Tips for Designing Taxonomy Facets

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About Heather Hedden

Career taxonomist, alternating between employed and self-employed consultant

- Taxonomy consultant and instructor (courses and workshops) through Hedden Information Management
- Previous taxonomy consultant and other taxonomy-related roles with Enterprise Knowledge, Semantic Web Company, Gale/Cengage, Viziant, First Wind, and PPC.
- Author of *The Accidental Taxonomist, 3rd ed.* (2022, Information Today, Inc.)

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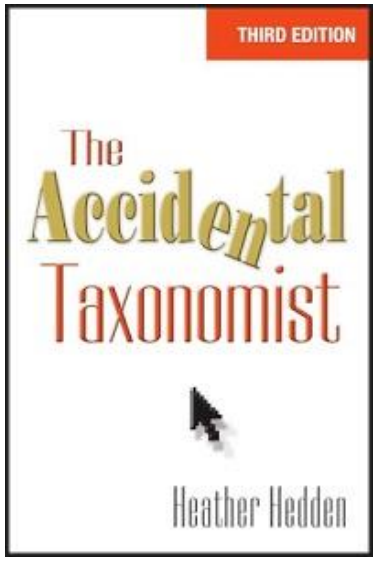
Making information findable



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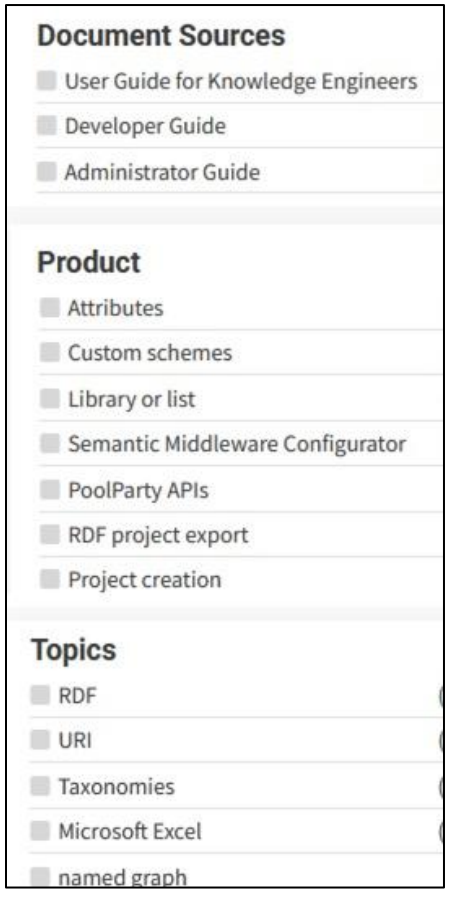
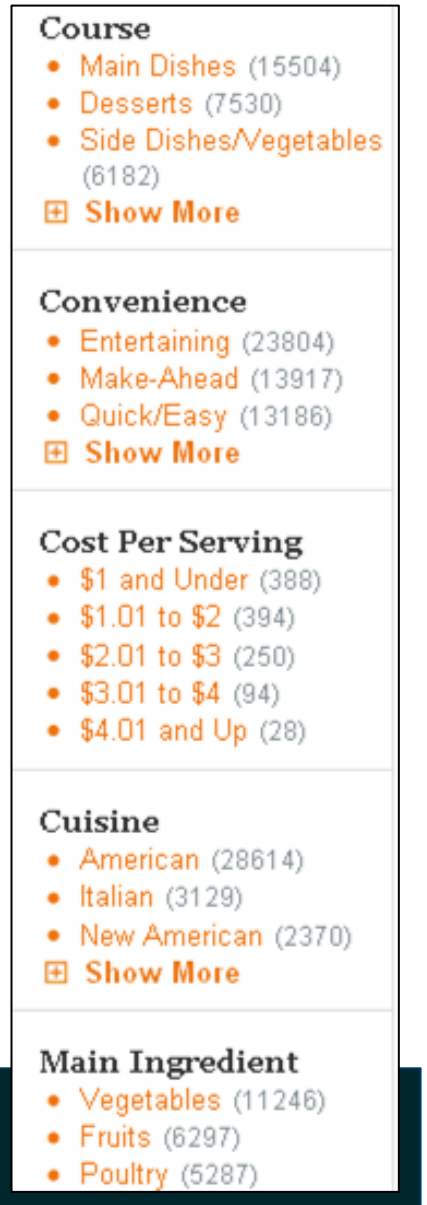
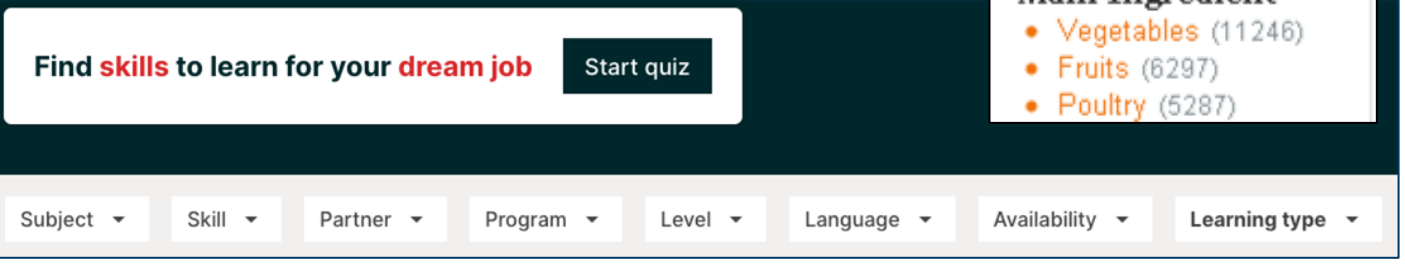
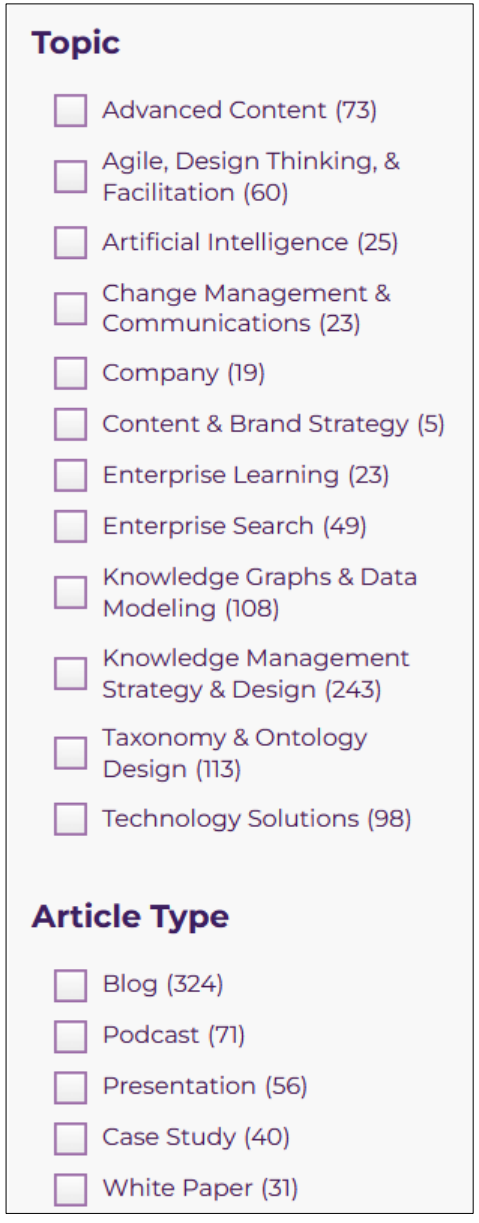
Facets are Common









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What are Facets

- Facets are the organization of taxonomy concepts/terms by types for selection in filtering or refining search results.
  - by the taxonomy concepts that have been tagged to the content
  - as selected from groups (facets) of concepts based on their type
  - and may be combined to further limit searches by selecting from multiple facet-filters together

- "Facets" mean "face": side, dimension, aspect
  - Different aspects to be used in combination
- Each facet (each filter) is a metadata property.

- Users may also select concepts from facets before searching.
  - For complex initial queries or "advanced search"

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Facets for Taxonomies

A faceted taxonomy or a taxonomy facet?

