

Year-Round Disruption: The Costs and Risks for Supply Chains

By Laura Gibbons and Christopher Sawchuk

EXECUTIVE SUMMARY

Even in the steadiest of circumstances, the supply chain relies on a tenuous relationship between suppliers, buyers and end customers. So, when major disruptions occur, companies with largely manual processes for logging order changes are forced to incur significant costs – in the form of excess safety stock, revenue losses and operational waste – to manage them. Today, software solutions can take disparate data about changes taking place between purchase orders and supplier fulfillment and link it back to company ERPs. In this way, performance can be monitored and blind spots eliminated.

COMMON CAUSES OF SUPPLY CHAIN DISRUPTION

Supply chain disruption can come from several sources. The best-known are those that cause unforeseen changes across several industries, such as natural disasters, geopolitical shifts or worldwide pandemics. These might cause sudden spikes or drop-offs in demand, as well as impact the supply side's ability to meet demand.

In addition to large-scale upheaval, supply chain disruption can also be due to small-scale logistical mishandlings. Inaccurate demand planning, miscommunications between suppliers and buyers, and late shipments can also cause negative effects down the supply chain.

MEASURING DISRUPTION IN CALM AND CRISIS

The Hackett Group leveraged manufacturer purchase order data to quantify disruption within the supply chain. To do this, we measured purchase order change requests between buyers and suppliers in the customer base, as each change marks a potential risk to meeting customer demand. These requests included changes to price, delivery dates and quantities.¹

Averages from 2019 show that, in moments of low or sporadic disruption, approximately 40% of purchase order line items changed across geography, company size and industry. As the coronavirus became a global disruptor, February data showed that 61% of upcoming orders placed contained line items with changes.

¹ SourceDay transactional database, 2019-20

Widely regarded as an unprecedented disruptive global event, the Covid-19 crisis caused demand and supply-driven changes across all industries. By comparing the effects of such large-scale volatility to the small-scale disturbances of everyday operations, the results demonstrate that disruption is a pervasive issue facing manufacturers everywhere.

THE BUSINESS IMPACTS OF DISRUPTION

The Hackett Group spoke with a variety of organizations in a wide variety of industries on their experiences with supply chain disruptions and found that there are three critical areas in which they incur significant costs in order to manage them: excess safety stock, operational waste and loss of revenue.

- **Excess safety stock:** Due to ongoing disruption, many manufacturers opt to carry additional safety stock to provide a buffer for unforeseen changes, often carrying 10% more inventory than target levels. The cost of carrying this additional stock adds up. On average, inventory carrying costs are 10-20% of total inventory value. For larger manufacturers, this can mean excess stock costing millions of dollars. At best, this ties up working capital that could be reinvested in strategic ways. At worst, it will be written off as obsolete if customer demand does not match up. A straight-to-consumer beauty brand we interviewed highlighted limited shelf life in their concerns about excess stock.
- **Operational waste:** Disruption also brings unintended consequences to the manufacturing floor, interrupting day-to-day operations and creating waste. Production downtime, time lost retooling machines, expedite fees and overtime pay can affect operational efficiency and potentially delay shipments. An automotive parts manufacturer we interviewed described scenarios in which they chartered private planes to deliver orders in order to avoid more costly customer late fees. While

an extreme example, operational waste was a concern of the majority of those interviewed.

- **Revenue loss:** Direct loss of revenue or customers is the most serious impact of all supply disruptions. Missing critical orders can damage and, in some cases, end long-term client relationships. Establishing a perfect-order² performance of at least 90% is important for most organizations to continue successful relationships. Missing that threshold puts a significant amount of revenue at risk, particularly with strategic or long-term clients. In the case of retail and consumer packaged goods brands, missing critical orders can result in stockouts and lost revenue, as well as loss of customer trust.

“If we didn’t have to worry about potential late deliveries, we wouldn’t need to carry excess inventory.”

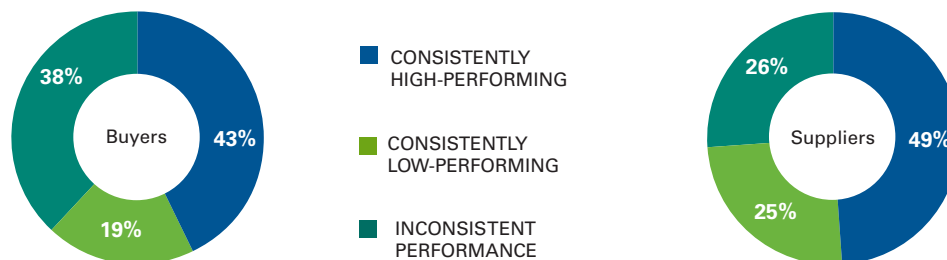
– Procurement director,
chemicals manufacturing company

HOW BUYERS AND SUPPLIERS MANAGE SUPPLY CHAIN DISRUPTION

Whether managing the effects of a large-scale event like the current pandemic or handling small-scale supply disturbances, the burden of managing disruption most often falls to two key groups: buyers within the manufacturing organization and the suppliers they depend on.

