Taxonomies for E-Commerce

Best practices and design challenges

Heather Hedden
Taxonomy Consultant
Hedden Information Management

Gilbane Conference, Boston, November 29, 2012

About Heather Hedden

- Independent taxonomy consultant, Hedden Information Management
- Continuing education online workshop instructor, Simmons College Graduate School of Library and Information Science
- Author of *The Accidental Taxonomist* (Information Today, Inc., 2010)
- Previously
  - employed taxonomy consultant
  - in-house taxonomy manager
  - publishing company vocabulary editor
  - taxonomist for enterprise search tool vendor
  - indexer

© 2012 Hedden Information Management

Introduction to Taxonomies

A Taxonomy…

- An authoritative, restricted list of terms/names/labels/categories
- Each term is for a single unambiguous concept
- Governed by policies for who, when, and how new terms can be added
- Arranged in some (hierarchical) structure or groupings
- Supports indexing/tagging/categorizing/metadata management of content
- Facilitates retrieval/findability in both browsing and searching

© 2012 Hedden Information Management

Introduction to E-Commerce Taxonomies

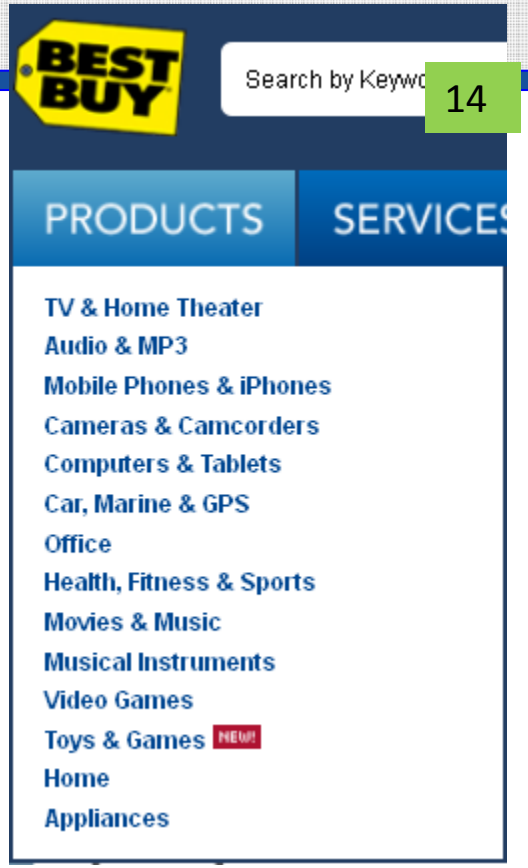
Typical characteristics of retail/ecommerce taxonomies:

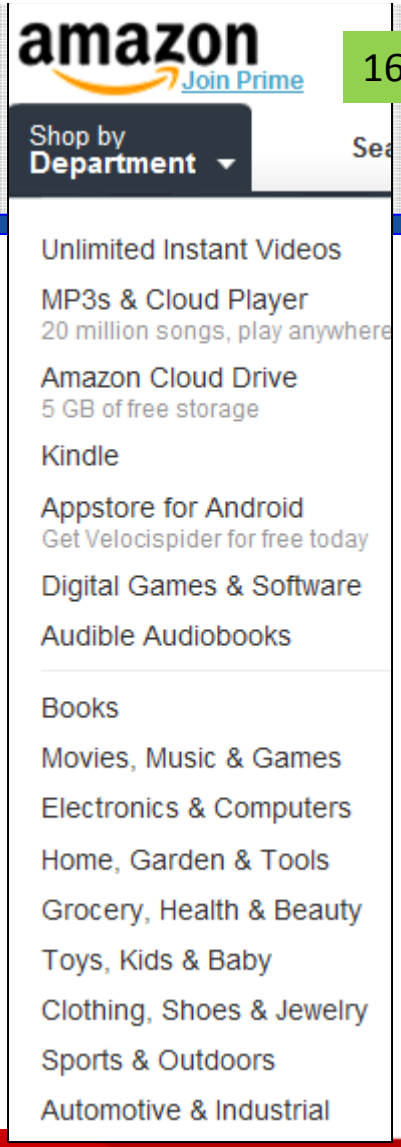
- Separate hierarchy for each department or broad product category.
  - Typically 5 – 20 top categories/hierarchies
  - Typical hierarchy depth of 3-4 levels
  - Typically 3 – 20 terms/subcategories per level

