



Navigating through Covid-19 to achieve Supply Chain 5.0

July 2020

Introduction

Even though businesses have risk management strategies and mitigation plans, crises such as Covid-19 can take supply chain leaders by surprise. The Covid-19 emergency has highlighted how quickly a crisis can escalate, requiring a proactive, innovative and collaborative approach to build resilience in mitigation. In this paper, we assess measures that can be taken with immediate effect and the priorities beyond the Covid-19 emergency.

A Wake-Up Call

Global supply chains form the backbone of the world’s economy, fuelling trade, consumption and economic growth. Even though companies have stress-tested their forecasting models against diseases such as H1N1 and SARS, they have been taken aback by something of the scale of a coronavirus pandemic. Forecasting models usually leverage past data to predict future trends. However, the radical changes in consumer behaviour, transportation, and production have resulted in several outliers. Supply chain models have to further evolve to account for the pandemic even after it passes. Additionally, to make such kind of predictions, businesses have to foresee the new steady state¹. Environmental issues and protectionism have to be considered, as these are likely to be dominant over any other driver after the Covid-19 crisis.

The current crisis has re-emphasised the fact that supply chains are not mere physical constructs made up of raw materials, production lines, inventories and warehouses. They are also human constructs, the absence of which can bring supply chains to an inevitable halt. Even though fully automated forecasting, planning, and execution might become eventual reality, today’s digital solutions must be integrated into today’s supply chains. There will always be the human nature of supply chain to build immunity against biased consumer sentiments/ behaviour, vulnerability to unknown risks and poor visibility and trust issues due to interdependencies.

Re-strategising: Providing requisite thrust to Supply Chain 5.0

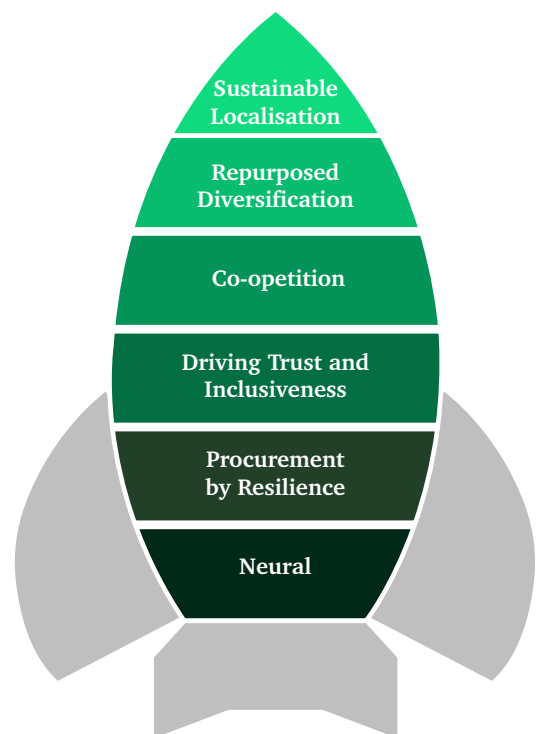
While most of the discussions around supply chain sustainability have always centred around societal contributions, climate change and driving positive business results (such as valuation and brand reputation), the other critical factors – namely, resilience, risk mitigation and continuity – have come to the forefront during the Covid-19 outbreak.

Since the supply chains are so interconnected, even a localised event can escalate rapidly and cause severe disruptions. To effectively manage the disruptions, companies have to build resilience within their supply chains. This will act as a solid foundation for the companies to pursue their journey towards Supply Chain 5.0. Only the companies which are agile and have innovative and collaborative approaches will sustain in the long term.

Companies have to evaluate and integrate the following six critical transitions as part of their supply chain strategies:

- **‘Frugal Offshoring’ to ‘Sustainable Localisation’** for shorter supply chain and increased proximity to customers: Re-shoring of manufacturing of standard high-volume components can remove uncertainty, reduce the likelihood of delays and make ‘just in time’ practices more feasible. This will also help create

Fig 1: Transitions required to provide requisite thrust to Supply Chain 5.0



jobs and reduce pollution as the volume of components shipped across the world will be reduced^{2,3}. The governments may also provide tax incentives and re-shoring subsidies to drive this transition⁴. Local supply can help drive agility, as companies can be more responsive to fluctuations in local demand⁵.

