LLMs, Agents, MCPs for Smarter Commerce:

Your Guide to Pricing, Assortment, and Content Wins in the Age of Al



Executive Summary

The Mandate

Every retail leader is being asked the same question: "How are we leveraging Gen Al and LLMs to stay competitive while improving operational efficiency?" The pressure to adopt and integrate these technologies across pricing, merchandising, content, and other functions has never been higher.

The Challenge

While the mandate is clear, the practical approach isn't. How do you move beyond pilot projects to production-ready Al that transforms core retail functions?

The DataWeave Answer

We are an AI native company with more than a decade of experience building and deploying AI workflows as the field evolves. We were among the first to adopt Gen AI and LLMs at scale and integrate them across our commerce intelligence suite of solutions. This whitepaper shares how retail leaders and decision-makers can benefit from our expertise.

Key Takeaways for Retail Leaders

Proven Applications: Visualize how Gen AI transforms pricing, assortment, and content in your context

Driving Al Adoption: Use DataWeave's learnings and recommendations to build your case for Al investment and adoption

Implementation Roadmap: Prioritize AI technologies and workflows that deliver immediate impact while you figure out long-term strategy

Competitive Intelligence: Learn how industry leaders are already using AI to outmaneuver slower-moving competitors



Introduction

Generative AI and LLMs have taken the world by storm. The AI world is inundated with innovation and users can barely keep up with the slew of updates and newer models being released. The advent of Agentic AI has been taking over internal process workflows. And with Model Context Protocols (MCPs) emerging as the open standard to connect models with external systems and data sources, not only are well-established processes getting disrupted, they are paving the path for a host of new opportunities. The transformation is real and every industry is getting impacted.

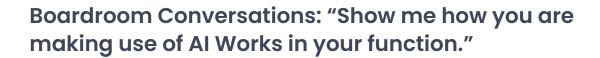
Retail is no different. Retailers are finding that their tech stacks and decision-making workflows are getting outdated increasingly quickly. Mission-critical retail functions like pricing, merchandising, content, and marketplace operations are expected to get disrupted if they aren't already. Each core function inevitably requires deep technology to track, evaluate, and solve for emerging challenges. There's an expectation that AI will enhance these functions to improve efficiency and speed such that retailers can make faster, more intelligent decisions and adapt to market changes rapidly.

Businesses dealing with data overload, siloed tools, and slow reaction times risk falling behind without timely intelligence. Often described as "SaaS Fatigue", decision makers are getting overwhelmed with multiple complex solutions, leading to inefficiencies and unclear ROI. A move towards unified platforms and integrated processes is being seen as a way out of this.

That is exactly where robust AI systems with well-integrated agentic workflows come into play. They provide a competitive edge by autonomously sifting through large quantities of data, organizing information, finding patterns, and making the decision process simpler, so you can act faster. This translates to efficiency gains, decisions that once took days now happen in seconds, while scaling to tens of categories and millions of products. With competitors already deploying AI at scale, others must follow or lose their competitive position in the market.

For more than a decade now, DataWeave has pioneered the usage of the latest Al technologies to tackle many challenges faced by consumer brands and retailers. With recent advancements in Gen Al and LLMs, DataWeave's solutions have become more robust and action-oriented. Our Al-driven foundation has allowed us to incorporate innovative advancements into our core and time-tested capabilities.





Every retail executive is being asked to demonstrate Al adoption in their function.

The questions are getting more specific and urgent:

"How can we use AI to stay ahead of competitor price changes and optimize our contribution margins?

Oh, and this has to be automated to the extent possible."

"Can Al help us identify assortment gaps and opportunities much faster than our manual analysis? How is it informing our private label strategy?" "How do we use AI to continually identify and fix gaps, and optimize product content for better search ranking and conversion?"

The common thread across all these questions: Leadership needs to see AI working in production, not just as a proof-of-concept or a pilot project. They need examples they can reference to justify tech and AI budgets, build implementation roadmaps, and define success metrics. There is a need to think long-term while also acting swiftly in the short term.

In the following sections, we draw from years of applied experience to show how retailers and brands can operationalize Gen Al across pricing, assortment, and content. Consider this your playbook for putting Al to work, today.

