

Supply Chain Disruptions and the High Cost of the Status Quo



Introduction

The past few years have underlined the volatile nature of global supply chains for large organizations. A succession of shocks—including the COVID-19 pandemic, multiple high-profile cyber breaches, and ongoing international trade disputes—have exposed vulnerabilities in many organizations' supply chains. Indeed, a recent report by McKinsey¹ noted that organizations need to prepare for extended supply chain disruptions, as shocks lasting a month or longer will occur every 3.7 years.

Complicating matters further, when shocks do occur, little is known about the true extent of the disruption, the wider organizational costs, or damage extending beyond that of a financial nature.

While dealing with these disruptions, organizations face scrutiny over the methods they use to monitor and assess their supply chains. Boards, government regulatory bodies, and others want to know if these organizations are doing all they can to minimize the disruption from supply chain threats.

In this whitepaper, through 900 interviews with supply chain decision makers from large enterprise organizations, we explore several areas, including:

- The wide-ranging impacts of supply chain disruptions
- The increased focus on supply chain risk management and visibility
- The methods and processes organizations are using to monitor their supply chains

Key findings

- On average, **global supply chain disruptions cost** enterprise-level organizations **\$184 million in lost revenue per year**
- **83%** have **suffered reputational damage** because of supply chain problems
- **88%** say **visibility** into their global supply chain is **more important now than it was two years ago**
- **66%** are **not assessing** their global supply chains **on a continuous basis**
- **74%** are using **manual methods** to assess their global supply chains

Supply chain disruptions: More frequent and more costly than ever

¹McKinsey Global Institute, "Risk, resilience, and rebalancing in global value chains", <https://www.mckinsey.com/business-functions/operations/our-insights/risk-resilience-and-rebalancing-in-global-value-chains#>, August 6, 2020 Report



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Financial impacts

For large organizations across the world, ensuring their supply chains are secure and robust is critical, both to their competitive success and sometimes their survival. One of the biggest threats to a resilient supply chain are large and unpredictable shocks. Once rare, these events are now commonplace and expose the fragility of many of the world's largest organizational supply chains.

The Annual Revenue Cost of Supply Chain Disruptions, Per Organization



Figure 1: The estimated average annual revenue cost in millions (USD) to respondents' organizations as a result of global supply chain disruption [Bases in chart], split by region and sector.

These shocks have a huge effect on organizations but quantifying the cost requires analysis across several different layers in order to understand both the direct and indirect financial impacts. In fact, disruptions are currently costing organizations \$184 million, on average, in annual lost revenue. This proves that supply chain disruptions are a major financial burden to organizations and come at a time when budgets are being impacted dramatically by the COVID-19 pandemic.



This average revenue loss rises to \$228 million for U.S. organizations, compared to UK and DACH where it costs \$146 million and \$145 million, respectively. There is also a large difference between sectors, with disruptions costing those in IT and technology (\$194 million) and aerospace and defense (\$193 million) more than financial services, where the average cost to revenue drops to \$164 million. However, no matter the location of the organization or the sector they operate within, these costs are an unsustainable and debilitating expenditure.

The cost of supply chain disruptions extend beyond an organization's revenue, as brand, reputation, and customer perception are also negatively impacted. It's therefore no surprise that more than four in five (83%) of those surveyed say their organization has suffered reputational damage as a result of supply chain disruption. Again, those in the U.S. see the most severe impact in this regard, where 87% have suffered, compared to organizations in the Nordic countries where 77% say the same.

It's likely that even minor reputational damage will add to the financial woes organizations suffer, with many experiencing a loss of trust among customers and missing business opportunities as a result. It's a toxic mix, and makes enterprise organizations vulnerable to their direct competitors, who will undoubtedly look to take advantage of such moments of fragility. Put together, this underlines the pressure organizations, and specifically key decision makers, are under to minimize the financial impact, and how an effective monitoring system is crucial to this endeavor.

