

5 Data Challenges for Industrial Distribution Websites



Introduction

Ecommerce professionals in the Industrial Distribution space tend to have a deep appreciation for product data challenges. Relative to their B-to-C peers, they are asked to create online shopping environments with lower budgets for more complex products sourced from less cooperative manufacturers. In short, if a B-to-C retailer spends \$100 to create a web site for 10 beach towels, an industrial distributor spends \$50 for 20 pneumatic power tools.

There are several reasons industrial distributors have been slow to invest aggressively in ecommerce relative to B-to-C retailers:

- 1) **Low revenue Per SKU¹** – Industrial Distributors² tend to exhibit lower “revenue per sku” than B-to-C retailers. It is not uncommon to see an industrial distributor with \$100 million in annual revenue carrying 50,000 active skus. This creates a culture highly resistant to “per sku” fixed costs, particularly for slow-moving items.
- 2) **Weak initial investment leads to weak initial results** – Bad websites saddled with expectations to fund their own growth can get stuck in first gear for years. Weak online sales resulting from insufficient funding can reinforce initial skepticism, caution, and cost-aversion. Often the tangible threat of losing a large customer is required to break the cycle and create a C-Level mandate for change.
- 3) **Lack of holistic ecommerce solutions** – There is no service provider with expertise in industrial distribution that offers a one-stop shop for a web platform, data, search technology, web analytics, and product information management. Compounding the issue of limited budget, industrial distributors are often left to cobble together solutions amidst a sea of over-hyped, piecemeal technology offerings.

Although each industrial distributor faces unique challenges in the context of existing technology and budget constraints, we find that there are 5 key areas of web content that differentiate industrial distribution websites in the eyes of customers. These 5 data challenges are described below, along with best practices and common signs of struggle associated with each.

Taxonomy

Taxonomy, or product classification, is the basis of online navigation, attribute normalization, and meaningful analytics and reporting. Taxonomy is the ultimate expression of a distributor’s ability to keep their products organized and is often the most over-looked data element in the ecommerce experience.

Best Practices:

- Dedicate resources to maintaining a custom taxonomy based on the unique product breadth and depth.

¹ “SKU” is a colloquialism for a “Stock Keeping Unit,” or warehouse item.

² The term “Industrial Distributor” will be used in this document to refer, in a general way, to distributors of industrial supplies, including MRO, HVAC, Plumbing, Electrical, Electronic Components, Building Supplies, Hardware, and Metalworking

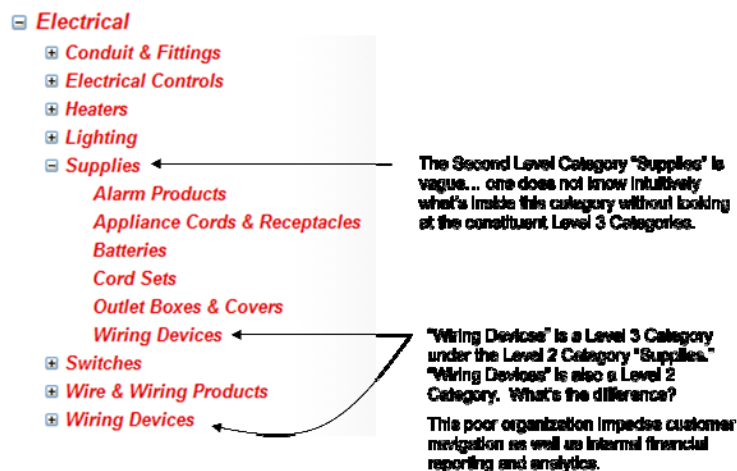
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- Leverage taxonomy as a basis for detailed financial reporting and analytics. For example, a more granular taxonomy can allow an organization to report sales trends of wrenches by type (e.g. "combination wrenches," "box end wrenches," "adjustable wrenches," etc.), rather than being limited to reporting and analyzing "Wrenches." Increased sales of specific types of wrenches could indicate trends within specific customer segments.
- Optimize taxonomy for meaningful online navigation. In tandem with keyword search, taxonomy allows customers to quickly navigate to and isolate relevant products.
- Route frequent search terms directly to relevant nodes of taxonomy to ensure search result relevancy.
- Use terminal taxonomy nodes as the basis for defining and normalizing product attributes (detailed below).

