Designing & Building Taxonomies

Gary Carlson + Rachel Price

IA Summit 2017

Hi!

Gary Carlson

Rachel Price

Let’s get cookin’.

What happened?

What is a taxonomy, anyway?

Schedule Speakers Sponsors Volunteers

You're speaking at this event! Manage & promote your session →

Wednesday, March 22

7:30am
- Registration Opens

8:30am
- The Visual Display of Information ($350)
  Stephen Anderson
- Collaborative Information Architecture ($350)
  Abby Covert

9:00am
- Introduction to Information Architecture ($650)
  Donna Spencer
- Mapping the Domain: The 5th Academics' and Practitioners' Roundtable ($200)
  Keith Instone • Bern Irizarry • Andrea Resmini • Sarah Rice • Stacy Surla
- Deep Text: Using Text Analytics to Create New Ways to Structure and Access Information ($650)
  Tom Reamy

Schedule or People Search

Filter By Date
Mar 22-26, 2017

Filter By Venue
Vancouver, British Columbia, Canada

Filter By Type
- Career Development
- Community Working Session
- Core IA
- Fundamentals of IA
- Future of IA
- Human-Centered Design
- Humans & Machines
- Plenary Session
- Poster Session
- Socials & Networking
- Strategy & Collaboration
- Taxonomy & Organizing Technologies
- Techniques & Methods
- User Research
- Audience

- Advanced
- All Levels
- Beginner
- Intermediate

www.canadiantire.ca/en.html

FEC | Election Stati...rt & Archives | Analytics | AWS WorkDocs | nyt | Blendle | Yahoo Groups | Pandora | Google Drive | Google | Twitter | LinkedIn

IBM Products - United States | Deal of the Day: Electronics Deals - Best Buy | Program | IA Summit | English | Canadian Tire

CANADIAN TIRE. Made for Life in Canada. **Pay Online & Pickup for Free in Store.** ›

FRANÇAIS

Search over 130,000 products...

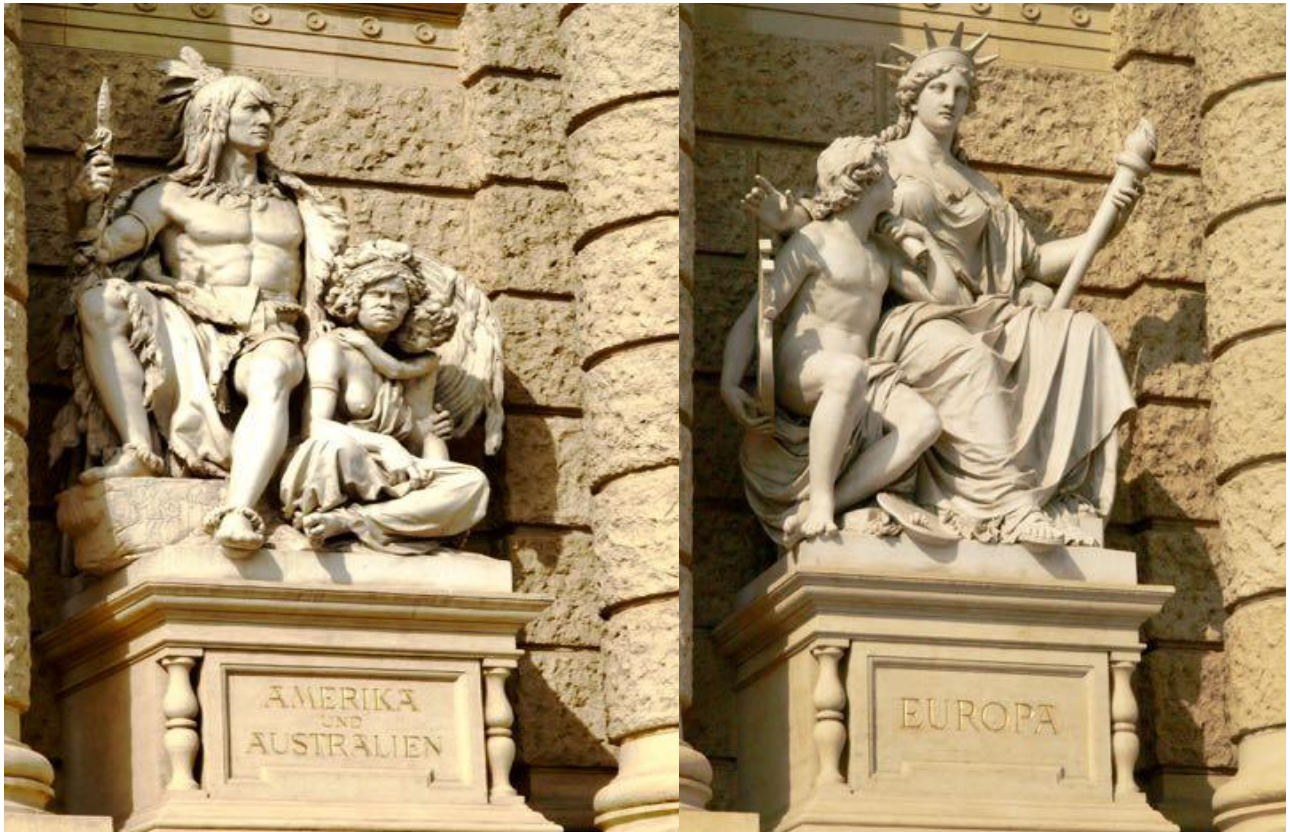
PREFERRED STORE:
VICTORIA HILLSIDE CE...
TODAY'S HOURS:
8:00 am - 9:00 pm

DRIVING | FIXING | LIVING | PLAYING | WINTER | DEALS & SALES

BROWSE OUR
WEEKLY
FLYER
NOW

Our categories can say more about us than anything else

Amerika und Australien



Europa

Vienna Museum of Natural History

“Taxonomy”

The science of classifying things.

“Taxonomy”

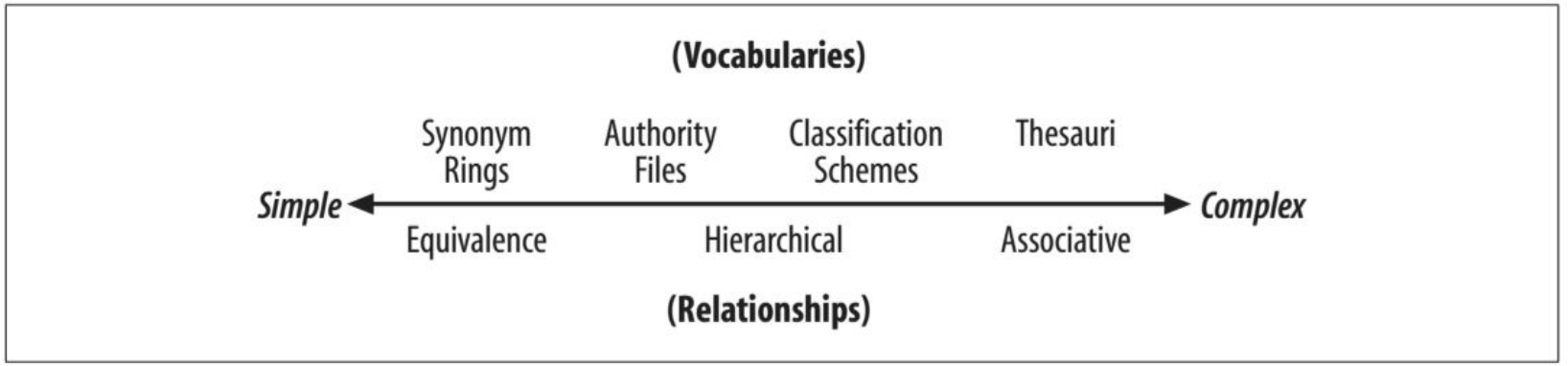
A collection of terms and relationships between terms used to describe a domain.

