



Strengthening the retail supply chain

Top challenges and artificial intelligence opportunities based on interviews with supply chain professionals at leading U.S. retailers

Survey independently conducted by:



Knowledge. Empowered.



About the survey

Make one miscalculation in the supply chain process, and your entire organization may end up feeling the ripple effects. That’s why it’s so important to understand what’s working, what isn’t—and where emerging innovation in artificial intelligence (AI) can help.

New research by EnsembleIQ on behalf of Symphony RetailAI suggests that retail supply chain professionals navigate many hurdles and hazards, including demand forecasting-related challenges such as real-time visibility into supply chain inventory, unforeseen market risks, and a lack of forecast accuracy. To stay on track, they rely on a range of replenishment strategies, primarily demand-based replenishment, store-to-store and vendor-managed inventory, while continually looking for ways to improve. Six in 10 retailers, in fact, report that they are taking steps to increase inventory visibility and reduce cycle times, according to the comprehensive new survey of retail supply chain professionals.

The research for the findings in this whitepaper was conducted by EnsembleIQ in July 2018. The sample captured a diverse range of U.S. supply chain leadership roles from executives to manager-level positions at 50 North American retailers. The majority of survey respondents work in grocery in large or mid-size organizations.

Read on for a look at the challenges and opportunities in retail supply chain management uncovered by the EnsembleIQ research, along with insights about how organizations can invest in greater efficiency, quality control and cost savings by leveraging the new generation of AI.

Business pressures impact supply chain processes

In the current economic climate, inflation and poor collaboration are at the top of the list of business pressures facing the retail supply chain, industry professionals say. Fifty-eight percent consider the rising cost of raw materials a major challenge their organization faces, while 47 percent report that miscommunication between internal stakeholders and departments creates barriers in the supply chain process.

The nuts and bolts of many retail supply chains also may not be functioning as efficiently as they should. Forty-three percent of retail supply chain professionals say their organization’s technology can’t keep pace with business demands, while 42 percent describe less-than-optimal synchronization between inventory and channel. Nearly as many worry about fulfillment complexities, stocking inefficiencies and high product lead time.

Supply chain professionals who work at the largest retailers are significantly more likely to say their organization’s technology can’t keep pace with the innovation required to support the business, and significantly less likely than those in smaller retail companies to worry about the rising cost of goods sold. This disparity likely reflects a fundamental difference between larger and smaller organizations: Their size enables bigger companies to bounce back from price fluctuations that aren’t as easily absorbed by smaller players.

Top retail business pressures

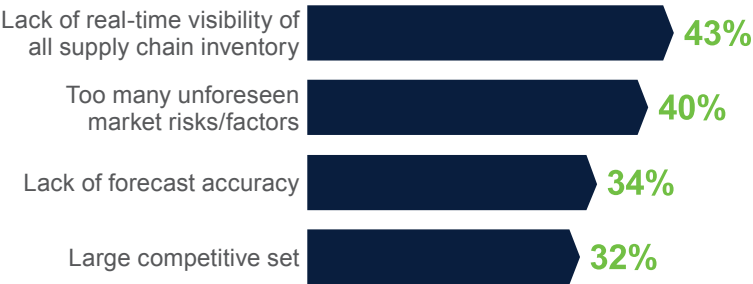




Demand forecasting: Looking for answers

Beyond outside business pressures, what keeps retail supply chain professionals up at night? Many cite concerns about clarity and confidence involving demand forecasting, both in their own business processes and toward the market as a whole. The top responses include a lack of real-time visibility into supply chain inventory (43 percent) followed by unforeseen market risks (40 percent). Many also report a lack of forecast accuracy (34 percent). These challenges are consistent across professionals in small, medium and large formats, suggesting these issues are at the fore in every area of retail.

