

CSCMP hottopics

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Smarter supply chain control towers: An IBM point of view

By IBM supply chain solutions

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CONTROL TOWERS TAKE CENTER STAGE

Supply chains are an essential service to our daily lives, the backbone of the global economy, and a true source of differentiation and innovation for enterprises.

When they run smoothly, customers get the products and services they need at the right price, place and time. But pressure to deliver better customer experiences and continuously optimize operations and costs — coupled with unpredictable disruptions to demand, supply and logistics — have exposed the vulnerabilities and fragility of supply chains.

We've seen...

- Shifts in demand that create empty shelves at some retailers, or leave goods sitting on shelves for months, at others.
- Late deliveries caused by weather and traffic events, health and safety concerns, or backups at warehouses, with little to no warning of shipment delays.
- Over-promising to customers due to gaps between real-time demand and actual inventory availability.
- Time wasted locating inventory across multiple stocking locations and emailing and calling individuals to check availability or transfer products.
- Shortages of critical equipment because companies didn't have visibility into their tier 2 to tier 10 suppliers, where 40% of supply chain disruptions occur.¹

Manufacturers and retailers tell market research firm IDC that being resilient and avoiding disruption are now their top supply chain priorities for the next three years.² Yet, visibility remains a major problem. Organizations can't optimize supply chain performance to deliver on customer expectations and gain competitive advantage unless they have end-to-end, real-time visibility into inventory and workflow activities across their organization. This includes visibility across multiple departments and divisions, as well as across their extended supplier and partner ecosystem.

Another major problem is that organizations deal with massive amounts of internal and external data scattered across siloed systems, from disparate sources and in different formats. Traditional data integration approaches are time-consuming, costly efforts that must be repeated as systems and information needs change. And that's just half of the battle. How do you correlate and analyze all that data fast enough so you can course-correct and be responsive?

The control tower concept has been around for more than a decade and is getting renewed attention as companies trying to pivot business operations, products, services and experiences, find themselves burdened by siloed systems and data complexity. Control towers can deliver real-time insights to help you see, predict and more effectively take actions that deliver value to your business and customers. However, as Christian Titze, Vice President and Analyst at Gartner, cautions, "The term control tower means many things to many people, which already constitutes a major challenge. There are no standardized requirements or obligatory capabilities."³ At IBM, our work with clients across industries has also proven this to be true.

¹ <https://www.cips.org/supply-management/analysis/2020/february/increasing-risk-below-tier-1-suppliers/>

² IDC 2020 SC Survey, March – April 2020

³ <https://www.supplychaindive.com/news/gartner-what-supply-chain-managers-should-know-about-control-towers/574098/>

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VISIBILITY AND DATA CHALLENGES

Traditional control towers have tried to address supply chain leaders' visibility and data challenges by helping aggregate data from different internal sources and serving the data up to a single dashboard that can be viewed by all supply chain team members and partners.

But with the global spread of supply chains, rising volumes of trading partners and channel proliferation, these control towers now fall short because:

- They can't see across silos – ERP systems, warehouse management, demand planning, order management, e-commerce platforms, and logistics. It's difficult to see the big picture and drive collaboration across boundaries. Without the ability to link sales orders to inventory to transportation, it's hard to say "yes" to customers with confidence.
- Most control towers only provide an inside-out view because they lack the ability to integrate with relevant, third-party data sources. Valuable data like risk events, and weather and traffic events cannot be factored into inventory availability and fulfillment decisions, putting the customer experience at risk.
- They can't drive actions because they either lack the broad correlation of data or they don't have granular visibility. Traditional control towers too often rely on people to get the right data and "connect the dots" to make supply chain decisions and drive action.
- Their data structure and architecture can't flex and keep pace with ever-evolving supply chains. Plus, they typically can't take advantage of the rapid growth of data science and analytics capabilities because they don't easily connect to other analytics tools. Control towers must be scalable and based on a modern technology architecture that can quickly adapt to enable supply chain resiliency.

Clearly, control towers designed more than a decade ago couldn't possibly meet the needs of today's modern supply chains. By necessity, they had to evolve. Chief Supply Chain Officers charged with managing through unforeseen events and strengthening resiliency need a way to overcome these obstacles.

A SMARTER CONTROL TOWER

Smarter control towers are the performance nerve center for smarter supply chains.

Purpose-built to address specific functions including inventory management, supply assurance, and logistics, smarter control towers go beyond the basics, zooming in to help solve day-to-day problems while keeping the longer horizon in view to drive strategic change. They provide a personalized dashboard of KPIs and events and use key technologies like AI so your supply chain team can easily understand, prioritize and help resolve critical issues in real time — delivering a better customer experience while helping to reduce costs.

IBM created a [smarter control tower](#) that leverages AI and machine learning to help clients:

- Deliver end-to-end visibility across the supply chain, bringing in data and information from internal and external systems and services to address key issues like inventory which drives both cost and service quality.
- Correlate the right data against a set of rules and deliver AI-assisted insights that let you understand the impact of events and recommend next best steps. You can act faster with better information and choose to automate certain actions where practical.
- Enable collaboration across teams and partners and preserve organizational knowledge to improve and accelerate decision-making and outcomes.
- Accelerate time-to-value with a highly scalable, open platform to help you quickly design, deploy, and extend solutions to meet your unique needs and allow for long-term growth. These solutions, such as IBM Sterling Inventory Control Tower, are purpose-built to quickly address key supply chain pain points.