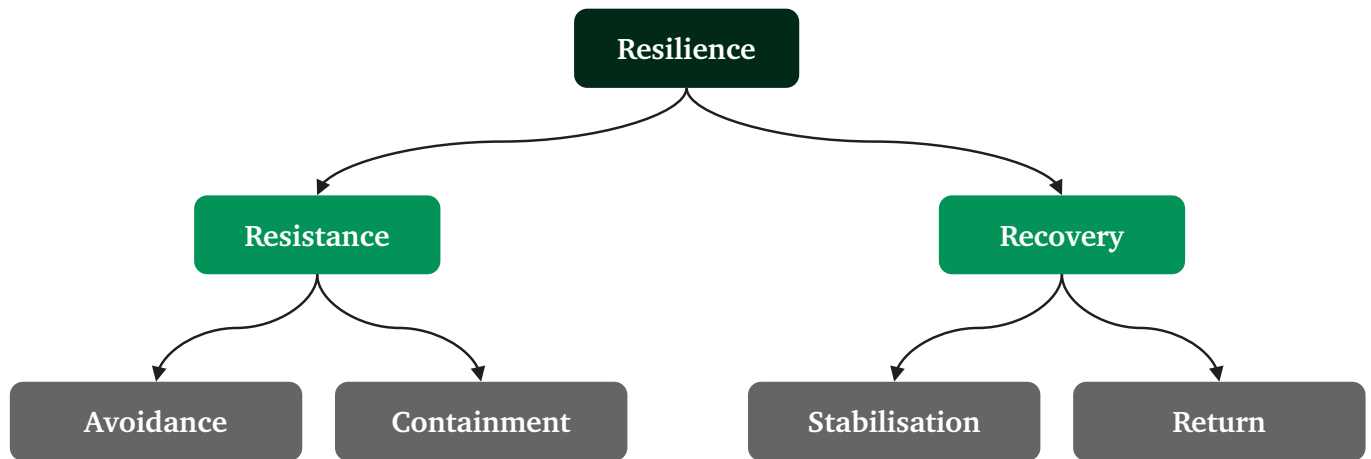
However, as procurement teams react and rush to reroute or find alternative sources of supply, they run the risk of partnering with the wrong suppliers. For instance, personal protective equipment (PPE) ordered by the UK government from Turkey did not meet British safety standards. Similarly, there have been quality issues with the PPE imported from China. Increasing quality complaints have even prompted the Chinese government to impose mandatory customs inspection on PPE exported from China^{6,7}. Failing to spot risks that affect business could add fuel to a very hot fire. For instance, risks due to dwindling public trust associated with news that a key supplier forced its employees into factories during quarantines; vendor data breach; critical plant closure; a supplier that had to shut down for compliance reasons.

- **‘Optimisation Driven Rationalisation’ to ‘Repurposed Diversification’** for rebalanced supply chain: The cascading economic impacts can be mitigated through diversified sourcing. Although it will be impossible to replace the current system immediately, the risk of not diversifying is greater than the pain of doing so. Transforming infrastructure and supply lines requires discipline and clear purpose. In the short term it might lead to thinner margins but not diversifying might prove to be fatal. The companies have traditionally been thinking of ‘just-in-time’ when actually they have to think about ‘just-in-case’⁸.
- **‘Competition’ to ‘Co-opetition’** for increased collaboration: The Covid-19 outbreak has helped re-emphasize the need for not only the competitors (as part of industry-level response) but even the governments to collaborate to manage disruptions. Companies may have to consider entering into joint purchasing agreements to increase procurement efficiency and reduce transaction costs⁹. However, the organisations have to be cognizant of the antitrust risks resulting from ‘crisis’ collaboration. For instance, in the hospitality sector, companies may want to coordinate their cancellation policies or the conditions for reimbursing customers. Such exchanges, which have the specific objective of dealing with the crisis, may be legitimate. However, companies should not discuss future prices, costs and volumes/output.

There may be a lot sharper competition during and after the recovery. Collaboration, if happening, is likely to take the form of cartels and/or government's interference and trade restrictions to protect their own interests and jobs. This could bring out the protectionist instincts of governments. For instance, the US government invoked Defense Production Act to order 3M to manufacture more of N95 respirators. Additionally, the US government demanded that the organisation stop the sales of masks to Canada and Latin America.^{10,11} So, true partnerships with suppliers and customers are likely to be more fruitful. This requires more openness and benefit sharing¹².

