

Retail Supply Chain Challenges

Coping Challenges with Effective Technological Solutions

The retail industry has undergone a paradigm shift in the past two years in all its segments. One segment that has taken worldwide retailers by storm is the supply-chain challenges. Challenges brewing out of the traditional operating models have led to the need for rethinking options in the supply chain dynamics. The underlying trends in the retail industry such as ever-changing consumer demands, increasing labor constraints, ESG (Environmental, Social, Corporate Governance) expectations are leading to challenges at the globalized level. As per the Gartner survey, 59% of the overall respondents from the retail sector identified supply-chain as a challenge in terms of resiliency and agility factors. The areas starting from procurement, operations, warehousing, distribution to logistics and reverse logistics, supply-chain in retail come across umpteenth challenges. Technologies like Artificial Intelligence (AI), Internet-of-Things (IoT), and varied other digital solutions can enable retail businesses to come out of the shackles and have a seamless experience. Modern digital capabilities like RAIN RFID, an advanced IoT technology, are helping businesses to accurately capture their first-party data and utilizing them ultimately driving efficiencies and protecting fragile bottom lines across the supply-chain ecosystem. Robotic, Predictive Analytics, automation all are heralding a new era for the supply-chain smooth functioning and operations in retail.

Navigating Challenges

The retail supply chain incorporates a complex structure and managing multiple stakeholders within the loop is a serious responsibility. Navigating the challenges becomes the topmost priority for a business to look into the underlying reasons behind them.

1. Procurement

A typical procurement cycle in the retail supply chain involves too many jobs, viz. *identifying customer needs, analyzing trends in the market, selecting vendors, the entire vendor management as well as managing the payment cycle*. Challenges that surface under the procurement life-cycle process are complex in nature. The bottom line is a high level of accuracy is required. Some of the grave procurement challenges identified are:

Supply Risks – A retail supply chain procurement process always stands at the risk of frequent fraudulent activities, market risks, delivery risks, cost, and quality of goods, and varied other supply

risks. Further, procurement needs to check compliance factors, and deal with anti-corruption risks, whether policy adherence is being maintained, and so on. All these procurement-related supply chain risks keep procurement leaders on toes days and nights and if a single accuracy is missed, the whole ladder will fall.

Uncontrolled Purchasing - The procurement department plans for a certain purchase limit and once it crosses that limit, it becomes a big challenge for the entire procurement team. Consequently, it proves to be a costly affair for the business concerned.

Data Inaccuracy- A procurement challenge arises out of inaccurate data that might lead to inconsistency in inventory stocks. If purchasing is done based on inaccurate procurement data, inventory will either suffer from excess or shortage but not the right way.

Cumbersome Process Cycle –Reasons like delayed preparation of technical specifications, not aligning procurement schedule, not starting on time the evaluation process, unwanted time extension to submit proposals/bids, failed contract negotiations, etc. account for a lengthy procurement process cycle. The urgency for products, services leads to last-minute procurement which leads to being a lengthy process and loss for the business concerned.

Multiple Vendors – There are multiple vendors and suppliers involved within the procurement cycle of the supply chain in retail. Reasons vary in that the cost-effectiveness part is accounted for while choosing to buy products from different suppliers. Then, managing as well as tracking relevant data as per orders become a complicated task.

Technological Solutions- Facing the procurement challenge using the right set of digital tools and technologies calls for expert advice. A retail supply chain management can deal with this challenge using a complete procurement cycle management solution. Optimizing is the keyword. Data can be stored on a specific On-Premise Server or Cloud platform and that prohibits data loss and allows smoother tracking and managing of data. A proper ERP software can check retailers for undefined purchasing activities setting limits for specific purchases. Automation can make the entire procurement cycle short and efficient. AI-ML-powered Predictive analytics can predict sales trends and market trends, and help strategize the procurement process. The end result is managing costs while getting optimum output. Moreover, having joint access to a vendor portal will help deal with easy management between stakeholders. Digital payment solutions can bring complete transparency to the system.