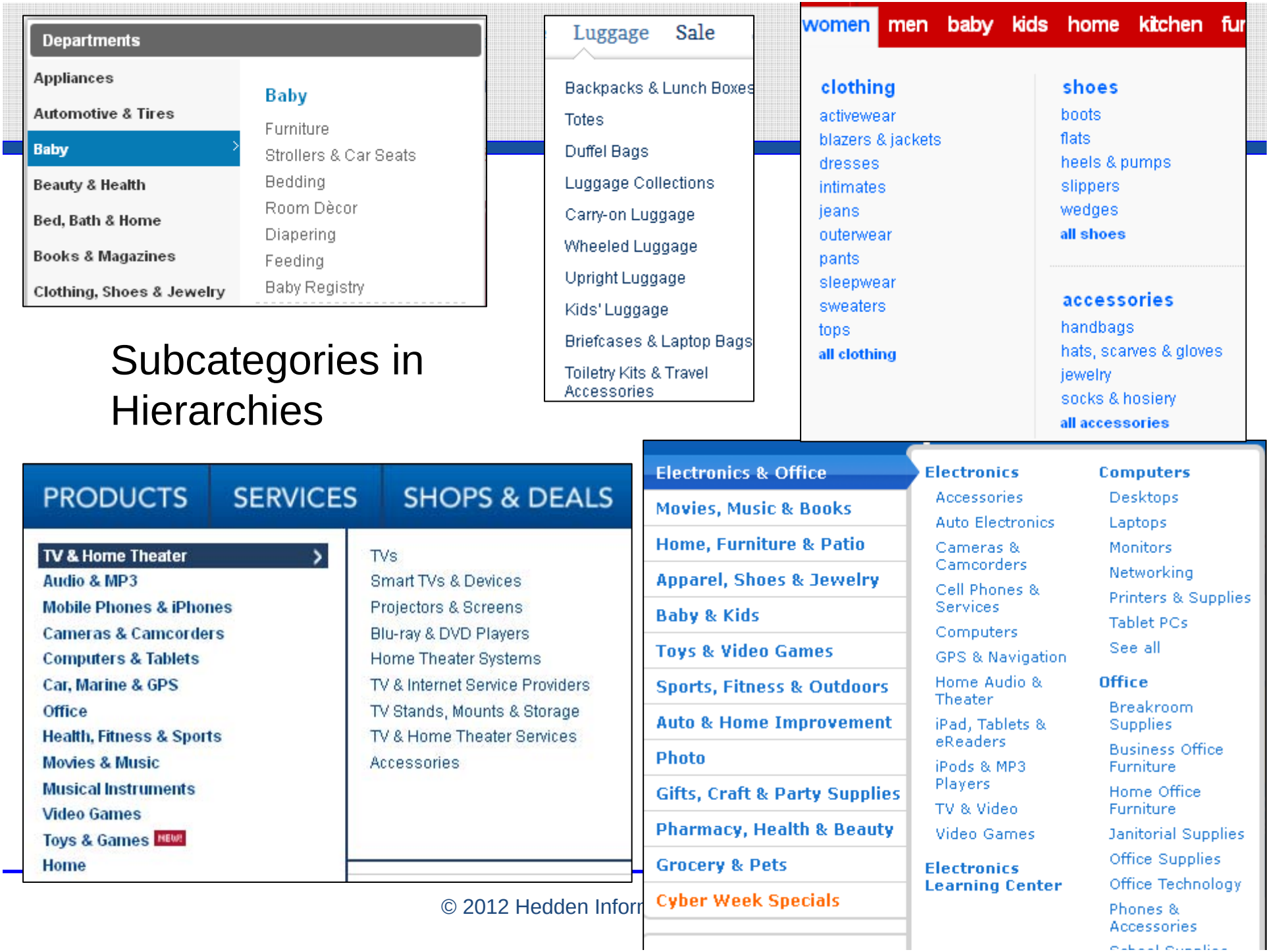
- May also have facets, typically at deeper hierarchy levels.
- Ordering is not always alphabetical, rather popular or logical.

