

A Guide to AI-driven Product Matching for Modern Retail



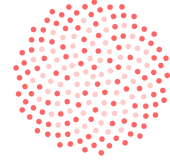
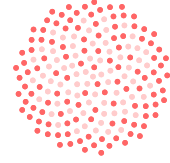


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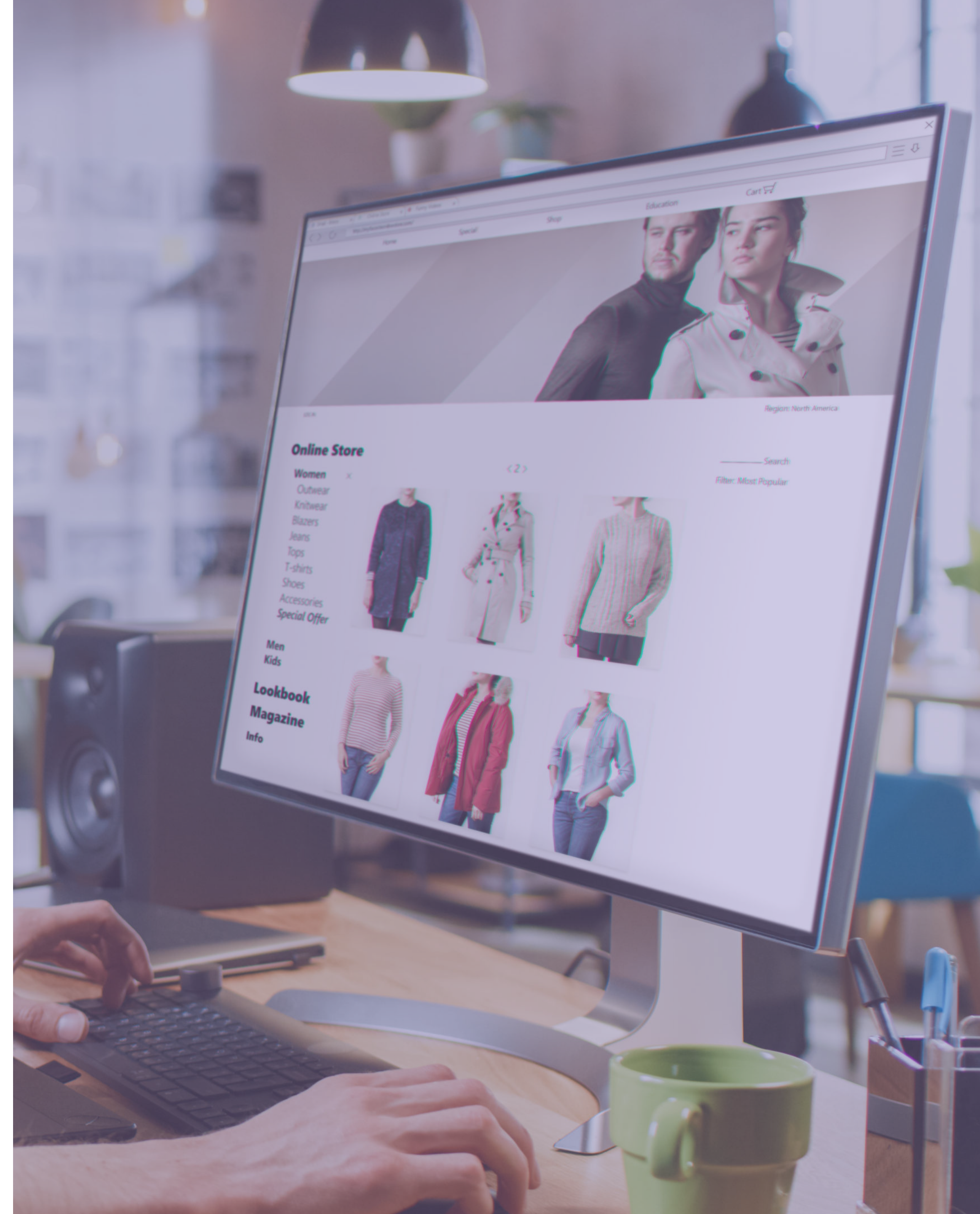


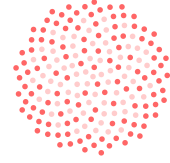
Introduction

The retail economy looks dramatically different pre and post COVID-19. While digitization had already paved the way for omni-channel and eCommerce driven retail, COVID accelerated this shift, making digital-first retail a priority for big, small, global, as well local retail businesses. It birthed many first-time online shoppers and acted as a catalyst for eCommerce growth in the last two years.

But, with the growth in eCommerce came intense online competition, comparison shoppers with unlimited access to information, and technological innovations to rise above the competition. One of these technological innovations that have gained momentum in the last few years is Product Matching. Both for its powerful competitor benchmarking capabilities and its wide application across pricing, assortment, digital shelf optimization, brand compliance, trend forecasting, and more.

In this ebook, we touch upon the importance of Product Matching for eCommerce businesses, its application, its advantages, and the reasons why a majority of retail businesses are investing in it. We also deep dive into Intelligence Node's AI-driven Product Matching solution, the technology behind this solution, its unique differentiators, and what makes it a formidable player in this space today. Let's jump right in!





What is Product Matching?

The retail economy has shifted from offline to online in a matter of years. The pandemic further tipped the scales in favor of eCommerce and there is no turning back now. Digital shoppers are more informed, aware, and have vast amounts of data at their disposal.

88%

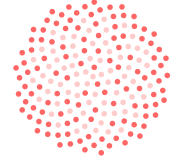
of shoppers compare prices online before making a purchase decision.

This trend will only increase with new tools like Camel Camel Camel and [Krazy Coupon Lady](#) coming out every day that assist shoppers in comparing prices across channels with a click of a button.

In this age of comparison shoppers, competitive prices become essential. The competition is intense and every brand and retailer is trying to compete on prices to convert shoppers into loyal consumers. To add to this mix, we have retail giants like Amazon and Walmart that review and update their prices multiple times a day to win shoppers looking for the best deals.

