Business Continuity Institute

SUPPLY CHAIN RESILIENCE REPORT 2019

ZURICH

Contents

Foreword
BCI

Thank you for reading the BCI Supply Chain Resilience report, now in its eleventh year. Business dynamics have changed dramatically and are very different to those identified 11 years ago. The global economy has moved on from the recession, which was the focus of attention when we published the first edition of this report. Today's disruptive forces continue to evolve; organizations enjoy the advancing benefits of technology to manage their supply chains, while macro-factors such as the Chinese/US trade negotiations and Brexit in Europe keep supply chain concerns at the top of board agendas.

Business continuity plays a key role in helping to avoid and mitigate disruption within the supply chain. We are pleased to note in the results of the 2019 survey that over three quarters of organizations record, measure and report on supply chain disruptions. Business continuity professionals are realising the benefits that technology can bring to supply chain management. For example, big data analytics can help to build a comprehensive map of supply chain disruptions and a multitude of devices connected via the Internet of Things (IoT) promise real time monitoring to provide early warning of potential issues.

The top five reasons for disruptions have remained unchanged in 2019, with IT and telecommunications outages still topping the list for causing the most disruptions. The greatest source of future concern is supply chain outages caused by external threats beyond the control of professionals. For example, cyber-attacks and data breaches were the source for 26.7% of disruptions this year, while 61.7% of respondents rate it as their primary concern over the next year. This is a trend that we have identified in other recent BCI publications.

The uptick in supply chain monitoring is an encouraging sign. However, there is still room to go further, with more organizations carrying out greater due diligence of their deeper supply chain. 12.2% of disruptions occur amongst tier 3 suppliers and beyond. Yet over two-thirds of organizations (67.7%) fail to question the business continuity arrangements of suppliers within those tiers.

Insurance plays an important role in mitigating some of the losses encountered after a supply chain disruption. The research reveals that organizations are getting better at insuring their losses; nearly a third (29.1%) revealed that losses were not covered after an incident because a risk-based decision had been made on insurance coverage requirements. For smaller organizations, this has the potential to result in business failure.

We are once again delighted to have Zurich's support with the BCI Supply Chain Resilience report, particularly as insurance plays a vital role within supply chain management. We hope you find the results of our 2019 global survey provide valuable information and insights that can be put to good use to further enhance your organization's supply chain resilience.

Tim Janes
Hon FBCI
Chair of the BCI

Foreword
Zurich Insurance Company

The risk of supply chain disruption has become one of the most fundamental risks that organizations face across virtually all sectors and Zurich Insurance are delighted to extend their sponsorship of the annual BCI Supply Chain Resilience report. This report analyses the key trends observed by both risk managers and supply chain managers over the last 12 months.

In today's increasingly complex business environment, in-depth knowledge of your supply chain and being able to map and understand your interdependencies across your primary, secondary and even tertiary level suppliers is key to keeping your business operational, maintaining profitability and keeping your reputation intact.

One trend noted this year is that whilst organizations are getting better at managing disruptions in their "close to home" tier 1 suppliers, due diligence further down the supply chain is slipping and there is quite a lot of work to be done here and in many cases the task of really getting to grips with your supply chain is not an easy matter and can quite often be overwhelming.

Although there is increasing awareness of supply chain risk, in all likelihood very few organizations have the level of information that enables them to drill down into level 2 and 3 suppliers or may not have even thought about it to any great extent, with the knock on effect that no contingency plans have been made in the event of a major event or disaster.

This year's report also introduces a new section which looks at the front of mind concerns for supply chain professionals on the horizon over the next five years. Here, geopolitical concerns such as civil unrest and political change dominate. However, this is a disconnect to what has actually been the main sources of disruption this year, namely IT and telecoms outage and adverse weather have been the top two causes of supply chain issues.

The report will also support risk and supply chain managers in the identification and assessment of various scenarios and, while not all risks can be avoided, the information will help develop effective loss mitigation and reduction strategies.

Lastly, this year's report continues to see a marked increase in global responses, so the key findings are certainly more reflective of the international supply chain management community, which is great to see.

Ian McNeil
Global Head of Customer Management
Risk Engineering
Zurich Insurance Company Ltd.

Foreword
Commercial Risk Europe

Commercial Risk Europe is pleased to have once again worked with the BCI to help deliver this highly valuable annual report, which this year delivers more international feedback than ever before. This is critical as supply chains become increasingly dynamic and interconnected through global value chains and networks.