Top retail demand forecasting-related challenges

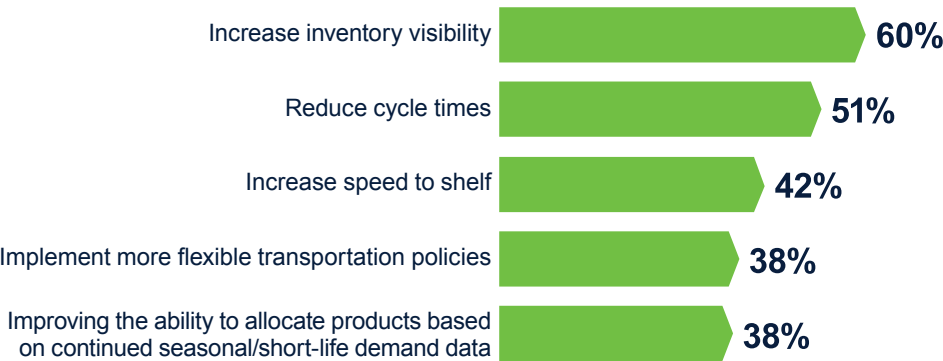


Replenishment strategies on the move

Retail supply chain professionals also rely on an array of strategies to keep processes moving smoothly. When asked to list the replenishment strategies used within their organization, most cite demand-based replenishment (70 percent), vendor-managed inventory (62 percent) or store-to-store replenishment (53 percent). This is another area in which large and small retailers differ: Major retailers rely more heavily on vendor-managed approaches than their smaller counterparts.

Reflecting the broader concern around a lack of real-time access to inventory information, efforts to improve in this area are the most common: Sixty percent of supply chain professionals say their organization is taking steps to increase inventory visibility. Others report they're addressing the need for speed, both in terms of reducing cycle duration (51 percent) and increasing speed to shelf (42 percent). It's important to note, however, that 4 in 10 retailers do not have systems in place to provide the right strategy for replenishment tools with rules that support cost-to-serve, models to improve on supply chain network design and costing decisions.

Top steps taken during past 12 months to increase retail supply chain resilience





Current supply chain capabilities

When it comes to overall supply chain capabilities, the research suggests retailers of all sizes are succeeding in some areas and have room to improve in others.

Many retail supply chains suffer from structural inconsistencies, functioning effectively in certain processes but riddled with weak links in others. And those weak links can add up to serious setbacks because each part of the chain—from setup to inventory policies to product flow optimization—reinforces the others.

Ideally, all processes within the supply chain work together to enable harmonized demand planning, replenishment, allocation and order management across the entire organization. Yet relatively few retailers have established such a unified process flow: Only 36 percent of supply chain professionals say their organization operates on a single supply chain platform. The rest make do with disparate demand replenishment systems.



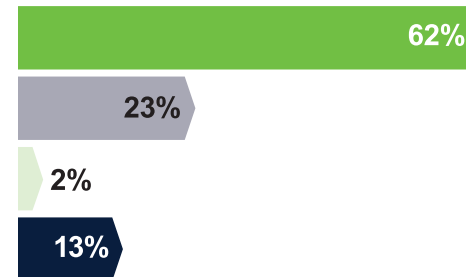
Sizing up software

For the technology to power supply chain processes such as forecasting or replenishment, roughly 6 in 10 retailers rely on software developed in-house. Still, a sizeable proportion—roughly 4 in 10—use enterprise systems or best-of-breed applications.

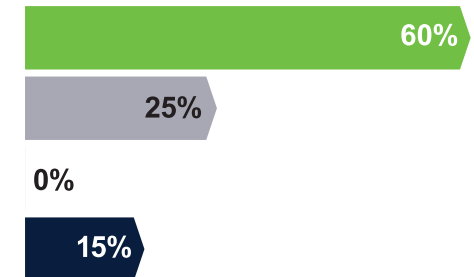
Software used for retail forecasting and replenishment