How can brands and retailers then ensure they are offering the best prices while protecting their margins? With Product Matching! Product Matching gives retail businesses visibility into competitor price movements, helps them benchmark against similar and exact competitor product prices and assortments, and determines the best prices that will win them more customers. AI-driven product matching takes this capability one step further - by offering accurate, fast, and reliable comparisons across millions of products as fast as every 10 seconds and automating the price optimization process to enable retailers to optimize their prices in near-real-time - giving them a fighting chance against even the biggest retail players in the market.

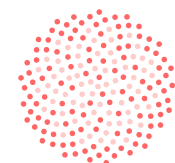




Who Needs Product Matching?

If you are a seller, a retailer, a brand, or a manufacturer selling products online anywhere in the world, through your own website or third-party marketplaces, you need a product matching solution! When your consumers have visibility into competitor prices, you need to as well. Without a benchmark or a price comparison, your pricing decisions are based solely on historical data, manual evaluations, or even a hunch, which, in today's dynamic, fast-paced, and data-driven retail environment, just won't suffice - costing you shoppers, sales, and profits.

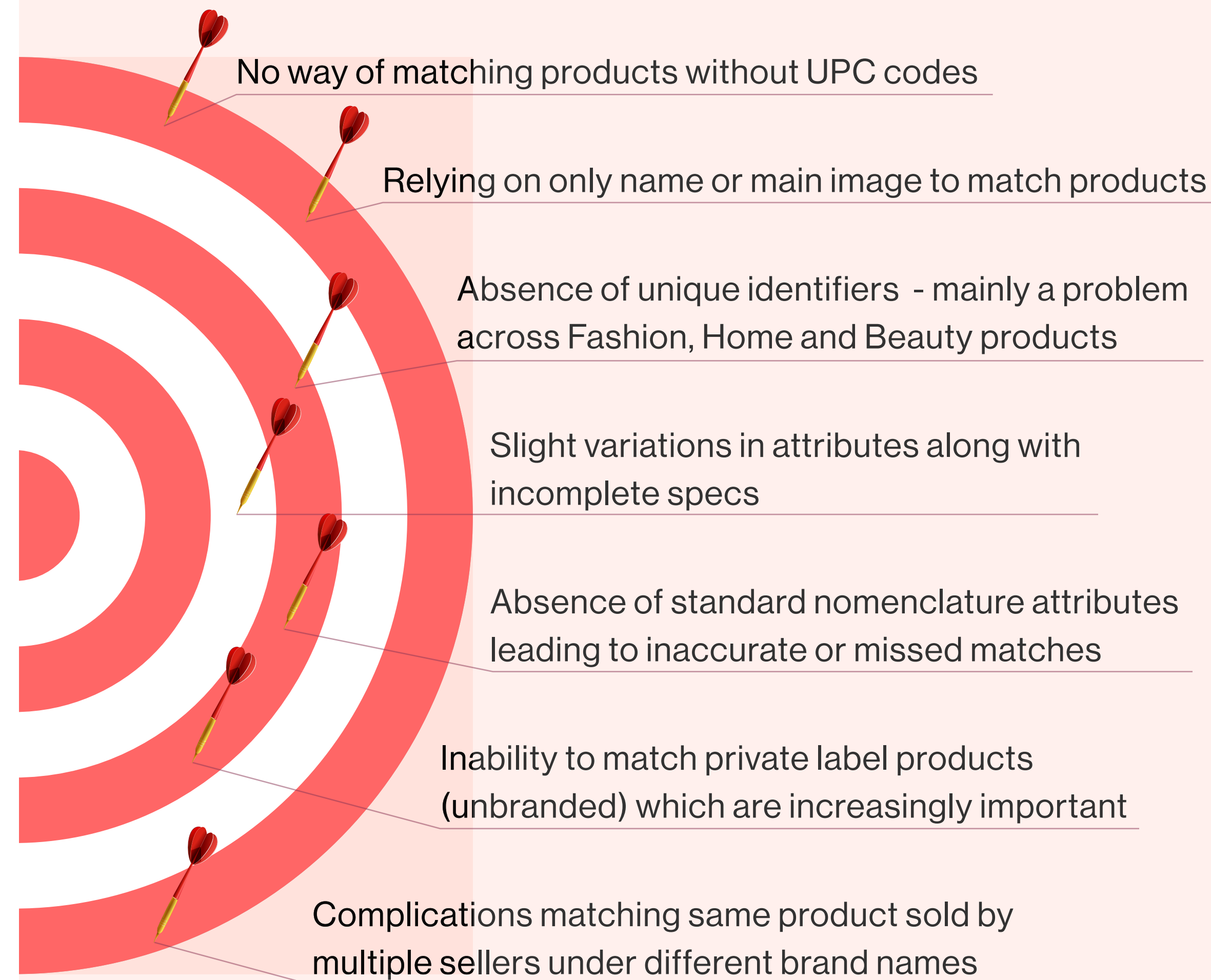


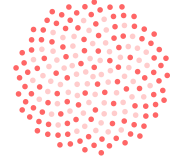


Challenges of Legacy/ Manual Product Matching Techniques

Most legacy or manual product matching techniques use only one or two attributes to identify product matches. This method might not always work as often products sold online have missing information, don't have UPC codes, have different nomenclature for the same products or have images or descriptions missing. This approach can also lead to a high error rate in finding the right matches alongside low accuracy levels. Such matching techniques have another problem attached to them - their ability to be fast, agile, and scalable. Many of these methods are manual tools that make use of spreadsheets to match products or they're partially automated solutions that will not sustain when the business expands to include thousands of products with multiple competitors - leading to delay in finding matches, rising inaccuracies, and lost opportunities.

Some of the common challenges that hamper accurate product matching are:





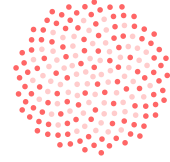
How Intelligence Node Addresses these Challenges

Intelligence Node's Product Matching solution is powered by advanced, proprietary AI technology 'Sherlock AI' and patented 'Similarity engine' making it highly intuitive, accurate, fast, and scalable. It uses a **three-pronged approach** to product matching which enables it to match products despite missing UPC codes, inaccurate descriptions, varied nomenclature, and insufficient product descriptions.