Supply chain risk factors

The number of supply chain shocks has grown in recent years, with each disruption proving troublesome for organizations who are likely still reeling from the effects of the previous one. In fact, fewer than 1 in 10 enterprise organizations (6%) say they **have not been impacted by supply chain disruptions** over the past two years. We can attribute these disruptions across a variety of supply chain threats, with risk spread fairly evenly across all factors. To illustrate this, over the past two years, decision makers report that shocks have been spread across cyber risk and breaches (52%), financial risks (50%), and environmental/social/governance (ESG) (41%), among others.

Risk Factors Behind Detrimental Impacts to Organizations



Figure 2: “Which of the following supply chain risk factors have been the cause of a detrimental impact to your organization in the past two years?” (Some answers omitted.) Detrimental impacts were defined as time wasted, lost revenue, wasted resources, duplicated effort, missed opportunities, etc.

Decision makers understand the critical need to protect themselves against all types of supply chain risk. More than four in five (88% to 81%) believe it is important to guard against all six risk factors. This demonstrates that even if they are not directly impacted by every threat, decision makers understand the wide ranging sources of disruptions to their supply chains.

Supply chain events and disruptors

Over the last two years there has been a diverse range of events behind the disruptions. Unsurprisingly, the COVID-19 pandemic is the most commonly reported event by key decision makers, with over half (51%) being affected. More than 4 in 10 are also affected by cybersecurity risks (42%) such as ransomware attacks or breaches and global financial insecurity (40%).

Individual Events Impacting Supply Chains

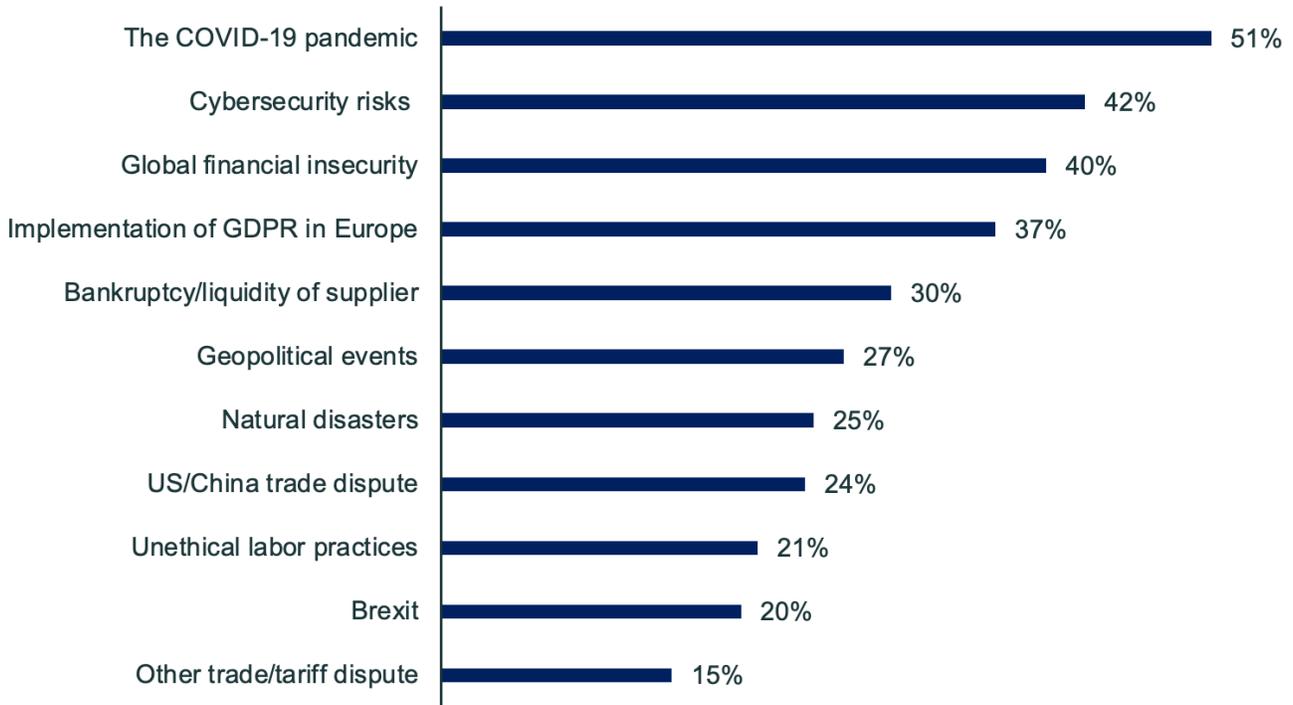


Figure 3: "Which of the following has impacted your organization's global supply chain over the past two years?"