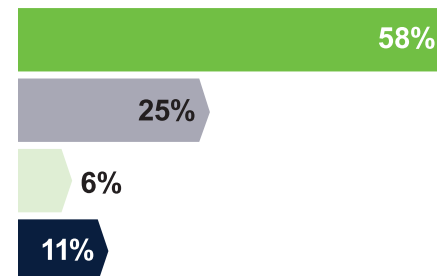
REPLENISHMENT FOR STORES



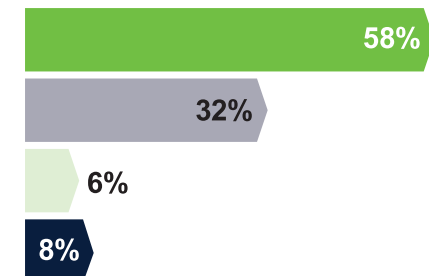
REPLENISHMENT FOR DCs



FORECASTING FOR STORES



FORECASTING FOR DCs





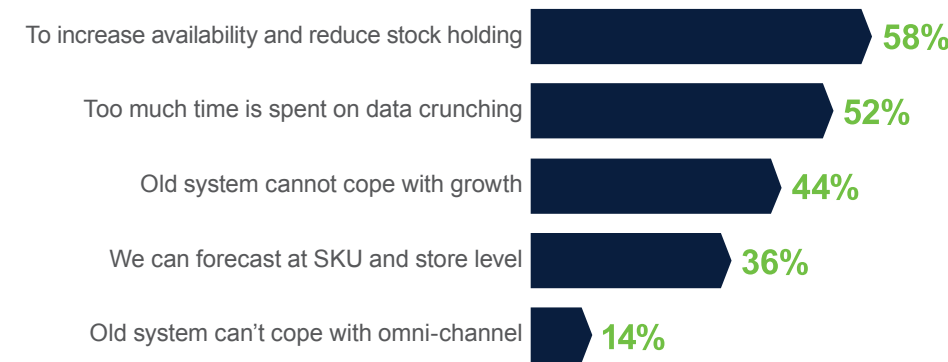
And how are the software systems faring?

Most retail supply chain professionals give high marks to allocation and inventory planning capabilities, with both rated good or very good by 8 in 10 survey respondents. Forecasting capabilities earn less enthusiastic reviews: Just 6 in 10 consider the technology enabling their supply chain forecasts to be good or very good.

Any growth-minded business knows that staying ahead of the pack requires keeping on top of the latest innovations. For retail supply chain technology investments, organizations are most inclined to spend on systems that help increase stock availability and decrease stock holding (58 percent). Software that reduces time spent digging through data is also worthy of investment—52 percent of retail supply chain professionals say their organization will invest in capabilities that cut down on number crunching—as is anything that helps companies keep pace with expansion. Forty-four percent invested in new technology because their old systems couldn’t cope with growth.

Businesses have invested in or are planning to invest more heavily in some areas than in others. Nearly three-fourths of retailers have invested in inventory

Major reasons for investing in new retail supply chain software



planning and warehouse replenishment software; by contrast, only about half have invested in software to improve warehouse management systems or distributed order management. Still, as a whole most businesses recognize the need for ever-more-efficient technology and are willing to pay for it. The majority of retail organizations that have not yet invested in more efficient supply chain software plan to do so in the next one to two years. (Only 2 in 10 do not plan to.)

Retail supply chain software investment plans

INVENTORY PLANNING



WAREHOUSE REPLENISHMENT



STORE REPLENISHMENT



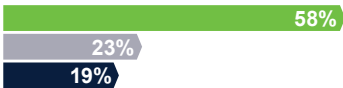
WORKFORCE MANAGEMENT



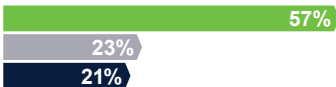
FORECASTING



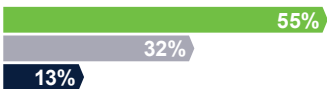
TRANSPORTATION MANAGEMENT



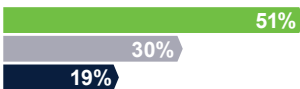
ALLOCATION PROCESS



WAREHOUSE MANAGEMENT SYSTEMS



DISTRIBUTED ORDER MANAGEMENT



Legend:
■ Already invested in software
■ Plan to invest in software in next 12 to 24 months
■ No plan



Measuring retail supply chain management success

Amid all the investments and improvements that retail companies are making, it's important to gauge what's working and what isn't across supply chain processes. When asked which metrics their organization uses to measure the success of supply chain management strategies, EnsembleIQ survey respondents were most likely to cite inventory in-stock rates and operating margins as barometers of a healthy supply chain. Gross margin return on inventory, as well as shipping accuracy and timeliness, also factor heavily into organizations' assessments of retail supply chain effectiveness.