In analyzing individual performance, we discovered that approximately 43% of the buyers sampled maintained consistent on-time deliveries of parts despite disruptions, while 19% consistently fell short (Fig. 1).

FIG. 1 Analyzing buyer and supplier on-time performance



Source: SourceDay, 2019-2020

² Perfect-order rate is defined as the percentage of orders delivered on time, in full, damage-free and with accurate documentation.

Leveraging technology to identify and address late deliveries

A fast-growing electronics manufacturer needed to streamline how its buyers managed supplier PO changes in order to improve performance and scale operations. Management noticed that 25-30 parts were consistently late, which caused production lines to be shut down. Across all suppliers, 67% of shipments were arriving on time, but the root cause of late shipments was unclear, particularly given that the parts that regularly halted production were sourced from several suppliers.

In analyzing the problem, the company discovered that these late deliveries were most often caused by poor communication about PO changes, which were being tracked in spreadsheets and sent through email. After adopting a collaborative technology that allowed POs generated by the ERP to be traced through supplier fulfillment, the manufacturer could pay close attention to the parts that regularly ran late. If a supplier needed to push back a delivery date, the manufacturer could then prioritize other orders to keep lines running or negotiate with the supplier to expedite shipping.

The visibility gained into PO changes over a six-month period enabled the organization to keep its production lines running at full capacity, no longer needing to shut them down due to missing parts. The switch also yielded an improved on-time supplier delivery rate of 90% and a 66% reduction of work-in-process (WIP) inventory.

With efficiency gains and a more reliable supplier base, the organization was able to continue scaling operations, experiencing 1,000% sales growth without increasing buyer headcount.

“One of the biggest challenges we face is that most of the communication by purchasers and planners is not captured in one single location; it’s very difficult to keep track of everything.”

– *Supply chain executive, transportation industry*

A third group, consisting of 38% of buyers sampled, performed unevenly, sometimes meeting on-time delivery targets and sometimes falling short.

Analysis of individual suppliers revealed a similar grouping. Independent of circumstance, 49% individual suppliers consistently delivered on-time performance, while 25% were consistently late and 26% were too sporadic to categorize.

The data suggests that company-wide performance relies heavily on the performance of key individuals, who, even when using the same tools, experience varying degrees of success. The challenge for leadership is to better understand these cohorts in order to minimize the risks they manage on a daily basis.

THE BUYER-SUPPLIER PERFORMANCE MANAGEMENT PROBLEM

Individual performance data has previously been difficult to obtain due to differing communication standards within the industry. Late shipments, as an example, are often discussed over phone or email and historically have been logged in spreadsheets and PDFs, which do not allow for real-time information-sharing with key stakeholders in operations, planning and finance.

These communication preferences create blind spots for supply chain operators and manufacturing executives relying on order data presented in an ERP system. Due to the high amount of change experienced between purchase order creation and the receipt of goods, manufacturers rely on manual processes to update changes from email and spreadsheets and back to their ERP, often with inconsistent results.

Recent adoption by some manufacturers of software solutions that bridge the gap between suppliers and the ERP have allowed individual performance to be studied in greater detail. They have also enabled upper-level management to monitor performance and develop training or processes to optimize it.

CONCLUSION AND RECOMMENDATIONS

With no end in sight to the Covid-19 crisis, many manufacturers are currently evaluating their operations and technology in order to create more resilient supply chains that are able to withstand future disruption.

Given the magnitude of disruption caused by even small-scale disturbances like missed supplier communications and late part arrivals, as well as the tangible business impacts they have, manufacturers undergoing large-scale transformation projects

should not neglect the buyer-supplier relationship. In that relationship, metrics about individual buyer and supplier performance are revealed, empowering organizations to create resources, processes or reports to improve them.

As manufacturers seek to transform their operations and minimize risk, those that adopt modern technologies in place of outmoded processes will gain competitive advantage, fuel growth and become better equipped to weather the next large-scale event.

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About the Advisors



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Ms. Gibbons has 10 years of industry and consulting experience in areas such as procurement strategy, organizational and process design, digital transformation, strategic sourcing and category management. She previously worked in The Hackett Group's Strategy and Operations consulting practice, specializing in sourcing, procurement and supply chain. Before joining The Hackett Group, she worked in product development and strategy and operations at Groupon.



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Mr. Sawchuk leads The Hackett Group's global procurement advisory practice. He has over 20 years of experience in supply management, working directly with the Global 2000 and midsized companies around the world and in a variety of industries to improve all aspects of supply management, including process redesign, digital enablement, operations strategy planning, organizational change and strategic sourcing. Mr. Sawchuk specializes in working directly with CPOs to help define a long-term strategy. He is a regular contributor to business publications, a frequent presenter at industry events and author of numerous reports and books. Mr. Sawchuk's background includes engineering, operations and sales roles with both United Technologies and IBM.

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