For those affected by the COVID-19 pandemic, the vast majority report that it has caused considerable negative impacts, with at least some of their business lines and/or locations being disrupted (89%). The level of disruption is a wake-up call for many organizations to focus on their supply chains more, with the majority (59%) saying they are now more proactive in investigating issues within their supply chain.

One other issue that is likely to have caught the attention of key decision makers is cyber breaches, which, as indicated above, are a common threat to the supply chain in an organization. Indeed, over three-quarters (77%) have suffered at least one cyber breach within their supply chain over the past year, with an average of two per organization. With this time period only being over 12 months, an even greater number of breaches are likely to occur over a longer timeframe.

International trade disputes, such as that between the U.S. and China, are not a new occurrence, and are likely to impact organizations over many years. The vast majority of decision makers (88%) believe these disputes would likely have an impact. The impacts include manufacturing and production activities having to be shifted to an alternative market (37%) to banking and payment infrastructure being disrupted (37%). A third of respondents (35%) believe that there could be an increase in cyber-attacks/espionage.

Each event is separate, distinctive, and unpredictable, but taken together, the collective impact is devastating. It shows the range of events decision makers have to consider to ensure their supply chains are resilient to disruptions. To achieve such operational resilience, supply chain leaders need to adopt modern technologies and processes that can identify and mitigate risks across multiple factors. Continuous monitoring methods should be at the top of their lists, as such visibility can be the foundation for risk mitigation, efficiency, and agility.

As disruptions grow, organizations focus on risk management and visibility

Supply chain risk management

The diverse and successive nature of supply chain shocks combined with the high costs associated with the disruptions they create should be a resounding wake-up call for organizations, and a clear signal that better monitoring is a business-critical need.

It's therefore no surprise that supply chain risk management and resilience is going to become increasingly important to organizations. To illustrate this, half of all surveyed organizations (50%) say supply chain risk management and resilience will be their top business priority in two years' time, compared to a little under two fifths (39%) now.

