

Designing and Building Taxonomies for the Real World

Factor - IA Conference March 13, 2019



Hi!



Principal, Factor LLC



Information Architect, Factor LLC



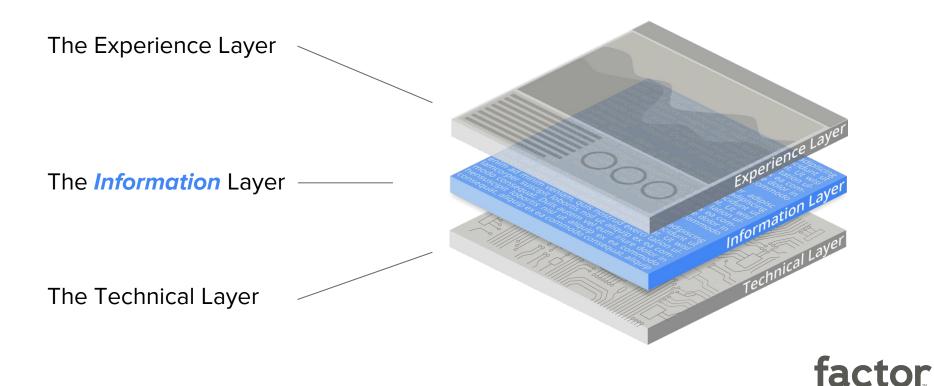
Let's get cookin'.

What happened?

What *is* a Taxonomy, anyway?



What role do they play in an Information Architecture?





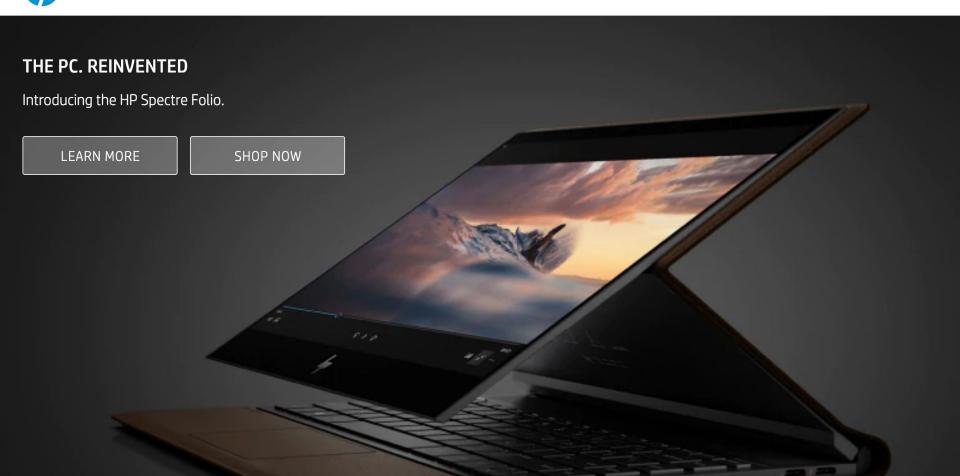
MacBook Air

Lightness strikes again.

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Gaming



Towers





All-in-ones

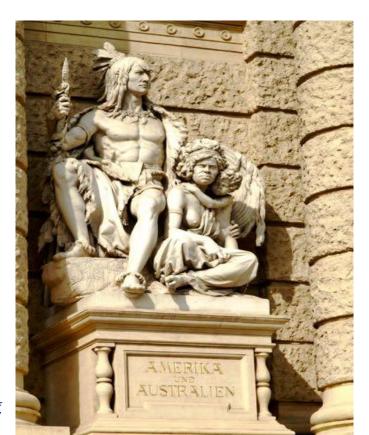


Deals

LEARN MORE SHOP NOW

Our categories can say more about us than anything else

Amerika und Australien





factor

Europa

Vienna Museum of Natural History

Our categories can say more about us than anything else



Cabela's

Hunting

Shooting

Fishing

Boating

• • •

REI Co-op

Camp & Hike

Climb

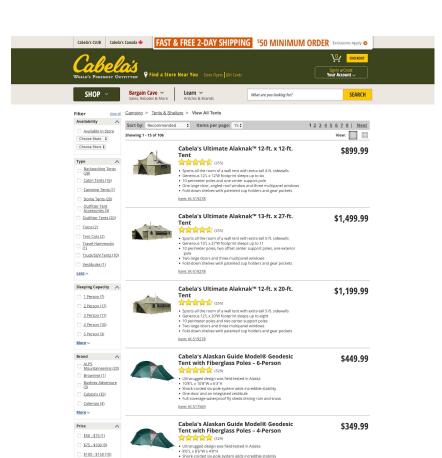
Cycle

Paddle

•••

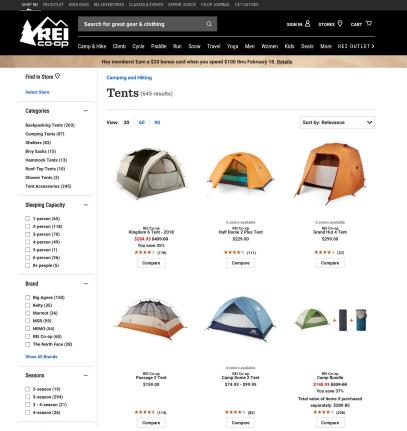






One door and an integrated vestibule

S150 - \$200 (15)





Taxonomy

From **ANSI/NISO Z39.19-2005** – Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies

A collection of controlled vocabulary terms organized into a hierarchical structure. Each term in a taxonomy is in one or more parent/child (broader/narrower) relationships to other terms in the taxonomy.



"Taxonomy for our purposes..."

A collection of terms and relationships between the terms used to describe a domain.

- Thesauri
- Controlled Vocabularies
- Ontologies
- Lexicons

- Controlled value lists
- Folksonomies
- ...and more!

At your tables, generate a few examples...



Taxonomic structures can take many forms

Keywords / Folksonomies

Controlled Vocabularies

Thesauri

Controlled Value Lists

Taxonomies

Ontologies

Less Complex Fewer Relationships Fewer Rules More Complex
More Relationships
More Rules



Taxonomies (looking outward)...

...bridge the gap between content and a user.



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...bridge the gap between content and a user.