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2. Operations

Moreover, there's a greater level of pressure on supply chain operations owing to the continuous economic downturn and high level of pricing pressures from the customers' side. Normally, retail supply chain operations deal with planning and executing the flow of goods/services from suppliers to respective customers. The e-commerce segment in retail faces abrupt merchandizing operational challenges. For non-discretionary goods which have high demands throughout the year make retailers out of the stocks mostly. There may be dips in the on-shelf goods for FDM (food, drug, and mass) categories, and fail to deliver supply on time and in a reliable manner. Cold-chain shipments during summer times for frozen food retail brands, labor shortage, lack of logistics all amount to hardships in the smooth operation processes. This is a major e-commerce challenge in supply chain operations.

Technological Solutions- To meet retail supply chain operational challenges, technology interventions help in maximizing the effectiveness of the operation management. For this, the retail business needs to evaluate internal operations, extended supply chains that involve customers, suppliers, too. Data Analytics and data modeling help in identifying the constraints within the gamut of supply-chain operations. Robotics, automation of repeated tasks, AI-powered robots can help tackle these challenges.

3. Warehouse

Retail supply-chain are prone to meeting challenges when they cannot see their inventory clearly. When inventory is not transparent, the business suffers. Either stock is running out at a very wrong time or there is overstocking of goods that sign for over expenses for extra materials. Stock shortage leads to unfulfilled orders, unhappy customers.

Lack of a proper inventory oversight leads to inefficiency within a warehouse facility and slows down operations as well as increasing the cost part. Several challenges crop up like pickers cannot find goods on time that are required to ship, leading to a slow loading process. In many warehouses that adopt manual processes, there exists no common route for picking items to ship, and that amounts to an unnecessary increased processing time. Redundant documentation processing like a pick ticket passing through multiple hands(picker-checker-stager-loader-etc.)add extra tensions in the warehousing processes.

Technological Solutions- Barcode technology helps to eliminate challenges faced during documentation processes, like no more requirement of passing through multiple hands. Technology helps in space utilization or warehouse layout optimization which helps in reducing labor costs. Automating processes for picking and routing reduces wear & tear on materials, goods, equipment as well as the workforce involved. AI-based predictive maintenance, data analytics tools, robotics technology, and automated robots, autonomous vehicles, etc. can tackle warehouse challenges to the maximum.

4. Distribution

Distribution directly influences the competitiveness of a retail business as it affects both the supply chain cost and the customer experience. Be it online customer or offline, fulfilling orders on time is essential. Retailers need to be flexible to react quickly to unpredictable customer demands and facilitate demand forecasting, stock holding, and distribution for both offline and online orders.

Distribution can be in multiple forms like cross-docking, consolidating orders, bulk packing, small parcel packing, expediting urgent orders, pool distribution, etc. An ideal supply chain system is capable of managing the different workflows within the distribution, direct the resources, and facilitate operations. Another issue in distribution is the sudden surge in demand that places extreme pressure on the underlying throughput capacity and staffing requirements that support the distribution operations.

Technological Solutions: Technology can provide the amount of synchronization and collaboration essential in retail distribution to enable visibility and reduce labor costs. In case of a demand surge issue, customer analytics can help predict the fluctuations and optimize the resources beforehand. Many retailers sell products on their online store that are not stocked in their distribution center, in such cases, retailers have to rely on a network of wholesale distributors to fulfill consumer orders, a platform that allows collaboration of wholesalers and retailers can play a crucial role to mitigate the challenges in inventory that has to be reserved for retailer online store, compliance issues, retailer-specific pricing/taxes, paperwork, etc.

An E-commerce giant Alibaba not just sustained and succeeded in this fiercely competitive environment but also led the way. The company had explored the opportunities presented by technology through AI and machine learning to optimize its distribution. It leverages AI automation that drastically assists the business in restructuring the entire distribution set up to achieve higher service levels and lower inventory and logistics costs.

AI algorithms allow the company to forecast the level of demand of each product for each store location, the algorithm then triggers a process that automates millions of decisions on a daily basis, balancing multiple and competing KPIs, this helps to enhance availability along with reducing wastage and significantly minimizing shelf gaps.