- "Facets" tend to refer to the subset of filters that are managed as *taxonomies*
  - Other "filters" are not "taxonomies": date, author, availability/status, etc.
- A "faceted taxonomy" is a *set* of controlled vocabularies designed to function together as facets in a use case.
  - Each facet is like a hierarchy, even if just two levels (facet name and concepts)
  - Could be referred to as "faceted classification" as an alternative to a single hierarchical classification method.
    - Example: Products classified not merely by industry classification, but by materials/components, production method, purpose/usage, users
  - A single facet could also be a "taxonomy" of topical concepts in a subject domain and could be hierarchical.
- Managed in SKOS, a facet is usually based on a Concept Scheme.
- In SharePoint Term Store, a "Term Set" serves as a facet for search refinement.

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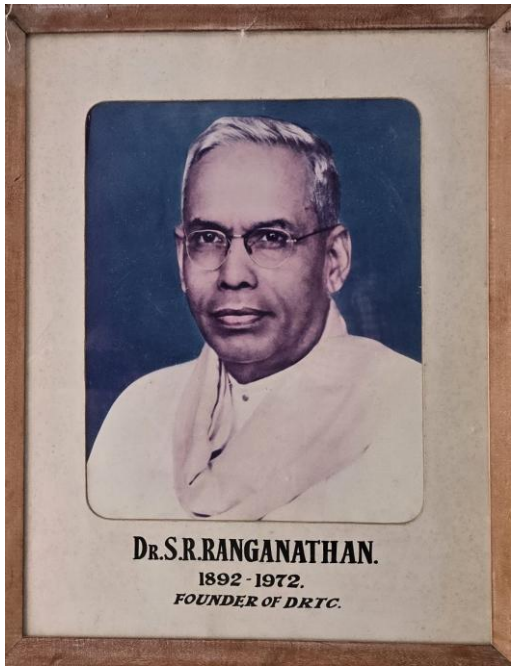
History of Faceted Classification

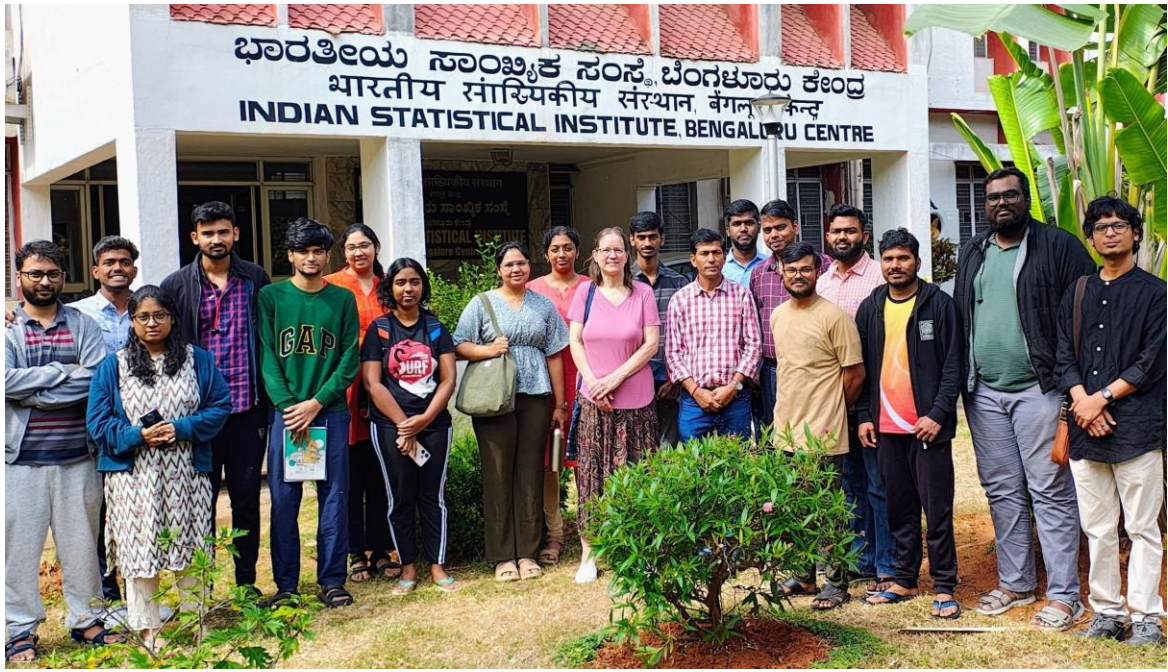
Mathematician/librarian S.R. Ranganathan created “Colon Classification” in 1933, as an alternative to the Dewey Decimal System for classifying books to support multiple classifications:

