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Betting on supply chain analytics for retail omni-channel success

Abstract

Linear retail supply chains are a thing of the past. Modern supply chains are digital i.e. they are more connected, agile, efficient, and customer-focused. All these advances however, come at a price – that of increased complexity. Digital supply chains comprise thousands of warehouses and suppliers stitched together with supply chain systems. With every supply node - from a warehouse to a distribution centre or showroom, fast transitioning into a fulfilment location, efficiently moving products across convoluted supply chain tributaries requires a scientific approach to managing flow.

This coupled with heightened consumer demand for transparency, faster delivery, and freedom to shop across channels at a time and place convenient to them, mandates a shift towards omni-chain retail supply chains. Executing an omni-channel supply chain strategy, however, requires re-engineering the existing model and leveraging supply chain analytics to create holistic visibility. Only 34% of retail organizations are able to achieve this – the rest falter on strategy, resulting in a downward spiral.[1] Digitizing supply chains leveraging technologies such as Artificial Intelligence, Machine Learning, and advanced analytics promises huge returns. Recent McKinsey research reveals that, on average, supply chain digitalization can help companies boost annual growth of earnings by 3.2% — the largest increase from digitizing any business area — and annual revenue growth by 2.3%.[2] That's not all - integrating digital technologies into supply chains can quickly improve service levels and reduce costs by up to 30% for retailers.[3]

The paper discusses why and how traditional retailers should transform their traditional supply chains to take the lead in the digital era. It also identifies the main challenges of omni-channel supply chain management, and explores the role of supply chain analytics in enabling digitalization and optimizing the omni-channel model.

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Why the future of retail supply chain is omni-channel

In today's highly crowded and hyper-competitive retail market, consumers increasingly call the shots in the way goods and services are bought and consumed. Some of their key demands include consistent quality and service experiences, and the ability to shop across channels, touch points and devices - at a time and place of their convenience. 47% of shoppers who engage with retailers across 10 or more channels make purchases from their favorite retailer's website at least once a week, compared to just 21% for those who engage across one to four channels.[4]

Clearly, consumer expectations are driving omni-channel retail distribution. Retailers who take the cue and digitally transform their supply chain capabilities will be the leaders of tomorrow. Many are, in fact, taking note atime visibility enabled by automation, sensors and analytics.[5] However, retailers face certain key challenges in implementing an omni-channel supply chain approach:

#1 Creating inventory visibility:

While omni-channel supply chains bridge the gap between online and brick-and-mortar retail stores, lack of inventory visibility and analytics can leave retailers ill-equipped to accurately forecast demand, hampering supply chain optimization. Ensuring end-to-end inventory visibility requires retailers to collaborate with manufacturers, suppliers, and other value chain stakeholders to integrate inventory management, procurement, order processing, delivery fulfilment, returns, and other standard operations.   Just as importantly, they must leverage analytics to drive end-to-end visibility. While utilizing Big Data to optimize retail supply chains is not new, only 26% of retailers say their IT systems and capabilities enable seamless holistic visibility.[6]

#2 Enabling faster time to fulfilment:

Blame it on the Amazon effect, but modern consumers have come to expect same day deliveries. 96%[7] of customers consider "fast" to mean same-day shipping and 61%[8] are even willing to pay a premium for same day delivery. Amazon Prime's arch rivals, Walmart and Google Express, are also expanding same-day deliveries by partnering with third-party logistics (3 PL) providers to enable an elastic supply chain that lies at the heart of omni-channel. Leveraging supply chain analytics helps retailers get a real time view of inventory excess or shortage across all supply nodes and for all product SKUs, thereby enabling a robust inventory replenishment engine that ensures optimal product flow within a shorter wait time.

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#3 Ensuring easy cross-channel returns:

Today's consumers look for options when returning their purchases. They want to be able to return at a physical store, drop purchases at a returns facility, or ship them to a centralized returns warehouse. Retailers must find ways to sync multi-site distribution centers and provide customers a seamless returns experience across their website, mobile app, social media properties, and brick-and-mortar locations. 88% of consumers say ease of returns is a critical factor in choosing where they shop.[9] The bottom line: retailers need to stop thinking of channels independently and focus instead on integrating supply chain processes by embedding analytics across channels to simplify returns reconciliation and expedite refunds.

