Find out more
www.thebci.org

Thought Leadership

BCI Supply Chain Resilience Report 2023

SGS

Leading the way to resilience

Contents

5 Executive Summary

10 Levels of Reporting and Technology Uptake

19 Frequency and Origin of Supply Chain Disruptions

27 Causes and Consequences of Supply Chain Disruptions

35 Insurance

39 Business Continuity Arrangements and Due Diligence

62 Annex

Foreword

We are pleased to present the 13th edition of the BCI Supply Chain Resilience Report, sponsored by SGS. This report comes at a time when lessons learned from the COVID-19 pandemic have become business as usual within organizations, but rising geopolitical tensions and climate change pose new challenges to supply chains and those managing them.

The previous edition of this report was published at the height of the COVID-19 pandemic, when organizations were experiencing intense supply chain disruptions like never seen before in modern history. Supply chain strategies were indeed being tested to the core.

COVID-19 demonstrated that a lack of attention to supplier networks, carrying out insufficient training and exercising, using tick-boxes to ascertain the resilience of critical suppliers and failing to carry out any checks at the procurement stage of a supplier relationship, presented organizations with serious issues of business continuity.

As a result, management attention on supply chains rose to an all-time high. Organizations were prompted to invest in supply chain management tools, undertake in-depth analysis of supplier business continuity plans and hold more frequent catch-up meetings with critical parties.

However, could this progress continue without being driven by a global pandemic? Could levels of management attention on supply chains remain high? Could the extra levels of due diligence be continued if the world reverted to a new level of normality?

This report demonstrates that the answer is largely yes. COVID-19 did indeed provide a shock lesson in supply chain resilience good practice. Management commitment to supply chain management is at an all-time high, while centralised reporting of supply chain disruptions and investment into specialist technology tools have also soared.

However, work still needs to be done. Many organizations are still failing to make basic checks on the business continuity and resilience plans of their most critical suppliers, and reporting data on disruptions is frequently held in Excel spreadsheets and not shared throughout the organization. Furthermore, while tools, such as supply chain mapping software have seen an increase in usage, many are still not fully embracing the benefits that technology can bring to ensure a truly resilient supply chain. With COVID-19 still fresh in the mind of senior management, now is the time to request dedicated budget to invest in technological solutions to boost resilience and improve efficiency.

I hope this report provides the resilience community with a contemporary overview of supply chain resilience, but also learnings that can be of immediate use within readers' organizations. The BCI is very grateful for the participation of our members and contacts for filling in the survey and taking part in interviews, and would like to offer our thanks to SGS for their sponsorship of this important report in our portfolio.

Rachael Elliott
Head of Thought Leadership
BCI

Foreword

As the world picks up the pieces following the pandemic and looks to face a global recession, businesses need a beacon of certainty and the knowledge to build resilience.

This is why we are proud to sponsor this BCI Supply Chain Resilience Report. By cleverly combining detailed data and in-person interviews, this document brings you the latest supply chain resilience information.

Supply chain resilience remains very challenging for organizations, although many positive trends include centralized reporting, which is at an all-time high. However, work must be done to maintain the lessons learned during the pandemic, as this report clearly shows that the opportunity to use COVID-19 as a lesson to learn about supply chain resilience is slipping away.

Whilst reported levels have increased, we are still seeing a relatively low uptake of technology to detect and report on supply chain disruptions. We also understand that top management commitment has increased overall, although more organizations describe this as "medium", rather than the "high" noted in last year's report. We all know that there is more work to do in these areas.

Given an uncertain future, we all want to be prepared as much as possible. This report turns its attention to the future, brilliantly combining lessons from the past with present and future potential issues and hurdles to give you a rounded picture.

Although cyber-attacks and data breaches were the sixth main cause of disruptions in the past 12 months, they are a primary concern over the next five years for over 55% of those that took the survey for the report. Other key concerns include adverse weather, natural disasters, energy scarcity and new laws or regulations.

This said, the future looks bright for business continuity, as many businesses continue to pursue the practice to ensure their prosperity and future.

Our Supply Chain Assurance services are primed and ready for the post-pandemic challenges, current and traditional tribulations, and what the future might hold, a global recession that will adversely affect supply chains, ushering in greater risks and tighter budgets.

Our checklists, customized programs and industry-driven initiatives cover a multitude of areas and content, from social compliance and environmental and quality management to information security, governance and health and safety.

Combining our cutting-edge, real-time technology and subject matter experts, we can partner with you to help manage your supply chain, ensure compliance and increase supplier visibility, no matter the complexity or international coverage.

Implementing a business continuity management system (BCMS) can also help you to understand critical business processes and the impact of disruptions.

By using our logistics support and other BCMS services, including ISO 22301 certification and training, you can improve your organization's resilience, have strong recovery capability processes and ensure your continual survival.

Jeff McDonald
Executive Vice President
SGS

Supply Chain Resilience
Executive Summary

Executive Summary

Supply chain resilience has been boosted through learnings made throughout the pandemic: Many positive trends that emerged in the aftermath of the pandemic have been retained which is resulting in organizations reporting better levels of supply chain resilience than pre-pandemic. However, work needs to be done to maintain the learnings made during the pandemic and ensure continued management support for supply chain management.

Reporting levels have increased, but a relatively low uptake of technology to detect and report on supply chain disruptions remains. Among the most utilised tools, traditional methods, such as excel spreadsheets, outweigh dedicated software for business continuity management, environmental events and geopolitical change. However, a new trend sees organizations use software for general supply chain mapping, which shows an appetite for more holistic approaches.

Top management commitment has increased, but more organizations describe it as "medium" rather than the "high" noted in last year's report. This moderate trend may not be enough to offset a general disconnect between high levels of disruptions and the relatively low-level uptake of business continuity practices within supply chains. Many organizations made positive changes to the resilience of supply chains during the pandemic when management attention was at its highest. Resilience professionals need to ensure this attention is maintained through regular promotion of good practice, showcasing of management standards and case studies of both failure and success.

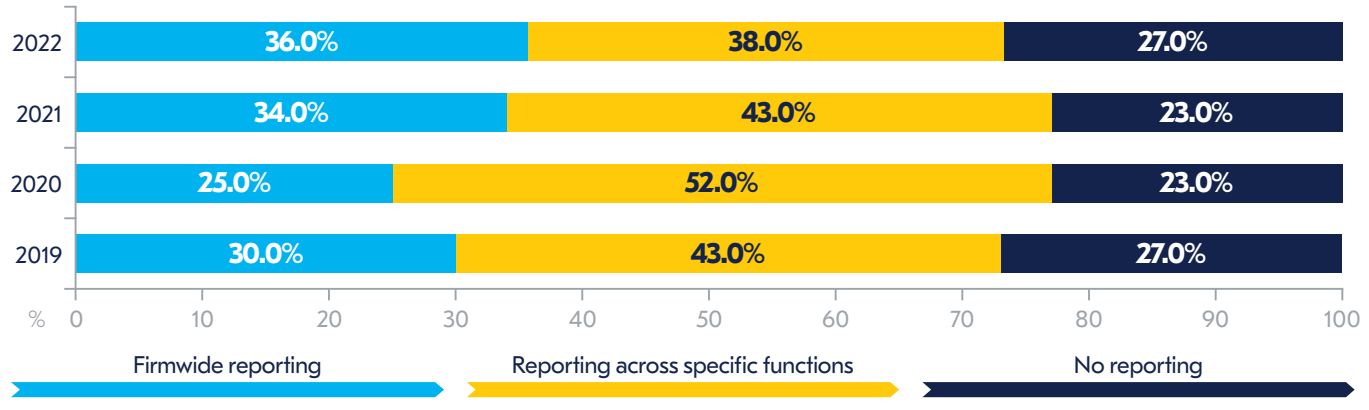
Disruption levels are significantly lower than three years ago, but still twice as high as before the pandemic hit. While many organizations state that the impacts of COVID-19 have been mitigated, supply chain disruptions are still very much an issue. Progress was clearly made in supply chain resilience during the pandemic, and this positive trend needs to be continued.

A significant subset of participants do not check or validate business continuity arrangements in the supply chain. This also applies to key suppliers, which are often not subject to business continuity considerations at all. The importance of introducing business continuity checks at the procurement stage of contract negotiations cannot be highlighted enough. Furthermore, ensuring closer relationships with suppliers can help to determine just how good a supplier's arrangements are and help to delve deeper than a pure "tick-box exercise" approach.

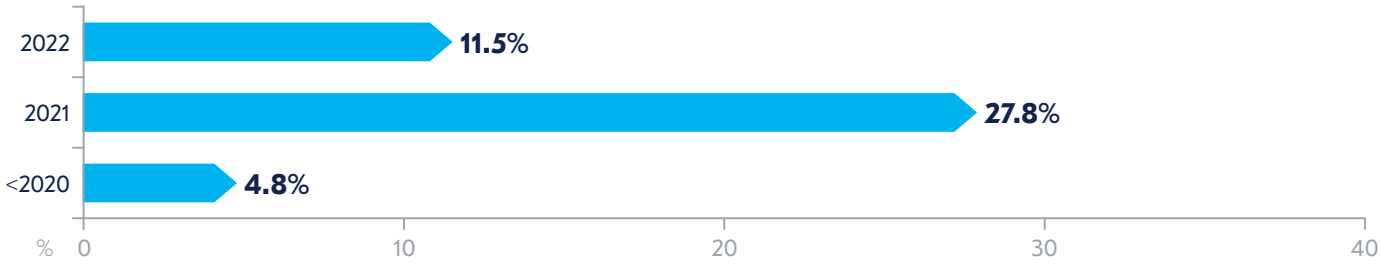
Cyber-attacks and data breaches are the sixth main cause of disruption in the past 12 months, but they are the primary concern over the next 5 years. Still, practitioners need to take more consideration of people-related disruptions, particularly loss of talent or illness, but practitioners are less concerned about these going forward. However, with climate-related events and energy shortages being of considerable concern, practitioners have started to consider the long-term implications of disruptions on supply chains.

Overall, this year's report leaves the impression that the opportunity to use COVID-19 as a lesson to learn about supply chain resilience needs to regain momentum. Whilst the measures taken to ensure supply chain resilience remain at a higher level than pre-pandemic, overall attention to resilience has seen a notable drop in 2022 as the acute pressures on supply chains seen during the pandemic have been somewhat mitigated. Ensuring management commitment to supply chain resilience remains crucial to the success of resilience strategies going forward and, once again, practitioners will need to continue to showcase this importance to those at senior management level.

The proportion of organizations not reporting on supply chain disruptions remains static, and organizations are making a concerted effort to centralise reporting processes with firmwide reporting at its highest level since the report began.



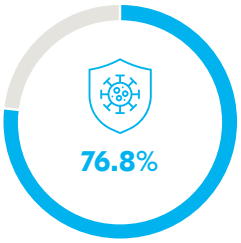
11.5% suffered more than 10 disruptions. This is lower than the 27.8% reached in 2021, but more than twice as much as pre-pandemic levels (4.8%).



40.7% use technology to record, measure and report on performance-affecting supply chain disruptions, a significant drop from last year's 55.6%.

Excel spreadsheets remain the most popular indicator to record, measure and report on supply chain disruptions, followed by financial models and geopolitical models.

76.8% of respondents have mitigated the impacts of COVID-19 to different degrees.



COVID-19 mitigation measures include:

37.7%
We have used the learnings made from COVID-19 to lessen the issues caused by more contemporary impacts

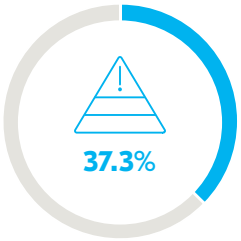
29.7%
We have ensured that we now have back-up suppliers in place for critical suppliers

29.0%
We are increasing stockpiling

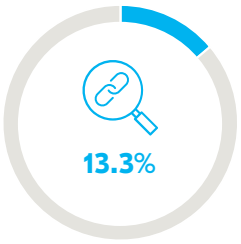
26.1%
We are making greater use of technology for managing our supply chain

23.9%
We are sourcing more locally

Most organizations experienced disruptions at tier 1



13.3% of respondents do not analyse the full supply chain to identify the original source of disruption



In the past 12 months, the main causes of supply chain disruptions were:

46.8%
Loss of talent/skills

46.0%
Human illness

44.4%
Transport network disruption

42.9%
Adverse weather

35.7%
Cyber-attack and data breach

In the next 5 years, the main concerns in terms of supply chains resilience are:

55.6%
Cyber-attack and data breach

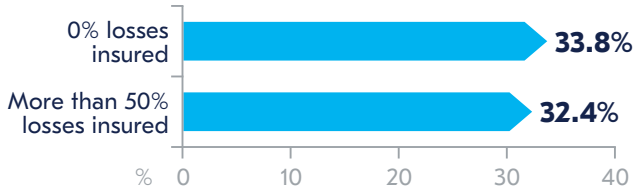
46.0%
Adverse weather

44.4%
Natural disasters

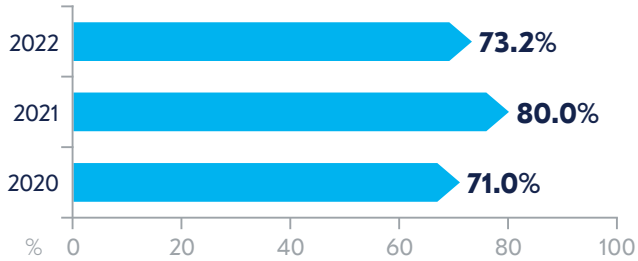
41.3%
Energy scarcity

40.5%
New laws or regulations

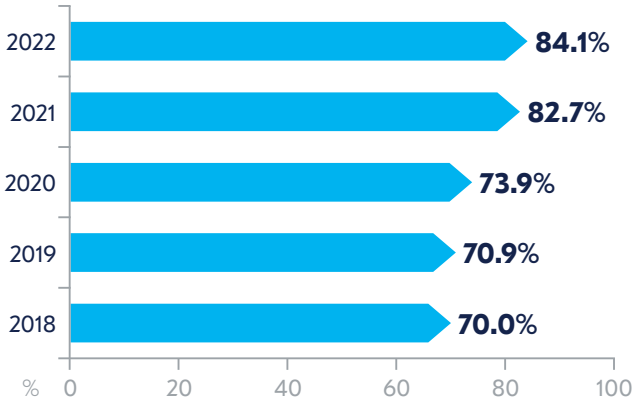
Insurance coverage in 2021



Organizations reporting business continuity arrangements within their supply chain



High or medium top management commitment



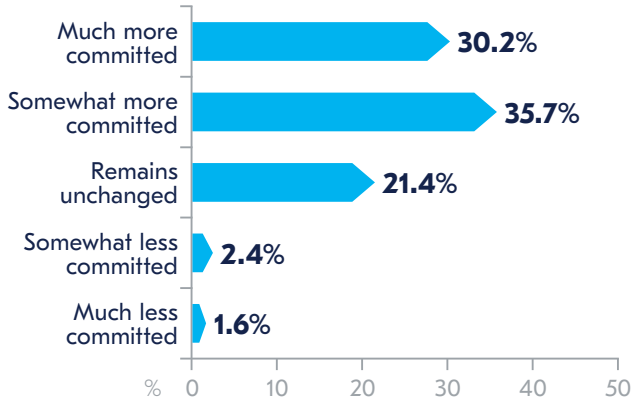
Top three methods to understand business continuity arrangements in the supply chain

52.1%
Evidence of plans being exercised

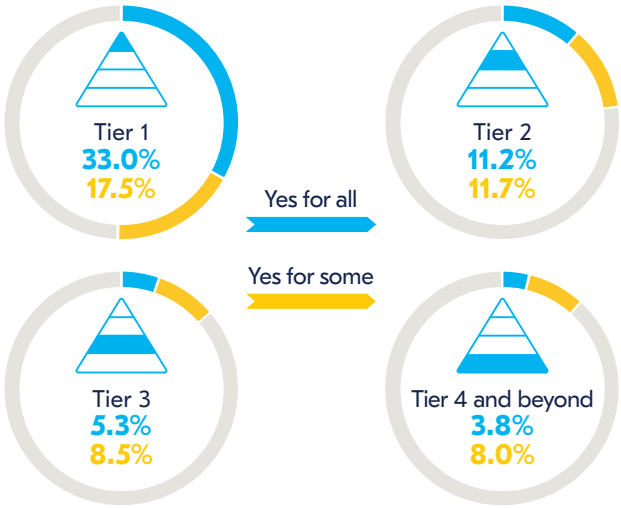
54.6%
A business continuity plan and having someone responsible for it

58.8%
Evidence of a business continuity programme (BCP) not just a business continuity plan

Top management commitment shifts as a result of COVID-19



Percentage of organizations that seek to understand the BC arrangements of key suppliers



Levels of Reporting and Technology Uptake

Levels of Reporting and Technology Uptake

- **The percentage of organizations with a centralised approach to reporting is at a 12-year high, but is still practised by only a third (35.6%) of organizations.**
- **Only 4 in 10 organizations use technology to report on supply chain disruptions, with Excel remaining the most popular choice.**
- **Advanced technology solutions and supply chain mapping software uptake is increasing as recent disruptions help to support new purchases.**

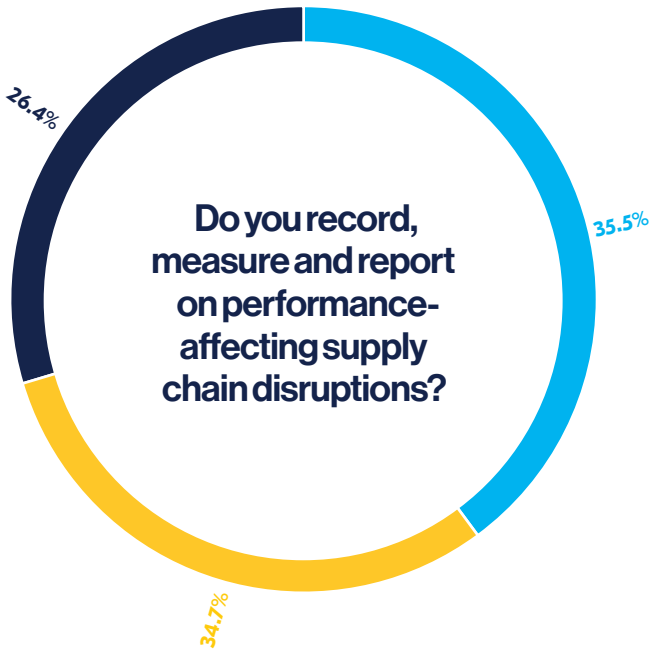
Despite the ongoing global disruptions and slowdowns that supply chain managers are battling, the level of reporting has not improved markedly through the years. Our last BCI Supply Chain Resilience Report reported that organizations that experienced more than 10 supply chain disruptions increased by five times[1].