- **‘Siloed Approach’ to ‘Driving Trust and Inclusiveness’** for improved supplier chain visibility¹³: Attempts to ensure supply chain sustainability solely through monitoring policies and compliance have failed. This approach leads to trust issues. Only authentic collaboration can help create and maintain sustainable supply chains. During such a pandemic, companies should try to alleviate the challenges of suppliers. Rather than merely prioritising suppliers based on spend, companies should focus on suppliers that supply parts/ raw materials that are critical to sustained operations. Companies should avoid building ‘islands of resilience’ which are not sustainable and inclusive¹⁴.
- **‘Procurement by Cost’ to ‘Procurement by Resilience’** for increased sustainability: The companies can build resilience through resistance or recovery. While companies prefer high capacity for both, due to resource constraints and competitive factors, they will have to maintain an optimal balance of the two¹⁵. Figure 2 below depicts the supply chain resilience tree.

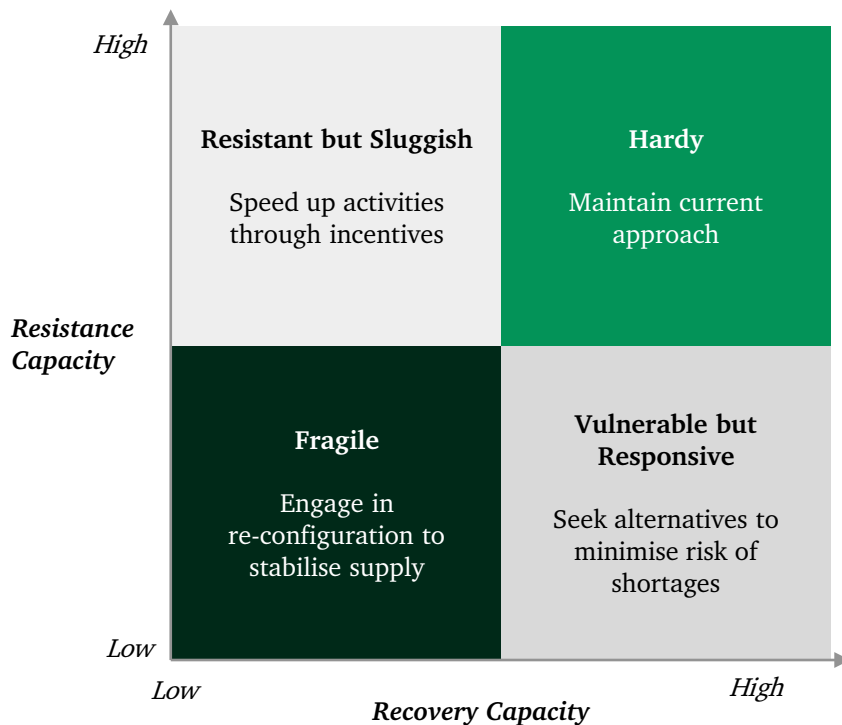
Fig 2: Supply Chain Resilience Tree



Source: RocSearch Analysis

The resistance and recovery matrix (Figure 3) characterises possible positions that an organisation might find itself in with respect to varied levels of these.

