

DATAWEAVE

Mastering Digital Shelf Content With Al

Track, Assess, and Optimize Your eCommerce Product Content

About the e-book

The online presence and performance of a brand is significantly influenced by the quality of its product content on the digital shelf. This e-book will equip brands and manufacturers gain the know-how to:

- systematically track the online content of their products and competition
- → assess their content's quality and completeness using relevant metrics and methodologies
- optimize their product's content via appropriate content recommendations
- → operationalize digital shelf content analysis and management

Table of Contents

- 01 Digital Shelf Content: What is it? Why is it important?
- 02 The Content Ecosystem
- 03 Assessing your Digital Content using AI/ML
- 04 The Power of Content Recommendations
- 05 Operationalizing Content Analysis and Management

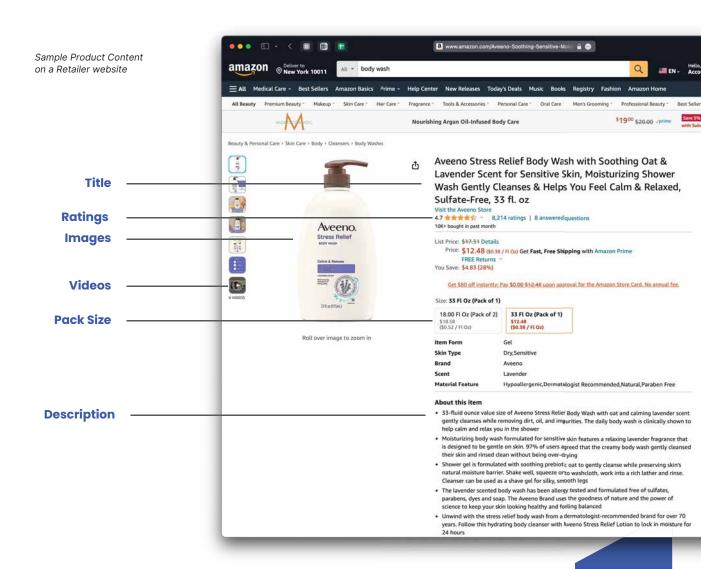
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Digital Shelf Content: What is it? Why is it important?

In today's digital-first era, shoppers increasingly use the digital shelf, which is the online equivalent of a brick-and-mortar store, to engage with brands, and discover, research and purchase products. Close to 21% of the world's retail purchases are expected to be made online in 2023. Retailer websites and marketplaces such as Amazon, eBay, Target, and Walmart, are growing in popularity, inspiring 52% of the total online purchases. Amazon alone commands a market share of 37% of the total eCommerce sales worldwide.

Forrester predicts that 70% of US retail sales will be digitally influenced in 2027, a remarkable jump from 49% in the pre-covid times. In 2021, 38% of the offline retail sales were digitally influenced, implying that a significant number of consumers research their desired products online before making a purchase at an offline store. This makes a robust online presence an imperative for all brands.

Digital shelf content refers to the product content on a retailer website or marketplace. This typically includes most elements of the Product Detail Page (PDP) such as the product title, textual, imagery, and video description of key features, reviews and ratings, along with dynamic elements such as stock availability and pricing. The product content defines a brand's online presence.



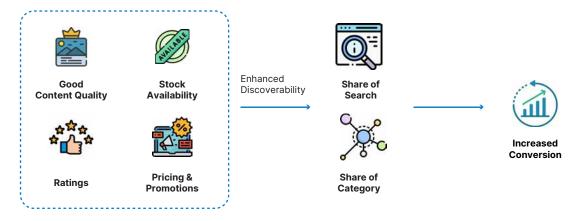


Shotfarm's survey of more than 1500 online shoppers indicates that quality and completeness of product presentation in retail has a quantifiable and direct impact on product sales. The key areas impacted by poor product content were product returns, shopping cart abandonment, and brand trust. About 40% of consumers reported returning a product due to product description mismatch, one in four consumers indicated that a purchase was abandoned due to poor product descriptions, and 87% of consumers indicated that they would be unlikely to make a repeat purchase with a retailer that provided inaccurate product information. High resolution images, 360-degree product views, feature videos and clear descriptions were highly valued by consumers as playing a significant role in their purchasing decisions. Many consumers also engage in an online survey of comparative products before executing an in-store purchase.