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Supply chain analytics: Helping retailers capitalize on omni-channel opportunities

A 24x7 supply chain lies at the heart of omni-channel retail with data analytics across the supply network driving omni-channel customer experiences. Here are three ways retailers can leverage analytics to future-proof their supply chain:

#1 Create an omni-channel supply chain strategy:

"The essence of creating a solid omni-channel strategy lies in creating supply chain capabilities for the requirements of tomorrow, not just today."

Creating a strong strategy requires retailers to have in-depth understanding of their customers, needs, preferences, habits, and motivations. The ability to aggregate and analyze data from POS systems, online transactions, social media, loyalty programs and call center records, helps retailers deepen their customer understanding and steer clear of three common pitfalls. These include lack of visibility into consumer wants and needs, inability to provide a profitable value proposition as well as inability to accurately predict future trends. Overcoming these pitfalls requires strong analytical capabilities. The essence of creating a solid omni-channel strategy lies in creating supply chain capabilities for the requirements of tomorrow, not just today. Strategy development must also include risk analysis of various potential supply chain disruptions and preparation of risk mitigation plans with alternative supply arrangements.

#2 Enable multi-echelon (multiple-tier) inventory optimization:

"Companies need multi-echelon inventory control and optimization, backed by real time and predictive analytics, to focus on inventory levels across the entire network and forecast demand and product adoption."

In an omni-channel supply chain model, single-echelon inventory control that focuses on inventory management for an individual unit of the supply chain network is not enough. Companies need multi-echelon inventory control and optimization, backed by real time and predictive analytics, to focus on inventory levels across the entire network and forecast demand and product adoption. Where to position the inventory, how much to invest in safety stock, which part of the supply chain should be company owned and which outsourced, and who these partners should be - are major questions confronting retailers today.

For instance, intelligent safety stock optimization is critical but hard to achieve. The primary inputs for safety stock calculation are forecast, lead time, demand variability, supply variability, distribution and service level. Apart from service level, the other inputs are all pre-defined by the prior processes or the type of demand/supply pattern. This leaves the decision for service level as an important consideration to manage inventory costs in the supply chain network. The right inventory management system (IMS) with built-in Artificial Intelligence and Machine Learning capabilities can significantly increase the flexibility in service level as the inventory segments may not be limited to a few and can include an infinitely large number. There are sophisticated clustering techniques (as illustrated in Figure 1) available to arrive at appropriate inventory segments. This coupled with decisions in a multi-echelon network by treating entire network as one node is driving companies towards optimality.
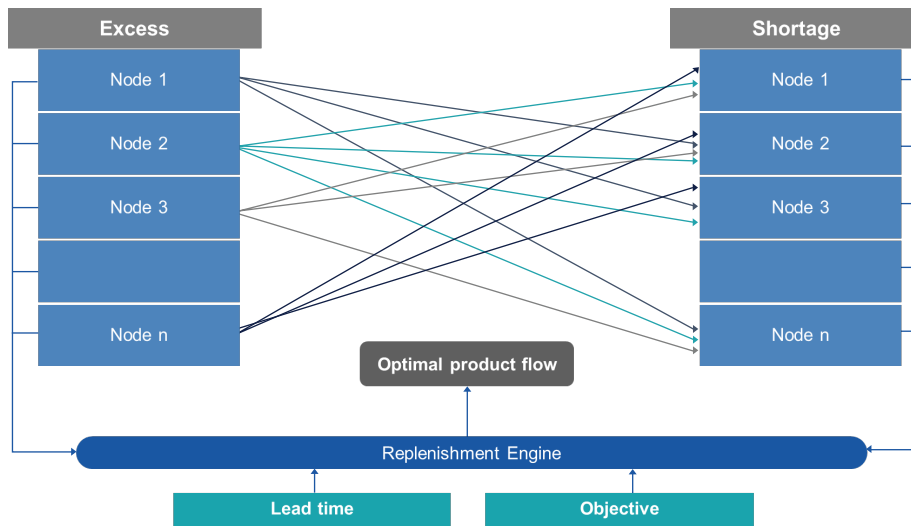
Figure 1: Inventory replenishment engine - a sample

