Intelligence Node

Assortment Intelligence: From Product Data to Actionable Growth

Understanding the role of **velocity, volume,** and **variety** in competitive data scraping, standardization, storage, and eCommerce application.



Introduction

How do you better align with what “the shopper” sees from you and your competitors, when making a purchase decision? Does your product assortment meet their needs or are your competitors in-tune with products and product attributes that you are not yet aware of?

Utilizing **AI-powered intelligence** built on **99%** product matching accuracy and **1.6+ billion** monthly price observations, gain a precise, real-time view of competitive assortments, availability shifts, pricing movements, and demand trends. Identify and act on assortment gaps to become the “Merchant of Choice” for your shoppers. Transforming large-scale product data into actionable insights allows you to optimize your product mix, improve availability, and maximize category profitability. With clean, standardized data and continuous competitive tracking, your assortment strategy becomes **proactive, data-driven**, and aligned with your **shopper and real market demand.**

Key use cases:

- Conducting in-depth competitor assortment matching and analysis across categories and brands
- Standardizing and normalizing product attributes to create clean, comparable assortment data and identify catalog content gaps
- Identifying assortment gaps across private label and branded products



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Let's look at the step-by-step approach to Intelligence Node's assortment optimization using real-time product matching and advanced analytics:

Step 1. Product Data Aggregation & Standardization

We begin by constructing a comprehensive and normalized view of the category landscape across both the client and competitors.

A. Scrape Product Pages

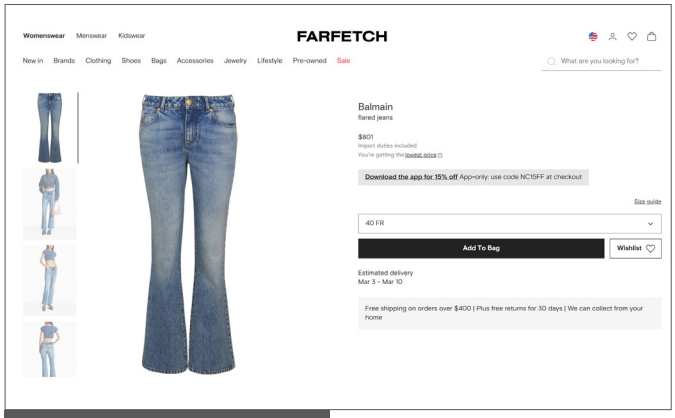
All products within the target category are scraped across:

- Client Assortment
- Key Competitors

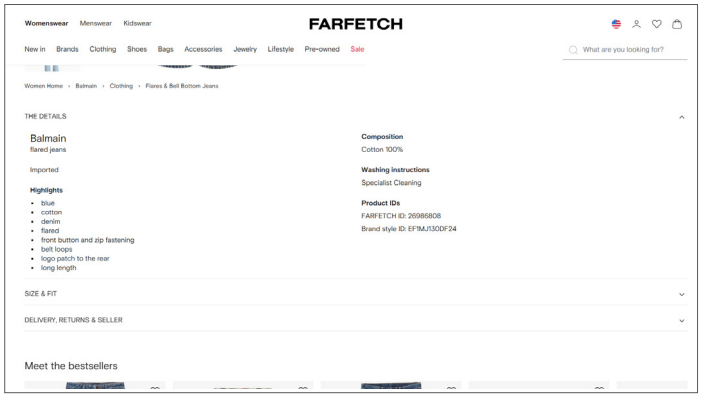
B. Scrape Product Pages

Attributes are extracted from multiple sources on the product detail page (PDP):

- Product name
- Descriptions
- Bullet points
- Product images (via computer vision)



Example: Women Jeans



Both explicit and implicit attributes are captured to ensure completeness.

Extracted attributes are normalized into a predefined taxonomy to ensure consistency across retailers.

