Capgemini
RESEARCH INSTITUTE

APRIL 2020

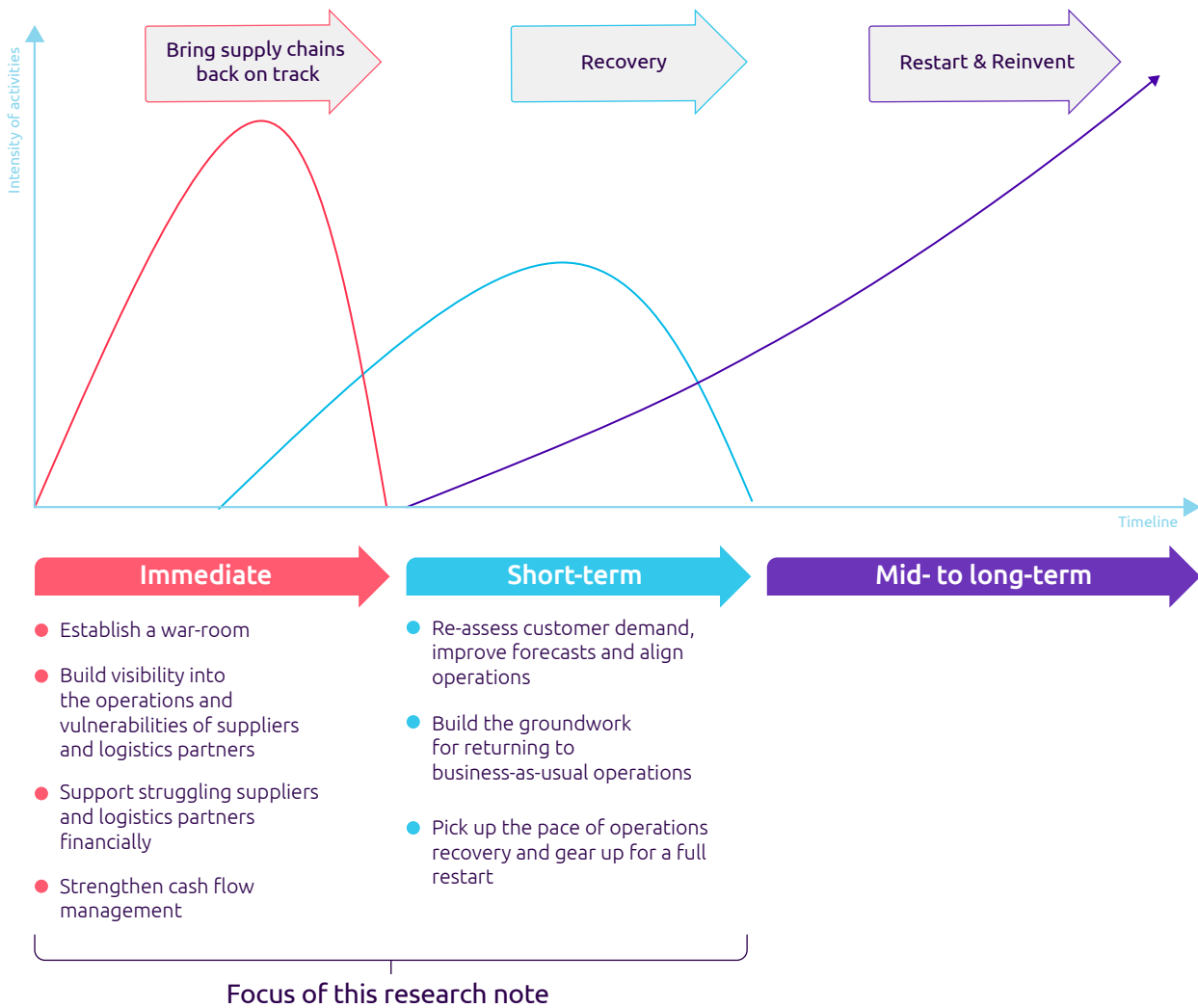# The great supply chain shock:
COVID-19 response and recovery

There has already been a huge human cost from COVID-19. At the same time, though, the economic implications are coming into sharp focus. Companies are having to protect their employees, maintain operational continuity, and address unprecedented disruption to supply chains.

The pandemic has left numerous supply chains across multiple sectors significantly disrupted. Many organizations have been left with no other option but to shut down plants because the supply of materials has dried up. This is a result of limitations in supplier or transportation capacity, or due to the mandatory lockdowns that are now in place in many countries around the world.