As a truly enterprise wide risk, supply chain continues to top many polls as a leading threat.

It demands a joined up corporate response and provides a huge opportunity for business continuity professionals to work with risk managers and other key individuals to minimise disruption, and even create competitive advantage.

So what can we take away as key findings from the 2019 BCI Supply Chain Resilience Report?

Several findings jump off the page.

Firstly, respondents indicate a steady decline in top level management commitment to supply chain risk. After a positive leap in 2017, such commitment has dropped for the second year running to 25.6%, its lowest level in five years.

Secondly, organizations are seemingly getting better at managing direct suppliers but finding it increasingly difficult to tackle tier 2 and tier 3 risks. While incidents with immediate suppliers fell below 50% for the first time since 2016, those in tier 2 rose to 24.9% from 23.2% last year, and those occurring in tier 3 and beyond rose to 12.2% from 11.0% in 2018.

Thirdly, organizations are slowly getting better at covering their losses with insurance and understanding the options open to them. For example, organizations with insurance that only covers traditional physical damage events, or are not aware of new non damage supply chain solutions, dropped by just over a third compared to 14.3% in 2018. However, the majority of respondents remain unable to quantify financial damage and many still cannot find insurance solutions that meet their needs.

These findings paint a mixed picture for companies looking to mitigate supply chain risk – there are areas of progress and others of concern. But it seems clear that business continuity professionals and risk managers must pull together to ensure supply chain issues remain top of the agenda, are tackled throughout the value chain and suitable risk transfer solutions are developed.

We believe that this survey and other initiatives – such as our Supply Chain conference in London this November held in partnership with the BCI, UK risk management association Airmic and the IRM – can help individuals and their companies rise to the challenge.

Adrian Ladbury
Director and Co-owner at Commercial Risk.

Commercial Risk Europe

Foreword
CIPS

Given how crucial supply chains are to business, organizations and to economies, they can be surprisingly fragile. Easily thrown off course by unforeseen crises, big and small, resilience and the ability to mitigate risk means the difference between long-term success and instant failure.

As the report highlights, the approach to business continuity is changing as more businesses are beginning to understand more clearly the value of strong business continuity plans. This new awareness is having a two-fold effect. Not only is there more data available so everyone understands the impact of these crises in a collective way, but businesses are becoming more transparent in how a disruption has impacted on their own operations; a risky option when it comes to reputation and the bottom line but useful for collective understanding on what these risks are and how effective mitigation can be.

Take the case of Xirallic, a chemical that gives car paint a metallic finish which became unobtainable following the Japanese earthquake and tsunami in 2011. The Merck factory producing the chemical in Japan was closed soon after the earthquake struck in an attempt to reduce any further environmental damage. It was the only one producing the chemical. This meant a number of major carmakers had to halt production, losing money and customers in the process. Maybe not a complete disaster as these companies are still in business, but this a clear example of how one event a long way down the supply chain can affect production closer to home.

If businesses do not get a grip on all suppliers in their supply chains, then resilience to unexpected events in their business is low. The likelihood of impact events becoming more frequent intensifies, as the report emphasises how micro disruptions can accumulate. Understanding these risks all the way down the supply chain may seem resource and cost-heavy, and some companies may avoid the complications. But the businesses that build resilience into their operational practices ensure sustainability of supply, good product quality and reduction in the cost of disruptions as well as mitigating against the resultant disappointment for shareholders and customers.

Don't get me wrong, it's not all doom and gloom. In this Age of Disruption, not all unforeseen consequences have negative effects. Digital transformation has had a transformational effect on daily lives and how business operates. Disruption has created new and innovative processes and ways of working, increased automation and sometimes placed simplicity at the core of increasingly complex supply chains. No doubt more disruption will come and we must be agile, open to creativity and the pioneering spirit.

The burden of risk and resilience in business has fallen onto the shoulders of supply chain managers as well as business continuity experts. We must ensure that we keep the lines of communication open, develop technological strategies and bolster our resilience capabilities. This report is a good start in developing your own strategy and understanding your own risks, so I would urge you to read and digest.

And what of the carmakers and their non-metallic cars? The halt in production galvanised Merck into finding a new and second factory in Germany and the original factory increased their level of supply in case production was interrupted again. Everyone had shiny cars again.