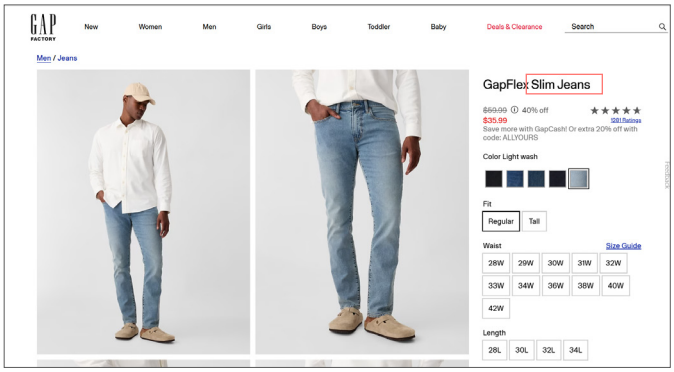
Material | Color | Pattern | Fit | Length | Sleeve Length | Neck Length

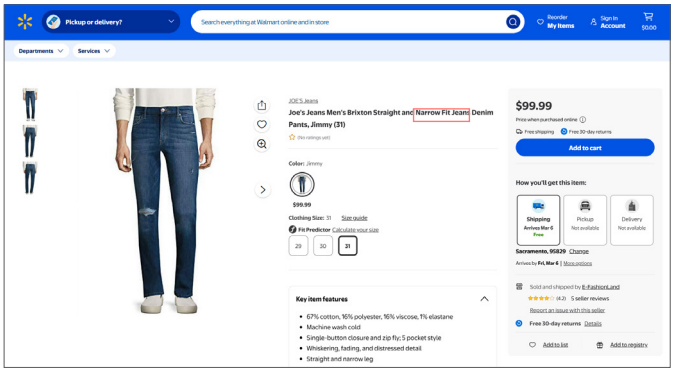
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Attribute values are standardized to enable comparison:

Azure | Teal | Cobalt → Blue

In the below example,
we have merged “narrow fit” jeans with “slim” jeans since they are similar products





Both raw and standardized values are stored to maintain data fidelity while enabling analysis.

C. Enrich Additional Contextual & Performance Data

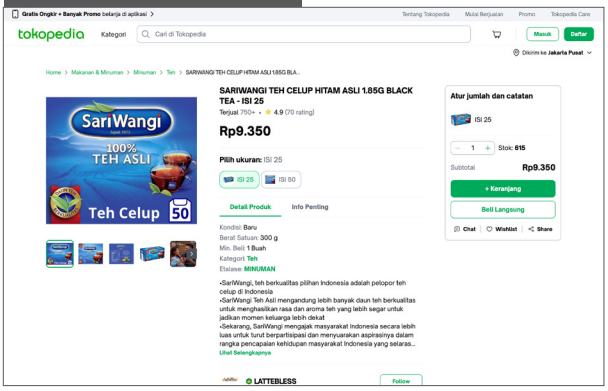
- Reviews – Average ratings, number of reviews.
- Sales indicators - Customer favorite tag, category best seller badge, etc.
- Product ranking - Leverage sort algorithms on the site to scrape the product rank when sorted by ‘best sellers’ or ‘top sellers’.
- Share of Visibility - Run Share of Visibility (aka Share of Search) using key words related to the category (e.g. non-fat yogurt) and scrape product rank. Key words need to be generic in nature as to not introduce a bias by searching.

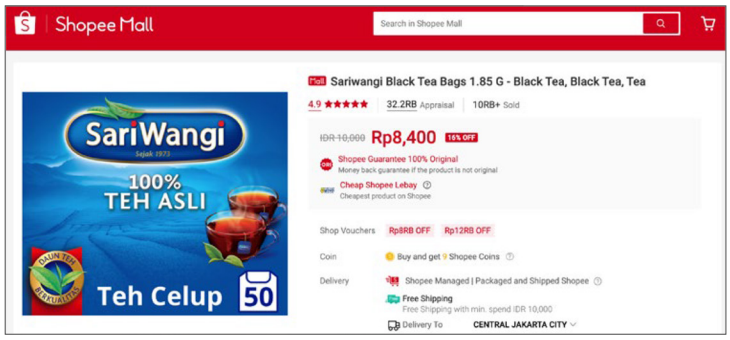
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Step 2. Product Matching (Client vs Competitors)

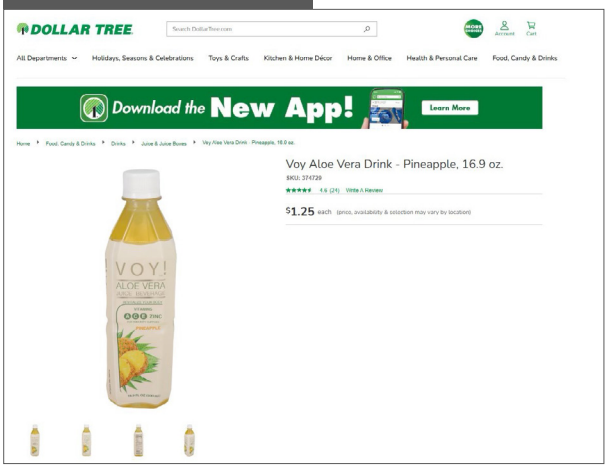
We perform dynamic product matching to identify exact and similar products between the client and competitors.