“Taxonomy”

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

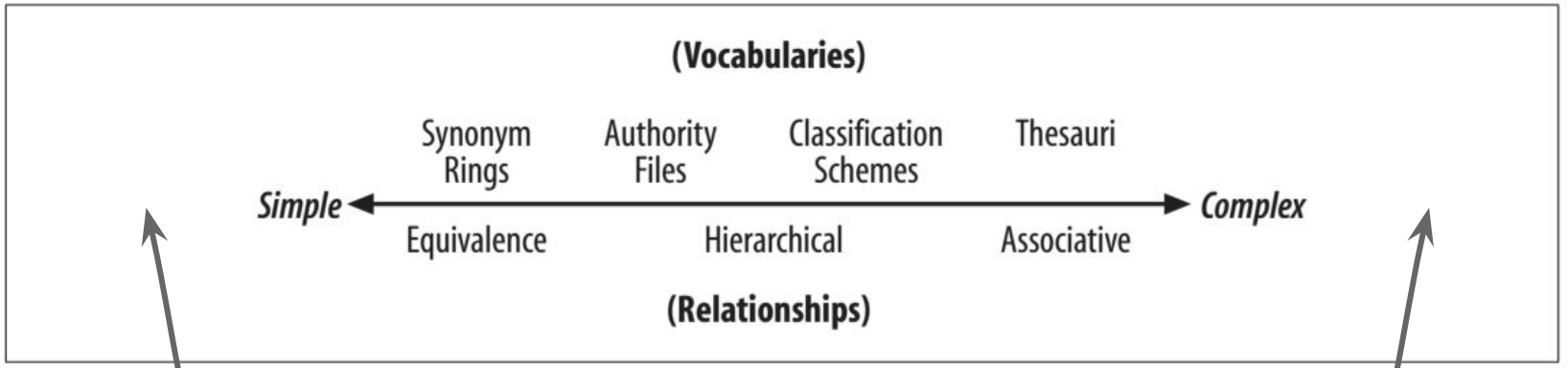
- Thesauri
- Controlled Vocabularies
- Ontologies
- Controlled value lists
- Folksonomies
- ...and more!

Taxonomies are fuzzy.



From 'Information Architecture for the World Wide Web', 3rd Edition, page 195

Taxonomies are fuzzy.



From 'Information Architecture for the World Wide Web', 3rd Edition, page 195

Folksonomies **fit somewhere over here**

Ontologies **fit somewhere over here**

Taxonomies (looking outward)...

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

Taxonomies (looking outward)...

...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.**

Taxonomies

Primary Use

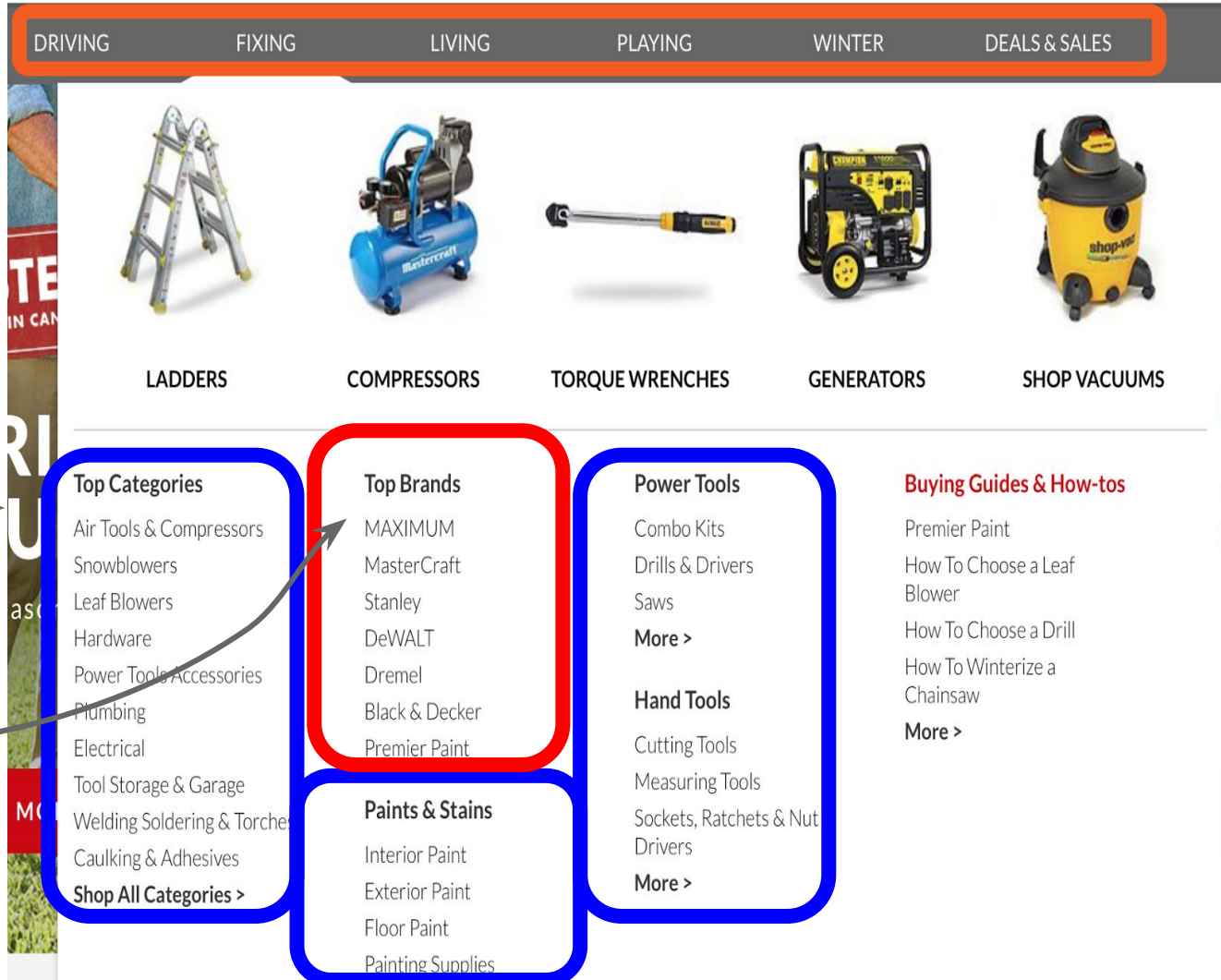
Reflects Brand and User goals

Categories

Subsets and complete list available. Shows expertise

Brand

Short list of brands, full list is not available



Taxonomies (looking inward...)

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

Taxonomies (looking inward…)

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

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

Taxonomies (looking inward...)

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

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

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

Taxonomies (looking inward...)

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

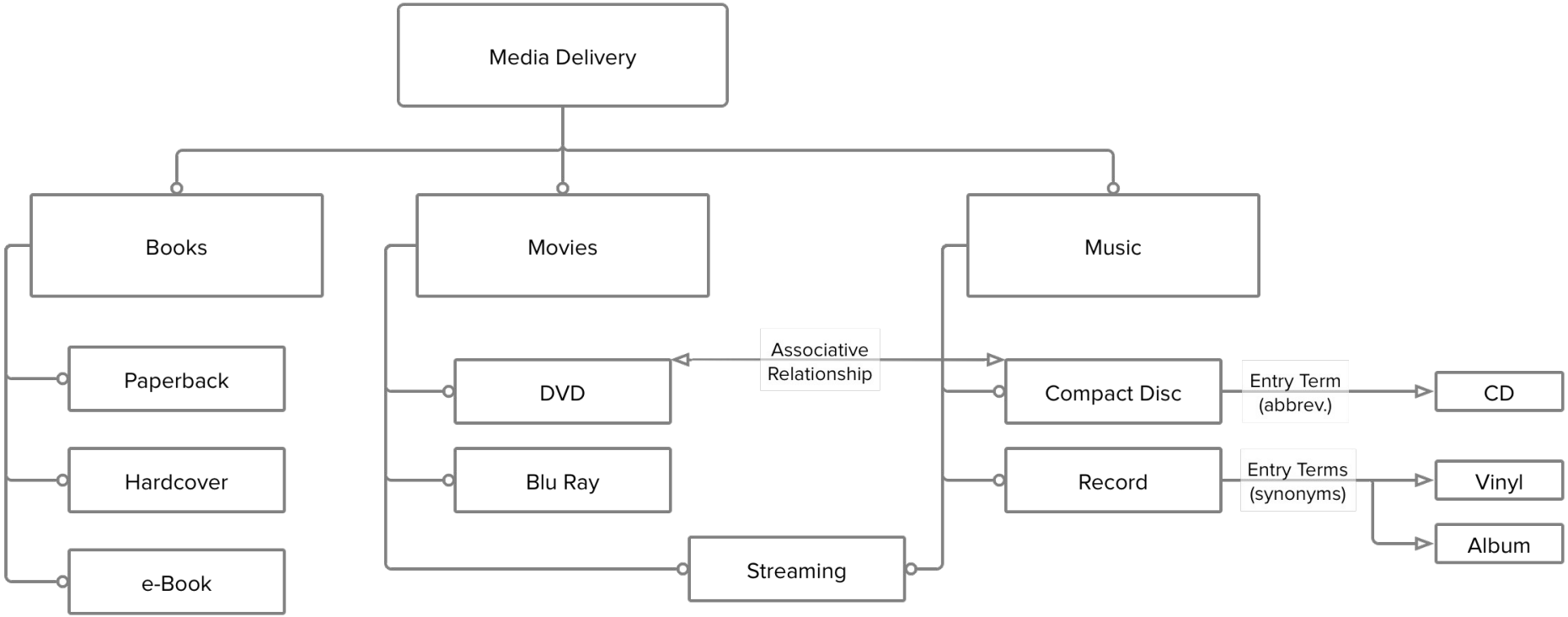
...are managed with **change control** and **security** requirements.