Sometimes, the problem begins even before products are added to the cart. Incomplete and inadequate product content can negatively impact product placement in search results. Poor quality product images and incomplete feature descriptions can influence people to abandon a product even before adding it to the cart.

Repurposing content can **increase organic traffic by 106%**. The use of the right keywords in the product title and description can help boost your search ranks. Studies show that moving up 1 search engine results page (SERP) can **boost your click-through rates by an average of 30%**. Further, with **eCommerce forecasted to share 24% of the retail market by 2026**, brands definitely need to invest resources to track, measure, and strategize their digital shelf content.

Digital shelf content quality is one of the key performance indicators (KPIs) in digital shelf analytics, along with others such as availability, share of search, ratings and reviews, and pricing and promotions. These KPIs are integrated metrics, which means that your score on one KPI can impact your score on others, as well as your overall performance. For example, a strong content quality along with good ratings and reviews and stock availability can enhance a product's discoverability by improving its search ranking for relevant keywords. This, coupled with competitive pricing, can increase conversion and impact sales and grow your market share significantly.



Digital Shelf KPIs work together to power eCommerce success

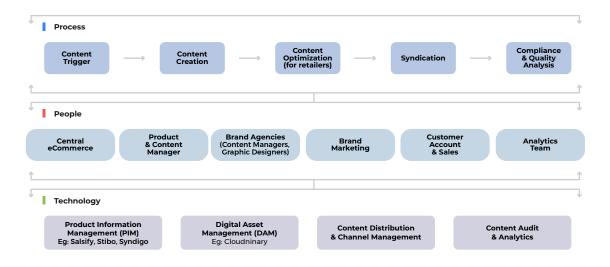
Winning the Digital Shelf means being in control of all your KPIs - content quality analysis being one of them. The rest of this book takes you through the components of the content ecosystem, ways and means of measuring content quality, effective use of content recommendations and finally, an easy 3-step approach to operationalize content management.

02

The Content Ecosystem

An ecosystem, in general, is a network of interconnected components working together to achieve a common goal. In the context of the digital shelf, the content ecosystem refers to how the components of technology, people, and processes interact and work together to create, maintain, and enhance online product content.

The base of the content ecosystem consists of four key technology components - the Product Information Management (PIM) System, the Digital Asset Management (DAM) System, Content Distribution System, and Content Audit and Quality Analytics Platform. The teams that collaboratively create, modify, manage, and consume the content lie above the technology base. These include the central eCommerce, brand agencies, product and content managers, brand marketing, customer and sales team, and analytics experts. In most cases, established brands engage with agencies to create the product content. Further adaptation of the content to key retailers and content enhancement is handled by the content managers with guidance from the agencies. The top of the ecosystem holds the content lifecycle processes starting from content triggers, creation, syndication, measurement & quality analysis, recommendations, and modifications.



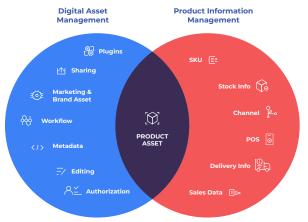
The Content Ecosystem

The Product Information Management System (PIM) is a central repository that holds all of a product's information such as SKU details, product codes and names, stock and pricing data, technical specifications, key features, accessories, certifications, shipping information, marketing data (SEO information, customer reviews) and localized data (translated descriptions, international shipping and pricing). The Digital Asset Management System (DAM), on the other hand, holds the complete digital assets including product images, videos, multimedia, logos and marketing and promotional materials. Product assets may be available in both PIM and DAM.

The product data in PIM and DAM is published and distributed to various sales channels including retailers and marketplaces via content distribution a.k.a syndication platforms.



As retailers and marketplaces can have their own product listing guidelines tailored toward driving traffic and sales on their sites. These syndication platforms provide a mechanism to allow brands to project a unified, but not necessarily a uniform product experience on the various channels they engage with. Many global brands offer base content across all their geographies, which is then translated and localized as needed. Thus, a brand can customize and optimize its product information for each sales channel.