...represent an organization's expertise, brand, and world view.



Taxonomies (looking outward)...

...bridge the gap between content and a user.

...represent an organization's expertise, brand, and world view.

...directly support revenue, brand health and operational efficiency.



...have **internal customers** (like internal users, backend systems and dashboards).



...have internal customers (like backend systems and dashboards).

...are managed with **change control** and **security** requirements.



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...are managed with **change control** and **security** requirements.

...are managed by **business owners** and **technical users**.



...have internal customers (like backend systems and dashboards).

...are managed with **change control** and **security** requirements.

...are managed by **business owners** and **technical users**.

...are a core organizational asset.



Taxonomies: Inward & Outward... for discussion

- How does your taxonomy represent your brand?
- What does your taxonomy organize?
- Who are you internal customers?
- What change control is there around your taxonomy?



Getting into the weeds with taxonomies...

Parts of a taxonomy

Terms/Concepts Relationships Attributes Taxonomy Definition itself



Terms + term attributes

Terms are the concepts in the taxonomy. They will often have Attributes (modifiers or qualifiers) that provide additional context.

Term attributes may include:

- Labels
- Descriptions (scope notes, external definitions, tagging notes)
- ID's
- Dates (creation date, last modified date)
- Term history or origin
- Nearly anything else you can imagine.

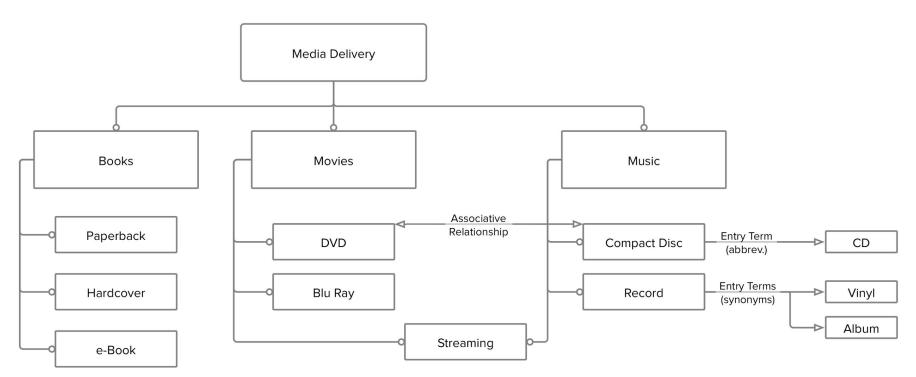


Types of terms

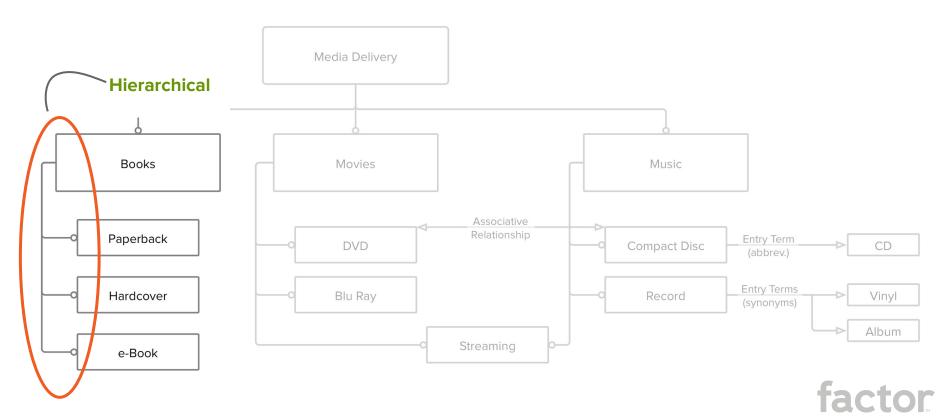
Depending on how they are used, terms can have different functions.

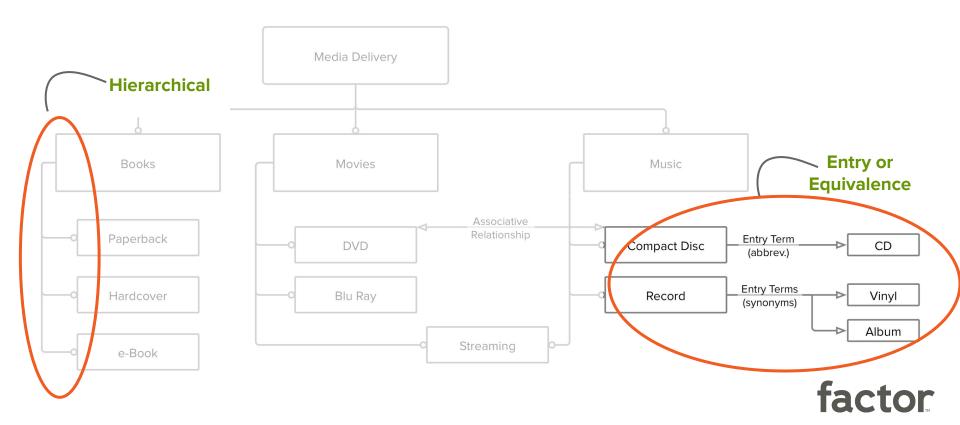
Sample types of terms:

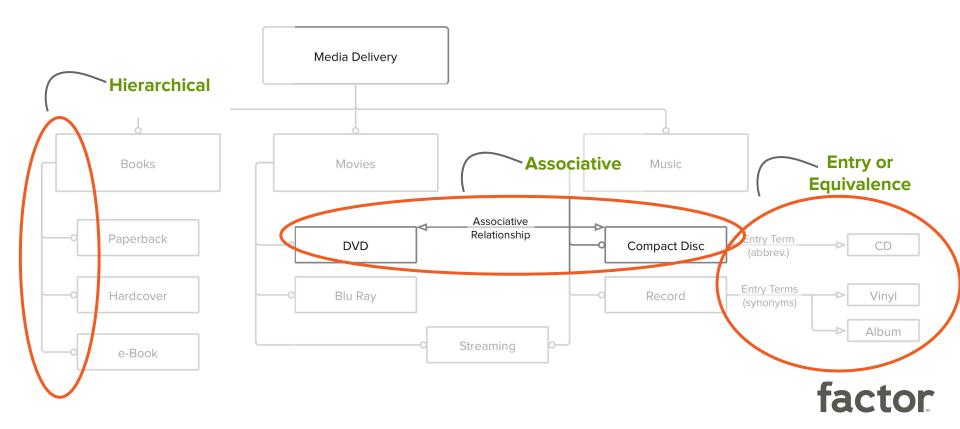
- Preferred term generally used for tagging
- **Entry Term** synonyms, abbreviations, acronyms. These are directly associated with a preferred term
- Leaf Node a term with no children.
- Placeholder Term often used to provide an important structural component of the taxonomy, even though it would not be used for tagging or other purposes.

