Order out of Chaos:
Building the Case for End-to-End Supply Chain Visibility
The competitive dynamics of globalization have led most companies to rely increasingly on outsourcing to a network of loosely connected manufacturing and distribution partners to better satisfy the ever-increasing demands of customers worldwide. The extended nature of these trading partner connections requires a more agile, flexible control structure to provide a centralized view of end-to-end supply chain operations while enabling a faster response to frequent change.

Background

More than two decades after its emergence as a critical corporate function, supply chain management (SCM) has not, for the most part, significantly advanced — at least not when compared to the forward charge of globalization. Businesses all over the world have invested heavily in enterprise resource planning (ERP) and various point solutions for execution, but only a few can credibly claim a positive return on investment (ROI). Periodic material requirements planning runs and sales and operations planning (S&OP) meetings — the underpinnings of traditional SCM — are based on stable processes, predictable demand and managed inventory. The problem is that these systems were built to manage siloed activities in relatively static settings, addressing change on a periodic basis instead of in near real time.

In today’s dynamic, consumer-centric markets, change is constant. The current business environment consists of volatile demand accompanied by continuous shifts in product mixes with relatively short lifespans, complicated by the ever-changing supply partnerships attempting to address them. With trade tensions building between countries and escalating costs, decision making has become challenging and pressure-filled.

Exception management is the name of the game when balancing volatile demand and multiple tiers of outsourced supply partners. What brand owners need can be best described as “daily S&OP” — planning between the plans — due to frequent, complex challenges requiring immediate responses. The stakes keep going up as the value of customer expectations, supplier responses, inventory and shipping costs weigh heavily on decisions and timing. To compete effectively in this environment, supply chain professionals must address common situations like missed shipments as well as crises involving fire- and tsunami-level challenges.

The company must make a decision — fast!

Frontline professionals struggle to make decisions — both simple and complex — quickly and confidently:

• “Can the business accept a ‘hot order’ from a key customer and send a response right away?”
• “How is end demand impacted by a sudden supplier component shortage?”
• “What orders should take priority to minimize late shipment impacts?”
• “Can the company fulfill orders earlier to meet end-of-quarter numbers?”
• “What is the best response to the widespread disruptions generated by a natural disaster?”

With complex global fulfillment networks far flung and filled with communication gaps, frontline professionals need a better way to manage continuous change.
Three Factors Driving the Need for Change

There are three critical drivers behind the urgent need for change.

**Driver #1: The game has changed, but technology investments haven’t kept up.**

A progressive dismantling of vertical integration and linear supply chains has occurred in favor of outsourced manufacturing and fulfillment, accompanied by trading ecosystems that manage them. This has caused brand owners to struggle with supply and demand using software tools designed for factory-centric supply chains. Instead of ERP and planning systems that focus on factory asset utilization, brand owners now need centralized, cross-network visibility, recognition and responsiveness to ensure lean product velocity. These capabilities — powered by machine learning and artificial intelligence engines — require “many-to-many” collaborative execution across a network of partners and their heterogeneous systems. Brand owners require a different solution to tackle this very different problem.

**Driver #2: Data sharing is no longer taboo.**

Lack of trust and reluctance to share supply chain data have long been the hallmarks of many supply chain relationships. As a result, many suppliers second-guess their customer orders and pass along inaccurate information to their next tier of suppliers — which, in turn, treat the information with equal suspicion. The end result of this dynamic is commonly known as the “bullwhip effect.” In an age that values time above all other commodities, now companies are quickly recognizing the need to restructure their relationships with external partners in favor of more open, collaborative operations. The most profitable and innovative supply chains in the world share this critical ability to collaborate and exchange data — such as exceptions, anticipated demand and forecast changes — in near real time.

**Driver #3: Decisions must be made quickly and confidently.**

In this environment of complex demand fulfillment networks, the ability to sense change and respond is straightjacketed by information fragmentation and latency.

With an increasing number of partners, systems and spreadsheets, for example, it has become exceedingly difficult to gather, consolidate and rationalize data quickly and reliably. Supply chain professionals must therefore make decisions based on partial information or wait until complete information is available. Both approaches result in suboptimal decisions that are often too late to affect positive change. Such poor, untimely decision-making lowers customer service levels, strains supply partner relationships, increases the amount of cash tied up in inventory and damages both brand reputation and financial results — sometimes irreparably.

In the absence of effective technology, even leading companies bridge the inter-company information silos and process gaps with bandaged workarounds, relying on “management by spreadsheet” and offline communications via phone, fax and email. In an attempt to prepare for unforeseen shifts in demand, these organizations also build up high levels of buffer inventory at all major nodes in the network. As a result, precious working capital is tied up in excess inventory, expediting costs skyrocket and profitability suffers due to high inventory obsolescence.