Product Assets are present in both PIM and DAM

Finally, the content ecosystem consists of a platform for content audit and quality analytics. This could typically be a content analysis module in a digital shelf analytics platform. Through carefully drawn out metrics and methodologies, this component validates compliance of the content to brand references and retailer guidelines and evaluates the content quality in a quantitative manner. The information gleaned by the analytics is also used to provide appropriate recommendations to enhance product content.

2.2 People

The responsibility of content creation, management, and consumption lies with several teams spread across both brands and retailers or marketplaces. At the brand or manufacturer, the product management team along with content managers, writers and graphics designers from marketing, and brand agencies are primarily responsible for creating the product content. The brand's eCommerce team is typically responsible to ensure content compliance to brand and retailer guidelines. The content managers, and customer and sales teams are responsible for syndication and two way communication between the manufacturer and sales channels such as the retailers and marketplaces. Sometimes this team can also trigger content creation based on retailer or customer feedback. The eCommerce business analytics team, on the other hand, is responsible for content quality.

2.3 Process

The life cycle of a product's content begins with the trigger to create new content - which could be a new product launch, a product refresh, or a competitive revamp of product content. This trigger could come from brand and eCommerce teams, product teams, customer insight teams, or account managers at retailers. Once the trigger and content requirements are understood, content creation is handled by the product management team along with content managers, writers and graphic designers from brand marketing teams and agencies. Once the product content is created, this information needs to be optimized for key retailers. Retailers can have their own content guidelines based on their data models, templates, and search algorithms. The content needs to be adapted to these to ensure good searchability and conversion on their platforms. This is handled by the brand marketing team and agencies.

The retailer-specific content is then syndicated to retailers and sales channels via content distribution systems. Here, customer accounts and sales teams play an important role and the eCommerce team may be responsible for the syndication.



The analytics team then enters into the play, evaluating the content quality and compliance in a quantitative manner. The knowledge gleaned by content analytics is also used to provide recommendations to enhance the content.

Smaller brands or brands that are starting out on their digital journey may not use PIM and DAM to store their product information. Similarly, not all brands have dedicated teams for content management or employ brand agencies for creating and optimizing their content.

03

Assessing your Digital Content using AI/ML

Brands and manufacturers typically engage in omni-channel sales and associate with key retailers, marketplaces, wholesalers and also have their own online and physical stores. Their product content is optimized for each of these sales channels. Content distribution platforms facilitate what is known as syndication or distribution of the product information to these sales channels in a way that provides a unified product experience.

However, 3P merchants and retailers often alter the product content without notifying the brands. In a recent **webinar with DataWeave**, Bush Brothers expressed how digital product content is dynamic, with content changes being initiated often without the brand's awareness. These changes may compromise a brand's equity and recall, and sometimes even result in delisting the product. Therefore, a constant monitoring of content on retail channels is imperative to maintain content sanctity.

Retailers and marketplaces on the other hand, also have carefully formulated product content guidelines that are optimized to steer traffic and sales on their sites. While it is crucial for brands to ensure that accurate and well crafted channel-specific content is rightly syndicated to the respective sales channel, it is also important for them to cater to retailer specific guidelines to ensure their products rank high in search listings, fuelling better conversion and sales.

In other words, both brand content integrity and retailer guideline compliance are important and need to be addressed. The former ensures that brand values are correctly and consistently represented across retail platforms and complete and accurate product content (in terms of quality, number of images, product and brand information, key features, trademarked or patented technologies) is syndicated to the various sales channels. The latter establishes internal consistency in marketplace retailers and maximizes discoverability by improving the share of search and search ranking, thereby triggering conversion and sales.

To summarize, brands need to find answers to the following:

- → Is my product content at a retail site exactly what was syndicated?
- → Are there any retailer initiated changes to my product content?
- Are my product content updates reflected at the retailer platforms?
- → How well does my product content comply with the retailer guidelines?
- → How do I optimize my product content for enhanced discoverability and conversion?



Therfore, content analysis at a retailer website or marketplace involves the following three aspects:

Content Audit	which refers to examining if the brand provided information is 'exactly syndicated' at the retailer website or marketplace,
Content Quality Analysis	which measures how well your product content adheres to the retailer specific guidelines, and
Content Optimization	which refers to the insights and suggestions provided to enhance content for better searchability and consumer experience.

