

Gartner Research

# **Coronavirus Alters Supply Chain Dynamics Impacting People, Products and Costs**

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# Coronavirus Alters Supply Chain Dynamics Impacting People, Products and Costs

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The new coronavirus, officially named COVID-19, has become an epidemic disruption, affecting supply chains through lack of access to markets, materials and most importantly staff. Supply chain leaders can use this research to put in place strategies to assess and respond to an epidemic disruption.

## Impacts

- Access to the workforce has been restricted due to mass quarantines, mainly in China, to prevent the spread of the coronavirus, resulting in lack of worker availability and reduced productivity impacting on the availability of goods. As workers start to return to work when quarantines are lifted, companies will need to take action to prevent these workers from becoming infected with the virus.
- Global supply chains are starting to slow down as access to finished goods and intermediates becomes increasingly constrained, impacting markets local to China first, followed by the rest of the world.
- Supply chain's strategic plans will be challenged with potential escalation of costs as organizations adapt to and then return to business as usual.

## Recommendations

Supply chain leaders responsible for direct sourcing material and supply risk management should ensure their strategy for crisis management should:

- Track geographic transmission of the virus, communicating with employees about new ways of working, protective actions and travel restrictions. Put in place measures to prevent the spread of the virus.
- Adapt and adjust global demand and supply plans and manage customer expectations regarding product access while also identifying opportunities to continue supply through alternative manufacturing and use of alternative suppliers.

- Proactively track additional costs resulting from crisis management and business continuity activities related to the virus, preparing for budget impacts and margin pressure. Adjust overall business and supply chain plans in response to this new operating environment. Assess expenditure against risk appetite to improve future resilience.

## Strategic Planning Assumption

By the end of February 2020, major manufacturing locations in affected areas within China will not have resumed full production, impacting global access to raw materials and finished goods. It is estimated that over 100,000 people will be infected with the virus.

