

A row of laboratory vials with blue caps on a metal surface, receding into the distance. The background is a blurred laboratory setting with a bright light source.

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Gartner for Supply Chain

# **6 Ways Supply Chain Analytics Mitigate Business Disruptions**

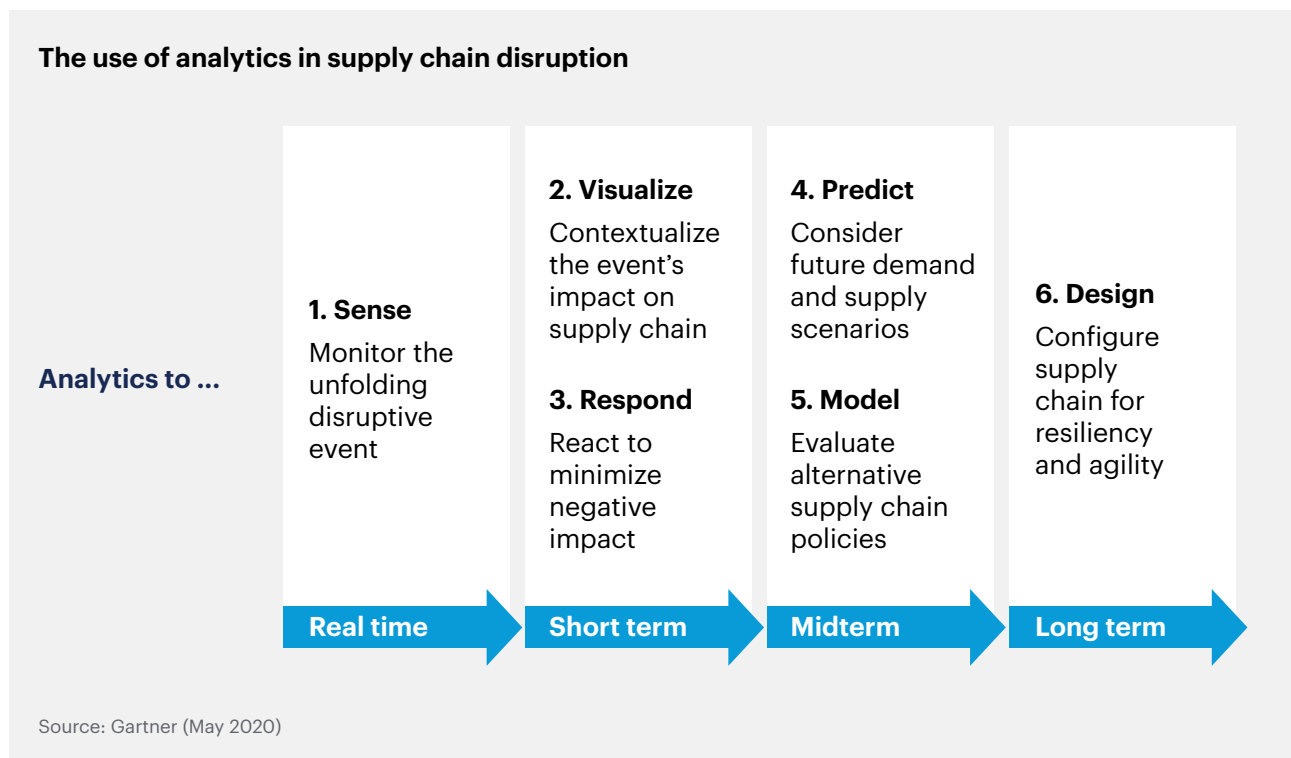
# Introduction

In supply chain, minor disruptions are inescapable. These can range from late supply delivery to a shutdown of a production line or a shortage in transportation capacity. Most supply chain organizations can quickly sense and respond to events with minimal impact to their customer service and operations.

In today's environment, however, organizations are increasingly facing major disruptions that significantly impact their supply chain operations. In a recent Gartner survey, 76% of supply chain executives indicated that compared to three years ago, their company today is facing more frequent disruptions in their supply chain. Meanwhile, another 72% reported that the impact of the disruptive events has increased. These events range from tariff disputes, natural disasters, major supply failure, or most recently, the COVID-19 pandemic.

With more available and reliable data, organizations are looking to leverage analytics to sense the disruption, comprehend its magnitude, impact on the supply chain and to formulate a response. To succeed, they must rely on a strong analytics competency that combines a broad range of analytics strategies and approaches.

This research outlines how supply chain executives can deploy a portfolio of analytics techniques while they sense, mitigate and recover from current events and prepare for future disruptions (see Figure below).



# 1



## Sense

### Monitor the unfolding disruptive event

Supply chain organizations can leverage publicly available data to track how disruptive events unfold. This data can be provided by governmental bodies, academic institutions for free or it can be offered for a fee by service providers. Similarly, supply chain organizations can leverage real-time analytics using mobility and location-specific data collected from satellites and distributed sensors to track the event.

# 2



## Visualize

### Contextualize the event's impact on supply chain

Visualization analytics help organizations gauge the impact of the disruptions on the supply chain. This is especially critical for companies with global, complex supply chains with thousands of suppliers for millions of parts and components. Overlaying the span of the disruptive event onto locations, multiple tiers of suppliers and customers can highlight supply chain vulnerabilities; specifically, critical fail points' risk exposure.

# 3



## Respond

### React to minimize negative impact

Supply chain leaders use machine learning and artificial intelligence (AI) to triage the supply chain in the short term. Combining machine learning and AI allows them to track unfolding events and take immediate action to minimize impact on their supply chains. Unlike traditional statistical modeling that relies on past representative data, machine learning algorithms lend themselves to forecasting and leveraging noisy, near-real-time data that reflects a dynamically evolving event.



## Predict

### Consider future demand and supply scenarios

Once immediate actions are taken to dampen the short-term impact of the disruption, supply chain organizations turn their attention to understanding short-, midterm and long-term scenarios to predict the impact of the disruption on their business. Leveraging predictive analytics and simulation enables supply chain leaders to better prepare for future needs.



## Model

### Evaluate alternative supply chain policies

Predicting changing business needs resulting from a major disruptive event, supply chain organizations can rely on approaches like optimization and scenario modeling to make policy changes. Using optimization, companies can evaluate different supply chain policies, balancing the trade-offs of managing a lean supply chain while building a level of resilience that would allow for quick recovery from or avoidance of a disruption.



## Design

### Configure supply chain for resiliency and agility

Using long-range forecasting, simulations and other advanced analytics techniques, organizations can predict the long-term impact of disruptions on their business under different scenario conditions. They can then determine the required action to position their supply chain to take advantage of new opportunities. Additionally, supply chain organizations can leverage long-range forecasting and optimization to increase their supply chain resiliency.

## About Gartner

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## Build a strong supply chain analytics strategy: How we help

Supply chain excellence depends on strong supply chain analytics strategy. Yet for many organizations, successful supply chain analytics adoption faces many challenges: Few have the data foundation needed, talent and skills relevant to supply chain analytics are limited, and adoption of supply chain analytics is low because ROI is unclear. To make better supply chain and organizational decisions, supply chain analytics leaders should harvest accurate and comprehensive data, secure the technical and business skills needed to maximize its value, and invest in real-time supply chain analytics and digital solutions. We can help supply chain leaders build a strong supply chain analytics strategy. Visit [gartner.com](https://gartner.com) to learn how we support our 2,500+ supply chain leader clients with insights, advice, data and tools.



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