FROM CHAOS TO CATALOG CLARITY: THE AI IMPERATIVE IN RETAIL

Abstract

Retailers face mounting challenges in product onboarding and catalog management due to fragmented supplier data, manual processes, and increasing multi-channel complexity. These inefficiencies delay go-to-market, inflate operational costs, degrade data quality, and limit personalization and merchandising effectiveness. AI fundamentally transforms this landscape by automating data ingestion, normalization, categorization, content enrichment, and real-time marketplace synchronization. By replacing error-prone manual workflows with intelligent automation, AI enables faster product launches, consistent and accurate catalogs across channels, reduced costs, and scalable growth. As a result, AI has become a strategic imperative for retailers seeking agility, efficiency, and a superior customer experience in an increasingly competitive market.

Infosys®
Navigate your next

Introduction

The retail sector faces significant challenges in product onboarding and catalog management. This complex, resource-intensive process slows growth, increases costs, and often results in missed market opportunities, frustrated customers, and operational inefficiencies.

Introducing new products frequently begins with a chaotic influx of data—spreadsheets, PDFs, emails, or even handwritten notes. Each supplier uses different formats and conventions, leading to incomplete or inconsistent product titles, vague descriptions, missing images, and absent critical attributes such as dimensions, materials, or specifications.

A major obstacle is data standardization. Internal systems require structured, consistent inputs, forcing catalog specialists to manually map raw supplier data to internal taxonomies. This work is tedious, repetitive, and error-prone, causing delays at every stage. A single product often requires multiple rounds of intervention—title reviews, description rewrites, image requests, and attribute mapping—before it can even be listed.

The challenge multiplies in a multi-channel environment. Each e-commerce platform and third-party marketplace has unique data requirements, requiring additional reformatting and manual adjustments. This fragmented process prevents retailers from maintaining a unified, single source of truth for their product catalogs.

The Cost of Manual and Fragmented Catalog Management

These inefficiencies have serious downstream consequences.

Delayed go-to-market is often the most immediate impact. Every hour a product sits in an onboarding queue represents lost revenue. In fast-moving retail environments, speed is critical. Slow product launches mean missed peak demand and lost market share to more agile competitors.

Rising operational costs are another major concern. Significant human effort is required for data entry, cleansing, image processing, categorization, and marketplace adjustments. Skilled resources are tied up in administrative work instead of higher-value strategic initiatives. Hidden costs—such as customer service inquiries caused by inaccurate information, product returns, and brand damage—further erode profitability.

Inconsistent customer experience is inevitable when product data is manually managed across multiple platforms. Differences in product descriptions, attributes, or images between a brand's website and marketplaces confuse customers, reduce trust, and lead to abandoned carts and lost sales. Brand credibility depends on consistent, accurate, and comprehensive product information across all touchpoints.

Limited personalization and merchandising capabilities are another consequence. Poorly structured or fragmented data restricts advanced capabilities such as refined search filters, personalized recommendations, and effective product bundling. As a result, cross-sell and upsell opportunities are lost, leaving significant revenue potential untapped.

Together, these challenges force retailers into a constant reactive mode—scaling inefficiently, draining resources, and diverting focus from core priorities such as marketing, innovation, and strategic growth.

The AI Revolution: A Seamless Path to Product Agility

AI represents a fundamental shift in how retailers address product onboarding and catalog management. It is no longer a futuristic concept—it is a practical necessity. AI acts as an intelligent co-pilot, capable of handling complexity with speed, accuracy, and scale.

By seamlessly integrating seller data from multiple sources and marketplace feeds, AI enables real-time data flow while eliminating manual effort and delays.

How AI Transforms Product Onboarding and Catalog Management

1. Intelligent data ingestion and normalization AI delivers immediate value at the point of ingestion. Instead of struggling with disparate formats, AI-powered systems automatically ingest product data from virtually any source. Using natural language processing (NLP) and machine learning, AI extracts relevant information from unstructured text, spreadsheets, and images. It normalizes attributes—even when labeled differently—and maps them accurately to internal taxonomies. Missing values are flagged and, in some cases, inferred using historical data, significantly reducing manual data preparation.