Similarly, lot size optimization is also extremely crucial to ensure organizational cost vs. availability balance. This is also largely driven by the agreements with the suppliers. With the increasing complexity in the supply chain network and availability of Big Data tools for faster processing, there is an increasing opportunity to simulate and evaluate the lot size (as illustrated in Figure 2) decisions in line with supplier agreements. This will minimize costs and drive efficacies in the supply chain.
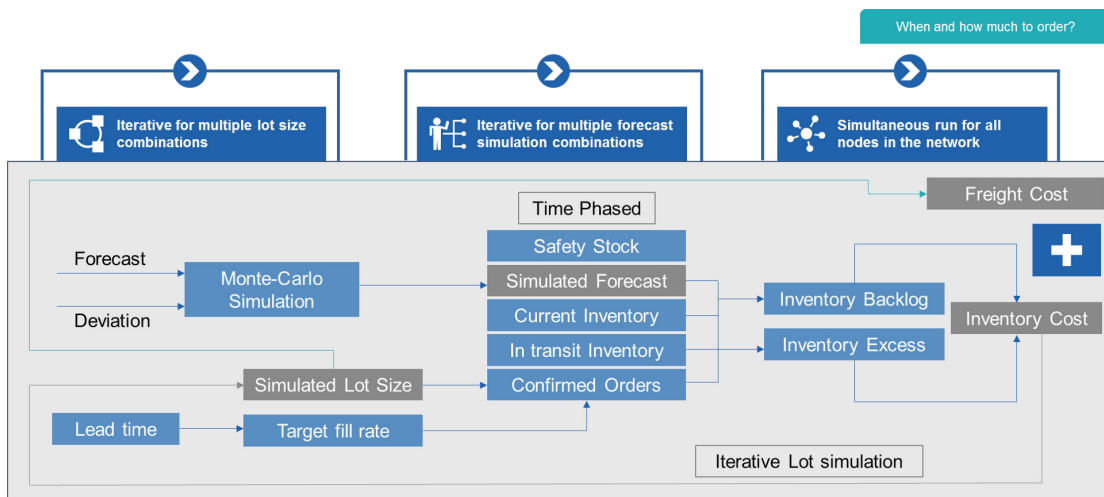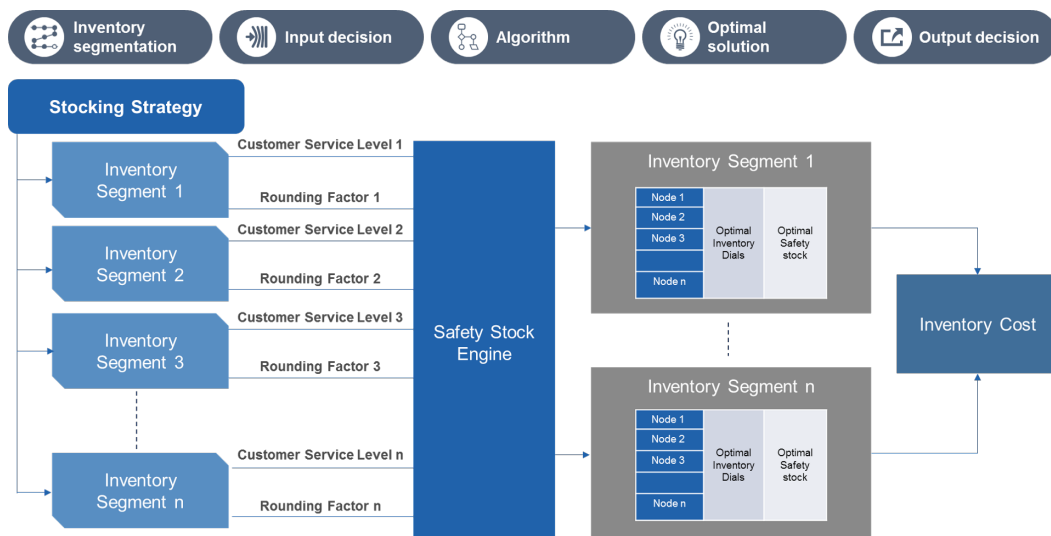