The figures show an improving picture this year. More organizations report a centralised approach to reporting (35.6%) than has ever been noted in the 12-year history of the report. In total, 73.4% of organizations now report on supply chain disruptions. Furthermore, in the last four years, the number of organizations not reporting on supply chain disruptions has remained lower than the four years prior. Some of this improvement can be credited to lessons learnt during the pandemic: the pandemic revealed that, in many cases, supply chains had been operating on very thin ice due to the absence of resilience capabilities. Indeed, interviewees corroborated this by reporting that tangible changes had been made to reporting over the past year.

1. Elliott, R. (2021). BCI Supply Chain Resilience Report 2021. The BCI. 8 March 2021. Available at: https://www.thebci.org/resource/bci-supply-chain-resilience-report-2021.html. Last accessed 13 December 2022.

Low levels of firmwide reporting of disruptions is still leading to siloed practices

However, an ongoing cause of concern is the fact that just over a third of professionals (35.6%) have adopted firm-wide reporting systems, with an additional 37.8% only employing them across specific functions. Although some reporting tasks require a degree of departmental autonomy, a certain level of centralisation is desirable as it leads to less siloing of information, more visibility of where supply chain problems originate, provides examples of best practices, helps to avoid work duplication and, in some cases, diminishes spending on multiple different packages or solutions.



35.5%
Yes, this is coordinated and reported across the whole enterprise

38.1%
Yes, but within certain departments/functions, but NOT aggregated

26.4%
No

Figure 1. Do you record, measure and report on performance-affecting supply chain disruptions?

Year	Firmwide reporting (%)*	Reporting across specific functions (%)*	No reporting (%)*
2022	36	38	27
2021	34	43	23
2020	25	52	23
2019	30	43	27
2018	32	38	31
2017	34	38	28
2016	28	37	35
2015	26	40	34
2014	25	39	36
2013	25	37	39

**Note that rounding may mean that totals do not add up to 100.*

Indeed, some participants believe that while the relevance of supply chain resilience has grown, there is still broad room for improvement. In this regard, a professional stated that they *"produce regular supply chain intelligence reports, and the level of risk in supply chains has never been higher, but this is a niche specialism that requires cross-functional working"*. For as long as organizations do not prioritise the understanding of disruption sources in the operating environment of their supply chains, they will remain unprepared to face unexpected events.

Adoption of new technology remains low for supply chain monitoring activities

Amongst those who engage in reporting activities, most showed a preference for traditional tracing systems with only 40.7% using technology to record, measure and report on supply chain disruptions. Within this subset, 6 out of 10 (59.8%) still use Excel spreadsheets as their "go to" resource. Whilst Excel is a popular package that is typically installed as standard on most corporate systems, it can lead to documents being stored in unshareable locations, and version control being poorly managed. Although tools such as SharePoint may make this easier to manage, it is still something that needs to be considered when using Excel for recording, measuring and analysing important data. Incident response data is used by a third of organizations (33.9%), and financial models by a quarter (25.0%). It is interesting to note that only 1 in 10 (10.8%) respondents employ specific tools for different requirements. For example, for the monitoring geopolitical or environmental events given that supply chains have been deeply affected by macrotrends deriving from both political decisions and extreme weather events.

Ultimately, the ability to report on events that occur across the supply chain will also depend on the technologies embedded in business-as-usual processes. For example, in manufacturing, with the booming of industry 4.0[2], smart devices are becoming incumbent as robots increasingly take over routine duties (e.g. automated vehicles). This allows warehouses to monitor performance through data analytics as more actions become measurable in terms of time and performance levels. Higher adoption of smart devices will eventually lead to a smoother information flow when analysing delays, changes or disruptions to operations. This is not to say automated systems are infallible, but under the supervision of qualified personnel, they can be a vital tool for boosting resilience along with business-as-usual operations.

For those industries that rely less on physical supply chains and do not rely on warehouses or physical transport (e.g. finance and insurance), it might be more relevant to adopt software solutions that help manage document process flow. This may include Business Continuity Management (BCM) software that, despite being the least adopted technology (7.1%), is perfectly suited to identify supplier dependencies, as well as single points of failure in the supply chain.

2. Hippold, S. (2022). Emerging and maturing supply chain technology is a major source of competitive advantage. Gartner. 20 April 2022. Available at: https://www.gartner.com/smarterwithgartner/gartner-predicts-the-future-of-supply-chain-technology. Last accessed 16 December 2022.

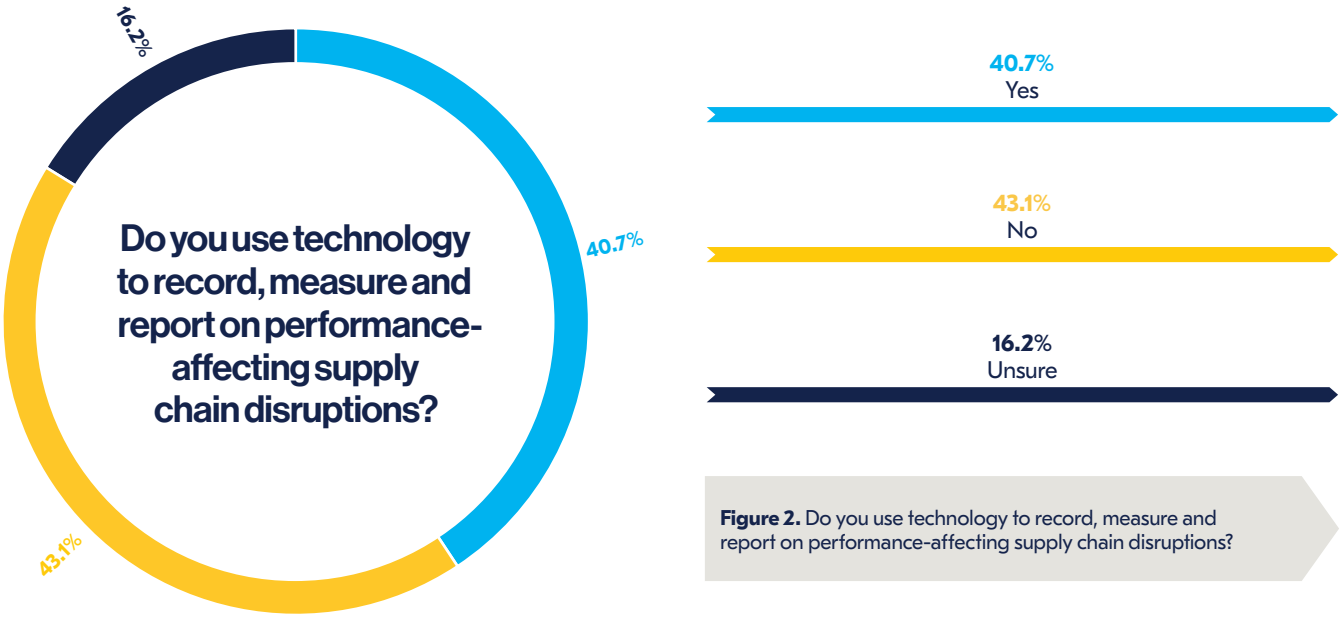


Figure 2. Do you use technology to record, measure and report on performance-affecting supply chain disruptions?

If yes, what types of indicators do you rely on to record, measure and report on performance-affecting supply chain disruptions?

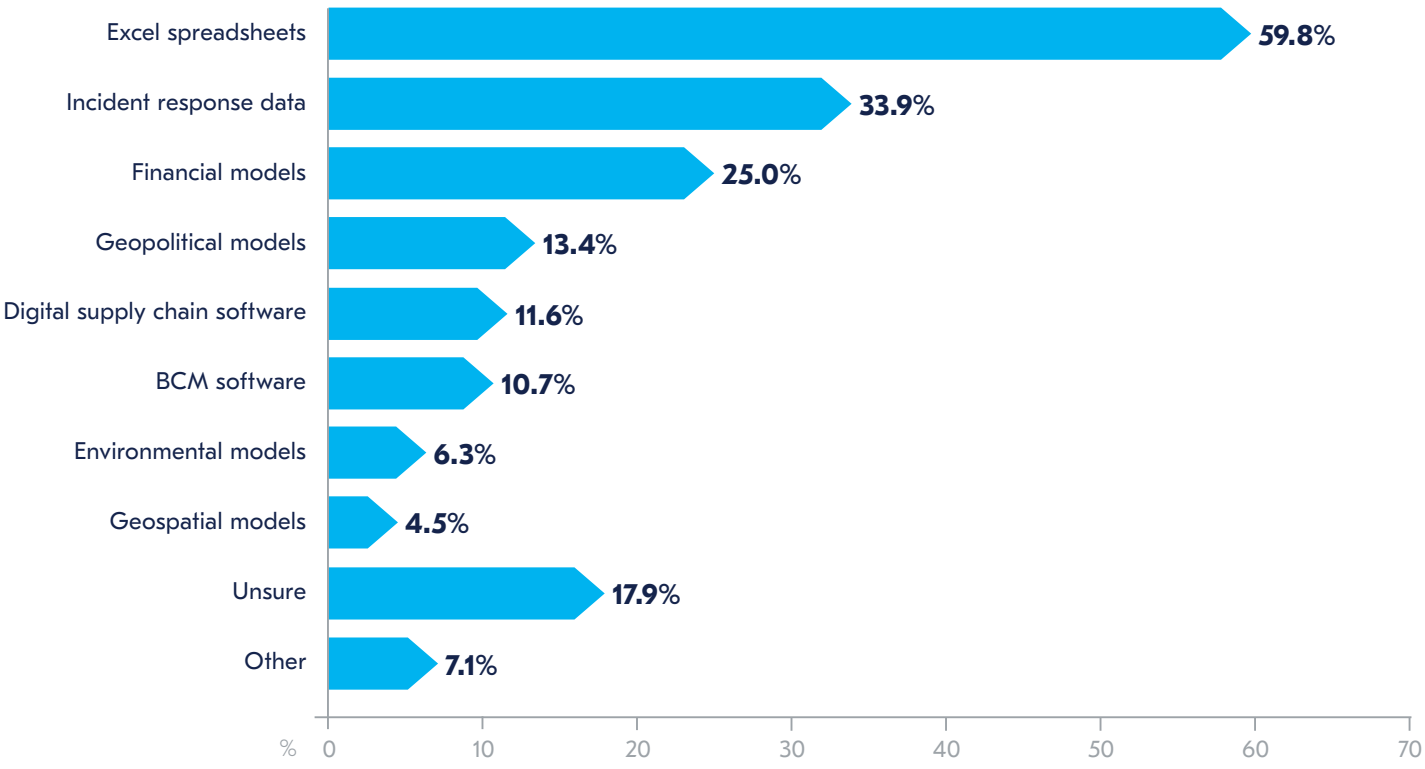
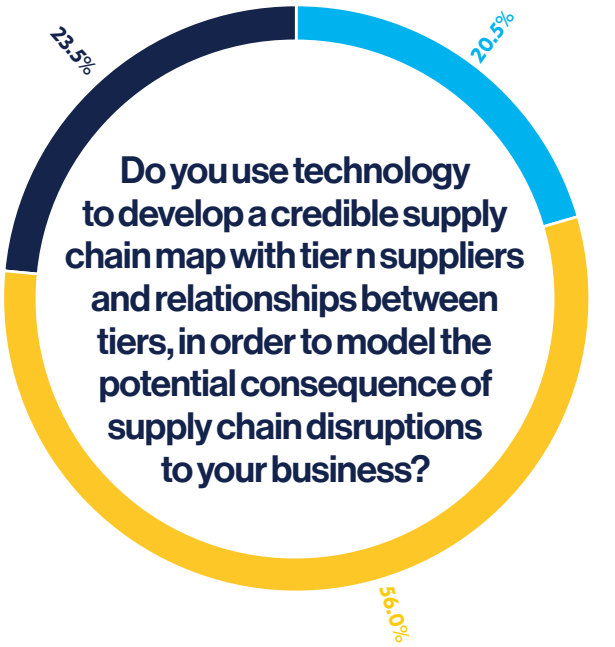


Figure 3. If yes, what types of indicators do you rely on to record, measure and report on performance-affecting supply chain disruptions?

This year's report shows that replicating supply chain processes through mapping software is gaining momentum. A fifth (20.5%) now use technology to develop a credible supply chain map. This choice seems to be paying off, as most of the professionals who do so (61.7%) have seen an improvement in customer satisfaction. On a different note, it should be noted that the majority of respondents within this subset (53.4%) have not increased their technology uptake as a direct result of supply chain vulnerabilities.

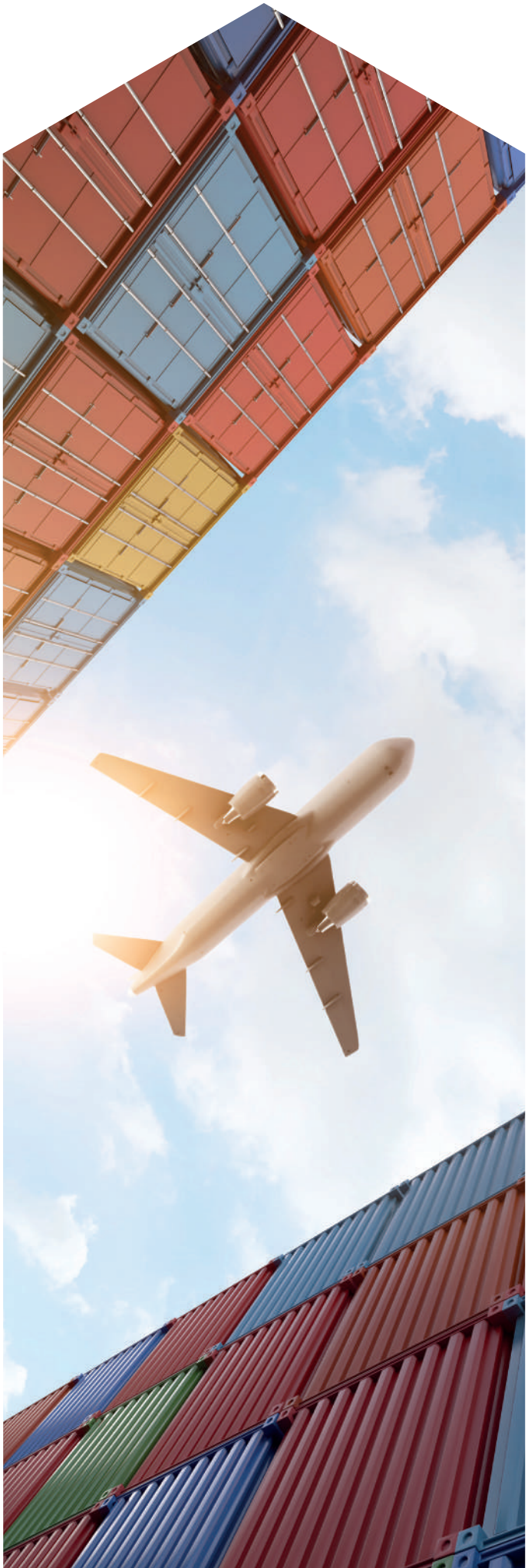


20.5%
Yes

56.0%
No

23.5%
Unsure

Figure 4. Do you use technology to develop a credible supply chain map with tier n suppliers and relationships between tiers, in order to model the potential consequence of supply chain disruptions to your business?



Supply chain mapping technologies are gaining traction in organizations

What these figures do show, however, is that whilst organizations may not have increased technology uptake, there is an increasing appetite for digital mapping solutions. However, disruption-focused technology, might be losing some ground. It may be the case that management and practitioners alike tend to look for holistic systems that go beyond the analysis of disruption data and provide a comprehensive view of the supply chain during business-as-usual as well as during live incidents. Indeed, planning for the *effect* rather than the *cause* of an incident is a path many practitioners chose to follow during the COVID-19 pandemic when pandemic plans proved unfit for purpose. It appears that the same phenomenon is playing out when it comes to supply chain technologies.

The integration of technology in supply chain resilience is a trend that has been stimulating the curiosity of both practitioners and academia. Recent research[3] has explored the integration between the physical capabilities of supply chains and a parallel virtual ecosystem. This type of technology is also referred to as a digital twin.

The creation of a virtual replica of the supply chain rests upon sound data gathering that feeds information into an algorithm. This includes the type of organization, its critical suppliers, and the risks it is subject to. With the use of software, it is possible to keep information updated through the automated collection of new data, based on internal inputs as well as open sources, such as public risk registers or news agencies. This allows for the creation of a blueprint of the organization, its supplier ecosystem, and its operating environment.

Contrary to the idea of full reliance on analytics, in this case, supply chain manager can leverage the support of software without completely relinquishing control.

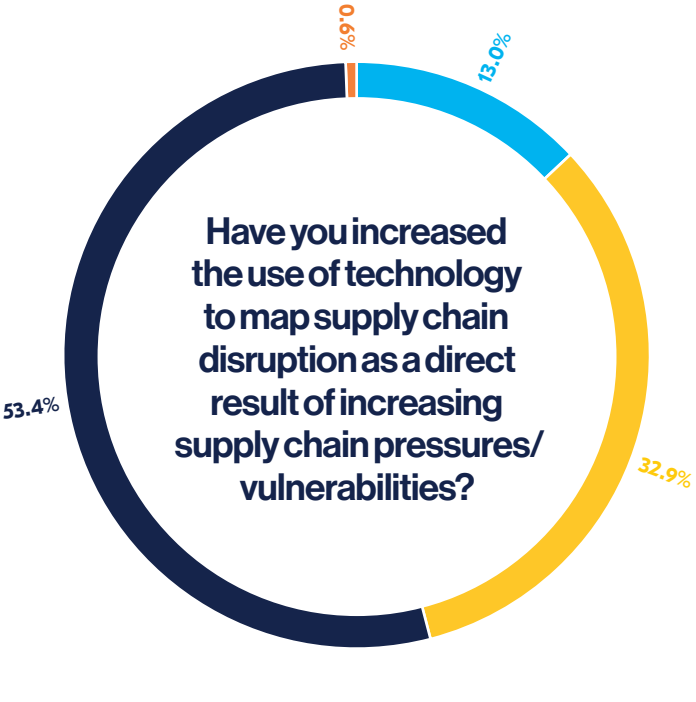
Before a disruption happens, automation can help with supplier risk assessments or business impact analyses, whilst also incorporating an early warning system for disruptions or a simulation of the impact of specific decisions.

However, it should be noted that building a replica of the supply chain often requires the adoption of smart devices to facilitate the timely transfer of knowledge from the physical to the cyber domain which could be prohibitive for some as it comes at a time when organizations are looking to save costs. Moreover, for this system to work in the supply chain, there should be a portal where suppliers can (and want to) share the necessary information. Traditionally, this is a moot point for many professionals, but one which is increasingly being better addressed through greater demands for in-depth due diligence - both from a supplier and buyer perspective - which, in many circumstances, has resulted in closer supplier/buyer relationships.

Without neglecting the importance of human decision-making, having a digital replica of the supply chain that has access to historical data as well as live information sources would represent significant technological progress in supply chain resilience. Furthermore, business continuity practices such as the business impact analysis (BIA) could be built into the software, contributing to a holistic approach.

