



COMPLIMENTARY EBOOK

Next Generation Retail Strategy





Introduction

Over the last decade, the digital revolution has brought about profound changes in the way people shop. It's transformed how consumers evaluate products, which channels they buy through and their expectations for delivery and returns. These changes, which affect every link of supply chains, have forced retailers to rethink how they forecast demand and position inventory. This eBook explores three strategic areas affecting modern retailers where supply chains can be optimized for competitive advantage.

- **How to compete in an Amazon-led world** explains why having a high-performance supply chain, optimized at every link, is the only way to survive in a market defined by Amazon's exceptional e-commerce experience and fast, low-cost customer service.
- **How machine learning steps up retail performance** cuts through the hype, offering a primer on machine learning and how retailers have applied it to lift the performance of trade promotions, media events promotions and new product introduction. It also covers how machine learning can improve demand forecasts affected by external variables like weather, housing starts, and interest rates.
- **Three ways to improve inventory performance** draws on best practices from hundreds of global supply chain leaders. It offers retailers tangible, proven strategies for driving higher returns on inventory assets and freeing up working capital while increasing their service levels.

These chapters are followed by three in-depth case studies from global retailers that have successfully adapted to the 'new rules of retail'.

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How do I compete in today's multichannel world?

It's not that Amazon is transforming the retail landscape. Rather, it's the Amazon shopping experience that's driving change. Anyone can deliver on that experience, but to do it profitably, we all need to think differently.

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This transformation is the continuation of a revolution that began 30 years ago. Walmart brought low-cost goods to the shelf. At the time, retailers were rarely known for their investment in innovation and technology, but Walmart went against the grain in the 1990s when it introduced the idea of high service level to customers at a low cost—offering a wide range of products with very high availability.

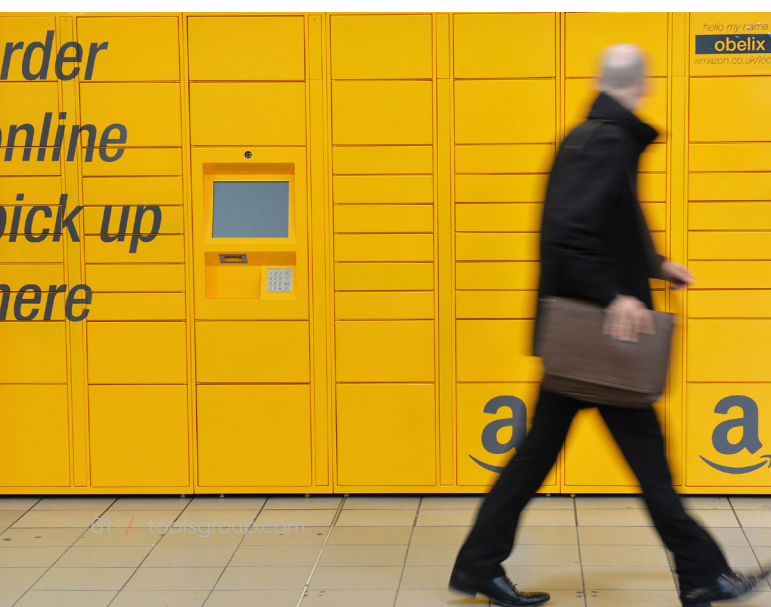
Walmart also pioneered the concept of service level agreements with suppliers, in exchange for promises of high-volume

purchases. These strategic vendor partnerships drove streamlined, integrated supply networks offering “everyday low prices” to consumers. They also led the way in providing vendors with point-of-sale (POS) data, so they could view demand as it unfolded to better meet their service agreements. Amazon is leading the next retailing revolution, bringing low-cost goods—and the shelf—to the consumer's home, via low-cost fast service times—that is, rapid fulfillment at low cost.

In the past, consumers could get courier shipment of product to the home, but it was a costly luxury. Now, Amazon Prime offers customers 1-2 day delivery, and even same day delivery in major cities. Amazon is using their economies-of-scale and logistical efficiency to drive fast delivery e-commerce customer service.