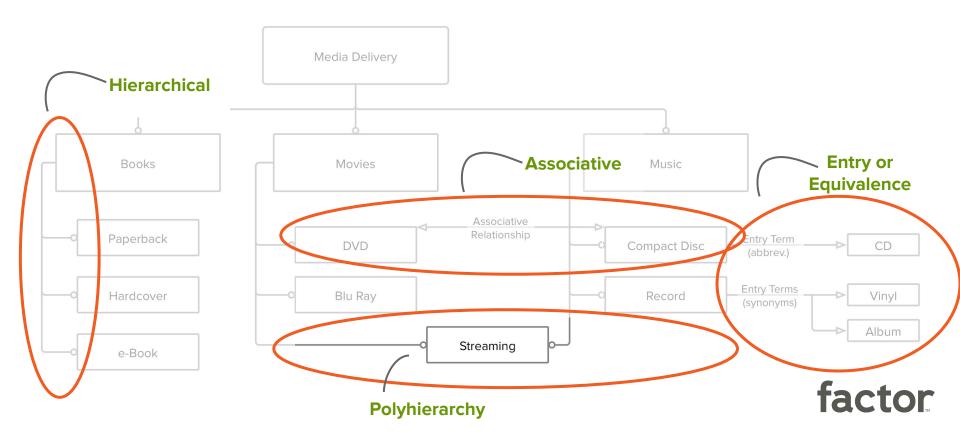












More Sticky Notes!

Defining taxonomies

Describing the taxonomy itself so that it can be implemented properly and used by others.

This should provide the information needed by both the technical teams and the business teams to move forward.



Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.



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- 2. **Usage Notes:** how should it be used?



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- 7. **Frequency of update:** How often does this need to be updated?
- 8. **Roles:** Who is going to be interacting with this taxonomy?

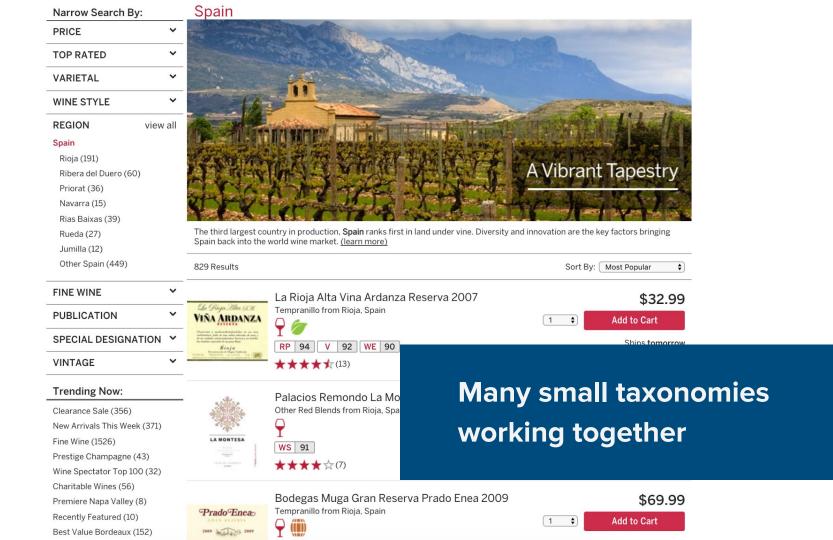


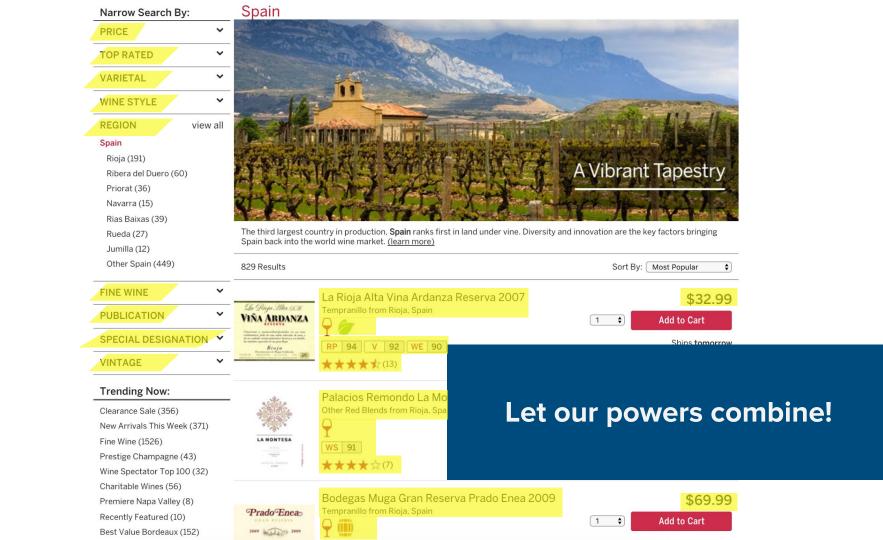
Taxonomy Definition

Taxonomy Name	The label used to identify the taxonomy.
Domain	Describes what the taxonomy contains and what it excludes.
Usage Notes	Describes how the taxonomy is intended to be applied. Note: once developed, taxonomies may be used for multiple purposes. These notes reflect the primary usage.
Types of Terms	Describes the different classes of terms. This may include synonyms, preferred terms, leaf nodes, etc.
Types of Relationships	Describes the different ways that terms will be explicitly related and the business rules driving those rules.
Term Attributes Required	Metadata associated with each term. At a minimum each term requires a label, but there are generally scope notes, IDs, usage notes, and administrative metadata.
Governance & Maintenance Needs	High level description of the different processes, roles, and approvals required to make changes to the terms or the taxonomy structure.
Frequency of update	Related to Governance above, this describes how often the taxonomy will be modified.
Roles	Describes the different user profiles interacting with the taxonomy