© 2012 Hedden Information Management

Hierarchies







Subcategories in Hierarchies

© 2012 Hedden Inform

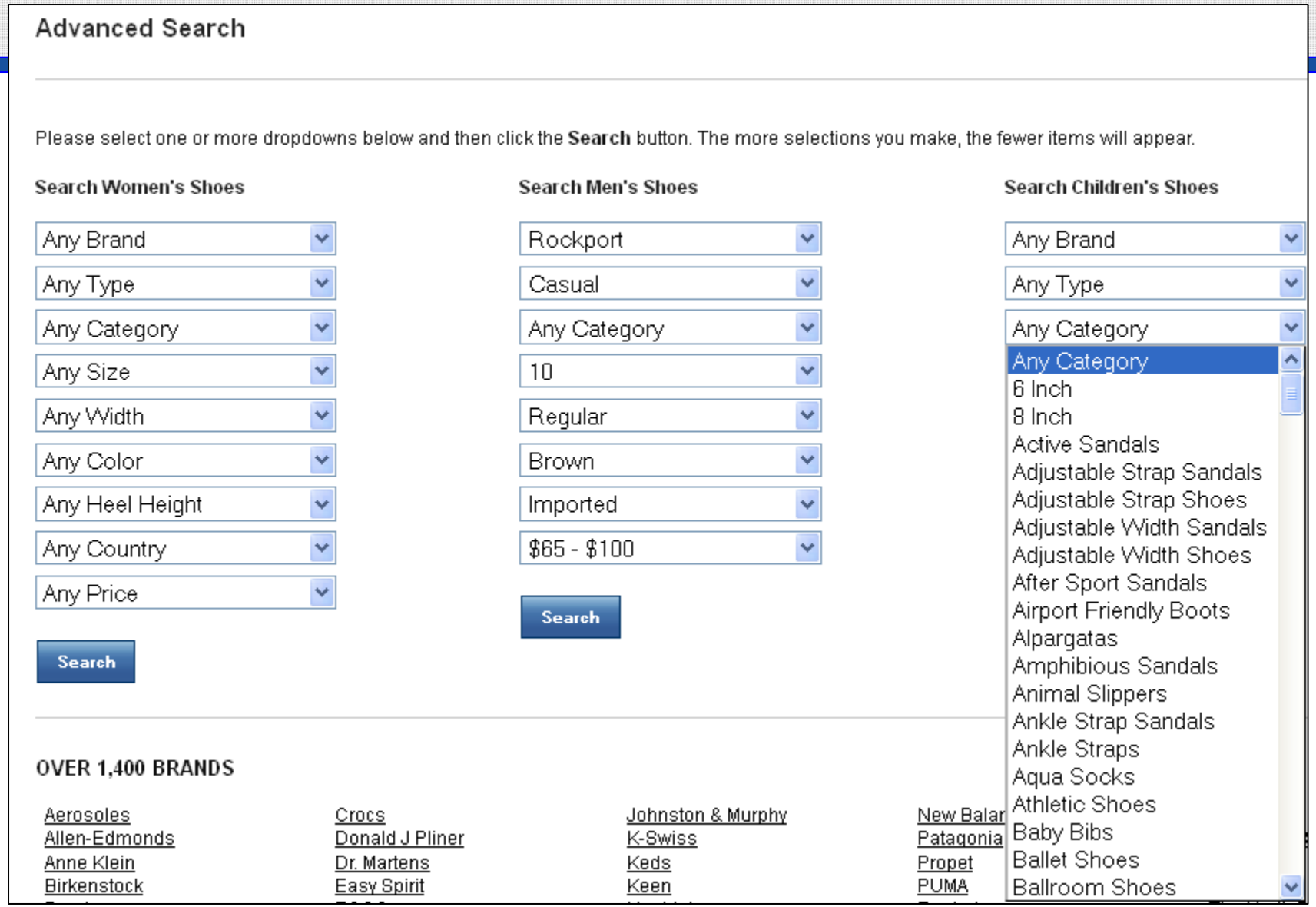
Facets

Facets
= Attributes = Dimensions = Refinements = Filters = Limit by

- Facets are for narrowing category sets that are similar and support the same kinds of attributes.
- Facets work well for retail products that are sufficiently similar: all shoes, all luggage, all laptop computers.
- Facets may:
  - be the only type of taxonomy on a specialized retail site
  - appear at lower (more specific) category hierarchy levels of a general retail site.
  - appear after executing a search

