



Facets are fundamental

Rethinking information architecture frameworks

Abe Crystal ~ IA Summit '06 ~ March 28th ~ Vancouver, BC

Expired

**Hierarchy is
Fundamental**

Tired

**Facets are
Supplemental**

Wired

**Facets are
Fundamental**

Facets are fundamental

Rethinking information architecture frameworks

1. The need to go beyond topic (aboutness).
2. The need to treat facets as fundamental.
3. The challenge to existing practices.
4. The potential payoffs.
5. The End.

Problem #1

Existing IA frameworks minimize or ignore *non-topical* methods of organizing and presenting information.

Expired: Hierarchy is Fundamental

- **Rosenfeld and Morville (2002)**
“The foundation of almost all good information architectures is a well-designed hierarchy or *taxonomy*” (p. 65)
- **Similarly, Brinck, Gergel & Wood (2002):**
IA’s first priority is to “create and evaluate your core structure” (p. 130)

Site Map

Text Only
Home
Search
Contact Us
Translation
Help
Site Map

Betsie
Screen & text Colour
Speech to Text Reader

My Choices

Feedback
Comments
Contact Councillor
Preferences
Community Consultation

My Views

Community Strategies
Community Organisations
Feedback

My Community

Heritage
Images of Sunderland
Key Statistics
Maps and Travel Guides
Sunderland in Europe

The City

Best Value
Council Departments
Council Meetings
Council Policies and Strategies
Council Structure
Councillors
Elections
Job Vacancies
Links
National Lottery
Whos Who

City Council

WWW.SUNDERLAND.GOV.UK

Useful Websites

National Websites
Regional Websites
Sunderland Websites

Home
Top
Back
Help
FAQ
Text Only
Preferences
Accessibility
Translation
Glossary
Privacy Policy
Email Policy
Disclaimer
Copyright
Complaints
WebMaster
Adobe Acrobat

My Life

Buying Good and Services
Caring for Adults
Caring for Children
Choosing a School
Dealing with Domestic Violence
Death and Bereavement
Getting Married
Having a Baby
Looking for a Job
Moving Home

City Life

A-Z
Business
City Centre
E-City
Education
Environment
Healthy City
Housing
Kid Zone
Leisure
Lifelong Learning
Local Heritage
Property Matters
Safe City
Visitors Guide
Young People

Online Services

Alarm Registration
Having your Say
Making Payments
Online Forms
Register to Vote
Apply for a postal vote
Jobs
Online Poll
Pest Control
Street Lights

Community Strategy

Community Strategy

TABLE 2. Number of mentions of document features.

	Useful		Not useful		Combined	
	#	%	#	%	#	%
Text	367	46.69	349	42.77	716	44.69
Content	185	23.53	204	25	389	24.28
Numbers	109	13.87	49	6	158	9.86
Titles/headings	37	4.71	34	4.17	71	4.43
Query terms	34	4.33	29	3.55	63	3.93
Too much	2	0.25	33	4.04	35	2.18
Structure	176	22.39	170	20.83	346	21.60
Layout	60	7.63	95	11.64	155	9.68
Links	80	10.18	28	3.43	108	6.74
Links quality	5	0.64	37	4.53	42	2.62
Table data/table layout	31	3.94	10	1.23	41	2.56
Quality	133	16.92	150	18.38	283	17.67
Scope/depth	28	3.56	59	7.23	87	5.43
Authority/source	61	7.76	23	2.82	84	5.24
Recency	31	3.94	35	4.29	66	4.12
General quality	8	1.02	25	3.06	33	2.06
Content novelty	5	0.64	4	0.49	9	0.56
Error on the page	0	0	4	0.49	4	0.25
Non-textual items	99	12.60	44	5.39	143	8.93
Pictures	99	12.60	44	5.39	143	8.93
Physical properties	11	1.40	103	12.62	114	7.12
Page not found	0	0	36	4.41	36	2.25
Page location	6	0.76	16	1.96	22	1.37
Page already seen	1	0.13	16	1.96	17	1.06
Language	1	0.13	4	0.49	5	0.31
File type	0	0	4	0.49	4	0.25
File size	2	0.25	1	0.12	3	0.19
Connection speed	1	0.13	13	1.59	14	0.87
Subscription/registration	0	0	13	1.59	13	0.81
Totals	786		816		1602	

Tombros, A., Ruthven, I., & Jose, J. M. (2005). **How users assess web pages for information seeking.** *Journal of the American Society for Information Science and Technology*, 56(4), 327 - 344.

TABLE 2. Criterion category frequencies.