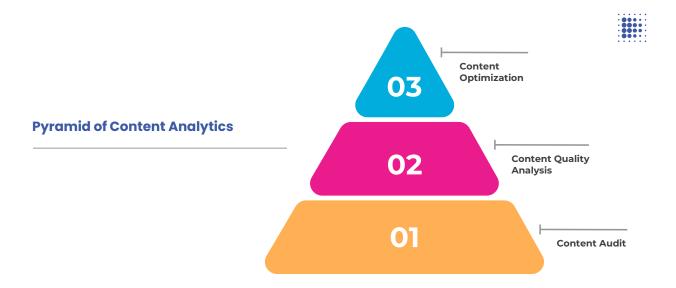
Role of AI/ML in Enabling Content Audit, Analysis, and Optimization

To perform a detailed assessment of digital content in a quantitative manner, we need a systematic approach. The first step is to identify attributes that make up a product's digital shelf content. Content attributes typically include, but are not limited to, the product title, bullets and key features, description, images, 360-degree views and videos, and enhanced content such as infographics or comparative product information. In addition, content attributes can be specific to product categories. For example, packaged and processed food products may have information such as nutrition tables, cocktail recipes, allergen information, etc. that are specific to their category. These need to be identified and tracked along with the generic content attributes.

Given the diverse nature of product content attributes, specific nuances within various verticals, and the multitude of sales channels, manual inspection and analysis prove to be cumbersome and error prone tasks. A typical brand with a reasonable online presence might manage around 1000 SKUs across five to six sales channels, resulting in the daunting task of manually inspecting and analyzing 5000 to 6000 content pages, which is far from practical. Here is where artificial intelligence and machine learning step in. Al and ML models trained on extensive data, can automatically classify multimodal content (text, images, and videos), making it possible to handle diverse content attributes and compare them against established guidelines and benchmarks. This, in turn, enables an automated content audit and assessment of content quality.

The Pyramid of Content Analytics

The pyramid below presents a pictorial representation of the three facets of digital shelf content analytics. Content Audit, which forms the base of the pyramid, is the most basic type of content analysis that is essential for ensuring correctness and compliance of product content at a retailer or marketplace.



The next type of content analytics is content quality monitoring and measurement, which is the use of Al and ML techniques to gauge and assess the degree of adherence of a product's content to the retailer guidelines. Though Al and ML techniques are used in content audit, they are more elaborate in quality analysis. While content audit is typically present in every organization, content quality analysis may be present in varying degrees of sophistication.

The knowledge gleaned from content audit and quality analysis can be effectively used to strategize and mold your product's content. This forms the top of the content analytics pyramid, namely, the content recommendation system. Content recommendations can range from straightforward and simple recommendations drawn from a lack of compliance to retailer guidelines, to sophisticated attribute, keyword and feature recommendations based on the category best sellers and competitor knowledge. The rest of this section will delve deeper into content audit and content quality analysis.

Content Audit

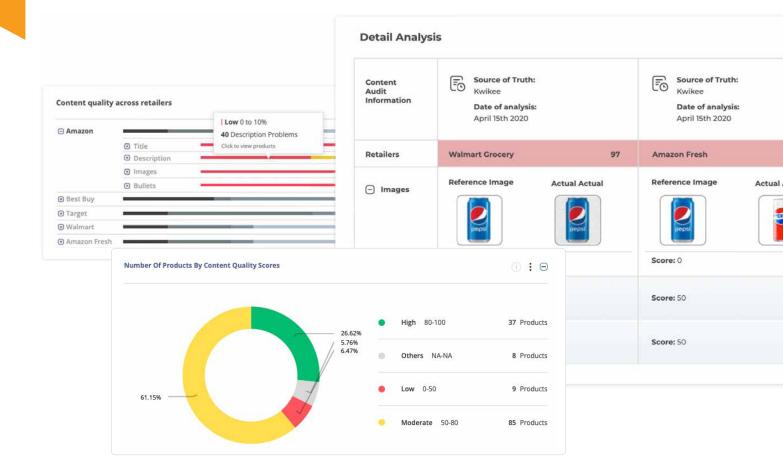
Product content is disseminated across a wide array of sales channels encompassing retail websites, mobile applications, delivery intermediaries and more. In addition, content has various aspects or attributes - title, bulleted descriptions, keywords, product images, and demo videos.