Let us dive into the matching approach that Intelligence Node leverages:

- **Key Product Attribute Comparison:** We use product specific attributes for comparing products to ensure the match is valid.
- **Image Comparison:** We use image similarity to judge if a product-candidate pair looks visually similar.
- **Text Comparison:** We use two methods to accomplish this matching. The first method is done by comparing word for word to identify an exact comparison and the second method uses a custom-tuned BERT for capturing semantic similarity between the product texts.

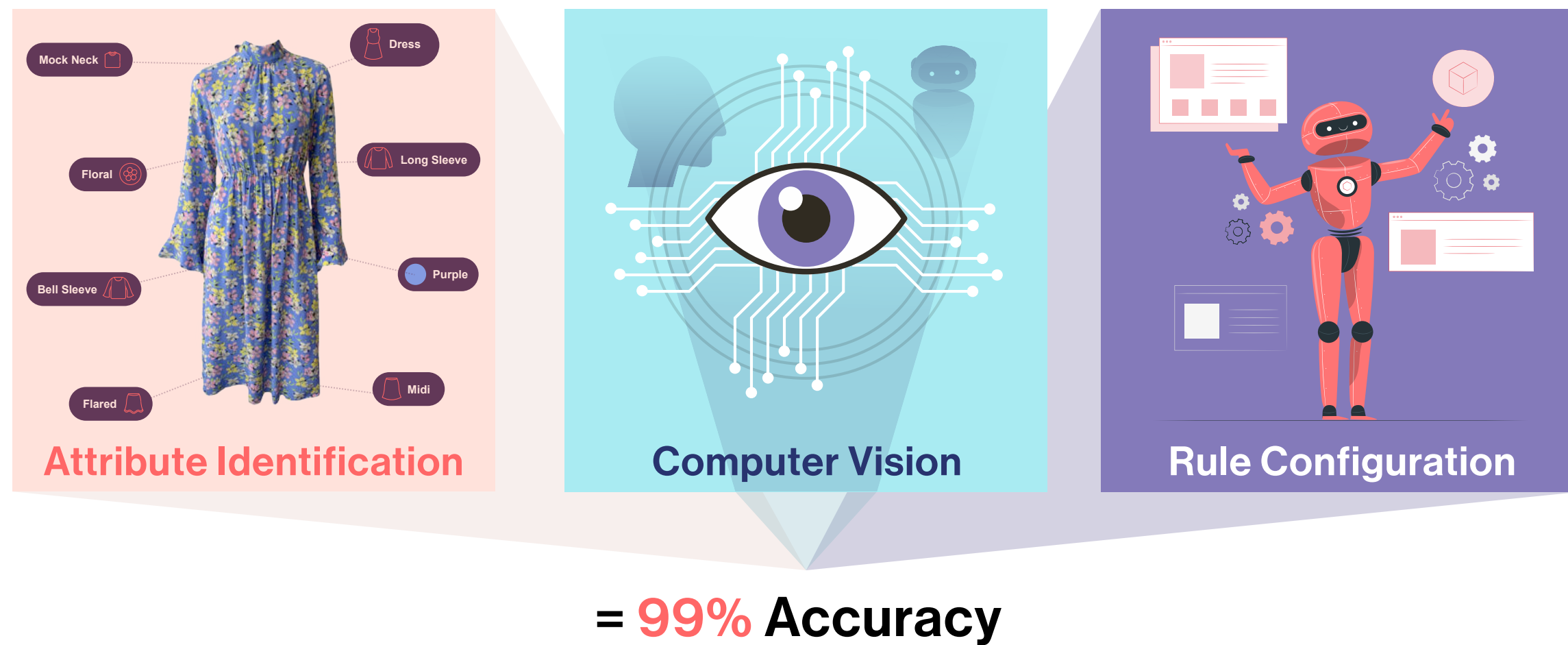


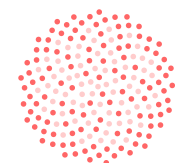


Using this approach ensures that all matches are vetted multiple times by looking at every aspect of the match. And in the few cases where the results derived by algorithms have a low probability, the matches are evaluated by data analysts to ensure a 99% accuracy level every time (it is written in our contractual SLAs!). We further standardize the attribute nomenclature, identify miscategorized products, and ensure our matches are accurate from both 'recall and precision' perspectives.

In Sherlock AI we have a self-learning loop. If a match is accepted, that match goes into a training database that improves the algorithm continuously, making it smarter and more efficient with every passing day.

This gives Intelligence Node the ability to be **accurate at scale**.



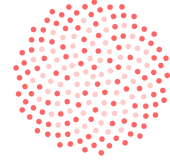


Types of Product Matching

Our AI-powered algorithms monitor websites around the world to help you find and compare branded or private label competitor products that are close or identical. With attribute standardization, our patented Similarity Engine ensures unbeatable accuracy and consistent matching performance across both private label and branded products. This also means our solution works just as well for soft categories (like beige bed linen or floral perfume) as it does for attribute-rich categories (like smartphones or toothpaste). The **3 types of matches ensure none of your competing products, identical or similar, go unnoticed:**

Exact Match	Variant Match	Similar Match
Exact match compares like-to-like product descriptions for the same brand.	Variant match compares the same products from the same brand but the products have a variation in pack size (e.g. pack of 1 vs. pack of 3), quantity (e.g. 30 ml vs 150 ml), color, size, etc. Intelligence Node calculates the unit-based pricing to ensure accurate benchmarking.	Similar match evaluates three parameters in order to ensure a highly accurate similar match: <ul style="list-style-type: none">- compares attributes and,- only considers products that are in a similar pricing range and,- uses computer vision to confirm a visual match.





Exact Match

Gain intelligence on your **exact** products

Our sophisticated algorithms scan the entire global eCommerce market to deliver all of the identical products across your competitive landscape so that you can craft a winning go-to-market strategy that converts shoppers at your point of purchase.

Example : Exact Match Comparison Across Two Competitive Retailers

In the following example, retailer leaders Lowe's and The Home Depot are both selling the exact same brand-name rug. Intelligence Node's exact matching technology can identify identical products despite varied descriptions and enable brands to compare prices and update prices and descriptions for improved visibility and conversions.