1. *Personality* – topic or orientation
2. *Matter* – things or materials
3. *Energy* – actions
4. *Space* – places or locations
5. *Time* – times or time periods

The string was separated by colons, later with other punctuation.
Example:
Medicine,Lungs;Tuberculosis:Treatment;X-ray:Research.India'1950
or L,45;421:6;253:f.44’N5



SL No	Name	From	To
1.	Prof. S. R. Ranganathan	Aug 1962	July 1967
2.	Prof. A. Neelameghan	Aug 1967	July 1978
3.	Prof. G. Bhattacharya	Aug 1978	Dec 1991
4.	Prof. M.A. Gopinath	June 1992	Aug 1996
5.	Prof. I.K. Ravichandra Rao (Acting)	Sept 1996	June 1997
6.	Prof. S. Seetharama	July 1997	Sept 1997
7.	Prof. I.K. Ravichandra Rao	Oct 1997	Nov 2010
8.	Prof . A.R.D. Prasad	Dec 2010	July 2019
9.	Prof. Devika P Madalli	August 2019	July 2021
10.	Prof. M. Krishnamurthy	August 2021	August 2023
11.	Dr. Biswanath Dutta	August 2023	



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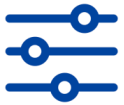
Benefits of Facets



- Supports filtering search results by different aspects/vocabulary types.

- Provides guided Boolean “AND” searching on concepts from a combination of facets.

- Supports more complex search queries by users.

- Allows users to initiate a search from any of multiple aspects/starting points.

- Allows users to control the search refinement, narrowing or broadening in any order.

- Suitable for both experienced and novice users

- Provides context for the meaning of concepts.

- Ensures more comprehensive tagging and retrieval.

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Taxonomy Facets vs. Attribute Filters

Displayed attributes may also function as filters but are not a faceted taxonomy.

Examples of attribute metadata are:

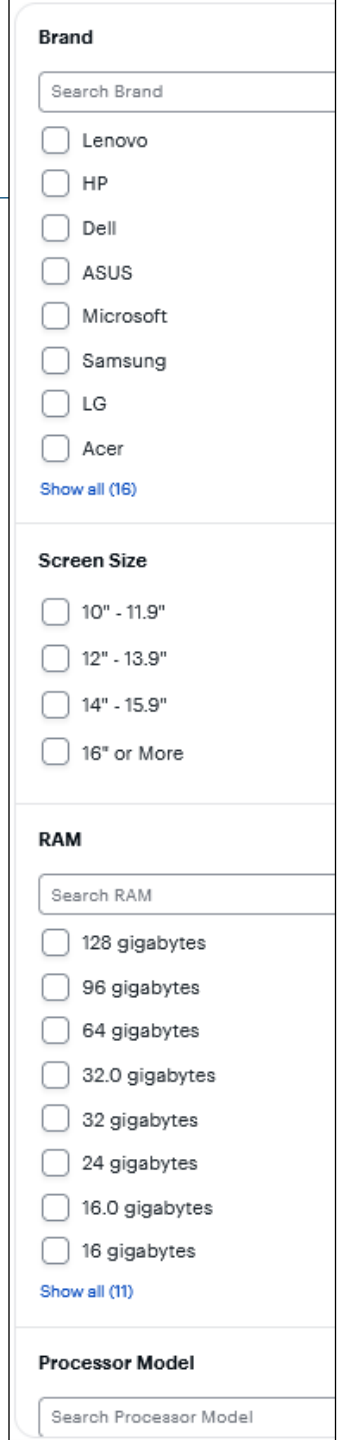
- *for people:* birth date, gender, occupation, nationality, phone number
- *for products:* brand, price, color, size, SKU number
- *for documents:* title, author, publication date, language, word count, file type