With accurate, real-time available-to-promise inventory data, you gain confidence in your ability to deliver on customer promises.



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How smarter control tower capabilities are helping companies solve their unique supply chain problems

Inventory is often siloed and distributed across the supply chain and partner ecosystem – stored in different internal systems, held by channel partners, in transit or already committed. Functioning as an integrated layer on top of these silos, Sterling Inventory Control Tower eliminates the need for resource-intensive integration efforts. A personalized dashboard delivers a near real-time picture of inventory wherever it is to better meet peak-period demand and avoid over promising, losing sales or disappointing customers. Embedded AI enables natural language search. Users can ask questions like “Where is safety stock the lowest?” or “What’s in transit?” to get answers quickly so they can improve the fulfillment network and optimize service quality.

A large telecommunication company had \$500 million in inventory scattered across warehouses. With end-to-end visibility and better control, they are improving cash flow by reducing inventory carrying costs and increasing inventory turns. In one year, they reduced operating expenses by \$4.5 million and improved working capital by \$40-47 million.

It isn’t unusual to discover disruptions that cause inventory shortages or excesses after they’ve happened or with little time to mitigate business impact. AI-assisted insights, informed by the right internal and external data, alert you to potential trouble spots before they happen so you can better plan and manage exceptions. With accurate, real-time available-to-promise inventory data, you gain confidence in your ability to deliver on customer promises.

Hampered by limited visibility into supply planning and time-consuming manual processes, a global electronics manufacturer was often missing opportunities to make timely decisions and mitigate disruption. Deliveries would already be late or the options available limited and more expensive. Using connectors to receive more timely carrier status updates, they can now see the big picture to get ahead of delays for better customer outcomes.

When conversations have to happen and trade-offs need to be made, virtual resolution rooms bring together the right experts across organizations and partners with the right data. AI brings clarity so you can prioritize based on upstream and downstream impact and make fully informed inventory-related decisions. Digital playbooks that curate organizational knowledge and embed AI, enable better and quicker responses to recurring supply chain challenges.

Balancing a surge in demand with supply and capacity constraints, a manufacturer of personal protective equipment needed to determine how best to allocate limited face mask inventory. With insights and priorities informed by downstream impact, they were able to make decisions – not just based on financial outcomes, but with sensitivity to the immediate customer – to prioritize healthcare providers over retailers.

THE NEXT GENERATION OF CONTROL TOWERS

Best-in-class control towers of the future will provide end-to-end visibility, enhanced by AI to enable you to:

- **See:** Establish end-to-end visibility across your supply chain with a control tower that correlates data across siloed systems with external event information to provide actionable insights into potential disruptions—all in personalized dashboards—so you can manage the exceptions.

About CSCMP Hot Topics

Issues of *CSCMP Hot Topics* may include early results from ongoing research being conducted for CSCMP or other organizations; new supply chain practices, thought-provoking ideas, or emerging trends; discussions of changes in the broader business and regulatory environment that may impact the supply chain and logistics field.



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- **Predict:** Better predict disruptions and improve resiliency with smart alerts and real-time actionable insights to help you understand the upstream and downstream impact of events on customers and prioritize your response.
- **Act:** Better collaborate on and manage exceptions across the entire supply chain with AI-powered resolution rooms and digital playbooks, combined with supply chain applications, that help you quickly respond to unplanned events and hone execution to drive KPI performance.

These next-generation control towers will also leverage the power of open platforms and intelligent capabilities to extend process optimization, making supply chains more dynamic responsive and predictive. They will:

- **Enable intelligent workflows.** Control towers will be the supporting technology to transform traditional supply chain processes and fundamentally change how work gets done. They will enable organizations to execute intelligent workflows that break down traditional silos between the back, middle, and front offices to reinvent supply chains for employees and customers alike. They will uncover efficiencies across a network of processes and partners and use learnings from vital supply chain data to predict future patterns – turning the unanticipated into the predictable and enabling readiness for disruptions impacting supply chains.
- **Future-proof and differentiate.** As an open platform, control towers can be customized and configured for the unique characteristics of each supply chain and can incorporate best-in-class capabilities from third-party services to differentiate enterprises. For example, integrating with solutions that provide trustworthy rail, ocean, truck and last mile transparency to eliminate in-transit blind spots from pickup to delivery. By combining real-time carrier data with IBM control tower capabilities, shippers can improve global logistics insights to quickly respond to relevant events and gain competitive advantage.
- **Continuously learn and improve.** AI continues to self-learn and build knowledge over time with more data, honing the control tower's ability to pinpoint recommendations and next best actions for each unique supply chain. For example, proactively identifying potential product or part alternatives. Organizations can confidently apply AI to extend human capabilities in areas such as resource allocation, managing and monitoring recurring activities and events, and providing recommendations when problems arise.

[Learn more about IBM Sterling Inventory Control Towers and the impact they can have on your operations.](#)