DataWeave's AI Tech Stack From Concept to Production

Over the last several years, DataWeave has been helping customers with production-scale deployment across core retail functions.

As attested by marquee customers, our Al-powered platform has been delivering **timely** insights **consistently** and reliably at **scale**, helping them make decisions swiftly and with confidence:

Instead of: Waiting for quarterly competitive analysis

Customers get: Al-powered alerts when competitors change pricing, launch products, or modify content

Instead of: Error-prone product matching that does not scale

Customers get: Automatic product
matching using computer vision and NLP
that identifies exact and similar items across
millions of SKUs, understands
category-specific differences, and
continuously learns and improves over time.

Instead of: Content teams optimizing based on intuition or limited information

Customers get: LLM-powered analysis that benchmarks against top performers and suggests specific improvements

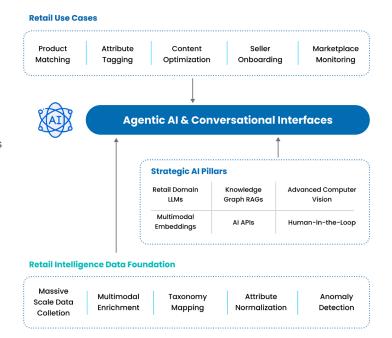


DataWeave's AI Stack

Data collection is only the first step in using AI for smarter commerce. Raw data cannot be used as is. Automatic product matching using computer vision and NLP that identifies exact and similar items across millions of SKUs, understands category-specific differences, and continuously learns and improves over time. Our product-matching and other AI capabilities are multimodal, making use of an ensemble of text and image-based models with built-in loss functions that determine confidence levels in all insights. This ensures every data point is not just captured but is reliable and decision-ready.

What helps us – and you – get there fast is the fact that all the requisite foundational elements are already in place:

- → LLMs including retail domain language models
- → Retail domain knowledge graph powered RAGs (Retrieval-Augmented Generation)
- → Advanced Computer Vision
- Multimodal Embeddings and Hybrid Text-Image Models
- → Al capabilities available as APIs
- → Agentic Workflows at Scale
- → Al Agent + Human-in-the-Loop
- → GPT-based Business Analytics Layer



DataWeave has been solving the toughest data challenges in retail over the past decade or so. These challenges come in a variety of forms, shapes, and flavours that span textual, image, and structured data.

Robust Data Pipelines

- → 24/7 autonomous crawlers
- → Billions of datapoints/week
- → 99%+ field-level accuracy

Retail Al Models

- → Multi-modal product matching (Claude 3.7 Sonnet) achieving 99% accuracy
- → LLM (GPT models) based models for sentiment analysis, content optimization, attribute extraction and normalization & knowledge base creation
- → Image AI for promo and shelf detection



Actionable Insights

- > Real-time dashboards and alert engines, with vibe coding helping build MVPs in a matter of days
- → Automated report packs and scheduling
- → LLM based AI wrappers to enable natural language queries and insight generation

Enterprise Readiness

- → REST & Snowflake / S3 data-lake feeds
- → Audit trails, role-based access
- → Client-specific taxonomies & KPI mapping

Our tech stack operates at proven scale, has Al depth, and enterprise-grade plumbing ready for acceleration. Our Al tech stack is engineered to meet the specific, nuanced, and varied needs of eCommerce teams in different retail verticals. We leverage our data foundation and strategic Al levers to solve several challenges, such as:

- → Exact and Similar Product Matching
- → Seller Onboarding
- → Attribute Classification and Tagging
- → Marketplace Monitoring
- → Content Optimization

We'll further break this down into how we use Al for Pricing, Assortment, and Content Optimization.