There are already several software providers in the industry that offer cutting-edge business continuity management (BCM) software, but their potential could be even greater if embedded within a larger digital architecture that mirrors the entire organization. Today, whilst there are limitations of a different nature to the mass adoption of this type of technology, if the resources and appetite are there, it could be the next frontier in supply chain resilience.

3. Ivanov, D. & Dolgui, A. (2021). A digital supply chain twin for managing the disruption risks and resilience in the era of Industry 4.0. Production Planning & Control. 2021, Vol. 32, No.9. 2021. Available at: https://www.tandfonline.com/doi/epdf/10.1080/09537287.2020.1768450. Last accessed 13 December 2022.



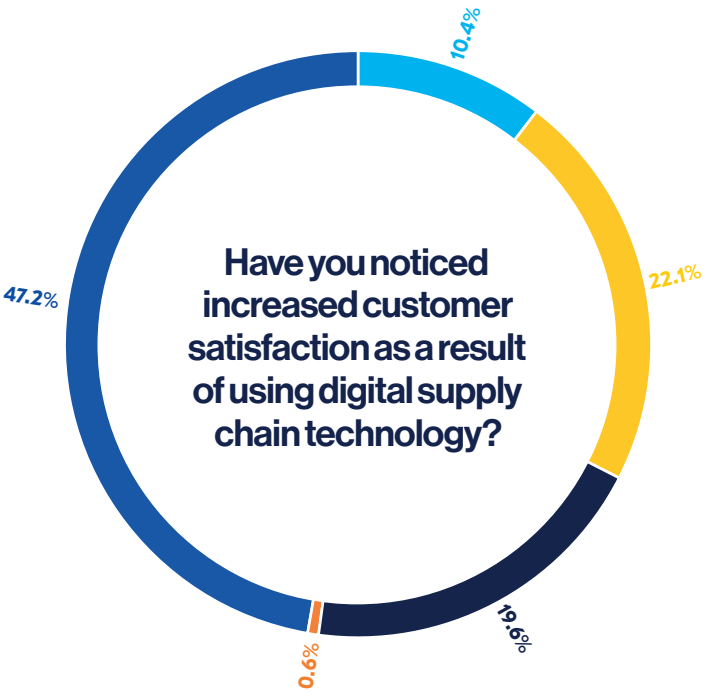
13.0%
Yes, increased significantly

32.9%
Yes, increased somewhat

53.4%
No

0.6%
We have reduced the amount of technology we use

Figure 5. Have you increased the use of technology to map supply chain disruption as a direct result of increasing supply chain pressures/vulnerabilities?



10.4%
Yes, very much so

22.1%
Yes, somewhat

19.6%
No, not really

0.6%
Customer satisfaction has fallen

47.2%
Not applicable

Figure 6. Have you noticed increased customer satisfaction as a result of using digital supply chain technology?

Frequency and Origin of Supply Chain Disruptions

Frequency and Origin of Supply Chain Disruption

- **Levels of disruption remain twice as high as they were pre-pandemic.**
- **The elevated figures do, in part, demonstrate the higher levels of disruption monitoring in supply chains.**
- **Professionals are transforming the learnings made in supply chain management during COVID-19 into actions to help thwart contemporary threats.**

Levels of supply chain disruption have been higher this year, with 11.5% of respondents reporting at least 10 disruptions in the past 12 months. Whilst this is a lower number than in 2021 when it peaked at 27.8%, it is still more than twice as high as pre-pandemic levels (4.8%).

Figure 7. How many supply chain incidents would you estimate your organization experienced in the past 12 months that caused a significant disruption?

The data shows more disruptions are happening, but this is down to increased awareness of these disruptions occurring

Disruptions occurred at different levels of the supply chain. When the "not applicable" numbers are stripped out, almost half of respondents (45.7%) experiencing issues at tier 1. Additionally, a significant subset reported more upstream disruptions at tier 2 (24.1%) and tier 3 or beyond (13.8%). At first glance, these figures could be interpreted as a backwards step from the previous report. The disruptions by tier are higher across the board when compared to the 2021 report where organizations reported 41.2%, 18.6% and 13.7% of disruptions occurring in tier 1, 2 and 3 & beyond respectively. However, the higher numbers are a result of organizations doing more analysis to determine where the disruptions happen. In 2021, more than a quarter (26.5%) of organizations did not analyse their supply chains to identify the cause of disruption whereas, in 2022, this number has halved by 10 percentage points to 16.4%. This shows a clear uptick in improved performance analytics of entire supply chains.

Figure 8. Considering ALL the supply chain incidents you are aware of in the last 12 months, which tier was normally the cause of disruptions within your supply chain?

In this regard, it is important to evaluate the extent of the disruptions that are still due to COVID-19. The sample is equally divided between those who suffered limited impacts because of the pandemic (44.1%) and those who experienced either major (33.8%) or serious (10.3%) knock-on effects, revealing once more that the virus hit differently depending on the nature, geography and levels of preparedness of organizations. On a positive note, for most organizations (76.8%), the impacts of COVID-19 have now been mitigated and learnings put into practice to differing degrees.

2.1%
Had a catastrophic impact on the business

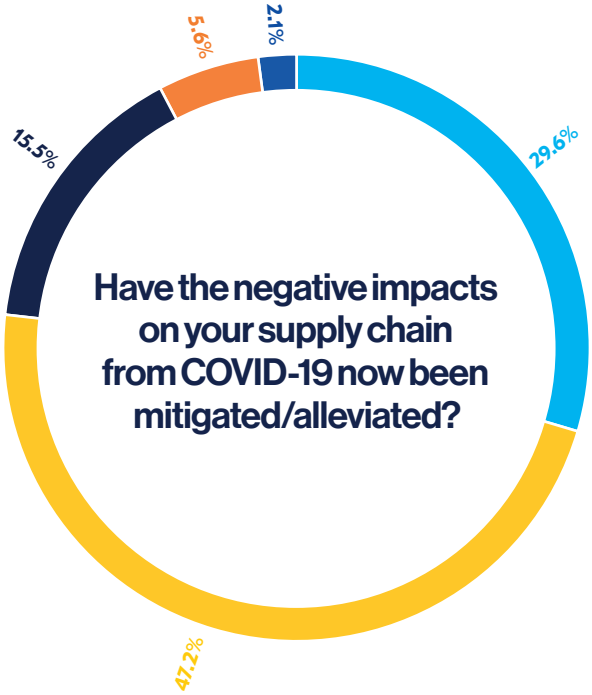
10.3%
Had a serious impact on the business

33.8%
Had a major impact on the business

44.1%
Had a limited impact on the business

9.7%
Had no impact on the business

Figure 9. What impact did COVID-19 have on your supply chain?



29.6%
Yes, very much so

47.2%
Yes, somewhat

15.5%
Neutral

5.6%
No, not really

2.1%
No, not at all

Figure 10. Have the negative impacts on your supply chain from COVID-19 now been mitigated/alleviated?

Professionals have used the learnings from COVID-19 to improve supply chain management

Indeed, when looking deeper into the subject of preparedness, some professionals changed their course of action as a result of pandemic-related disruptions. For example, 37.0% of respondents applied the lessons learned from COVID-19 to mitigate the consequences of other current events, such as the conflict in Ukraine, and roughly one in three have newly introduced back-ups for critical suppliers (29.7%) or have increased stockpiling (29.0%). Further down the chart, two other popular measures include an increased use of technology (26.1%) and a more local approach to sourcing (23.9%). Although these figures may seem fairly low at first glance, they demonstrate the *new* changes professionals have made to their supply chain management. It should also be noted that many organizations already employed good practices and had back-ups for critical suppliers. Nevertheless, until organizations universally adopt approaches to minimise supply chain disruption, work remains to be done to ensure supply chain management and business continuity management (BCM) become better connected.

An interviewee in the healthcare sector spoke about how local sourcing had become part of their supply chain strategy since the pandemic. They had forged links with local communities that had supplied them with goods (such as PPE) at the height of the pandemic and they have worked to retain those links to help to ensure continuity of supply in the event of not being able to acquire goods through normal channels.

"COVID has changed people's thinking around where we get things from. So, whilst we had the plethora of things donated to us during the pandemic that turned out to be of no use at all, we did form some useful links, particularly with local colleges, who actually produced some stuff for us such as visors, masks and uniforms that was really, really useful. As a result, we've maintained those links."

Resilience Manager, Healthcare,
United Kingdom

Another interviewee from a raw materials organization detailed how they had to be very reactive during the COVID-19 pandemic, as they were very dependent on a single good for all their manufacturing processes. They had to look at balancing stockpiling with sourcing alternative suppliers which, in turn, had to be vetted to ensure they were certified to the standards required of the organization.

"One of the things we did in certain countries and certain operations was increased stockpiling based on the lead time. We increased the lead time, so we recalculated safety stocks based on that and, naturally, we increased our safety stocks. The downside, of course, is your work in capital increases and you have to have more stock. We've also looked at alternative suppliers; we asked, for example, 'Are we exposed to China? Yes, we are. Okay, what material groups are exposed to China? Where else can we go? Which other sources should we be looking at?' In some cases, for example, it's a matter of regulation as well. If you're buying material from a country and you're importing it into the US, the US requires you to have their own certification. So, we would have to go to various suppliers in other parts of Asia, for example, Vietnam and Indonesia. Even if they can't necessarily execute the volume of the primary suppliers, I would still go through the process of taking the samples, certifying the suppliers and making sure that we look at the logistics capacity they have on the supplier side. This means, if there's a failure elsewhere, we can always rely on these back-up suppliers that could be used to cover our needs if, for example, we keep seeing disruptions in China or Vietnam."

Global Head of Supply Chain Planning,
Raw Materials, Spain

A report from BDO reveals that manufacturers' future plans to build resilience include digitalising processes (52%), finding back-up suppliers (50%), and conducting risk assessments (25%)[4]. Whilst these are welcome intentions that will contribute to supply chain resilience, they also reveal that many organizations still have yet to act on intentions. Indeed, the 'fear of being first', where adoption of technology is concerned, remains a problem within industries. It is also worth noting that the path from intention to action is often long and difficult, especially at a time when budgets are tight, and costs are rising.

One additional indicator of the disconnect between supply chains and contingency planning — especially in relation to manufacturing — lies in the fact that several organizations worldwide have built their successes on lean and agile production models[5]. These have served supply chains very well in less turbulent times as they allow for fast manufacturing and shipping processes whilst reducing waste and excessive stockpiling. However, these models rest upon the assumption that services (e.g. shipping, transport) will remain available and demand dynamics will stay predictable.

The pandemic fundamentally changed several assumptions upon which lean models are based, but it is highly unlikely that such successful systems will be entirely abandoned, especially as some of the largest players in the world remain amongst their strongest promoters[6]. Apple's CEO Tim Cook once described inventory as "evil", but for others, it could mean salvation. Lean supply chains will still exist, but many should now perhaps look to trade some agility for increased contingency and resilience.

Following COVID-19, academic research is starting to mirror these concerns, with examples of supply chain modelling featuring the need to account for the unexpected[7]. Factors, such as risk mitigation inventory, back-up suppliers, lead times, and the ripple effect, are starting to be analysed together within the same framework, showing a more integrated approach between business-as-usual and resilience processes.

Within some organizations, however, the current mindset is still similar to that which was adopted pre-COVID-19. Some organizations have failed to change their supply chain management processes post-pandemic and are still relying on previous methods for the acquisition of goods. An interviewee spoke about how their organization still relied on being able to acquire goods quickly and efficiently, with stockpiling not even a consideration. This meant that they often struggled to source equipment which had a direct impact on customers and other stakeholders.

> **"Strategic planning is still too reactive. We are short of equipment to cope with a recent patient surge and it's on a long back order — so the option is to hire it in the meantime, but even this had a four-week delay. This, to me, shows a lack of strategic planning within the supply chain area — why wouldn't you put some items that you know you will have to replace regularly during the year into a strategic reserve that you can access quickly when you have a surge? It's a pre-COVID mindset; it's the just-in-time supply chain piece. Three years ago, we'd have been able to get hold of the equipment quickly, but we can't now, and planning hasn't moved on quickly enough with what are different supply chain risks, including forecasting risk."**
>
> Resilience Director, Healthcare, United States

The same interviewee explained that, whilst the organization was very forward-thinking in terms of medical thinking and innovation, corporate functions and operational management were not given the same space to develop ideas for improving supply chain resilience. Indeed, even the most technologically advanced medical organization will be at risk if the resilience measures are not there to support it. Therefore, this message needs to be continuously promoted upwards within the organization.

4. BDO (2021). 2021 BDO Manufacturing CFO Outlook Survey. BDO USA LLP. 2021. Available at: https://www.bdo.com/BDO/media/CFO-Outlook-Survey/IND_2021-Manufacturing-CFO-Outlook-Survey_WEB.pdf. Last accessed: 13 December 2022.
5. Tardif, V (2022). The New Supply Chain Mindset: From Just-in-Time to Just-In Case. SupplyChainBrain. 15 November 2022. Available at: https://www.supplychainbrain.com/blogs/1-think-tank/post/35871-the-new-supply-chain-mindset-from-just-in-time-to-just-in-case. Last accessed: 13 December 2022.
6. Ashcroft, S (2022). News analysis: Is pandemic killing just-in-time supply? Supply Chain Digital. 11 January 2022. Available at: https://supplychaindigital.com/supply-chain-risk-management/news-analysis-pandemic-killing-just-time-supply. Last accessed 13 December 2022.
7. Ivanov, D. (2020). Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. Transportation Research. Part E 136 (2020) 101922. Available at: https://www.sciencedirect.com/journal/transportation-research-part-e-logistics-and-transportation-review (subscription required). Last accessed 16 December 2022.

"Within the organization, there's a lot of emphasis on continual improvement on the medical side, but for other processes, such as the more corporate functions, emergency management or looking at resiliency as a whole, there is less emphasis. That's where I think some of those barriers are and, with the help of internal networking, I think we will be able to make some progress."

Resilience Director, Healthcare, United States

Another interviewee shared that whilst they had previously been able to rely on a "just-in-time" delivery model, recently they had had two instances where this had failed and they had had to acquire the goods from elsewhere – at a highly inflated cost.

"We are developing a project to implement new software for customer services in offices. To do this, we had to provide new laptops to employees to serve customers. Because of the global problem with container capacity, we not only suffered months of delays, but we had to change suppliers, and at an increased cost, to be able to get hold of said products. We also had another case related to hand soap and alcohol. We have 175 offices throughout the country and had a supply chain problem where there was no availability of these products. We had to go out and shop at different local supermarkets, at a much higher cost, to cover the shortfall."

Business Continuity Manager, Financial Services, Costa Rica

Another interviewee spoke about how they had reacted innovatively to continue to deliver vital goods to customers despite the challenges of the conflict in Ukraine. With transportation lines hampered by the conflict, the organization opened up a dialogue with the UN to help export vital grain products from the country to alleviate the global food crisis. Such an extreme case demonstrates the advantage of having links with external parties that may be able to assist in certain circumstances. Indeed, the last edition of the BCI Supply Chain Resilience Report discussed how big pharma organizations had partnered to charter aeroplanes to deliver vital drug ingredients despite being fierce competitors in the marketplace.

"For us, we have our own social responsibility to think about too. We worked with UN partners, logistics companies and global humanitarian organizations to secure a stable flow of relief supplies into Ukraine."

Head of Business Resilience, Lead Logistics, The Netherlands

What measures, if any, have you put in place in your supply chain since the disruptions caused by COVID-19?

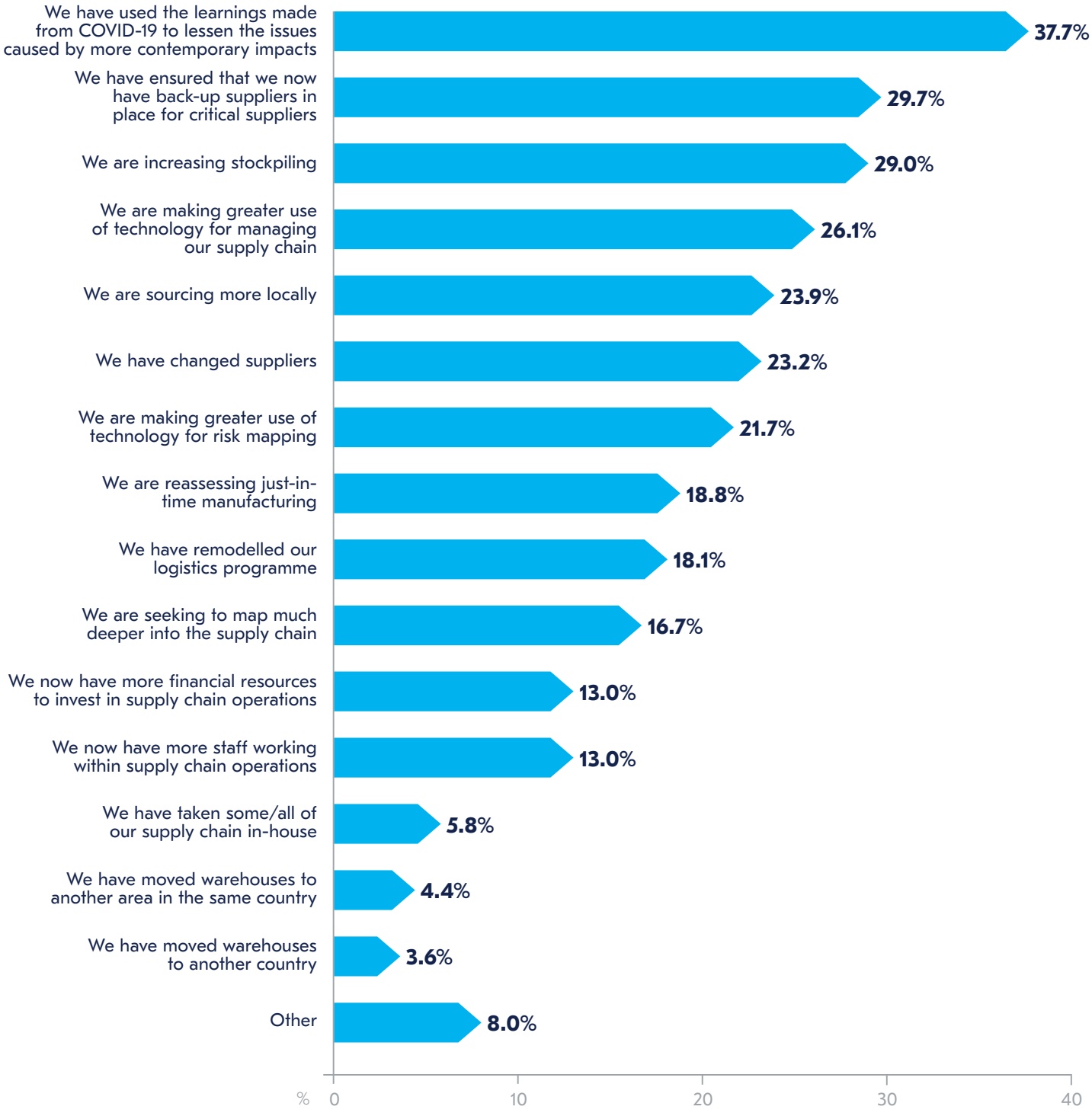


Figure 11. What measures, if any, have you put in place in your supply chain since the disruptions caused by COVID-19?

