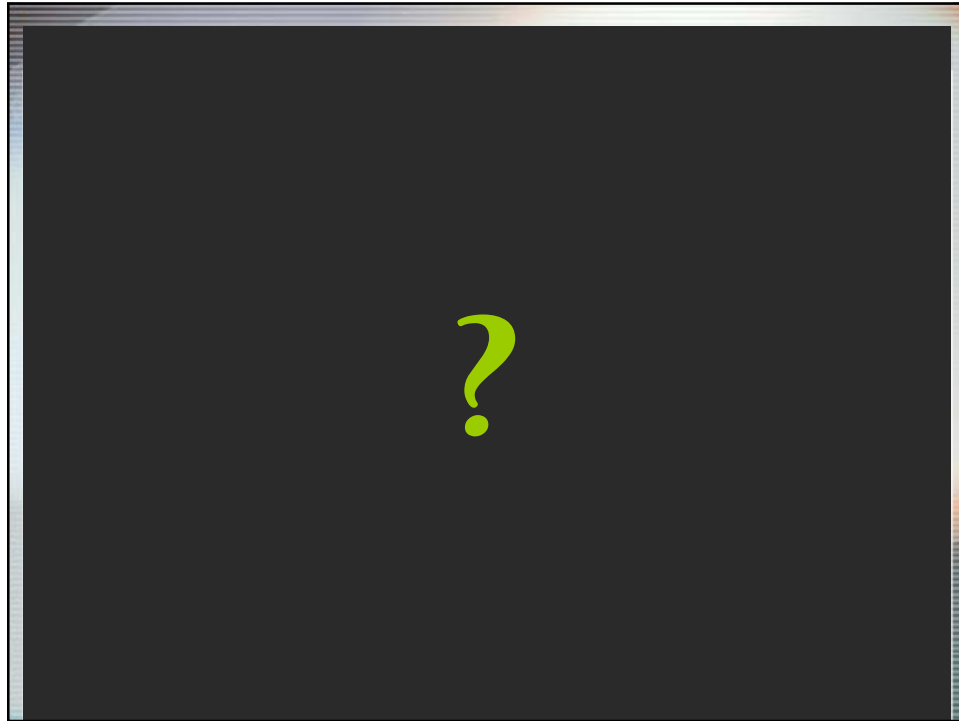
## International Issues

- **Does the organization/nav of a website need to change for different cultures?**
  - Keep the top levels the same
  - Vary the lower levels where locale-specific content exists

- **Sometimes the cultural differences aren't as big as you'd think**
  - Germans said they search differently, but could perform OK on generic search engine
  - Indian card sorting on household electronics – facets were similar to European, but hierarchy was slightly different

- **Biggest cultural differences that affect IA:**
  - Developed nations vs Developing nations
  - Asia vs everywhere else

◻ "Practical Global IA" panel discussion
page 50

## International Issues

- **Hofstede's Dimensions of Culture are harmful stereotypes**
  - Power-distance
  - Collectivism vs. individualism
  - Femininity vs. masculinity
  - Uncertainty avoidance
  - Long- vs. short-term orientation

- **Useful to recognize cultural differences… but not to reconcile them**

- **We need a more nuanced view**

�«» "Practical Global IA" panel discussion

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## Business Issues

- **IAs don't get no respect**
  - IA must have support from the executive suite (Briggs and many others)

- **"10 mistakes I made"**
  - thinking metadata would solve all our problems
  - not managing management expectations
  - thinking that UCD was more important than anything else
  - didn't spend enough money on consultants (!)

�«» Joanna Briggs, Building on User Testing: Softchoice.com
Lorelei Brown, 10 Giant Mistakes I Made This Year

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## Business Issues » Evangelizing IA

- **Elevator pitch:**
  "I'm an IA and I structure information.  It could be for websites, or it could be to help management make decisions."
- **Wait for the seducible moment** – for an exec, pain = $.
- **I never use the term "user"**  when talking with execs. Never, never, never.  I call it "constituent value add." The execs won't take you seriously if you use talk about users.
  (Harry Max, Dreamworks)

- **At the C Level:** first talk about the vision, then the plan.
  At the Program Manager level: vice versa. (Harry Max)
- **When presenting IA internally**, think about it as a campaign ad – execs just need to know how IA will meet business goals (Fiorito)

▣ David Fiorito, Thinking Navigation on Vanguard.com
  Helping IAs Speak the Language of Business, panel discussion

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## Business Issues » Evangelizing IA

### You might be an evangelist if …

- You've seen the movie Jerry Maguire a dozen times and you still can't figure out why they fired Tom Cruise.