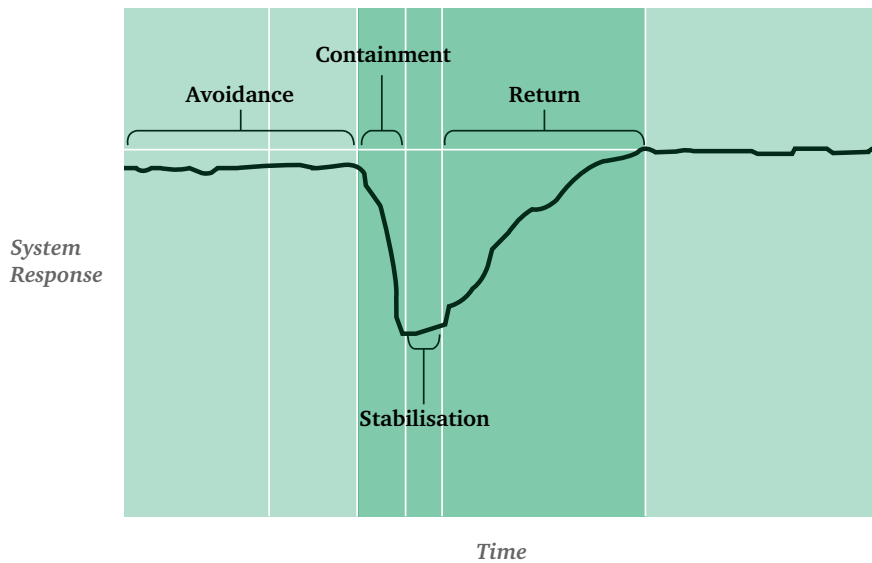
Fig 3: Resistance and Recovery Matrix



Source: RocSearch Analysis

Once recovery is complete, companies should reflect upon their experience to document their learnings and make necessary corrections to reduce future risks. This completes a supply chain resilience cycle of: Avoidance → Containment → Stabilisation → Return → Review → Avoidance as illustrated in Figure 4.

Fig 4: Supply Chain Resilience Cycle

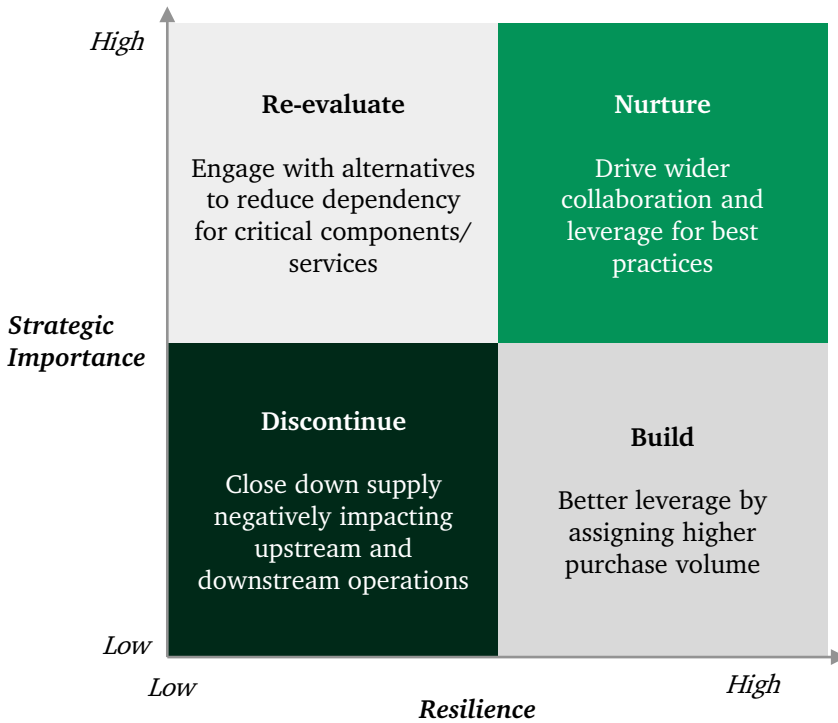


Source: RocSearch Analysis

Companies have to transform the metrics through which they evaluate new suppliers and periodically assess health of their critical suppliers. Beyond traditional financial stability and strategic fitment metrics, the assessment should also include resilience test parameters such as a) potential impact on Tier 1 suppliers and also to Tier 2 and Tier 3 suppliers as a must and preferably, should also include impact on Tier 4 suppliers; b) measures being taken/ planned to mitigate risks; c) status of the plans; d) expected recovery times and methods during such pandemic events; e) ways in which business is monitoring developments and managing the response^{16,17}. Figure 5 below outlines the transformed supplier segmentation matrix which can be leveraged by organisations to classify their supplier base and action on them.

Adoption of Trusted Trader schemes encouraged by the World Customs Organisation (WCO), such as EU Authorised Economic Operator (AEO), are likely to be critical enablers to achieve multi-tier supply chain resilience. These schemes have been around since 2005 and have been formulated to drive supply chain security standards. Thus, organisations can turn to well-used and understood mechanisms.