EVERYONE NEEDS TO UNDERSTAND MULTICHANNEL (INCLUDING MANUFACTURERS)

Through its investments in high efficiency to increase low-cost rapid service, Amazon is becoming the dominant platform for access to the market—and is now attempting to extend from the consumer space to the industrial realm. Some vendors report that they can actually achieve higher margins by selling through Amazon than through





their own channels – upending many companies' business models. It's not simply the e-commerce aspect of Amazon's operations; other companies provide e-commerce platforms. The upheaval is from the combination of e-commerce with low-cost customer service time, which makes it difficult for companies not as efficient as Amazon to survive—and why Amazon pockets minimal margins to keep funding the outlays that extend its dominant position.

The result are high customer expectations.

Retailers must fill the customer request when they want it, where they want it, and how they want it, and there will always be somebody who can provide this service and grab the sale.

This alters multichannel and multiple delivery alternatives, including combining a physical local presence with the Internet.

THE SUPPLY CHAIN IS THE KEY TO REMAINING COMPETITIVE

The pressure on supply chains to support this model is significant. Because demand keeps shifting, the supply chain must also change as a function of time, as demand pivots from one channel to another. Generally retail organizations are dominated by Merchandising, which is about assortment, new product introductions and on-shelf availability, and by Purchasing who negotiates the best deals and does the buying. This "Brick and Mortar" view relegates supply chain to an operational cost center, delivering on-time to stores from Distribution Center (DC) inventory, rather than as a strategic value-generating function. This thinking has to change in order to create new fulfillment models to compete for the multichannel customer.

Supply chains inventory pools must be positioned to fulfill a wide assortment that is customer-behavior agnostic, accommodating either e-commerce or brick-and-mortar purchases. As a result, supply chains have to be extremely dynamic and flexible, operating at a high frequency. They must provide customers with multiple delivery collection and delivery options. They must be able to drive fulfillment through distributed order management that defines sourcing and fulfillment policies and logic, as well as make transfers across channels to balance inventories as demand evolves dynamically.

FROM PRODUCT-CENTRIC TO CUSTOMER-CENTRIC

The above requires changing the culture of the organization and the operational fulfillment model from product-centric to customer-centric, including new ways of shopping, processing returns, and even supply chains routed for time-phased flexibility, rather than for stability. A customer-centric approach cannot be fulfilled with only a "hybrid" fulfillment strategy of filling online orders from both stores and distribution centers—picking items to fill online orders from a common pool of stock spread across stores and DCs—because it overlooks the much higher picking costs at stores.

Distribution centers are designed for receiving, warehousing, and shipment. Product is organized for rapid access; stock pickers get their instructions via wireless communication, directing them along efficient storage and retrieval paths for more productive yield. Stores are set up for customers; their layout is not designed for efficient, distribution-center-like operations.



Labor costs per unit to pick from a store are typically six times higher than in a warehouse." Nucleus Research.

And in light of its new investments in logistics and warehouse automation, they say that Amazon could be on track to have a worker pick up to 600 items per hour—up to 40 times faster than a store associate.

On top of the labor costs, there may be additional transportation, shipping, and handling costs. Simply fulfilling demand from wherever inventory happens to be sitting cannot be a long-term fulfillment strategy. What is needed is the agility to support an integrated multichannel strategy that leverages advanced demand planning and inventory optimization to predict and respond to constantly shifting demand and customer fulfillment needs.

FORECASTING MULTICHANNEL DEMAND AND IMPROVED INVENTORY OPTIMIZATION

For demand forecasting, this means accurately forecasting each channel, so that instead of always reacting to demand with expensive cross-channel fulfillment you can plan proactively before getting the customer order. Multichannel demand should be forecast at the transactional level, such as:

- Where the transaction was initiated (e.g., in-store or online)
- How the order was fulfilled—picked in-store, picked in distribution center, picked by supplier
- How the consumer received the product—in-store collection, shipped from distribution center, shipped from supplier

This enables all elements of the chain to understand their fulfillment expectations,

to plan and position resources accordingly to reach target service levels. Advanced demand planning software can disaggregate the forecast down to the stock keeping unit level. It can predict what stock needs to be in the store for on-site customers and in a distribution center for online shoppers. When combined with POS store data and frequent online sales updates, it can further anticipate orders better than traditional tools to lower fulfillment costs and increase responsiveness by stationing more inventory at DCs.

To get to this level, you need to utilize advanced algorithms that analyze daily demand to generate the in-store or DC inventory buffers, calculating the optimal service point – placing the inventory as close to the customer as possible.