As they deal with these issues, organizations need to not only respond to the immediate crisis but also build long-term resilience, as shown in Figure 1. However, given that supply chains are under immediate strain and urgent action is required, in this research note we focus on the first two phases:

1. Bringing supply chains back on track at the earliest opporturtunity.
2. Preparing for, and executing, the recovery.

Figure 1: Supply chain resilience: from crisis recovery to long-term transformation

Bring supply chains back on track

Recovery

Restart & Reinvent

Intensity of activities

Timeline

Immediate

Short-term

Mid- to long-term

- Establish a war-room
- Build visibility into the operations and vulnerabilities of suppliers and logistics partners
- Support struggling suppliers and logistics partners financially
- Strengthen cash flow management

- Re-assess customer demand, improve forecasts and align operations
- Build the groundwork for returning to business-as-usual operations
- Pick up the pace of operations recovery and gear up for a full restart

Focus of this research note

Source: Worldometers.info, Capgemini Research Insitute analysis.

Industries such as food, pharma, paper, and some consumer products are facing increased demand and therefore, a diffferent set of challenges. While some of the recommendations in this note do apply to these industries, this note mainly focuses on industries that are struggling with supply chain disruption as well as a fall in consumer demand, mainly manufacturing, automotive, and discretionary consumer products.

Bringing supply chains back on track

Establish a war room

A command center (or war room) is a cross-functional crisis response team that closely monitors the fast-moving situation and has a mandate to respond to the emerging picture by taking immediate to short-term decisions quickly. Toyota and automotive suppliers Dana and Aptiv are among the many companies that have already established one.[1] A war room can help in a range of areas, from balancing demand-supply to prioritizing orders. Priorities include:

- **Governance:**

  – Establish decision making and execution powers to limit the time spent in approvals.

- **Assessment:**

  – Of the stock in-hand and in-transit inventory in the affected countries and the inventory already in the plants (funnel view).

  – Of the parts/components that are shipped from lockdown countries along with the inventory lead times and disruption in container shipments.

- **Continuous monitoring:**

  – Use real-time dashboards to reflect the current position across the value chain. Control towers are more important than ever as they allow teams to take strategic, tactical, and operational decisions.[2] They help in improving decision making, shifting supplier allocations, and in ensuring more accurate demand planning. Samsung increased its load efficiency, improved tracking, and enhanced transport efficiency through its control tower solution.[3]

  – Of dashboards to monitor workforce availability.

- **Coordination and decision making**

  – With teams that can listen to all the markets in order to stay updated about the various measures taken by governments (such as lockdowns, transport bans, etc.) and channel this information into the dashboards.

  – Prioritize customers/deliveries and reallocate the supply and the workforce as the situations demand.

Build visibility into the operations and vulnerabilities of suppliers and logistics partners

- Organizations need a detailed picture of where core suppliers' plants are located but also where their suppliers' suppliers are located. A US manufacturer of construction equipment mentions that the potential risk would tend to be with Tier 2 and Tier 3 suppliers that feed into larger suppliers. Three out of their top 25 suppliers are Chinese, so they know about the exposure there. However, because they do not know where their other 22 suppliers' supply chains extend to, the total Chinese exposure within their extended supply chain remains unclear.[4] Priorities for organizations include:

- Assessing Tier 1 suppliers as well as their suppliers to understand their ability to meet contracts

- Analyzing whether logistics partners and those of suppliers are able to transport goods, in order to find alternatives for securing inventory. For instance, General Motors responded to a shortage of parts by airlifting in supplies for North American truck production.[5]

- Building transparency by establishing communication and data-sharing channels with partners where they do not already exist.

SAMSUNG INCREASED ITS LOAD EFFICIENCY, IMPROVED TRACKING, AND ENHANCED TRANSPORT EFFICIENCY THROUGH ITS CONTROL TOWER SOLUTION.

Technology: A smart approach to supply chain disruption

- Use of 3D-printing for manufacturing components. A team from MIT is working on an open-source, low-cost ventilator design while several startups are employing 3D printing to produce anything from nasal swabs, face shields, splitters for ventilators, etc. [6,7]

- Use of AI-based tools to predict shortages/demand spikes and direct supplies. While organizations such as Alibaba, Baidu already use AI to help medical teams fight COVID-19, AI could also be used to predict the changes in demand during a crisis.[8] One of the largest water bottle suppliers in China used predictive and scenario-based planning tools to navigate the current crisis. It learned about the traffic restrictions in various places, regularly collected information from local managers to understand, and build a picture of how many workers were most likely to be available at any given time and place. It ran simulations to devise plans A, B, C, and so on. It shifted production capacity in response to changing conditions to offset transportation issues.[9]