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

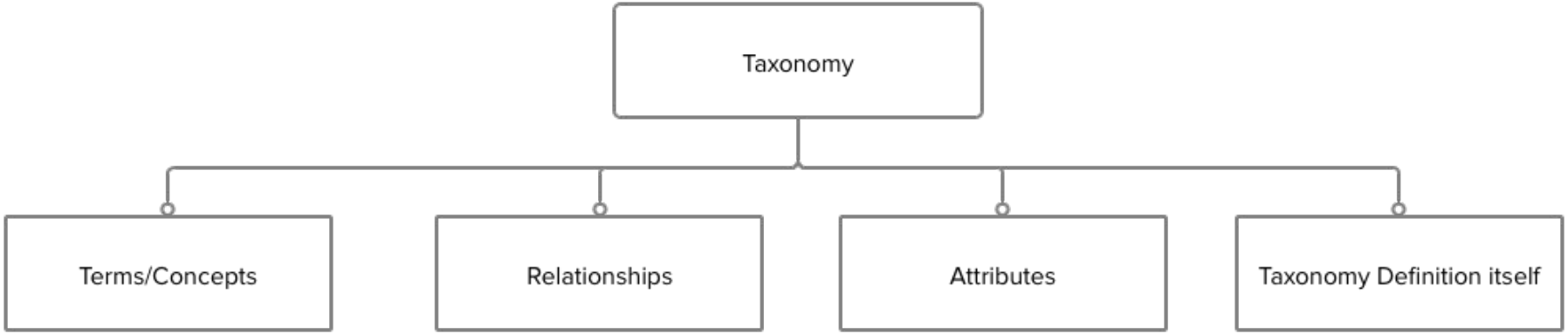
...are a **core organizational asset**.

A simple taxonomy

A simple taxonomy



Parts of a taxonomy



Terms + term properties

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

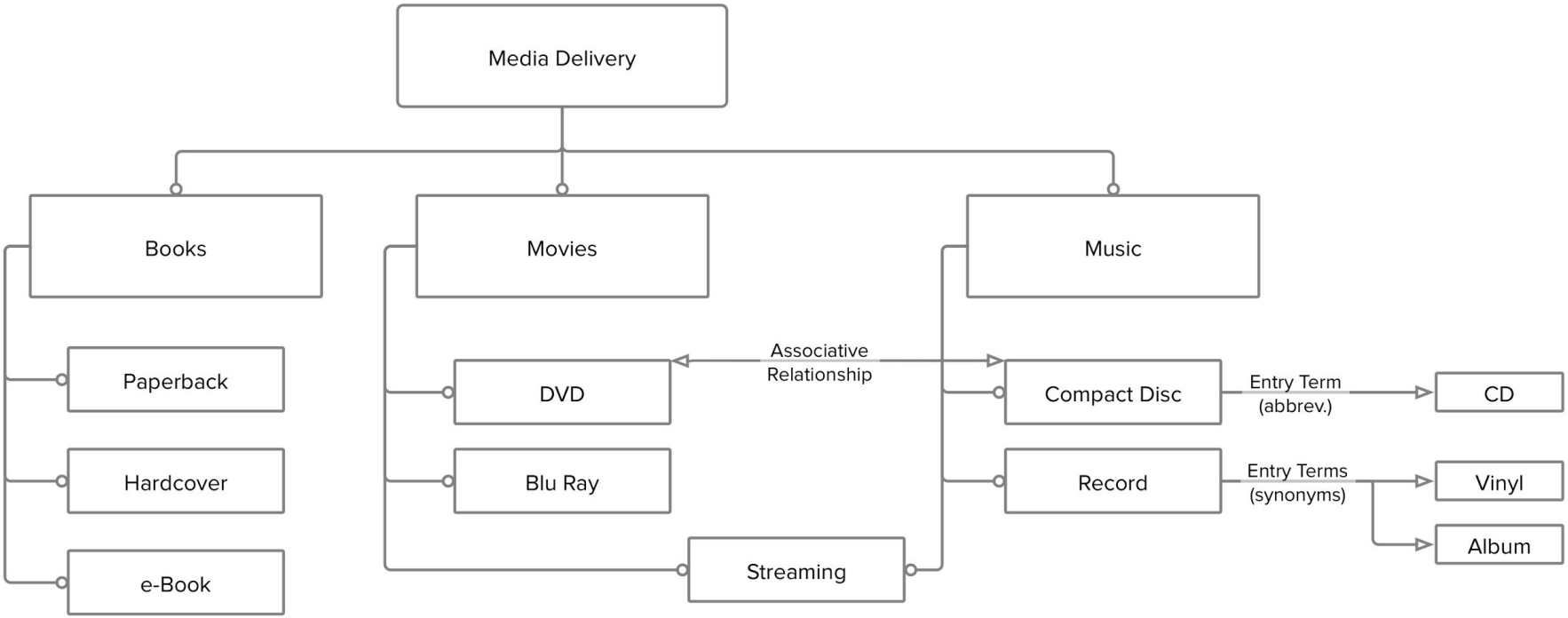
Terms + term properties

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

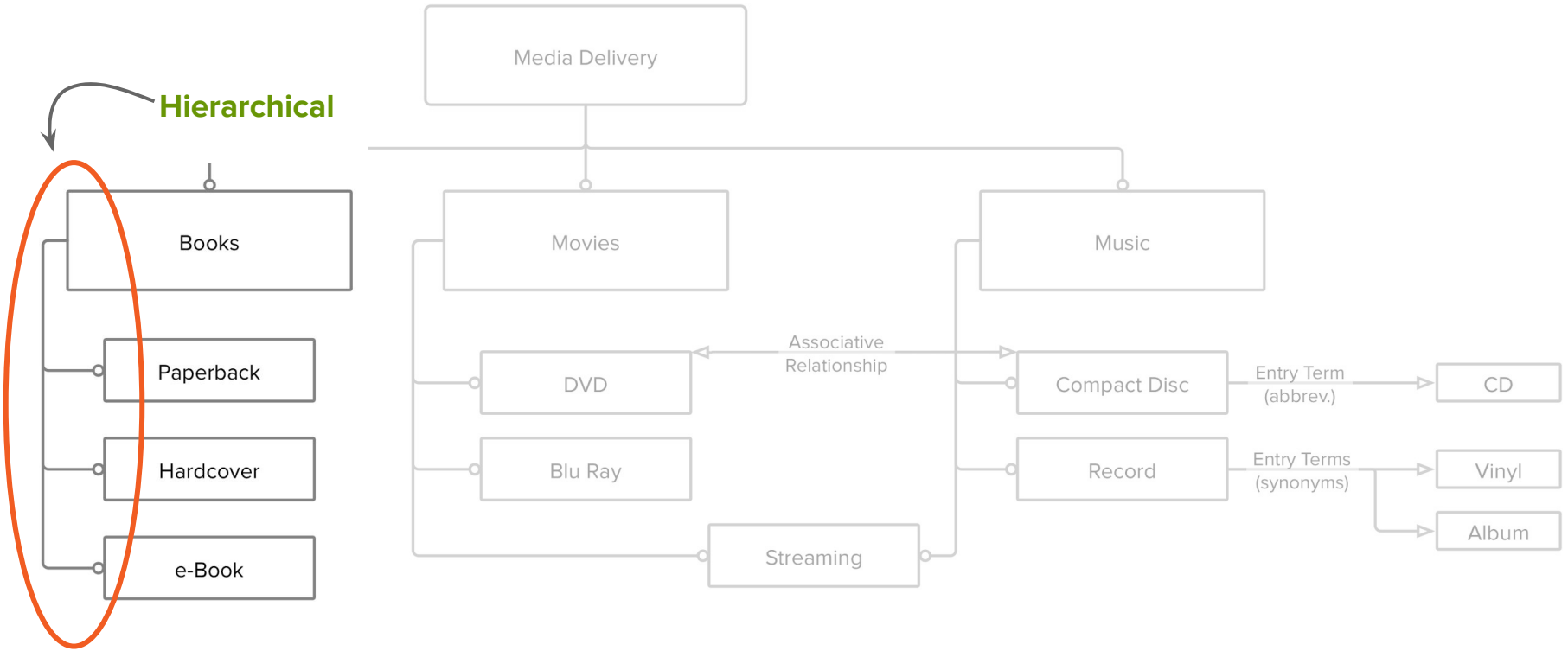
Term properties may include:

