

Piloting the Retail Supply Chain

Pre-empting tomorrow's disruptions today



Abstract

The post-COVID-19 landscape of the retail industry will shape itself around circumspect consumers with conscious spending patterns and a heightened sense of vulnerability, driving new shopping routines that will ultimately impact all aspects of the retail supply chain. As some of these changed behaviors are embedded into the retail mainstream, and even more moving parts are added onto the retail supply chain in the form of channel partners and extended delivery ecosystems, the supply chain will need to progress quickly from a reactive model running on intuition and manual judgments to a holistic and autonomous entity. Much like in the airline industry, the modern retail supply chain will benefit from a control tower-driven approach that provides real-time visibility and decision-making capability by continuously considering intricacies and dependencies across parameters.

Reimagining the Retail Supply Chain

The retail supply chain, especially in the case of grocery retail, has become very erratic in the past year, mainly due to demand and supply disruptions caused by the COVID-19 pandemic. Changing demand patterns have impacted the availability of essential goods. Safety concerns have led to retailers extending their reach via locker boxes, corner shop tie-ups and third-party partnerships to extend the span of their delivery, collection, and returns ecosystem. The impact on supply lines due to resource constraints, import challenges and demand volatility have all combined to adversely affect steady availability and effective fulfilment at optimal cost.

While disruptions are common in retail, the pandemic has highlighted the fragility of complex global supply chains. The recent large-scale disruption to the world's major shipping lanes caused by the blockage in the Suez Canal only serves to highlight how the supply chain has become an intricate but interdependent web.

Can the modern retail supply chain transform quickly into a strong and an autonomous chain with the ability to anticipate disruptive events and make systemic real-time decisions that address interdependencies and balances complex trade-offs? The need is for dynamic flow decisions augmented by real-time visibility, autonomous node and inventory realignment supported by granular supply and demand intelligence, and holistic orchestration of operations to optimize the value chain. Not just quick decision making, the supply chain must also be driven by intelligent alerts and scientific interventions, orchestrating multiple parameters across the value chain to ensure success.

Supply Chain Control Tower: Rubber meets the runway

In the airline industry, where safe and smooth operations are vital requirements, the Air Traffic Control (ATC) monitors a multitude of parameters, ranging from environmental factors such as wind speed and weather conditions to operational factors, such as passenger loads, fuel levels and runway availability to efficiently manage the flow of air traffic in air space and at airports. The modern retail supply chain, with its similarly interdependent complexity, requires a control tower-driven approach, which will ably provide it with real-time visibility and decision-making capability by continuously considering a multitude of changes and parameters that influence and ensure its smooth operation.

Modern supply chains need a control tower-driven approach to execution based on the following dynamics:

- **360-degree intelligent view:** Easy traceability and accountability across multiple channels and platforms of all entities in the chain including partners and consumers. For instance, visibility to an impending workforce strike action can allow selection of alternate sources of supply. Similarly, visibility to a rise in the number of people turning vegan can allow for course correction of merchandising and assortment plans.
- **Smart decision support:** Sensing unfamiliar trends and pre-empting swift adjustments to the entire network with tailored scenario modeling and contingency planning. For example, the impact of industry wide consumption trend shifts in response to black swan type events can be alleviated by preemptive recommendations of alternative product lines.
- **Cognitive decision automation:** Next best actions enabled with an autonomous decision-making and execution engine. This type of capability can continuously optimize the cost and efficiency of the last mile by ensuring alignment of inventory at nodes and offering the most cost-effective delivery proposition to the customer.

The control tower will act as a virtual cockpit to steer the supply chain toward a real-time, hyper collaborative execution orchestrated by simplified, standardized, digitized and efficient operations, while also enabling navigation through complex network scenarios and eliminating expensive exceptions. The transition will have to be a phased and a deliberate walk-crawl-run approach. It must start with a comprehensive value discovery exercise to identify business objectives and value drivers while also taking a pragmatic view to system and process maturity, data availability, partner and ecosystem maturity, among other factors. With greater maturity, progress can be made toward building more complex capabilities and introducing machine learning and algorithmic capabilities.

The holistic execution landscape will include responsive and self-healing core operations, dynamic partnerships for flexible and profitable augmentation, and accelerated value delivery, further embedded with capabilities such as intelligent alerts, flexible monitoring, and on-demand visibility for scenario planning.

Enabling a Future-Ready Supply Chain

The availability promises and delivery propositions offered by retailers are heavily dependent on the assured orchestration of all the components within plan, buy, move and sell. Beginning with demand forecasting up to the execution of last-mile logistics, every component of the value chain will form an integral link in the control tower, individually and collectively providing the inputs required to enable greater visibility as well as contextual and pragmatic autonomy. For instance, demand forecasting will benefit from visibility to social media-driven consumption changes and influencer-driven demand spikes and troughs, which would augment traditional forecasting techniques. Autonomy and smart decision support can be introduced into the replenishment and allocation process through autonomous artificial intelligence/ machine learning (AI/ML)-driven refinement of parameters. As the supply chain becomes a larger ecosystem with the onboarding of new and often inexperienced partners, granular end-to-end visibility will provide the platform for informed decision making for logistics optimization. Machine-led decision support capabilities will augment this, offering predictive and prescriptive alerts and recommendations based on real-time transactional and environmental data.

Conclusion

As the value propositions offered to customers have expanded over the last few years, retailers have had to apply several strategies, ranging from technology-fueled last-mile delivery enhancements to nurturing and leveraging extended partner ecosystems. The continuing pandemic has accelerated the pace of this change. To sustain this scaled-up capability, the retail supply chain will have to move to a holistic, purpose-driven and intelligent version of the remote overarching control tower.

A control tower approach will provide the pivot around which the supply chain can develop, gradually enhancing visibility across the network, laying the platform on which smart decision-making and cognitive capability can be built. The control tower will gradually become the focal point of the business, a cockpit from where the retailer is able to view, manage and improve upon all aspects of the chain.

About the authors

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Prasanna has over 15 years' experience as an industry advisor for global retailers, specializing in supply chain and logistics. He has led strategic transformation initiatives spanning the entire value chain across merchandising, replenishment, order management, logistics, supply chain, sourcing, and omnichannel enablement.

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Awards and accolades



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