Criterion category	Frequency	Percent	Documents	Respondents
Depth/scope	64	14.4	52	16
Objective accuracy/validity	13	2.9	12	8
Tangibility	29	6.5	22	10
Effectiveness	16	3.6	13	6
Clarity	9	2.0	8	5
Recency	25	5.6	21	6
Background/experience	19	4.3	18	10
Ability to understand	9	2.0	6	5
Content novelty	53	11.9	35	10
Source novelty	10	2.3	10	8
Stimulus document novelty	5	1.1	5	4
Subjective accuracy/validity	45	10.1	31	13
Affectiveness	25	5.6	21	9
Consensus within the field	20	4.5	17	11
External verification	19	4.3	15	9
Availability/environment	21	4.7	19	11
Personal availability	5	1.1	3	3
Source quality	14	3.2	14	7
Source reputation/visibility	18	4.1	16	8
Obtainability	10	2.3	10	3
Cost	2	0.4	2	2
Time constraints	6	1.4	6	6
Relationship with author	7	1.6	6	4
Column total	444	99.9 ^a	—	—

Barry, C. L. (1994). **User-defined relevance criteria: an exploratory study.** *Journal of the American Society for Information Science*, 45, 149 - 159.

Problem #2

Existing IA frameworks treat facets as supplemental, rather than fundamental.

When classifications are used in Internet databases, it is hierarchical classifications that are almost invariably used. These are in the conventional “tree” shape, a broad area subdivided, then subdivided again and again, with each possible category contained within the one above. Librarians invented a better kind of classification decades ago, that is called faceted classification.

Marcia Bates (2002). After the Dot-Bomb: Getting Web Information Retrieval Right This Time. *First Monday* 7(7).

- **Faceted classification in the Government of Canada:
Toward a Global Approach to Information Architecture**
- **The Faceted Interface: PC Connection Case Study**
- **Faceted Browsing**
- **Developing a Faceted Classification**
- **One Size Does Not Fit All:
a Story of Faceted Browse at Yahoo!**

Titles of sessions at IA Summit'05.

More than FLAMENCO...

Flamenco Fine Arts Search

SAVE
SEARCH

HISTORY AND
SETTINGS

RETURN TO
SEARCH

NEW
SEARCH

LOGOUT

Images from the Collections of the Fine Arts Museums of San Francisco; Legion of Honor and de Young Museums, <http://www.thinker.org>

Questions or Comments? Email Kevin Li (kevinli@sims.berkeley.edu)

SEARCH

all items within current results

Refine your search further within these categories:

Media [\(group results\)](#)

[Book](#) (4) [Metalwork](#) (2)
[Ceramic](#) (48) [Objects](#) (60)
[Drawing](#) (19) [Print](#) (154)
[Glass](#) (17)

Date: [all > 18th century](#) [\(group results\)](#)

[1700 - 1709](#) (9) [1770 - 1779](#) (6)
[1720 - 1729](#) (6) [1780 - 1789](#) (11)
[1730 - 1739](#) (8) [1790 - 1799](#) (70)
[1740 - 1749](#) (32) [Early 18th century](#) (6)
[1750 - 1759](#) (20) [more...](#)
[1760 - 1769](#) (13)

Location [\(group results\)](#)

[Asia](#) (53) [North america](#) (4)
[Europe](#) (191) [South america](#) (1)
[Middle east](#) (1)

Occupations [\(group results\)](#)

[Combatant, guard](#) (12) [Professional](#) (7)
[Entertainer](#) (3) [Worker](#) (7)
[Leader](#) (36)

These terms define your current search. Click the to remove a term.

Date: 18th century

Heaven and Earth: Mountains, Hills, Valleys

250 items [\(Ungroup items\)](#)

clearing 9



A deer in ruttin...
Ridinger
1736



Dawson Grove, th...
Walker
18th century



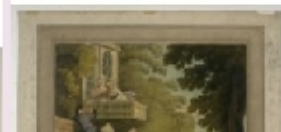
Landscape with R...
Ricci
1730



May Dance
Coppens
1700 - 1720

[all 9 items...](#)