Duncan Brock
Group Director, CIPS

1 Executive Summary

NON-REPORTING OF SUPPLY CHAIN DISRUPTIONS IS AT AN ALL-TIME LOW, BUT CO-ORDINATED REPORTING HAS FALLEN:

Less than a quarter (23.3%) of organizations now report that their organization does not record, measure and report on supply chain disruptions – the lowest figure in the 10 years this report has been published. However, co-ordinated reporting has dropped from 30.0% to 25.0% - a disappointing figure given BCI research has shown an increased focus on holistic organizational resilience over the past year.

THE TOP FIVE DISRUPTIONS OVER THE PAST YEAR REMAIN UNCHANGED, WITH *IT AND TELECOMMUNICATIONS OUTAGES* REMAINING THE PRIMARY CAUSE FOR DISRUPTION:

Unplanned IT and telecommunications outages accounted for 44.1% of disruptions in 2019. Interestingly, despite cyber-attack and data breach only causing 26.1% of disruptions in the past year, it is the most top-of-mind disruption for professionals over the next year with 61.7% of it rating it as their primary concern.

OVERALL, ORGANIZATIONS EXPERIENCED FEWER DISRUPTIONS IN 2019, AND THE NUMBER EXPERIENCING MULTIPLE DISRUPTIONS HAS ALSO FALLEN:

51.9% of organizations experienced supply chain disruption in 2019 compared to 56.5% in 2018. Furthermore, the number of organizations experiencing five or more disruptions fell to 10.0% from 15.0% in 2018. The trend is encouraging, particularly given the political and geopolitical issues weighing heavily on supply chains in 2019.

ORGANIZATIONS ARE BECOMING BETTER AT MANAGING THEIR IMMEDIATE SUPPLIERS, BUT MORE WORK IS NEEDED DEEPER INTO THE SUPPLY CHAIN:

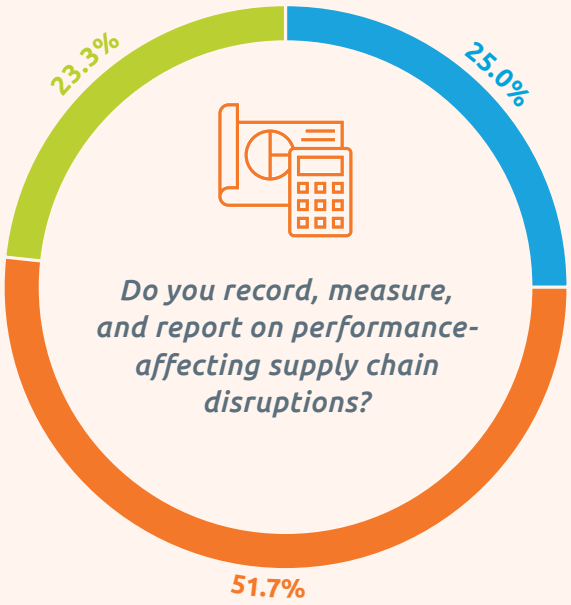
Incidents involving tier 1 suppliers fell below 50% for the first time since 2016 (48.9%) although incidents in tiers 2, 3 and beyond saw a small percentage increase. Part of this could be down to decreased due diligence deep into the supply chain: 12.2% of disruptions occur in tier 3 and beyond, yet over two-thirds (67.7%) do not seek to understand the business continuity arrangements of suppliers within those tiers.

ORGANIZATIONS ARE GETTING BETTER AT INSURING THEIR LOSSES, BUT NEARLY HALF ARE UNABLE TO FULLY QUANTIFY HOW MUCH OF THOSE LOSSES WERE INSURED:

45.2% of organizations that experienced supply chain disruptions were unable to quantify how much of those losses were insured. 29.1% of organizations said losses were not covered because a risk-based decision was made on insurance coverage requirements indicating more work needs to be done to bridge the assessment gap.

LEVELS OF REPORTING AND TECHNOLOGY UPTAKE

Reporting of supply chain disruptions is now at its highest level for the 10-year history of the report, but co-ordinated reporting remains sporadic



25.0%
Yes, this is coordinated and reported across the whole enterprise

51.7%
Yes, but within certain departments/ functions, but NOT aggregated

23.3%
No

Organizations are increasingly using technology to increase the efficiency and performance of supply chains, with blockchain still yet to enter mainstream popularity

"Top 5 technologies used widely in organizations by 2030"