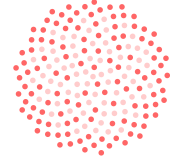
The image shows two screenshots of product pages for a Safavieh rug. The top screenshot is from Lowe's, showing the product name "Safavieh Hudson Beckham Shag Ivory/Gray Rectangular Indoor Machine-Made Area Rug (Common: 10 x 14; Actual: 10-ft W x 14-ft L)", a price of \$414.38 (was \$517.98), and a 20% discount offer. The bottom screenshot is from The Home Depot, showing the same product with a price of \$400.14 and a financing option of \$67.00 per month. Both pages feature a large image of the rug and a list of product details.

Lowe's Product Page:

- Item # 746778 Model # SGH281A-10
- Safavieh Hudson Beckham Shag Ivory/Gray Rectangular Indoor Machine-Made Area Rug (Common: 10 x 14; Actual: 10-ft W x 14-ft L)
- 38 Ratings, 4.7 Average
- 94% Recommend this product
- Community Q&A View Now
- Price: \$414.38 (Was \$517.98)
- SAVE 20% thru 03/04/2020
- Manufacturer Color/Finish: Ivory/Gray

The Home Depot Product Page:

- You're shopping Manhattan West 23rd St
- What can we help you find today?
- Home / Flooring / Rugs / Area Rugs
- Internet #206590935 Model # SGH281A-10
- Safavieh Hudson Shag Ivory/Gray 10 ft. x 14 ft. Area Rug
- Price: \$400.14
- Financing: \$67.00 per month* suggested payments with 6 months* financing on this \$400.14 purchase*
- Color/Finish: Ivory/Gray
- Shape, L x W: Rectangle, 10'0" x 14'0"

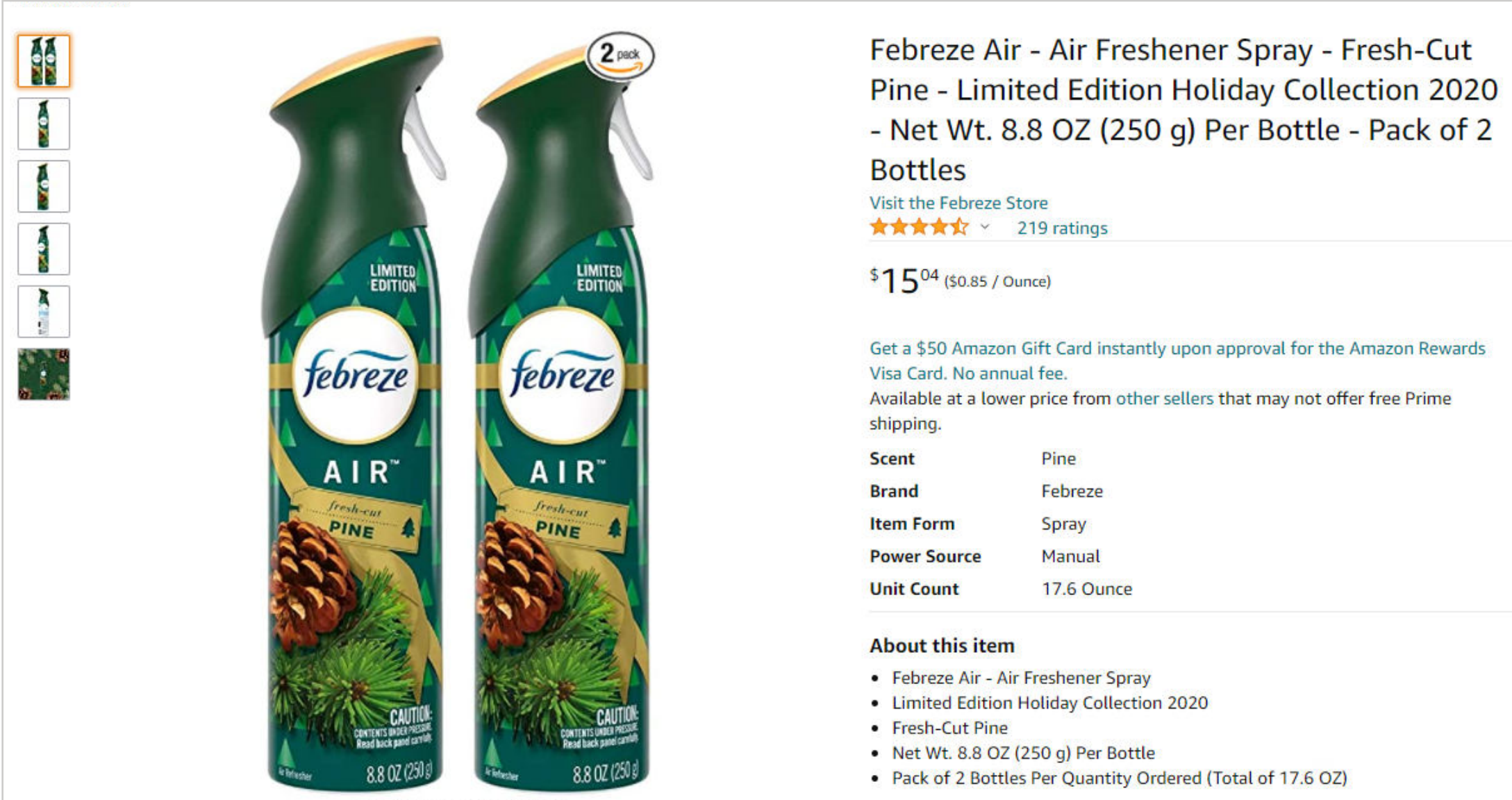


Variant Match

Gain intelligence on **attributes** of your products

Shoppers aren't just comparing the exact same products - they're comparing your products across variations in size, color, and quantity, among other factors. Variant matching captures these factors to inform the optimization of your product offer, tipping the odds of winning the shopper in your favor.