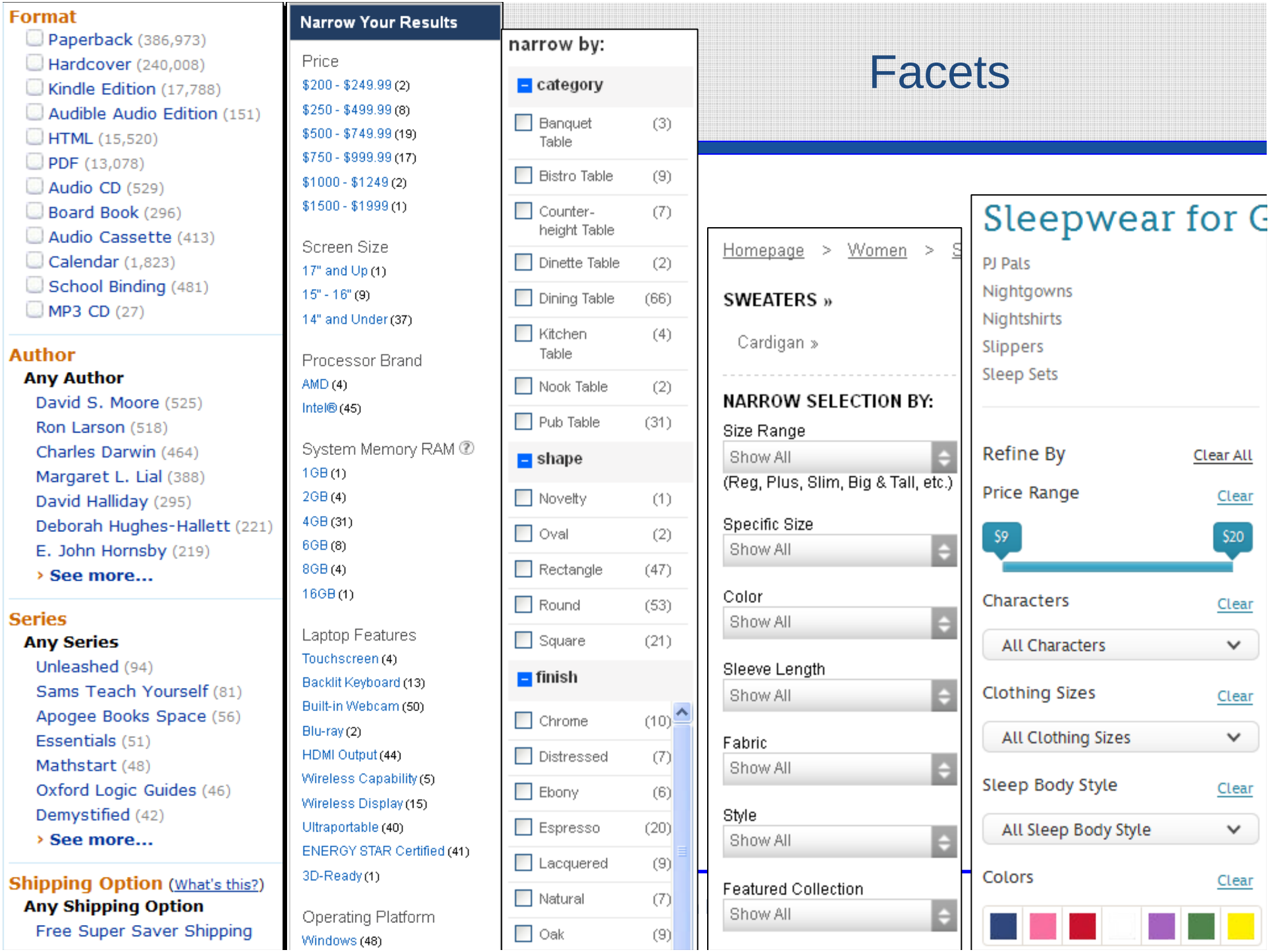
© 2012 Hedden Information Management

Facets



© 2012 Hedden Information Management

Facets



Format
- Paperback (386,973)
- Hardcover (240,008)
- Kindle Edition (17,788)
- Audible Audio Edition (151)
- HTML (15,520)
- PDF (13,078)
- Audio CD (529)
- Board Book (296)
- Audio Cassette (413)
- Calendar (1,823)
- School Binding (481)
- MP3 CD (27)

Author

Any Author
- David S. Moore (525)
- Ron Larson (518)
- Charles Darwin (464)
- Margaret L. Lial (388)
- David Halliday (295)
- Deborah Hughes-Hallett (221)
- E. John Hornsby (219)
- **› See more...**

Series

Any Series
- Unleashed (94)
- Sams Teach Yourself (81)
- Apogee Books Space (56)
- Essentials (51)
- Mathstart (48)
- Oxford Logic Guides (46)
- Demystified (42)
- **› See more...**

Shipping Option (What's this?)

Any Shipping Option
- Free Super Saver Shipping

Narrow Your Results

Price
- $200 - $249.99 (2)
- $250 - $499.99 (8)
- $500 - $749.99 (19)
- $750 - $999.99 (17)
- $1000 - $1249 (2)
- $1500 - $1999 (1)

Screen Size
- 17" and Up (1)
- 15" - 16" (9)
- 14" and Under (37)

Processor Brand
- AMD (4)
- Intel® (45)

System Memory RAM
- 1GB (1)
- 2GB (4)
- 4GB (31)
- 6GB (8)
- 8GB (4)
- 16GB (1)

Laptop Features
- Touchscreen (4)
- Backlit Keyboard (13)
- Built-in Webcam (50)
- Blu-ray (2)
- HDMI Output (44)
- Wireless Capability (5)
- Wireless Display (15)
- Ultraportable (40)
- ENERGY STAR Certified (41)
- 3D-Ready (1)

Operating Platform
- Windows (48)

narrow by:

category
- Banquet Table (3)
- Bistro Table (9)
- Counter-height Table (7)
- Dinette Table (2)
- Dining Table (66)
- Kitchen Table (4)
- Nook Table (2)
- Pub Table (31)

shape
- Novelty (1)
- Oval (2)
- Rectangle (47)
- Round (53)
- Square (21)

finish
- Chrome (10)
- Distressed (7)
- Ebony (6)
- Espresso (20)
- Lacquered (9)
- Natural (7)
- Oak (9)

Homepage > Women > S

SWEATERS »

Cardigan »

NARROW SELECTION BY:

Size Range
Show All
(Reg, Plus, Slim, Big & Tall, etc.)

Specific Size
Show All

Color
Show All

Sleeve Length
Show All

Fabric
Show All

Style
Show All

Featured Collection
Show All

Sleepwear for G
- PJ Pals
- Nightgowns
- Nightshirts
- Slippers
- Sleep Sets

Refine By Clear All

Price Range Clear
$9 $20

Characters Clear
All Characters

Clothing Sizes Clear
All Clothing Sizes

Sleep Body Style Clear
All Sleep Body Style

Colors Clear

E-Commerce Taxonomy Design Challenges

1. Distinguishing a subcategory from a facet value
2. Different categorization methods and category cross-overs
3. Related items and accessories
4. Sort order options: alphabetically or not
5. Competitor website comparisons
6. Web site vs. physical store organization
7. Business needs vs. taxonomy standards/best practices

© 2012 Hedden Information Management

Challenge 1. Subcategory vs. Facet Value

Categories and subcategories are:

- Things, products, nouns, items that can stand by themselves
- e.g. *Sweater*

Facets and their values are:

- Characteristics, descriptions, adjectives, dimensions of things, which do not stand by themselves
- e.g. *Blue*

© 2012 Hedden Information Management

Challenge 1. Subcategory vs. Facet Value

Problem: Modifier + Noun	Example: Flannel Shirts
Should it be:	
Category: Noun	Shirts
Subcategory: Modifier + Noun	> Flannel Shirts
OR should it be:	
Category: Noun	Category: Shirts
Facet value: Modifier	Fabric (facet): Flannel

© 2012 Hedden Information Management

Challenge 1. Subcategory vs. Facet Value

Considerations:

- Is the modifier an obvious value of an facet?
  Do customers consider Flannel a kind of fabric or a subtype of shirt?
- Are there other products (other than shirts) in the same website that also have this modifier (such as flannel sleepwear)?
- Is the list of facets already quite long?
- Are the levels of subcategories already deep enough?