59.6%
Big data analytics

47.7%
Internet of Things

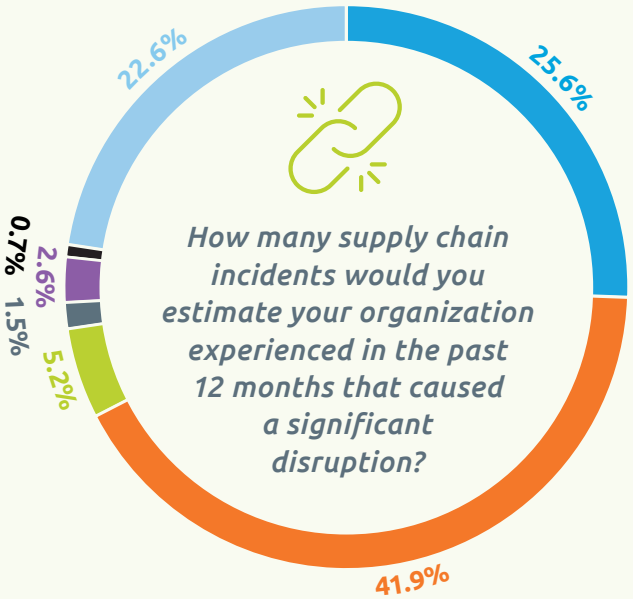
31.2%
Artificial Intelligence

27.5%
Geospatial and location intelligence

18.4%
Blockchain

FREQUENCY AND ORIGIN OF SUPPLY CHAIN DISRUPTION

Fewer organizations overall experienced disruptions in 2019, and the number of organizations experiencing five or more disruptions fell to 10% from 15% in 2018



25.6%
0 (We have not had any disruption in our supply chain in the past 12 months.)

41.9%
1-5

5.2%
6-10

1.5%
11-20

2.6%
21-50

0.7%
51+

22.6%
I don't know

The proportion of incidents occurring with immediate suppliers fell below 50% for the first time since 2016, but disruptions in tier 2 and beyond are rising

48.9%
Disruptions occurring in tier 1

24.9%
Disruptions occurring in tier 2

12.2%
Disruptions occurring in tier 3 and beyond

32.6%
We do not analyze the full supply chain to identify original source of the disruption

CAUSES AND CONSEQUENCES OF SUPPLY CHAIN DISRUPTION

The top five causes of disruption remain the same as 2018 with IT and telecommunications outages the primary cause of supply chain disruption

"Top 5 causesof supply chain disruption in the past twelve months"

44.1%
Unplanned IT or telecommunications outage

35.1%
Adverse weather

26.1%
Cyber-attack and data breach

21.2%
Loss of talent/ skills

15.8%
Transport network disruption

Despite cyber-attacks and data breaches only causing a quarter of disruptions in 2019, it is the most top-of-mind threat for professionals over the next twelve months

"Top 5 causes for concern for supply chain disruption in the next twelve months"

61.7%
Cyber-attack and data breach

50.9%
Unplanned IT or telecommunications outage

43.7%
Political change

43.2%
Adverse weather

40.1%
New laws or regulations

Loss of productivity and customer complaints due to supply chain disruption cause more disruption than the financial cost

"Top 5 impacts or consequences arising from supply chain incidents/disruptions over the past twelve months"