Consequences of Supply Chain Disruptions

Consequences of Supply Chain Disruptions

- **Cyber-attacks and data breaches are perceived as the top threat to supply chains over the next five years.**
- **A lack of talent and staff shortages caused the most disruptions to supply chains in 2022 with nearly half (46.8%) citing it as an issue.**
- **Professionals are starting to take a longer-term view of the risk landscape, with incidents related to the natural environment (such as climate change) becoming a source of concern.**

Disruptions generated by cyber-attacks and data breaches are the primary cause for concern for supply chain professions, both in the near- to mid-term and the long-term. This was also the sixth most cited cause of supply chain disruptions for 35.7% of organizations in the past 12 months. It is also of most concern going forward: 53.2% of respondents were concerned about cyber-attacks being a cause for disruption in the next 12 months, and 55.6% in the next five years. One respondent elaborated on this threat, reporting that the main cause of cyber incidents has been human error. The impact consisted of large amounts of internal and external work to recover lost data, whilst the service had to be closed for three working days. This also led to severe customer concern.

An interviewee explained that having a close relationship with a supplier meant that the supplier was comfortable presenting their case of a serious cyber-attack on their organization to their company. As a result, their company was able to help their supplier because of the actions they had taken to mitigate cyber-attacks on their organization. This process had helped to build a strong degree of trust — and ultimately better resilience — between the supplier and their organization.

"Focusing supplier questions on security and then adding additional questions around ransomware preparedness helps to showcase the ability of our suppliers to recover from a malicious cyber-attack. We've actually had suppliers that have been attacked and have had to recover. We've then worked with those suppliers to help them recover. In fact, such a degree of trust was gained that we had an internal conference in September and one of our suppliers was willing to come and talk through a case study of their cyber-attack and what they did. As a result, we, as a customer of their services, were able to help them because of where we were on our journey. Although not related to COVID-19, the prevalence of cyber-attacks has significantly increased because of COVID. Changing how we protect our resources and a change in moving to a zero-trust model on information security within our enterprise was huge in being able to seamlessly transition to work from home and keep our business secure. There have also been other cases where we've actually helped our suppliers improve their journeys — demonstrating a willingness to share information before a more severe problem arises is crucial to supplier resilience."

Resilience Leader, Information Services, United States

The talent shortage coupled with staff absence has caused the most disruptions over the past year

Nevertheless, this example shows how it is important to keep a broad view of the risk landscape. Practitioners need to be careful that concern for future disruptions does not automatically divert to those where practitioners feel they have the least control. Loss of talent and skills ranks at the top of the list (46.8%) in terms of disruptions in the last 12 months, increasing to 52.4% in the next 12 months, and yet it only concerns 39.7% of organizations in the next 5 years. Similarly, transport network disruption (a cause for disruption for 44.4% of responses) and human illness (46.0% of respondents) experience a downward trend, registering 30.2% and 31.7% in the next 12 months and upcoming 5 years respectively.

These have all been recurring issues over recent times, yet their disruptive capacity often does not catch the attention of professionals, creating a potential misperception of the risk landscape. Previous reports, such as the BCI Horizon Scan, have highlighted how other types of hazards, such as health and safety, were not considered amongst the main threats in the future, despite being the costliest cause of disruption. As an example, transport disruption was in fourth place this year (44.4% noted it as a cause), but practitioners do not see this as a long-term threat, with just 30.2% believing it will cause disruption in five years' time.

Practitioners are thinking longer-term about the threat landscape

Encouragingly, Figure 12 shows that practitioners are starting to consider the longer-term threats to resilience rather than those which are currently affecting their organization. Incidents that reflect a change in the natural environment or natural resources also experienced an upward trend. In the past 12 months, energy scarcity (22.2%) and natural disasters (22.2%) do not figure amongst the highest concerns, although adverse weather (42.9%) ranks third. However, participants reported growing apprehension about this group of threats: over the next 5 years, energy shortages (41.3%), natural disasters (44.4%) and adverse weather events (46.0%) all figure amongst the top 5 risks for organizations. Moreover, many organizations are seeing the threat of energy shortages — and resultant planned or unplanned blackouts — as a serious threat to their supply chains. An interviewee described how they are already making plans to manage rolling power outages.

> **"In terms of world events at the moment, the big one is power. We've been doing a lot of work over the last few weeks. There's real anxiety around it. The concern is over two things: the potential for the three-hour rolling planned outages to try and manage demand over the winter period, and then the real catastrophic deliberate act to interrupt the power network, where it could take 7–10 days to restore supplies. So, there's a massive piece of work around what would a rolling power outage look like in terms of continuing to deliver healthcare and getting supplies through. We've been studying this and calculated how much diesel we've got stored on site, how long that will keep our generators going for, and all that kind of stuff. So, we've done all that and now have quite robust plans around it."**
>
> Resilience Manager, Healthcare, United Kingdom

Political change registers only a moderate concern within our respondents, surprisingly low given the current geopolitical situation. Political shocks caused disruptions to 25.4% of organizations, but only 35.7% of respondents registered concern for them over the next 5 years. This is interesting as supply chains have become a subject of interest for many governments. The trade war between the US and China, which is essentially a competition for global economic dominance, is heavily focused on supply chain routes. China has been building influence with trade deals all over the world through its Belt and Road Initiative, which grants Beijing access to high-demand natural resources[8]. On the other hand, the US — and some of its Western partners are implementing restrictions through regulations and financial subsidies to slash outsourcing to China and encourage reshoring or nearshoring moves instead[9]. Supply chains form the fibre of the modern economy; they are the practical manifestation of global trade in its various shapes and forms and they are now being "weaponized" to serve geopolitical strategies.

The so-called 'chip war' is a prime example of this[10]. It dates to the 1980s when the US and Japan were competing to become the largest manufacturers of semiconductors.

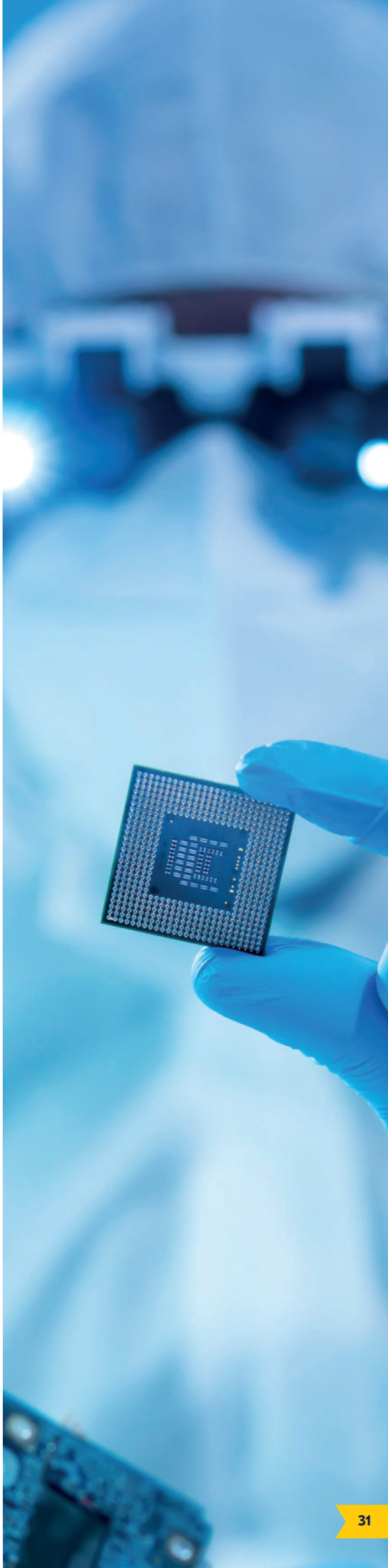
8. Kuo, L. & Kommenda, N. (2018). What is China's Belt and Road Initiative? The Guardian. 30 July 2018. Available at: https://www.theguardian.com/cities/ng-interactive/2018/jul/30/what-china-belt-road-initiative-silk-road-explainer. Last accessed: 13 December 2022.
9. Reed, J.R. (2019). President Trump ordered US firms to ditch China, but many already have and more are on the way. 4 September 2019. Available at: https://www.cnbc.com/2019/09/01/trump-ordered-us-firms-to-ditch-china-but-many-already-have.html. Last accessed: 13 December 2022.
10. Aresu, A (2022). Como finisce la guerra dei semiconduttori. Tutto Un Altro Mondo. 9 November 2022. Available at: limesonline.com/cartaceo/come-finisce-la-guerra-dei-semiconduttori (in Italian). Last accessed 13 December 2022.

Whilst Japan gained the upper hand initially, the US was able to retaliate with an aggressive tax policy towards their rivals that assured Washington's dominance once again. This is considered by some as the first chip or semiconductor war. The late 1980s and early 1990s gave way to the second chapter of this story, as new players such as Taiwan Semiconductor Manufacturing Company Limited (TSMC) were founded. TSMC is to date one of the most important semiconductor manufacturers in the world and is the brainchild of Morris Chang, an icon in the manufacturing industry. Chang worked for Texas Instruments for 30 years and then decided, in the 1980s, to move to Taiwan and continue to revolutionize the chip industry. The Chinese response would take place 10 years later, in the early 2000s, with the creation of the Semiconductor Manufacturing International Corporation (SMIC). It is now one of the largest players in its industry and one of the main suppliers for US organizations such as Qualcomm and Texas Instruments.

The growth of the Chinese economy has boosted SMIC's climb through the years up until current times, whilst US, Taiwanese and Japanese organizations have managed to remain at the top of their game, with constant twists and turns.

The semiconductor industry is an excellent example of the complexity of modern supply chains[11]. It encompasses borders and is, at the same time, pulled by different political strings that are enforced through ad hoc laws and regulations. Manufacturers in the industry are also heavily reliant on the exchange of talent across geographical areas, as in the case of Morris Chang, who was born in China but had a prominent role in the US and Taiwan. Furthermore, chips also play a significant role in the conflict. For instance, the Russian military is a large importer of semiconductors for military equipment which has become a single point of failure for the Russian army now that heavy sanctions and trade bans are in place[12].

11. Anderson, S. (2022). Chip War: The Battle Over Trade, Immigrants And Semiconductors. Forbes. 24 October 2022. Available at: https://www.forbes.com/sites/stuartanderson/2022/10/24/chip-war-the-battle-over-trade-immigrants-and-semiconductors/. Last accessed: 13 December 2022.
12. Sheftalovich, Z. & Cerulus, L. (2022). The chips are down: Putin scrambles for high-tech parts as his arsenal goes up in smoke. Politico. 5 September 2022. https://www.politico.eu/article/the-chips-are-down-russia-hunts-western-parts-to-run-its-war-machines/. Last accessed: 13 December 2022.



Please indicate whether any of the following incidents impacted over the past 12 months, and if they are a cause for concern for the next 12 months/next 5 years

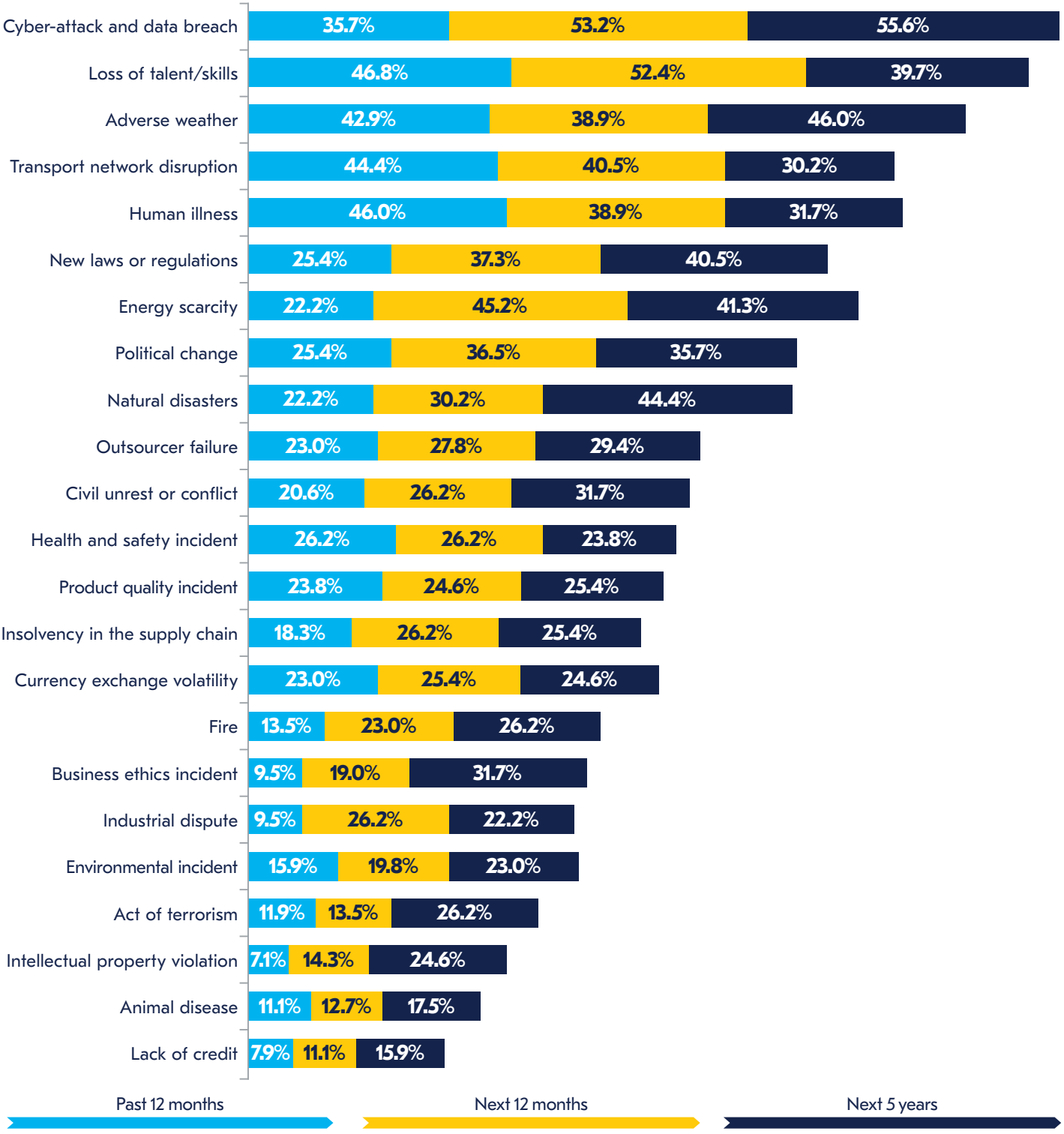


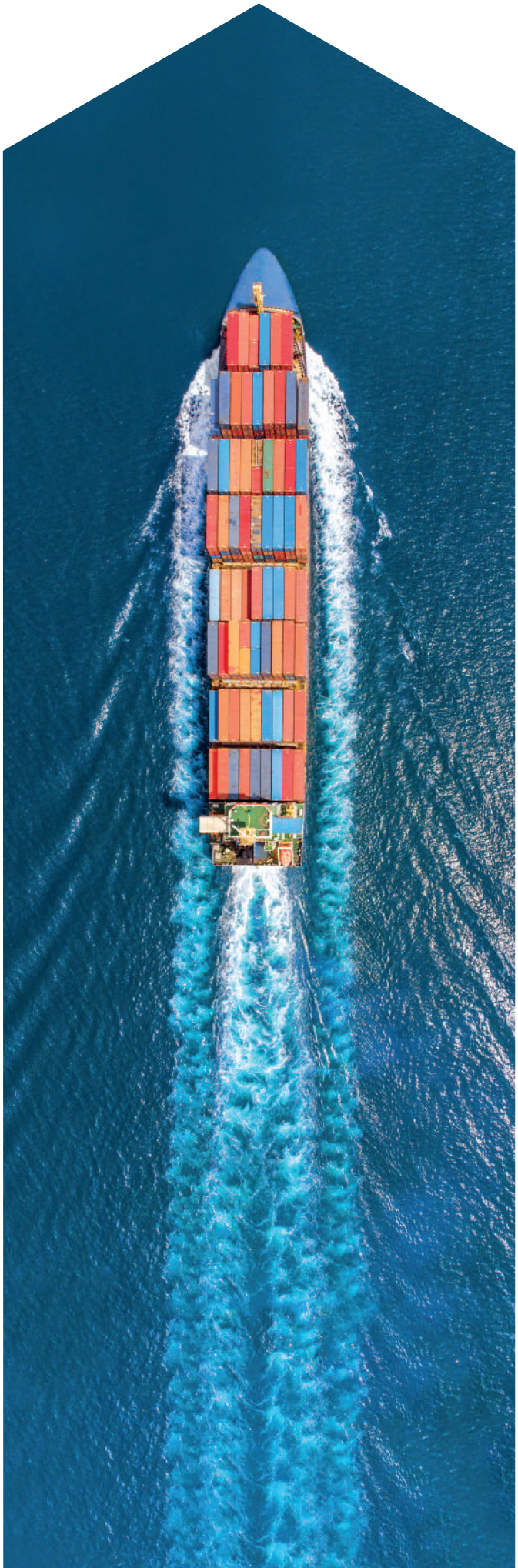
Figure 12. Please indicate whether any of the following incidents impacted over the past 12 months, and if they are a cause for concern for the next 12 months/next 5 years

The data in this report and the example of the semiconductor industry reveal how complex the consequences of disruptions can be for modern supply chains. Participants report increased cost of working (84.6%) as the prime impact of disruptions, followed by loss of revenue (77.6%) and loss of productivity (76.4%). It is also worth noting that loss of productivity registers the highest percentage of severe impacts (11.3%). Meanwhile, the impact on external stakeholders and an organization's reputation are exemplified further down the chart: two additional consequences that can lead to reputational damage for an organization are customer complaints (73.8%) and stakeholder or shareholder concerns (73.7%). It is important to underline that, in moments of crisis, being able to uphold a sound reputation is a resilience strategy in itself as it can boost confidence from both customers and investors' perspectives and maintain a reputational advantage during difficult trading periods.

An interviewee discussed how some of their customers were going through difficult times as a result of the current economic climate and did not have the warehousing capacity to store all the goods that were being shipped to them. As a result, their organization helped by offering them slower shipping routes which would keep the goods in transit longer, helping to reduce the pressure on warehousing costs.