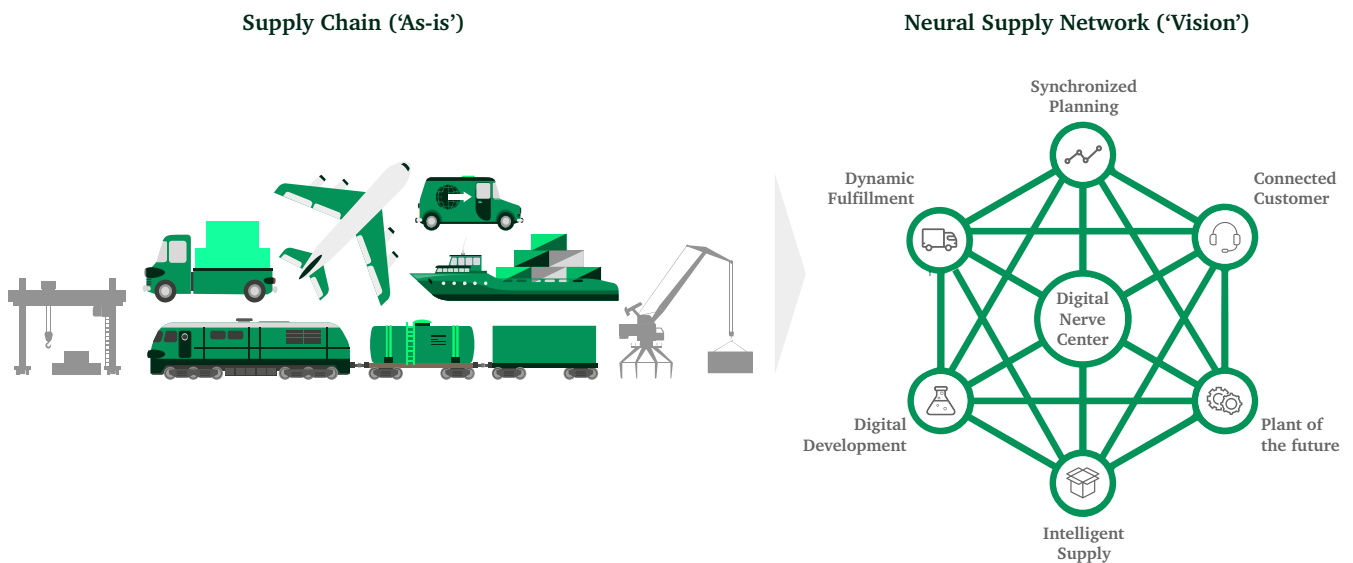
Fig 5: Reconfigured Supplier Segmentation Matrix



Source: RocSearch Analysis

- ‘Linear’ to ‘Neural’** supply chain network for required agility: Businesses have to leverage technology to build an integrated and agile supply chain management system. This system will act as a nerve centre and will cover multiple priorities, ranging from conducting scenario-based sales and operations planning to overseeing parts availability, logistics, and supplier health performance tracking. Organisations are expected to increase their investments on artificial-intelligence- (AI-) powered tools which help map out risks linked to globally spread supply chains^{18, 19}Figure 2 below outlines the transition required from the traditional supply chain to digital supply networks.

Fig 6: Transition to Neural Supply Chain Network



Trajectory from COVID Emergency to the New Normal

Companies should understand their supply chains more deeply and in more dimensions. The COVID-19 outbreak is likely to result in longer-lasting reconfigurations of supply chains to build resilience. Supply chain leaders must collaborate with customers, suppliers and peers to effectively identify, assess and mitigate risk. Figure 4 outlines the trajectory to be traversed to navigate the current crisis and maintain momentum to achieve the vision of future^{20,21,22}.

- Mitigate: Assess supply chain risk exposure and develop a contingency plan.
- Pivot: Navigate uncertainty while quickly retooling and smartening the supply chain for the "new normal."
- Sustain: Strengthen operational and structural resilience to achieve Supply Chain 5.0²³

Fig 7: Requisite Measures to Pursue and Achieve Future Supply Chain Vision

Mitigate (Lockdown)	Pivot (Pre-normal)	Sustain (New Normal)
<ul style="list-style-type: none"> • Buy ahead to procure inventory • Activate pre-approved parts/ raw-material substitutions • Assess supplier preparedness • Proactively communicate with Tier-2 and Tier-3 suppliers • Prioritise and communicate with customers • Assess 'true demand' and 'cost to serve' • Support financially hit critical Small and Medium Enterprise (SME) suppliers • Collect real-time data to match demand and supply 	<ul style="list-style-type: none"> • Update supplier performance evaluation metrics with resilience, responsiveness and reconfigurability • Conduct scenario planning • Diversify supplier base • Map overall supply chain • Relocate freight to be closer to the customer • Drive supplier collaboration and innovation • Activate product redesign/ material certification • Create transparency on multitier supply chains • Execute dynamic pricing for enhanced revenue 	<ul style="list-style-type: none"> • Deploy supply chain visibility tools • Secure sensing and connectivity across enterprises • Model future risks and associated costs • Reconfigure and digitalise supply chain • Integrate with supply chains of Tier-1, Tier-2 and Tier-3 suppliers. Preferably, also track Tier-4 suppliers • Make critical decisions through closed loop of real-time data analysis • Optimise operations through closed loop automation • Manage closed loop infrastructure - both external and internal