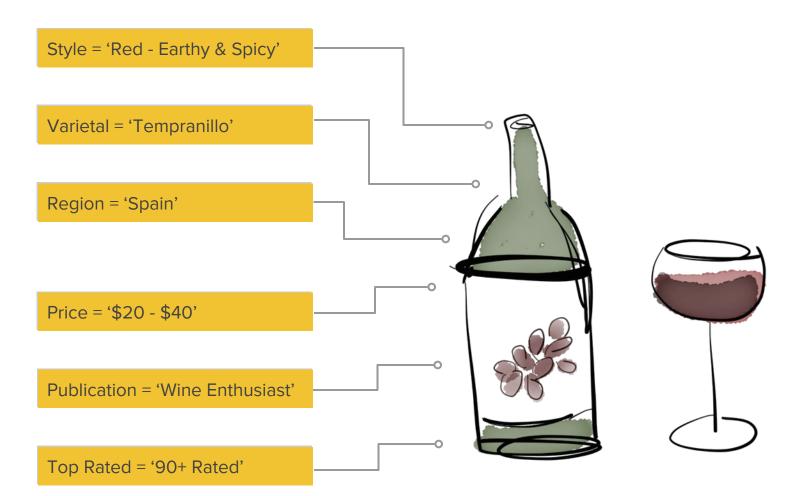








PRICE \$20 and Below (534) \$20 - \$40 (262) \$40 - \$80 (80) \$80 and Above (60)	90+ 90+ 94+	PRATED Rated Under \$20 (114) Rated (375) Rated Under \$75 (38) Rated (77)	^	VARIETAL Red Wine (531) Cabernet Sauvignon (5) Bordeaux Blends (2) Other Red Blends (99) Syrah/Shiraz (4) Rhône Blends (5)	^	REGION California (6064) Washington (534) Oregon (490) Other US (41) Australia (526) New Zealand (319)
WINE STYLE Red - Light & Fruity (8) Red - Smooth & Supple (207) Red - Earthy & Spicy (60) Red - Big & Bold (114) White - Light & Crisp (89) White - Fruity & Smooth (59) White - Rich & Creamy (2) Sweet (1)	Wine The V Jame Conn Interi Wilfre Wine Burgl Deca Jame Pinot Tasti Vinou	Spectator (2622) Vine Advocate (3365) es Halliday (188) noisseurs' Guide (112) national Wine Cellar (181) ed Wong of Wine.com (851) & Spirits (544) hound.com (130) nter (336) es Suckling (1695) :Report (19) ng Panel (222) us / Antonio Galloni (3043) Enthusiast (2042)		Grenache (58) Mourvedre (17) Other Red Wine (58) Tempranillo (283) White Wine (180) Chardonnay (9) Sauvignon Blanc (1) Albarino (45) Muscat (2) Other White Blends (44) Other White Wine (79) Champagne & Sparkling (83) Rosé Wine (35) Dessert, Sherry & Port (106)		France - Bordeaux (846) France - Rhône (490) France - Other regions (1941) Italy (2050) Spain (936) Portugal (302) Israel (19) Germany (113) Greece (70) Other European (80) South America (797) South Africa (206) Japan (20) Mexico (1) Canada (6)



The power of facets combined

Facet / Metadata	Number of terms		
Wine Style	8		
Region	21		
Varietal	20		
Price	4		
Rating	4		
Publication	14		

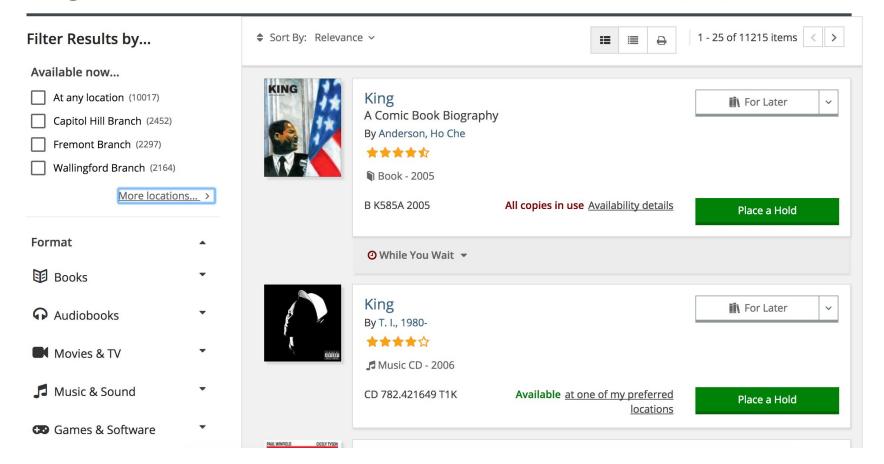
The power of facets combined

Facet / Metadata	Number of terms
Wine Style	8
Region	21
Varietal	20
Price	4
Rating	Total terms: 71
Publication	Total combination