2. Automated product categorization and attribute extraction AI excels at categorization, a task that becomes unmanageable at scale when done manually. Trained on existing catalogs and performance data, AI models automatically classify products with high accuracy. Image analysis further enhances data quality by extracting visual attributes such as style, features, seasonality, and trends—eliminating manual entry while enriching product data for search and recommendations.

3. Real-time marketplace conversion and synchronization AI functions as an intelligent marketplace converter. Once product data is standardized in a central catalog, AI automatically transforms it to meet the specific requirements of each sales channel. Field names, descriptions, character limits, images, and mandatory attributes are adjusted automatically. Updates made in the central catalog—such as pricing, images, or descriptions—are synchronized across all platforms in real time, eliminating data drift and ensuring consistency everywhere customers interact with the brand.

4. Product content enrichment and optimization AI goes beyond data processing to actively enhance content. It improves product descriptions for SEO, generates compelling copy and bullet points at scale, and identifies gaps in product information. Generative AI can produce high-quality, SEO-friendly descriptions in minutes, while neural translation enables rapid localization for global markets. AI-powered image tools further enhance visuals by improving resolution, removing backgrounds, and optimizing presentation.

5. Error detection and quality control AI acts as a continuous quality control layer. It detects anomalies such as duplicate listings, mismatched images, incorrect pricing, or inconsistent attributes in real time.

Issues are flagged before they reach customers, reducing returns, customer complaints, and brand risk while lowering the cost of downstream corrections.

The Business Impact: Faster GTM, Lower Costs, Smarter Growth

The adoption of AI in product onboarding and catalog management delivers transformative results:

· **Faster go-to-market:** Product launch timelines shrink from weeks or days to hours, enabling retailers to capitalize on trends and peak demand.

· **Reduced manual effort:** Teams are freed from repetitive tasks and can focus on strategic initiatives such as catalog optimization, merchandising, and customer engagement.

· **Lower operational costs:** Automation reduces labor costs, errors, returns, and customer service volume—driving meaningful savings.

· **Improved data quality and consistency:** Accurate, consistent product information builds trust, reduces friction, and enhances the customer experience.

· **Enhanced merchandising and personalization:** Clean, structured data enables advanced search, personalized recommendations, and effective bundling, increasing conversion rates and average order value.

· **Scalability and future readiness:** AI-powered systems scale effortlessly with expanding catalogs, new markets, and additional channels—without linear increases in cost or headcount.

Conclusion: AI as a Strategic Imperative in Retail

AI-driven product onboarding and catalog management has moved from a competitive advantage to a strategic necessity. It enables retailers to operate with speed, precision, and scale—reducing costs while delivering a consistently superior customer experience.

The era of fragmented data and manual catalog management is ending. The future of retail lies in intelligent automation, where AI transforms product complexity into clarity and agility—creating a streamlined path to sustained growth and market success.

Authors

Anu Maria Arok
Lead Consultant, Retail Solution Design, Infosys BPM

Anu is a Senior Consultant for retail industry solutions at Infosys BPM. She is a seasoned retail expert with over 15 years of experience, helping retailers navigate the ever-changing retail landscape. Anu has a deep understanding of various retail functions, from merchandising and assortment planning to store operations, marketing, e-commerce, and even loss prevention. She leverages best practices from different segments of retail to drive tangible results and help businesses not only adapt to changes but become pioneers in the evolving market.

Anu holds a bachelor's degree in fashion design and a master's in management, showcasing her well-rounded knowledge in both the creative and business sides of retail. She is a certified Six Sigma Green Belt expert.

Sudhakar Pola
Senior Service Head-Client operations

Sudhakar is a senior service head for client operation at Infosys leading retail sector delivery across key accounts like Currys Nike and MGF. With over 2 decades of experience in retail operations, he brings deep expertise in capability building, business transformation and client relationship management. Sudhakar has a strong track record of driving outcome in project transitions, retail audit and financial process improvement. His work has helped client enhance cash flow, working capital, and operational efficiency.

For more information, contact infosysbpm@infosys.com

Infosys
®
Navigate your next

Infosysbpm.com

Stay Connected