- You drop Bill Gates a personal e-mail every time you think of another thing that bugs you about that damn talking paper clip.

- Every week, you find yourself trying to convince the office cleaning crew to put the toilet paper roll in the right way.

- You have a recurring nightmare where the company's adherence to existing processes inadvertently opens the Gates of Hell and initiates Armageddon.

▣ Dan Willis, Evangelism 101                                page 54

## Business Issues » Evangelizing IA

**An evangelist** helps things change...

- **By the work of their "day job"**
  - Solve problems rather than just alleviate symptoms
  - trade ownership for consensus around new kinds of thinking

- **By their involvement within projects**
  - Function as an outside consultant whether they are one or not.

- **By initiating group creative exercises**
  - Run workshops, Home Cookin' sessions

- **By circulating information**
  - Author e-mail newsletters, collect timely articles from other industries

◻ Dan Willis, Evangelism 101 · · · · · · · · · · · · · · · · · · · · · · · page 55

## Business Issues » Evangelizing IA

### Evangelizing IA at The Vanguard Group
- IAs at Vanguard Group decided to document business strategy
- Had to overcome skepticism
- Information design matters – even/especially for execs



◻ Richard Dalton, A Foray Across Boundaries: Applying IA to Busn Strategy · · page 56

## Other Issues

- **Ethics of persuasion**
  - Why is e-commerce floundering in India if computers cost $900?
  - Because $900 is more than one year's salary, and nobody is going to spend that much money online
  - Keynote speaker, B.J. Fogg, admitted his book, Persuasive Technology, needed an ethical balance

- **Soul-searching**
  - Acknowledging that IA can be a frustrating field due to politics
  - Lou Rosenfeld – how to get 12 departments to agree on something?
  - Polar Bear methods don't work in that environment
  - Go for quick IA wins

- **No navel-gazing**
  - "What is IA" was not an issue

▣ Louis Rosenfeld, Enterprise IA Methodology
page 57

## Bottom Line

- **There are lots of hard IA problems**
- **Some very smart people are working on them**
- **Some IAs create beautiful artifacts that increase credibility**

- **Nobody has all the answers**
- **Nobody will, any time soon**

- **Do your homework... and go for it**
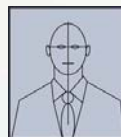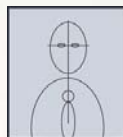
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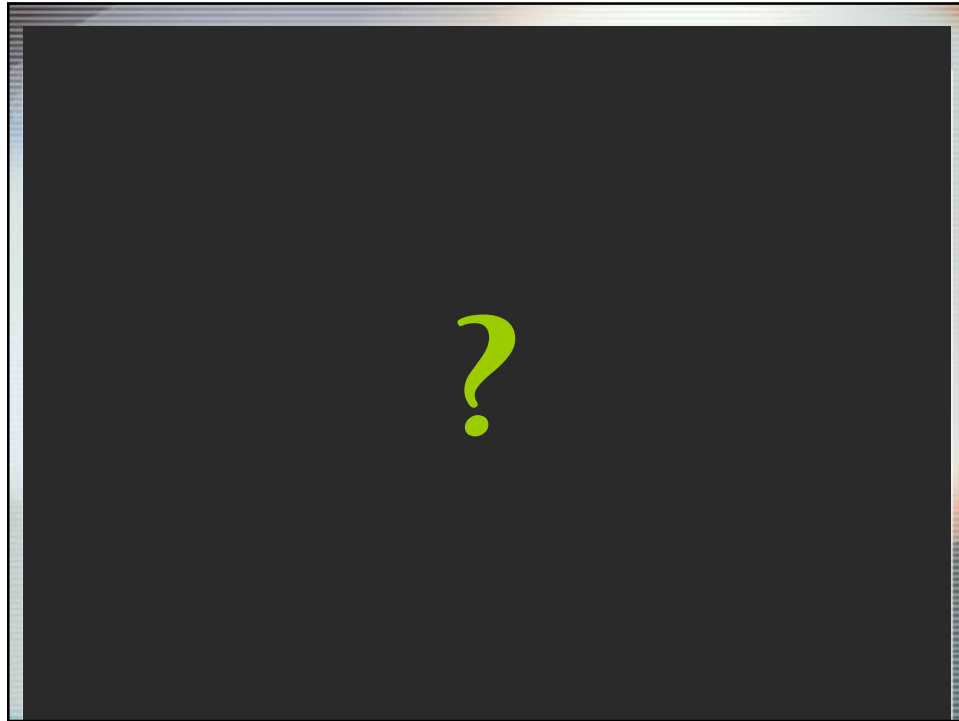
**Learning More** » **Professional Societies**