Signs of Struggle:

- Leveraging a third-party data structure that is too broad in some places and too narrow in others.
- Product attributes are not normalized at the terminal taxonomy node (the lowest level of classification).
- Print catalog index repurposed as web taxonomy.
- Taxonomy nodes are not intuitive or are redundant (see Figure 1).

Figure 1: Sample Web Taxonomy for a Large Industrial Supplier



Note: The lowest level of the taxonomy (e.g. "Batteries" above) is often referred to as a "terminal node." Product attribute schemes are often defined and normalized at the terminal node.

Product Attributes

Structured, normalized product attributes are essential for faceted product navigation, particularly for Industrial Distributors, who often stock hundreds of similar products with incremental attribute differences. For example, if a distributor offers 500 socket head cap screws, it is important that a customer can navigate within (not just to) these products. The ability to “drill down” by selecting values from thoroughly-populated and normalized primary attributes is a simple enough concept, but nearly every online supplier encounters challenges with this data element.

Best Practices

- After thoroughly defining a meaningful taxonomy (see above), define a short list of “Navigation Attributes” that will be leveraged by the search engine for drill down searches within each terminal node of the taxonomy. “Navigation Attributes” should not attempt to capture all possible product attributes, but rather isolate attributes that are relevant to every, or nearly every, product in the category.
- Once navigation attributes have been defined, aggressively normalize and populate values for all items in the category, returning to manufacturer source materials where necessary.
- Understand that “Navigation Attributes” are merely a subset of possible product attributes. The creation of an “Extended” attribute scheme that contains all possible product attributes is a much larger task.

Signs of Struggle:

- No normalization of product attributes across similar products. Many distributors are forced into this scenario with an overly general taxonomy, or the inability to manipulate un-normalized data that is stored “as is” when received from manufacturers. This scenario is extremely common – even large retailers like Sears and Target struggle to display structured attributes within taxonomy nodes.
- Attempt to create faceted navigation using existing, un-normalized data (i.e. “If the data’s not structured, just use what we have.”) This approach results in multiple “fragmented” attributes with similar meanings, which can preclude the customer from isolating similar products. While it creates the impression of faceted navigation, it often does more harm than good and can cause extreme customer frustration. (see Figure 2)
- Blank Attribute Values. For example, if a customer uses the attribute “Length” as a drill down, products without a value for length will be invisible to the customer. Empty values for key attributes causes distributors to systematically under-represent their product portfolio. (see Figure 3)
- Too many Navigation Attributes. The less essential an attribute is, the less likely it is that attribute values can be consistently populated. The goal, with many exceptions, is to have 100% fill rate for navigation attributes.

Figure 2: Sample Attribute Normalization for a Large Online Supplier

Tools > Hand Tools, General Purpose > Hammers

Sort by **Top Picks**

Items 1-21 of 326 Page 1 **NEXT** 21 items per page

NARROW BY

- BRAND**
- TYPE**
 - Accessory (2)
 - Axe/hatchet (11)
 - Ball peen (4)
 - Ball Pein/tack hammer (38)
 - Beechwood mallet (1)
 - Blacksmith/bricklayers hammer (11)
 - Board straightener (1)
 - Bricklayers (2)
 - Contractor bar (1)
 - Cross peen (3)
 - Curved claw hammer (37)
 - Curved claw (2)
 - Dead blow (21)
 - Drilling (3)

In this example, a customer is provided attribute "drill downs" in order to facilitate navigation within the 326 items in the terminal taxonomy node "Hammers."

This retailer's lack of normalization within attribute values results in an extremely cumbersome navigation experience in which there are 31 un-normalized "Types" of hammers.