"One of the biggest challenges going forward is reduced demand due to the inflation and global economic slowdown. This has a huge impact on our industry, but other industries too — as well as our customers. We see the immediate impact in the market; the rates are jumping and the volumes are going down, the so-called normalisation of the ocean market. The impact of reduced demand on our customers can be large because they have the cargo, but it cannot be sold out very quickly because of the low demands in their ultimate destination. This means that they have more inventory on the origin side. The warehousing capacity is getting tight and there simply isn't space to store the cargo. Some customers are asking for longer transit time solutions. This is to slow cargo movement and reduce the potential storage cost after the goods arrive at the destination."

Head of Business Resilience,
Lead Logistics, The Netherlands



Which of the following impacts or consequences arose from all your incidents/ disruptions experienced in the last 12 months?

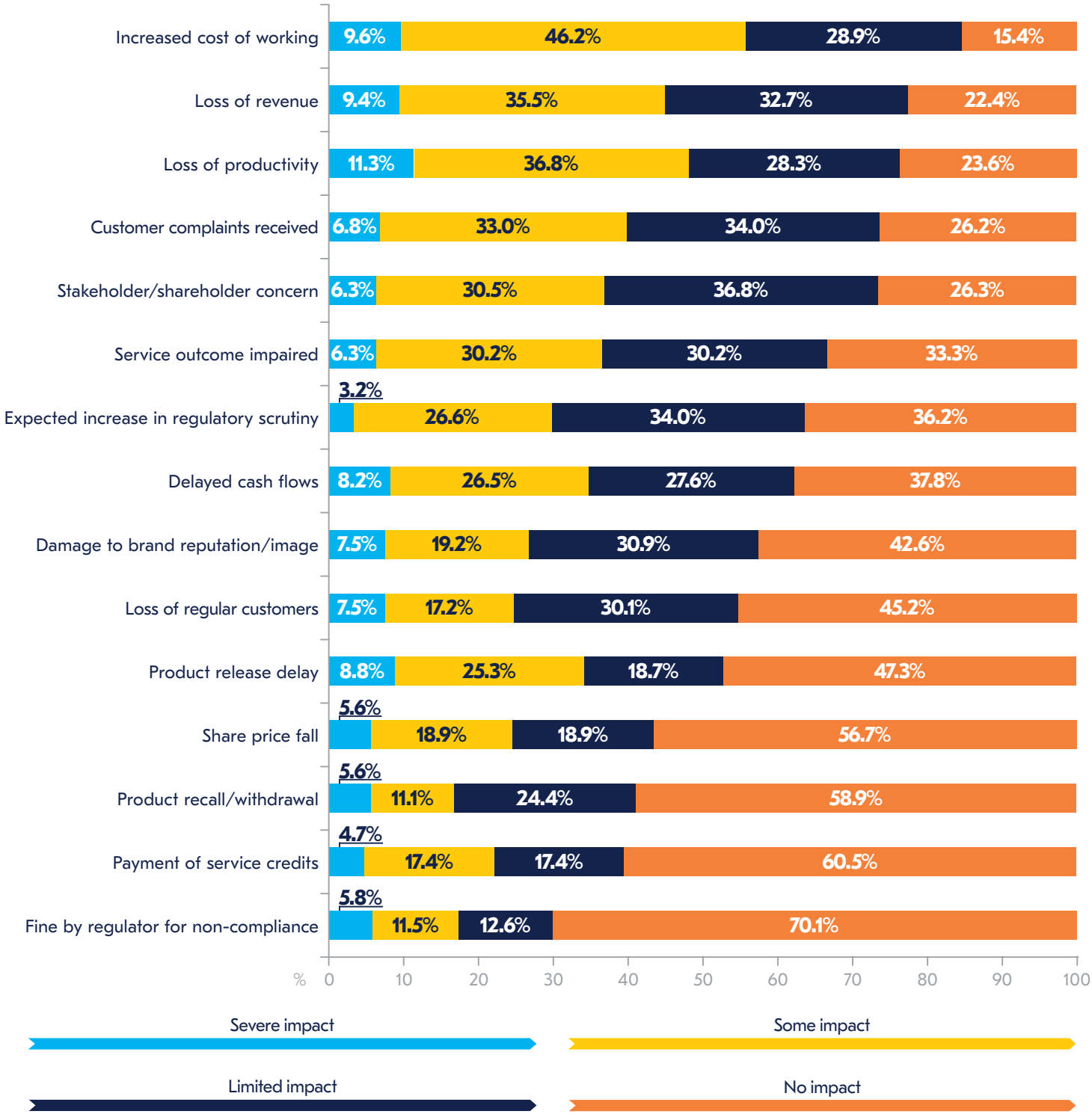


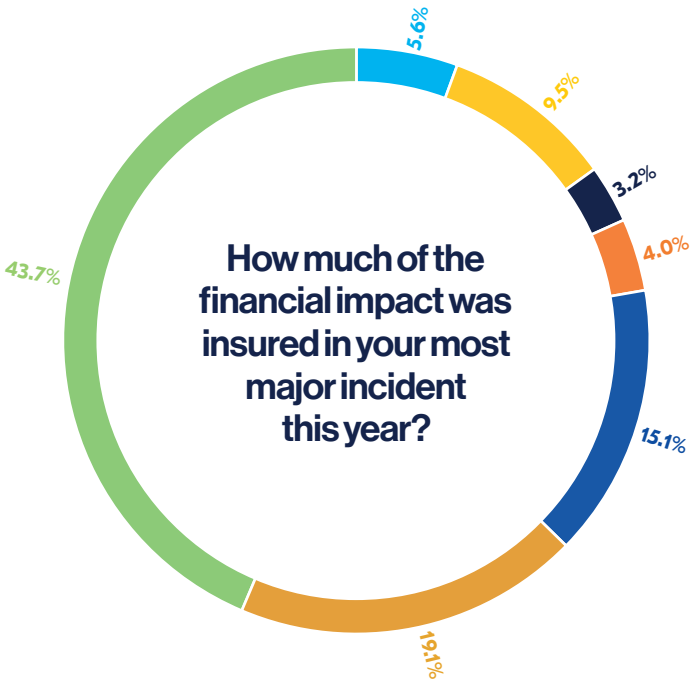
Figure 13. Which of the following impacts or consequences arose from all your incidents/disruptions experienced in the last 12 months?

Insurance

Insurance

- **Full supply chain losses are rarely insured, with only 1 in 10 reporting this to be the case.**
- **A third of organizations either self-insure or are happy to cover the cost of a disruption when it happens.**
- **With disruptions rising in supply chains, insurance companies are starting to offer risk advice to insurance customers to help them mitigate disruptions.**

Addressing supply chain risks includes a series of strategies and choices that depend on the organization, its supplier network and operating environment. For each threat, management has the choice to either accept, mitigate or insure risk. Sometimes, the three directions can coexist: for instance, a certain risk might be only partially insured. Only 1 in 10 participants (9.9%) reported that supply chain losses were fully insured, whilst a much larger segment (33.8%) said that no losses at all were covered by insurance. Many of those organizations that were not fully or partially insured had made the decision not to insure. Of those that did not have all their losses covered, nearly a third (28.3%) were happy to take the financial impact, and the same number had only covered traditional physical damage events. In contrast, some were not aware of covers that extend beyond physical damage (15.1%) or were not paid out due to COVID-19 related clauses (7.6%).



5.6%
100%, losses were fully insured

9.5%
76—99%

3.2%
51—75%

4.0%
26—50%

15.1%
1—25%

19.1%
0%, losses were uninsured

43.7%
Unsure

Figure 14. How much of the financial impact was insured in your most major incident this year?

28.3%
You were happy to take the rest of the financial impact

28.3%
You had only covered traditional physical damage events

15.1%
You were not aware of new non-damage supply chain covers

7.6%
The insurer would not pay out due to a COVID-related clause

20.7%
Other

Figure 15. Where your insurance did not cover the full financial impact of disruptions, was this because...

Insurance providers are going beyond offering just insurance services to clients

The indirect cost of incidents (e.g. lost sales, share price falls) tends to be harder to quantify and coverage for such losses is difficult, if not impossible, to insure. However, several insurance brokers are now offering services that go beyond covering damage when it comes to supply chain disruptions — even if not full recompense for indirect losses. Some of the largest players in the industry are starting to offer risk management services to their clients that include dedicated specialist teams and artificial intelligence solutions to map the supply chain, identify priority suppliers and concentrations of risk, and build mitigation measures.

Some providers explicitly state that the role of insurance firms is more than just coverage; it consists of a whole series of support services that can help the client understand their supplier ecosystem, identify risks and, ultimately, mitigate them. When this is not possible or mitigation actions are not considered appropriate, then losses can be insured.

This holistic approach comes from the acknowledgement that the risk landscape has changed[13], and the insurance industry needs to keep up. A significant aspect of this trend is represented by the digitalisation of production processes, as in the case of Industry 4.0 and the related cyber threats. Providers realise that, with effective risk management and business continuity solutions, digital weaknesses can be vastly reduced, albeit not eliminated. However, it can be hard work to quantify the damage for consequences that can be perceived as intangible or tricky to measure objectively. For instance, quantifying the reputational damage that derives from a cyber-attack can be a daunting task, as many knock-on effects can be invisible at first.

13. Dobie, G. et al (2016). Global Risk Dialogue. Allianz Global Corporate & Specialty SE. April 2016. Available at: https://www.agcs.allianz.com/content/dam/onemarketing/agcs/agcs/grd/AGCS-GRD-1-2016-EN.pdf. Last accessed: 13 December 2022.

Business Continuity Arrangements and Due Diligence

Business Continuity Arrangements and Due Diligence

- Just a third of respondents report that top management commitment to managing supply chain risk is high.
- Levels of commitment were higher during the COVID-19 pandemic, and management attention appears to be directly proportionate to the amount of global supply chain disruption occurring at a specific point in time.
- At points of high disruption, more organizations report having business continuity plans in place. This leads to concern that some BC planning in organizations may be only temporary.
- Just 6 in 10 professionals report that their key suppliers have business continuity plans in place.
- However, more information is now being asked for to ensure the viability of business continuity plans, including increasing demands for ISO certification.
- Just a third of professionals verify potential suppliers' BC plans at procurement stage.

Top management commitment to managing supply chain risk remains at a moderate level. Whilst 34.1% report high commitment, for half of the participants (50.0%) it is described as medium, and for an additional 8.7% it drops to low. Furthermore, this year's figures are less optimistic than 12 months ago, when high top management commitment was at its most promising levels in the last 8 years, at 43.2%. The higher figure in last year's report is likely to reflect that the survey was carried out during the height of the COVID-19 pandemic when management was taking a heightened interest in supply chain management.

How would you assess your organization's top management commitment to managing supply chain risk?

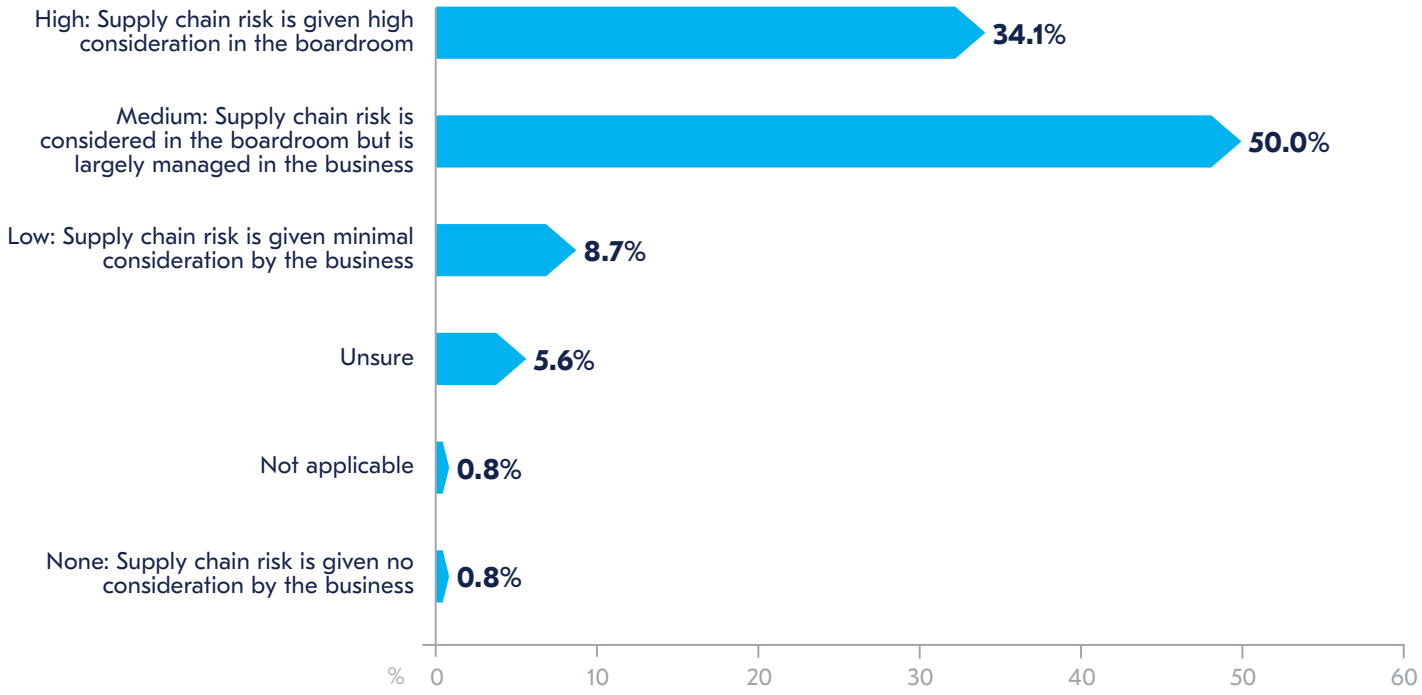
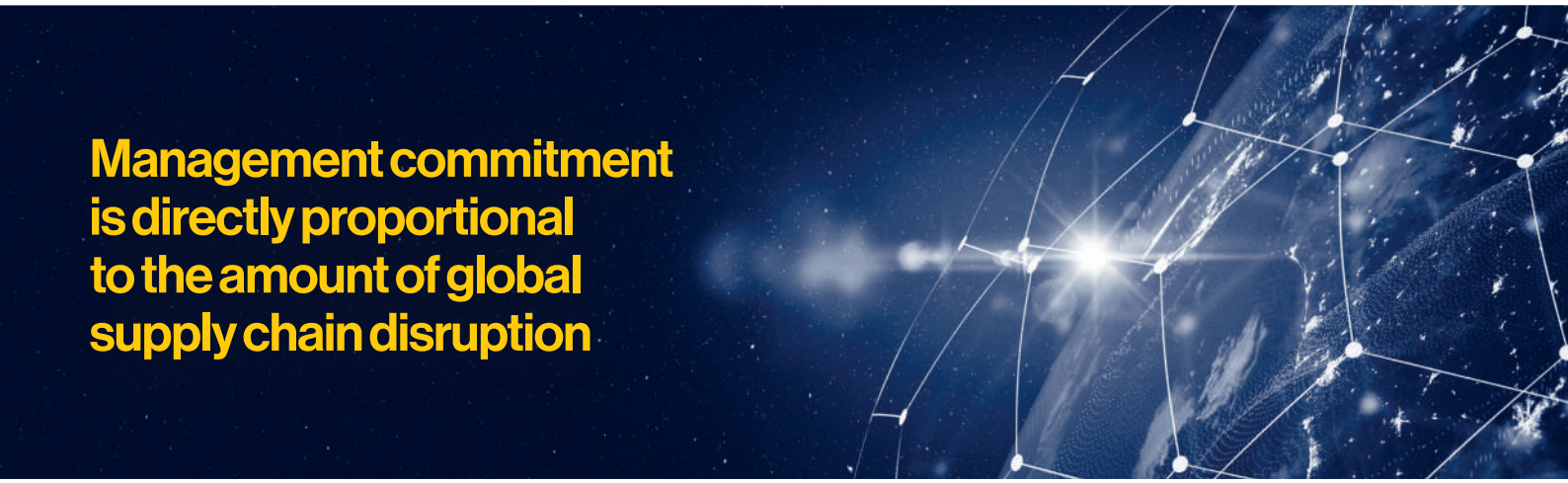


Figure 16. How would you assess your organization's top management commitment to managing supply chain risk?

Management commitment is directly proportional to the amount of global supply chain disruption



Looking at the data in past reports, top management commitment has always been subject to shifts: it increased in 2018 — perhaps as a result of the rising awareness of cyber-attacks — then dropped again in 2020, only to rise again in 2021 as a result of the pandemic. This year it has decreased once more, confirming the lack of steady growth or stable patterns. Additional data reveals that roughly two-thirds of participants experienced a shift in top management commitment (65.9%), but this could be considered as significant (i.e. described as "much more committed") only for 30.2% of them.

An interviewee highlighted how they worked hard to ensure that management commitment to supply chain resilience remained high. They actively sought ways to present information to management in ways that would resonate with them and promote the importance of resilience to those at the top of the organization.

However, in some organizations, the challenge of getting buy-in from senior management can be difficult, particularly if they have been using the same processes for many years and management is reluctant to change. One interviewee spoke about how someone had been in the head of supply chain role for two decades and, as a result, was reluctant to make changes to supply chain strategy. Meanwhile, another interviewee that was having trouble with engaging senior management was hopeful that the introduction of increased regulation would help to drive a higher level of support. Indeed, increased regulation has been a topic that has arisen in many BCI reports this year, particularly in the banking sector, as a way of assuring both financial and people support for resilience in organizations.

"My senior VP came to me and explained the communication challenge that she was having. I went away for half a day and put together a very simple slide deck. It was the same information that I've shared before, but I shared it in a different way, a simpler way. In just two slides, I was able to convey a message that had been lost over the past year. As a result, we're now getting the traction and results that we wanted. Although we lost a year, we learned a lot through that year. It's all about not giving up, being persistent and consistent and being willing to change your message and how you deliver that message. The main thing though is never give up trying."

Resilience Leader, Information Services, United States

"In an organization that is currently fairly siloed, I'm not sure what supply chain systems we have. The main challenge for me is about being able to drill down a little bit more and get this information as part of our overall approach to resilience. I'm sure we have systems in place, but whether it is at a level where the outputs are actually going to inform the organization proactively, I'm not certain."

Resilience Director, Healthcare, United States

"Management commitment is mediocre as a combination of culture and budget. The topic of resilience is something relatively new that emerged from the pandemic experience, and something that we, somehow, are trying to sell to top management. When I show the board a plan and how much money I need to make the organization more resilient, the focus is on spending and not investment. However, when the regulator establishes the need to implement business resilience measures, I am sure this will lead to greater management support."

Business Continuity Manager,
Financial Services, Costa Rica

Has top management commitment changed as a result of the COVID-19 pandemic?