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

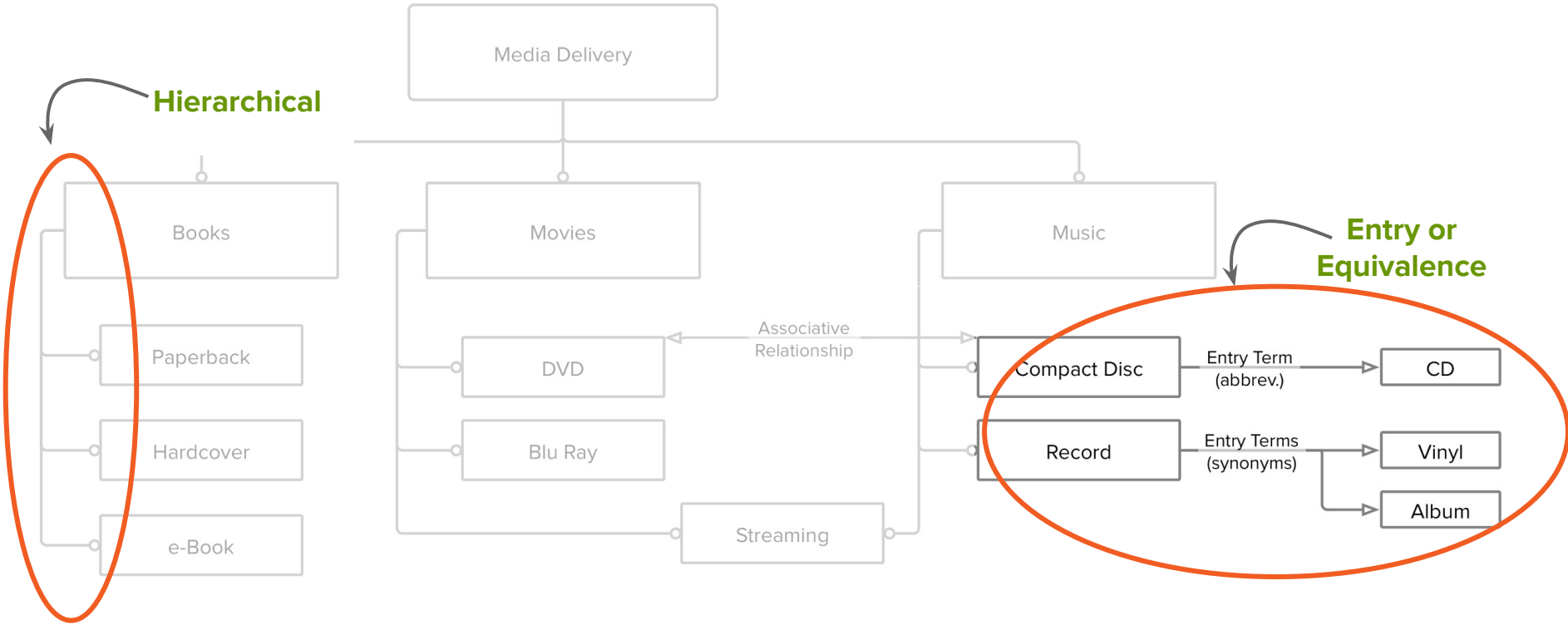
Relationships



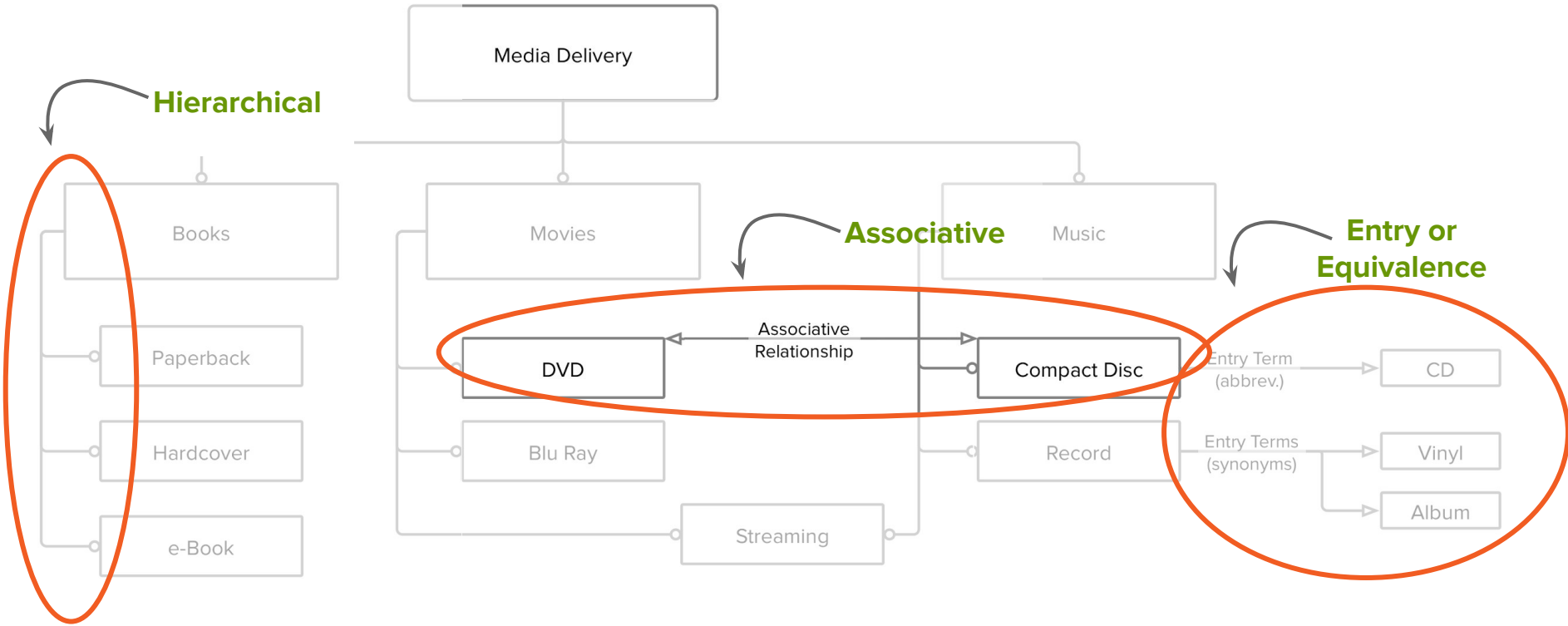
Relationships



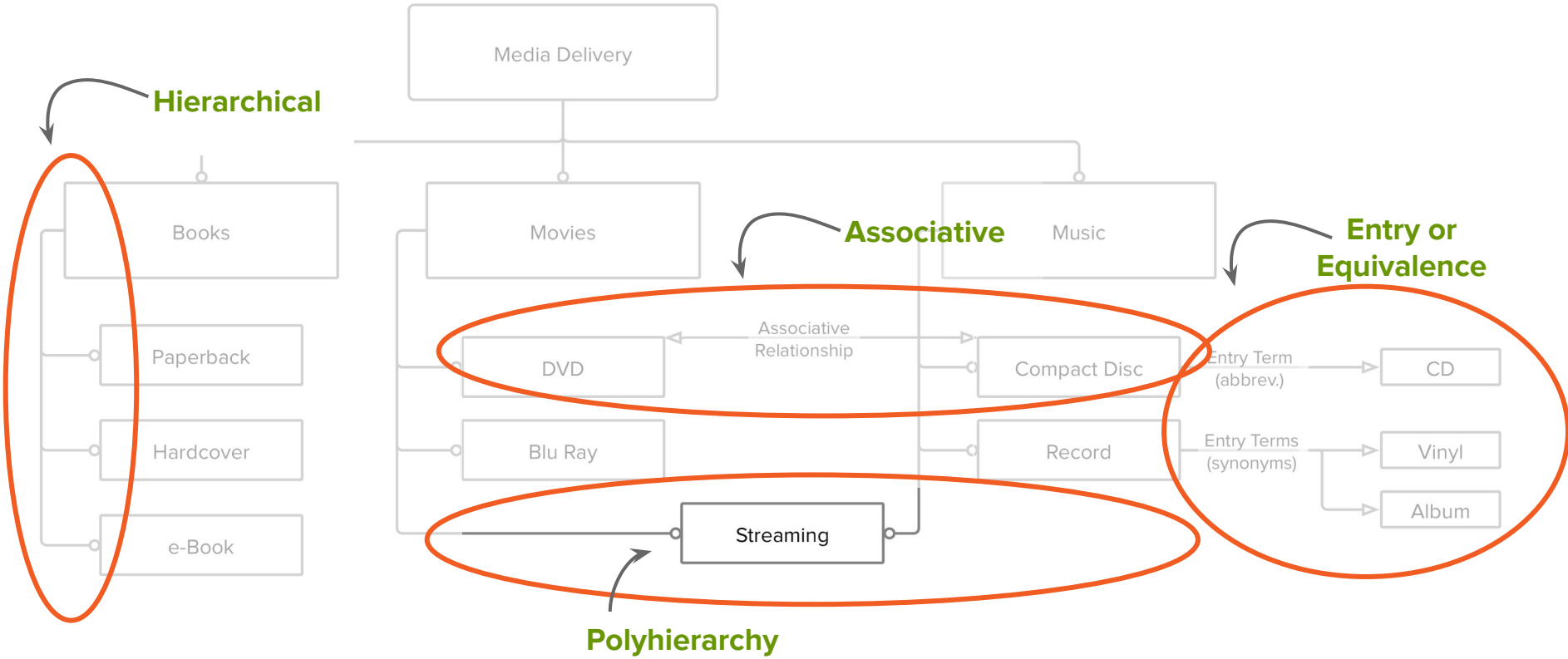
Relationships



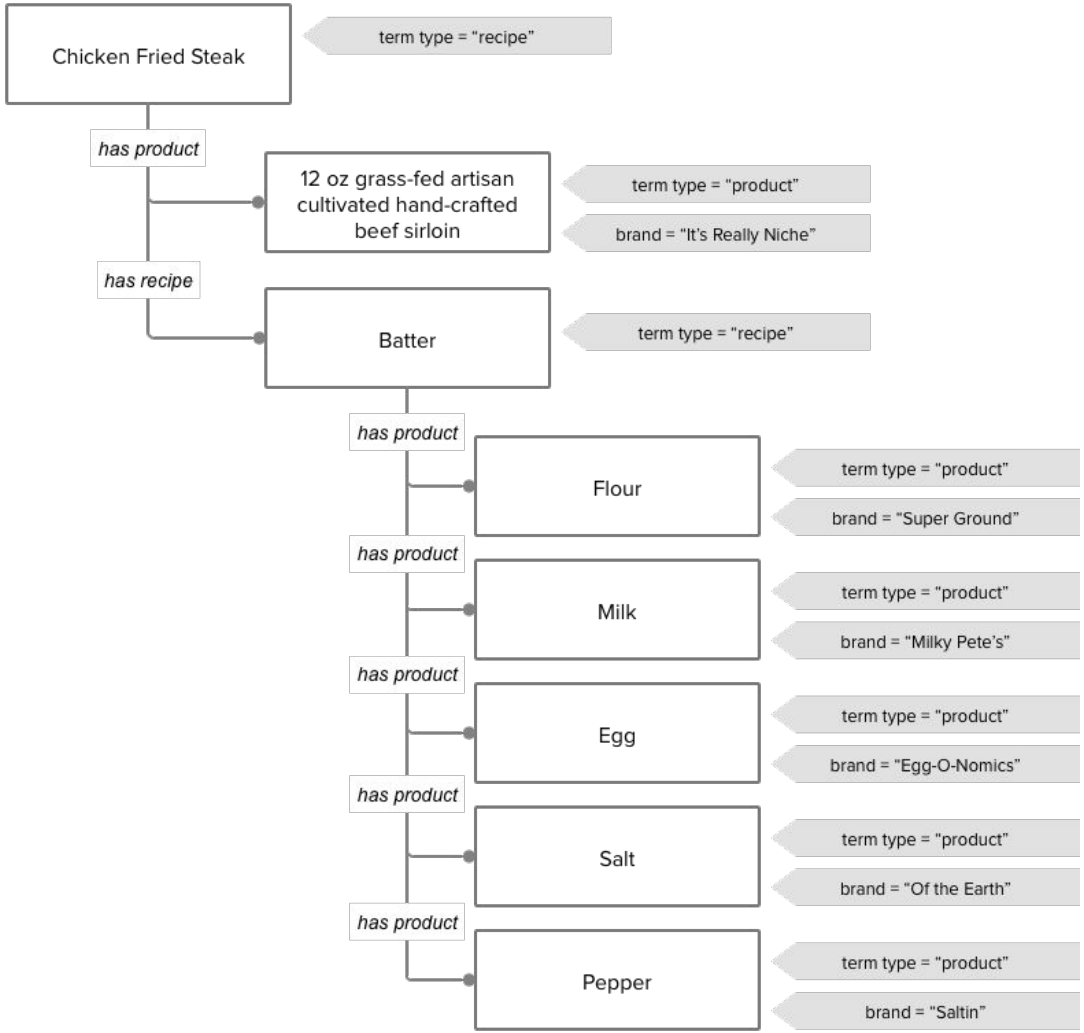
Relationships



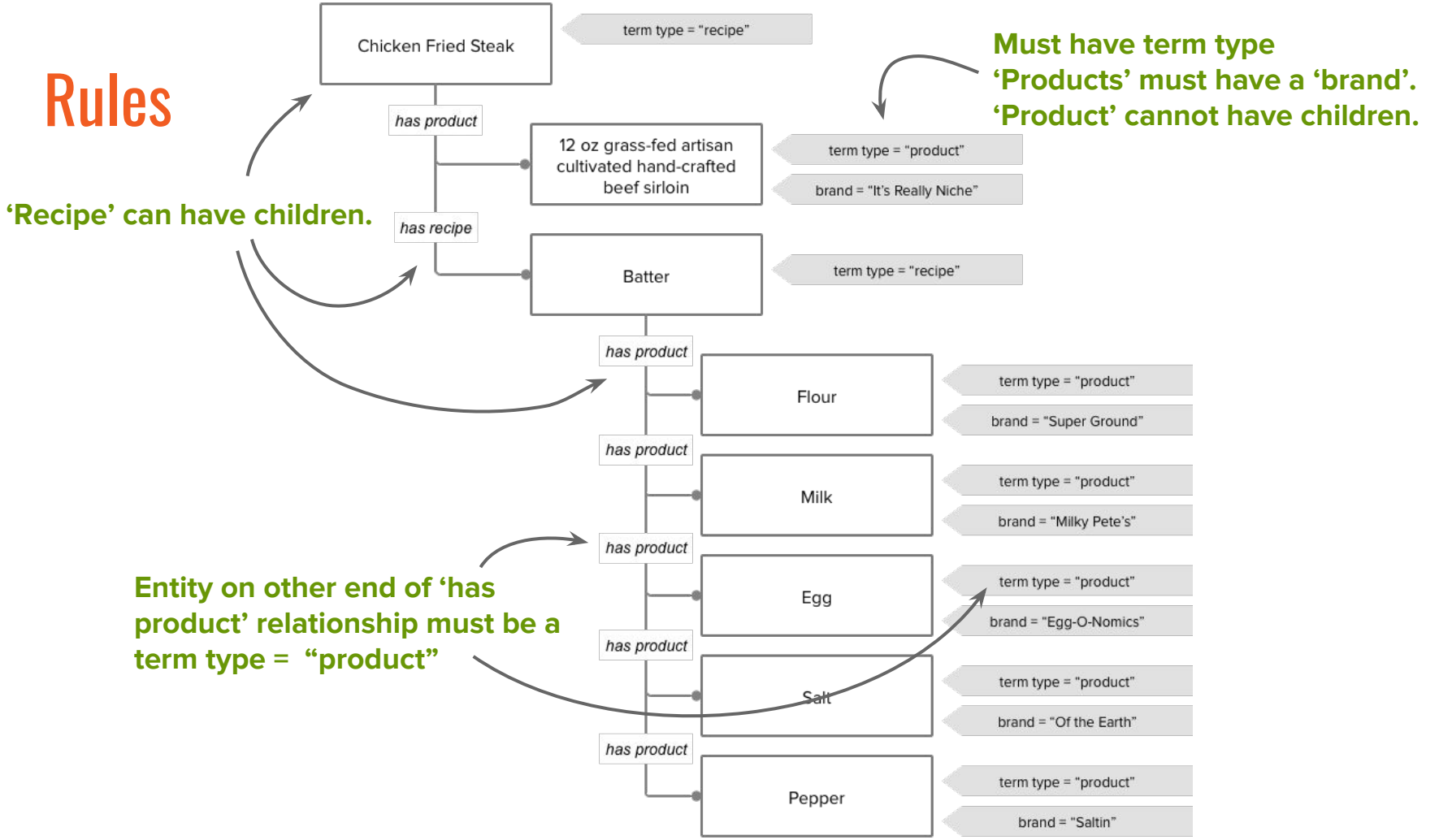
Relationships



Rules


Chicken Fried Steak
term type = "recipe"
has product
12 oz grass-fed artisan cultivated hand-crafted beef sirloin
term type = "product"
brand = "It's Really Niche"
has recipe
Batter
term type = "recipe"
has product
Flour
term type = "product"
brand = "Super Ground"
has product
Milk
term type = "product"
brand = "Milky Pete's"
has product
Egg
term type = "product"
brand = "Egg-O-Nomics"
has product
Salt
term type = "product"
brand = "Of the Earth"
has product
Pepper
term type = "product"
brand = "Saltin"