The customer is effectively made to pay for the retailer's poor data normalization, and must select multiple attribute values in order to isolate relevant products.

Figure 3: Sample Attribute Fill Rate for a Large Industrial Supplier

Search Products

Refine Your Search

Category: [Electrical](#) > [Fuses and Breakers](#) > Midget Fuses ([remove](#))

Popular Refinements

- < Amps >
- < Voltage >
- < Size >
- 13/32" x 1-1/2"
- 3.2"
- < Material >
- < Application >
- < Interrupt Rating >
- < Specification >
- < Manufacturer >

Showing 152 Products

Page **1** 2 3 4 5 » of 16 < Sorting Options >

In this example, a distributor offers size as a navigational attribute. However, the first selection (13/32" x 1-1/2") routes to 140 products and the second (3.2") routes to 1 product.

Thus only 141 products out of 152 will be available for navigation using the attribute "Size." The other 11 (presumably with null values) essentially become invisible.

This distributor is under-representing its product portfolio through low attribute fill rates.

Product Images

While apparel and consumer electronics retailers are debating the impact of zoom and “in use” images on their online conversion rates, industrial distributors struggle to simply *have* an image for many products.

Product Images are essential to industrial distribution websites. Images not only create consumer confidence that a product “is what the text says it is,” they are also valuable visual cues in product navigation. Our experience indicates that customer perception of product image quality is highly correlated to customer perception of overall website quality.

Best Practices:

- Define image standards and image governance procedures that account for both print and web requirements.
- Leverage digital asset management tools that streamline image management and deployment.
- Engage manufacturers directly and systematically to obtain the most up-to-date (and highest resolution) product images available.
- Once manufacturer source materials have been exhausted, leading distributors often take pictures themselves for key items with missing images.

Signs of Struggle:

- Responsibility for product images resides within vertical silos of Product Management, creating inconsistent image quality across product categories.
- Complete reliance upon a subscription service. The quality of subscription image repositories varies by industry, but invariably results in large missing image rates and often achieves lowest-common-denominator image quality.

Figure 4: Product Images and Product Titles for an Electrical Supplier

Select	Manufacturer Mfg Part#	Quantity	Description
<input type="checkbox"/>	GARDNER BENDER AP4-K100	<input type="text"/>	Anchor Kits: Kit Type - Anchor & Screw; Anchor Type - Expansion Flanged Anchors, Plastic; Anchor Size - 1/4 x 1; Anchor Color - Red; Quantity - 100
<input type="checkbox"/>	CULLY ENTERPRISES 76536	<input type="text"/>	Concrete Wedge Anchor Bolt, Nut & Washer, Screw Size: None, Length: 2-1/4, Stainless Steel, Installation: Drill, 1/4
<input type="checkbox"/>	CULLY ENTERPRISES 76968	<input type="text"/>	Concrete Wedge Anchor Bolt, Nut & Washer, Screw Size: None, Length: 4-1/4, Stainless Steel, Installation: Drill, 1/2
<input type="checkbox"/>	CRAFTSMAN 9-52068	<input type="text"/>	Drill & Tap Sets: Kit type - Standard Tap & Drill; Total Pieces - 14; Drill Sizes - High Speed - 43, 36, 29, 25, 21, 7; Drill Sizes - Other - None
<input type="checkbox"/>	THOMAS & BETTS 31208	<input type="text"/>	Clamps, Bar-Flat Surface: Connector Type - Ground Clamp; Application - Cable to Bar; Connection Type - (1) Cable Right Angle to Bar

Missing product images and lack of product titles make it difficult to quickly scan these search results.

Product Titles (Short Descriptions)

Along with images, product titles are the most immediate visual cues for online shoppers. Generally speaking, a product title should provide as much information about a product in as few characters as possible while avoiding cryptic abbreviations.