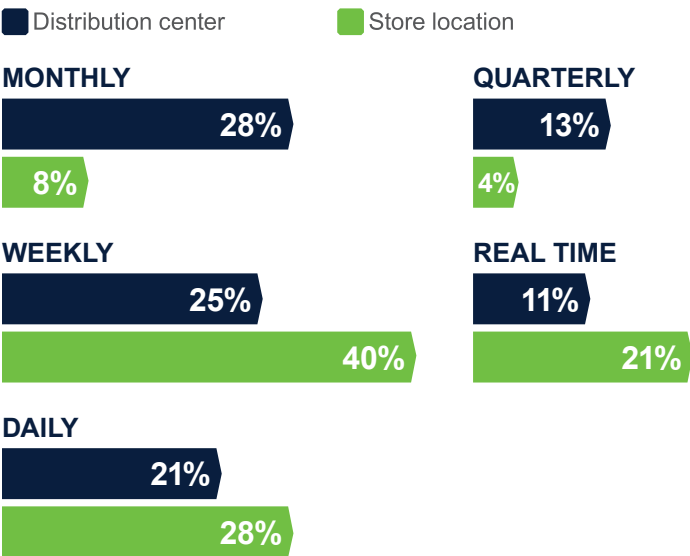
Top metrics for measuring retail supply chain management success



How often a business assesses these metrics varies by location, with retailers typically running reports less frequently at distribution centers than at store locations. Forty-six percent run distribution center reports at least once per week, while 68 percent run daily or weekly reports at store locations. Moreover, organizations are two times more likely to run real-time reports at store locations than at distribution centers.

Together these findings demonstrate that while every retailer utilizes its own set of tools to execute supply chain processes, virtually all recognize the need to continually assess and invest in capabilities that power efficiency and growth.

Frequency of supply chain metrics report creation





Retailers get a head start on AI

As retailers ramp up their efforts to leverage the latest technology in all areas of supply chain management, innovations in artificial intelligence are poised to enhance every link within the chain. The AI-powered supply chain will operate on a single, unified platform in which each link supports and strengthens the others.

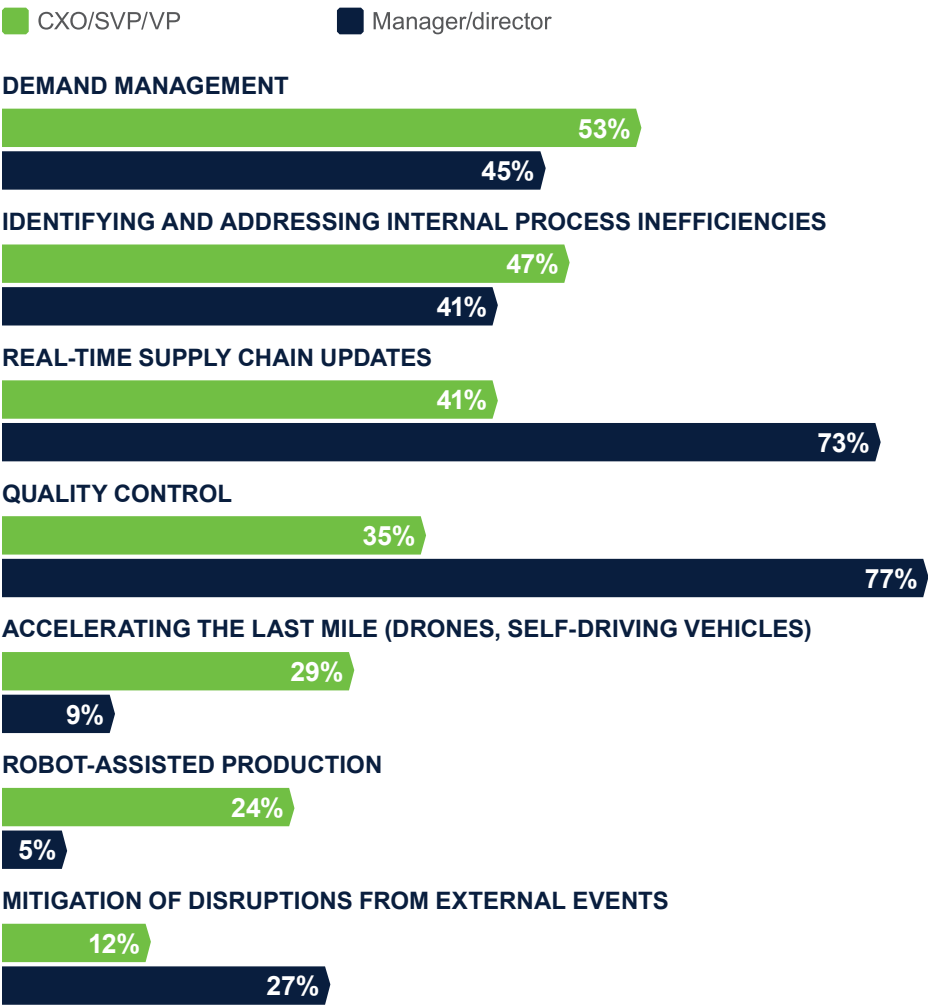
AI holds enormous potential to improve supply chain efficiency, and forward-looking retailers already have begun investing in these technologies. One in 3 say they have implemented AI capabilities into their supply chain management processes, and 1 in 4 are working toward that goal.