**STC:** www.stc.org

**STC International Conference 2005**
www.stc.org/52ndConf/index.asp

**Usability SIG:** www.stcsig.org/usability/

**Information Design SIG:** www.stcsig.org/id/

**Single Sourcing SIG:** www.stcsig.org/id/

**ASIST:** www.asist.org
sigia-l mailing list (free):
mail.asis.org/mailman/listinfo/sigia-l

**IA Summit 2005 papers:**
www.iasummit.org/2005/conferencedescrip.htm

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## Learning More  »  Top-Down IA

**Top-Down Intro & Context:**

- **Jesse James Garrett,** Elements of User Experience
  27 April Denver IA and brand architecture,
  28 April Boulder user experience seminar,
  www.adaptivepath.com/events/2005/april/
  Diagram:  www.jjg.net/elements/pdf/elements.pdf

- **Steve Krug,** Don't Make Me Think
  3 June Denver usability seminar,
  www.stevekrug.com/workshops.html
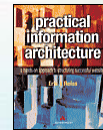
**Top-Down Practical:**

- **Christina Wodtke,** Information Architecture:
  Blueprints for the Web

- **Eric Reiss,** Practical Information Architecture

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## Learning More  »  Top-Down IA

**IA for Tech Writers:**

- **Mir Haynes,** "Information Architecture: You Do It,
  You Just Don't Know It."
  Intercom, April 2003.
  http://www.stc.org/intercomArticle_Haynes0403.asp

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## Learning More: RIA

- **Ajax:**
www.adaptivepath.com/publications/essays/archives/000385.php

- **Macromedia:**
www.macromedia.com/resources/business/rich_internet_apps/

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## Learning More  » Bottom-Up IA

**Bottom Up:**

- **NISO new draft standard for Controlled Vocabularies** www.niso.org/standards/balloting.html

- **Taxonomy and Metadata Jump Start**
conference calls, Taxonomy Community of Practice, Seth Earley   www.earley.com

- **Tomatoes are Not the Only Fruit,** Maewyn Cumming
www.govtalk.gov.uk/documents/Tomatoes%20are%20not%20the%20only%20fruit%202002-12-19.doc

- **Creating a Controlled Vocabulary,** Karl Fast, Fred Leise, Mike Steckel
www.boxesandarrows.com/archives/creating_a_controlled_vocabulary.php
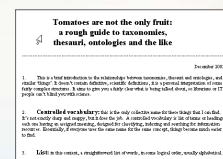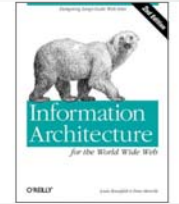
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**Learning More   » IA all over**

**Top Down and Bottom Up:**

**Louis Rosenfeld and Peter Morville,** Information
   Architecture for the World Wide Web (2nd ed.)
   June 2 Denver EIA seminar,
   www.louisrosenfeld.com

**Boxes and Arrows,** www.boxesandarrows.com

**Neill Kipp** "Information Architecture, Storage &
   Retrieval" seminar and CU Denver class,
   www.kippsoftware.com

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