This level of analysis and forecasting cannot be done through an Excel spreadsheet.

What's needed is machine learning to do the heavy lifting for the planning team.



How Machine Learning Steps-Up Retail Performance

WHAT IS MACHINE LEARNING REALLY?

The ability to capture and analyze retail data to understand consumer behavior is well documented. After all who hasn't heard about Target assuming it's customers were pregnant based on shopping patterns and historical data points? The ability to look at transactional history and draw conclusions was revolutionary. However, retail needs to go beyond backwards looking data in order to formulate a winning supply chain strategy. As part of this evolution, computer scientists have developed a new type of artificial intelligence (AI) called Machine Learning that enables computers to recognize and learn from new data inputs without being programmed. Simply put, machine learning is a program that sifts through massive amounts of data, both structured and unstructured, to understand meaning contextually and make recommendations for the human, or planner, to respond.

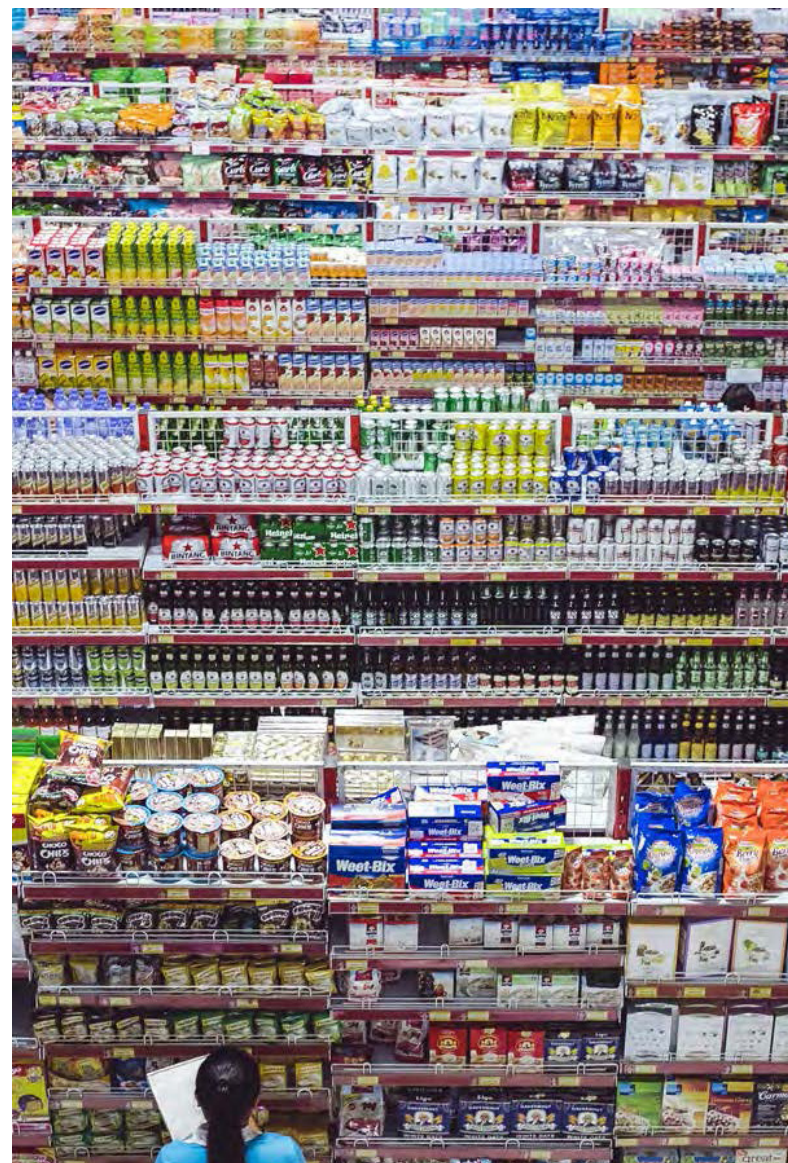
Here are some of the ways machine learning lifts retail performance.

TRADE PROMOTIONS AND MEDIA EVENTS PROMOTIONS

Advertising, and other "demand shaping" activities are expensive, and determining their impact, or "lift," is challenging. In a market where everything is just a click away, retailers must invest in these activities. Often the outcome is multiple variables with complex interactions buried in huge amounts of data

with a high degree of noise. Because of this lack of clarity, retailers have to throw money at a problem and hope something "sticks". The approach is less and less effective as the market evolves.