Brands not only need to ensure that the correct product content is syndicated at the retailer website or marketplace, but also perform a content audit periodically to spot any retailer initiated changes in content. This is essential to preserve brand content integrity and avoid delisting of products that don't adhere to the brand's content guidelines.

An automated mechanism to track and perform a detailed comparison of corresponding brand content attributes against what is displayed at the marketplace is needed. The solution should handle multimodal inputs, i.e. text, image, video, and capture vertical specific nuances.



For example, product images and textual descriptions across the brand and the retailer can be compared using AI to automatically verify image and text similarity. Similarity scores can be computed for each content attribute to better understand the degree of adherence. A score for a content attribute will be 100 for an exact match and brands strive for close to 100% compliance. Image similarity analysis can include annotations to describe whether the product and reference images are almost identical or if there is a difference in packaging, marketing label, or point of view. The annotations also indicate whether a product image is missing or a different image is present on the retailer.



Content Audit Analysis and Scoring

Overall content audit score could be the average or a weighted average of the individual content attribute scores. This will give brands and manufacturers a detailed perspective of the degree of content compliance for their products at different retailers and marketplaces.

Content audits help brands zero-in on the retailers and products where there is a significant gap in the brand's content as against what is displayed at the retailer. Using this information, brands can prioritize and take necessary action to ensure that accurate and optimized product content is always displayed at each of their sales channels. This is a very important step to maintain and improve the brand perception and ensure a uniform and satisfying consumer experience.



Content Change Alerts

Brands would love to be automatically notified of any product content changes on their retail sites. These changes could either be retailer-initiated changes of which the brands

 Content on 167 products has changed since the last update

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must be made aware of, or changes requested by the brand that needs to be updated by the retail site. Through similarity analysis of current content with the previous content, brands can be notified of the list of products that have undergone recent content modifications.

Content Quality Analysis

Retailers and marketplaces have their own guidelines for product content that is optimized to drive traffic and sales on their websites. These guidelines are formulated based on retailer-specific data models, templates and search algorithms. As a brand, adhering to them can go a long way in ensuring that your products have a good share of search and visibility on the retailer's platform, thereby increasing your chances of conversion.

Tips on how to create a great title

Do

- Capitalize the first letter of each word (but see exceptions under Do Not)
- Use numerals (2 instead of two)
- If a bundled product, state value in parenthesis as (pack of X)
- Keep it short, but include critical information
- 50 characters maximum

NOTE: Please include only standard text. Type 1 High ASCII Characters ($^{\text{TM}}$, $^{\text{O}}$, $^{\text{O}}$, etc.) or other special character are not supported.

Elements to Include

[Brand] + [product type] + [size/style/flavor] + [quantity (if applicable)]

Do Not

- Do not include price and quantity
- X Do not use ALL CAPS
- Do not capitalize:
 Conjunctions (and, or, for)
 Articles (the, a, an)
 Prepositions with fewer than five letters (in, on, over, with, etc.)
- ★ Do not include seller information
- Do not include promotional messages such as "sale" or "free ship" (use the Promotion Manager tool to include messaging)
- Do not use your seller name for Brand or Manufacturer information, unless your product is Private Label
- Do not include symbols in your listings (such as: ! * \$?)
- Do not include subjective commentary such as "Hot Item" or "Best Seller"

A sample title guideline



Rich Media

5%

0% *

100%

Reviews

Label

info

Amazon, for example, has a very elaborate category specific product content guideline. These guidelines are defined for each content attribute. A product title, for example, has a specified minimum and maximum length, should hold the brand or manufacturer name, should mention the pack size and should not include seller information, promotional messages or price. For product features, guidelines include a minimum and maximum number of key features or bullet points, clarity and brevity of content, and omission of promotional details, availability or shipping information. Product descriptions should include accurate dimensions, care instructions and warranty information and cannot include seller name or URL. They must also have a simple, white background within a specified minimum and maximum resolution and the product must occupy at least 80% of the image area.