Aspect	Pricing	Assortment	Content
Primary Goal	Feed competitive	Optimize product	Improve search relevance,
	pricing into price	mix and category	brand consistency, and
	management/dynamic	coverage	conversion
	pricing systems		
Use of Al	Match identical or	Tag and normalize	Analyze, benchmark, and
ose of Af	similar products using	attributes like material,	rewrite product titles,
	computer vision, NLP, and	brand, and pack size to	descriptions, and bullets
	rules-based equivalency	uncover gaps or overlaps	using NLP and LLMs
Key Outcome	Defend against	Identify white space,	Improve search ranking,
	undercutting, maintain	eliminate redundancy,	align content with pricing,
	price leadership, and	and fine-tune category	and support consistent
	respond to market shifts	strategy	digital shelf execution



Gen Al Implementation at DataWeave: 3 Proven Applications

Pricing Intelligence as a Unified Decision System

To price products optimally, retailers need ways of establishing product linkages or matches so they can compare them: these can be exact apples to apples, similar products, or equivalization relationships. This is a challenge in a retail industry that is constantly evolving. Product linkages can be hard to find, even when similar product codes exist, which often isn't the case.



The Foundation: Competitive and Internal Item Mapping

Before pricing intelligence dashboards can deliver actionable insights, critical mapping processes work behind the scenes to create a comprehensive view of the competitive landscape:

Competitive Item Mapping

Our Al-powered product matching engine systematically identifies and links your products with competitor offerings across the market. This process creates the foundational competitive view that powers all pricing intelligence by establishing relationships between your catalog and external market data. Without accurate competitive mapping, pricing decisions become guesswork rather than strategic responses to market dynamics.

Internal Item Mapping

Equally important is mapping relationships within your product portfolio. Our Al uncovers hidden linkages across your internal catalog, identifying products that may compete with each other, complement each other, or serve as substitutes. This internal intelligence helps prevent cannibalization, optimize cross-selling opportunities, and ensure pricing consistency across your portfolio.

These mapping capabilities work in tandem to feed comprehensive data into pricing intelligence dashboards, enabling retailers to see not just how they compare to competitors, but how their internal pricing strategy impacts their entire product ecosystem.



AI-Powered Product Matching Technologies

Computer Vision

Computer vision is a field of AI that emulates the way humans "see" and interpret images. It encompasses a set of algorithms and ML models that can perform tasks such as the detection of edges, motifs, and objects; segmentation, object classification, and image captioning.

Our applications use advanced object detection and image preprocessing techniques to remove backgrounds and faces/skin to isolate the object of interest. Then, we extract visual features like color, shape, sleeve type, collar type, and pattern. CLIP Embeddings and Siamese Networks evaluate whether the images are similar and provide confidence scores, surfacing similar pictures for evaluation.



Being able to match products visually is important because competing products may have similar features but different branding or naming conventions.

Natural Language Processing (NLP)

DataWeave uses Natural Language Processing (NLP) to extract, normalize, and understand product attributes from unstructured text. The text may include titles, descriptions, specs, and customer reviews. For instance, your product may have a spec stating '16 gigs.' A competitor's laptop may have '16GB' listed. Our NLP can normalize these noisy and inconsistent data points for comparison, so you don't get undercut on a similar product.

With these links, retailers can make more precise pricing decisions based on competitive listings and their product catalogs.

Al Rules to Detect Private Label Substitutes Private-label and in-house brands are becoming increasingly common as competitive differentiators for retailers, especially in price. It can be challenging to find and match products similar to these private labels to enable meaningful pricing comparisons.



Al Rules to Detect Private Label Substitutes Our AI detects functional equivalents across competitor product sets by combining image similarity, text-based attribute matching, and category-level rules. It flags substitutes that customers may purchase instead. With complete knowledge of competitor and private-label substitutes to your products, teams can make strategic calls on their private-label pricing decisions.





DataWeave's Al identifies product relationships from identical matches to private label equivalents and similar alternatives.

Human-in-the-Loop Validation

To ensure maximum accuracy in private label and substitute detection, our platform incorporates

Human-in-the-Loop validation capabilities. Domain experts can review and validate complex

matching decisions, particularly for high-impact products or ambiguous cases where Al confidence
scores indicate uncertainty.

Importantly, this Human-in-the-Loop functionality extends to our clients as well. Customers have the autonomy to verify and validate matches themselves, ensuring that matching accuracy aligns with their specific business context and domain expertise. This collaborative approach between Al and human intelligence, whether from DataWeave experts or client teams, continuously improves the system's performance and builds confidence in pricing decisions.

Advanced Price Modeling

Beyond product matching, our Al-driven pricing intelligence incorporates sophisticated price modeling capabilities that help retailers optimize their pricing strategies. Our models analyze historical pricing patterns, competitor movements, and market elasticity to recommend optimal price points that balance competitiveness with profitability, while learning from past pricing decisions to refine future recommendations.