Source: RocSearch Analysis

Final Note

Even though supply chain problems posed by crises such as COVID-19 are still evolving, businesses have to be pro-active and persistent in their response. In the future, the procurement function is expected to play an important role in business continuity planning. By mapping, monitoring, and moving quickly, companies can better handle a “whack-a-mole” recovery in which many of the moles are disruptive problems, but some are opportunities²⁴. They should move from being cost competitive to being risk competitive. This is likely to require supply chain reconfiguration measures which are inclusive and agile.

RocSearch is publishing a series of papers that are expected to empower businesses with timely information and analysis to enable better planning for survival and recovery. In this series, we will next assess the following topics:

- Select the right post-COVID supply chain strategy to create value
- Invest in, and implement, the right new technologies

Acknowledgement

We interviewed several of our partners to assess the impact of this crisis on global supply chain. Some of the participants included:

- Tim Lux and Valter Johansson of Pathfinders, a UK based strategy and insights consultancy
- Prof Richard Wilding, Immediate Past Chairman, The Chartered Institute of Logistics & Transport, U.K. & Full Professor Cranfield School of Management U.K.

References

- ¹ [The algorithms big companies use to manage their supply chains don't work during pandemics, The Verge, April 27, 2020](#)
- ² [Is it time to rethink globalized supply chains? Massachusetts Institute of Technology Sloan Management Review, March 19, 2020](#)
- ³ [There will be a 'massive' shuffling of supply chains globally after coronavirus shutdowns, CNBC, March 20, 2020](#)
- ⁴ [Trump seeking to remove China's industrial supply chain, Supply Chain Digital Magazine - BizClik Media, May 4, 2020](#)
- ⁵ [Covid-19 crisis has laid bare weaknesses in supply chains, Financial Times, May 12, 2020](#)
- ⁶ [China imposes more checks on mask exports to ensure quality control, Reuters, April 10, 2020](#)
- ⁷ [Coronavirus PPE: Gowns ordered from Turkey fail to meet safety standards, BBC News, May 7, 2020](#)
- ⁸ [Be wary of scapegoating 'just-in-time' supply chains, Financial Times, May 28, 2020](#)
- ⁹ [Combating COVID-19 through competitor collaboration, JD Supra, April 7, 2020](#)
- ¹⁰ [3M taps regional suppliers to meet soaring demand for masks, Reuters, March 5, 2020](#)
- ¹¹ [Covid-19 is bringing out protectionist instincts, Financial Times, April 19, 2020](#)
- ¹² [Philips warns protectionism could derail critical medical supplies, Reuters, March 24, 2020](#)
- ¹³ [Supply chains have been upended. Here's how to make them more resilient, World Economic Forum, April 6, 2020](#)
- ¹⁴ [Supply chains need some love during the coronavirus pandemic, Financial Times, April 7, 2020](#)
- ¹⁵ [Understanding Supply Chain Resilience, Supply Chain News](#)
- ¹⁶ [Coronavirus is a wake-up call for supply chain management, Harvard Business Review, March 27, 2020](#)
- ¹⁷ [What it will take for China to rebuild global supply chain resilience after COVID-19, GreenBiz, April 3, 2020](#)
- ¹⁸ [Coronavirus Is Changing Global Supply Chains in Unexpected Ways, Brinknews, April 19, 2020](#)
- ¹⁹ [Philips warns protectionism could derail critical medical supplies, Reuters, June 17, 2020](#)
- ²⁰ [Planning for the COVID-19 supply chain recovery, Forbes, March 17, 2020](#)
- ²¹ [How supply chains are responding to the impact of coronavirus, SCM World - Gartner, March 10, 2020](#)
- ²² [Supply Chain Guru Prof. Richard Wilding explains supply chain challenges during COVID-19, DHL, April, 2020](#)
- ²³ [The ongoing impact of COVID-19 on global supply chains, World Economic Forum, June 22, 2020](#)
- ²⁴ [Are you prepared to manage a whack-a-mole recovery? Supply Chain Management Review - Peerless Media, April 27, 2020](#)