1. Logistics

Retail logistics is all about product availability, this means retailers must be aware of what the customer wants, how to produce it, and where and when to deliver it. Increasingly, the last mile is becoming both more complex and of more strategic importance in terms of cost and sustainability for retailers. Also, it is considered the most important part of the order fulfillment process and can take two forms home delivery or store pickup points. Both of them have their different set of challenges. Another challenge in logistics is inconsistency and fragmentation due to multiple parties involved,

Technological Solutions: Incorporating autonomous tracking and AI to track potential real-time data with routes as well as possible alternative routes can help resolve logistics issues and cut costs significantly. For fragmentation issues, blockchain technology can encompass asset tracking and enable the connection with the end customer.

Many retailers often see a significant percentage of returns that come at a great expense. A comprehensive supply chain management system can handle the returns and link the items returned with the original order and help the retailer to refine the processes for what happens to products after delivery and help them retain customers and save money.

Why Should you Address Supply-Chain Challenges

The current landscape of the retail industry has undergone a massive change especially enduring the detrimental effects of the pandemic. Retailers are grappling with varied core issues like those within consumer discretionary categories. A better, technology-backed supply-chain management can be a remedial step towards recovery. Moreover, there's a rapid shift in consumer behavior and their increasing preferences over digital channels. Especially, for the discretionary product categories, consumers prefer their discretions and less spending owing to their need-basis priorities.

According to the McKinsey & Company survey, consumers want to reduce their in-store physical retail shopping, going to malls, and similar physical outdoor shopping activities. They are prioritizing their health and safety issues aftermath Corona crisis that is still hovering around. There is the demand for omnichannel retailing and the pressure on curbside pickups has mostly doubled as compared to the pre-covid period. The survey says there's almost 50% growth in the "*Buy Online, Pickup In-Store*" (BOPIS) phenomenon under the retail ecosystem. This leads to the conclusion of how technology can indeed help in catering to this supply chain segment in a smoother way.

The change in consumer behavior, customers b2b or b2c, are redefining the way the companies are structuring their supply chain. They can shop anywhere and just anytime and expect a seamless experience from retail companies. They want an ethical and environmentally friendly approach. However, the retail organizations are not matching the speed of the ever-growing demand and changes in the ecosystem. They face challenges in finding an innovative way for :

- Sourcing
- Replenishment
- Distribution

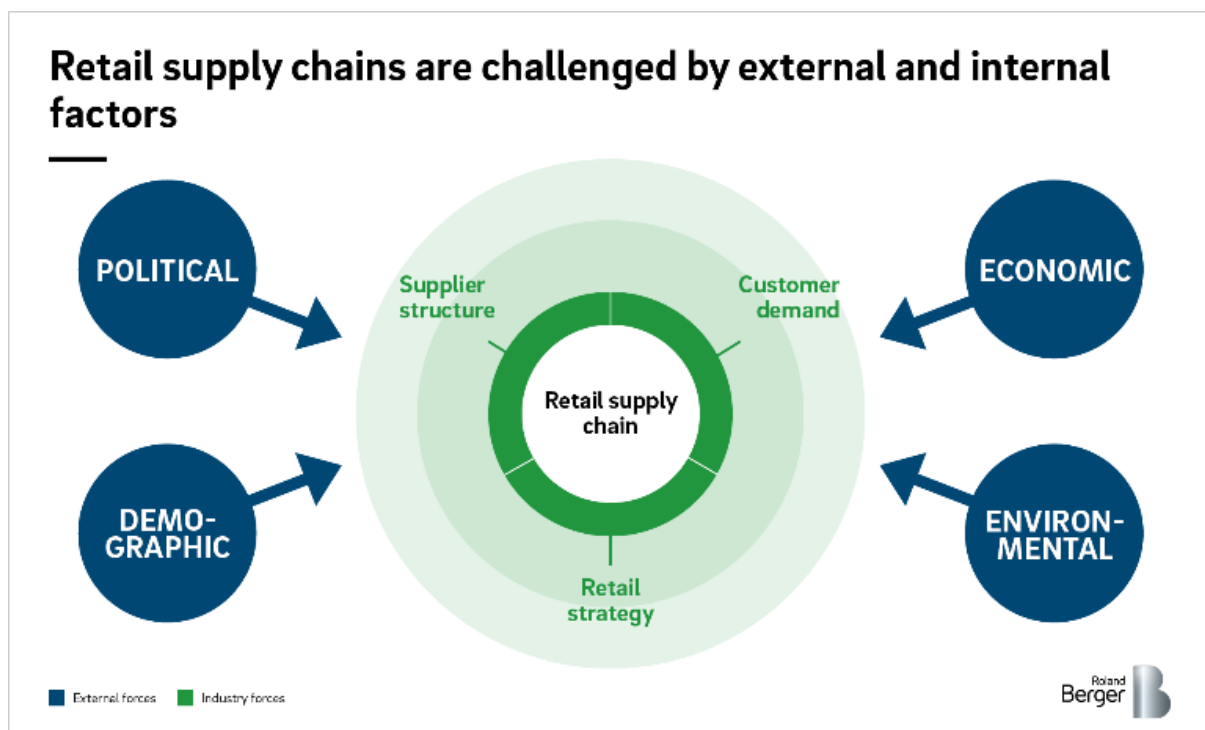
Technology like Internet-of-Things(IoT), Clouds, Robotics, Data Analytics, RAIN RIFD, AI is increasingly used across the supply chain segment in retail.