Example : Both The products on Amazon and Walmart are Febreze Air Freshener available in an 8.8 fl oz spray bottle in a pack of 2. However, Walmart sells Linen & Sky fragrance whereas Amazon carries Fresh Spiced Apple fragrance. Since products are identical in terms of brand, product type, pack, volume and container type and the only difference is fragrance, we have marked it as Variant match.



Febreze Air - Air Freshener Spray - Fresh-Cut Pine - Limited Edition Holiday Collection 2020 - Net Wt. 8.8 OZ (250 g) Per Bottle - Pack of 2 Bottles

Visit the Febreze Store
★★★★☆ 219 ratings

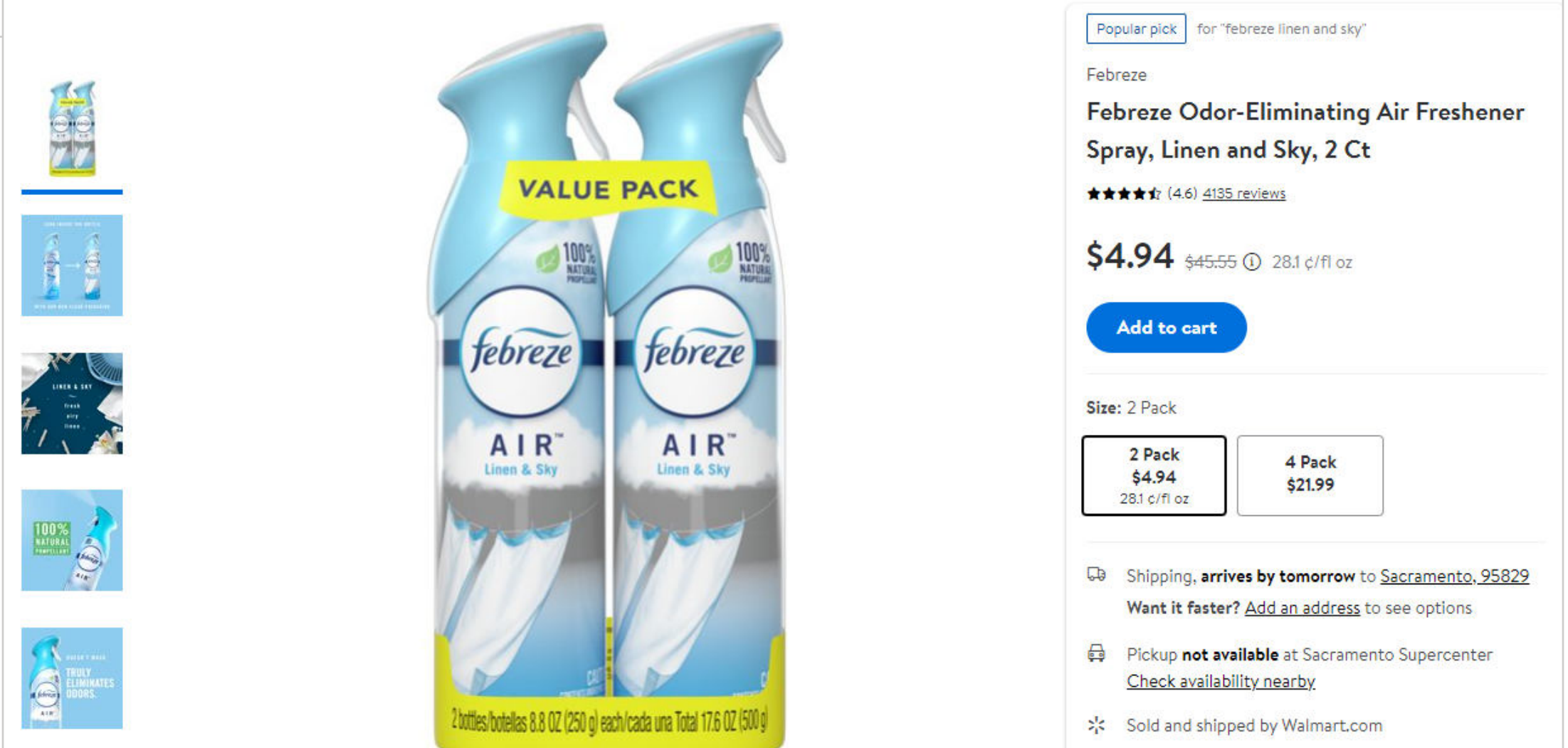
\$15⁰⁴ (\$0.85 / Ounce)

Get a \$50 Amazon Gift Card instantly upon approval for the Amazon Rewards Visa Card. No annual fee.
Available at a lower price from other sellers that may not offer free Prime shipping.

Scent	Pine
Brand	Febreze
Item Form	Spray
Power Source	Manual
Unit Count	17.6 Ounce

About this item

- Febreze Air - Air Freshener Spray
- Limited Edition Holiday Collection 2020
- Fresh-Cut Pine
- Net Wt. 8.8 OZ (250 g) Per Bottle
- Pack of 2 Bottles Per Quantity Ordered (Total of 17.6 OZ)



Popular pick for "febreze linen and sky"

Febreze
Febreze Odor-Eliminating Air Freshener Spray, Linen and Sky, 2 Ct

★★★★☆ (4.6) 4135 reviews

\$4.94 \$45.55 28.1 c/fl oz

Add to cart

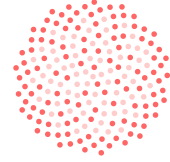
Size: 2 Pack

2 Pack \$4.94 28.1 c/fl oz	4 Pack \$21.99
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Shipping, **arrives by tomorrow** to Sacramento, 95829
Want it faster? [Add an address](#) to see options

Pickup **not available** at Sacramento Supercenter
[Check availability nearby](#)

