

Overcoming Supply Chain Challenges in 2023



Photo: iStock.com/metamorworks

May 11, 2023 Rakesh Prasad, SCB Contributor



The priorities of supply chain managers are changing. The ultimate goal today is customer centricity.

According to [Gartner](#), 62% of supply chain leaders are investing in ways to capture and analyze customer-satisfaction data, instead of just focusing on cost-cutting. A combination of hyper-automation, embedded analytics and edge computing can help. (Edge computing gathers and processes data closer to the actual data sources, rather than in a centralized location – something particularly well-suited to the widely dispersed nature of international supply chains.)

Agility, flexibility, consistency and resiliency will be key themes in the coming years. Supply chains must overcome challenges posed by labor scarcity, time constraints and increased customer demand. Robotics and other types of automation offer an opportunity to achieve those goals.

The robotics market is expected to exceed [\\$214 billion](#) by 2030, at an annual growth rate of 22.8%. Sophisticated machine-learning algorithms will power the next generation of efficient robots, their “sight” and “touch” augmented by technological developments such as light detection and ranging (LIDAR) and infrared sensors. The units can be deployed for a variety of functions, including packaging, moving units across the factory or warehouse floor, and optimizing container space. In the process, machines will become more intelligent and less dependent on humans.

The supply chain of the future will be intricately connected, spanning manufacturing, warehouses, logistics and the valuable data that supports them. Embedded artificial intelligence and analytics will enable real-time reporting and interactive data visualization, allowing managers to adjust to ever-evolving market conditions. They'll be able to create more accurate demand forecasts, and curb excessive procurement spend, by comparing previous order data with real-time market analysis.

Supply chains are fertile ground for augmented data intelligence, a combination of multiple technologies that enable advanced processing on top of a data lake or platform. Leaders can collect and analyze multiple data pipelines, and quickly zero in on the information they need for boosting preparedness and foresight.

With supply chains of the future depending on intelligent machines and internet of things (IoT) devices across functions, edge ecosystems become an attractive option for realizing rapid computation and data processing. Edge computing enables users to reassign and re-plan large swaths of data-processing capacity to the edge of the enterprise, taking advantage of low latency, high bandwidth device processing and data offload, as well as trusted computing and storage. The technology monitors environmental factors such as temperature, tilt angle, shock, humidity and other conditions to ensure the quality of goods in transit and across a product's lifecycle. It can also power predictive maintenance of equipment to prevent breakdowns and sub-optimal performance.

Supply chains have traditionally relied on monolithic architectures that require extensive coding and changing, making updates or upgrades an arduous task. Such applications require an extensive overhaul to make the smallest changes. Micro-services architecture allows supply chains to move away from this legacy technology, by decreasing the size of, and dependencies between, application components. The shift to micro-services enables I.T. teams to treat services as individual modules, so that they can be redeployed in support of a specific operation when needed. The decoupling of services not only drives agility and flexibility for supply chains, but also bolsters scalability in the event of higher cloud-based workloads, warehouse workforce challenges, sustained peak sales periods, and increased transportation needs.

The focus for supply chains, now and in the future, will be on customer centricity. Rapidly changing marketing dynamics and customer demands will require supply chains to become more agile and flexible. The confluence of data and technology will allow supply chain leaders to build strategies to overcome multiple challenges posed by changing regulations, environmental conditions, workforce requirements, and a host of other pressing issues.

Rakesh Prasad is senior vice president, strategy and solutions with Innover.

TECHNOLOGY

GLOBAL SUPPLY CHAIN MANAGEMENT

QUALITY & METRICS

RELATED CONTENT

RELATED VIDEOS

All content copyright ©2023 Keller International Publishing Corp All rights reserved. No reproduction, transmission or display is permitted without the written permissions of Keller International Publishing Corp
Design, CMS, Hosting & Web Development :: ePublishing