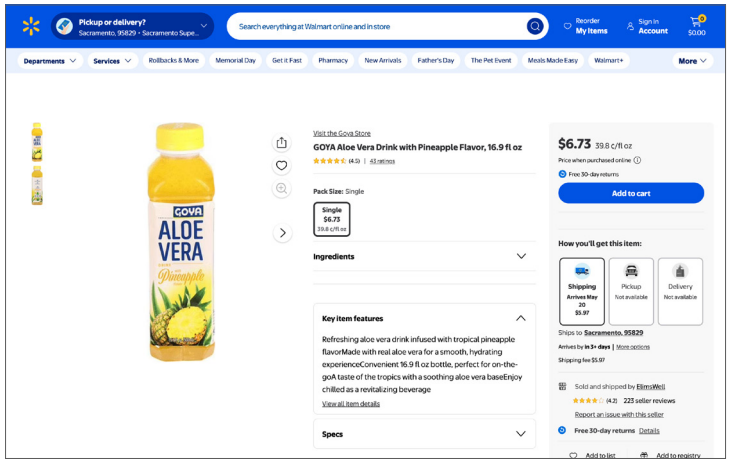
Exact Match Example





Similar Match Example





Key Outcomes

- Identification of direct branded assortment gaps
- Detection of missing variants (size, flavor, color, etc.)
- Visibility into competitor private label strategies

This step creates a true like-for-like comparison, enabling accurate benchmarking.

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Step 3A: Competitive Benchmarking

We analyze unmatched products (from step 2) across competitors to uncover broader market patterns like:

- Products carried by multiple competitors but absent in the client assortment
- Identify emerging assortment trends within the category (e.g. use of eco-friendly, recycled materials).

This helps identify high-confidence opportunities that are validated by the market.

Step 3B (Optional): Physical Store Penetration

To extend insights beyond digital channels, we analyze brick-and-mortar distribution (% of stores who carry the product physically on shelf) by leveraging the buy online, pick up at store option when the option is supported on the website.



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Step 4: Assortment Gap Analysis & Prioritization

All insights are synthesized into a structured decision-making framework to prioritize opportunities based on:

- Product attribution - even if I don't have a match to the competitor product, do I have something "close enough"?
- Competitive set penetration - is the product is stocked at many/all of my competitors?
- Competitive store penetration - is this an online exclusive item only?
- Customer sentiment – are the reviews positive, in high in volume and velocity (increase of reviews over time)?
- Potential sales performance – is the product is consistently displayed as a "top seller"?



A simple heatmap showing dress types available on various websites highlights an assortment gap for Net-a-Porter which does not list "Sheath' dresses

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Key Benefits of Assortment Intelligence

- Optimize product catalog to sell the variety, quality and designs shoppers want
- Identify and correct gaps in product catalog to increase conversion rate
- Optimize product assortment and take complete control of online product merchandising with data to sell the right product to right audience at the right time
- Track competitors' brands, inventory movements and historic trends to calculate your revenue opportunity for a given product
- Identify product gaps and make intelligent assortment & availability decisions, such as whether to allocate more marketing muscle and shelf space to exclusive brands or private label products.

Timelines

- Initial data delivery within **3–4 weeks**
- Multiple categories can be executed **in parallel**
- Subsequent category deliveries can be **accelerated**, contingent on timely client inputs

About Intelligence Node

Intelligence Node is the intelligence layer powering agentic retail. We sit at the center of the digital shelf, transforming pricing, product, assortment, and content signals into the real-time, trusted intelligence that drives confident decisions, human and AI alike. Our platform spans Market Intelligence, Product Intelligence, AI Readiness, and Decision Intelligence—delivering the visibility, precision, and autonomous recommendations retailers need to compete as retail becomes AI-driven.

Acquired by Interpublic (NYSE: IPG) in December 2024 and now part of Omnicom (NYSE: OMC), Intelligence Node is integrating with Acxiom and Omnicom Media at the core of the world's leading marketing and sales ecosystem.

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Intelligence Node

Drive Sales Growth With AI-Enabled Assortment Optimization

Explore how Intelligence Node can help you drive conversions and customer satisfaction by optimizing assortment and availability.

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