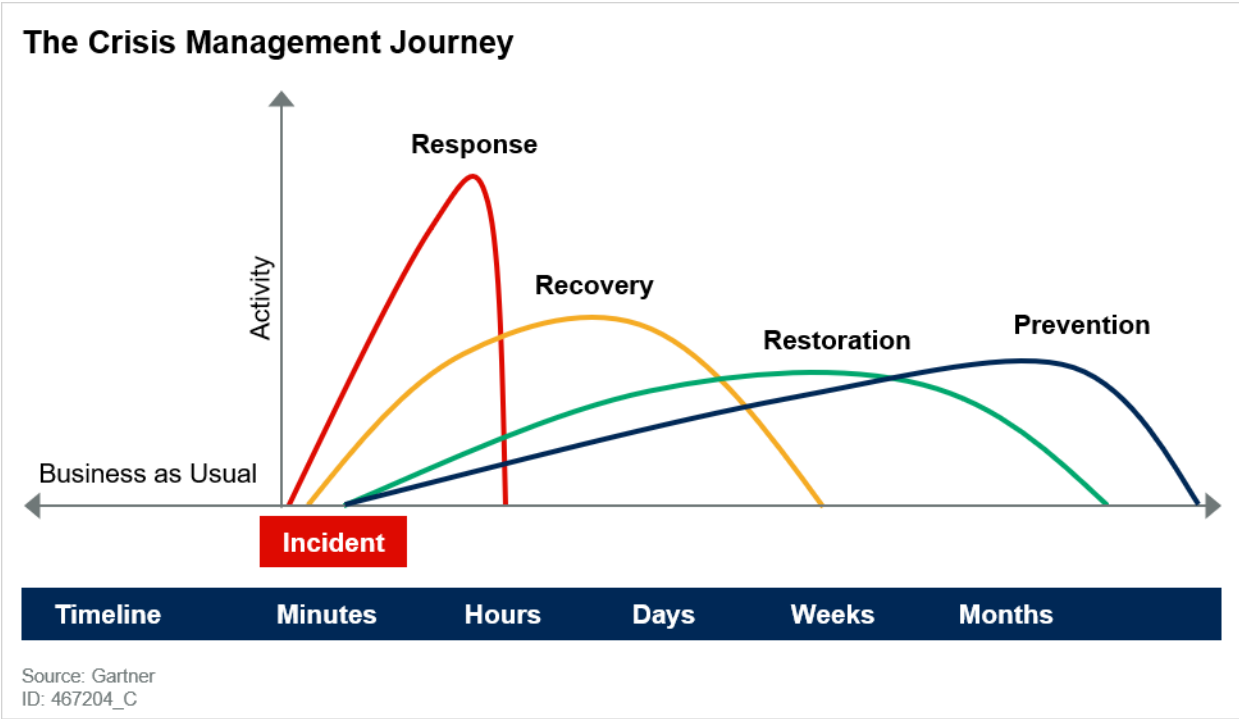
## Analysis

As of 19 February 2020, the coronavirus has resulted in more than 75,000 confirmed cases of infection and mass quarantine in several Chinese cities as an effort to ensure containment.<sup>1</sup> Mark Carney, the governor of the Bank of England, stated that magnitude of the macroeconomic impact from the coronavirus exceeds SARS.<sup>2</sup> The coronavirus resulted in the quarantine of cities and the extension of the Lunar new year holidays, which has slowed productivity from China. This, in combination with the trade difficulties with the U.S., and often national inflated GDP numbers from China has resulted in the Chinese Central Bank injecting 1.7 trillion yuan (\$242 billion) into the economy to stabilize markets.<sup>3</sup>

The quarantines and travel restrictions mean that the impact of the epidemic goes far beyond those who are ill or who have died. China has stepped up quarantine efforts with door-to-door health checks and compulsory quarantine of suspected cases in affected areas.<sup>4</sup> From a supply chain perspective, the virus has broader impacts for logistics, materials and sourcing as described in “Supply Chain Brief: Global Supply Chains Prepare for Impact From Coronavirus.”

Although companies have enacted their crisis management plans as part of a wider business continuity approach, the dynamic nature of the event means that many organizations are still focused on their immediate response. This includes a limited focus on recovery, due to the dynamic nature of the event (Figure 1).<sup>5</sup>

Figure 1. The Crisis Management Journey



Companies which do not have a well-defined risk appetite statement and/or weak crisis management and business continuity processes in place are at elevated risk of delayed response and recovery. A lack of a structured approach and decision-making processes along with misaligned organizational exposure exacerbate the impact. See “Coronavirus Requires Supply Chain Leaders to Adopt Enhanced Decision-Making Abilities” for more information about decision making during a crisis.

In this research we will examine three impacts from the event: workforce, products and costs (see Figure 2). We will specifically examine short-term responses, recovery actions and what to watch out for when working through the response.

Figure 2. Impacts and Top Recommendations for Coronavirus

Impacts and Top Recommendations for Coronavirus	
Impacts	Top Recommendations
<p><b>Workforce:</b> Access to the workforce has been restricted due to mass quarantines in China to prevent the spread of the coronavirus, resulting in lack of worker availability and reduced productivity impacting the availability of goods. As workers start to return to work when quarantines are lifted, companies will need to take action to prevent these workers from becoming infected with the virus.</p>	<p><b>Workforce:</b> Monitor geographic transmission of the virus, communicating with employees about new ways of working, protective actions and travel restrictions. Put in place measures to prevent the spread of the virus as workers return.</p>
<p><b>Products:</b> Global supply chains are starting to slow down as access to finished goods and intermediates become increasingly constrained, impacting markets local to China first, followed by the rest of the world.</p>	<p><b>Products:</b> Adapt and adjust global demand and supply plans and manage customer expectation regarding product access while also identifying opportunities to continue supply through alternative manufacturing or product design.</p>
<p><b>Costs:</b> Supply chain's strategic plans will be challenged with potential escalation of costs as organizations adapt to and then return to business as usual.</p>	<p><b>Costs:</b> Proactively track additional costs resulting from crisis management and business continuity activities related to the virus, preparing for budget impacts and margin pressure. Adjust overall business and supply chain plans in response to this new operating environment. Assess expenditure against risk appetite, to improve future resilience.</p>

Source: Gartner  
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## Impacts and Recommendations

### Proactively Manage Employees

The coronavirus has had four impacts on workers within the supply chain:

Organizations have an obligation to ensure the health, safety and welfare of their employees. This has resulted in companies advising employees in impacted areas to stay at home in an effort to limit the spread of the virus.

The supply chain impact is that goods are not being produced or exported to dependent markets. Supply chains that operate just in time (JIT), or hold limited inventory are likely to be disproportionately impacted.

- Employees in geographies which have not yet been impacted either may be faced with increased workloads or are part of a crisis management team assessing options and responses to the event. Companies need to be mindful of the pressure on these employees if the coronavirus crisis continues for an extended period and put plans in place to counter the risk of fatigue and burnout.

- Face-to-face contact with supplier's personnel will be restricted in impacted areas for a period, which makes supply chain relationships more difficult to build.
- At some point, the quarantines will be lifted if the virus subsides and/or a vaccine is created; however, organizations have the obligation to ensure that those returning to work do not spread the illness across the workforce. This may be through the provision of additional personal protective equipment or changes in working practices.