Examples of taxonomy facets:

- *for market research:* Topic, Industry, Product Type, Brand Name, Company
- *for an Intranet:* Department, Region, Topic, Activity, Person Name, Event
- *for training content:* Skill, Role, Level, Subject, Delivery Method
- *for technical documentation:* User Type, Content Type, Product (name or module), Feature/Function, Topic

Attributes

- May vary depending on the taxonomy category
- In addition to controlled vocabularies may be numbers, dates, free text, etc.
- May be managed as ontology datatypes



Attributes for Windows laptops on Bestbuy.com

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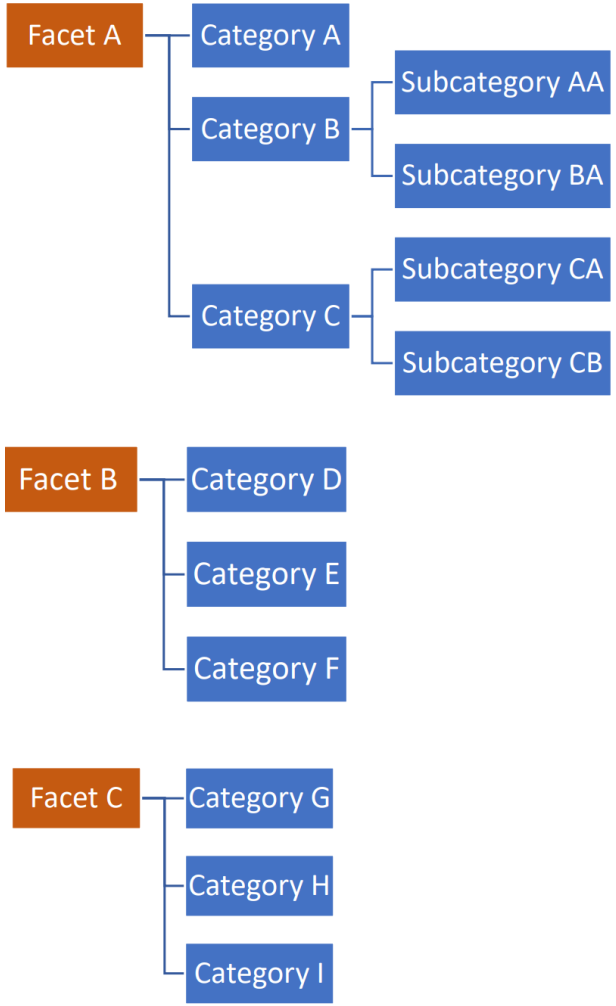
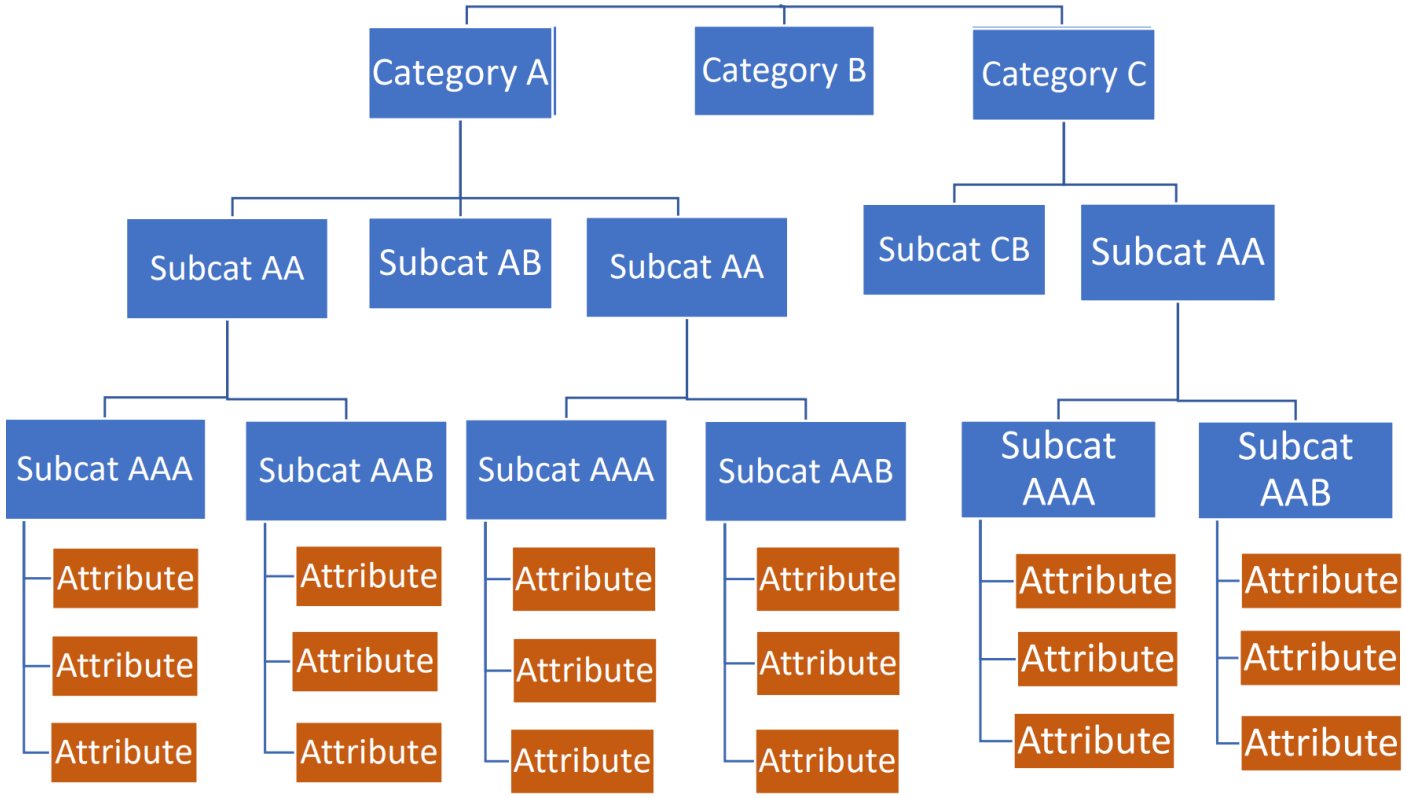
Taxonomy Facets vs. Attribute Filters