© 2012 Hedden Information Management

Challenge 2. Categorization and Cross-Overs

Multiple categorization examples:

- Women's Shoes – in Women's Clothing; in Shoes
- Office Furniture – in Office Products; in Furniture

Cross-over product examples:

- Home Theater – in TV/Video; in Audio/Stereo
- Printer-Scanner-Faxes – in Printers; in Scanners; in Fax Machines

© 2012 Hedden Information Management

Challenge 2. Categorization and Cross-Overs

Put in both locations – *Polyhierarchy*

OK, but…

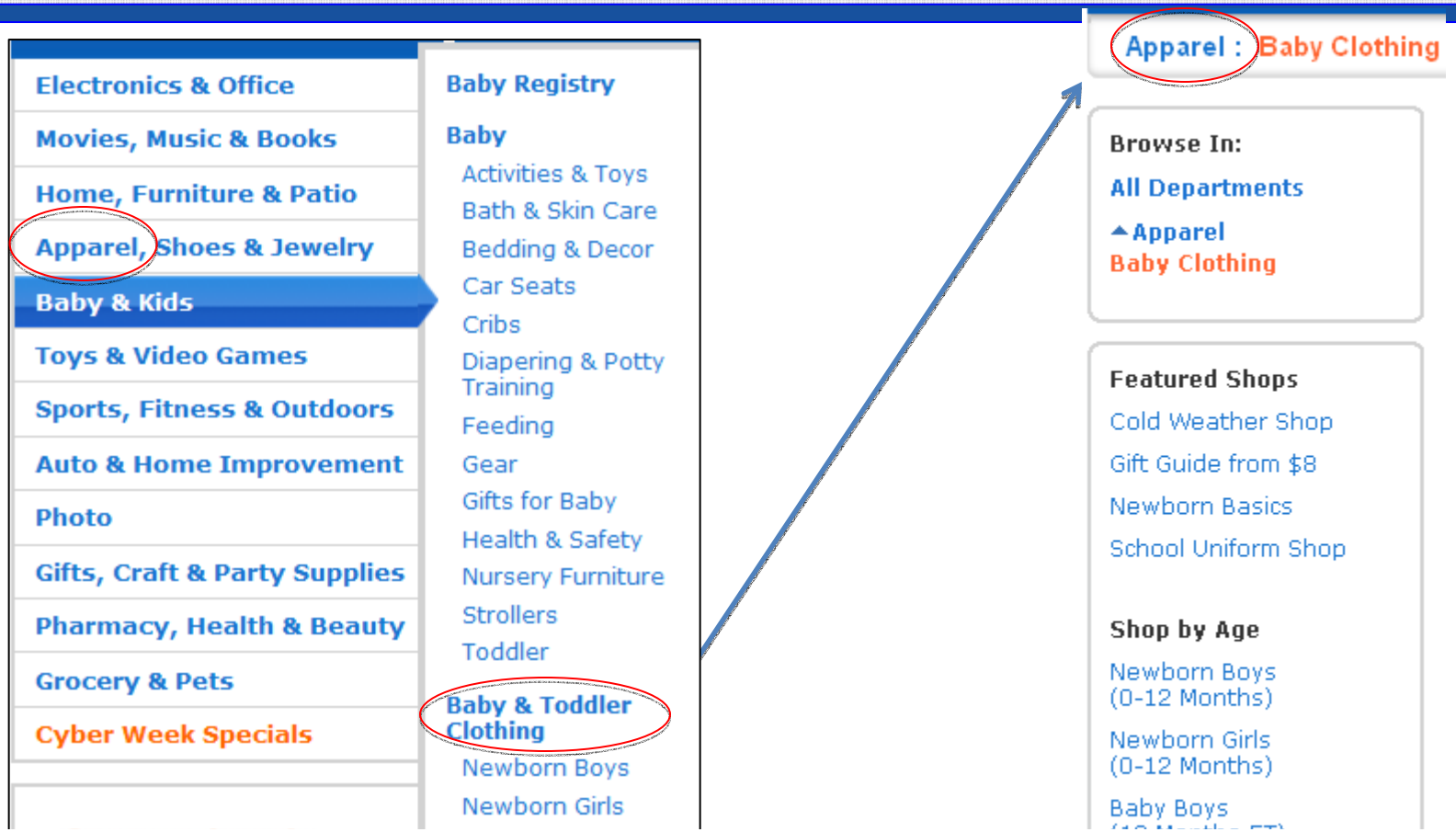
- Too much polyhierarchy confuses the tree structure.

  Polyhierarchies work better for specific terms/categories at the lowest level or second-lowest with small sub-hierarchies, (e.g. Fitness GPS Watches in GPS Systems, in Portable Fitness Electronics, and in Watches),
  not large hierarchy branches.

- Systems may not fully support polyhierarchy
- Breadcrumb trail may be only a fixed path, not dynamic/not user's path.