### **Case Studies: Business Responses**

- Ford Motor, Fiat Chrysler, Dongfeng PSA and Nissan Motor have suspended their operations in Wuhan in accordance with the Chinese government's advice.<sup>6</sup> HIS Markit estimated a loss of 1.7 million units of production for the auto industry in the first quarter.<sup>7</sup>
- Companies such as Amazon, Apple, Google and Airbnb took proactive steps to suspend employee travel to high-impact areas; this was in advance of nations and airlines putting travel restrictions in place.<sup>8</sup>

### **Recommendations**

#### ■ **Response:**

- Engage with human resources to assess how the supply chain and wider organization can balance health, safety, moral and legal duties to ensure that workers are protected against the virus. Also ensure that those who have contracted the virus are given time to recover.
- In collaboration with human resources, provide clear communication about new ways of working and welfare standards. This may include ongoing travel restrictions, limited contact between workers to reduce the likelihood of transmission, increased homeworking and video conferencing.
- Engage with critical suppliers to assess the impact of the virus on their workforce and the estimated time for recovery. See "Supply Chain Brief: Navigating Procurement Challenges From Coronavirus Outbreak" for more information on procurement strategies.

#### ■ **Recovery:**

- Talk to suppliers to determine if they have the people and production capacity to manufacture materials and products.
- Identify production gaps and assess if alternative suppliers have people, capability and capacity to manufacture components in the interim. Review the timeline and costs associated with temporarily switching suppliers.
- Plan for what precautions will be put in place when quarantines are lifted and employees return to work. Consider the efficacy of preventative actions to ensure that the virus does not spread across a healthy workforce.

#### ■ **Watch Out:**

- Carefully construct an employee communication strategy that is balanced and outlines changes in work practices. Avoid speculation that may cause anxiety.

## Take Charge of the Product Portfolio

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The coronavirus will have four potential impacts on product portfolios, therefore, requiring an adjustment to supply chain strategies and tactics. The impacts are as follows:

- The virus has the potential to change the competitive landscape with commoditized products being put at an increased disadvantage. For goods that are already commoditized, suppliers' market share may be lost as organizations look to substitute raw materials to ensure that supply chains can still deliver products and services.
- Products which have a higher degree of brand loyalty are likely to face less of an impact in the short term if consumers are willing to wait for these products. The degree of impact is dependent on the consumer demographic and values associated with the product.
- Consumers that focus on product functionality, as opposed to brand, will buy products that are available and meet their requirements. A lack of product availability may upend the competitive landscape with consumers focusing on requirements being met and product availability.
- Consumer sentiment within the epicenter of the virus, Wuhan and other quarantined cities, has changed. Due to the shutdown, only essential goods are available along with food and medical supplies. However, uncertainty about the length of quarantine, availability of supplies and the broader societal impacts has led consumers to stock up on essentials. Continued "panic buying" will potentially lead to shortages as logistics networks to move goods have become constrained.

To understand the impacts of the disruption on logistics activities, see "Supply Chain Brief: Global Logistics Networks Disrupted by Coronavirus."

### **Case Studies: Business Response**

- Disney has closed its theme parks in both Hong Kong and Shanghai to contain the spread of the virus. The company is still assessing the profit implications, although the Lunar New Year holidays represent a peak season.<sup>9</sup>
- Foxconn, traditionally known for the manufacture of electronics such as the iPhone, has started to produce personal protective facemasks for its employees<sup>10</sup> and the wider market to offset the shortage. Automotive and energy companies are adopting a similar approach.<sup>11</sup>

### **Recommendations**

- **Response:**
  - Analyze and forecast the impact of the virus on product availability and prioritize high-revenue or high-profit margin products that are in demand when making trade-off decisions.

- Pay attention to commoditized products in the portfolio and how market position may be challenged by competitors.
- Map the geographical spread of the virus to the locations of critical suppliers. Use scenario planning to model likely impacts by location and supplier and to understand pivot points to alternative supply chain arrangements.
- **Recovery:**
  - Assess the lag in the access to raw materials/components and goods or services once operations resume in manufacturing areas. Model the customer and supply chain impacts from delayed access to goods and services.
  - Identify learning points from the initial response and assess the impacts and costs against the supply chain's risk appetite. Put in place measures that will limit the supply chain organization from future impacts.
- **Watch Out:**
  - Be careful if the organization is involved in providing goods and services to respond to the virus that it does not raise prices to unreasonable levels.