Total combinations: 143,218,999

king Save Search

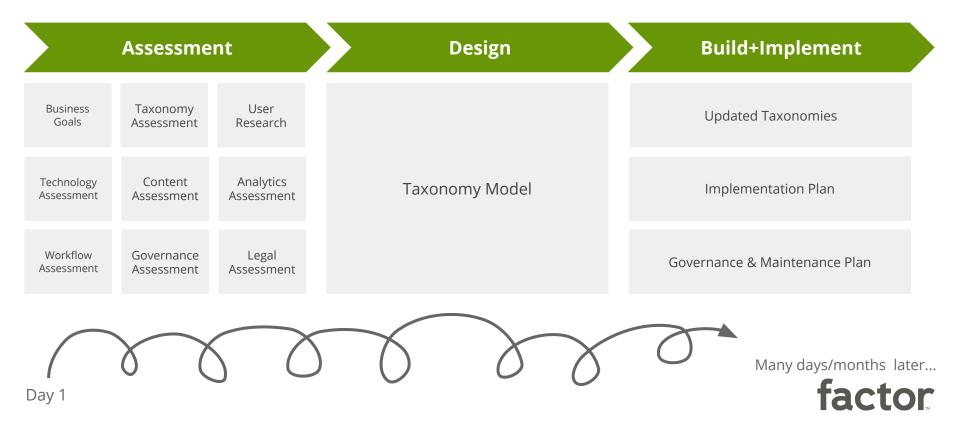
Regular keyword search for "king" →



king Save Search Regular keyword search for "king" → Facets: 1 - 25 of 11215 items () **Filter Results** Location of availability Available now... Format Date of acquisition At any location iii For Later Borrowing permissions Biography Capitol Hill Bra Content (fiction/non-fiction) Fremont Brand **Audience** Wallingford Br Genre Topic All copies in use Availability details Region Author **Format** Language **Published Date** Books Rating Tags ii For Later Audiobooks Reading Level Movies & TV **♬** Music CD - 2006 Music & Sound CD 782.421649 T1K Available at one of my preferred

Assessing Taxonomies

A Typical Taxonomy Project



Business Goals

What it is

Document the business drivers that are behind this taxonomy work. What are the business goals that the taxonomy needs to support?

How it helps

Gives you some direction about the higher level, overall goals of the taxonomy. What qualities does it need to surface?

Sample findings

Show consumers that we provide high quality, lifetime kitchen products.

Support our new Chef's Star packages of product bundles.

Deliver consistent information across all our touchpoints.



Discussion: Business Goals

Current Taxonomy Assessment

What it is

Review of the existing taxonomies to determine how they support the business goals, if they meet quality standard, and whether they are maintainable and implementable in the technology stack.

How it helps

Helps frame the scope of work going forward and often provides a tactical list of quick wins.

Sample findings

Taxonomy has many duplicate or similar terms.

Taxonomy does not reflect current marketing effort to sell sets of products.

Taxonomy domain is poorly defined: many concepts that are not related



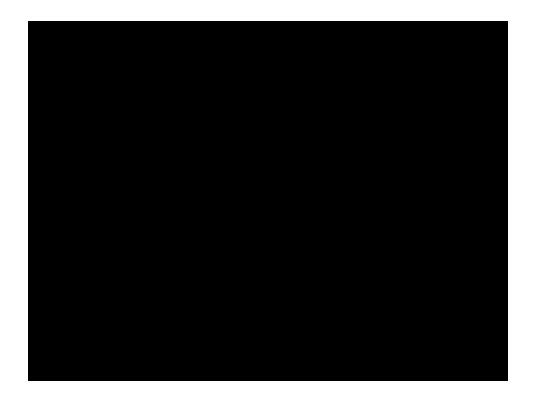
Activity: Assess the taxonomy!

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Roles	Describes the different user profiles interacting with the taxonomy



What Happened?



"All That We Share" - TV2 (Denmark), 2017





Taxonomies in business activities

Search

Preferred Terms Synonyms Hierarchy Content Management Systems

Preferred Terms

Navigation Structures

Preferred Terms
Synonyms
Associations

Publishing & Personalization

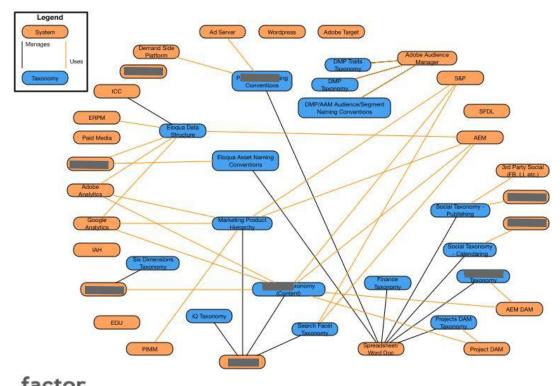
Preferred Terms Translations Reporting

Preferred Terms



Case Study: Enterprise Analytics

Taxonomy Landscape

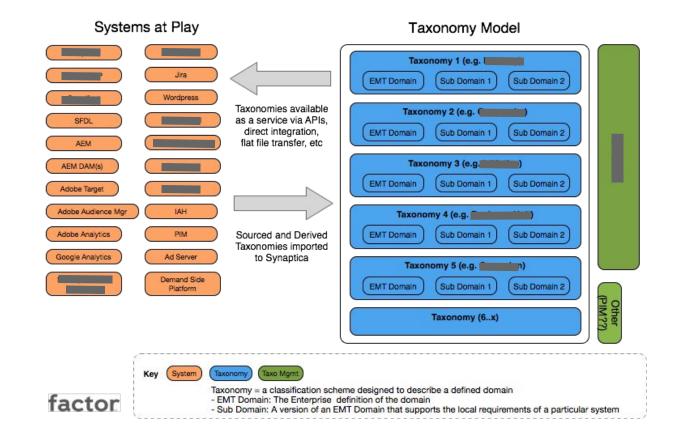






factor

Goal







factor

Enterprise Marketing Taxonomy - Step 1

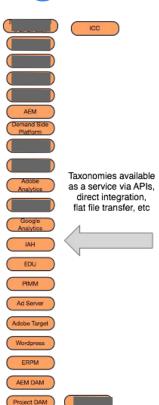
Taxonomies are well defined and made available programmatically.

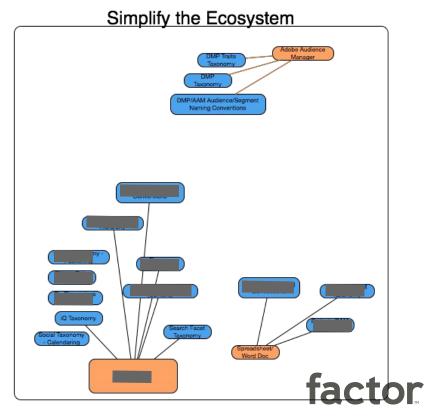
Many have been moved into Synaptica.

Fewer systems managing the taxonomies. Some merging of taxonomies.

Framework in place to offer taxonomies as a service.

Note this is an example, the actual set of steps and roadmap will be determined in this project.