cliff 10



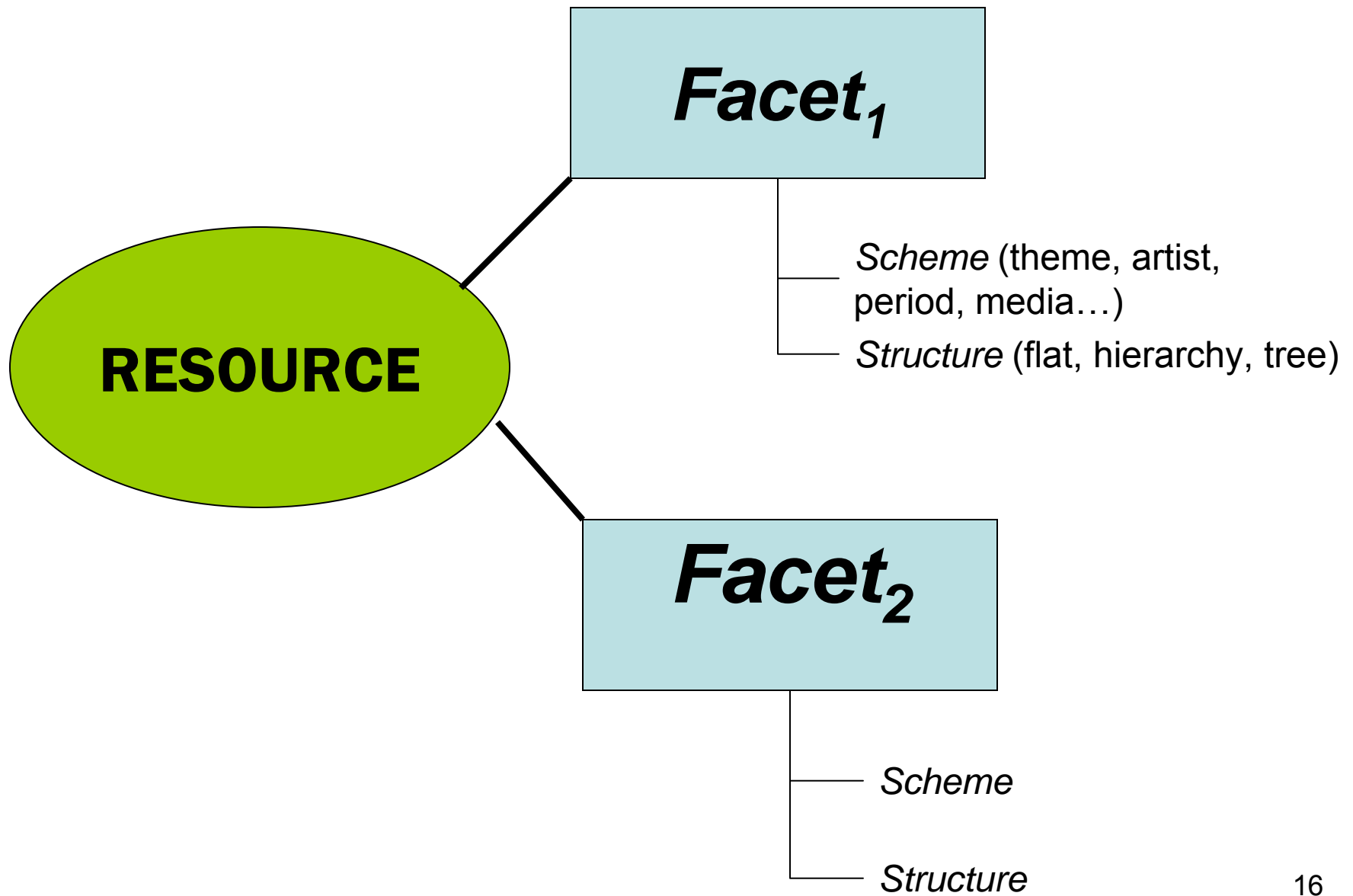
... faceted classification is to hierarchical classification as relational databases are to hierarchical databases.

Marcia Bates (2002). After the Dot-Bomb: Getting Web Information Retrieval Right This Time. *First Monday* 7(7).

Three Aspects of Facets

- **facets = “orthogonal sets of categories”**
- ***flat* (“by Pablo Picasso”) vs. *hierarchical* (“located in Vienna > Austria > Europe”)**
- **single-valued (“measures 36 cm tall”) vs. multi-valued to an item (“uses oil paint, ink, and watercolor”)**

Yee, P., Swearingen, K., Li, K., & Hearst, M. (2003). Faceted Metadata for Image Search and Browsing. In *Proceedings of the 2003 conference on Human factors in computing systems (CHI'03)*. Fort Lauderdale, FL: ACM Press.