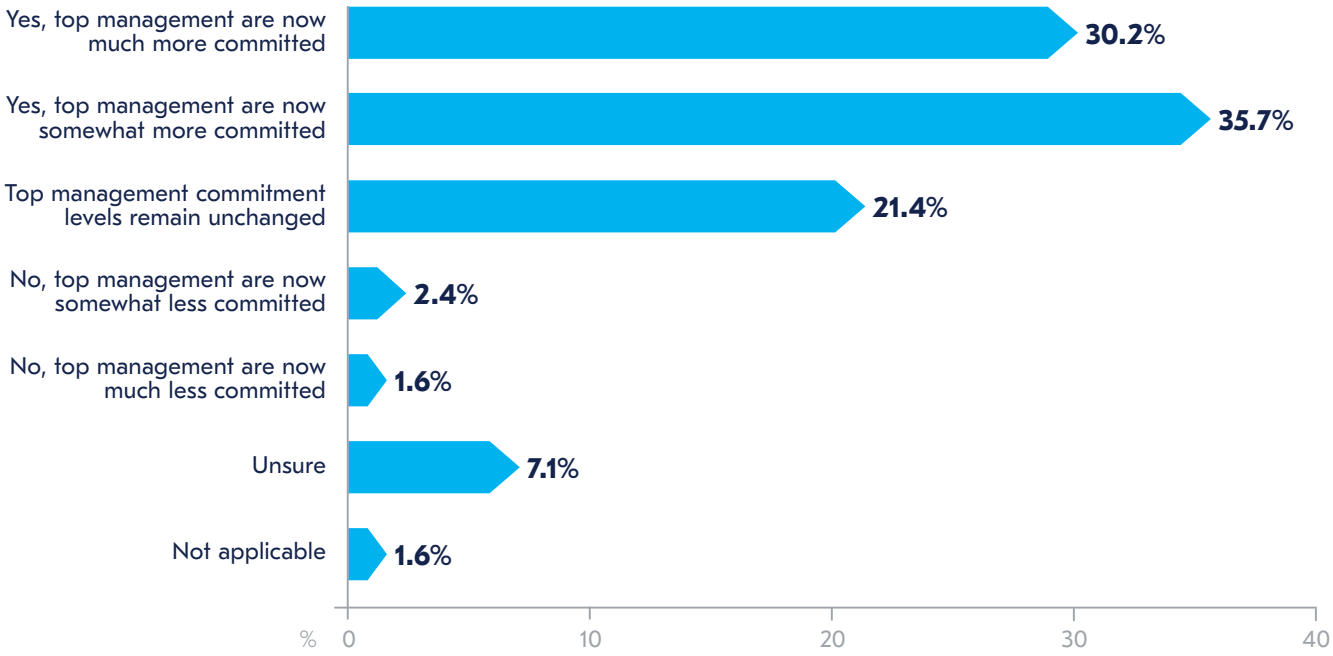


Figure 17. Has top management commitment changed as a result of the COVID-19 pandemic?

Following the thread highlighted so far in this report, top management is another indicator that there have not been significant improvements in supply chain resilience since the pandemic. Lessons have been debated but, in many instances, not fully embedded and senior management has yet to fully commit to a truly resilient supply chain strategy. As one participant stated, supply chain resilience "has been given little consideration from a risk, validation and business continuity perspective and it is only recently that this is beginning to change with new eyes being brought in to review business continuity and resilience". This comment highlights that, even if change is happening, it is slow and often unsteady. It is fair to wonder whether the initial attention given to supply chain resilience — as in many cases in the past — will fade once it becomes old news.

Global disruptions prompt organizations to build business continuity programmes

A similar downward trend also persists in the case of business continuity arrangements. This year, 73.2% of respondents report having business continuity arrangements in place to mitigate supply chain disruptions and 73.6% usually ask key suppliers whether they have such measures in place. Both figures have slightly decreased compared to the previous report, which amounted to 79.8% and 75.3% respectively in the immediate aftermath of the pandemic outbreak. Furthermore, whilst business continuity and resilience managers may ask newer suppliers about their business continuity arrangements, often incumbent and long-term suppliers do not have their arrangements checked regularly or, in some cases, ever.

"Some of our supplier agreements have been in place with some big companies for a long time, and I doubt we've gone back to them to ask them any due diligence questions in the last 5–10 years."

Resilience Director, Healthcare, United States

Reviewing the resilience arrangements of suppliers should not be dictated purely by time and annual calendar appointments. An interviewee discussed how the conflict in Ukraine prompted an urgent review of the supplier base to determine which, if any, suppliers could potentially be affected, either by the conflict itself or due to sanctions being placed on first- or second-tier suppliers.

"When the conflict in Ukraine started, we went through a list of all our suppliers. We first identified all the suppliers that would be directly impacted, and second, the ones that would be potentially impacted. As an example, we had a supplier of paper bags that was based in Lithuania. These bags are used for vital transportation in less developed countries. We had a supplier that was supplying a Mexican operation from Lithuania, but the plant belonged to a company that is Russian which raised a flag. However, we eventually found out that this plant in Lithuania belonged to a subsidiary of a Russian company. We therefore went directly to the company and enquired about the situation and they admitted that they were not able to supply because they had a problem with cash flows. They advised that a lot of their pulp was coming from Russia, and they were not going to be able to deal with that disruption. As a result, we switched suppliers."

Global Head of Supply Chain Planning, Raw Materials, Spain

Another interviewee from a logistics company revealed how the Ukraine crisis had the potential to impact heavily on their business due to the nature of their work and how important it was to ensure contingency plans were in place in the case of closures of a major transport hub or port.

"When Ukraine declared a national emergency, you can imagine that all our staff were not in a situation to continue work and had to look after themselves and their families. So, on the second day of the conflict we activated our back-up teams in Georgia and Israel. We sent out emails to keep our customers informed and offer some relief packages to help our customers mitigate the overall impact. We were able to respond fast because we had mobilised the crisis management team (CMT) a month before the conflict started, closely monitoring the situation and preparing for possible scenarios. We had a workstream under the CMT focusing on contingency planning and we developed the plans for different scenarios. So, when the situations happen for real, we can quickly switch on the contingency solutions, to activate the back-up team continuing the services."

Head of Business Resilience,
Lead Logistics, The Netherlands

It is no coincidence that only moderate commitment from the top of the organization results in a decrease in business continuity uptake. International standards and guidelines often mention that business continuity management and resilience is a top-down approach. Whilst each function is responsible for its business continuity arrangements, when it comes to the more operational tasks, the C-suite should provide the strategic vision necessary to set the tone for the rest of the organization.

Such strategic vision can also cascade into good practice taking place at an operational level. As an example, an interviewee from the public sector spoke about how she, as a business continuity manager, chaired a supply chain response group. The group is composed of individuals throughout the organization who are involved in supply chain management (including procurement) and are regularly assembled to help manage any supply chain issues their organization may encounter.

"When we have supply chain issues, we have a supply chain response group, which I chair. This group pulls together all sorts of people to look at what the alternatives are in the event of a disruption and the impact it will have on our activity. So, if we have problems getting a normal hip joint, what would we do for somebody who needs hip replacement surgery? What are the options? Or, do we have to re-profile our activity plan so that we shift, for example, people having a knee replacement forward and shuffle those getting a hip replacement backwards? But, obviously, that's really poor patient experience and doesn't fit with our normal targets. So, it does present some challenges. Therefore, my procurement colleagues come knocking on my door to get the supply chain resilience group going as soon as they think there may be a problem."

Resilience Manager, Healthcare, United Kingdom

73.2%
Yes

15.5%
No

11.4%
Unsure

Figure 18. Does your organization have its own business continuity arrangements in place to deal with supply chain disruption?

73.6%
Yes

12.4%
No

14.1%
Unsure

Figure 19. Do you or your organization ask key suppliers (new/existing) whether they have business continuity arrangements in place?

Respondents report fewer than 6 in 10 key suppliers have business continuity arrangements in place

The cascading effect of unsatisfactory levels of commitment is demonstrated when participants report that, on average, only 6 out of 10 (57.0%) key suppliers have business continuity arrangements in place. This figure has remained static for the past three years. This is a key figure as it is the very core of supply chain continuity. This means that, in the case of a supply chain disruption, there is a near 50% chance that a supplier will not have any mitigation measures in place. Similar figures have been widely reported after two years of global supply chain slowdowns and incidents that have become a prominent subject in the media. In this sense, the data shows a level of overconfidence that is no different from pre-pandemic times.

Considering your key suppliers, what percentage of them would you say have business continuity arrangements in place to address their own needs?

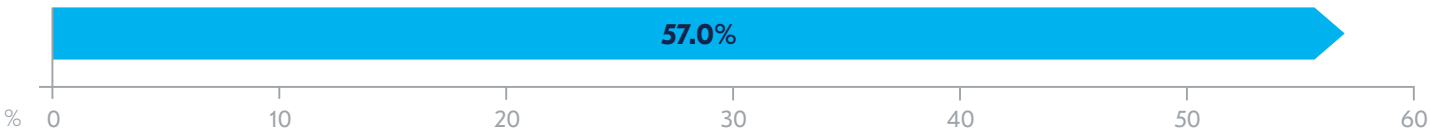


Figure 20. Considering your key suppliers, what percentage of them would you say have business continuity arrangements in place to address their own needs?

Despite respondents reporting lower levels of BC arrangements, BC professionals are gathering more information to verify the resilience of key suppliers

However, there is a notable uptick in the amount of information business continuity and resilience professionals are asking for to confirm the resilience of their key suppliers. More professionals have asked for evidence of a business continuity programme and not just a business continuity plan this year (58.8%) compared to last year (50.6%), and more seek to identify who holds responsibility for the plan amongst their suppliers (54.6% this year, compared to 44.7% last year). Furthermore, only 12.6% of organizations admit to not collecting any information to better understand the business continuity arrangements of key suppliers; down from 14.1% in 2021. Evidence that plans are being exercised saw a slight dip this year — 52.1% down from 56.5% in 2021 — which might not necessarily be a bad thing. An interviewee spoke about how now that COVID-19 posed less of a risk than previously, they went a stage further than seeking evidence of the existence of a business continuity plan by making regular site visits to critical suppliers to participate in live exercises. This was a trend also noted in survey responses.

It is worth noting that the least recurring type of information sought by respondents concerns programmes that are relevant to the product or service they purchase from the supplier (38.7%). This is an interesting observation because the evaluation of key suppliers should occur within the broader framework of the analysis of high-priority products and services. In this regard, key suppliers should be those that provide vital inputs. On the contrary, the data highlights a disconnect between the evaluation of what the supplier does for the organization and its business continuity measures. This reinforces the idea — consistent throughout the report — that business continuity and resilience objectives are often not aligned with general strategic objectives. This does not reflect good practices and, most importantly, it is highly counterproductive.

Will there be an uptick in ISO standard certifications?

An interviewee spoke about how they were increasingly being asked by suppliers and vendors if they adhered to certain ISO standards (such as ISO 22301) as well as details of their own business continuity plans. As a result, they felt that more and more organizations would be looking to certify to management standards to provide both suppliers and customers with assurance of their own supply chain resilience arrangements. Another interviewee revealed that they were being increasingly asked to provide information about their business continuity plans and the detail required was becoming greater and greater.

"If we're going to enter into a contract, I want to make sure that they're compliant with the standard that is going to be more and more commonplace going forward. Some of the frameworks you see are compatible with it, but not necessarily with the standard — which sometimes isn't enough. I think there will be value in having these standards in place because we will see our customers asking us for them. We recently had a case in the United Kingdom, where a customer asked us what our certifications were, whether we had business continuity plans in place and if we had any certification of that. They wanted proof that we did. Whilst it's still a little bit informal, I think there's going to be more and more standard practice, particularly with the ISO 22301 frameworks."

Global Head of Supply Chain Planning, Raw Materials, Spain

"We've noticed the percentage of resilience-related questions increasing dramatically in tenders. Before 2020, we only had a small percentage of these customers asking questions about business resilience or contingency planning. Now, almost one in every four tenders actually asks these questions. Some ask basic, generic questions, such as requesting BCP documents and asking whether you have a BCM program. But some go to a very detailed level. They have dozens of questions, and some will even ask for an audit or at least reserve the audit rights to your site. Customers are interested to understand and gather better assurance from our side on the resilience of our business continuity programme."

Head of Business Resilience, Lead Logistics, The Netherlands

What information do you seek to better understand the business continuity and/or resilience arrangements of key suppliers?

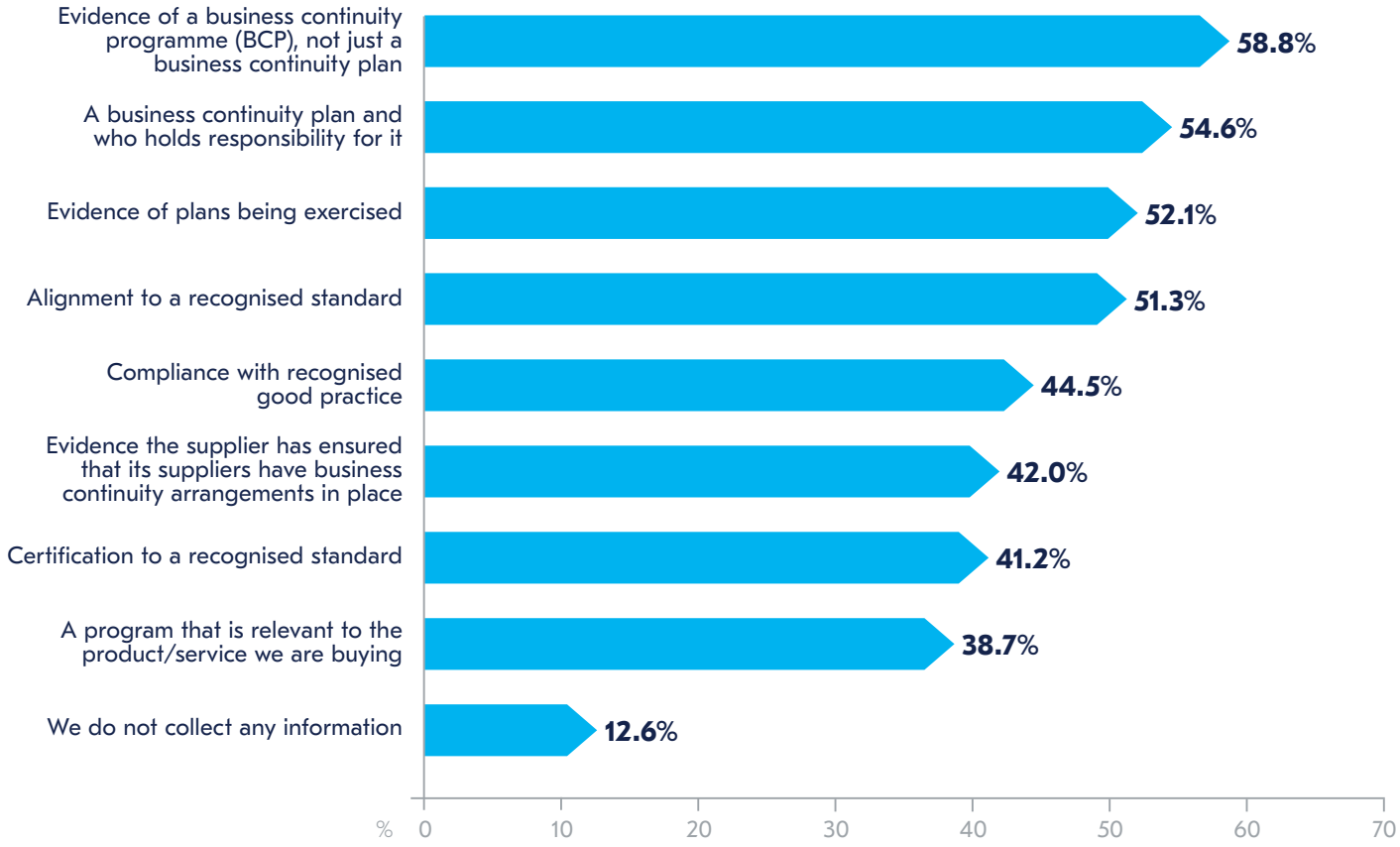


Figure 21. What information do you seek to better understand the business continuity and/or resilience arrangements of key suppliers?

The values pertaining to validation methods also show moderate results in the uptake of business continuity practices. Self-assessment questionnaires remain the most popular form of validation (57.0%) for the third year running, followed by copies of supplier documentation (42.1%) and face-to-face meetings (37.7%). Compared to previous years, the uptake of audits (29.0%) returns to pre-pandemic levels after experiencing a spike last year (44.1%) when multiple audits took place as COVID-19 restrictions were lifted. It is also important to highlight that the percentage of professionals who do not collect any information at all to validate suppliers' business continuity measures remains similar to previous years at 16.7%.

Some organizations are still using the learnings made during the COVID-19 pandemic to improve their validation methods. An interviewee discussed how they used a specialist system to both onboard new suppliers and review existing suppliers by making them complete a criticality test. Once the online components had been completed, the process was completed by human review. Indeed, technology can help to automate some processes, but it is human interaction which is key to ensuring a supplier can meet and deliver on service level agreements.

"Within our systems, we have included a supplier criticality test that we created. When anybody in the business wants to bring in a new supplier, they not only have to do the third-party security assessment, but they also have to answer questions about supplier criticality. This is a standard part of the global procurement process. It's not only for new suppliers, but is also used when renegotiating an existing supplier contract. This helps us to be insert information in an automated fashion within the supplier ingestion system. I get automated notifications when somebody's done this and that is a way of getting it at the beginning of the pipeline and learning about new suppliers coming into the mix. After this has been done, I can review those questionnaires and determine if a supplier is going to meet that threshold of criticality and whether we need to do the extra level of supplier due diligence, thereby holding the supplier accountable to a higher standard."

Resilience Leader, Information Services, United States

The same interviewee discussed how the importance of onboarding resilient critical suppliers was taken so seriously, and the criteria with which they had to meet were displayed on the corporate website. Providing the information in a public format meant that the organization showed suppliers, customers and other stakeholders their high levels of commitment to a resilient supplier base.

"We have the supplier code of conduct that all suppliers have to agree to. It's all on the corporate website, so is publicly available. Therefore, if anybody wants to do business with us and be a supplier, they know exactly what we require. This is very important to us because we often get people asking, "well, what do you ask of your suppliers?". We can just point them to our corporate site and they can see exactly what we're doing. So, having it in such a publicly available place really shows the commitment to transparency that the business has and how seriously we take it. I think that you don't need to get a letter from the CEO saying that we're committed, we've shown it. We're transparent and we've put this out for everyone to see."

Resilience Leader, Information Services, United States

How do you collect this information?