Supply Chain Risk Management and Resilience as Top Business Priority

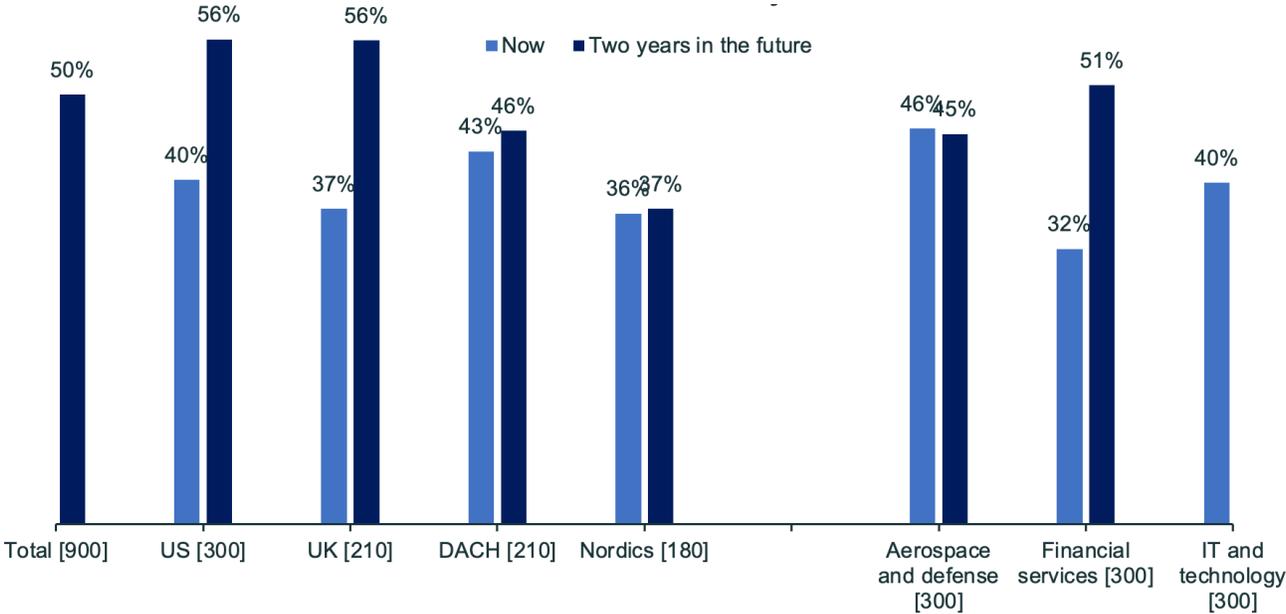


Figure 4: The percentage of respondents who believe that global supply chain risk management and resilience is/will be their organization's top business priority.

Intriguingly, this pattern is not mirrored across all regions. While those in the U.S. (40% to 56%) and UK (37% to 56%) predict large increases in importance, the change in DACH (43% to 46%) and Nordics (36% to 37%) does not appear so dramatic and will be an area of further investigation.

This general pattern is mimicked somewhat in terms of sectors. For those in financial services (32% to 51%) and IT and technology (40% to 53%), there is a sizable projected increase. However, importance actually decreases slightly for those in aerospace and defense (46% to 45%), which could suggest that the industry has reached a higher level of risk management maturity.

Supply chain risk management will become critical, or the number-one business priority, for many organizations, and the frequency with which those at the board-of-director level will discuss it reflects this. Overall, over two-fifths of boards (21%) are talking about supply chain risk on at least a weekly basis, with 78% doing so at least monthly.

The average number of times boards confer on supply chain risk each year is 22 overall, but there is some variance when it comes to regions. This average rises to 27 for those in the U.S., before dropping to 20 for DACH and 19 for Nordic countries. This result isn't necessarily surprising, given the importance that those in the U.S. attach to supply chain risk management and how they predict it to rank in terms of business objectives.

Supply chain visibility

A crucial element of supply chain risk management is the level of visibility that organizations have throughout their supply chain. The less the organization can see across its supply chain, the less it can accurately predict. Intuitively, organizations experience more significant fallout due to disruptions when visibility into their supply chains is lower.

With that being said, it's not a surprise that the vast majority (88%) of organizations say visibility into their global supply chain is more important now than it was two years ago. The succession, and at times, overwhelming number of recent shocks and related impacts demands that greater importance is placed on visibility.

However, while decision makers note the value that visibility into supply chains can provide them, this does not necessarily translate across the different tiers in an organization's supply chain.

In fact, visibility levels drop off sharply below the second tier of organizations' supply chains. Whereas four in five (80%) say their organization has instantaneous visibility/the

ability to continuously monitor their supply chains in the second tier, this drops to only half (50%) at the third and fourth tiers. By the ninth tier and below, this ability declines even further with a little over one-fifth (22%) citing that they can do this.