In our new multichannel world, the only way to get ahead is to understand what's moving the needle, and that needle will change as buyers change. Finding a solution that will pinpoint what's moving the needle every time will be



invaluable to promotions and events teams.

But a Machine Learning Engine (MLE) can attribute the ROI on activities and events, enabling targeted efforts that enable retailers to understand and anticipate customer behavior, focusing on winning promotional planning strategies and getting ahead of demand and thus their peers.

For instance, at Danone, more than 30% of items are sold on promotion—accounting for nearly 70% of forecast error. The global foods company wanted to predict promotional lift to baseline demand to get timely production and balanced inventory deployment for channel and store supplies.

Using machine learning, Danone lowered forecast error 20% and lost sales by 30%. It increased service level to 98.6%, and realized a 30% reduction in product obsolescence. Danone also cut demand planner workload in half, allowing planners to focus on more value-added activities.

NEW PRODUCT INTRODUCTION (NPI)

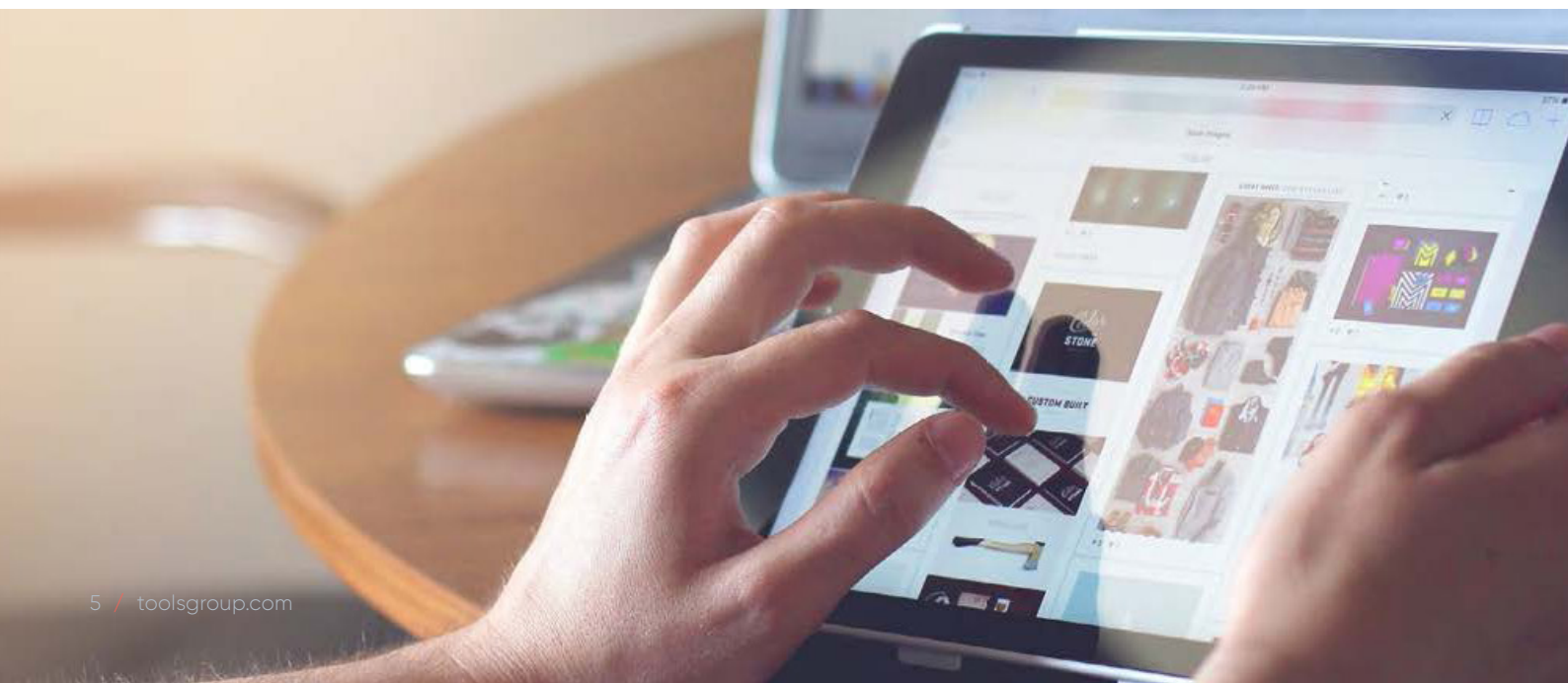
It's tough to forecast demand for a product without a sales history. But you can use machine learning to predict the performance of a product launch. Models can include

early indicators such as web analytics, product attributes or even social media data, thereby predicting the performance and launch profile early on.