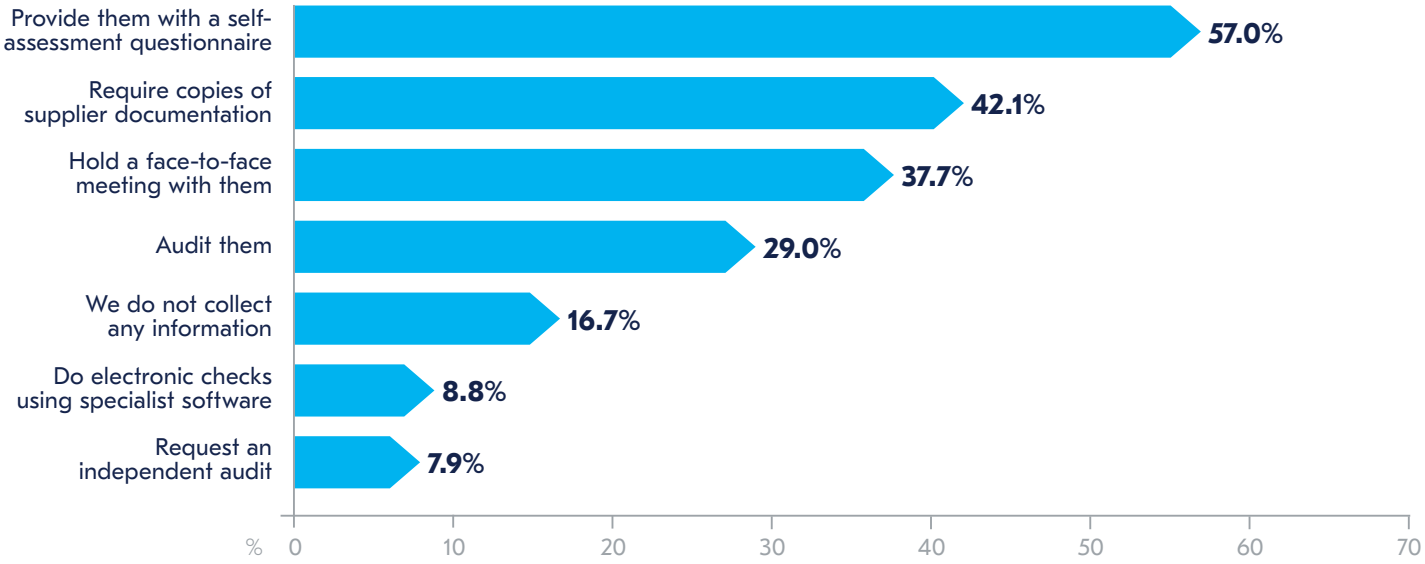


Figure 22. How do you collect this information?

Just a third ensure business continuity features as part of the procurement process

For one-third of respondents (36.1%), business continuity features as an integral part of the procurement process from the start, with an additional 32.8% who do so only where the contract risk is deemed high. On the flip side, 1 in 5 do not include business continuity considerations at all (21.0%). This is far from good practice: if such discussions are not included as part of the procurement process, then an organization risks taking on a supplier that could ultimately fail to deliver. Again, the importance of business continuity/ resilience managers working with procurement managers during the supplier onboarding process should be something that happens as a matter of course.

Furthermore, if the procurement programme does not have some degree of centralisation, this can also be a risk to the organization. An interviewee spoke about how different departments were responsible for their own procurement, which can lead to new suppliers being engaged for single items, duplication of sources and, in many cases, overspending.

> **"One of the risks of procurement is when not everything goes through the centralised procurement process, and it can be ordered at the local level. Therefore, some of the due diligence piece doesn't happen because, for example, Doctor X prefers one type of medical equipment to another, and that department just goes off and orders it. If someone's skillset, expertise or speciality is highly prized, they'll get their way, even though due diligence may not have always taken place. This lack of centralised procurement process can create operational issues in terms of having to stock, support and resupply instruments or materials from multiple vendors."**
>
> Resilience Director, Healthcare, United States

Another interviewee from the public healthcare sector in the United Kingdom spoke about how there were differing levels of support for procurement throughout the organization, which led to a chaotic approach having to be taken to procure vital supplies, whereas other parts of the organization had dedicated teams to manage it.

> **"We had a shortage of plastic tubes for taking blood; it was a shortage of the raw materials themselves. We get through a lot of those, and because there are a whole myriad of different colours depending on what types of blood you're taking, who is using it, what type, how many were used, what our minimal safe number is not clear. Some NHS organizations have a materials management team who would have that really detailed knowledge of where everything was and what stocks were like. But we don't have that at the moment. We therefore ended up with people running around literally with pieces of paper, going into departments and saying, 'How many of these have you got? Can we rummage in your cupboards and see how many you've got? And, actually, the ward down the corridor has only got one box, and you've got 22 boxes stockpiled, so can I take some of your boxes?" We probably had 15 people running around the organization, moving them around. So, that's clearly not particularly effective in terms of business continuity. This is a good example of some of the problems we have: big volume items, really significant items, but really limited in terms of data to be able to manage supply and demand."**
>
> Resilience Manager, Healthcare, United Kingdom

36.1%
Yes, it is an integral part of our procurement process from the start

32.8%
Yes, but only where the contract risk is deemed high

10.1%
Yes, but after the purchase decisions have been taken

21.0%
No

Figure 23. Does business continuity feature as part of your supplier contractual discussions?

7.0%
Yes, every month

10.5%
Yes, every quarter

35.1%
Yes, annually

29.8%
Yes, on contract renewal

17.5%
Not applicable

Figure 24. As part of ongoing supplier relationships, do you continuously re-evaluate suppliers and the risks they can potentially import to your business?

Once again, the longitudinal data shows a similar trend to other graphs. In organizations where business continuity does not feature as part of discussions (21.0%), data went back up to pre-pandemic levels (2020: 20.3%). At the height of the pandemic in 2021, this figure almost halved (13.1%), but we can now see a return to the previous norm. A consistent narrative across the report is that organizations made improvements in the immediate aftermath of the pandemic, only to lose some of that progress now that the harshest consequences of the virus are being better controlled. As for the frequency of business continuity discussions, 35.1% of respondents re-evaluate suppliers and their risks every year, whilst 17.5% do so more frequently, on a monthly (7.0%) or quarterly (10.5%) basis. However, an equal number of respondents (17.5%) do not consider this approach applicable to their business model.

Nearly one in four organizations fail to do any due diligence on tier 1 critical suppliers

In terms of depth of due diligence, the report shows one of its most revealing figures. Only one-third of organizations (33.0%) seek to understand the business continuity plans of their tier 1 key suppliers, with an additional third that do so either occasionally (14.4%) or just for some suppliers (17.6%). Furthermore, nearly 1 in 4 organizations (22.9%) never perform this type of analysis at tier 1. Industry discussions often revolve around the depth of supply chain continuity analysis, with some arguing that it should reach tier 2 or lower, whilst others believe that engaging the most immediate suppliers can be enough. International standards and guidelines often favour the latter approach, stating that a culture of business continuity should be cascaded through each tier, and that is a collective responsibility and cannot rest entirely on one organization, even if it is the largest player in the network.

"For our key suppliers, such as data centres and critical infrastructure, we don't go into tier 2, 3 or 4 with them because it's unlikely they'll provide us with that information. But when you start getting to know some of the primary suppliers that we need – things like security, cleaners or the landlords themselves – we do start going into a bit more detail just to make sure that we will have the appropriate people on site when we need them. It's those types of things where we can delve in more."

Business Continuity Manager, Technology, United Kingdom

However, there is consensus on the fact that key suppliers (sometimes referred to as critical, high-priority or prioritised) at tier 1 should not just be part of business continuity discussions, but a good relationship should be forged between both parties with regular meetings taking place. Such strong relationships can help to inform the organization if any problems are developing deeper in the supply chain and make necessary arrangements. Some organizations may even be able to enter into a dialogue with critical suppliers deeper in the supply chain. This, unfortunately, is not common practice amongst most organizations in the sample. As a consequence, the figures for lower tiers accentuate this lack of engagement, as only 11.2% evaluate all tier 2 suppliers and 5.3% do so at tier 3.

The three-year trend does not bode well in this case either. Looking at tier 1 suppliers only, those that performed a continuity analysis in 2020 for all suppliers reached 41.3%, whilst those that never did so were only 4.1%. A year later – as in many other cases – participants reported notable improvements with half of organizations evaluating all of their key tier 1 suppliers (49.8%) and those at the other end of the spectrum remaining at 4.8%.

To what depth do you seek to understand the business continuity arrangements of your critical suppliers?

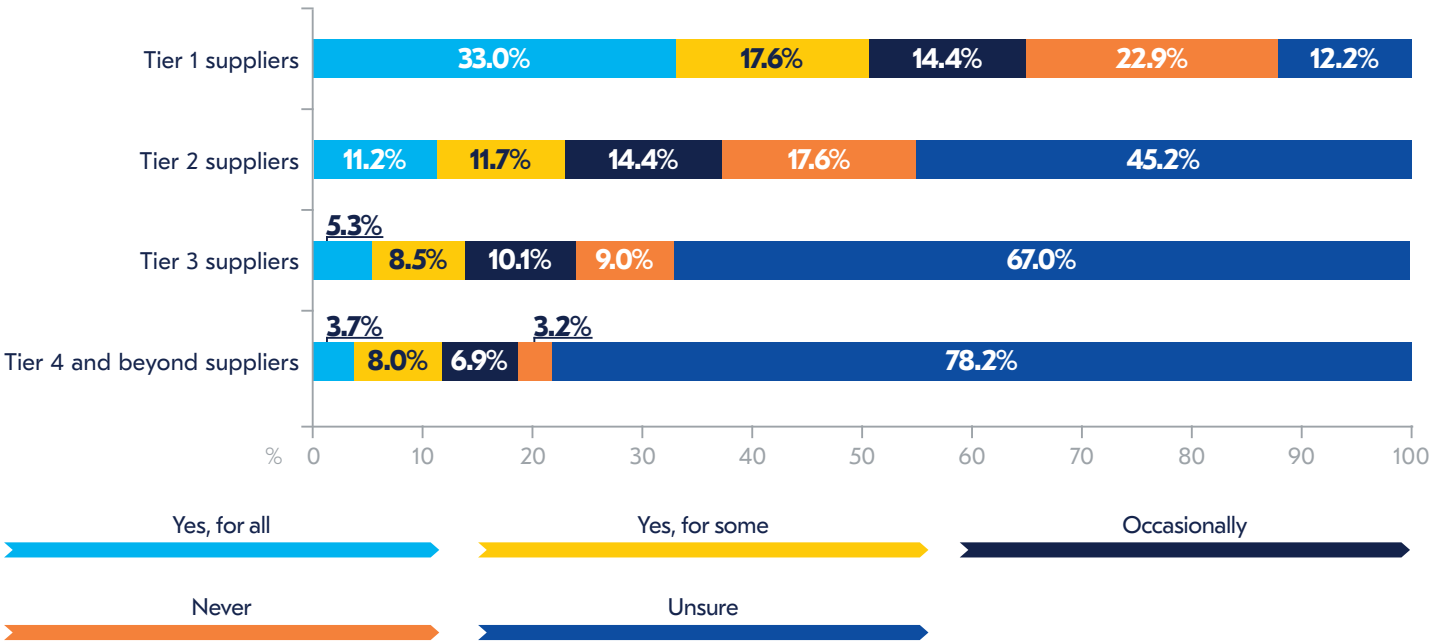


Figure 25. To what depth do you seek to understand the business continuity arrangements of your critical suppliers?

Organizations are going deeper to validate suppliers' business continuity arrangements, with joint exercising being one of the validation processes on the increase

The data on the validation of supplier continuity arrangements shows mixed results. Those that have not checked or validated their plans increased compared to last year's report, from 43.4% to 49.6%, but this still represents a marked improvement on pre-pandemic figures (2020: 54.3%). Similarly, those that produced documented outcome reports and action plans (41.6%) are fewer than in 2021 (48.2%), but still represent a higher number than pre-pandemic levels (35.0%). Exercising plans (29.2%) has also increased its uptake in the past three years after reaching a low of 22.3% in 2020.

Understanding how organizations validate supplier continuity arrangements is a key takeaway from this report as it provides a practical insight into how to work with suppliers. Whilst good practice suggests that organizations should engage with their suppliers, it is often hard to grasp how to do so. Suppliers have their own business needs and priorities, they are subject to confidentiality, and they may not always be willing to reveal sensitive information. Therefore, agreements on shared documentation or joint exercises do not just happen overnight; rather, they are the outcome of effective communication and the establishment of a good working relationship.

An interviewee pointed out that, as a services company, they did not have the same supplier relationships as a manufacturer would, for example. However, as an information services company, they were very reliant on a large hosting provider to stay up and running at all times. As a result, they had built a strong, two-way relationship with the supplier, even having access to their legal team for assurances over resilience practices.

> **"It's now part of our day-to-day operations to have that ongoing dialogue with our suppliers and to ensure that they're doing the right things, just as we are doing within our own business. So, we've been able to forge conversations with key individuals at [our hosting provider] and get that assurance and contractual information. We play a key role in influencing them by discussing the impact of decision-making and providing feedback to further improve their resilience – and our business benefits from that. So, it's not just about management, it's about influence and influencing our suppliers and how they choose to do business."**
>
> Resilience Leader, Information Services, United States

Another interviewee from the healthcare sector in the United Kingdom spoke about how they worked hard to ensure the procurement process involved more than just a "tick-box" exercise, where potential suppliers had to meet a list of business continuity requirements.

"The procurement piece forms part of our overall business continuity management system; it's part of our policy and procedure that supply chain are also part of. I think we've got a good system and we've got some good structures internally to make sure that we ask the right questions. We will no longer just ask, 'Have you got business continuity?' as everybody could say, 'Of course I have' and just tick the box. So, we are actually starting to ask what that looks like, what that means, when was it last tested, what were the learnings taken from that? We certainly don't do that every time yet, but we're moving towards it."

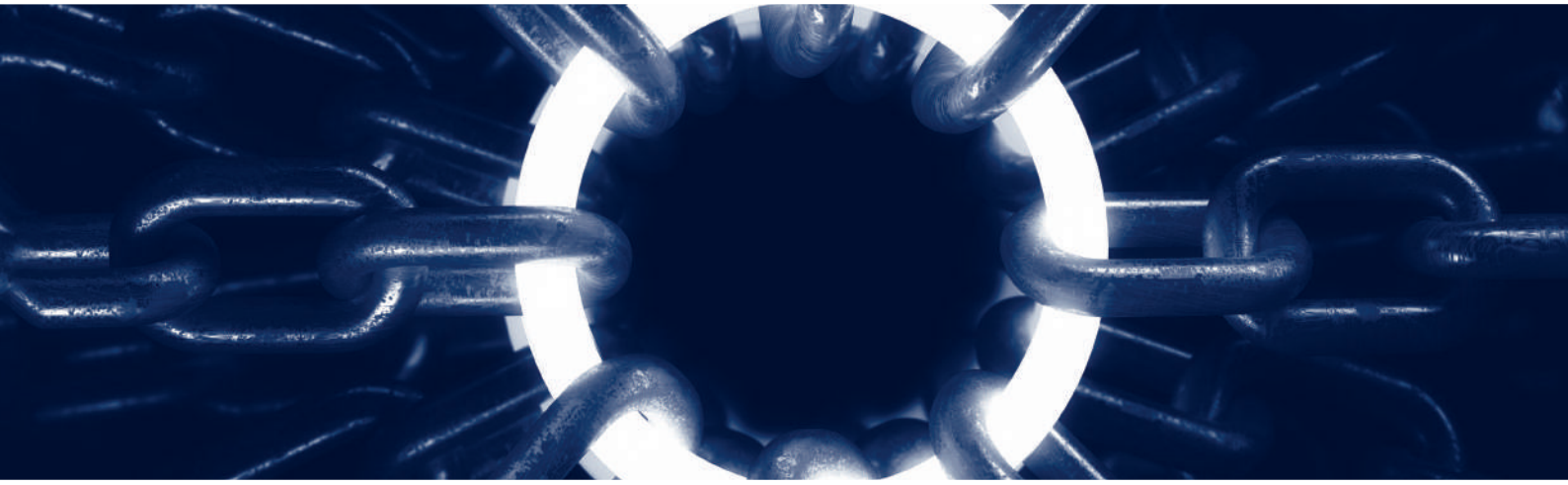
Resilience Manager, Healthcare, United Kingdom

However, for regions where business continuity and resilience are far from universally practised within organizations, asking suppliers for evidence of their BCM programmes and resilience measures was often met with confusion. This, therefore, meant that they had to choose suppliers from a greatly reduced pool of organizations if they only wanted to engage with those with sound business continuity arrangements. Frequently, this also meant choosing suppliers that came at a greater cost. This could lead to prohibitive financial concerns for some organizations.

"For new contracts, we do include continuity clauses. However, we have not had a particularly positive outcome from this, as many suppliers have no idea what we are talking about when we talk about business continuity or resilience. This drastically reduces the pool of choices, causing costs to increase. By asking for certifications and other business continuity measures, companies immediately increase their prices. However, nowadays we have no choice as these measures are something that the regulator requires us to request."

Business Continuity Manager,
Financial Services, Costa Rica

The same interviewee was keen to elaborate further that, if a supplier did not meet their risk criteria to a sound level, they provided them with training and would then only take them on if they could prove they had rectified their issues.



"For all the critical suppliers to our organization, we do an annual exercise where we meet with them and assess the level of risk in four areas: business continuity, information security, cybersecurity and sustainability/green technologies. From this, we classify suppliers from lowest to highest risk. For those who are at a high or medium level of risk, we identify the areas in which they present deficiencies and we train them in those issues. In the next stage, we re-evaluate them to see if they have corrected their problems. Critical suppliers are approximately 25% of total suppliers, but we are working to extend this approach to all suppliers for the coming year."

Business Continuity Manager, Financial Services, Costa Rica

How have you checked/validated that key suppliers' business continuity arrangements might work in practice?

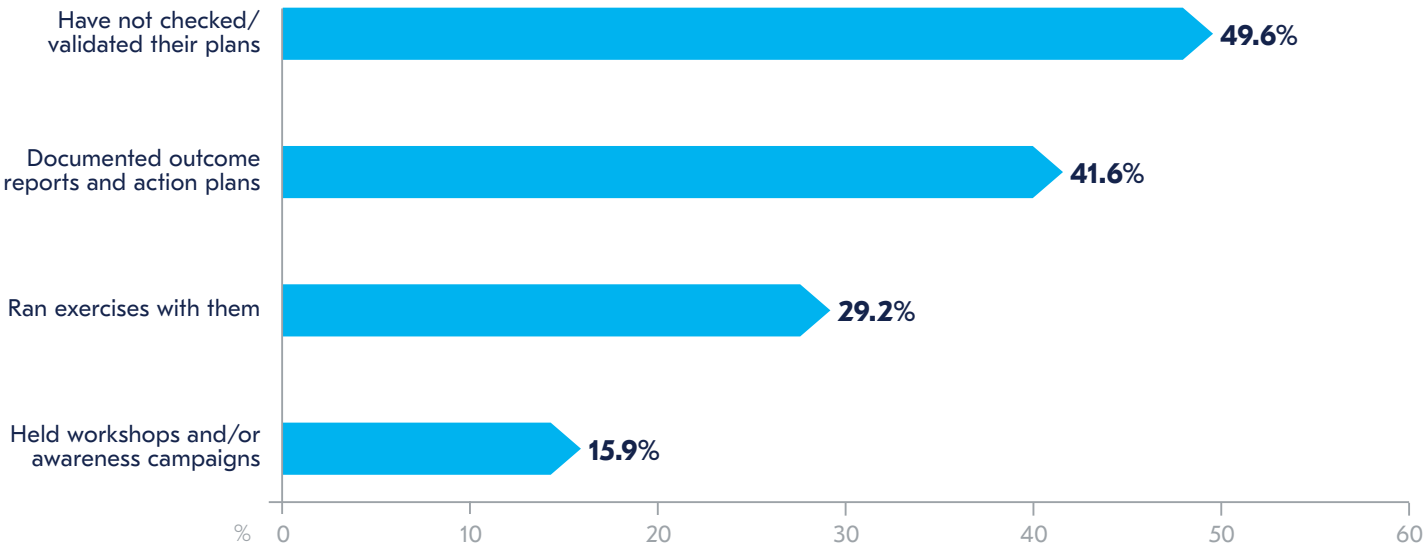


Figure 26. How have you checked/validated that key suppliers' business continuity arrangements might work in practice?

