

ORIGINAL RESEARCH

COVID Resilience Report:

The Impact of COVID-19 on Supply Chains and How Businesses are Preparing for the Next Shock

Executive Summary

In a year characterized by relentless upheaval, global supply chain vulnerabilities and disruptions have moved beyond niche logistics discussions among industry experts to a dominant topic in board rooms and living rooms alike. No force is more responsible for this than the COVID-19 pandemic, which continues to prompt massive changes in supply chains and third-party risk programs worldwide.

To assess the sweeping change wrought by the disease to supply chain risk management, Interos surveyed 450 executives in the United States across the aerospace and defense, financial services, manufacturing and production, technology, energy and utilities, and other commercial sectors. The respondents include risk and compliance officers, logistics, IT, procurement and operations executives at companies exceeding \$1 billion in revenue. Our survey found that not only has COVID disrupted nearly every large business, but that 92% of companies expect the disruption of global supply chains caused by the pandemic will continue to shape their business in the long term. From a list of 11 risk factors covered in the report, 57% of organizations ranked the ongoing pandemic as the biggest current risk to their supply chain, a greater percentage than any other risk listed.

The effects of the pandemic varied significantly between industries. Most affected were aerospace and defense companies, who reported, on average, that 65% of their supply chains were disrupted by the pandemic.

Companies were united across the board in their recognition of the problem, and in their agreement that better supplier visibility is needed to tackle the problem (97%) but lack a streamlined and comprehensive method – less than half (44%) currently have a single solution for monitoring their entire supply chain, including sub-tier suppliers.

Of companies have only one solution for monitoring supply chain

Below are the major findings, focusing on those disruptions and vulnerabilities exposed by the ongoing pandemic, as well as a range of risks outside the pandemic, and what core changes their organizations are implementing to strengthen their supply chains and build greater resiliency against future disruptions.

COVID-19 and Global Supply Chain Fragility Exposed

There is uniform agreement that unprecedented disruption continues to ripple throughout supply chains due to the pandemic; 98% of respondents experienced some form of disruption due to COVID-19. Fluctuations in supplier prices and order delays impacted almost half of respondents. These shorter-term events caused immediate disruptions, but COVID-19 continues to have ongoing effects. The pandemic has not only accelerated the

geographic shifting of supply chains, but it has also completely eliminated suppliers. Over a third of respondents felt disruption due to the collapse of manufacturing suppliers, while a quarter experienced supplier bankruptcy. Given these significant impacts, it is not surprising that 92% of respondents believe the impact and disruptions of COVID-19 will persist long after these initial shocks.

Chart 1

Which of the following effects of the COVID-19 pandemic have disrupted your organization's global supply chain?



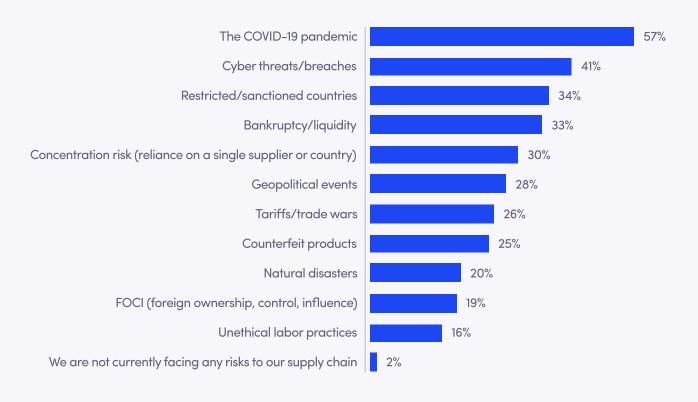


Geopolitical Forces

COVID-19 has sparked a significant reset in global supply chains, with almost 60% of respondents noting the pandemic as the biggest threat to their supply chain. As the graph below illustrates, the pandemic is just one of many significant risks to their supply chains. Cyber threats pose the next most common risk across all respondents, followed by restricted or sanctioned countries. Over a third of respondents noted disruptions due to rising export or import restrictions. Geopolitical events and trade wars each also pose a risk to over a

quarter of respondents, while a fifth of respondents identified foreign ownership or influence as a core risk. Taken together, these three risks illustrate the challenging threat environment as supply chains seek greater data security and trusted technologies, while navigating a complex regulatory environment driven by these geopolitical and adversarial environments. In fact, as Chart 2 highlights, over a third of respondents noted a dependence on unreliable or unstable partners or governments as a top vulnerability exposed this year.