Retailers say AI's greatest potential to improve supply chain management relates to quality and speed. Fifty-nine percent selected either "real-time supply chain updates" or "quality control" as the supply chain processes most likely to be impacted by the integration of AI. Other predictions for AI include improved demand management (49 percent) and the ability to identify and address inefficiencies (44 percent).

Retail supply chain professionals at the senior management level hold different expectations for AI than their manager or director-level counterparts do. Senior-level respondents are more likely to list AI's potential to improve demand management and reduce internal process inefficiencies; those in manager or director roles tend to cite quality control and real-time supply chain updates as anticipated AI improvements.

The good news is that researchers project AI will deliver on all these fronts—and more.

AI's biggest impact area in the next five years





3 ways AI will transform retail supply chain management

While the opportunities are vast and will only expand as AI technology evolves, expect AI to most significantly impact three key processes in supply chain management: **demand management, fresh item management and real-time updates.**

1 Demand management. With its speed, precision and ability to leverage self-learning, algorithm-based predictive forecasting models, AI promises to deliver swifter responses to demand and capacity changes across the supply chain. Techniques that read, interpret and analyze demand patterns, such as drivers, triggers, peaks and troughs, will empower organizations to synthesize and streamline all the different variables impacting demand. The result? One accurate version of the truth.

2 Fresh item management. Managing fresh or ultra-fresh items to reduce waste is a major challenge for any retailer. AI's machine learning capabilities will vastly improve forecasting reliability, enabling retailers to plan ahead so they can maintain appropriate stocks of fresh items, and initialize systemic and centralized

quality checks while paving the way for easier regulatory compliance.

3 Real-time updates. Expect AI to transform how organizations conduct real-time updates by reducing complexities and eliminating inefficient manual processes across the supply chain. AI-based natural language processing (NLP) applications will provide automated route scheduling alerts, smart picking messages and out-of-stock alerts. Meanwhile, machine learning capabilities can detect malfunctions in picking systems, transportation fleets and other processes and equipment in a distribution center, then alert offsite staff for immediate actions. As a result, issues can be identified and rectified in real time, saving retailers major amounts of time and money.

A retail supply chain is only as strong as its weakest link. Though every organization leverages different tools and technologies in its supply chain execution, the EnsembleIQ research suggests that when it comes to challenges such as cost, efficiency and quality control, retail supply chain managers have much in common.

Yet while supply chain challenges are real, so are the opportunities. AI promises to transform supply chain processes from end to end, delivering faster, more reliable demand insights, unparalleled quality management

capabilities, and real-time updates along the way. Moreover, the AI-powered supply chain will operate on a single, unified platform in which every link in the chain supports and strengthens the others.

The retailers that come out ahead in this ever-more-competitive landscape will be those that invest in technologies like AI. By embracing innovation that boosts productivity and quality across the supply chain, leading-edge retail organizations can stay ahead of the pack and enjoy sustained growth for years to come.



About Symphony RetailAI

Symphony RetailAI is the leading global provider of Artificial Intelligence-enabled decision platforms, solutions and customer-centric insights that drive validated growth for retailers and CPG manufacturers, from customer intelligence to personalized marketing, and merchandising and category management, to supply chain and retail operations.

More at www.symphonyretailai.com

EnsembleIQ is a premier business intelligence resource that exists to help people and their organizations succeed. We empower retailers, consumer goods manufacturers, technology vendors, marketing agencies and a vast ecosystem of service providers by leveraging an integrated network of media and information resources that inform, connect and provide actionable marketplace intelligence.

With thanks to our research partner:

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