Rules


Chicken Fried Steak
term type = "recipe"
Must have term type
'Products' must have a 'brand'.
'Product' cannot have children.
has product
12 oz grass-fed artisan cultivated hand-crafted beef sirloin
term type = "product"
brand = "It's Really Niche"
'Recipe' can have children.
has recipe
Batter
term type = "recipe"
has product
Flour
term type = "product"
brand = "Super Ground"
has product
Milk
term type = "product"
brand = "Milky Pete's"
has product
Egg
term type = "product"
brand = "Egg-O-Nomics"
Entity on other end of 'has product' relationship must be a term type = "product"
has product
Salt
term type = "product"
brand = "Of the Earth"
has product
Pepper
term type = "product"
brand = "Saltin"

Facets...let our powers combine!

Narrow Search By:

PRICE

TOP RATED

VARIETAL

WINE STYLE

REGION view all

Spain

Rioja (191)

Ribera del Duero (60)

Priorat (36)

Navarra (15)

Rias Baixas (39)

Rueda (27)

Jumilla (12)

Other Spain (449)

FINE WINE

PUBLICATION

SPECIAL DESIGNATION

VINTAGE

Trending Now:

Clearance Sale (356)

New Arrivals This Week (371)

Fine Wine (1526)

Prestige Champagne (43)

Wine Spectator Top 100 (32)

Charitable Wines (56)

Premiere Napa Valley (8)

Recently Featured (10)

Best Value Bordeaux (152)

Spain

The third largest country in production, **Spain** ranks first in land under vine. Diversity and innovation are the key factors bringing Spain back into the world wine market. (learn more)

829 Results

Sort By: Most Popular

La Rioja Alta Vina Ardanza Reserva 2007

Tempranillo from Rioja, Spain

RP 94 V 92 WE 90

(13)

$32.99

1 Add to Cart

Ships tomorrow

Palacios Remondo La Mo

Other Red Blends from Rioja, Spa

WS 91

(7)

Bodegas Muga Gran Reserva Prado Enea 2009

Tempranillo from Rioja, Spain

$69.99

1 Add to Cart

Facets:
many small taxonomies working together.

Narrow Search By:

PRICE

TOP RATED

VARIETAL

WINE STYLE

REGION view all

Spain

- Rioja (191)
- Ribera del Duero (60)
- Priorat (36)
- Navarra (15)
- Rias Baixas (39)
- Rueda (27)
- Jumilla (12)
- Other Spain (449)

FINE WINE

PUBLICATION

SPECIAL DESIGNATION

VINTAGE

Trending Now:

- Clearance Sale (356)
- New Arrivals This Week (371)
- Fine Wine (1526)
- Prestige Champagne (43)
- Wine Spectator Top 100 (32)
- Charitable Wines (56)
- Premiere Napa Valley (8)
- Recently Featured (10)
- Best Value Bordeaux (152)

Spain

The third largest country in production, **Spain** ranks first in land under vine. Diversity and innovation are the key factors bringing Spain back into the world wine market. (learn more)

829 Results

Sort By: Most Popular

La Rioja Alta Vina Ardanza Reserva 2007

Tempranillo from Rioja, Spain

RP 94 V 92 WE 90

★★★★½ (13)

$32.99

1 Add to Cart

Ships tomorrow

Palacios Remondo La Mo

Other Red Blends from Rioja, Spa

WS 91

★★★★☆ (7)

Bodegas Muga Gran Reserva Prado Enea 2009

Tempranillo from Rioja, Spain

$69.99

1 Add to Cart

Facets...let our powers combine!

The power of facets combined

Facet / Metadata	Number of terms
Type	46
Region	16
Winery	750
Price	6
Rating	6

Morante, Marcia. Creating Useful Taxonomies: Metadata, Taxonomies and Controlled Vocabularies.
http://www.kcurve.com/Metadata_Taxonomy%20Development_SLA_060804.ppt

The power of facets combined

Facet / Metadata	Number of terms
Type	46
Region	16
Winery	750
Price	6
Rating	6

Morante, Marcia. Creating Useful Taxonomies: Metadata
http://www.kcurve.com/Metadata_Taxonomy%2

Total terms: 824

Total combinations: 1,656,824

More notecards!

1. Form groups of 4-6.
2. Use some terms from first exercise as your seed terms - copy them onto your notecards.
3. Add to your group's list of terms until you have ~25 terms total.
4. Card sort your terms into logical groups.
5. Identify relationships between terms & groups.

What happened?

Break!

[10 minutes]

Taxonomies in business activities

Taxonomies in business activities

Taxonomies in business activities

Search	Content Management Systems	Navigation Structures	Publishing & Personalization	Reporting
preferred terms synonyms hierarchy	preferred terms	preferred terms hierarchy associations	preferred terms translations	preferred terms

allrecipes

BROWSE

noodles

Ingredient Search

Create a profile

617 recipe results for "noodles" including "cream" but not "green bell peppers", "shrimp", "eggs"

Edit search

Results

Sort by: Relevance

Popular Category

Noodles

Looking for noodle recipes? Allrecipes has more than 690 trusted noodle recipes complete with ratings, reviews and cooking tips.

692 recipes, 50 videos

ADVERTISEMENT

Polish Noodles

7

This recipe con
and egg noodle
delish.