Enterprise Marketing Taxonomy - Future

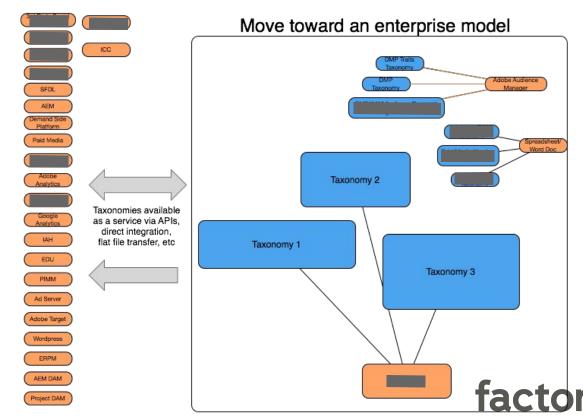
Taxonomies are rationalized, greatly reducing the total number of individual taxonomies.

A consistent enterprise semantic model is available.

Bi-directional integrations are available.

Governance and Maintenance processes are well defined.

Framework in place to offer taxonomies as a service.



Content Assessment

What it is

Documents the types of information being used and the different ways the information is bundled, distributed, and categorized

How it helps

Ultimately the taxonomies will need to support the different ways the information is used, so this is an essential input to the taxonomy design

Sample findings

Product information does not include the intended use of the product.

Editorial content does not link to product pages.

Current product features are inconsistent across like products Products are tagged inconsistently.



MR PORTER









WHAT'S NEW

DESIGNERS

CLOTHING

SHOES

ACCESSORIES

WATCHES

SPORT

GROOMING

EDITORIAL

THE MEN'S STYLE DESTINATION



TIME TO WIND FORWARD: FINE WATCHES



CRAFT AND STYLE: JAPANESE BRANDS

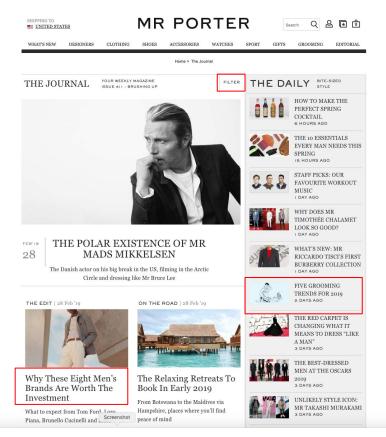


THE DAILY: MONK-STRAP SHOES





Content and Taxonomies



- "Editorial" or non-product content
- Product content
- Micro-content

Editorial / Marketing mrporter.com



Content and Taxonomies

THE EDIT

WHY THESE EIGHT MEN'S BRANDS ARE WORTH THE INVESTMENT

What to expect from Tom Ford, Loro Piana, Brunello Cucinelli and more





Words by Ms Molly Isabella Smith, Copywriter, MR PORTER
Photography by Ms Annie Lai
Styling by Ms Otter Hatchett, Junior Fashion Editor, MR PORTER

The term "investment piece" gets a lot of mileage in the fashion industry. In memower it's usually used to refer to items that are a at home in your <u>mandrobe</u> today as they would have been in your grandfather's 50 years ago, or as they will be in your son's a few years hence. And, to a great extent, that's still true: no one can argee with the staying power of a <u>gandle</u> cast. a <u>may blagar</u> or a pair of bench-made <u>Oxford shoes</u>. But the scope of the term has expanded somewhat recently to include more fashion-forward olsess barely a season passes, for instance.

- Taxonomies support product content on non-product pages
- Taxonomies support content strategy

Editorial / Marketing mrporter.com





BROWSE >

noodles

Ingredient Search









340 recipe results for "noodles" including "cream" but not "peppers"





Popular Category

Noodles

752 recipes, 56 videos

Looking for noodle recipes? Allrecipes has more than 750 trusted noodle recipes complete with ratings, reviews and cooking tips.





Bacon Ranch Chicken Skewers

These bacon ranch chicken skewers were intended to star at your next tailgate cookout.

MEAL

RECIPE

SHOPPING LIST



Dress Up Your Meal with Ranch Hidden Valley® Original Ranch® See Store for Price



Pick a Side Vegetable Green Beens



to your door

See Store for Price



>

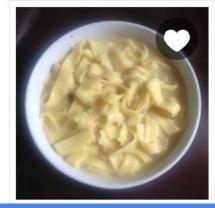
Pick a Side Beverage Canada Dry Ginger Ale See Store for Price





Buy Meal Now





Creamy Chic



Poached chick mozzarella ma for this rich las mozzarella are

Search allrecipes.com

Recipe by Caroli













wayfair









Bedroom

Bathroom

Dining Room

Entry & Mudroom













Kitchen

Patio

Nursery & Kids Bedroom

Navigation:

'Room' taxonomy Wayfair.com

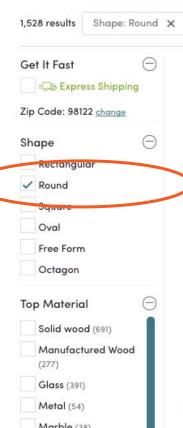


round table



clear all

Round Kitchen & Dining Tables















Sort: Recommended

Search term level of specificity impacts result page

Wayfair.com

Cardsort

Open:

https://iac2019.optimalworkshop.com/optimalsort/open

Closed:

https://iac2019.optimalworkshop.com/optimalsort/closed

Gathering Evidence for Design Decisions

User Research

What it is

Qualitative research of your users' behaviors and information needs. Can take many forms - generative or evaluative.

How it helps

Gives you directional information about how people structure your catalog in their heads (relationships between concepts).

Provides direction on language and term labels.

Sample findings

Users are interested in activities rather than individual products.

Users associate Brands and Durability with quality. Currently they read reviews to find information about durability.

