



How IoT can help enable a demand-driven supply chain

Miscalculating supply and demand metrics can be bad for business. It can lead to missed sales and future opportunities, a decrease in customer satisfaction and an overstock in inventory—all of which can affect profitability. In times of economic uncertainty and fluctuations in demand, forecasting future sales and fulfilling them through increasing complex supply chains is more challenging than ever. Many firms are finding that using a supply chain model based on customer demand can help improve product availability and reduce overstock.

What is a demand-driven supply chain?

A demand-driven supply chain turns demand focus back toward the customers by responding in near real time to their demand signals. In other words, the model is based on “pulling for sales” rather than “pushing to markets.”

A demand-driven supply network (DDSN) is a system that uses integrated multichannel systems (e-commerce, mobile and stores) to measure real-time demand. While traditional supply chains rely on demand forecasting and historical trends to assess demand projections, DDSNs can respond almost immediately to demand changes within their networks of customers, employees and suppliers.

Distribution and logistics companies are focused on building digitally connected networks that are concentrated on the customers. Digitization is now connecting companies directly with their customers, helping them understand trends and demand signals as they happen. This approach effectively ends an overreliance on demand forecasting and out-of-date historical trends that no longer adequately serve an increasingly capricious market.

How achieving Enterprise Intelligence can help with supply chain management

To implement a demand-driven supply chain, manufacturers require better visibility into the full spectrum of the supply chain, including customers' actions.

Companies need to do more than just connect their facilities; they need to make the facilities even smarter. The right on-site connectivity combined with technology and intelligence can help manufacturers, distributors and logistics companies achieve Enterprise Intelligence.

Data analytics and supply chain planning tools can offer near-real-time insights and predictions that can help improve supply chain management, allowing companies to track and respond to customer demand signals. But these tools require massive data and Internet of Things (IoT) devices to collect them all.

IoT and supply chain visibility

Deploying IoT devices across the full supply chain can give manufacturers, distributors and logistics companies the visibility they crave. IoT devices can capture near-real-time data from the factory to the distribution center to the store, which intelligent software can then analyze to make forecast and demand planning more accurate, responsive and timely. This helps companies optimize their production and inventory planning. Through these carefully managed and monitored information sources, organizations can spot new trends and spikes in demand and then quickly turn to their supply chains to fulfill them.

IoT can provide visibility for demand-driven supply chain management in many ways:



IoT sensors in factories and warehouses can update inventory data in near real time, track availability and automate inventory management and alerts for low supplies.



Machines can be remotely monitored using IoT-connected devices and predictive maintenance to help avoid unscheduled downtime and repairs when most inconvenient, taking into account periods of reduced customer demand.



IoT platforms can facilitate improved communication and information sharing among suppliers, vendors and customers so manufacturers can plan for changes in supply or orders.



Manufacturers, distributors and logistics companies can access data, such as weather information, from third-party IoT devices that could indicate possible changes in customer behavior and demand.

IoT and supply chain digital twins

Digital twin technology is an example of how IoT technology can help test how different levels of customer demands may impact the supply chain. Digital twins are accurate and responsive virtual models of physical objects and devices. Using data sourced from IoT, organizations can create virtual copies of their supply chains, including all the various assets, warehouses and logistics. These “digital twins” can then be used for scenario planning, helping organizations identify risks, such as the likelihood of warehouse future congestion, and make decisions around optimization earlier than previously possible.

The benefits of a demand-driven supply chain

Using IoT and supply chain analytics offers organizations many benefits.

Enhanced forecasting of demand, supply and sales

Manufacturers can respond faster and more effectively to supply chain impacts, such as customer demand or weather-related events. When demand signals are positive, the factory can increase production (and revenue); when demand signals are weak, manufacturers can avoid building excess supply.

Faster and more efficient factory operations and shipments

IoT can drive factory efficiency and dynamic route optimization for deliveries.

More accurate asset and inventory tracking

IoT sensors can help organizations know where everything is and the environmental conditions around it, potentially helping reduce waste, damage or shrinkage of assets and inventory.

Improved customer satisfaction

A more efficient supply chain means customers could encounter fewer empty shelves and receive their orders earlier.

The network infrastructure for IoT and supply chain technology

Collecting and managing data from IoT devices in near real time requires reliable connectivity that can handle the volume of data needed for your IoT solution and supply chain analytics. What's more, getting the data to the right people at the right time requires integrating operational technology and business systems.

The low latency, increased bandwidth and faster throughput that 5G-enabled devices can provide could give manufacturers and distributors the performance they need to implement demand-driven supply chains.

Working at scale

Combined with complementary technologies, such as mobile edge computing (MEC), artificial intelligence and machine learning, demand-driven supply chain management can be done at scale, with increased accuracy and automation.

For example, MEC systems harnessing these technologies can send data to enterprise resource planning systems for near-immediate analysis and processing. A cloud-based digital platform can share information and insights across an organization and with trusted partners, so everyone can collaborate seamlessly regardless of their geographical locations. Optimization and automation of just-in-time manufacturing and delivery processes can then be unlocked for a faster, more agile demand-driven supply chain. In addition, edge computing and 5G can shorten the data loop by bringing the data processing to where the machines and operators are working.

Modern supply chain management can appear increasingly complex. But IoT and supply chain analytics can give organizations the data and insights needed to organize their operations around a simple proposition: Respond to customer demands—otherwise known as a demand-driven supply chain.

Learn more

For more information about how Verizon's solutions can help you create a secure, flexible, robust and sustainable supply chain that offers enhanced, near-real-time visibility into every stage, visit [verizon.com/business/solutions/industry/distribution-logistics](https://www.verizon.com/business/solutions/industry/distribution-logistics).

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