* Sold and shipped by Walmart.com



Similar Match

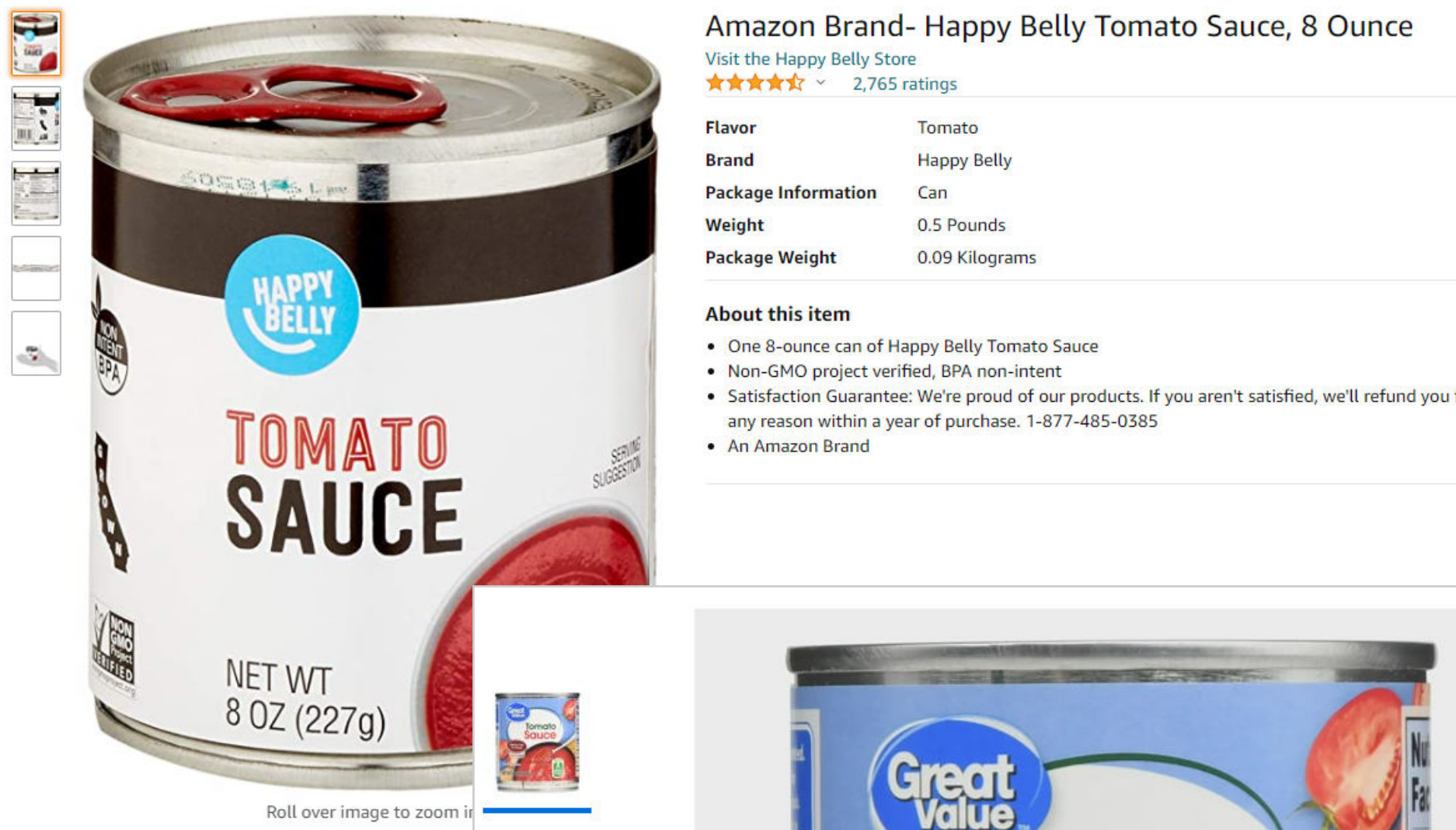
Gain intelligence on **similar** competitor products

With similar match, find competitor products that are visually similar or that share similar attributes that your shoppers are likely comparing your product with while making a purchase decision.

Our AI-powered sensing continuously monitors websites around the world to help you find and compare with competitor products that are close matches and standardize attributes for accurate comparison. Our AI-powered similarity engine uses three different approaches to similar matching:

• Private Label Vs Private Label matching

Example : Both the products on Amazon and Walmart are private label brands selling tomato sauce available in an 8 fl oz can in a single pack.