Polar Bear organization model: Schemes

- **Exact**
 - **Alphabetical**
 - **Chronological**
 - **Geographic**

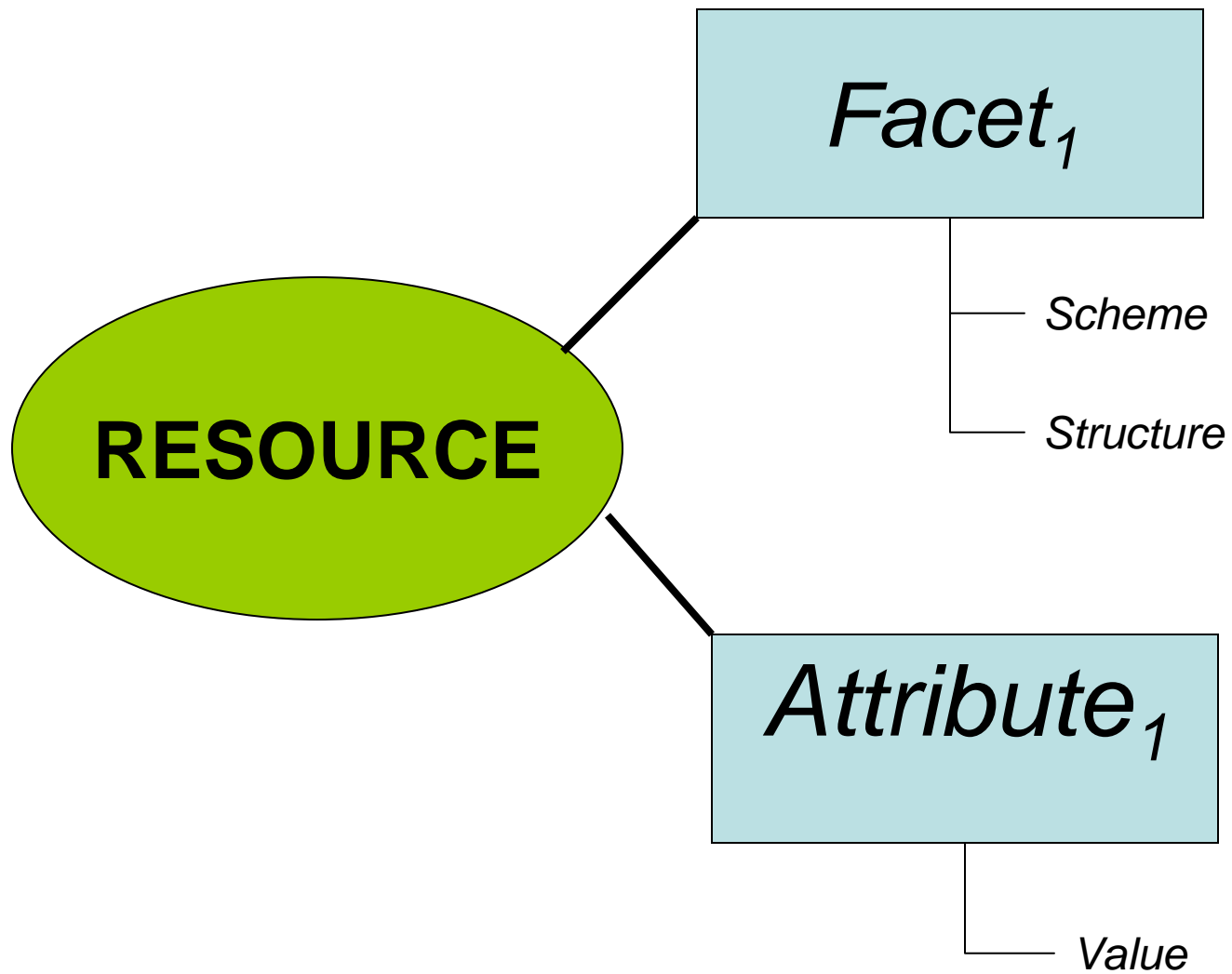
- **Ambiguous**
 - **Topic**
 - **Task**
 - **Audience**
 - **Metaphor**
 - **Hybrids**

Polar Bear organization model: Structures

- **Hierarchical**
- **Database**
- **Hypertext**

Kwasnik organization model: Structures

- **Linear (i.e., flat)**
- **Hierarchy**
- **Trees**
- **Matrices/Paradigms**



<i>Axis of Comparison</i>	Attribute	Facet
<i>Scope</i>	data	information
<i>Control</i>	syntactic	semantic
<i>Definite-ness</i>	tight, widely accepted	loose, controversial, problematic, culture-bound
<i>Origin</i>	inherent	assigned

Facets vs. Attributes

- **Attribute: data**
 - **Price: \$49.95**
 - **Date modified: 3/3/2006 4:15:21 PM**
- **Facet: information**
 - **Theme: Military > Heroism > Self-Sacrifice**
 - **Subject/Topic: Research → Projects →
Open Video**
 - **Audience: Student → Prospective**

Facets vs. Attributes

- **Control: syntactic vs. semantic**
 - **Attribute: syntactic control**
 - **Everyone knows what a price is, but how do we encode it?**
 - **Facet: semantic control**
 - **How do we classify the vast set of documents created by our organization in a systematic but flexible and useful way?**

Facets vs. Attributes

- **Definite-ness: tight vs. loose**
 - **Attribute: tightly defined, well-accepted**
 - **Facet: loosely defined, controversial, problematic, culture-bound**

Facets vs. Attributes

- **Origin: inherent vs. assigned**
 - **Attribute: come with the object (file size, date) or item (price, width x height, etc.)**
 - **Facet: assigned by human sense-makers/order-makers (topic, theme, audience, task, role, genre...)**

<i>Axis of Comparison</i>	Attribute	Facet
<i>Scope</i>	data	information
<i>Control</i>	syntactic	semantic
<i>Definite-ness</i>	tight, widely accepted	loose, controversial, problematic, culture-bound
<i>Origin</i>	inherent	assigned

The Challenge

- **Canonical Website IA...**
 - **Sitemaps**
 - **Breadcrumb navigation**
 - **Page templates**
- **... leads to big hierarchies based on “hybrid” schemes**
- **How do we move beyond this approach?**