Product names in the taxonomy are not familiar to the users



Card Sort Results

Review: Taxonomies in business activities

Search

Preferred Terms Synonyms Hierarchy Content Management Systems

Preferred Terms

Navigation Structures

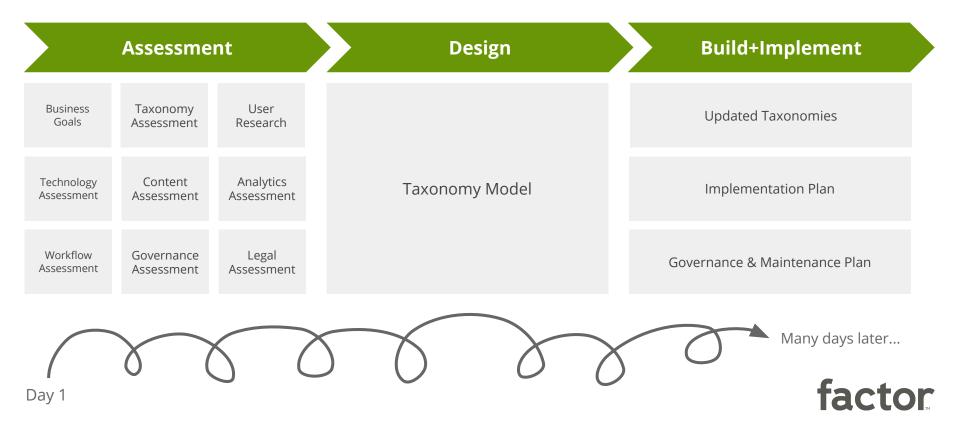
Preferred Terms Synonyms Associations Publishing & Personalization

Preferred Terms Translations Reporting

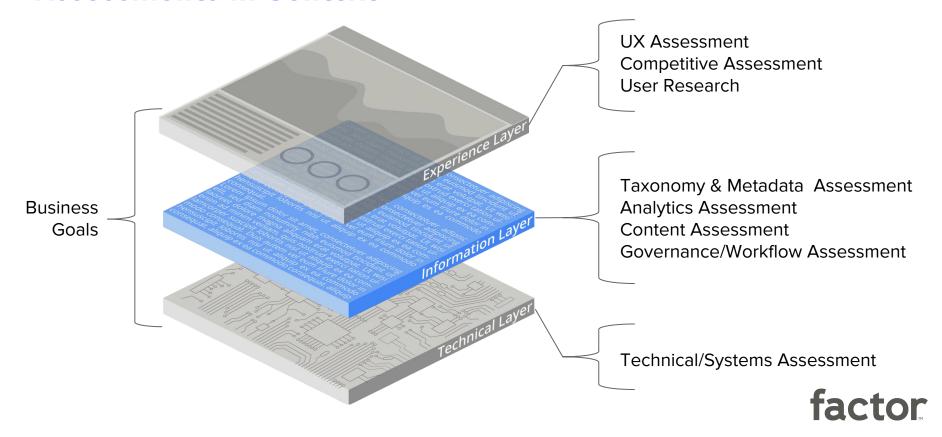
Preferred Terms



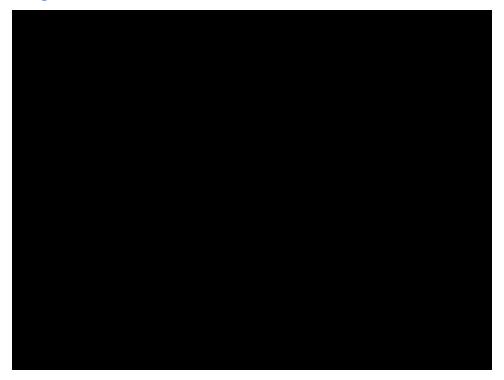
A typical taxonomy project



Assessments in Context



Why so many inputs?



High Fidelity (2000)

factor

Technology Assessment

What it is

Documents the the technical capabilities of the organization with respect to taxonomy modeling, management, and integration

How it helps

Provides clear understanding of what the current technology can support. This makes it easier to design and build taxonomies that can be easily utilized. Where there are gaps, this can help drive a technology roadmap.

Sample findings

The CMS can only support 3 levels of hierarchy in the navigation.

The CMS cannot export the hierarchy.

Search tool supports synonyms and associated terms.



Case Study: Microsoft

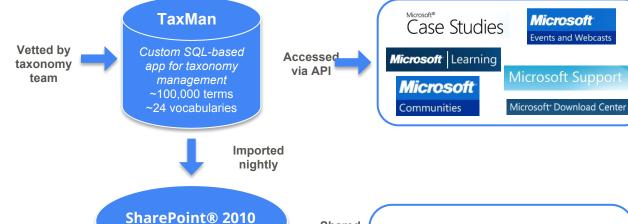
Taxonomy Landscape

Taxonomy Sources

Other enterprise stores or master data

Stakeholders – taxonomy requests, query logs

External standards



SharePoint® 2010 Enterprise MMS

Term Store Manager

- Managed metadata
- Enterprise keywords (folksonomy)

Content Type
Syndication Hub

Shared Properties



Shared Tags

Intranet SharePoint Sites

- Custom divisional portals
- Self-provisioned team sites
- //my sites (profiles)



Project Goals

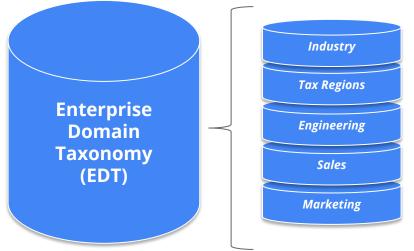
- Reduce confusion, increase confidence and use of term store taxonomy stakeholders
- Lay the foundation for effective stakeholder onboarding
- Ensure the taxonomy in the term store supports optimum information discovery on the intranet



Governance Goals & Strategy

Enterprise Domain Taxonomy (EDT):

Contains all managed terms for the MMS. May be one or more term sets.



Subject Domain Taxonomies (SDT):

Subsets of the EDT. While all the terms will come from the EDT, each SDT can have its own structure.

Taxonomists manage all the terms in the EDT and any structure that is deemed necessary.

Taxonomist structures the taxonomy and guides the creation of governance and maintenance plan. May also manage the taxonomy.

Technology needs to be built to either enforce the subset rule or to report SDTs that are out of compliance.

Governance needs to to describe the process for adding new terms.



Project Outcomes

Functionality supported

- 1. Business owner ability manage their own domain area.
- 2. Use of Enterprise Domain (Taxman) taxonomy import maintained.
- 3. Leveraging the "open" term set to allow end user tags to be easily added.

Governance changes

- 4. Sales, Marketing and Services team is a strong partner in leveraging the corporate taxonomy. More stakeholders on-boarding.
- 5. Clear value of taxonomist vetting terms via the process.
- 6. More flexible on terms added to the corporate taxonomy.