- Use of autonomous trucks/robots and drones for intralogistics and last-mile delivery. This helps reduce the impact of any fall outs of shift plans caused, for instance, by the sickness of a large number of workers. BMW uses robots to help with small factory maneuvers such as split-bots (for splitting) and place-bots (for placing plastic boxes), pick-bots (for picking parts from supply racks), sort-bots (for stacking containers).[10]

Support struggling suppliers and logistics partners financially

In an integrated supply chain, the failure of a critical supplier can affect all players in the chain and can even disrupt an entire national industry. Providing finance for struggling but strategically important suppliers or logistic operators, especially smaller ones in the chain, can maintain operational continuity. Key areas include:

- Prioritizing your suppliers and logistics partners based on their importance to your supply chain or the products to be immediately produced

- Identifying the most vulnerable organizations on your priority list and considering extending credit or even short-term loans.

IN AN INTEGRATED SUPPLY CHAIN, THE FAILURE OF A CRITICAL SUPPLIER CAN AFFECT ALL PLAYERS IN THE CHAIN AND CAN EVEN DISRUPT AN ENTIRE INDUSTRY.

Strengthen cash flow management

Sustaining cash flow and maintaining working capital requirements are key levers for organizations looking to stabilize supply chain operations. Organizations should look at measures that conserve the cash flow in these troubled times, such as delaying large capital expenditure and cutting down on discretionary spending.[14] Yet, these levers will require the support of a range of short-term actions to yield significant liquidity impact. Priorities for finance and procurement teams include:

- Improving visibility into cash flow management through use of dedicated dashboards, as well as closely assessing the performance of procurement and sourcing contracts

- Maximizing liquidity by:

  – Exploring avenues that generate cash quickly, for instance, by prioritizing clients with strong payment capacity, collecting dues, and selling off old inventory.

  – Creating alternate revenue streams or doubling down on existing ones. P&G mobilized its teams in early January to install new production lines at its five manufacturing plants to produce hand sanitizers. When fully operational, the company aims to produce 45,000 liters per week for hospitals, health authorities, and relief organizations.[15]

Innovation: Fresh ideas for tackling supply chain disruption

- Reusing or recycling components – organizations should strive for a circular economy model and minimize waste.

- Frugal innovation – pharma companies such as Novartis and Pfizer use micro-factories, no bigger than a shipping container, to produce drugs faster and more cheaply.[11] Decathlon, the sporting goods company, converted its snorkeling masks into makeshift ventilators in Italy.[12]

- Creative pricing to dissuade hoarding – helps organizations discourage hoarding and stabilize demand. The Rotunden market in Denmark, for example, priced their sanitizers at 1000 DKK ($143) for anyone buying more than one bottle, while each bottle is priced at 40 DKK ($5.75).[13]

— Tightening cash outflow. For example, by renegotiating supplier contracts to increase days payable outstanding for suppliers with strong financials, and not for those struggling with finances. This can be balanced by offering better payment terms to those same suppliers after the recovery. Studies have shown that 69% of small businesses in the UK are already experiencing cash flow issues as a result of the Covid-19 outbreak.[16] However, organizations must exercise this option carefully. Dr. Yossi Sheffi, Elisha Gray II professor of engineering systems and the director of the MIT Center for Transportation and Logistics, told us that: *"You cannot lengthen account payable too long because you are endangering some of your critical suppliers. They go out of business, you go out of business."*

ASSESS THE SHIFT IN CUSTOMERS' BUYING PREFERENCES AS WELL AS A SHIFT IN THE SALES CHANNELS PREFERRED.

Preparing for, and executing, the recovery

As the spread of coronavirus decelerates, and lockdowns are partially or fully lifted, customer demand will begin to pick up. With the initial phase dedicated to immediate crisis issues and vulnerabilities, the recovery phase focuses on getting back to business and preparing for the moment when operations will restart in full swing. An agile approach that flexes to the evolving situation will be critical.

Reassess customer demand, improve forecasts, and align operations

- Sales & Operations Planning professionals must build a picture of future consumer demand by simulating several recovery scenarios before finalizing production and logistics decisions. A few actions that will help:

  — Assess whether there is a shift in customers' buying preferences as well as a shift in the sales channels preferred. For instance, early data from reopening markets in China at the end of March suggest that online sales of large appliances have rebounded in both volume and average price.[17]

  — Estimate demand recovery in the short term (3–6 months) and develop new forecast models based on the latest customer sales and market data. Organizations that have already digitized their supply chain are able to respond quickly. ATMI, an industrial materials manufacturer developed a supply chain alert system for its top revenue-generating products. The system tracked each product's supply chain back to base elements from the suppliers' suppliers. Through an alert system, the organization is able to quickly respond to potential supply disruption.[18]

- Adjust production and logistics schedule to prioritize customer/product segments owing to new constraints and demand-supply mismatch, for instance:

  – High-margin products or fast-moving products. Reckitt Benckiser, a UK-based consumer goods company, recently optimized its product assortment in the short term. Gathering the data on their products from retailers and wholesalers, the company focused on the ones that really sell. To meet this demand, the company has simplified assortment at its factories and distribution centers, allowing it to produce quicker by avoiding the downtime from switching lines.[19]

- Communicate with all supply-chain stakeholders regularly and synchronize key plans and decisions.