A content quality analysis framework must have an automatic way of measuring the degree of compliance of your product's content to the retailer specified guidelines. Similar to content audit, for each content attribute, a mix of semantic, text, and image analysis techniques can be employed to measure variance from the guideline. Similarity scores for each attribute can be computed. The similarity scores and their semantic meaning indicate the quality of your product's content. For example, image analysis scores can also include annotations to describe the quality issue with the image - a poor lighting angle or glare or an incorrect choice of background or product view.

As with content audit, the overall content quality score can be the average or a weighted average of the individual content attribute scores. The overall score gives an indication of the overall quality of your product's content on a retail site. The brand can then analyze the individual content attribute scores for a more detailed view.

Bullets

30%	20%	20%	15%	10% 5%
Content Type		Goal		Weight
Number of Images		3+		30%
Bullets		4 - 8		20%
Long copy		50+ words		20%
Video		1+		15%
Reviews		8+		10%

1 asset or more

Exists on PDPs

Long copy

Video

Score Weighting

Number of Images

Rich Media

Label info

Total Content Score

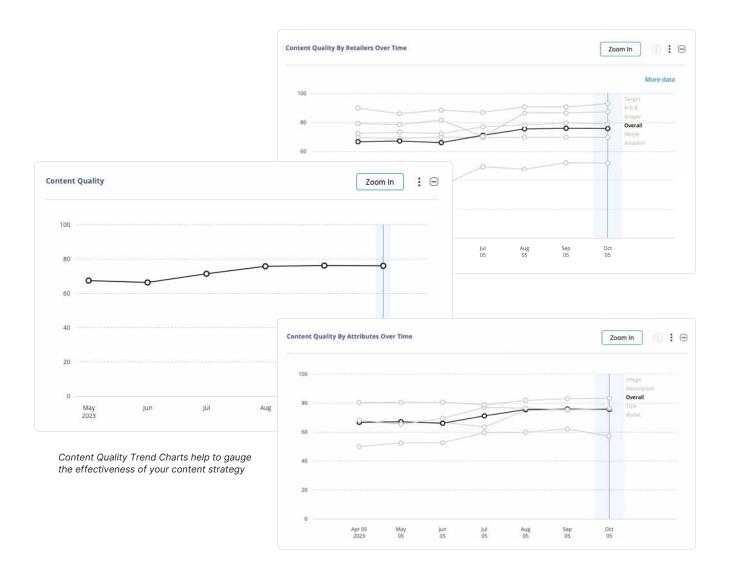
^{*} Not weighted since not legally required



Content quality analysis equips brands with the quantitative knowledge of how their product's content fares both in overall quality as well as the quality of each content attribute. By comparing the content of their products against the content of best selling products from the competition, brands can identify the content areas that need improvement and plan a strategy to revamp their product's content. This can go a long way in improving their brand's perception and garnering more conversions.

Content Quality Distribution and Trend Charts

Apart from viewing a snapshot of the current content quality for your products, a historical analysis of content quality scores across retailers can be beneficial in gauging the effectiveness of your content strategy by assessing how well your content quality scores have improved in the recent past. Similarly, such an analysis also reveals any sudden dips in content quality across products and retailers.





04

The Power of Content Recommendations

Leveraging the knowledge mined from a detailed analysis of product content, one can arrive at various recommendations to optimize and mold the content to enhance product discoverability, provide a compelling consumer experience and increase conversion. A first level of recommendations can be drawn based on how well your content adheres to retailer specific guidelines - these are referred to as guideline-based recommendations. You can also use the knowledge obtained by analysis of the content of best selling and top ranking products to arrive at keyword, attribute, and feature recommendations. This forms the second category of content recommendations.