STOP

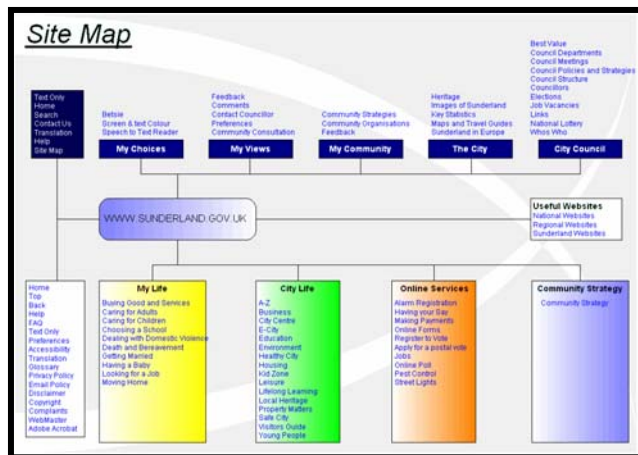
STOP thinking about Web sites like this



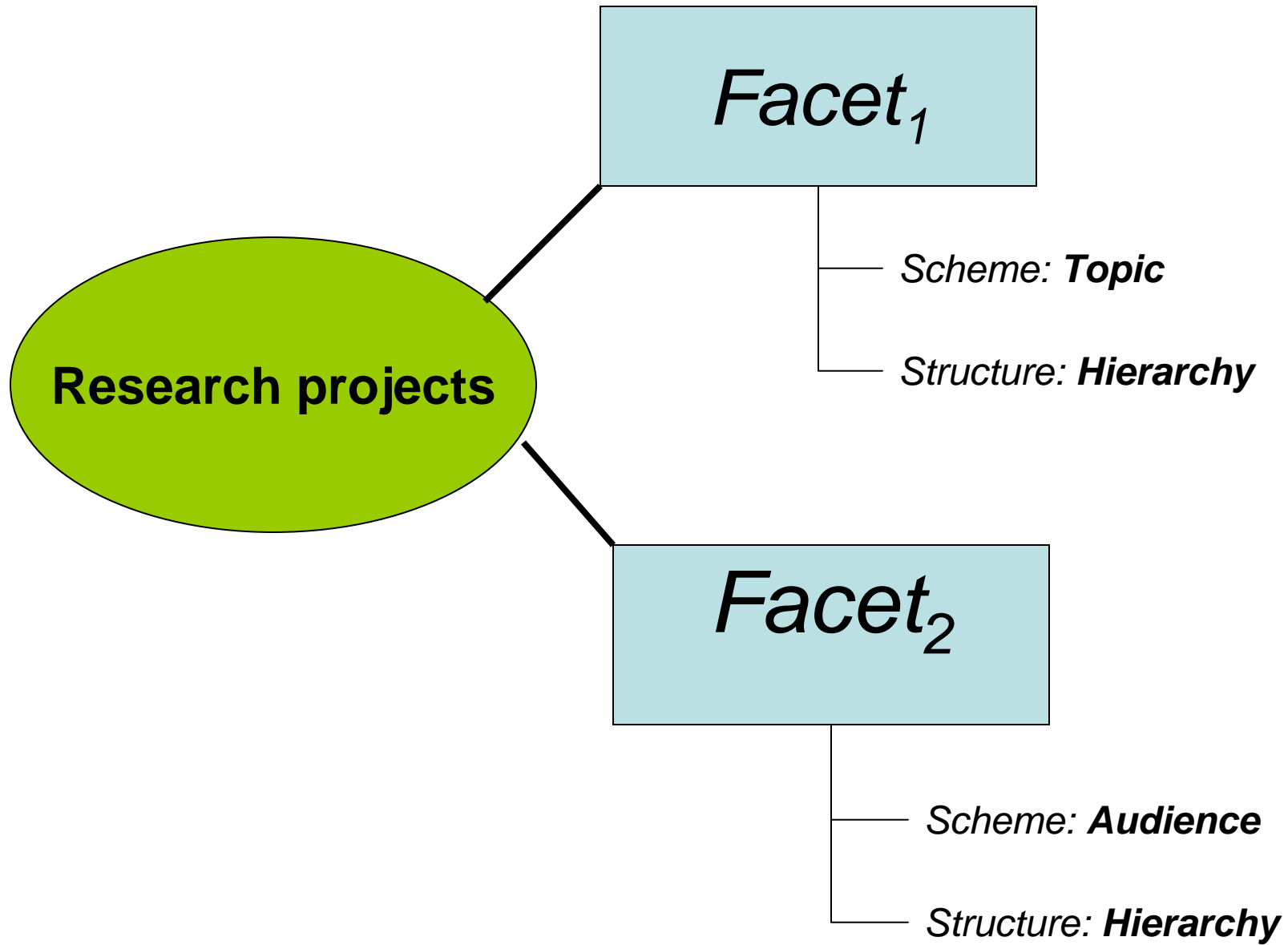
Yes, I will do
the opposite.