Challenges due to Demographic & Climate Change

The retail supply chain faces grave challenges that are unavoidable due to the underlying reasons involved. Climate change, demographics are the two key challenges that call for retail transformation. While the supply chain itself poses risks for climate change, like, transport-connected emissions, the weather also causes big losses to retail. Bad weather leads to production losses, disrupted

infrastructure, all further pose risks for retail store shelf-replenishment. Demographic is another challenge that is triggered due to increased urbanization at the global level. Challenges emanating from the current demographic trends, declining household sizes, and ever-changing consumer behavior.

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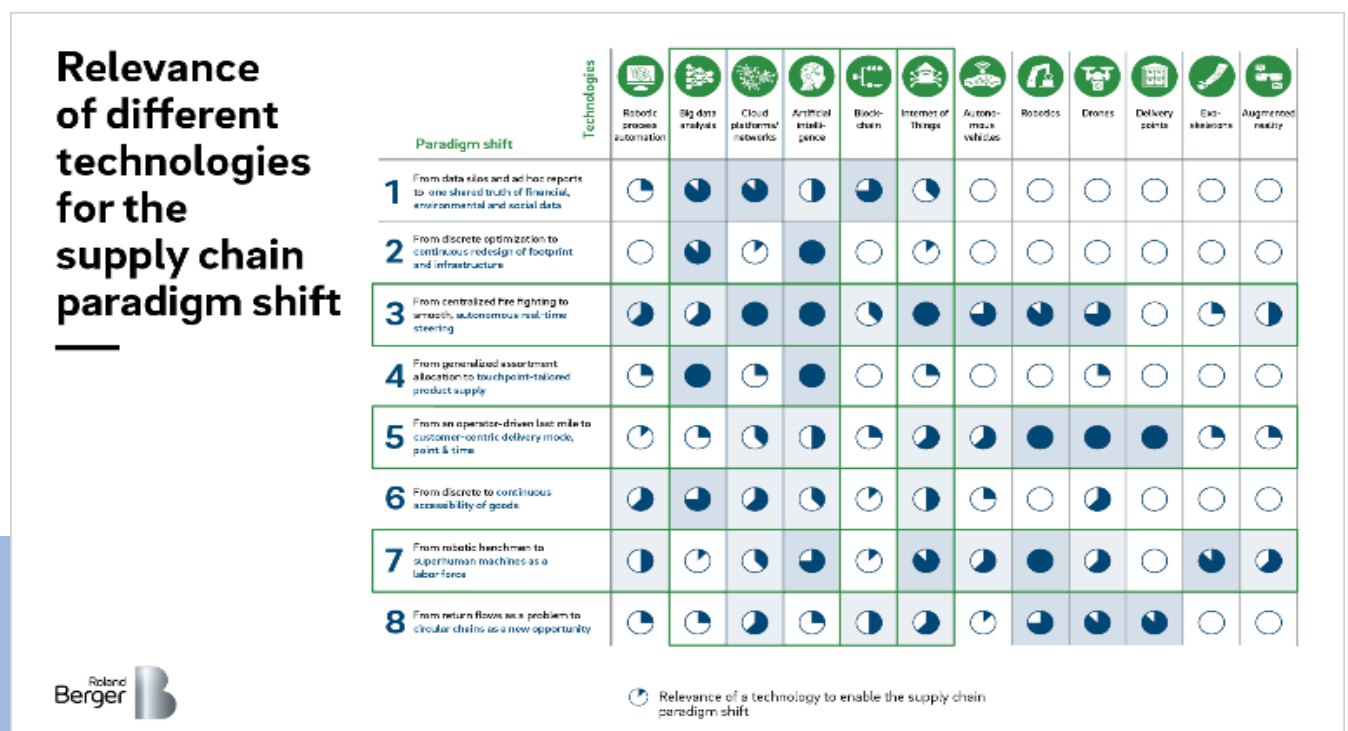
The supply-chain in retail faces ever-increasing uncertainties due to-

