Distribution & Logistics

Optimize Your Whole Business

How AI-Powered Data Automation Can Transform the Distribution Industry





From the earliest canals and turnpikes to our modern highways, transportation and distribution networks have significantly evolved. What may seem like a simple act of moving goods has helped to shape modern commerce, as well as urban development.

Even today, distributors continue to supply the vital economic lifeblood that connects communities across our nation. For most of the industry's history, it relied on manual processes to ensure our goods arrived safely, reliably, and efficiently. The advent of automation reinvented distribution operations, enabling distributors to optimize nearly every aspect of their business, and the rise of artificial intelligence (AI) has dramatically expanded these automation capabilities. So why are so many distributors still underutilizing the automation of data?

For many, it can be daunting to determine a place to begin. In this article, we explore some of the areas in distribution where Al-powered data automation can have the biggest impact on business outcomes.



Overcoming the Data Dilemma

The distribution industry comprises a vast expanse of SKUs, parts, product categories, and other data points ripe for collection, analysis, insight-extraction, and value generation. Al can drive those processes with exponentially greater speed, precision, and scale. And yet the industry remains slow to capitalize on these advancements.

A recent study on data and Al initiatives among distributors found that many plan on deploying Al within one to two years.¹ Meanwhile, Al is already in use in industries like tech, healthcare, and financial services.²

Progress Deploying Al



This disparity may be due to the differences in data regulation across industries. While regulations for financial and healthcare sectors are much more stringent, essentially forcing businesses to capture clean and consistent data, in distribution, there is little regulation for how the countless products and parts are catalogued and tracked. Leveraging Al to automate distribution data can bring powerful benefits and help the distribution industry catch up to its data-driven counterparts. It can seem daunting, but integrating Al into your data strategy might be quicker to stand up than you think.

All you need is access to the right data – and the right team to orchestrate it – and you can enable major distribution optimizations.

Data Orchestration

When we talk about optimizing the "whole business," we're referring to three specific areas: revenue, customers, and inventory. To optimize these areas through Al-powered data automation, you need a diverse team of business leads, data scientists, analysts, and engineers to build a data orchestration platform. Data orchestration is the process of collecting, ingesting, cleansing, and curating external and internal data and deploying it for different end user needs. It is the foundation for high quality machine learning framework models – the lynchpins of automation – which enable reusability and scalability.



Optimizing Revenue with Data Automation

When you're an industrial distributor with millions of SKUs, you're likely sitting on a mountain of useful data. And that data can be transformed into a revenue optimization powerhouse.

One way to use data to optimize revenue is through dynamic pricing models, which we implemented for a global distributor of industrial automation solutions with more than 30 million SKUs across multiple subsidiaries, in roughly six months.



Our data strategy was as follows: First, we brought all of the company's disparate data sources into one platform and organized it to be more useful and meaningful. Then we pulled purchase history data, seasonality data, economic data, weather data, competitor data, and more into a mixing model and trained it to predict the optimal price of each product. Updating in real time and refreshing itself daily, the distributor's Al-powered dynamic pricing model optimizes margins to maximize revenue generation.

Beyond optimizing SKUs, distributors can leverage Al and data analytics to enhance the speed and accuracy of their quoting, ordering, and inventory process.

Optimizing Customers

Data can also be used to predict customer behavior and optimize accordingly. Al-powered propensity modeling can determine the likelihood of a customer taking a specific action, such as their propensity to engage, make a purchase, spend over time, and churn. These models can then be used to predict a customer's lifetime value.

Industrial distributors could benefit enormously from using AI to better understand their customers' buying behavior. One way to drive revenue through predicting customer behavior would be to target which specific products or SKUs a customer would be most likely to purchase at any point in the future, e.g., next day, next month. This allows marketers to target segments of these high-propensity purchasers for specific product offers.

By leveraging a data integration strategy like the one above, they can develop reusable predictive data assets (e.g., a feature store) to enable data scientists to spin up individual models for each product or product segment in a matter of minutes. This ultimately accelerates a business' ability to deploy dynamic marketing offers across multiple channels.

Optimizing Inventory

If your company has a product catalogue that runs in the millions, any change in inventory is going to have cascading effects on business functions. While surplus inventory can lead to higher storage costs, a shortage can hurt sales and frustrate customers.

Using data and AI can forecast excesses and shortages, as well as predict how adding or removing products will impact customer behavior, sales, or transaction accuracy.

For example, to optimize inventory planning for thousands of SKUs across multiple geographically dispersed locations, machine learning models can track the quantity of items sold, shipped, ordered, and received, and accurately forecast demand based on demand signals, seasonal changes, and historical trends.

Consider Nestlé,³ who wanted to harness Al-powered data automation to enhance its forecast accuracy and reduce enough inventory to make substantial savings. Using a demand-driven forecasting model that tracks what demand signals are actually influencing consumers' purchasing behavior, Nestlé was able to completely automate 80% of its forecasts and remove 14-20% of its inventory safety stock while still meeting demand. That means if Nestlé has \$100 million in inventory, the model will save \$14-20 million.

Becoming a Modern Data Organization

The distribution industry is poised for an automation revolution. By harnessing Al-powered data automation, distributors can extract significant value from their data and use it to enable dynamic pricing models, a deeper understanding of customer behavior, and optimized inventory management.

Even organizations that are not yet data mature can stand up advanced data automation solutions in mere months. It's likely your organization has enough customer and transactional data to get started – you just need the right team with the right approach.

¹Source: distributionstrategy.com/

² Source: www.visualcapitalist.com/sp/ai-adoption-by-industry/

³ Source: supplychaindigital.com/logistics/how-demand-driven-forecasting-paid-nestle



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