© 2012 Hedden Information Management

Challenge 2. Categorization and Cross-Overs



Breadcrumb trail may not reflect the user's navigation path, but rather only the other, one fixed hierarchy, path of the polyhierarchy.

© 2012 Hedden Information Management

Challenge 3. Related Items

- E-Commerce Taxonomies tend to be simple hierarchical. They usually don't have "related terms" relationships.
- *Individual* products (SKUs) can be manually related.
- Product *categories* (taxonomy terms) are usually not related.

Special cases:

- Accessories to products
- Related services

Examples:

- Accessories to Products: Camera Accessories
- Related Services: Delivery and Setup/Installation Services

© 2012 Hedden Information Management

Challenge 3. Related Items

Issue:

Where to put related items in an hierarchical-only taxonomy

- As narrower terms
- In a separate hierarchy
- Both

© 2012 Hedden Information Management

Challenge 3. Related Items

Related accessories narrower terms:
Whether to rename the parent category to include related accessories

Computers
. Laptop Computers
. Desktop Computers
. iPad, Tablet & eReaders
. Monitors
. Mice & Keyboards
. Printers & Scanners
. Computer Memory
. Computer Components
. Computer Accessories

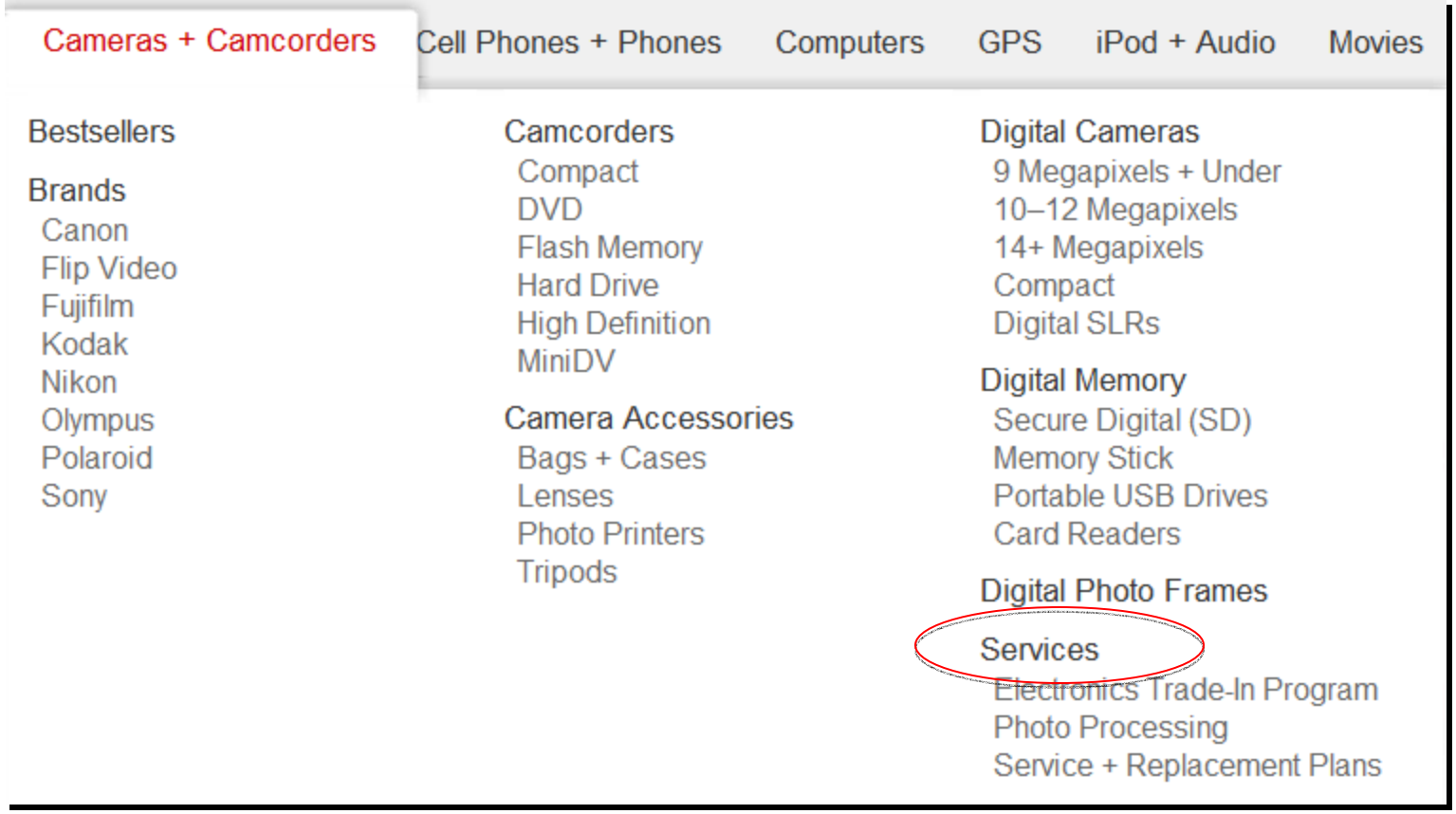
or

Computers & Accessories
. Laptop Computers
. Desktop Computers
. iPad, Tablet & eReaders
. Monitors
. Mice & Keyboards
. Printers & Scanners
. Computer Memory
. Computer Components
. Computer Accessories