Retailers can model "what-if" scenarios to understand the potential impact of pricing changes before implementation, with the system simulating market responses, competitor reactions, and internal portfolio effects to help teams make informed pricing decisions. Our price modeling integrates with business rules and cost structures to ensure pricing recommendations align with margin targets and strategic objectives, preventing scenarios where competitive pricing undermines profitability goals.

In addition, our Al-driven pricing technologies undergo feedback loop-based retraining so they're constantly improving. Additional enterprise customization is available for companies with specific needs.



Assortment Analytics for Improved Product Strategy

Building a risk-averse product assortment requires deep visibility into competitive landscapes, market gaps, and customer demand patterns that manual analysis simply cannot deliver at scale. DataWeave's Al-driven assortment analytics transforms this complex challenge into a strategic advantage by automatically identifying optimization opportunities across your entire product portfolio.

DataWeave uses similar computer vision, NLP, and Al rules for assortment analysis. Teams can use these tools to build a winning product catalog while simultaneously making better pricing decisions.

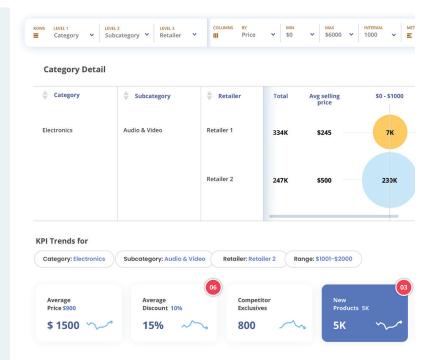
Our Al-driven applications tag key product attributes like brand, material, pack size, sustainability certifications, country of origin, etc. This allows teams to make like-for-like comparisons at scale across large and complex assortments to identify gaps and uncover price disparities within a category.

For example, apparel companies can leverage DataWeave to find disparities between 100% cotton shirts and cotton-polyester blends. Competitors may be winning customers with lower prices because of their similarly styled, lower-quality offerings. This information allows retailers to make smarter decisions around assortment mixes to avoid redundancies or target gaps in premium or budget tiers.



We are grateful to DataWeave for providing us with detailed product-level intelligence about our competitors. Their insights have been crucial these past years in steering our assortment volume, quality, and strategy across various markets.

~ **Roxane Canceill,**Group Assortment
Insights Manager, Douglas





Al-driven assortment analysis helps retailers get enhanced granularity when making merchandizing decisions.

The solution helps you view:

Detailed Assortment Breakdown Get a complete portfolio view that identifies exactly where your assortment aligns with or differs from competitors. You get insight into Overlapping Items, Unique Items to You, and Unique Items to Your Competition. This breakdown helps you understand your competitive positioning and reveals opportunities for differentiation or strategic overlap.

New Item Introduction Speed to Shelf Track how quickly competitors launch new products and identify emerging trends before they become mainstream. This intelligence allows you to accelerate your product development cycles and capture first-mover advantages in high-potential categories.

Competitive
Product Removals

Monitor when competitors discontinue products to immediately identify market gaps and supply opportunities. These removal events often signal shifts in strategy, profitability challenges, or emerging white space for your brand to capture.

Brand / Item
Distribution

Analyze brand presence and market share across categories to understand competitive landscape dynamics. This insight reveals which brands are gaining or losing ground, helping you adjust your own brand portfolio and partnership strategies.

Comprehensive
Price Point Analysis

Map pricing across the entire competitive landscape to identify optimal positioning opportunities.

Understand price gaps, premium positioning potential, and value tier strategies that align with your margin objectives and market positioning.

Missing Items that are in-demand

Discover high-demand products absent from your assortment using search volume, competitor performance, and market trend data. These gaps represent immediate revenue opportunities and help prioritize product sourcing or development initiatives.

Null Searches
Reducing Conversion

Identify search queries that return zero results on your platform, revealing critical assortment gaps where customer demand exists but your catalog falls short. These null searches represent direct revenue loss and highlight immediate opportunities to expand your product mix in high-intent categories where customers are actively looking but finding nothing.