Chart 2
Which of the following currently pose the biggest risks to your organization's global supply chain?





Concentration Risks & Geographic Reshoring

Almost of third respondents identified concentration risk as a core risk to global supply chains, as well as a vulnerability. As the chart below illustrates, 45% of respondents noted geographic concentration as a major vulnerability exposed by the pandemic. 43% of respondents also stated that the pandemic had exposed a single point dependency or bottleneck in their supply chain, as illustrated in Chart 3, below.

Diving deeper into geographic concentration risk, an overwhelming majority of respondents believe onshoring – moving major production to the United States – will not only persist long term but is already a short-term priority. Almost three-quarters of respondents believe there will be a slight or major increase in onshoring in the short-term; more than three-quarters see this persisting in the longer term.

Chart 3
Which of the following vulnerabilities in your organization's global supply chain has the COVID-19 pandemic exposed?





Insufficient Planning

Chart 3 also highlights the importance of planning. Almost half of respondents identified inadequate long-term planning as a supply chain vulnerability exposed by the pandemic, while 41% similarly noted a lack of short-term planning. As we'll address in the final section, organizations are taking several steps to build resiliency and prepare for future disruptions.

In fact, due to the disruptions caused by the pandemic, almost half of respondents now have plans to make major supply chain changes to focus on building resilience, while an additional quarter now have plans to make minor changes.

It's Not Just The Pandemic: Cyber Threats Dominate Top Concerns

As Chart 4 illustrates, cyber threats are top of mind for the respondents, just second to the pandemic-spawned disruptions. While the pandemic has exposed significant vulnerabilities and risks to global supply chains, these effects are not limited to physical supply chains; 96% of respondents are experiencing greater digital supply chain risks as a result of COVID-19.

Data breaches are the top cyber risk identified, followed closely by concerns over supply chain attacks. 30% of respondents identified risks relating to direct and sub-tier suppliers as the next most significant digital vulnerability, ahead of concerns over a distributed workforce.

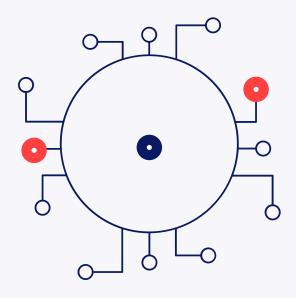
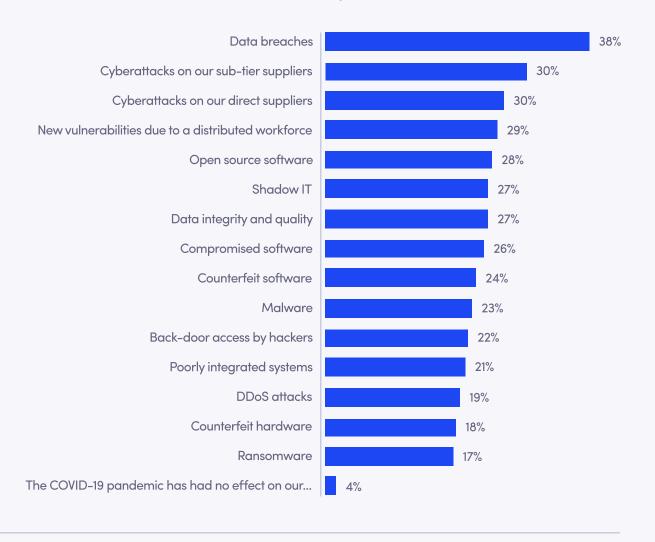




Chart 4
Which of the following risks is your organization's digital supply chain more vulnerable to as a result of the COVID-19 pandemic?



The vulnerabilities associated with digital supply chains not only focus on indirect network access, but also access to data. Respondents estimate that roughly 40% of an organization's data exists external to their own network, making protecting external data as it travels across the supply chain ecosystem a top priority. Beyond cyber threats, as chart 5 demonstrates below, the pandemic continues to dominate risk management concerns.

In addition, challenges with having a supply chain presence in restricted countries will remain a top priority into the future, as will bankruptcy and concentration risk concerns. This broad range of risks – expanding from natural disasters to ESG to geopolitical events – highlight the necessity for greater resilience and agility to address this range of risks. The final section addresses those steps organizations are taking to prepare for this risk environment.