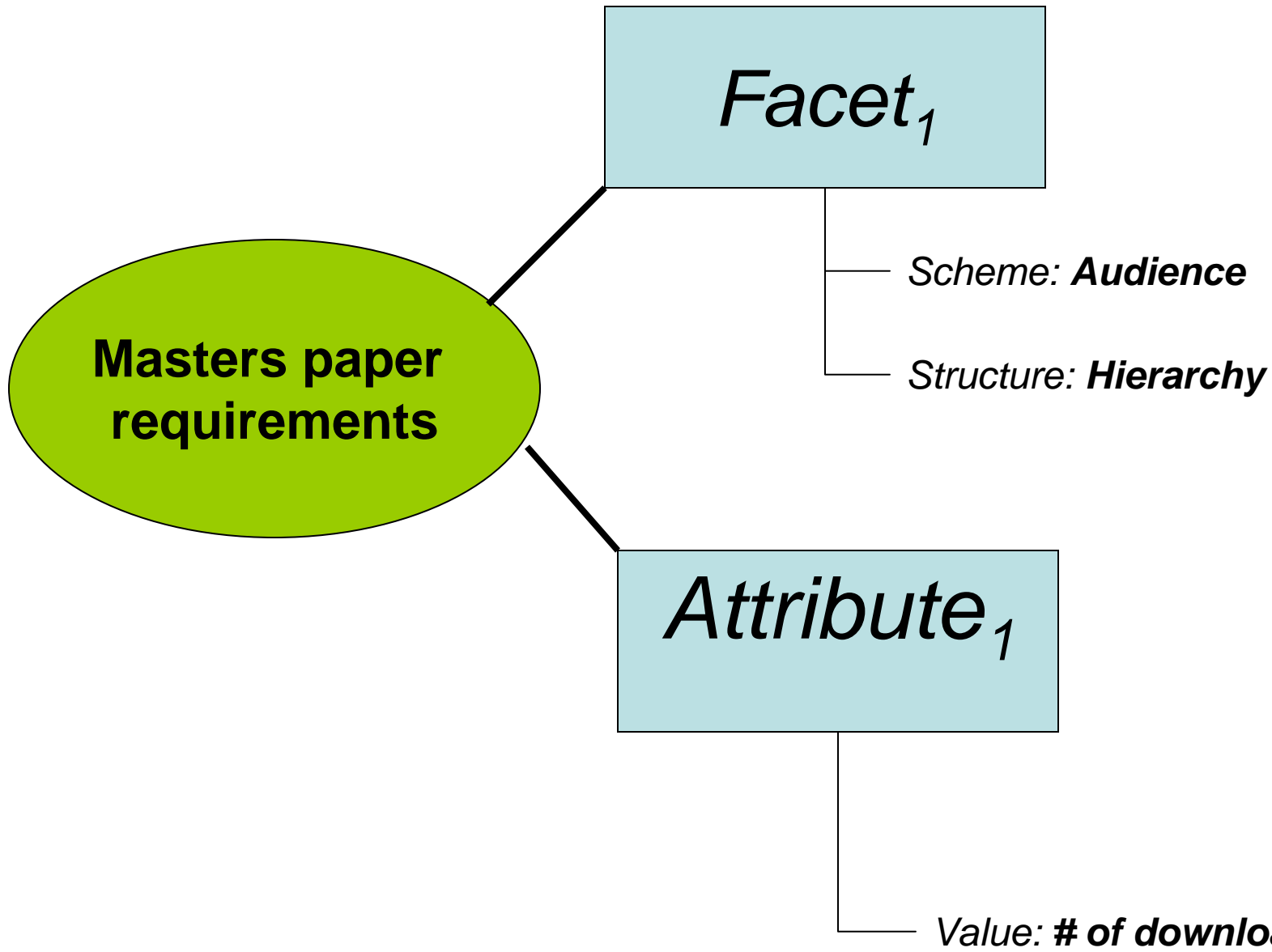


Pages in directories (giant sitemap)



**Objects in a structured
information space**





So what? What difference does this make?

The Payoff: Natural fit with faceted UI's

UNC Movie Collection

Genre: Drama (7)

Decade: 1990-1999 (6)

Format: VHS (7)

7 result(s) [Restart] [Fewer Categories <<] [More Categories >>]

Title:	Date:	Director: ang lee
Title	Date	Director
Crouching Tiger, Hidden Dragon [AKA: Wo hu cang long ...	2000	Lee, Ang
Eat Drink Man Woman [AKA: Yin shi nan nu]	1994	Lee, Ang
Wedding Banquet [AKA: Hsi yen]	1993	Lee, Ang
Pushing Hands [AKA: Tui shou]	1992	Lee, Ang
Ride with the Devil	1999	Lee, Ang
Ice Storm	1997	Lee, Ang
Sense and Sensibility	1995	Lee, Ang

(Director=ang)****(Director=ang lee)

The Payoff: Support UI Innovation

The interface consists of six filter sections, each with a 'Learn' button:

- Shape:** Round (checked), Princess, Marquise, Emerald, Radiant, Pear, Oval, Heart.
- Price:** Range from \$1,150 to \$10,000.
- Carat:** Range from 0.25 ct. to 1 ct.
- Cut:** Ideal, Very Good, Good, Fair.
- Color:** D, E, F, G, H, I, J. Sub-categories: Colorless (D-F), Near Colorless (G-J).
- Clarity:** FL (Flawless), IF (Included Free), VVS1, VVS2 (Very small inclusions), VS1, VS2 (Small inclusions), SI1, SI2 (Small inclusions), I1, I2 (Eye-visible).