Recipe
2

Quick and Easy Parmesan Noodles

14

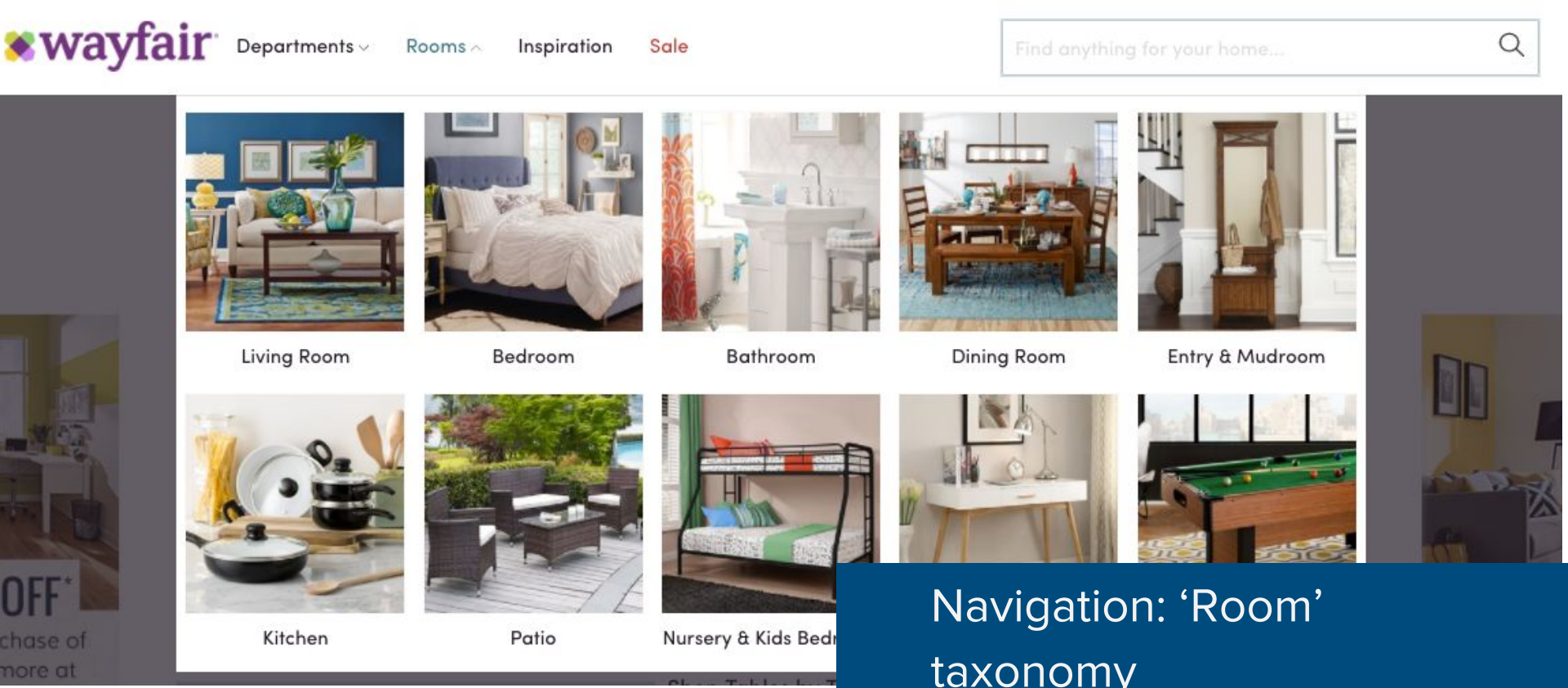
NO YOLKS® Noodles Romanoff

10

Creamy and comforting, this easy NO YOLKS(R) noodles Romanoff is sure to please the whole

Search

allrecipes.com



Navigation: ‘Room’ taxonomy

Wayfair.com

wayfair Departments Rooms Inspiration Sale table

Shop Product Type / Tables

Tables

Featured Categories

- End Tables
- Console & Sofa Tables
- Coffee & Cocktail Tables
- Dining Tables
- Pub Tables & Sets
- Patio Tables
- Plant Stands & Tables
- Computer & Training Tables

Narrower terms

Dalton Round Extending Dining Table
Birch Lane

Shop Tables b

Search & Navigation
Wayfair.com

wayfair Departments Rooms Inspiration Sale

end table

Furniture / Living Room Furniture / Coffee & End Tables / End & Side Tables

End & Side Tables

12,491 results

Sort: Recommended

Get It Fast

Express Shipping

Zip Code: 98122 change

Finish

- Brown (4046)
- Black (2910)
- White (2147)
- Clear (1455)
- Gray (1333)
- Beige (1197)
- Gold (986)
- Silver (845)
- Walnut (724)
- Cherry (645)

Shape

Sale

More Options: Finish »

Banbury 2 Drawer End Table

by Breakwater Bay

$99.21 ~~$219.00~~

FREE 2-Day Shipping

Get it by **Mon, Mar 13**

★★★★☆ (665)

Sale

More C

Marott

by Mer

from $1

FR

Get it b

★★★★½ (1994)

Search term level of specificity impacts result page

Wayfair.com

wayfair Departments Rooms Inspiration Sale

round table

Furniture / Kitchen & Dining Furniture / Kitchen & Dining Tables

Round Kitchen & Dining Tables

1,528 results | Shape: Round ✕ | clear all

Sort: Recommended

Get It Fast

- Express Shipping

Zip Code: 98122 change

Shape

- Rectangular
- Round
- Square
- Oval
- Free Form
- Octagon

Top Material

- Solid wood (691)
- Manufactured Wood (277)
- Glass (391)
- Metal (54)
- Marble (38)

More Options: Finish »

Gloucester Extendable Dining Table

by Charlton Home®

$164.99

FREE Shipping

★★★★½ (273)

More Op

Bonenf

by Darb

$192.9

FREE Sh

Sale

Search term level of specificity impacts result page

Wayfair.com

wayfair Departments Rooms Inspiration Sale

gray round table

Furniture / Kitchen & Dining Furniture / Kitchen & Dining Tables

Round Grey Kitchen & Dining Tables

146 results | Shape: Round × | Finish: Gray × | clear all

Sort: Recommended

Get It Fast

Express Shipping

Zip Code: 98122 change

Shape

- Rectangular
- Round
- Square
- Oval
- Free Form
- Octagon

Top Material

- Solid wood (68)
- Manufactured Wood (27)
- Glass (11)

Sale

More Options: Finish »

Baroncourt Round Dining Table

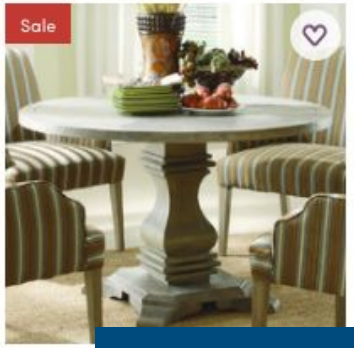
by August Grove®

$461.99 ~~$680.00~~

FREE Shipping

★★★★½ (83)

Sale



Euro Ca…

by Homel…

$587.99

FREE Ship…

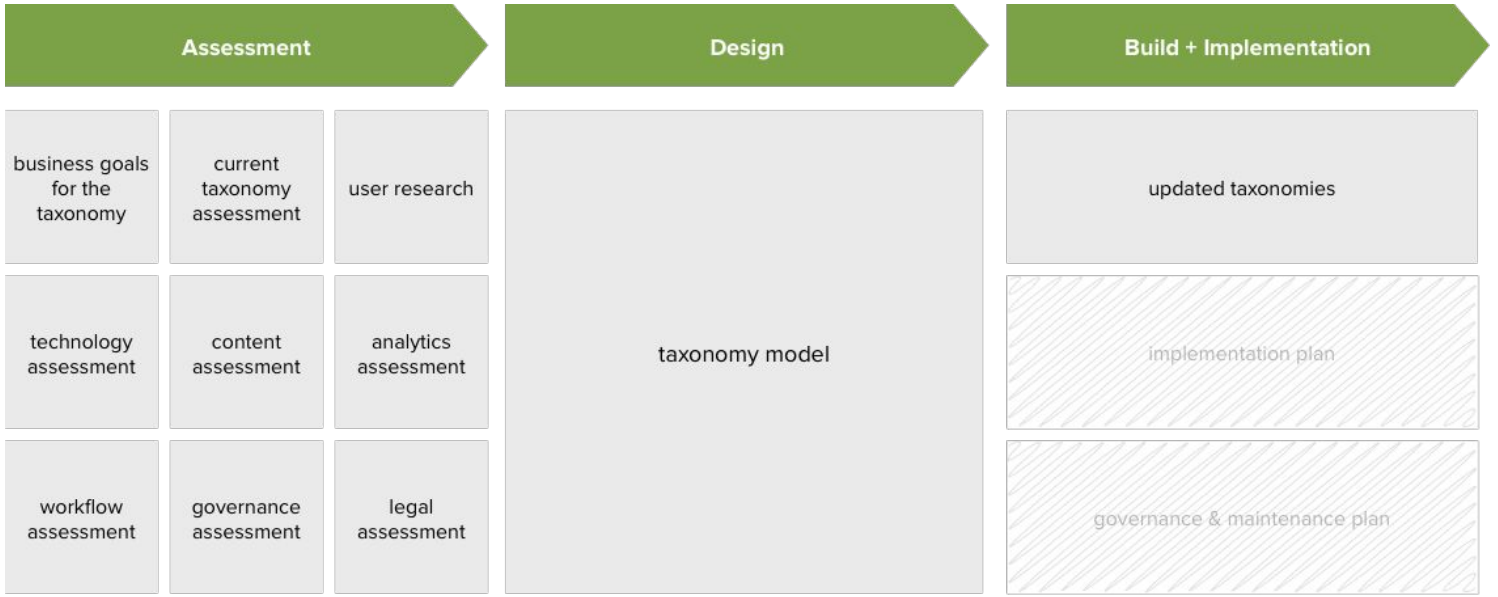
★★★★…

Search term level of specificity impacts result page

Wayfair.com

Gathering evidence for design decisions

A taxonomy project



Inputs to taxonomy design

business goals	**current taxonomy assessment**	**user research**
technology assessment	**governance assessment**	analytics assessment
workflow assessment	content assessment	legal assessment

Why so many inputs?

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.
Promote our new Chef's Star packages of product bundles.
Deliver consistent information across all our touchpoints.

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: what's in, and what's clearly out?

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 feel alienated by industry jargon
Product names in the taxonomy are not familiar to the users

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.