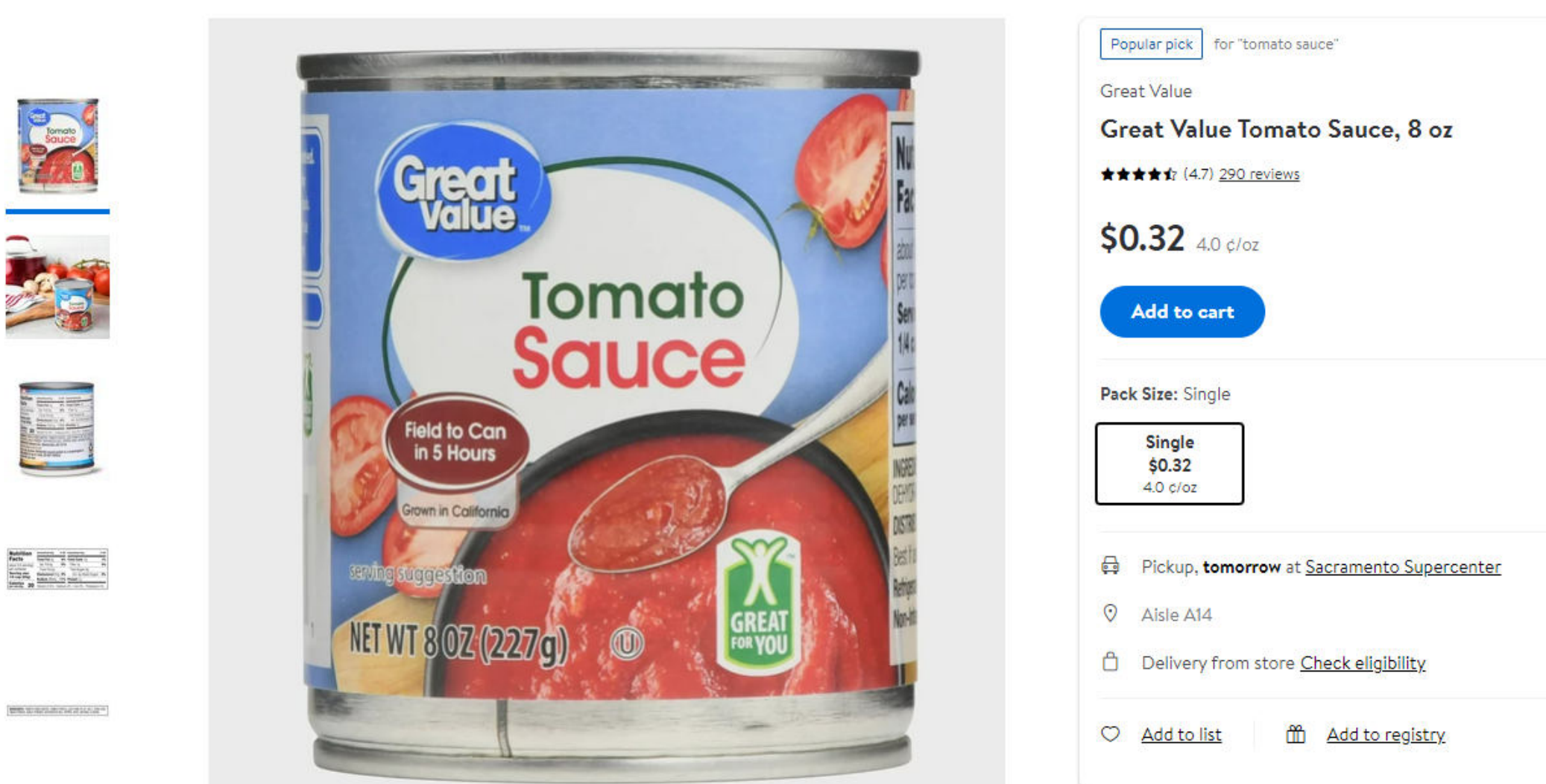


Amazon Brand- Happy Belly Tomato Sauce, 8 Ounce
Visit the Happy Belly Store
★★★★☆ 2,765 ratings

Flavor	Tomato
Brand	Happy Belly
Package Information	Can
Weight	0.5 Pounds
Package Weight	0.09 Kilograms

About this item

- One 8-ounce can of Happy Belly Tomato Sauce
- Non-GMO project verified, BPA non-intent
- Satisfaction Guarantee: We're proud of our products. If you aren't satisfied, we'll refund you for any reason within a year of purchase. 1-877-485-0385
- An Amazon Brand



Popular pick for "tomato sauce"

Great Value
Great Value Tomato Sauce, 8 oz
★★★★☆ (4.7) 290 reviews

\$0.32 4.0 c/oz

Add to cart

Pack Size: Single

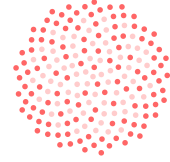
Single
\$0.32
4.0 c/oz

🛒 Pickup, **tomorrow** at [Sacramento Supercenter](#)

📍 Aisle A14

📦 Delivery from store [Check eligibility](#)

📌 [Add to list](#) 📁 [Add to registry](#)



• Branded Vs Private Label matching

Example : Both the products on Amazon and Walmart are hand sanitizer available in Aloe fragrance in a 3 fl oz single pack bottle - one a national brand and the other a private label brand.

The screenshot shows two Amazon product listings for hand sanitizer. The top listing is for **Equate Hand Sanitizer with Aloe, 3 Oz**. It features a large image of the product bottle and a smaller thumbnail on the left. The product details include the brand name 'Equate', a 4.2-star rating from 17 reviews, a price of \$0.96 (32.0 ¢/fl oz), and an 'Add to cart' button. Below the main image is a zoomed-in view of the bottle with the text 'Roll over image to zoom in'. The bottom listing is for **Germ-X Hand Sanitizer, Aloe, Travel Size, 3 Fluid Ounce**. It shows a smaller product image and details such as the brand 'Germ-X', a 5-star rating from 1 review, a price of \$9.97 (\$4.99 / Fl Oz), and a '3 FL Oz (Pack of 1)' size selection. Both listings mention a promotional offer: 'Get \$60 off instantly: Pay \$0.00 upon approval for the Amazon Prime Store Card. No annual fee.'

• Branded Vs Branded matching

Example : Both the products on Amazon are tomato ketchup from national brands available in a 20 oz squeeze bottle, in a pack of 6.

The screenshot shows two Amazon product listings for tomato ketchup. The top listing is for **French's Tomato Ketchup, Gluten Free, No High Fructose Corn Syrup 32oz, Squeezable Bottle 6 Pack**. It features an image of a 6-pack of bottles and a '6 pack' badge. The product details include the brand 'French's', a 5-star rating from 202 ratings, a price of \$37.99 (\$0.20 / Ounce), and a '2 Pound (Pack of 6)' size selection. The bottom listing is for **Heinz Tomato Ketchup (20 oz Bottles, Pack of 6)**. It features a large image of a single 20 oz bottle and a '6 pack' badge. The product details include the brand 'Heinz', a 5-star rating from 3,439 ratings, a price of \$22.15 (12 options from \$22.15), and a '20 Ounce (Pack of 6)' size selection. Both listings mention a promotional offer: 'Get \$60 off instantly: Pay \$0.00 upon approval for the Amazon Prime Store Card. No annual fee.'