125 diamonds match your criteria

[See results](#)

The Payoff: Support Non-Topical IA

The screenshot shows the Clusty.com search results for the query "information architecture". The interface includes a navigation bar with categories like Web+, News, Images, Shopping, Encyclopedia, Gossip, and Customize!. A "Cluster by:" dropdown menu is set to "Document Genre". The main results are organized into a list of clusters, each with a plus sign icon and a count in parentheses. The clusters are: "information architecture" (182), Tutorials (44), Weblogs (21), Links and Resources (15), Academic Papers (10), Professional Association Websites (12), Books (8), Essays (10), Consulting Websites (7), Definitions (328), and Course Syllabus (7). A "More..." link is visible at the bottom of the cluster list. On the left side, there is a sidebar with a "Cluster by:" dropdown and a list of document genres with their respective counts: Tutorials (44), Weblogs (21), Links and Resources (15), Academic Papers (10), Professional Association Websites (12), Books (8), Essays (10), Consulting Websites (7), Definitions (328), and Course Syllabus (7). Below the sidebar, there are several icons and labels: "Open in new window", "Show in clusters", "Open in preview frame", and "Expand clusters". The background shows the search results page with a search bar, a "Submit" button, and a "Download Firefox Toolbar" link. The search results include a "Sponsored Results" section with a link to "Care Tools" and a "Search Results" section with a link to "Information Architecture".

Cluster by: Document Genre

"information architecture" (182)

- + [Tutorials](#) (44)
- + [Weblogs](#) (21)
- + [Links and Resources](#) (15)
- + [Academic Papers](#) (10)
- + [Professional Association Websites](#) (12)
- + [Books](#) (8)
- + [Essays](#) (10)
- + [Consulting Websites](#) (7)
- + [Definitions](#) (328)
- + [Course Syllabus](#) (7)

[More...](#)

Cluster by: Document Genre

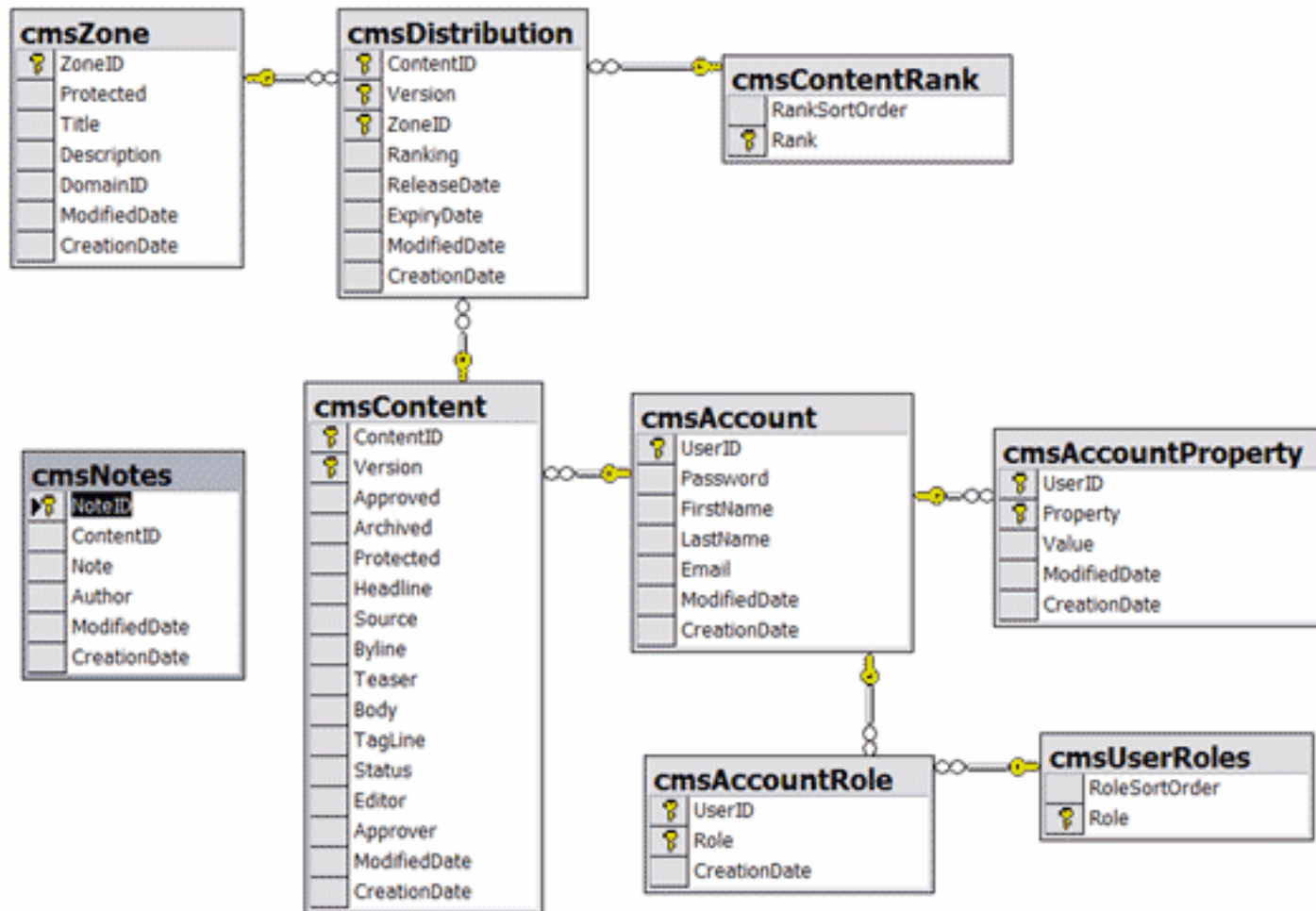
- + [Tutorials](#) (44)
- + [Weblogs](#) (21)
- + [Links and Resources](#) (15)
- + [Academic Papers](#) (10)
- + [Professional Association Websites](#) (12)
- + [Books](#) (8)
- + [Essays](#) (10)
- + [Consulting Websites](#) (7)
- + [Definitions](#) (328)
- + [Course Syllabus](#) (7)