Intelligent matching and great customer service. DataWeave has been a reliable partner in our competitive analysis

~ Harshal Patel,

Senior Manager of Pricing Strategy & Analytics Purchasing Power



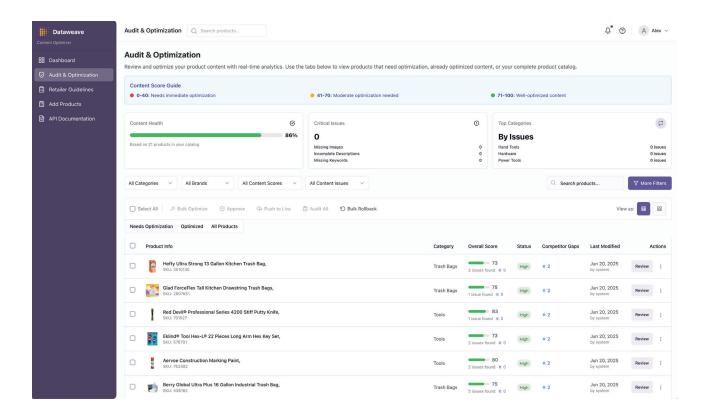
Content Optimization

Product content plays a crucial yet often overlooked role in shaping price perception, discoverability, and conversion. Studies show that 85% of shoppers rely on product information to decide which brand or retailer to buy from. Leading brands typically use Product Information Management (PIM) solutions for this function. But the majority of listings on retail sites, especially from third-party merchants and long-tail items, often suffer from poor content quality that fails to meet retailer guidelines.

DataWeave's Content Analytics platform empowers content teams to audit, benchmark, and optimize content at scale using Al. It addresses three critical needs for retailers and brands:

Advanced Content
Audit to Discover
Content Gaps

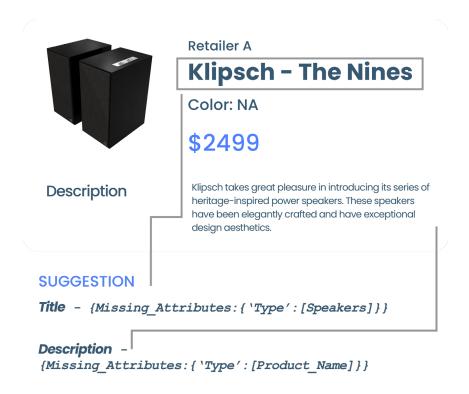
Using multi-modal Al and automatic attribute tagging, DataWeave identifies Product Detail Pages (PDP) with suboptimal content and low compliance with retailer guidelines. Our system analyzes titles, descriptions, images, taxonomy levels, and missing attributes, making it easy for retailers to pinpoint exactly which products need attention. For products from third-party merchants, white-label items, and long-tail inventory, this automated discovery process is essential for maintaining content standards at scale.





For example, a premium speaker brand may want to raise the price of one of its products. To the company, the premium value of the product may be apparent. However, the premium value may not have been communicated to customers.

Crucial attributes like "speaker" and high-performing keywords like "smart" or "Bluetooth" may have been omitted in titles and bullet points. With these recommendations, the retailer can improve the product listing to align with customer search behavior, improve product ranking, and win conversions while raising prices.

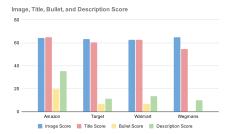


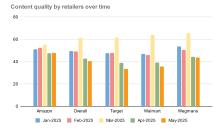
Competitive

Benchmarking with

Actionable Insights

DataWeave offers comprehensive benchmarking of your content against competitors, analyzing attributes such as titles, bullet points, taxonomy levels, product images, image angles, model presence, and size chart types. This detailed analysis provides a clear comparison highlighting your content strengths and weaknesses, offering insights to refine guidelines and optimize content strategy. The platform shows you exactly how top-performing competitors structure their content and which elements drive better search ranking and conversion.





Al-Driven
Recommendations
to Bridge Content Gaps

Leveraging advanced product matching capabilities, DataWeave analyzes similar products across retail sites to offer targeted content recommendations. This involves standardizing content attributes across retailers for accurate comparisons, merging attribute values according to retailer guidelines, and resolving conflicts. For example, for a premium gin brand, our system might identify missing attributes like "Type: Gin," suggest repositioning the product name at the start of the title, recommend adding volume information to bullet points, and propose description enhancements covering taste, aroma, recipe, and alcohol content.