For example, Luxottica, a global leader in eyewear, adds 2000 new styles to its collection annually. It uses machine learning to cluster the behaviors of past launches, select the most probable performance for the new product, then "learn" common demand behaviors in the first launch period through detailed demand profiles. A major international eyewear retailer improved global WMAPE (Weighted Mean Absolute Percent Error) by 10% and reduced the forecast baseline on new launches by about 30%.

SOCIAL LISTENING

Traditional demand planning relies mostly on transactional data, creating latency between customer needs and supplier reactions. But social listening can be used by the supply chain team to correlate social sentiment with demand signals. These enhanced forecasting models can be especially helpful for providing early indicators of how the market perceives a promotional offer and upcoming demand. This ability to integrate these signals into a



forecast is a tremendous opportunity that remains untapped for many organizations.

EXTREME OR COMPLEX SEASONALITY

Demand planning software can factor in seasonality—like the fact that more ice cream is sold in summer than in winter. But sometimes seasonality can become so extreme or complex that it is not as well suited to normal regression analysis-based techniques. For instance, Lennox Residential is able to stock their regional stores with the right inventory for heating in winter and A/C in summer by using machine learning and cluster analysis to identify and track seasonality patterns and trends for its HVAC systems. The system recognizes more than 200 “microclimates” within the United States and their seasonal timing variations. Machine learning sifts through the SKU-Locations to identify “clusters” with similar seasonality profiles.

Lennox improved service levels by 16% while simultaneously increasing inventory turns by 25%.

EXTERNAL VARIABLES

As business becomes more complex and distributed, variables that impact demand not directly tied to a supply chain were too indirect (or external) were impossible to incorporate into a demand plan. Those variables included things like weather, housing starts, and interest rates. However, micro and macro-economic trends, related indices, weather data, and other meaningful information would provide a more holistic picture of market activity and guidance for a retailer. These data streams can now be captured and used to modify a demand signal, giving retailers a sharper picture of what they need to prepare for. From big box hardware stores using housing starts

to determine demand for construction materials to an early rise in temperature creating larger demand for ice cream, demand and inventory is responding to these factors. Now with the inclusion of the ToolsGroup machine learning engine users can include these variables and hone forecast demand, improving sales and the bottom line.



Three Ways You Can Improve Inventory Performance

Much of what you have read is conceptual – or may seem so. Here are a few tangible ways you can improve your inventory performance.

REVITALIZE YOUR ASSORTMENT

Shoppers want options, and a constantly changing array of them. Pop-up stores, fast fashion, click-and collect, and proprietary products are new methods that retailers use to keep their assortment fresh. In order to support these models, supply chain teams have to be strong on two fronts – managing assortment expansion and contraction.

The traditional merchandise planning model consists of deciding what to carry and then calculating what will sell. But omnichannel retail is causing retailers to revisit this practices and explore a new approach that flips the sequence, using analytics to first determine what is likelier to sell, then deciding what to carry. Employing machine-learning based forecasting tools, retailers can predict potential sales at the front-

end of the assortment planning process. By using data to stock items with higher forecasted demand, they can reallocate cash that would normally be tied up in poorly performing inventory, avoid margin erosion from markdowns and dead stock, and increase overall on-shelf availability.

At the back-end of the cycle, planning must identify poorly performing SKUs and transition these out of the assortment. The analogy is pruning a garden. By cutting back on unhealthy and dead wood, a plant becomes healthier and more robust. By pruning away unhealthy items in an assortment, stores can utilize their shelf space to carry better performing items, increase turns, and increase margins.

FUTURE-PROOF REPLENISHMENT

In retail, the governing axiom is having the right amount of stock in the right store at the right time. Yet paradoxically retailers frontload inventory to the store, based on the belief that goods must be on the shelf



to sell. The challenge is that once inventory is forward deployed, it's not always cost effective to re-position it. By adhering to this legacy belief, retailers cause both lost sales and markdowns because the stock is poorly positioned to fulfill channel demand.