Facets in a taxonomy



Attributes in a taxonomy



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Developing Facets: Question Words

Think of facets as aspects, corresponding to several question words:

- What? Subject/Topic – Products, Industries, Technologies, Disciplines
- Where? Location/Location Type – Countries, Market Regions, Office Locations
- Who? Person/Person Type – Job Roles, Market Demographics, User Audiences
- When? Event/Occasion/Phase – Holidays, Conferences, Production Phases
- How? Function/Activity – Methods, Channels, Functional Areas
- Why? Goal/Purpose – Tasks, Solutions, Support Issues

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Developing Facets: Topical and Named Entities

Have some facets that are topical and some that are named entities.

Topical (generic)

- Subjects
- Activities
- Document/publication types
- Functional areas
- Types/groups of people or roles

Named Entities (proper nouns)

- Organizations, Department names
- Places
- Titles (of publications, productions)
- Named people
- Laws

Do ***not*** make named entities as narrower concepts to their generic types within the same facet.

Despite to thesaurus standards (ISO 25965 and ANSI/NISO Z39.19 permitting the generic-instance type of hierarchical relationship.

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Developing Facets: Types of Topics

Challenge of how to deal with the “What?”

Consider breaking it up into more than one topical facet.

Examples:

- Function
- Activity
- Issue Type
- Technology
- Research Field/Discipline

How to break out these facets should be based on discussions with stakeholders/users.