Chart 5
Which of the following potential future risks to your organization's global supply chain is your organization most focused on preparing for?



Future Plans & Priorities

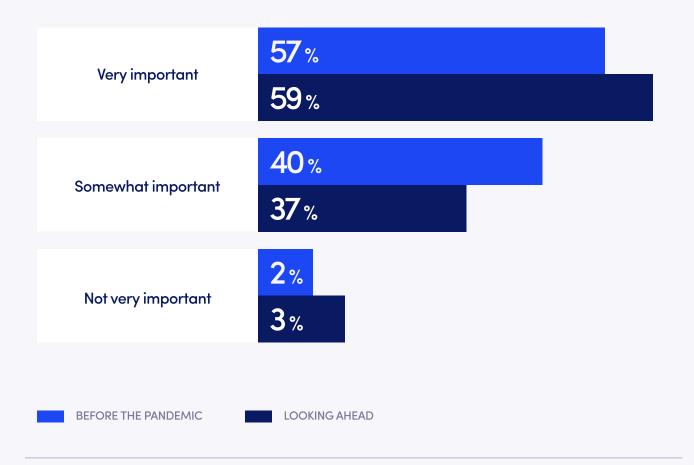
If we return to Chart 3, inadequate planning for long-term disruption topped the vulnerabilities exposed by the pandemic, while a lack of short-term planning similarly ranked as a top vulnerability exposed. To address such a challenging risk environment and overcome inadequate planning for disruptions, organizations are taking steps now to build resiliency into their supply chains, as illustrated by Chart 7 below.

While the pandemic exposed many supply chain vulnerabilities and has shifted organizational priorities, visibility over their supply chain remained a steadfast objective. Chart 6 illustrates the 97% of respondents who identified visibility across their su ply chains as somewhat or very important before and since the pandemic began.



Chart 6

The importance of visibility before the pandemic and looking ahead.



With visibility a steadfast priority, it makes sense that identifying and employing alternate suppliers and continuous monitoring of suppliers topped the steps organizations are taking to build resilience. Chart 7 details the additional steps organizations currently are taking to build resiliency, including an emphasis on suppliers' cybersecurity postures and increasing onshoring capabilities and diversifying across regions, while decreasing just-in-time production.

As discussed in the first two sections, cybersecurity and geographic concentration risks are top of mind for these executives. Monitoring for regulatory compliance and audits rounds out the list of top actions currently being taken, reflecting the growing regulatory challenges. In sum, 99% of respondents are taking at least one of these actions to build resilience.



Chart 7
Which of the following actions has your organization taken to increase resilience against potential disruptions to your global supply chain?



According to respondents, these actions are likely to continue into the future. Continuously monitoring, identifying and employing alternate suppliers remain the most common action respondents anticipate taking in the future, while continuous monitoring across the supply chain and cybersecurity monitoring are close behind. Over a third of respondents identified onshoring and diversifying suppliers across geographic regions as a future action, and regulatory and compliance considerations round out the most common steps organizations will take looking ahead.

Of course, even the best plans may not stand up to reality, and during such uncertain times organizations are still struggling to build supply chain resiliency.

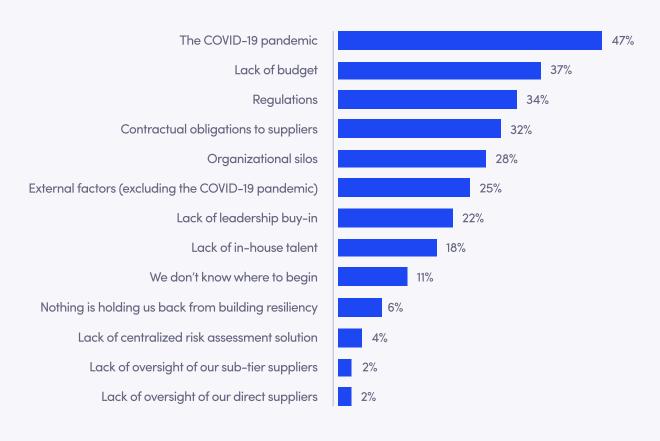
The pandemic continues to limit responses, impacting budgets and contractual obligations.

Regulations also are a top impediment, but many other organizational barriers pose a significant challenge. Organizational silos, lack of leadership support, and lack of talent resources contribute additional hurdles to achieving supply chain resilience.