Instantaneous Visibility Across the Tiers of the Supply Chain, Per Region

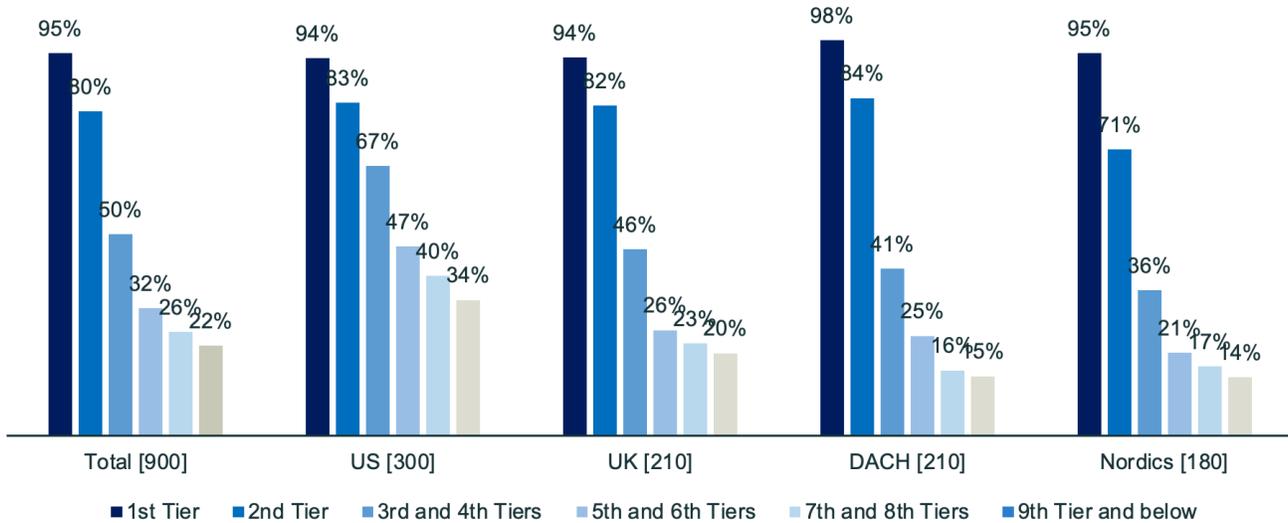


Figure 5: The percentage of respondents who report that their organization has instantaneous visibility/continuous monitoring into third party relationships across the various tiers of their global supply chain.

Instantaneous Visibility Across the Tiers of the Supply Chain, Per Sector

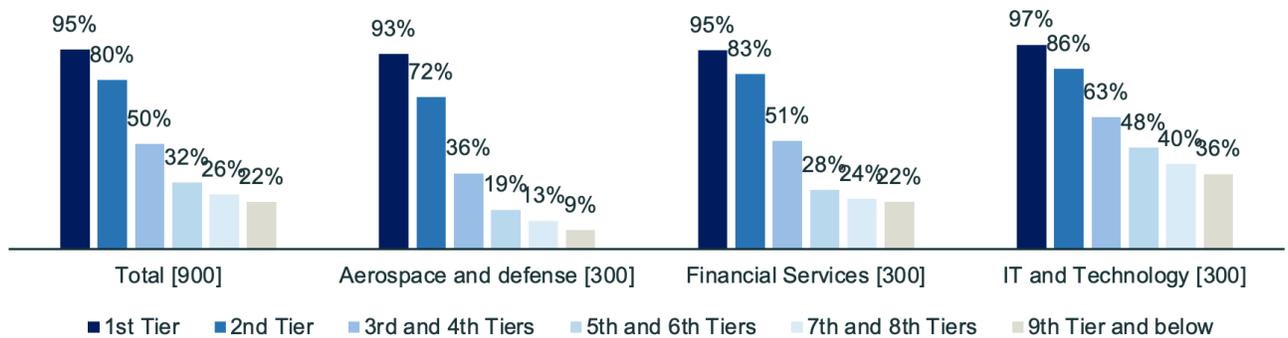


Figure 6: The percentage of respondents who report that their organization has instantaneous visibility/continuous monitoring into third party relationships across the various tiers of their global supply chain.

While it’s important to note that not all organizations will have so many tiers in their supply chain, the pattern is clear. The world’s largest organizations place their trust in their extended supply chains to ensure their own business continuity. However, this trust can appear as blind faith, especially considering the extent and fallout of recent shocks. Many

will be unable to assess the security of their suppliers beyond the second tier without a huge manual effort. Those who have visibility and continuous monitoring of multiple risk factors across the sub-tiers of their extended supply chains are better able to minimize the impacts and capitalize as a result.