Guideline-based Recommendation

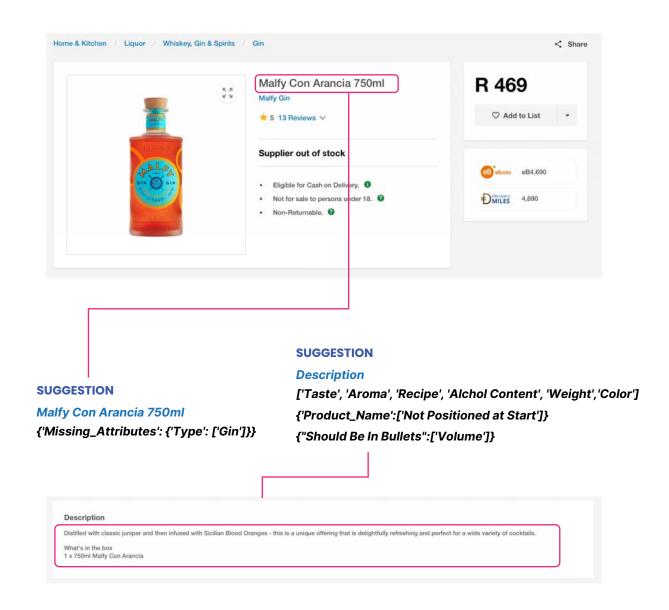
Retailers and marketplaces often provide content guidelines to brands. These guidelines are tailored towards driving the traffic and increasing sales and conversion for products on the retailer sites. Adherence to these guidelines, therefore, increases the chances of products being discoverable and searchable on the retailer site.

In content quality analysis, we saw how one can measure the degree of compliance of a product's content to the retailer specific guidelines. The quality analysis for the various content attributes and their annotations can act as recommendations for improving your product's content. For example, an image similarity analysis may indicate that your product does not cover 80% of the image area on Amazon, or the background is not contrasting enough to enhance clarity, or the brand logo is missing, or image dimensions are inappropriate or the resolution is low. These are, in effect, suggestions for improving the quality of your product's image content. Similarly, a missing brand name (which is a guideline in Amazon's product listing) in your product title can negatively impact your share of search. A text and semantic similarity analysis can reveal this non-compliance and make a suggestion for content quality improvement.

Keyword, Attribute, and Feature Recommendations

Knowledge gleaned by an in-depth analysis of the content of top ranking products in your category of interest on a retailer can be used to formulate suggestions for improving your own product's content quality. For example, if alcohol is the category of interest to you, an analysis of the content of the top 20 alcohol products in the organic search listings can reveal useful insights to prune your own product content. A text analysis can reveal strategic keywords (gluten-free, all-natural), repeating phrases, common attributes (recipe, alcohol content, color, flavor, recipe, weight, calories) and key features (production method, aging technique) that can be inserted into the product content to enhance its searchability and conversion. An image and video analysis can reveal types of product images (nutrition facts, recipe) and any enhanced content (brochures, tasting notes, mixing suggestions) that can be included. As another example, "easy to handle" is a common keyphrase for top selling vacuum cleaners and can be a content recommendation in this category.





Sample Al powered content recommendations for the alcohol category

In the home and furniture category, a competitive analysis may indicate that search ranking and relevance of search results improves with the use of certain keywords and specifications in the product title. For example, for conversation patio furniture, a precise mention of seating capacity in the title may improve the relevance of search results when searching for furniture with a maximum seating capacity. Similarly, presence of the keyword "cushion" in the product title for wicker furniture may improve searchability when you are searching for wicker furniture with cushions. In the absence of the right keywords in the product title, certain products may get suppressed in the search results.

Content can also be molded to provide a compelling user experience. For example, adding color options in the product listing can enhance consumer experience and improve chances of conversion. In its absence the consumer may assume that only a single color, as shown in the listing image, is available, and may not click further to view the product details which may have the alternate color combinations.



Generative AI for Content Optimization

Generative AI can play a significant role in content molding and optimization. AI models trained using titles of best selling products in your category of interest can be used to generate effective titles with the right keywords and attributes placed at appropriate positions. Alternative product type synonyms, strategic keywords in bulleted descriptions, number of product type synonyms to be placed in the title and their positions can be deciphered. For example, for travel merchandise, analysis can reveal that to specify portability as a feature, the keywords 'portable' or 'travel' generate better search ranking than the phrase, 'on the go'. Also, using multiple synonyms to specify the same feature - for example, in this case using both portable and travel in the product title, may be the most optimal for discoverability. Therefore generative AI techniques can guide you on the type, number and position of strategic keywords and attributes in all aspects of product content, be it the title, bulleted list of features, or detailed descriptions.