Best Practices:

- Create rules to auto-generate product descriptions. In advanced product title schemes, rules can vary by product category, so that the rule for creating a title for a power tool may not be the same as commodity items like nuts and bolts.
- After generating product descriptions using a rules-based approach, copy edit product titles to ensure consistency and meaningfulness. This one-two punch of structured logic and human touch can dramatically improve product navigation and aesthetic look and feel.

Signs of Struggle:

- Repurposing product titles from manufacturers without modification. These “pass through” product titles lack consistency, making it difficult for customers to quickly scan lists of titles to find the item they are looking for.

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- Repurposing legacy supply chain descriptions with little or no modification. Legacy supply chain data often contains cryptic abbreviations and suffers from a paralyzing lack of consistency, accuracy, and completeness. They were never intended to be used on a website.

Feature Copy

Not all product information can be captured in a picture, product title or structured product attributes. Most manufacturers provide some form of product information in paragraph or bullet form that can contain critical information about a product, its applications, or restrictions. Naturally, this content (and its usefulness and quality) varies widely by manufacturer.

Best Practices:

- Capture all feature copy and feature bullets from manufacturer source materials, carefully extracting information that belongs in structured attributes.
- With the remaining text or bullets, eliminate language that is “self-congratulatory” (e.g. “the screwdriver all contractors prefer”) or that are overly fluffy (e.g. “When’s the last time you reached for your tool belt to find that your screwdriver was missing?”).

Signs of Struggle

- Total absence of feature copy or bullets. This scenario typically reflects web platform or product information management limitations.
- Feature copy captured “as is” from manufacturers, without editing before publishing to the website. Presence of manufacturer-centric or extremely long paragraphs containing little meaningful information.

Figure 5: Feature Copy for a Flashlight Manufacturer

Product Information

When darkness is the archenemy of productivity, grasp your fingers around the Infinity Ultra. A pint-sized but powerful **L.E.D.** light featuring Gerber’s patent pending technology. It’s the kind of light you want when the space for gear is limited and the need for brilliant light is mandatory.

Our circuitry is coated with epoxy for durability and reliable performance. Heck, the Infinity Ultra is even waterproof down to a depth of 10 feet, thanks to the rubber o-rings that seal it tight and true.

And what about that **L.E.D.** bulb? Well, it’ll never need replacing. It’ll blast out a beam for 30 feet. And it’ll burn for upwards of 100 hours on the AA batteries we’ve included. With an **anodized** aluminum housing and a rugged pocketclip, this little light machine more than earns its keep.

This feature copy for a flashlight contains several sentences that could be eliminated.

The copy can also be edited to eliminate words like “we” and “our.”

Conclusion

In an online environment, customers never see the products that they are purchasing³, or the aisles and shelves on which they are stored. Taxonomy and structured attributes are the aisles and shelves. Product descriptions, images and feature copy are the products. Much like the brick and mortar environment, the organization and presentation of products (in conjunction with pricing) will win and lose customers and drive revenue.

The data elements described in this document (taxonomy, attributes, images, product titles, and feature copy) should be thought of as components in an overall strategy – not one-off projects. They are highly interdependent, and distributors who struggle with one product data element often struggle with many or all product data elements.

In the end, the concept is simple: allow customers to find what they are looking for as quickly as possible. Once they find it, provide the information they need to make a purchase decision.

About ByteManagers, Inc.

ByteManagers provides strategic data consulting and data services to large and mid-sized industrial distributors facing the data challenges described above.

Headquartered in Chicago, the ByteManagers' team is fortified with industry domain experts who understand the strategic objectives of data sourcing and normalization initiatives. With more than 500 projects executed successfully since 1999, ByteManagers is dedicated to repeatable, predictable, and sustainable results.

About The Author

Eli Cooley is the Director of Strategic Services and IP Development at ByteManagers. He has worked with numerous clients in the industrial supply space to build and optimize product content for ecommerce initiatives. Before joining ByteManagers, he worked as an independent consultant for a Fortune 500 industrial supplier where he helped build the cross reference and product search optimization practices.

³ That is, until they arrive via shipment AFTER the purchase