## Budget for Recovery and Invested Funds for Risk Management

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There are three direct financial impacts to organization with supplies and customers in areas which have been impacted by the virus. They are as follows:

- Companies' profitability may be impacted as supply to global consumers becomes constrained as goods cannot be accessed from quarantined areas within China. Organization with a large market share within China will be impacted as quarantines have encouraged citizens and consumers to stay indoors as all but essential shops have been closed.
- As supply of resources is constrained, the supply-demand dynamics will work to increase price. Prices and quantities of materials previously locked into contracts may no longer be valid as supplier may invoke force majeure clauses or look to pass on additional costs up through the supply chain.
- When manufacturing resumes, there will be a spike in demand for access to materials and shipping to get products to market as quickly as possible. Shipping costs will increase as companies seek to expedite products by air. Cargo capacity is already constrained with a reduction in passenger flights, likely driving up cost, too.

Beyond these direct costs, there may be additional costs associated with the workforce. This includes costs for increased protective measures and costs for sourcing additional labor — where illness keeps employees from the workplace or costs to replace employees if they do not return to work due to anxiety about their health and welfare.



## Case Studies: Business Response

- Bloomberg has indicated that at least 20 companies in China have issued profit warnings due to the virus.<sup>12</sup>
- Several companies have invoked force majeure clauses within their supply contracts. This includes using clauses around the foreseeability of the event, the lack of ability to prevent the event and that reasonable steps have been taken to mitigate and avoid the impacts of force majeure. For example, copper traders in China — the world's largest buyer of the metal — have asked miners from Chile to Nigeria to cancel or delay shipments.<sup>13</sup>

## Recommendations

- **Response:**
  - Treat the additional cost as an enterprisewide issue rather than attributing this to a single department. Assess additional costs against the organization's ability to achieve its strategic objectives, managing stakeholder expectation accordingly. Raise a separate cost center for additional expenditure associated with the event.
  - Analyze supply contracts examining force majeure clauses in conjunction with the legal team and under what conditions these may be invoked. Undertake a risk analysis, reviewing suppliers who have invoked these clauses and suppliers who may invoke these clauses in the near term. Assess the impact on supply and the ability to meet demand.
  - Secure supply of raw materials and logistics services as part of the recovery plan. Engage with providers, agree on costs and use supplier relationship to seek priority treatment. Ensure any additional costs are clearly captured.
- **Recovery:**
  - Review the additional amount of expenditure against risk management budget and activities. Assess which actions have been effective and build these into a playbook for future events.
  - Review force majeure clauses in all new contracts to ensure that this gives the organization enough protection against disruption.
- **Watch Out:**
  - Guard against escalating costs and ensure that decision making is clearly tied back to supply and demand plans.

## Gartner Recommended Reading

“Coronavirus Requires Supply Chain Leaders to Adopt Enhanced Decision-Making Abilities”

“Supply Chain Brief: Global Supply Chains Prepare for Impact From Coronavirus”

“Supply Chain Brief: Global Logistics Networks Disrupted by Coronavirus”

“Supply Chain Brief: Navigating Procurement Challenges From Coronavirus Outbreak”

“Gartner Invest Analyst Insight: SARS Proxy Points to Minimal Impact of Coronavirus on IT Services Industry”

### Evidence

<sup>1</sup> “Coronavirus Updates: Global Death Toll Passes 1,000 as China Records Most Deaths in a Single Day,” The Washington Post.

<sup>2</sup> “Economic Impact of Coronavirus Bigger Than SARS, Says Bank of England Governor Mark Carney,” Sky News.

<sup>3</sup> “China Central Bank Says Huge Cash Injections to Stabilize Market Expectations, Restore Confidence,” BW Businessworld.

<sup>4</sup> “Coronavirus: Suspected Infected Residents Dragged From Homes — China Declares War on Virus,” Express.

<sup>5</sup> “How to Ensure Resilience for Your BCM Program When Implementing Standards.”

<sup>6</sup> “Coronavirus Taking Its Toll on the Auto Industry — and It May Get Worse,” Forbes.

<sup>7</sup> “Coronavirus Damages China’s Auto Industry as Outbreak Worsens,” CNBC.

<sup>8</sup> “Wuhan Coronavirus Leads Ericsson, LG, Google, Apple, and Others to Suspend Employee Travel as WHO Declares Global Health Emergency,” Business Insider.

<sup>9</sup> “Here’s How 5 Industry Giants Are Warning Coronavirus Will Harm Operations in 2020,” Business Insider.

<sup>10</sup> “Coronavirus: iPhone Manufacturer Foxconn to Make Masks,” BBC.

<sup>11</sup> “Need for Face Masks in China Pushes Auto, Energy Companies to Make Them,” The Wall Street Journal.

<sup>12</sup> “At Least 20 Companies in China Issued Profit Warnings in One Day,” Bloomberg.

<sup>13</sup> “Chinese Copper Traders Declare Force Majeure Over Coronavirus,” Financial Times.

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This complimentary research is part of Gartner's ongoing coverage of the business impact of the coronavirus (COVID-19).

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