- Political, regularity instabilities and unpredictable impact of climate change
- Ever-increasing complexities caused by diverse business models, multiple manufacturers, multiple channels
- Ever-rising customer expectations and demands for quality, comfortable price-range,24*7 and choice-based availability of assortments
- Recurring cost-pressure owing to skilled-workers-shortage, scarce resources and higher cost price due to saturated market conditions as well as a higher level of competitions

Need for technology Intervention

- To combat the climate change challenge, Supply-chains must be optimized in a way that transport-related emissions are hugely reduced
- To combat weather-related production losses/infrastructure disruptions, the stakeholders should adopt regional diversification
- Retailers should adopt business models that address the changing needs of customers, consumers & consumer-friendly
- Retailers should focus on more e-commerce, move to Omni-channel retailing, adopt creative business ideas like special shopping events, pop-up stores, etc.
- Radical digitalization is the need of the hour for sustainable supply-chain shifts

Image 2- to be converted



Technology Impact in the Retail Supply Chain

- Instant access of relevant, complete, and accurate information
- Reduced costs of supply-chain operations
- Enhanced usage-level of storage space in typical warehouses
- Increased level of traceability
- Developing intelligence-based marketing-capabilities
- End-to-end optimization of the whole business processes

Digital Supply-Chain

Creating a digital supply chain needs the following paradigm shifts with the help of the latest digital technologies:

1. Replacing siloed data formats with one single source of information

A complex supply chain in the retail segment generates data that are mostly uncontrollable and continuous flowings which are available in the siloed format. So, bundling information in a way that is not presented in siloed format rather a single, common, secured, and shared, reliable, social data platform.

2. Setting up of digital infrastructure

To combat global supply-chain challenges caused by unpredictable external factors like climate shift, trade policies, wages, national policies & regulations, robust, constant data-driven monitoring, and surveillance comes in handy. Fine balancing of redesign costs and operational costs via digital data-driven monitoring tools and technologies, a retail business can ensure the supply chain to be competitive and effectively optimized.

3. Shifting to AI-Powered Assortments

Artificial Intelligence (AI) can help address this supply-chain problem of a centralized management system that has one-size fit all category even for smaller stores in multiple locations. But AI enables the touchpoint-tailored supply of products while removing the scope of any generalized allocations of assortment. Thus, an AI-powered assortment & order management system addresses the issue of smaller stores at the micro-level.

4. Robotics Technology for Real-Time Transparency

The retail supply chain can utilize the massive AI-ML-backed Robotics technology for smooth, autonomous, real-time steering across facilities, warehouses, and to customers at their places. Machines via Robotics can communicate amongst themselves in their network, can decide next steps, and can efficiently tackle varied issues like traffic, delays, and so on. App-based Real-time instructions, based on remaining inventory, and predictive analytics demand forecasting, all can guide drivers for seamless deliveries to stores, warehouses, and varied facilities.