This is a growing challenge and a leading factor behind the move toward rethinking security operations centers (SOCs) into risk operations centers (ROCs) supported by the people, processes, and technology that can anticipate and build resilience against future disruptions.



Chart 8
What, if anything, is holding your organization back from building resiliency against disruptions to your global supply chain?



In fact, leveraging technology to help build resilience and agility is foundational to future supply chain risk management plans. 91% of respondents agree that a single solution to continuously monitor their entire supply chain would have helped build resiliency against disruptions.

To maintain greater agility against future disruptions, respondents are focused on improving their response time to disruptions (Chart 9), with almost half identifying this improvement as foundational to achieving agility.

With 46% of respondents planning on the increased use of automation, leveraging automated technologies is a core part of future plans to increase agility.

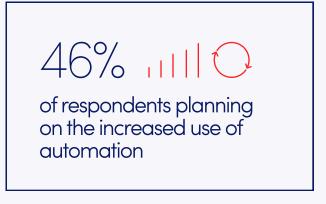


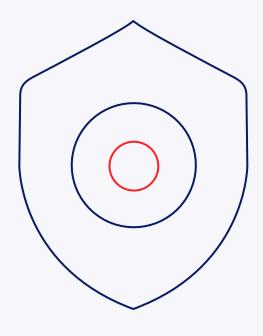


Chart 9

How does your organization plan to increase agility in its global supply chain?



The pandemic reinforced respondents' steadfast commitment to visibility, with 45% of respondents aiming to increase visibility across their entire supply chain ecosystem. This visibility is essential to achieve other priorities, including building alternative supplier networks and scenario planning and testing, which 44% and 30% of respondents, respectively, identified as planned steps to help increase agility. Finally, almost a third of respondents identified reshoring to trusted countries as a step towards agility. This was a consistent theme throughout the survey, as respondents continue to grapple with a swiftly changing regulatory landscape while simultaneously adjusting due to the geographic concentration risks exposed earlier this year.





Final Thoughts

Significant changes are well underway as organizations seek greater resilience, agility, and visibility to prepare for future disruptions. Clearly, the supply chain disruptions caused by COVID-19 will have a lasting effect. By exposing supply chain fragility due to concentration risk, geopolitical risks, and inadequate planning, organizations now are taking significant steps to address these vulnerabilities.

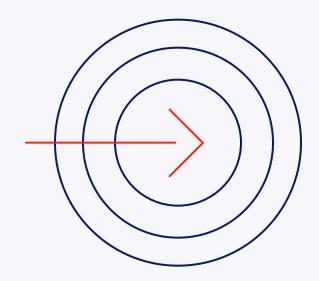
At the same time, the pandemic is only one of many risks top of mind for respondent.

Cybersecurity (across the entire supply chain), regulatory shifts, geopolitical factors,

and continuous monitoring top the priorities to help future-proof supply chains. As these plans come together, respondents identified the organizational changes required to make these plans come to fruition. Respondents are also anticipating a greater use of automation and other technologies to help gain visibility and move toward enhanced scenario planning and identification of alternate suppliers. The only constant truly is change; agility and resilience against future disruptions will only grow in importance as the technological, regulatory, and geopolitical landscape change at an unprecedented pace.

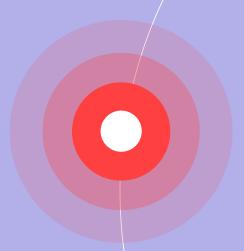
About the Survey

Market research firm Vanson Bourne, on behalf of Interos, conducted a survey in July and August to assess the pandemic's disruption to supply chains and the business response. Survey respondents include 450 U.S. senior decision makers who serve in risk and compliance, logistics, IT, procurement and operations at companies with more than \$1 billion in revenue across a range of industries, including aerospace and defense, manufacturing, financial services and technology.



About Interos

Interos protects customers' brand and operations from risk in their extended supply chains and business relationships. The first Al-powered platform for eliminating multi-party, multi-factor risk from 3rd, 4th to nth tier parties, Interos automates discovery, detection, and response to financial, operations, governance, geographic, and cyberrisk. Designed by experts and leveraging the company's 15 years of experience in managing the world's most complicated supply chains, Interos provides real-time risk management for the largest commercial brands in manufacturing, financial services, and aerospace and defense.



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