© 2012 Hedden Information Management

Challenge 3. Related Items

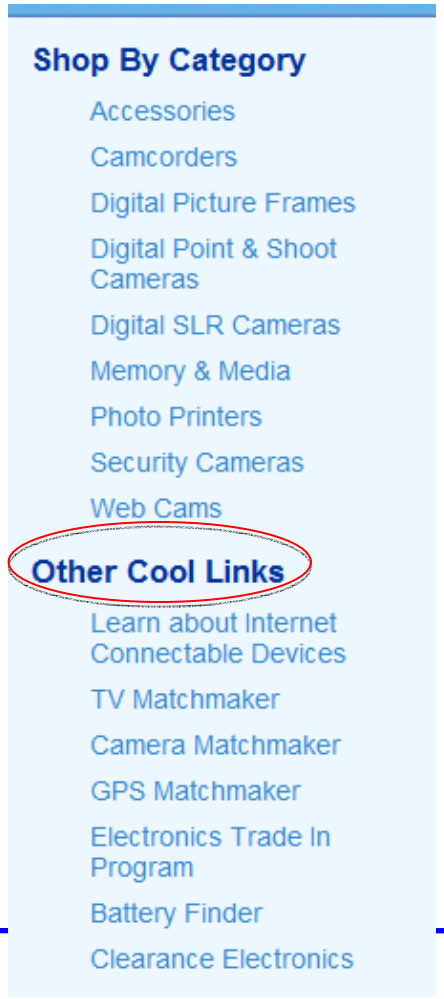
Related services listed as a narrower term under products

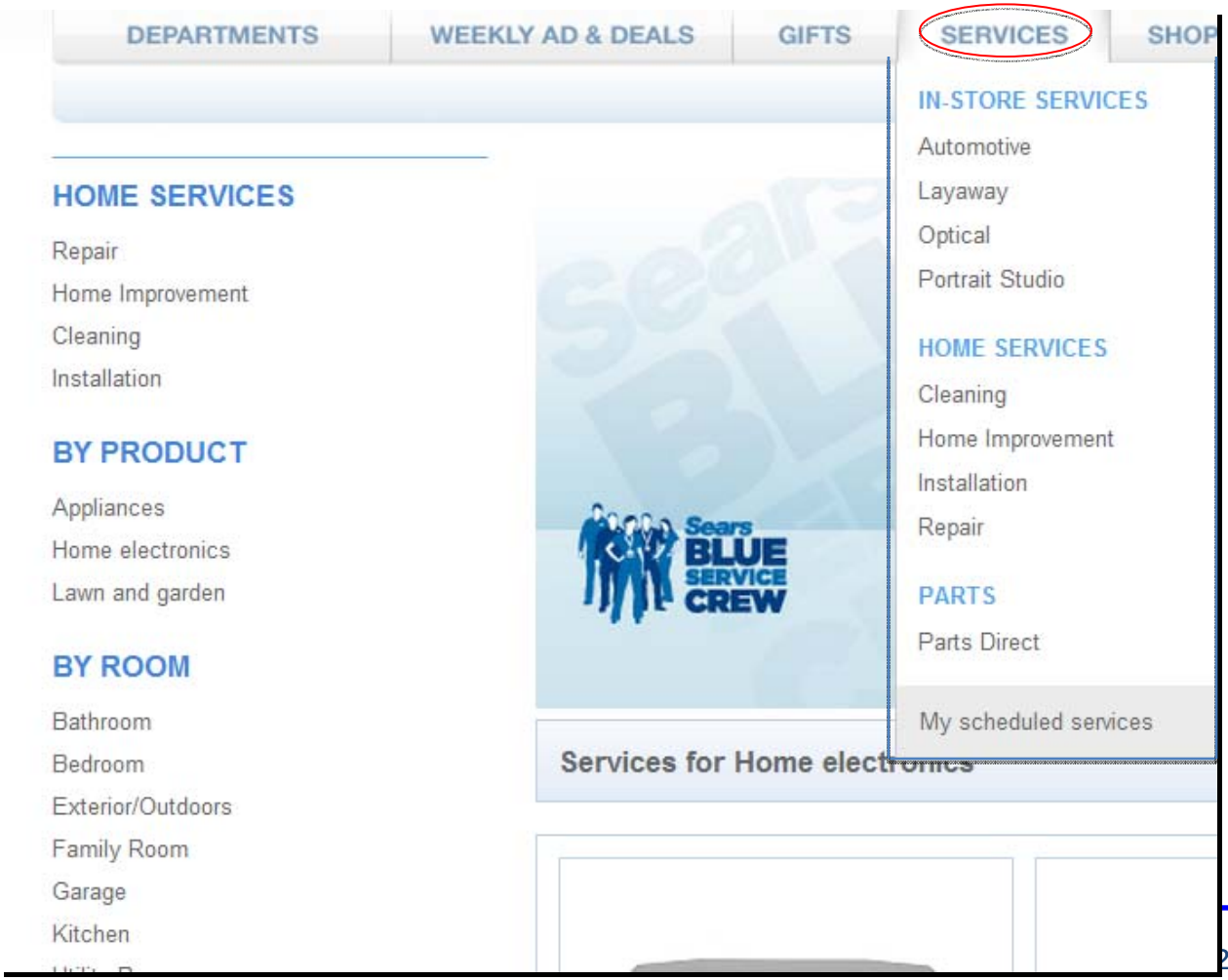


© 2012 Hedden Information Management

Challenge 3. Related Items

Related items and services listed in a separate hierarchy





Challenge 4. Display Sort Order Choice

Could be alphabetical

Shop By Category

- Accessories
- Camcorders
- Digital Picture Frames
- Digital Point & Shoot Cameras
- Digital SLR Cameras
- Memory & Media
- Photo Printers
- Security Cameras
- Web Cams