By aligning content and pricing strategies, businesses can drive more consistent experiences, justify price points, and ultimately increase conversions across the digital shelf.

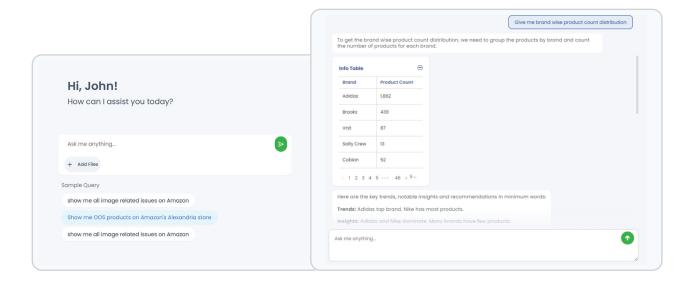




Prompt-Based Conversational Reporting: The Unified Intelligence Layer

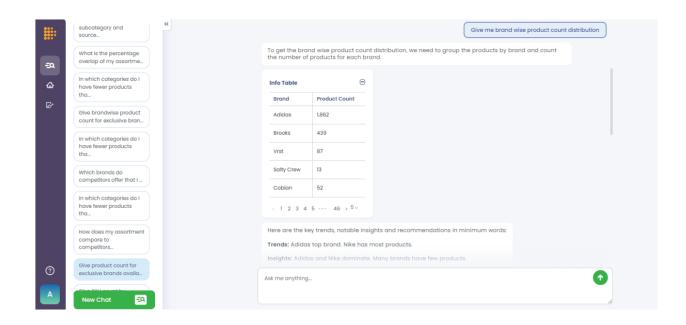
Time-to-insight is the dividing line between success and being too late in retail. Seasons change, consumer behavior shifts, and out-of-stock situations correct themselves through standard reordering patterns. You can't capitalize on the opportunities if you don't discover them quickly.

This is where our prompt-based conversational reporting functionality comes into play. Instead of sifting through layers of filters and complex reports to generate insights, even non-technical team members can ask DataWeave to construct reports. All they need to do is type in a query to uncover targeted insights without needing an analyst.



Ask DataWeave's LLM-powered conversational interface questions like:

- → "Which SKUs dropped more than 10% in price vs. Amazon last week?"
- → "What's the price gap for sugar-free beverages across Walmart and Target?"
- → "Which of my top 20 products lost share of search this month?"
- → "Identify products where improved content optimization led to better conversion rates and higher pricing power"
- → "Which assortment gaps are causing us to lose pricing opportunities in high-margin categories?"
- → "Show me the correlation between content completeness scores and our ability to maintain premium pricing versus competitors"



DataWeave then parses the intent and runs the analysis in the background. If more information is needed, the system will prompt the user for more details within the chat box as though the user were speaking with a support representative. It then returns to the user a contextual, visual response that is easy to digest.

This zero-training interface reduces dependency on traditional BI tools, lowering the barrier to data-driven decision-making.

An analyst or technical expert is no longer needed to process data and unearth insights.



DataWeave offers great insights that help ensure we're providing our customers with the very best value. The team is great to work with and very quick to respond whenever we have any questions or concerns.

~ Andie Villez,

Buyer of Oils & Chemicals, Blain's Farm & Fleet (Blain Supply, Inc.)



Our Retail AI Manifesto

And now with all these solutions and our robust tech stack in place, we are upping the ante!

DataWeave is building the Al backbone that enables retailers and brands to move from reactive analysis to autonomous growth – at every shelf, screen, and storefront. The core underpinnings of this growth are:

- Unify fragmented commerce signals (pricing, assortment, content, marketplace sellers, and digital shelf) into a shared data core
- → Amplify insights with Agentic All that learns across these commerce signals
- Automate retail outcomes through an integrated system of APIs and workflow agents

From point solutions we are moving towards an integrated retail platform.