In terms of regions, there is some disparity between those organizations in the U.S. and Europe. Those in the U.S. have greater visibility (67% at third and fourth tiers, 34% at ninth tier and below) across the various tiers compared to their European counterparts, perhaps indicating they are better prepared to deal with shocks than other regions. In terms of sectors, those in aerospace and defense report the worst levels of visibility across the supply chain tiers (36% at third and fourth tiers, 9% at ninth tier and below), demonstrating that they have a real weakness in being able to track hidden suppliers.

Organizations are becoming aware of how imperative it is for them to effectively assess their supply chains, and this will only increase in the near future because the financial impact makes it impossible to ignore. However, despite increasing in importance, visibility (and crucially, in-depth visibility) is a real weakness for many and will hamper organizations. So how are organizations evaluating their supply chains and the shocks that occur?

Assessment methods lag behind evolving supply chain risks

Frequency of monitoring

Unquestionably, supply chain shocks are causing debilitating effects on large organizations, especially financially. This impact alone is enough to cause deep damage. Therefore, the methods currently in use by organizations to monitor their supply chains and the preventative measures they have in place need to be explored. The key question is whether these processes are enough to mitigate against supply chain disruption.

Given the range of threats that large organizations face, it is important to understand the frequency with which they are assessing their supply chains. In fact, only just over a third (34%) of organizations currently assess their global supply chain on a continuous basis. The remaining (66%) organizations do so every month or less. For the majority, it would appear there are large gaps in time when these organizations don't know what's happening in their supply chain, making them more vulnerable to disruption.

The Frequency with which Organizations Assess their Supply Chains



Figure 7: “Approximately, how frequently do you evaluate your organization’s global supply chain?”

When separated out by region, those in the U.S. appear the most advanced, with over two-fifths (41%) assessing their supply chain continuously. However, considering organizations in the U.S. suffer the most financially, and the fact that supply chain risk management will be a top business priority for them, it’s not a surprise they are monitoring it so closely. The Nordic region has the least number of organizations monitoring their supply chain continuously, with only just over a quarter (26%) doing so.

Those in IT and technology (42%) are also more advanced than their counterparts in aerospace and defense (30%) and financial services (30%).

Assessment methods

Aligned to the frequency of measurement is the type of methods organizations are using—manual or automatic. The former measures supply chains on an irregular basis and at one point in time, while the latter provides feedback in real time on a continuous basis. Nearly three quarters (74%) of organizations use manual methods at least some of the time, with only just over a quarter (26%) solely using automatic methods.

It also appears that organizations in financial services (79%) are more likely to show a greater reliance on manual methods than those in aerospace and defense (71%) or IT and tech (71%). When analyzing by persona, those in IT/IT security are more likely to use manual methods (77%) than procurement respondents (70%).

There is a current reliance for infrequent monitoring in all sectors. The enormous financial impact many suffer proves current methods are ineffectual, and organizations need to focus on switching to more automatic methods because they are still blind to many of the shocks occurring in their supply chain.

Therefore, it's not surprising that the majority of decision makers (63%) admit that they need to make improvements to their ability to continuously monitor their supply chains.

Decision Makers Rating of their Organization's Instantaneous Visibility into their Supply Chains