Term Set changes/improvements

7. Needed to reconcile subject domain terms to be included in the enterprise domain.



Governance Assessment

What it is

A review of the inputs, tasks, roles, and impacts of changes required to maintain the taxonomy so that it meets the needs of all stakeholders

How it helps

An understanding of the types of changes that will need to be supported and the approval processes. These can have large impacts on the taxonomy design and are essential for designing of the governance processes.

Sample findings

Product managers and executive teams need a sales report that shows sales by major product category. They will also need to govern their own teams based on major product category.

HR team needs sets of taxonomy terms that are not visible and cannot be searched on by other groups in the organization.

Product categories are managed by the marketing team and are revised quarterly



Analytics Assessment

What it is

Digging through any analytics data you have about the current taxonomy and user behavior around it.

How it helps

Great for answering specific questions that come up in other assessments. "I wonder what terms people use in our search tool? I wonder how people move through the navigation? I wonder what paths our users take most frequently?"

Sample findings

Most common types of terms in the query logs were tasks and product names. Also, search terms were different than the navigation terms.

People bounce in and out of categories when looking for similar items

Browsing users abandon navigation for search at product list pages



Discuss: Governance, Analytics, and Technical Needs

What has dependencies on a taxonomy?

What does the taxonomy have dependencies on?

Workflow Assessment

What it is

Often closely tied to the governance assessment, this documents the processes necessary to create, maintain, and use the taxonomy internally.

How it helps

Identifies the requirements of internal users of the taxonomy. Also documents the level of effort required to use the taxonomy. Each of these can impact the scope, design, and resourcing for the taxonomy.

Sample findings

There is no systematic way to assign colors consistently to products and content editors must enter product colors by hand.

Knives need to undergo legal review.



Legal Assessment

What it is

Checking with the legal team (if there is one) about compliance regulations and other red tape that may impact your decisions.

How it helps

Makes you aware of your legal constraints - compliance regulations, trademark or copyright issues for term names, contractual issues to be addressed, etc.

Sample findings

When you get to talking about governance, you need to give the legal team an advisory role when terms are being changed.



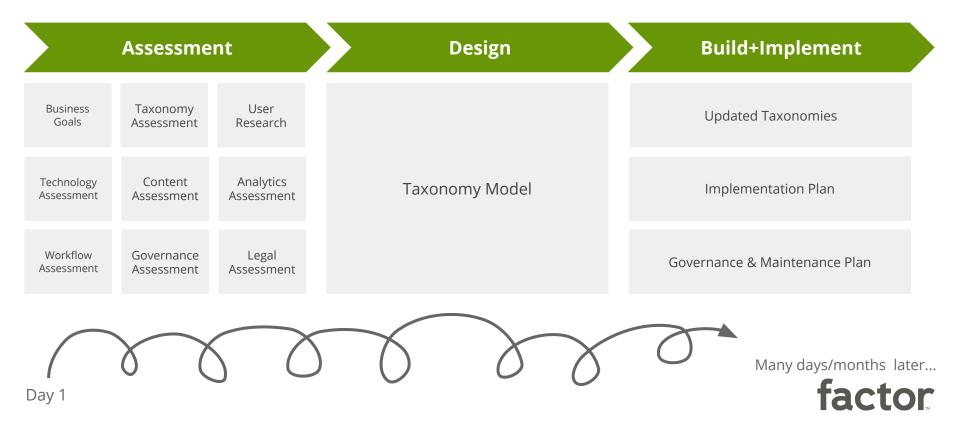
Taxonomy Definition

Taxonomy Name	The label used to identify the taxonomy.
Domain	Describes what the taxonomy contains and what it excludes.
Usage Notes	Describes how the taxonomy is intended to be applied. Note: once developed, taxonomies may be used for multiple purposes. These notes reflect the primary usage.
Types of Terms	Describes the different classes of terms. This may include synonyms, preferred terms, leaf nodes, etc.
Types of Relationships	Describes the different ways that terms will be explicitly related and the business rules driving those rules.
Term Attributes Required	Metadata associated with each term. At a minimum each term requires a label, but there are generally scope notes, IDs, usage notes, and administrative metadata.
Governance & Maintenance Needs	High level description of the different processes, roles, and approvals required to make changes to the terms or the taxonomy structure.
Frequency of update	Related to Governance above, this describes how often the taxonomy will be modified.
Roles	Describes the different user profiles interacting with the taxonomy



Synthesize

A Typical Taxonomy Project





1. Number of systems

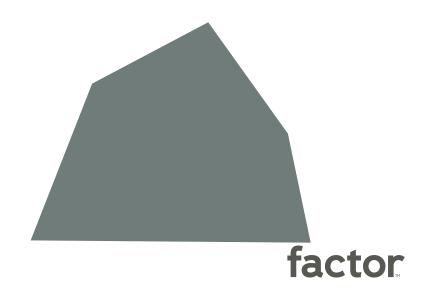


factor

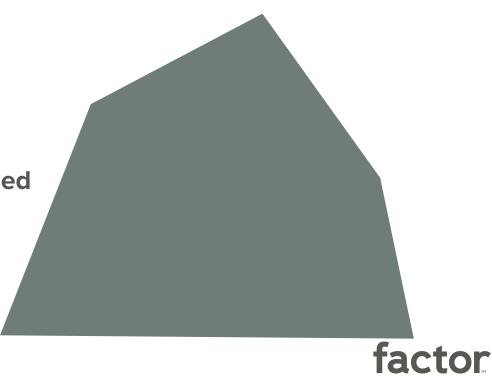
- 1. Number of systems
- 2. Number of workflows



- 1. Number of systems
- 2. Number of workflows
- 3. Number of user profiles



- 1. Number of systems
- 2. Number of workflows
- 3. Number of user profiles
- 4. Number of places it will be used



- 1. Number of systems
- 2. Number of workflows
- 3. Number of user profiles
- 4. Number of places it will be used
- 5. Number of business units



To Conclude...

How to win taxonomy friends & influence structures



Define the business value, meet cost criteria



Include metrics to prove success



Take user behavior seriously



Manage expectations all around & collaborate



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