To combat this, retailers are beginning to shift to demand-driven inventory deployment for all SKUs. This means the traditional push allocation process commonly used for seasonal SKUs and one-time buys is merged with replenishment into a single process that's based on a forward-looking forecast. A holistic forecast has been the "white whale" in retail planning for decades, but with emerging technology – machine-learning, specifically – it's now missing period.

Inventory planners are able to see specific demand streams and hold back inventory at the DC, deploying it to stores with the greatest likelihood of selling that item based on early sellthrough patterns, i.e. demand sensing.

ENGINEER REMOVE PERIOD.

In an industry with thin net margins, finding the right inventory mix to maximize profit can be difficult. Retailers have relied on an "Open-to-Buy" budget as a way to both control spend and determine what inventory to purchase. But this process limits agility

and responsiveness because it places too much emphasis on a short-term horizon, without incorporating the real time impact of item supply and demand.

This is a retail-oriented version of Sales and Operations Planning (S&OP), but with

Innovative retailers are moving away from "Open-to-Buy" towards a more holistic planning process, or what Gartner Research calls Sales and Operations Execution (S&OE).

a shorter 12-week planning horizon. While S&OP has traditionally been a function more commonly used in manufacturing, retail-centric S&OE allows retailers to identify gaps earlier between budget and sales projections. These early indications give retailers time to develop a strategy to close financial gaps by taking corrective actions, such as running a promotion or canceling upcoming orders of slow moving items. Equally important, retailers can manage sales plans against working capital, physical capacity and transportation constraints. Essentially, S&OE provides operational guardrails for retailers by understanding holistic inventory performance, improving cost and revenue decision making.



Retail Supply Chain Success

Many organizations were where you are now.

Here are a few examples of retailers that have successfully adapted to the new inventory optimization landscape through supply chain transformation.





O2

O2 runs 2G, 3G, and 4G networks across the UK, as well as operating O2 Wifi and owning half of Tesco Mobile. O2 has over 450 retail stores and 25 million customers.

Challenge

High growth driven by technology changes and customer demands required a change from a manual, supply-driven approach to planning (with multiple standalone systems), to one based on a centralized single model to enable trading teams and suppliers to collaborate in a demand-driven process. The system was conceived to support the entire extended supply chain – from handset supplier to end customer – and reduce days of stock, increase availability, and improve forecast accuracy

Solution

Establish a demand sensing system to fine tune forecasts and replenish inventory through recommending new orders and/or reallocation from suppliers. O2's new system provides a hub in which all internal trading teams and external suppliers can collaborate to optimize the Sales & Operations Planning (S&OP) process.

Results

A customer focused demand-driven supply chain now allows dynamic modelling, bespoke planning and the optimization of store deliveries.

- Stock held across retail outlets decreased by nearly 30%.
- Forecast accuracy improved by 10% by freeing up the trading teams' time to concentrate on core functions and enabling forecast improvement collaboration
- Handset availability improved to 97% in the warehouse and 96% in retail stores while minimizing increases in inventory value

A background image showing a pair of hands holding two different models of hearing aids. One is a small, beige, behind-the-ear device, and the other is a larger, more complex, beige and yellow device. The hands are positioned over a desk with some papers and a pen.

AMPLIFON

Amplifon, owns 2100 retail outlets, has 3200 'shopin- shops' and 'corners' in third-party pharmacies, opticians, and medical practices, a well as an additional global network of more than 3100 indirect points of sale, franchises and affiliates.

Challenge

Amplifon, known in the US for its 'Miracle Ear' brand, has a highly complex extended supply chain with different processes in place by region. Over time they lost full oversight of its inventory, particularly which products needed replenishing and the assortment of products to be distributed to stores.