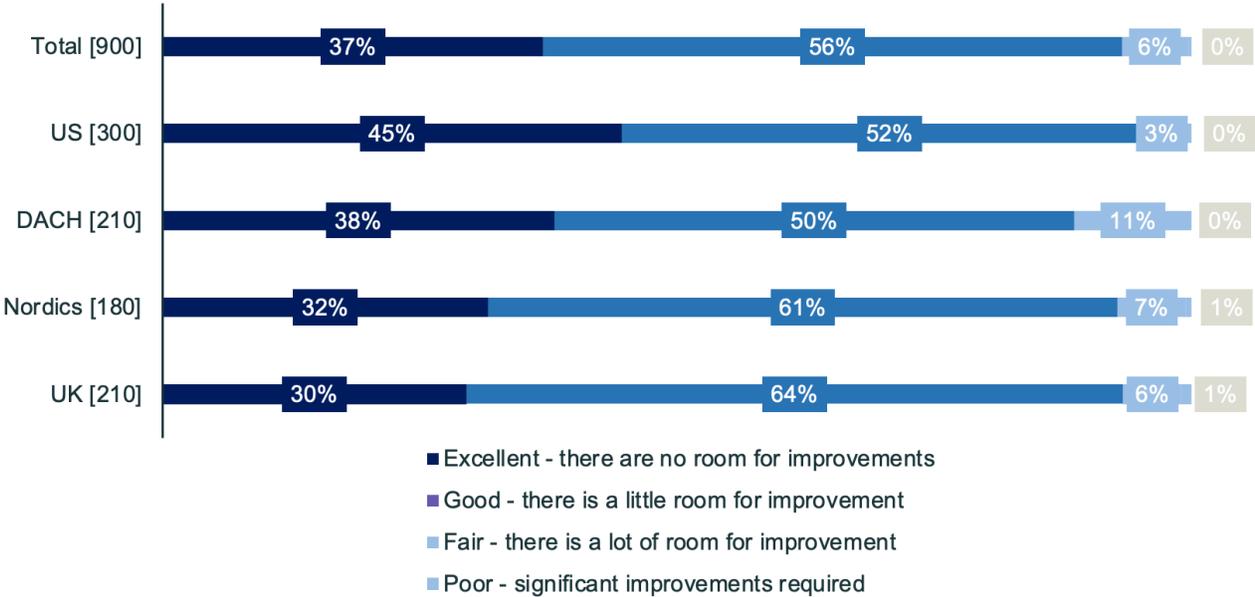


Figure 8: “How would you describe the instantaneous visibility/continuous monitoring your organization has into your global supply chain?”

Intriguingly, those in the U.S. are more likely (45%) than any other regions to rate this ability as excellent, with no improvements needed. As shown above, U.S. organizations assess their supply chains on the most frequent basis, and it appears they are most satisfied for doing so.

The chosen methods indicate enterprise organizations are using a range of processes to keep a close eye on their supply chains. In fact, decision makers cite their organization typically uses three separate methods/processes on average. The most commonly used methods are security rating services (57%), AI/data and analytics (56%), integrated risk management (55%), and vendor risk management (54%). When asked which one is most beneficial to them, AI/data and analytics ranks the highest (45%), suggesting that decision makers believe automatic methods derive the best value.