Figure 2: Lot size optimization simulation

Figure 3: Multi - Echelon POC

#3 Optimize retail returns management:

Data lies at the core of effective returns management. A single source of truth across the supply network is critical to make channels and transactions symbiotic. Making original purchase data available across channels should be retailers' key priority to expedite returns, reduce cost of returns, and offer customers a frictionless experience. Additionally, omni-channel integration also helps curb fraudulent returns, enabling merchandise to move into the reverse logistics supply chain swiftly, thereby eliminating stock-outs or idle inventory scenarios. Of the three major return routes available i.e. return to store, return to distribution center, and return to 3PL provider, in-store returns are the most economical for retailers as they offer the fastest resale of returned goods.[12] Click and collect is another method most retailers use to reduce returns and increase in-store foot traffic.

Walmart's industry-first initiative Mobile Express Returns, marries the power of the Walmart app with the retailer's more than 4,700 locations, making returns fast, easy, and hassle-free[13]

Digital Supply Networks (DSNs) will rule retail

"The rise of the digital supply networks (DSNs) that are flexible, interconnected, and matrix-like is a big leap from linear chain-like ecosystem that thrived on action and reaction."

Few industries can match the pace of change that today's retail sector is witnessing. As digital technologies mature, consumers become increasingly demanding, and sales and customer service channels increase by the day, supply chain analytics is emerging as a strong profitability enabler for retailers. 94% of supply chain leaders in a recent study said that digital transformation will fundamentally change supply chains in 2018.[14] The rise of the digital supply networks (DSNs) that are flexible, interconnected, and matrix-like is a big leap from linear chain-like ecosystem that thrived on action and reaction. The continuing maturation of Artificial Intelligence, Machine Learning, and Predictive Analytics is accelerating the shift towards cognitive omni-channel supply optimization. Most importantly, what separates DSNs from traditional supply chains is the fact that they are always on – like a connected community. The future of retail will belong to players who can think beyond making incremental supply chain improvements to adopting an ecosystem approach to consider how an integrated supply network can uncover hidden value.

Helping your business profit using Supply Chain Analytics

LatentView Analytics can help companies across industries drive supply chain profitability through forecast accuracy improvement leveraging unstructured data, predictive analytics to minimize the gap between demand and supply, and what-if scenario modelling to minimize potential risks. To know how LatentView Analytics can enable your omni-channel strategy using analytics,
please get in touch with us at **sales@latentview.com**

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Sandeep currently leads the Supply Chain Service Line for LatentView. He has consulted/has been part of top notch CPG, Retail, Manufacturing, Food & Distribution, Health care supply chains. With 11+ years of experience in varied areas of the Supply Chain industry, Sandeep has been instrumental in executing strategic projects in the areas of Demand Forecasting, Inventory Optimization, Network Optimization, Supply Chain Velocity, Logistics Cost Optimization and Service Level Optimization. He is a certified PRINCE2® Practitioner.

About: LatentView Analytics

LatentView Analytics is a leading global data and analytics service provider helping companies turn data into actionable insights to gain competitive advantage. As a trusted analytics partner to the world's most recognized brands, LatentView solutions provide a 360-degree view of the digital consumer, fuel machine learning capabilities and support artificial intelligence initiatives. LatentView's success is driven by a commitment to deliver unrivalled analytics solutions that enable Fortune 500 companies in the retail, CPG, BFSI, high tech, healthcare and other sectors to predict new revenue streams, anticipate product trends, improve customer retention, optimize investment decisions and turn unstructured data into a valuable business asset. LatentView has offices in Princeton, N.J., San Jose, Calif., London, Singapore and Chennai, India with more than 600 employees globally.

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