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.

Identify requirements

What happened?

Break!

[5 minutes]

What taxonomies do we need?

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.

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?
3. **Types of terms:** what kind of terms will I find here?

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?
3. **Types of terms:** what kind of terms will I find here?
4. **Types of relationships:** what relationships & rules are here?

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?
3. **Types of terms:** what kind of terms will I find here?
4. **Types of relationships:** what relationships & rules are here?
5. **Term attributes required:** what attributes do terms require?

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?
3. **Types of terms:** what kind of terms will I find here?
4. **Types of relationships:** what relationships & rules are here?
5. **Term attributes required:** what attributes do terms require?
6. **Governance & maintenance needs:** process for maintenance?

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?
3. **Types of terms:** what kind of terms will I find here?
4. **Types of relationships:** what relationships & rules are here?
5. **Term attributes required:** what attributes do terms require?
6. **Governance & maintenance needs:** process for maintenance?
7. **Frequency of update:** How often does this need to be updated?

Defining taxonomies

1. **Domain:** what the taxonomy contains & what it excludes.
2. **Usage Notes:** how should it be used?
3. **Types of terms:** what kind of terms will I find here?
4. **Types of relationships:** what relationships & rules are here?
5. **Term attributes required:** what attributes do terms require?
6. **Governance & maintenance needs:** process for maintenance?
7. **Frequency of update:** How often does this need to be updated?
8. **Roles:** Who is going to be interacting with this taxonomy?

Define your taxonomy

Fill out your taxonomy

1. Any relationships you should add?
2. Any terms you should add?
3. Any new groupings you should add?
4. Any language you need to adjust?
5. Do you need multiple taxonomies?

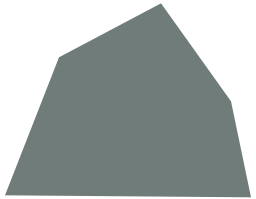
Thinking about the bigger picture

Search	Content Management Systems	Navigation Structures	Publishing & Personalization	Reporting
preferred terms synonyms hierarchy	preferred terms	preferred terms hierarchy associations	preferred terms translations	preferred terms

When does a molehill become a mountain?

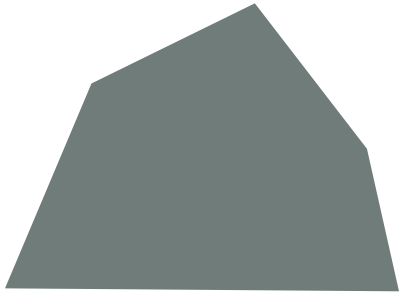
When does a molehill become a mountain?

1. Number of systems



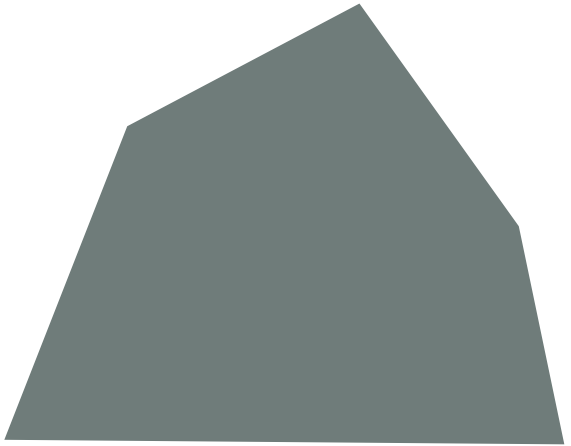
When does a molehill become a mountain?

1. Number of systems
2. **Number of workflows**



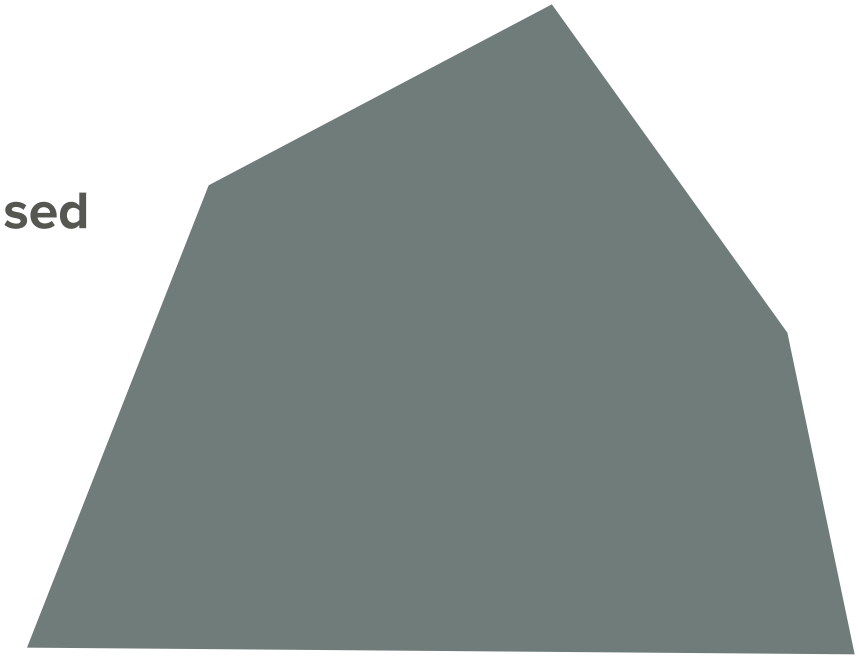
When does a molehill become a mountain?

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



When does a molehill become a mountain?

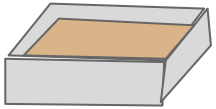
1. Number of systems
2. Number of workflows
3. Number of user profiles
4. **Number of places it will be used**



When does a molehill become a mountain?

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**

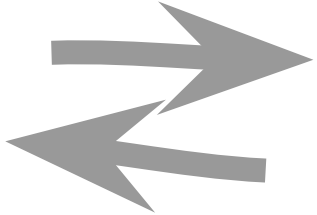
Why use taxonomy tools?

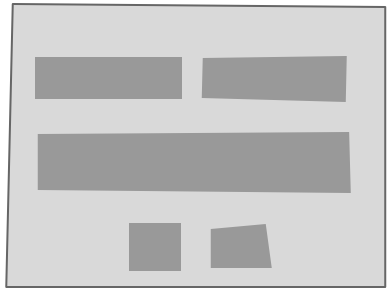


have a modeling sandbox

support governance

provide import & export

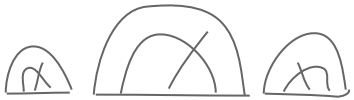




central management

common interface
across teams

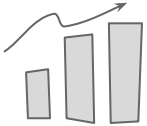
allow auditing & reporting



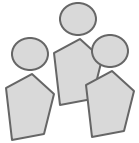
To conclude...

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

Gary Carlson
gary@factorfirm.com

Rachel Price
rachel.price@factorfirm.com

factor™

Extra content! Woohoo!

Rules

Encoding some logic into your taxonomy.

Rules

Encoding some logic into your taxonomy.

For **properties**...

Rules

Encoding some logic into your taxonomy.

For **properties**...

> “All terms must have a label.”
>
> “All terms must have a term type.”
>
> “All ‘Product’ term types must have a brand.”

Rules

Encoding some logic into your taxonomy.

For **relationships**...

Rules

Encoding some logic into your taxonomy.

For **relationships**...

> “The entity on the other end of a ‘Has Product’ relationship has to be a product!”
>
> “The entity type ‘Product’ may not have a child.”
>
> “The entity type ‘Recipe’ may have children.”

wayfair Departments Rooms Inspiration Sale

grey round table

synonym

Search results for "grey round table"

14,695 results Shop by Color: Gray clear all

Sort: Recommended

Departments

- Furniture
  - Kitchen and Dining Tables
  - End & Side Tables
  - Console & Sofa Tables
  - Coffee Tables
  - + See More
- Outdoor
- Business
  - Folding Tables
  - Classroom Tables
  - See All Departments

‘Shape’ facet disappears!

It Fast

Express Shipping

Zip Code: 98122 change

Special Offers

- New Arrivals
- Sale

More Options »

Doylan Round Dining Table

by Charlton Home®

from **$225.99** ~~$369.99~~

FREE Shipping

★★★★½ (952)

Sale

More Options: Finish »

Baroncourt Round Dining Table

by Aug

$461.9

FREE Sh

★★★

Grafton Extending Round Dining Table

by Birch Lane

Search term level of specificity impacts result page

Wayfair.com

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

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:
Look at the search query logs provided to see if there are any themes or patterns to the search queries that people use on the site.

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.