These and other dynamics have positioned the supply chain arena for a new stage in its evolution. In this stage, multi-tier collaboration is a foundational, not aspirational, element of leading companies’ approach to trading partner network planning and execution.
The Need for End-to-End Visibility

Visibility across all partners and siloed networks is one of the key requirements for profitable demand fulfillment in today’s highly volatile, complex and outsourced marketplace. With suppliers, contract manufacturing service providers, third-party logistics providers (3PLs) and customers spanning the globe, the lack of timely and accurate information can cause a number of difficulties. These range from high levels of supply chain risk and strained supplier relations to poor planning, excess and obsolete inventory, and missed revenue opportunities. It is therefore critical to enable near real-time visibility and collaboration across major operations and transactions, including forecasts, orders, shipments, receipts, inventory information, and stock-in-channel and point-of-sale (POS) data. Without this visibility, it is almost impossible to make intelligent, timely decisions to correct supply chain disruptions or meet volatile customer demand.

Furthermore, obstacles to collaboration hinder the establishment of truly strategic partnerships, which require working across both financial and operational boundaries. All too often, brand owners make decisions to advance their own financial advantage at the expense of their partners. To develop trusting, symbiotic relationships, it is imperative to enable near real-time information exchange and collaboration across all tiers and share value among all parties involved in the extended supply network.

In addition to real-time communication, another key enabler of multi-tier supplier collaboration is solid business-to-business (B2B) connectivity and seamless supply chain process management, both of which help create a solid foundation for sophisticated business intelligence (BI). This foundation makes event recognition possible during supply chain disruptions and facilitates more effective risk mitigation. Supply chain BI also integrates data across the entire value chain, providing unique insights about demand patterns, operations and customer service requirements. A lack of effective BI tools hinders a company’s ability to monitor operations and trading partner performance, often leading to poor operational efficiency and lost revenue.

Beyond Supply Chain Control Towers: Gaining Visibility and Controlling Chaos

A supply chain control tower can provide the extended supply chain with a more flexible and agile control structure, one that offers a centralized view of planning and execution systems with a consolidated platform for enabling rapid recognition and faster responses to change.

A control tower solution enables real-time visibility across and between disparate supply chain partners so companies can rapidly determine the business impacts of deviations from what was planned and orchestrate corrective actions between all appropriate parties. Raw data feeds are used to provide “right-time” information in a central location that monitors the flow of orders, inventory and consumption across the network. Supply chain professionals can leverage control tower capabilities to collaborate with partners online for faster, more intelligent decision-making.
An effective global supply chain requires integrated collaboration among all partners, including brand owners, suppliers, outsourced manufacturers, vendor hubs and retailers.

Not all control towers are the same. It is important to understand that control towers are not a single application, but rather a solution that combines multiple functional capabilities to address a business use case such as logistics visibility, inventory management or production milestones. Enterprises gain visibility but can also use a control tower to evaluate business impacts and further orchestrate remedial activities within or outside the organization. Advanced capabilities include predictive or prescriptive analytics and can automate the optimal response in some use cases.

Control tower functionality streamlines the assessment of future demand and the inventory levels required based on the latest macro and micro customer demands, planned production, in-transit and hub inventory, and real-time customer consumption. However, information without action has little value, so beyond its critical role as an aggregator of supply chain execution data, the control tower should also drive frontline decision-making in response to exceptions.

Control Tower Maturity

According to a September 2019 Gartner report entitled *Smart Insights for the Real-Time Transportation Visibility and Monitoring Solution Market*, “Although visibility is still on the lower end with regard to adoption and maturity compared to solutions such as transportation management systems (TMS), it is among a list of top three funded initiatives investment priority for many (46%) supply chain organizations. Gartner sees the most active implementations over the next 24 months in the areas of visibility and advanced analytics. Increasingly, supply chain visibility adoption is no longer a ‘nice to have’ for any organization, no matter the size, geography or industry. Supply chain visibility use now goes across a multitude of vertical industries, use-case segments and geographies.”*
Design Principles of a Supply Chain Control Tower

The following design principles outline what E2open believes are important functional criteria for effective supply chain control tower technology systems:

• **Connectivity is critical.** The key challenge of a fragmented supply chain is the many-to-many synchronization of the information flows that are needed to source, make and deliver a product — plus handle all the planning and execution exceptions that require prompt responses. A solid integration backbone that accommodates various information systems and data formats — including management by spreadsheet — is a foundational element of a control tower.

• **Meaningful key performance indicators (KPIs) support control tower effectiveness.** Defining and building a performance measurement platform will establish the underlying logic for the control tower mission. The tracked KPIs must be meaningful and their number manageable. Furthermore, a good rule of thumb when defining and selecting a KPI is to measure only what the company can influence.