The Most Beneficial Monitoring Methods Currently in Use

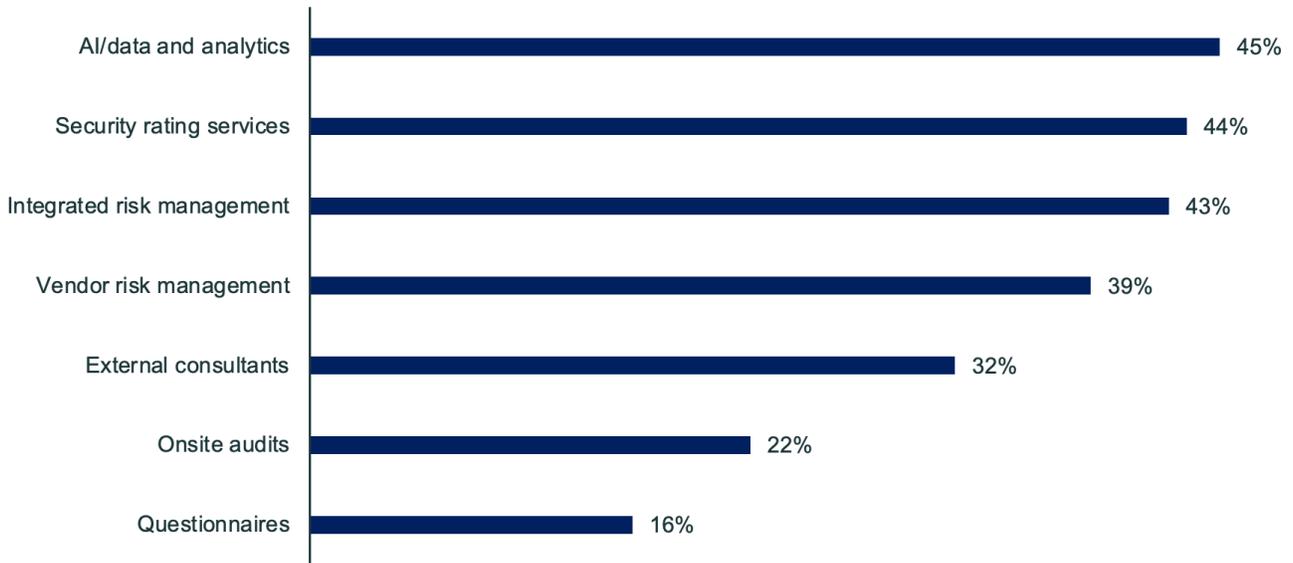


Figure 9: “Out of the current methods your organization is using to monitor your global supply chain, which are the most beneficial?” Combination of responses ranked first, second and third [899], respondents from organizations that evaluate their global supply chain, omitting some answers.

Visibility is currently a critical weakness among many organizations, especially the ability to see in-depth across sub-tiers in the supply chain. Automatic methods can alleviate this deficit in organizations’ risk management systems. In fact, when asked to name the benefits of using a fully automated method would be, many decision makers rank supply chain visibility (ecosystem awareness) as the greatest benefit (64%).

Automatic methods may help to reduce the financial burden brought about by disruptions, with two other benefits which rank highly including cost avoidance (56%) and cost reduction (56%). What is clear is that all supply chain decision makers (100%) believe there are benefits to using automatic methods.

Organizations should view an effective and robust monitoring system as essential. Current methods are likely inadequate at preventing large-scale financial damage as a result of supply chains shocks. Those who employ the most efficient methods are likely to be in the best position to protect themselves going forward.

Conclusion: To improve ROI, meet sophisticated threats with AI, analytics, and modern risk management strategies

Supply chain disruptions have considerable impacts on organizations, in all regions and sectors. Financially they can be devastating. The range of potential threats is exhausting, and that’s before you factor in those that are more unpredictable such as COVID-19.

It is not a surprise to see that supply chain risk management is becoming an ever more important topic to organizations, with visibility also increasing in significance.

It's therefore more important than ever for organizations to have effective monitoring systems in place for their supply chain to achieve operational resilience – where the organization output, be it services or products, is uninterrupted no matter the amount of disruption in the supply chain. Reaching this goal has clear benefits and would allow the organization to respond quickly and effectively to shocks that occur while minimizing the impact.

However, the majority of organizations are still using techniques that are likely outdated and ultimately expose themselves to further disruption. These methods measure events at one point in time and use manual processes, meaning that organizations lack the tools and visibility to make effective decisions in high pressure moments.

Visibility of more tiers, their relationships, and a broader view of risk across more factors is essential to improve resilience.

The ability to continuously monitor the supply chain is crucial. While the majority of organizations still don't, supply chain shocks and the disruption caused are likely to continue to have far reaching consequences.

Research scope and methodology

Interos commissioned independent technology market research specialist Vanson Bourne to undertake the quantitative research upon which this whitepaper is based. A total of 900 respondents, equally split between IT/IT security and procurement decision makers, were interviewed in April and May 2021, with targeted representation in the U.S. (300), UK (210), DACH (210), and Nordic (180) regions. All respondents had to be from organizations with at least 1,000 global employees, a \$1 billion+ revenue, and are from three sectors: aerospace and defense, financial services, and IT and technology.

Interviews were conducted online using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate. Unless otherwise indicated the results discussed are based on the total sample.

About Vanson Bourne:

Vanson Bourne is an independent specialist in market research for the technology sector. Their reputation for robust and credible research-based analysis is founded upon rigorous research principles and their ability to seek the opinions of senior decision makers across technical and business functions, in all business sectors and all major markets. For more information, visit www.vansonbourne.com.



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