5. Digital & Seamless Omnichannel Strategy

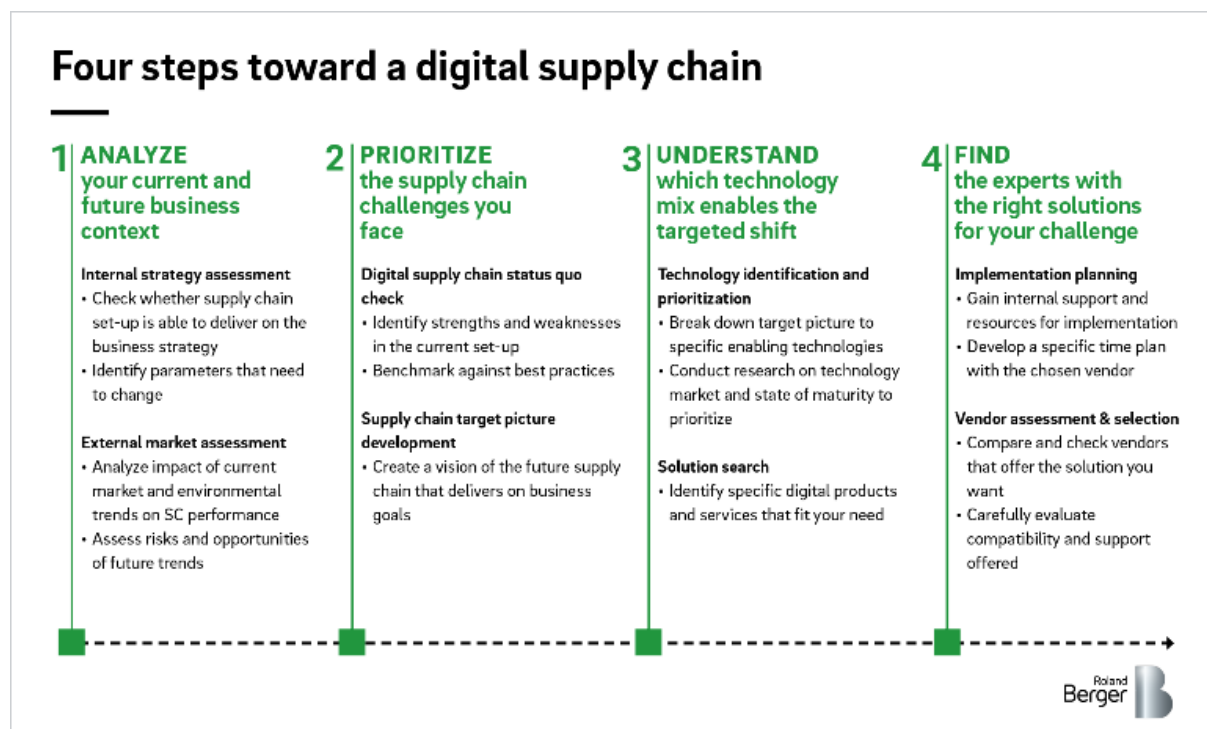
A retail product that remains in the supply chain has to be ordered from any place, by anyone, and for closing a sale, it shouldn't be challenging if that product (that has been ordered) is presently available on a shelf, lying on a truck due to arrive sometime later, is in a retail store or the warehouse. Retail sales should be in the position to digitally access that product anytime and can reserve it for future delivery. The same rule applies to the customers directly if they are ordering

products on an e-commerce platform. The omnichannel strategy applies to this supply chain aspect in retail where the decoupling of physical availability and sale of an item plays a prominent role.

6. Customer-Centric Connected Commerce

Customers don't care about brands or prices once they have paid for their products. They want their product to be served on their terms and that's how a retail supply chain can help close this deal! Technology can help retail supply chains to establish customer-centric mode, centering around on-time availability and delivery of products, all the time! Foraying into connected commerce allows retailers to become omnichannel players and serving all their customers seamlessly, at any touchpoint, from one single source.

Image3 to be converted



Conclusion

Digitalization of the entire supply chain in retail can facilitate a seamless, efficient, and cost-effective flow of goods & information in the ecosystem. The overall focus in the retail supply chain has evolved from the functional aspects of moving products to an integrative approach that attempts to develop end-to-end supply chains. The ability to collect, disseminate and use technology throughout the supply chain and its partners can increase the pace and accuracy of supply chains. The use of technology positively influences retail supply chain responsiveness along with reducing order cycle time, quick replenishment, the faster and timely transmission of needed information in the entire network. Global retailers such as Amazon and Alibaba have invested and already reaping benefits, considering the way to improve supply chain challenges using technology can drive sustainability in today's competitive world.

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About The Author

Varsha Priyadarshini

Endnotes

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