Soft skills are crucial for effective supply chain management

It is also important to not forget the importance of soft skills in supply chain management. In some cases, contractual leverage may be enough to persuade a supplier to collaborate, but that is not always the case. In fact, for several organizations, having a sound relationship can bring several added benefits to a business partnership than a contract alone. This became very clear during the pandemic, when many suppliers found themselves unable to honour every contract and ended up having to break or modify their service level agreements (SLAs).

In this sense, it is concerning that nearly half of respondents (47.0%) only discuss continuity requirements at contract renewal, whilst others adopt a different approach, scheduling regular meetings (29.6%) or reviewing conditions once a new threat is identified (26.1%).

One interviewee described that, whilst suppliers might not be forthcoming with information, they found that working with them, gathering anecdotal evidence and speaking to industry contacts meant sufficient information could be obtained to make decisions.

> **"So, a conversation might start with 'okay, I understand you can't show me your documents. I'm not going to show you mine either, okay?' But it's about extending that conversation and seeking to learn whether or not they've really got resilience measures in place. And also, this is where my connections, through places like the BCI and my extended professional network, can help too. This way, I can get that anecdotal information and, whilst I can't put it into the actual official documentation, I can validate what I'm hearing through my official channels. I can validate it with my side channels as well."**
>
> Resilience Leader, Information Services, United States

How often do you review your business continuity requirements with key suppliers and their capability to meet them?

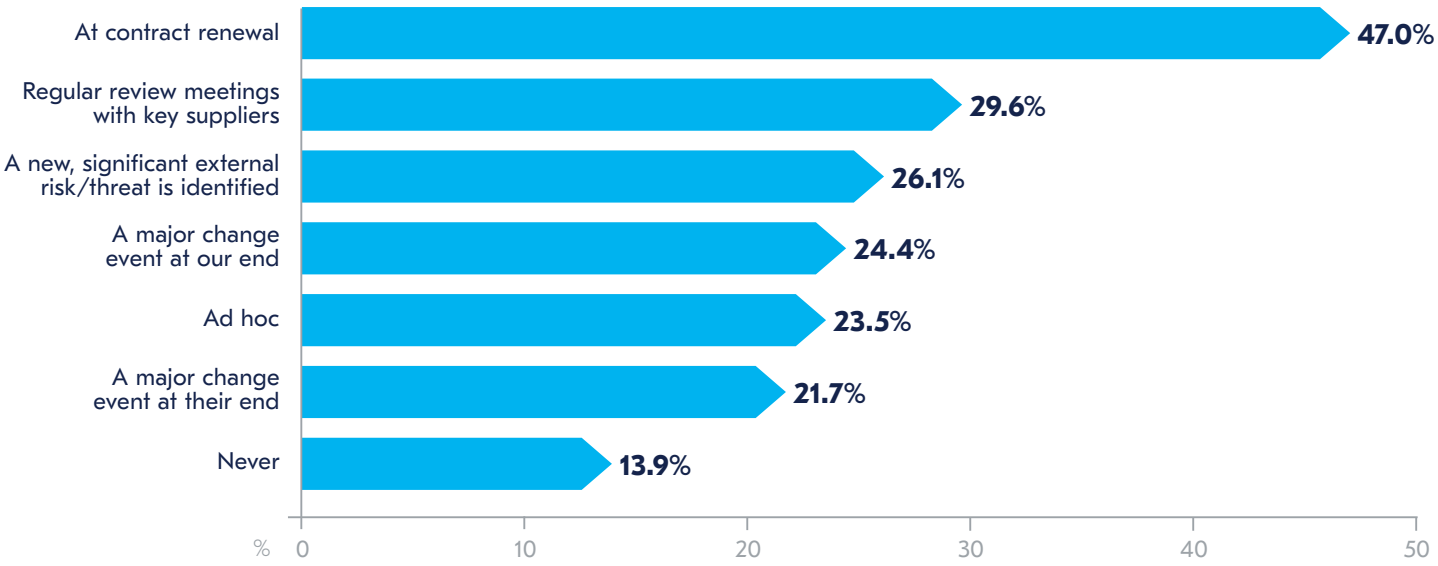


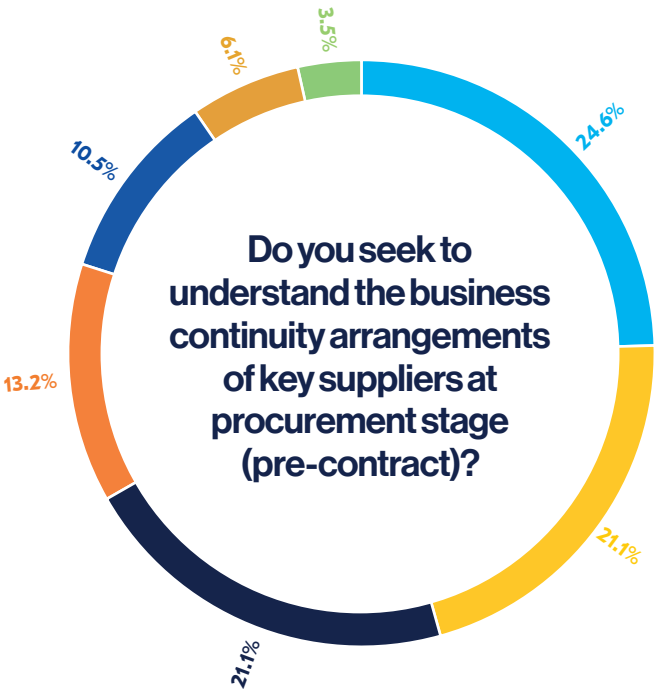
Figure 27. How often do you review your business continuity requirements with key suppliers and their capability to meet them?

Delving into the procurement process, 1 in 5 respondents (19.5%) reported having to provide assurance to the majority of their clients that their business continuity arrangements were sufficient, with an additional 13.3% saying they always had to do so. Nevertheless, over a third (34.5%) reported that they only had to provide such evidence on some occasions (19.5%) or on rare occasions (15.0%). Similarly, amongst those that seek such information at a pre-contract stage, 24.6% did so for every tender and 21.1% for the majority of their key suppliers. The same pattern is observable for audits, as 41.6% audit either key suppliers (23.0%) or all suppliers (18.6%) following stages of data collection and risk evaluation to check the validity of their management systems, their ability to fulfil legal obligations and their capability of meeting the organization's internal codes of conduct. Work remains to be done, however: 15.0% of respondents admit to never auditing any of their suppliers.

"In general, supply chain maturity overall has increased within the industry. I think we are just scratching the surface now of how we can truly reap the benefits of effective supply chain management. We've made great progress from where we were five years ago, but there's a lot more we have yet to learn. And as our world increases that complexity of dependencies because of how the world is evolving, it's really bringing to the forefront how important good supply chain management is. We need to keep those lines of collaboration open and keep the conversations going. No one organization is totally autonomous and has no dependencies outside their organization. It is about recognizing that we live in a large world but one which becomes very small – and understandable – when actually you get down to looking at who depends on who. So we need to continue to focus on this and reap the benefits because the more that we collaborate, the more resilient supply chains will be."

Resilience Leader, Information Services, United States

Figure 28. When tendering for new business clients over the past 12 months, how often have you had to provide assurance to clients that your own business continuity arrangements are sufficient?



24.6%
Every tender/proposal (100%)

21.1%
Majority (51–99%)

21.1%
Sometimes (25–50%)

13.2%
Rarely (1–24%)

10.5%
Don't know

6.1%
Not at all (0%)

3.5%
Not applicable

Figure 29. Do you seek to understand the business continuity arrangements of key suppliers at procurement stage (pre-contract)?

23.0%
Yes, every time we take on a critical supplier

18.6%
Yes, every time we take on a supplier

14.2%
Yes, but this is only done on an ad hoc basis

21.2%
Occasionally

15.0%
Never

8.0%
Not applicable

Figure 30. Following stages of data collection and risk evaluation, do you audit your supply chain to check the validity of suppliers' management systems, their ability to fulfil legal obligations and their ability to meet your own internal codes of conduct?

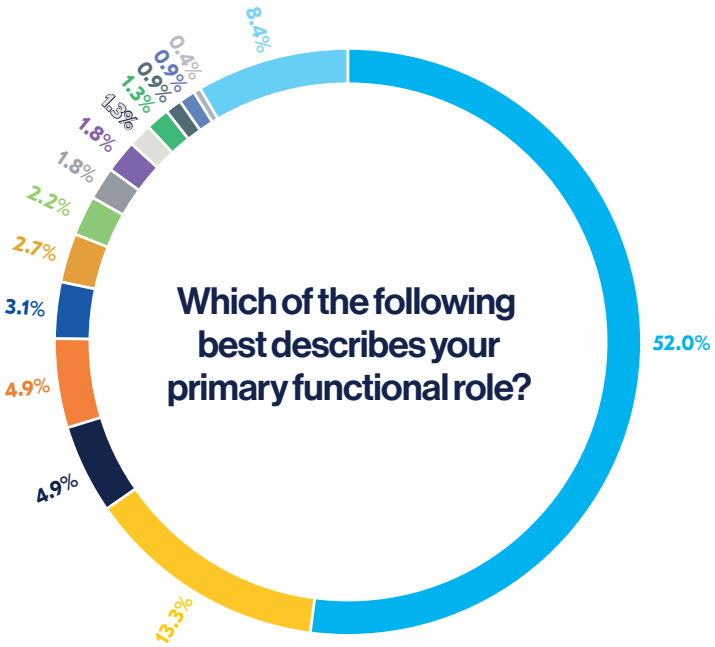
Annex

228
Respondents

58
Countries

17
Sectors

8
Respondent Interviews



52.0% Business continuity

13.3% Risk management

4.9% Supply chain and logistics

4.9% IT disaster recovery/ IT service continuity

3.1% Top management

2.7% Internal audit

2.2% Quality/business improvement

1.8% Crisis management

1.8% Health and safety management

1.3% Emergency planning

1.3% Line of business or service directorate

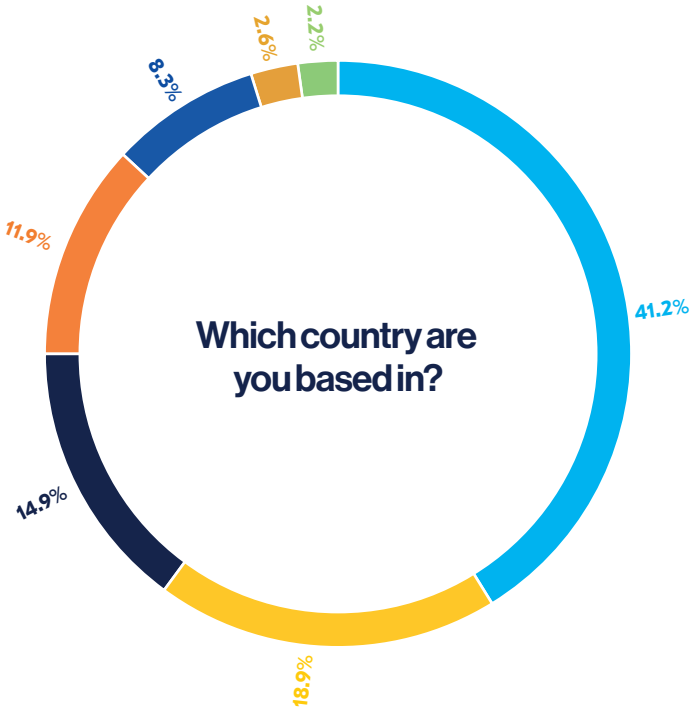
0.9% Physical security

0.9% Information security

0.4% Communications

8.4% Other

Figure 31. Which of the following best describes your primary functional role?



41.2%
Europe

18.9%
North America

14.9%
Asia

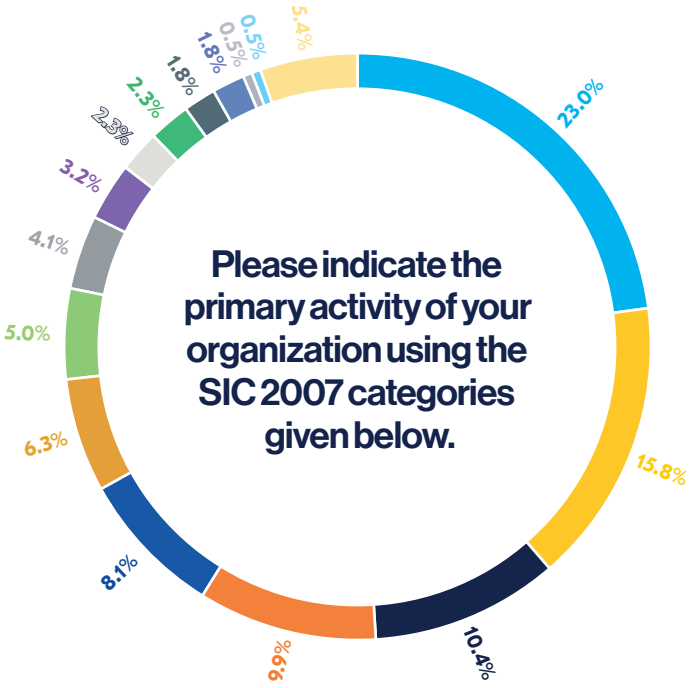
11.9%
Australasia

8.3%
Africa

2.6%
Latin America

2.2%
Middle East

Figure 32. Which country are you based in?



23.0%
Financial & Insurance Services

15.8%
Professional Services

10.4%
Public Administration & Defence

9.9%
Manufacturing

8.1%
IT & Communications

6.3%
Energy & Utility Services

5.0%
Health & Social Care

4.1%
Transport & Storage

3.2%
Education

2.3%
Retail & Wholesale

2.3%
Media & Entertainment

1.8%
Engineering & Construction

1.8%
Support Services

0.5%
Agriculture, Forestry & Fishing

0.5%
Mining & Quarrying

5.4%
Other

Figure 33. Please indicate the primary activity of your organization using the SIC 2007 categories given below.

0.4% 1–10

2.2% 11–20

2.2% 21–50

3.1% 51–100

3.6% 101–250

5.8% 251–500

7.1% 501–1,000

7.6% 1,001–5,000

11.1% 5,001–10,000

12.9% 10,001–50,000

20.9% 50,001–100,000

23.1% Greater than 100,000

Figure 34. Approximately how many employees work at your organization?

37.9% 1

14.1% 2–5

7.3% 6–10

7.3% 11–20

13.1% 21–50

5.3% 51–100

15.0% >100

Figure 35. How many countries does your organization operate in?

About the Authors

Rachael Elliott

(Head of Thought Leadership)

Rachael has twenty years' experience leading commercial research within organizations such as HSBC, BDO LLP, Marakon Associates, CBRE and BCMS. She has particular expertise in the technology & telecoms, retail, manufacturing and real estate sectors. Her research has been used in Parliament to help develop government industrial strategy and the BDO High Street Sales Tracker, which Rachael was instrumental in developing, is still the UK's primary barometer for tracking high street sales performance. She maintains a keen interest in competitive intelligence and investigative research techniques.

She can be contacted at rachael.elliott@thebci.org

Maria Florencia Lombardero Garcia

(Research Manager)

Maria has over 15 years of experience in academic and market research and has been responsible for the design and implementation of a wide range of policies within public and private organizations such as the Argentine Ministry of Defence, RESDAL, and BMI (Fitch Group). She has served as a policy advisor and political analyst at the Argentine Ministry of Defence and coordinated the Argentine National Security Council's Office. She has particular expertise in geopolitical risk, defence and intelligence and her work has been applied to develop government defence strategies and draft legislation on the matter. Her areas of interest relate to open-source research and how geopolitics impacts resilience within organizations.

She can be contacted at maria.garcia@thebci.org

Gianluca Riglietti

(Content Specialist in Business Continuity and Resilience)

Gianluca is a researcher and a freelance content creator interested in the development of resilient and safe societies. He has experience managing international research projects for companies such as BSI, Zurich, Everbridge and SAP. He works regularly with a number of organizations in the field of organizational resilience, such as the Business Continuity Institute. In his publications he has addressed a wealth of topics, such as climate change, cybersecurity, supply chain management and business continuity. He is also a PhD Candidate at Politecnico di Milano, where he investigates the impact of business continuity management on supply chain resilience.

He can be contacted at SCWF@protonmail.com.

About the BCI

Founded in 1994 with the aim of promoting a more resilient world, the Business Continuity Institute BCI has established itself as the world's leading Institute for Business Continuity and Resilience. The BCI has become the membership and certifying organization of choice for Business Continuity and Resilience professionals globally with over 9,000 members in more than 100 countries, working in an estimated 3,000 organizations in the private, public and third sectors. The vast experience of the Institute's broad membership and partner network is built into its world class education, continuing professional development and networking activities. Every year, more than 1,500 people choose BCI training, with options ranging from short awareness raising tools to a full academic qualification, available online and in a classroom. The Institute stands for excellence in the Resilience profession and its globally recognised Certified grades provide assurance of technical and professional competency. The BCI offers a wide range of resources for professionals seeking to raise their organization's level of Resilience, and its extensive thought leadership and research programme helps drive the industry forward. With approximately 120 Partners worldwide, the BCI Partnership offers organizations the opportunity to work with the BCI in promoting best practice in Business Continuity and Resilience.

The BCI welcomes everyone with an interest in building resilient organizations from newcomers, experienced professionals and organizations. Further information about the BCI is available at **www.thebci.org**.

Contact the BCI

+44 118 947 8215 | bci@thebci.org
10-11 Southview Park, Marsack Street, Caversham, RG4 5AF, United Kingdom.

About SGS

We are SGS — the world's leading testing, inspection and certification company. We are recognized as the global benchmark for quality and integrity. Our 96,000 employees operate a network of 2,700 offices and laboratories, working together to enable a better, safer and more interconnected world.

Correct as of January 2022

BCI 9 Greyfriars Road, Reading, Berkshire, UK. RG1 1NU

bci@thebci.org / www.thebci.org

SGS

bci Leading the way to resilience