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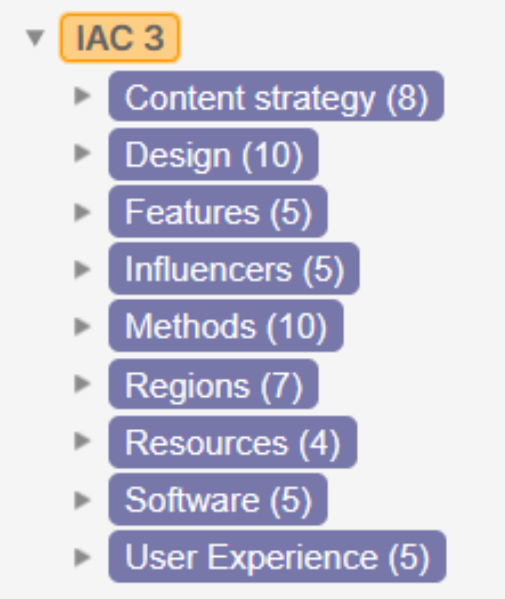
Developing Facets: Suitability of Facets

Facets should be aspect-like and not just top-concept hierarchy categories.



Medical Subject Headings

The name of a facet should make it clear what kinds of concepts it contains.

Example:

not Financial Services or Financial Services Industry,
but rather: Finance Topics

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Developing Concepts/Terms for Facets

Use of terms that appear in search logs?

- Not as-is, as concepts for filtering should not duplicate search terms, but rather help refine.
- Analyze search log terms for patterns, categories, types, instead.
- More for developing the facets than for the concepts in facets.

Facets' topical concepts should remain broad and not be too specific/granular.

- High retrieval per concept is OK, because concepts will be used in combination with others from other facets.

- Number of concepts per facet should be limited, ideally to

	A	B
1	**Search Term**	**Total Unique Searches**
2	shif	451
3	dsa	449
4	travel	414
5	staff regulations	380
6	igds	223
7	pardev	220
8	home leave	193
9	implementation agreement	191
10	procurement	178
11	normes	157
12	exchange rate	151
13	infotec	147
14	normlex	136
15	teleworking	135
16	dcomm	132
17	actrav	126
18	iris	126
19	cafeteria menu	123
20	437	121
21	hrd	118
22	iuc	114
23	prodoc	112
24	education grant	110

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Facet Display Options

Taxonomy design should consider the user interface.

- Number of facets should be limited, such as 4-8.
- Facets should display in a logical, not alphabetical order.
- Concepts within facets may display in either alphabetical or ranked by tagged content count.
- Facets may be “open” with some/all concepts initially displayed or “closed” (collapsed) to save space.
- For open facets, display is limited typically to only 5-7 concepts; when a closed facet is opened, could display a few more concepts.
  - Choice of open or closed facets tends to be based on the number of filters, rather than on the number of concepts in each.
- Concepts within facets my have tick boxes next to them to allow multiple selections within a single facet.
- A two-level hierarchy within a facet is possible (indented display)
- Good example of interactive facets: Microbial Life Educational Resources http://serc.carleton.edu/microbelife/resources

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Resources

Posts on Faceted Taxonomies from The Accidental Taxonomist Blog (accidental-taxonomist.blogspot.com)

- "Faceted Classification and Faceted Taxonomies," February 24, 2024
- "Topical Taxonomies for Filtering," September 30, 2024
- "Taxonomies and Attribute Data," May 5, 2025
- "Named Entities in Taxonomies," December 17, 2021

Upcoming Conference Speaking (www.hedden-information.com/events)

- DCMI, Barcelona, Spain, 22-25 October 2025
  - Speaking on the panel "Using Schema and Value Vocabularies to Provide Consistency Across Structured Content"
- Taxonomy Boot Camp, Washington, DC, 17-18 November 2025
  - Presenting "Taxonomies in Support of Search"

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Questions/Contact

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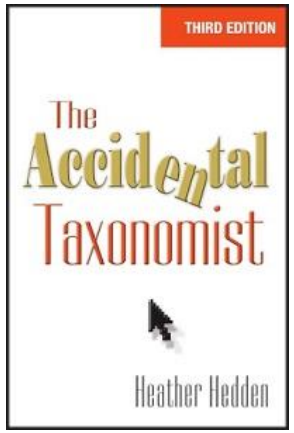
Hedden, Heather. (2022) *The Accidental Taxonomist, 3rd edition.* Medford, NJ: Information Today Inc.
www.hedden-information.com/accidental-taxonomist



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