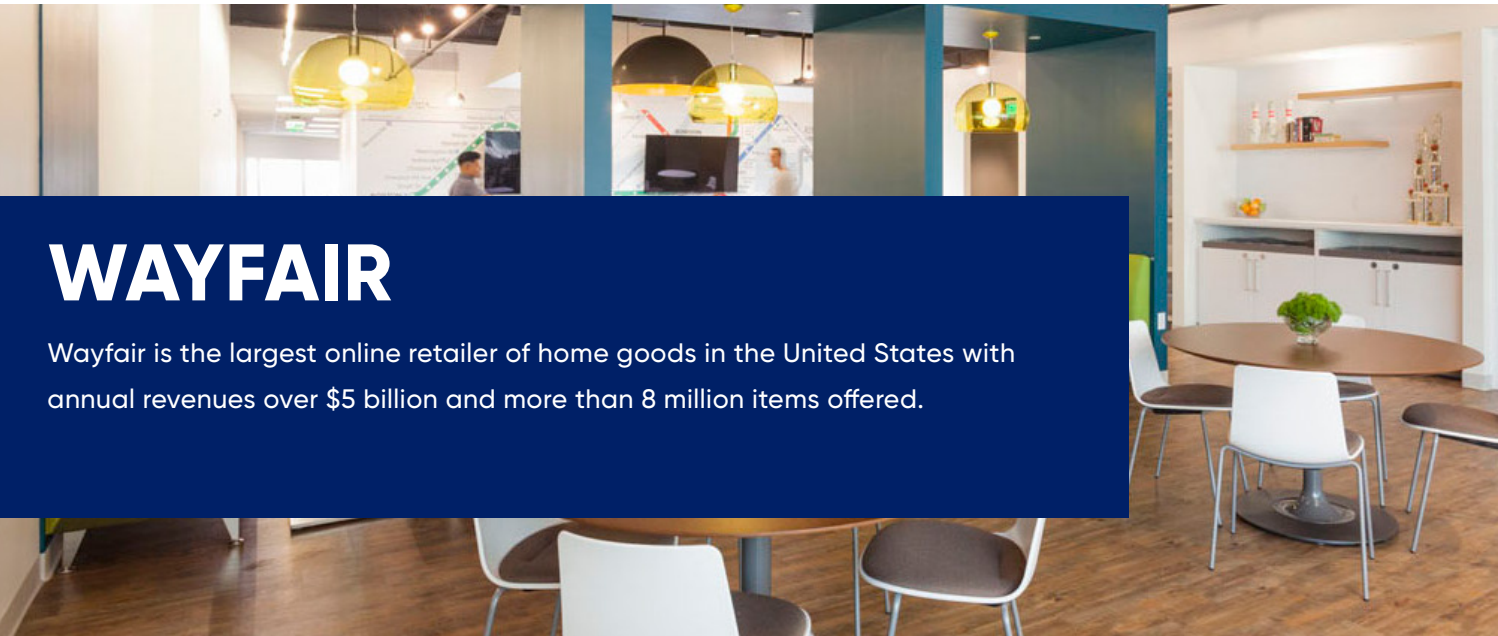
Solution

Leverage CRM and historic sales data to improve forecast precision at the store level and achieve operational excellence by enabling retailers to provide the highest level of service at the point of sale (POS) - while removing their burden of inventory management and logistics.

Results

Sensing short-term demand data and integrating it into Amplifon's sales forecast has allowed the company to optimally allocate stock across the distribution chain.

- Inventory reduced by %18
- Obsolescence reduced by 40%
- Significant improvement in the quality of customer service.
- Freed logistics staff from mundane tasks to grow into more advanced inventory and demand planner roles



WAYFAIR

Wayfair is the largest online retailer of home goods in the United States with annual revenues over \$5 billion and more than 8 million items offered.

Challenge

Recently Wayfair reconfigured their business model, moving away from drop shipping all items and carrying selected fast moving items in house. To support this, Wayfair added two new distribution centers, each with its own stocking portfolio. This change was going to dramatically increase the amount of time requires to manage forecasting – well beyond the 3-person team that was in place.

Solution

Wayfair selected ToolsGroup's SO99+ software to deal with high volumes, extreme demand volatility and long-tail SKUs. The implementation was completed in four months and now handles the forecasting for over one million SKUs and the replenishment planning for the 40,000+ SKUs it ships directly from Wayfair's DCs.

Results

Demand volatility was smoothed out resulting in improved planning accuracy.

- Reducing forecasting errors by 50%.
- Reducing 'unhealthy' distressed or aged inventory by 50%.
- Increasing inventory turns by 25%.
- Planning time was slashed from 100 hours to 15.

Book a Demo

To learn how you can take control of your supply chain
visit toolsgroup.com/industries/retail/

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