• **A clear governance model helps accelerate responses.** The cross-functional team managing the control tower must have the authority and underlying processes to act on exceptions. Periodic assessments of group performance will help fine-tune the working model. Adjusting exception thresholds is just one example of beneficial fine-tuning.

• **The importance of change management should not be disregarded.** Ensuring cross-functional alignment and partner adoption is critical to the success of a supply chain control tower. The value of working across organizational boundaries to ensure full-time functional representation and tight integration with key trading partners such as suppliers, contract manufacturers and 3PLs cannot be underestimated.

• **It is execution, not planning, that makes the difference.** The primary mission of a control tower is superior execution of supply chain plans and the management of change in between plans. The modus operandi is “sense and respond,” which requires constant monitoring of system health indicators and exceptions — such as a delayed shipment or non-adherence to schedule — as well as prompt intervention to resolve or mitigate an exception’s impact.

• **The exception-handling model must be constructed properly.** An exception management framework outlines the metrics to be tracked based on business needs, the tolerances that trigger alerts and workflows for implementing corrective actions. This model should be properly defined and built. A mindset of continuous improvement is needed to ensure that the exception-handling model is constantly assessed and improved.

Implementation Approach

The specific business requirements for the control tower should be the basis for the implementation approach. It is therefore important to make sure those requirements are derived from the business objectives for visibility and control. Successful implementations rely on a process that takes the objectives and matches them to the strategies and practices to be deployed — taking into consideration current capabilities — and then builds upon them to deliver the control tower. The design should include KPIs for the measurement of success with targets set as part of the rollout.

The most successful implementation approach to date has been to break delivery into a series of iterative business releases that meet specific business requirements, with each release forming a control tower building block such as functionality, data, business and system processes, policies, performance measurements, and new customer and trading partner B2B connections.

At the end of each major program phase, a “phase gate exit” meeting should be held with appropriate stakeholders to review the status and major deliverables of the project. The sign-off on a particular phase gate indicates that all deliverables in the current phase have been completed to the stakeholders’ satisfaction, all critical issues have been identified and reviewed and the project is ready to progress to the next phase.
Adoption by Every Stakeholder

Change management and adoption, within both the company implementing the technology and its trading partners, are critical to the success of the control tower. This starts with clear executive sponsorship of the initiative. The executive sponsor is responsible for ensuring that the control tower’s implementation and operation receives adequate staffing and that success can be measured. This includes holding teams accountable for measurable targets on the specific KPIs that will be used to drive performance improvements and evaluate the success of the control tower. Typically some of these KPIs are directly related to the business case, requiring participation from the finance organization to “audit” the business benefits.

In the most successful supply chain control tower implementations, metrics cascade down to individual performance metrics and incentive compensation plans for control tower and trading partner users to ensure alignment with the KPIs — including bonuses for successful business releases, as well as trading partner onboarding and solution adoption. A continuous improvement process should also be established to analyze exceptions and business trends after each business release. Root causes of any problems can be addressed within this process as well.

Finally, executive sponsors need to incentivize their staff to embrace the changes driven by the control tower. A critical starting point is ensuring that all participants view the control tower as the main execution platform and the single version of the truth for all supply chain-related exceptions.

The E2open network, also known as E2net, provides simple and reusable trading partner network connectivity.
Visibility and Control Across Multi-Tier Networks

Today’s brand owners and global manufacturers get products to market through the orchestration of a complex network of trading partners, including suppliers, outsourced manufacturers, logistics providers and distributors. It takes thousands of businesses across the globe working together to deliver the right products to the right customers at the right time. For this reason, supply chains today are perhaps better described as business networks, sprawling across different geographies and tiers of trading partners. To most profitably manage the delivery of products to market, brand owners need a supply chain control tower to provide visibility and control over their multi-tier business networks.

E2open’s role is to provide advanced control tower solutions that integrate complex trading partner networks to enable easy data exchange and business process orchestration across the extended value chain. Using E2open, manufacturers can quickly detect unexpected changes in supply or demand and leverage relevant information to make informed, timely decisions for improved profitability and market share. This is how leading-edge brand owners keep supply aligned with demand and maintain control over costs, product quality and service levels — even when much or all of the manufacturing process is outsourced.


About E2open

At E2open, we’re creating a more connected, intelligent supply chain. It starts with sensing and responding to real-time demand, supply and delivery constraints. Bringing together data from customers, distribution channels, suppliers, contract manufacturers and logistics partners, our collaborative and agile supply chain platform enables companies to use data in real time, with artificial intelligence and machine learning to drive smarter decisions. All this complex information is delivered in a single view that encompasses your demand, supply and logistics ecosystems. E2open is changing everything. Demand. Supply. Delivered. Visit www.e2open.com.