50.3%
Loss of productivity

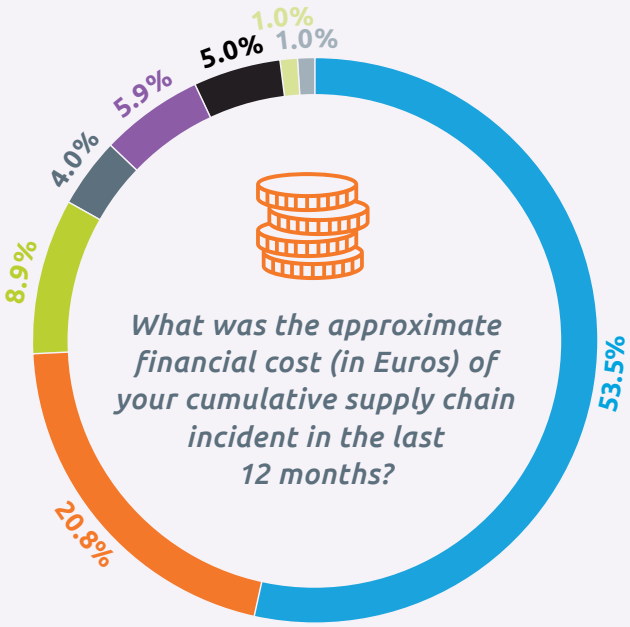
41.5%
Customer complaints received

39.9%
Increased cost of working

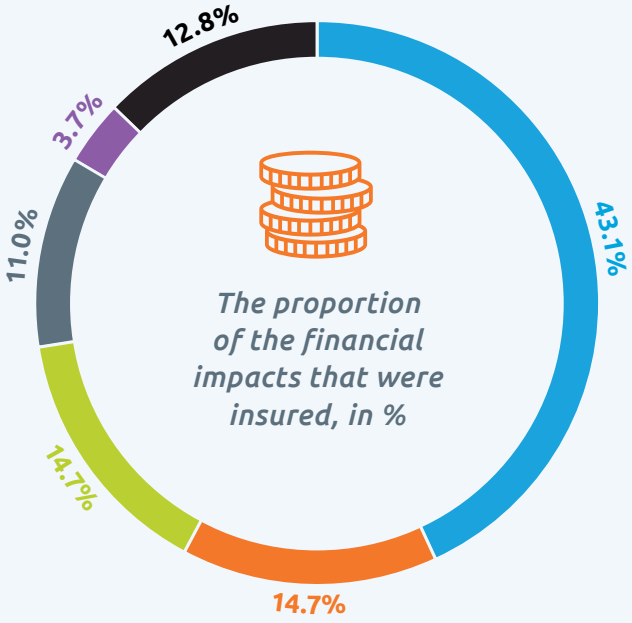
36.1%
Loss of revenue

33.9%
Service outcome impaired

The majority of supply chain incidents incurred losses of over €50,000 for organizations in 2019, with more than 1 in 20 incurring losses greater than €100 million for their single largest disruption



53.5% Less than €50,000
20.8% €50,001-250,000
8.9% €250,001-500,000
4.0% €501,000-1,000,000
5.9% €1-10 million
5.0% €11-50 million
0.0% €51-100 million
0.0% €101-250 million
1.0% €251-500 million
1.0% Greater than €500 million



INSURANCE UPTAKE

Nearly half of organizations reported that 0% of the financial impact of supply chain disruptions was insured with small- to mid-sized businesses being the least likely to be insured

43.1% 0%, losses were uninsured
14.7% 1-25%
14.7% 26-50%
11.0% 51-75%
3.7% 76-99%
12.8% 100%, losses were fully insured

BUSINESS CONTINUITY ARRANGEMENTS AND DUE DILIGENCE

High level top management commitment to managing supply chain risk has dropped for the second year running to 25.6%

"Percentage of organizations reporting a high level top management commitment to managing supply chain risk"

When looking to better understand the business continuity arrangements of key suppliers, nearly two-thirds ask for the BCM plan and who holds responsibility for it, but few ask to see details of the full program

64.0%
Seek a business continuity plan

46.0%
Seek certification or alignment to a recognised standard

45.5%
Seek compliance with recognised good practice

37.0%
Seek a program relevant to the product/service we are buying

35.5%
Seek details of the entire BCM program, not just the plan

Many organizations are still failing to ask key suppliers if they have their own business continuity arrangements in place

66.8%
Yes

19.4%
No

13.7%
Don't know

Understanding the business continuity arrangements of suppliers beyond immediate suppliers is inconsistent, and could explain the rise in disruptions due to incidents in tier 2 and beyond

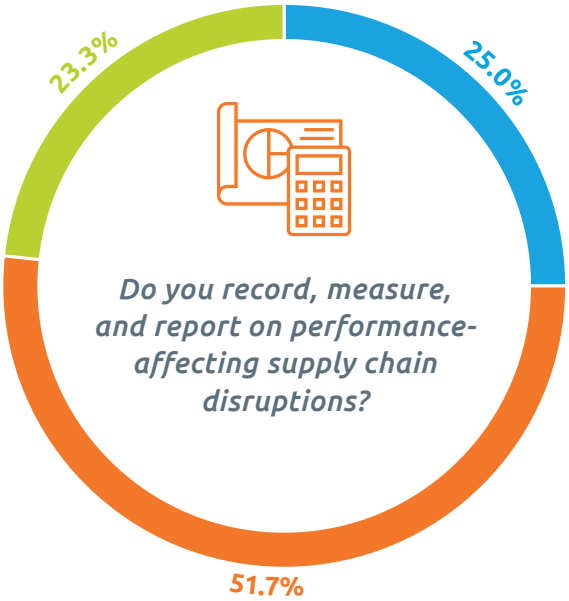
"To what depth do you seek to understand the business continuity arrangements of your key suppliers? % of those who answered "Never"