Effectiveness of content optimizations can be gauged through A/B testing or split testing. In this testing technique, two versions of the product content, one with the content optimization incorporated and one without, is evaluated by distinct groups of consumers, to assess which version fares better in terms of search ranking, relevance, user experience, and conversion. This is done by measuring KPIs such as click-through-rates, search rankings, conversion rates, and user time spent. With 60% of the organizations finding A/B testing on reasonable sample sizes highly useful in improving sales conversion, sometimes by even 50%, this is a powerful approach to evaluate your content recommendations.

To summarize, precise and appropriate content recommendations, whether based on guideline compliance or an in-depth content analysis, can go a long way in enhancing your brand's digital shelf presence by improving searchability, creating a compelling content experience for your customers, and increasing sales conversion.

Operationalize Content Analysis and Management in 3 Easy Steps!

Digital shelf content optimization and management is not a "once-and-done" activity. To keep ahead of the competition and retain buy-box captures, brands must periodically track, analyze, and optimize their product content on their top retail sites and marketplaces. Therefore content analysis and management needs to be tightly integrated into the brand's business strategy and operations.



A Three-step Approach

To operationalize digital shelf content analysis and management, one needs to:

Identify

key stakeholders

for collectively shouldering the responsibility for a product's online content. The director of eCommerce, customer and sales team, product management team, marketing team including content managers, graphic designers, eCommerce business analysts are typically responsible for the overall eCommerce content.

Assign

precise responsibilities

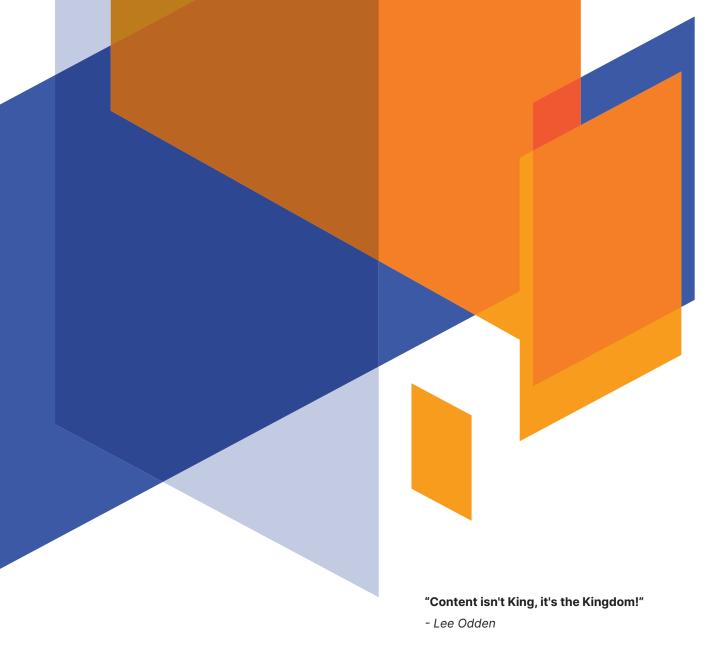
to the stakeholders with a reporting mechanism in place. For example, the director of eCommerce may hold the responsibility for content audit, while the product management team along with content managers and graphic designers from marketing can be responsible for the product content. Apart from responsibilities, a lucid reporting mechanism and a method for escalations needs to be drawn.

Define

key performance indicators (KPIs)

and metrics for measuring the quality of content, decide on frequency or measurement and reporting. Stakeholders must be well aware of the KPIs within their realm of responsibility. Typically, once syndication is exact, a weekly or bi-weekly monitoring of content KPIs is advisable. The frequency and sophistication of content management depends on the brand size and maturity.

By following these three easy steps, your organization can streamline digital shelf content management, enhance customer engagement, and stay ahead of your competition. With a well-structured content management approach, you'll not only optimize your online presence but also strengthen brand loyalty, foster long-term customer relationships, and drive sustained business growth. Embracing these strategies ensures that your organization remains agile and responsive in an increasingly competitive and dynamic digital marketplace.



To know more about how content analysis and management can be integrated into your Digital Shelf Analytics solution to benefit your business,

Sign up for a demo

For information on other DataWeave solutions, email us at contact@dataweave.com or visit www.dataweave.com

