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ARTICLE

# HOW IOT IS RE-DEFINING THE RETAIL SUPPLY CHAIN LANDSCAPE

A WNS PERSPECTIVE





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## A WNS Perspective

Inventory is the lifeline of retail. But ever-evolving customer expectations and changes in business models are putting a serious strain on an enterprise's ability to operate streamlined inventory supply chains. The Internet of Things (IoT), with its propensity to drive unprecedented inventory visibility across shelves, transit and warehouses, can help businesses achieve efficiencies, cost reduction and superior customer experience.

According to reports, the remote asset management market will be worth USD 26.99 Billion by 2021,<sup>1</sup> growing at a Compound Annual Growth Rate (CAGR) of 25.1 percent. Adoption of IoT will be a key contributor to this momentum. By 2021, 70 percent of retailers are planning significant investments in IoT.<sup>2</sup> These numbers reflect how IoT is primed to become a potent and strategic tool for retailers, helping them pre-empt as well as drive demand.

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<sup>1</sup> [https://www.researchandmarkets.com/research/tmj47q/remote\\_asset](https://www.researchandmarkets.com/research/tmj47q/remote_asset)

<sup>2</sup> <https://www.forbes.com/sites/louiscolombus/2017/03/19/internet-of-things-will-revolutionize-retail/#2bb289225e58>

# GROWING PRESSURES ON RETAIL SUPPLY CHAINS

Same-day delivery turned out to be a milestone in the retail supply chain space and is continuing to grow exponentially as a market. A significant number of shoppers are now willing to pay for faster or same-day delivery. While leading e-retailers with deep pockets are putting their foot on the accelerator on same-day delivery offers, start-ups are leveraging same-day delivery to build their customer base. This has left other retailers playing catch-up in re-inventing their supply chain to enable faster delivery.

Another customer behavior that is rocking the retail supply chain boat is expectation of a hassle-free, no-questions-asked return policy. A study<sup>3</sup> found that nearly 51 percent of customers avoid shopping at retailers with strict return policies.

Products are returned for a variety of reasons ranging from damaged goods to customers buying multiple sizes to try at home to fraudulent purchases where the customer intended to use and return the product.

Distribution center networks of retailers were not originally designed for same-day delivery. Same-day delivery requires retailers to have adequate inventory of the product and the ability to track products closely. Further, return policies are placing pressure on reverse logistics, which has traditionally not been an area of strength for retailers.

Returned goods take a few weeks before they find their way back to the shelves. Retailers also need to evaluate the condition of the returned products and sort them across various channels

of liquidation such as rack stores and liquidation sites.

Apart from changing customer needs, supply chains face other challenges that impact inventory, cost and fulfillment abilities. Businesses in the U.S. alone lose USD 15-30 Billion annually in cargo thefts,<sup>4</sup> with food and beverage, and electronics being the most targeted categories. Retailers also need to deal with fleet repair and maintenance costs which constitute a significant portion of the operational cost. This becomes even more relevant given the fact that large retailers have begun maintaining their own fleet to fulfill same-day delivery.

## IOT – BOON FOR RETAILERS

IoT is enabling retailers to drive innovation in their supply chains. It is opening up new avenues for companies to curtail costs and better serve customers. A delivery start-up that facilitates both national and cross-border e-commerce deliveries in the EU leverages common travelers to deliver packages.<sup>5</sup> Items are packaged in bags with automatic locks and interior sensors to monitor weight, humidity, shock and temperature – all with the singular objective of preventing damage. In case of any kind of tampering, an alarm notifies both the company and sender. By adopting such innovative methods, companies can achieve their business imperative of faster delivery.

There are several instances of how IoT is helping companies get rid of typical supply chain problems. A leading e-commerce company which used to scan each of its

<sup>3</sup> <https://www.promocodes.com/pr/returning-point-promocodes.pdf>

<sup>4</sup> <https://losspreventionmedia.com/unreported-cargo-theft-incidents-make-it-difficult-to-grasp-scope>

<sup>5</sup> <https://www.pymnts.com/intelligence-of-things/2018/iot-enabled-crowdshipping/>

products manually in the warehouse now leverages wi-fi connected robots to identify products by reading quick response codes using built-in cameras.

GPS tracking is being actively used to monitor fleet transporting products. Apart from providing greater visibility of the inventory in transit, GPS tracking is also helping prevent cargo thefts.

IoT is enabling on-demand repair of fleet through remote monitoring and diagnostic of fleet, as well as signaling their location for better route management. This saves both time and money for retailers. Further, retailers can also use the information to update customers about the arrival of their product from shipment to doorstep delivery.

IoT can help proactively diagnose product issues, thereby significantly reducing the possibility of returns and associated costs. Diagnosing problems remotely can be a win-win situation for both customers and retailers. While customers are spared the hassle and derive greater value from their purchase, retailers can both save costs and reduce the burden on their supply chains.

A leading hypermarket chain has filed a patent<sup>6</sup> to integrate IoT tags to monitor product usage at customers' homes. It will have the capability to replace products as necessary and monitor product expiration.

Retailers are using geo-fencing to send push notifications to customers in the vicinity of a store, prompting them to visit the store or updating them on ongoing offers. A customer's presence is detected through GPS, wi-fi or Bluetooth.

Smart shelves, cameras and Radio Frequency Identification (RFID) chips on products in stores or warehouses are helping update the inventory records instantly. It is also enabling faster coordination across touch points for inventory re-stocking.

## POSSIBILITIES EXIST, BUT NOT WITHOUT CHALLENGES

While IoT has opened the door to a streamlined and intuitive supply chain, retailers will need to carefully chart the implementation journey. The adoption of IoT is still at its early stages. A part of the challenge is that the technology itself is evolving. According to a study, 50 percent of executives were concerned about the absence of industry-wide standards for IoT, cost, security and interoperability.<sup>7</sup>

Retailers will need to find solutions to some challenges unique to this industry. For example, while equipment and machinery can be tagged for monitoring, not all retail products lend themselves to tracking without issues. While customers might be okay with the monitoring of detergents or food in the fridge, there might be concerns about monitoring other products such as clothes. For example, a leading clothing and outdoor recreation company sought to sell boots and coats with IoT sensors allowing them to gather information such as usage and washing. However, it withdrew the project offering clarifications to customers.<sup>8</sup>

Further, IoT alone is not sufficient to transform retail supply chain. Retailers will need to build a holistic transformation plan with clear goals and milestones. For IoT to be effective, a mature analytics system needs to be a precursor. Also, the role of other technologies will need to be laid out. Finally, team preparedness, process alignment and leadership support will also play a key role.

The global connected retail market is anticipated to grow at a CAGR of 19.8 percent, with the valuation estimated to reach USD 82.31 Billion by 2025.<sup>9</sup> IoT will play a key role in this transition, helping connect all the nodes of the new-age retail supply chain.

<sup>6</sup> <https://www.forbes.com/sites/bernardmarr/2017/08/29/how-walmart-is-using-machine-learning-ai-iot-and-big-data-to-boost-retail-performance/#630f0e826cb1>

<sup>7</sup> <https://www.verizon.com/about/sites/default/files/Verizon-2017-State-of-the-Market-IoT-Report.pdf>

<sup>8</sup> <https://www.mediapost.com/publications/article/314364/ill-bean-backs-off-of-continually-tracking-clothi.html>

<sup>9</sup> <https://www.transparencymarketresearch.com/pressrelease/connected-retail-market.htm>





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