[More...](#)

Open in new window
Show in clusters
Open in preview frame
Expand clusters

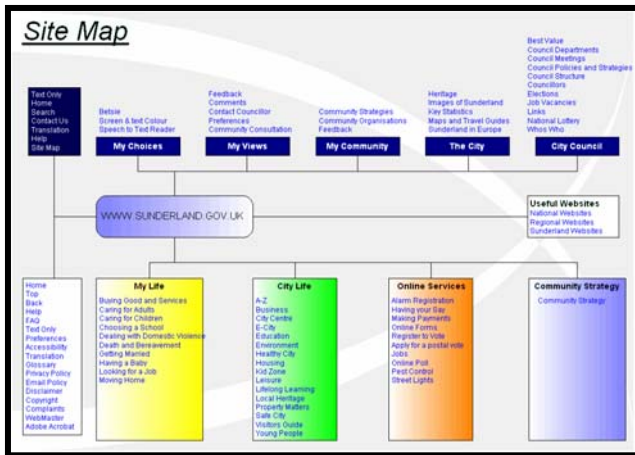
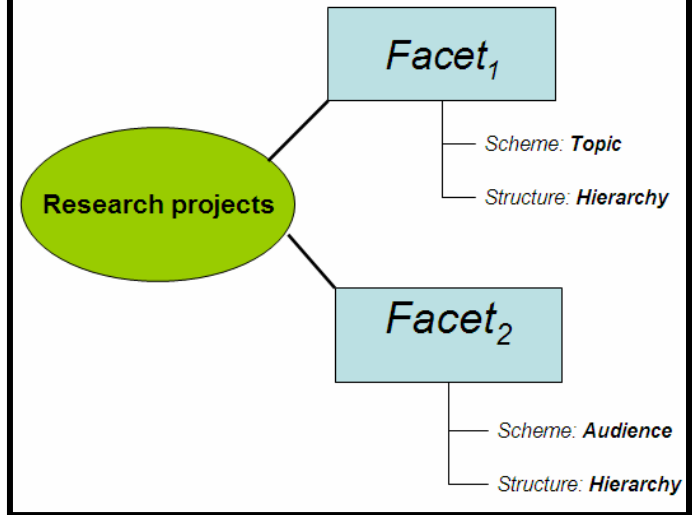
http://www.peterme.com/archives/000488.html

The Payoff: Natural fit with CMS



<http://uk.builder.com/shared/images/developer/cmsa.gif>

**Now: Pages in directories
(giant sitemap)**



**Near Future:
Objects in a structured
information space**

**Intermediate Future:
Flexible, faceted,
dynamic user interfaces**

A Flexible Response

- **Separate *organization* and *representation***
 - **Make facets foundation of IA process...**
 - **... but support both existing Website model, and future, faceted UI model**

Prospective students subsite

[Home](#) → [Audiences](#) → Prospective students

Task

- >> Apply now
- >> Request a mentor
- >> Attend an open house

Format/genre

FAQ

Application forms

Printable catalog

Audience

**Admission process
& criteria**

Curriculum

Internships and field
experience

Careers

Public service
opportunities

Rethinking: Everybody's Doing It.

[iai-members] Polar Bear III

☆ Peter Morville <morville@semanticstudios.com> to iai-me [More options](#) 11:14 am

Lou and I are pleased to announce we recently signed a contract with O'Reilly Media to publish a third edition of Information Architecture for the World Wide Web. Since its original publication in 1998, the polar bear book has sold more than 100,000 copies and become established around the world as a leading text for students and practitioners. But it's time for an upgrade, and we'd love your help. Please contribute by completing this survey (only 2 questions):

<http://www.surveymonkey.com/s.asp?u=184091821605>

This is the first in a series of community surveys we're planning to ensure we include the best ideas and examples. Also, we're hiring an editorial assistant, so if you know someone who may be interested, send them this position description:

<http://semanticstudios.com/pb3editorial.pdf>

Thanks!

Peter Morville
President, Semantic Studios
<http://semanticstudios.com>
<http://findability.org>