Pricing Intelligence Assortment Analytics Digital Shelf Intelligence Content Optimization Integrated Ecosystem All point solutions share one data + Al core All solutions in one dashboard. Unified 360° view, helping break silos across teams Network effect: Insights from one solution feeds others. The whole > sum of parts

Strategic Pillar 1: Agentic Workflows at Scale

- → Objective: Automate the full lifecycle of retail workflows, from data collection to analysis, insight generation, and action, using Al agents.
- → What it Means: Users can prompt the system with a request, and AI agents handle the rest. For example: "Monitor Competitor X, flag major price drops, and adjust pricing to maintain margins," or "Optimize this product detail page for the listed keywords while accounting for seasonal trends." These actions are executed autonomously, without requiring manual follow-up.
- → **Tech Backbone:** A large language model-driven orchestrator interprets user prompts and triggers the appropriate specialized agents for tasks such as data crawling and analysis. These agents continuously learn from outcomes and adapt to changes in business conditions.
- → Benefit: Faster time to insight and action, monitoring on demand, and the ability to manage a high volume of internal workflows simultaneously. Human teams can redirect their focus to strategic decision-making rather than manual execution.



Strategic Pillar 2: Commerce Intelligence Platform

- One-Stop Platform: A unified cloud platform that brings together all commerce intelligence capabilities in one place.

 Core modules include Pricing, Assortment, Content, Promotions, and Digital Shelf all fully integrated.
- Cross-Module Analytics: Users can explore questions that span across functions, such as "How do better reviews affect our pricing power?" Unified data architecture enables these types of cross-functional insights.
- → Collabration: Teams across pricing, merchandising, and marketing operate on a shared data foundation. This alignment supports faster decisions and greater coordination across functions.
- → Sticky Ecosystem: The platform becomes part of the organization's day-to-day workflows, increasing adoption across departments and driving long-term value through high retention and engagement.

Strategic Pillar 3: Al Agent + Human-in-the-Loop

- Automation with Transparency: All drives efficiency behind the scenes, while humans remain in control of strategy and oversight. The system handles the heavy lifting, but users define objectives and validate key outcomes.
- Orchestration and Oversight: Workflows include built-in checkpoints where AI recommends an action and humans review and confirm. Continuous feedback loops help the system improve over time.
- Trust and Accuracy: This combined approach ensures high precision, with AI and human collaboration delivering accuracy levels greater than 99 percent. This is especially critical for high-impact decisions such as pricing changes.
- → Power User Experience: Intuitive interfaces allow users to engage with AI using natural language prompts, approve alerts, and interact with insights as if working alongside a highly capable assistant.

Ecosystem Integration: Where AI Meets Retail Operations

DataWeave Modules	Retail Workflows/Teams
Pricing Intelligence	Revenue Management (Pricing Team)
Assortment Analytics	Merchandising & Assortment Planning
Content & SEO Analytics	Content Operations / SEO
Ratings & Review Analysis	Brand / Product Management
Promotion Analysis	Marketing & Promotions

What was once only a vision is now beginning to manifest in the real world. Even as we continue developing fully autonomous retail AI, our current systems already show how AI can immediately improve collaboration and decision-making across functions.

The true power of DataWeave's Al-driven approach lies in how all these levers work together as a unified intelligence layer, breaking down traditional organizational silos.



Pricing intelligence feeds competitive insights to merchandising and other teams. Content analytics ensures pricing strategies are supported by compelling product information. Finally, assortment analytics identifies opportunities that inform both pricing and content optimization.

In conclusion, this integrated ecosystem transforms DataWeave from a collection of point solutions into a strategic decision making asset that enables retailers to move at the speed of market change, providing the definitive answer to the boardroom question: "Here's exactly how we're using Al to drive measurable competitive advantage across pricing, merchandising, and content."



Content quality and search visibility were major challenges in our e-commerce growth. With DataWeave's digital shelf analytics, we've improved our content health from 51% to 76% and significantly increased our share of search. Their platform helps us effectively monitor what matters across retailers. DataWeave has always been a fantastic partner that listens, and offers customer-focused solutions!

~ Kristen Arnwine,

Sales Manager,
Bush Brothers & Company

Ready to turn Gen Al into real business outcomes?

Book a <u>walkthrough</u> to see how our Al-powered Commerce Intelligence Cloud can give you a competitive advantage!