About RocSearch

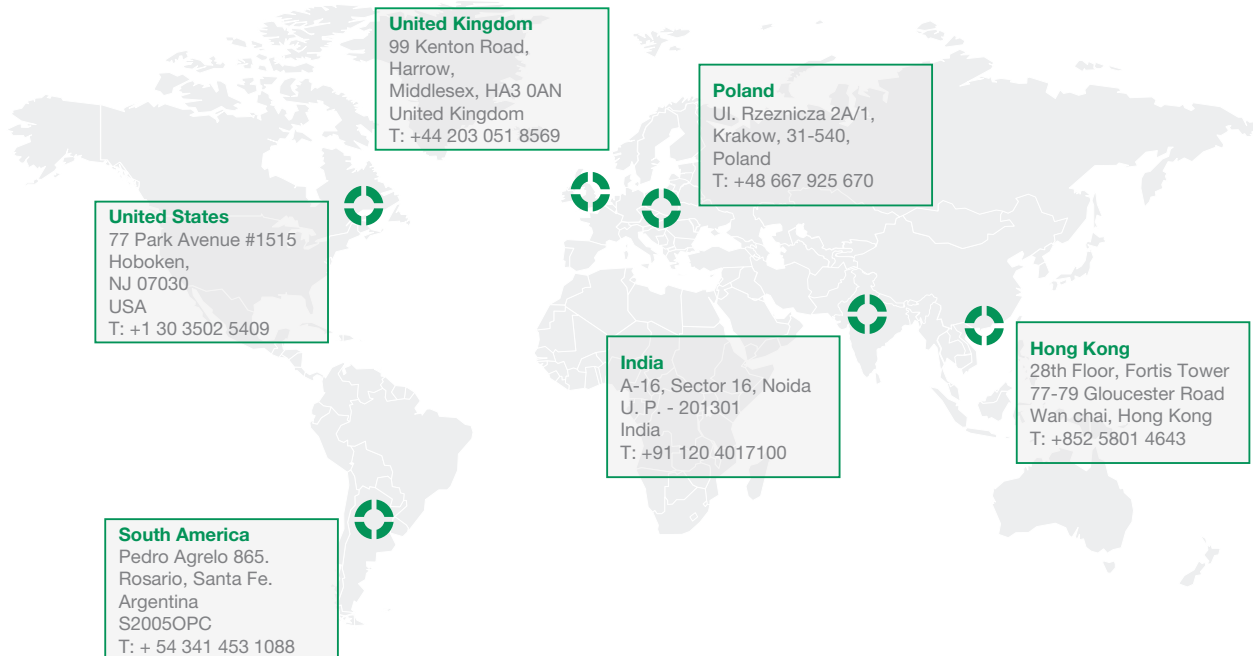
At RocSearch, we are focused on offering meaningful perspectives and evidence-driven actionable intelligence to help businesses. Being data-driven, we continuously adapt and evolve these perspectives to help businesses plan better in uncertain times.

RocSearch's industry agnostic Research and Advisory offerings to support a robust operational and financial strategy for Covid-19 are listed below:

- “Pre-Normal” Operational Best Practices for Transition
- Technology Assessment for Pre-Normal Phase
- Supply Chain Resilience / Risk Reassessment
- M&A in uncertain times: how to spot the opportunity?
- Financial needs during the pre-normal phase
- Long-term Impact: Political, Economic, Social, and Technological (PEST) Assessment
- Moonshot Scanning: Disruptive innovation post-Covid-19

Please visit www.rocsearch.com for more details.

Our Offices





Disclaimer

This document is proprietary to RocSearch and the information contained herein is confidential. Not without prior written permission from RocSearch, may this document be reproduced, either in whole or in part, or disclosed to others outside your firm. Whilst care and attention has been exercised in the preparation of this document, RocSearch does not accept responsibility for any inaccuracy or error or any action taken in reliance on the information contained within. All warranties whether expressed or implied by statute, law or otherwise are hereby disclaimed and excluded to the extent permitted by law. In case of any questions on this document, please reply to the sender.