Benefits of Product Matching AI for eCommerce Businesses

Benchmark prices and assortments against competitors

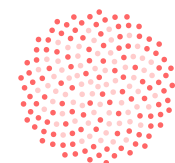
Optimize product assortments with improved competitive insight

Avoid costly overstocking mistakes

Run dynamic price changes & automated promotions more efficiently

Visibility from improved product targeting translates to better traffic and conversions

Access to product lifecycle data across the market helps you measure true product performance



Intelligence Node for Product Matching Excellence

Access to a Global Retail Dataset

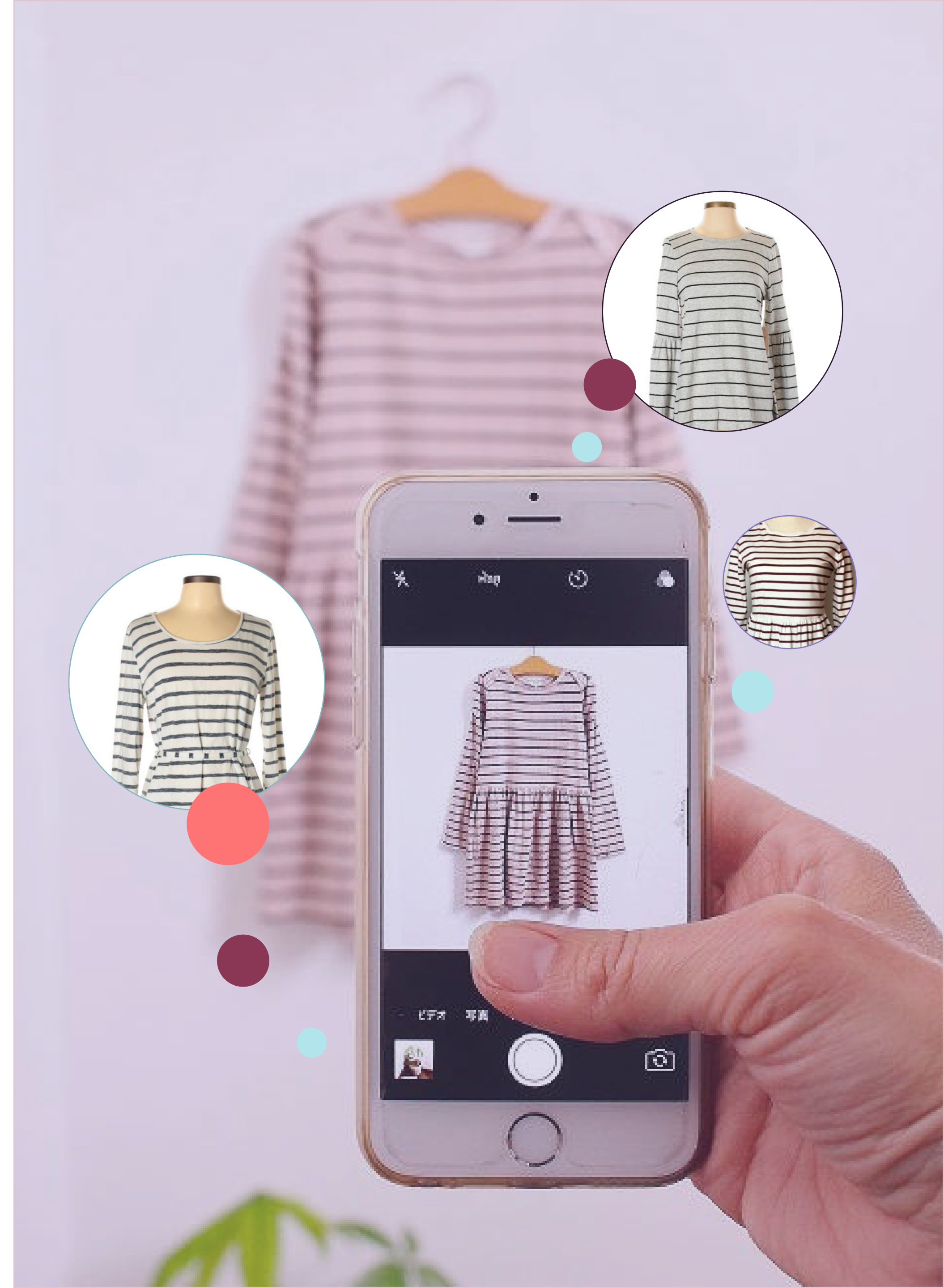
Intelligence Node mines a massive trove of data globally across one billion-plus unique products, for more than 1,400 categories, and over 190,000 brands, making it the **world's largest product database with unmatched 99% accuracy** — setting it apart from competing price-optimization solutions on the market.

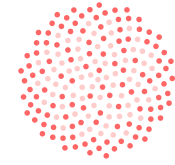
Accountability

Our accuracy and quality claims are backed by contractual SLAs. See what some of [our customers](#) have to say about Intelligence Node's award-winning product matching technology.

Effortless Onboarding with Flexible, Customizable APIs

Our product matching solution is designed to close the divide between users seeking insight and technical specialists in need of business context. With our software, users across diverse retail teams can explore data and publish findings in a way that can be accessed on a broad range of platforms. Moreover, our Product Matching API can be easily plugged into your backend system and get up and running in less than a week. We work extra hard to ensure speedy implementation that mirrors your internal benchmarks. Intelligence Node can tailor its matching algorithm to meet your internal criteria for tracking similar products in your category.





Ever-Changing Retail Landscape Demands Buy over Build

Search engines and marketplaces update their algorithms frequently and it's impossible to keep up, let alone beat them as an in-house business analytics unit. [Machine Learning algorithms get smarter](#) as they train with large and varied Big Data sets over time - and ours have been training with global retail data across every sector for almost a decade now! Our APIs are made to be used across diverse teams so your business can harness data for competitive advantage without becoming a slave to data management and large capital investments. Intelligence Node's Product Matching solution helps you avoid blind spots and expensive mistakes, save costs, and escape decision paralysis.

Find out how your team can leverage our [Product Matching solution](#) to achieve unprecedented retail growth and customer satisfaction. [Book a Demo](#) with one of our experts today!

About Intelligence Node

Intelligence Node is a real-time retail price intelligence platform that empowers businesses to drive product level profitability and grow margins using data-driven competitive insights. Leading as a premier independent data powerhouse, it has created the world's largest pricing dataset with unmatched accuracy - feeding the growth of more than **\$600 billion** in retail revenue globally.

Intelligence Node's proprietary AI-driven algorithms are packaged in an intuitive and beautiful user interface, simplifying onboarding by providing easy-to-use plug & play capability.

It is the platform of choice for hundreds of retailers and brands worldwide, including category leaders like **Nestle, Lidl, Cios 19, Prada, Li & Fung, Lenovo** and many others.



Simplified Intelligence for Complex Retail Decisions

Optimize pricing, assortment, product visibility,
and more with patented AI

BOOK A DEMO

Visit us at: <https://www.intellicencenode.com>