- Proactively communicate with customers about your recovery plans and timelines to reduce customer anxiety and assess demand fluctuations.

Build the groundwork for returning to business-as-usual operations

- Build agility into your supply chain strategy. For example, Master Kong, a leading food and beverage producer in China, has adapted its supply chain by constantly tracking retail outlets' reopening plans. It was able to supply 60% of stores that reopened – three times as many as its competitors.[20]

- Prepare a workforce reinforcement plan that allows you to bring back employees to factories, transport channels, and stores in a phased manner. Explore ways to onboard some workers for the short term on a contract basis to deal with fluctuating demand and supply. Alibaba, the Chinese retail giant, was faced with a logistics manpower crunch in its grocery chain, Hema. This was due to a big surge for online delivery owing to the COVID crisis. To overcome this challenge, Alibaba partnered with local, traditional restaurant chains to hire 2,000 employees on a temporary basis. This allowed Alibaba to deal with its labor shortage while allowing restaurant chains to cut labor costs.[21]

- Reposition idle capacity to benefit society. For instance, LVMH – the owner of brands such as Louis Vuitton, Bulgari, and TAG Heuer – is using the production lines of its perfume and cosmetic brands to manufacture and distribute the hydroalcoholic gel used in hand sanizers for free. [22]Rolls Royce has responded to the UK government's call to manufacture large quantities of ventilators.[23]

Pick up the pace of operations recovery and gear up for a full restart

- Create new production plans for the longer-term restart phase and evaluate priorities and potential bottlenecks.

- Start building buffer stock, particularly for complex parts that require collaboration with multiple suppliers. For example, having learned from the Ebola crisis in 2014 and Hurricane Maria in Puerto Rico in 2017, Johnson & Johnson maintains key inventory at major distribution centers away from high-risk areas and works with its suppliers to mitigate the impact of crises.[24]

- Diversify the supply network – multi-sourcing from global or local suppliers or alternate sites of single suppliers– will avoid risks associated with localized disruptions. Onboarding new vendors in the recovery phase can be more practical for certain industries where products are simple and are not heavily regulated e.g., household items, sporting goods, and apparel, among others. Kerstin Braun, President of the Stenn Group, a UK-based trade finance provider, stated, *"Businesses are likely to diversify and broaden their supply chains to become more resilient post-coronavirus, and some manufacturing should also move closer to home in order to gain better control of supply chains."*[25] But this would also mean that the supply chain professionals need to be more hands-on with their supply networks. *"Supply chain managers who previously focused their attention one or two levels down into their supply chains will have to…. develop the systems and discipline to track even more deeply into the chain,"* says Stephen Kaufman, senior lecturer of Business Administration at Harvard Business School.[26]

REPOSITION IDLE CAPACITY TO BENEFIT SOCIETY

- Onboard your suppliers quickly. One way to reduce the time required for onboarding new suppliers is to license the required techonlogy or buy (as opposed to make) or agree upon the industry-accepted standards. Ford is collaborating with GE Healthcare to produce 50,000 ventilators within the next 100 days to meet demand.[27] They are licensing an FDA-approved ventilator design from a small, privately held company – Airon Corp – to help scale production quickly.

Conclusion

COVID-19 has exposed, to a significant degree, some of the deepest vulnerabilities and risks of today's globally connected supply chains. Once the situation has been stabilized, it can therefore be a positive opportunity to take a fresh look at the supply chain – in particular, how the digitization of the supply chain can build effectiveness, transparency and resilience. The next chapter will be to drive transformation through the digitization of supply chains, mapping supply networks, rethinking supply chain strategy (such as multisourcing vs monosourcing; nearshoring vs offshoring), stress-testing critical supply chain partners, and boosting sustainability. While we are rightly focused today on crisis response and recovery, we can learn some valuable lessons from this experience that will build resilience for whatever shock the future may bring.

This document is part of the Capgemini Research Institute's special series of research notes on pragmatic tips to help organizations tide over the COVID-19 pandemic. You can find more such research notes and other tips and analyses at https: https://www.capgemini.com/our-company/covid-19-insights-for-today-and-tomorrow/

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