Cameras & Camcorders

- Accessories
- Camcorders
- Digital Cameras
- DSLR Cameras
- Film Cameras
- Web Cameras

or could be “logical”

- Digital Cameras
- Compact System Cameras
- Digital SLR Cameras
- Camera Lenses
- Camcorders
- Memory Cards
- Photo Printers
- Digital Photo Frames
- Webcams
- Binoculars & Optics
- Accessories

Digital Cameras

- Camera Bundles
- Digital SLR
- 14+ Megapixels
- 10-12 Megapixels
- 9 Megapixels + Under
- Long Zoom
- Film Cameras
- Waterproof

Camcorders

- Compact Digital
- DVD
- Flash Memory Digital
- Hard Drive + Memory Card
- High Definition
- MiniDV

Shop by Brand

- Canon
- FUJIFILM
- Flip Video
- JVC
- Kodak
- Nikon
- Olympus
- Polaroid
- Samsung
- Sony

Camera Accessories

- Bags + Cases
- Flashes + Lights

© 2012 Hedden Information Management

Challenge 5. Comparing with Competitors

1. Need to distinguish comparing design with comparing content organization.
2. There may not be a 100% identical competitor.

   Each retailer has a slightly different focus.
   - Target – general, but no major appliances
   - Sears – general, plus automotive parts
   - Walmart – general, plus pharmacy
   - Best Buy – electronics focus, plus appliances, furniture, etc.
   - Sam's Club – general, no clothing; plus pharmacy & grocery
   - Amazon – book and media focus; plus everything else

3. Brand retailers (e.g. clothing) *try* to differentiate themselves.

© 2012 Hedden Information Management

Challenge 6. Comparing with Physical Stores

There may be a push to organize the product taxonomy in conformity with store layout and organization.

- Loyal customers might understand it.
- But are customers divided by store loyalty or by physical store vs. online shoppers?

Factors may be unique to physical stores:

- Newest/hottest products at the entrance
- Small accessories in the checkout lines
- Larger items in the back
- Use of aisle end-caps for featured items
- Creative use of physical space

© 2012 Hedden Information Management

Challenge 7. Business Needs vs. Best Practices

Possible taxonomy requests for “business needs” that challenge taxonomy standards or best practices:

- Creating new top level categories for relatively small, hot categories, that belong under existing top categories
- Creating multiple polyhierarchies for a product category to help promote it
- Creating intermediate level categories to group and promote related subcategories, not to serve navigation

© 2012 Hedden Information Management

Challenge 7. Business Needs vs. Best Practices

Solution to taxonomy requests for “business needs” that challenge taxonomy standards or best practices:

- Create more than one navigation path
  1. Accurate hierarchies (such as in left-hand margin)
  2. Promotional categories (in central space)

- Create a “featured” category that is manually maintained

© 2012 Hedden Information Management

Challenge 7. Business Needs vs. Best Practices

- List of next level categories may differ in the true taxonomy of the left hand navigation, compared with the central area.

© 2012 Hedden Information Management

Electronics

- Auto Electronics
- Cameras & Camcorders
- Cell Phones
- Computers
- GPS & Navigation
- Home Audio & Theater
- iPad & eReaders
- iPods & MP3 Players
- Office
- TV & Video

Related Categories

- Home Appliances
- Kids' Electronics
- Movies & TV
- Musical Instruments
- Video Games

Special Offers

- Clearance
- Rollbacks
- Special Buys
- Value Bundles

Shopping Tools

- Battery Finder
- Buyback Plan
- Electronic Trade-In
- Explore VUDU-enabled TVs
- Shop & Explore New

PAUSE 1 2 | See the Difference and Save

Free Shipping With Site to Store on Eligible Items

TVs | Laptops | Tablet PCs | iPods | Cameras

Featured Categories

Save on TV and Video Solutions

- TVs
- Home Theater Systems

Everything for Your Laptop - for Less

- Laptops
- Cases & Bags
- Mice

Top Values in Electronics

See all **Top Values in Electronics**

Conclusions

- Product taxonomies are not as simple to create as expected.
- Taxonomy design may be under constraints.
- Business needs can challenge taxonomy standards.
- Creative solutions may be needed.
- Consider customer perspectives, use cases, and scenarios.

© 2012 Hedden Information Management

Questions/Contact

Heather Hedden
Hedden Information Management
Carlisle, MA
heather@hedden.net
www.hedden-information.com
www.accidental-taxonomist.blogspot.com
www.linkedin.com/in/hedden
Twitter: @hhedden
978-467-5195

© 2012 Hedden Information Management