2 Levels of reporting and technology uptake

LEVELS OF REPORTING AND TECHNOLOGY UPTAKE

- **Levels of non-reporting are falling and at their lowest yet.**
- **Uptake of supply chain management technologies continues to increase, though over half of respondents remain resistant.**
- **Big data is the overall software of choice. Responses by sector show a clear division of preferences.**
- **The vast majority use Excel for predicting, recording and reporting disruptions, with social media / news seeing the largest movement and entering the top five.**

Non-reporting of supply chain disruptions is at its lowest level in the 10-year history of this report. 23.3% of respondents report that their organization does not record, measure and report on performance-affecting supply chain disruptions compared with 27.0% in 2018. The fall is encouraging to see, though the drop is because more organizations are only reporting within certain departments/ functions (51.7%, up from 43.0% in 2018). Co-ordinated reporting throughout the organization fell from 30.0% to 25.0%. This is disappointing given the BCI's 2019 Organizational Resilience report showed many organizations have an increased focus on organizational resilience which should encourage more transparency and better communication between departments.



25.0%
Yes, this is coordinated and reported across the whole enterprise

51.7%
Yes, but within certain departments/ functions, but NOT aggregated

23.3%
No

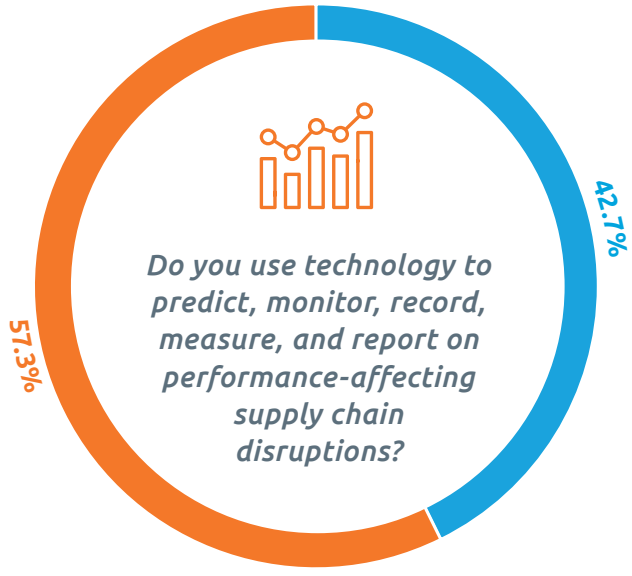
Figure 1. Levels of reporting supply chain disruptions, in %

Year	Firm-wide reporting	Reporting within certain departments	No reporting
2019	25	52	23
2018	30	43	27
2017	32	38	31
2016	34	38	28
2015	28	37	35
2014	26	40	34
2013	25	39	36
2012	25	37	39

Table 1. Levels of reporting supply chain disruptions, in % (2012-2019)

Supply chains are becoming increasingly dynamic and interconnected through global value chains/ networks. The benefits of adopting new technologies such as big data analytics, internet of things (IoT) and artificial intelligence must be prioritised. These enable organizations to have a holistic view of multi-layered supply chain networks with near real-time and actionable data flow. Risk culture is gradually changing when it comes to embedding new technologies into supply chain management. Uptake has increased year-on-year since 2017: from 36.9% to 42.7% in 2019.

Over half (57.3%) of respondents are reluctant to explore and adopt new technologies. Reasons for this hesitance include budget constraints, legacy IT infrastructure, lack of talent/skills, cyber-attacks, and regulatory concerns[1]. Organizations in Asia have the highest uptake (68.8%), followed by those in the Middle East and Africa (54.5%), Australasia (42.9%), Europe (34.8%) and the Americas (30.4%).



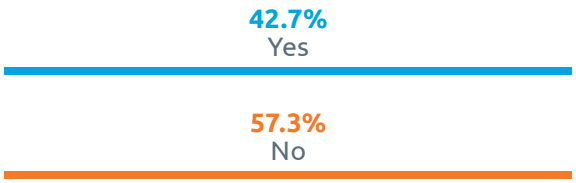


Figure 2. Uptake of technology for supply chain management, in %

1 The BCI (2019), BCI Disruptive Technologies 2019 report

The majority (59.6%) of organizations use big data analytics for their supply chain management. It removes silos and enables organizations to have better and quicker access to more comprehensive data. Crucially, big data is able to pinpoint potential points of failure and vulnerabilities to shocks across the supply chain. Second is IoT (47.7%), followed by artificial intelligence (31.2%), geospatial and location intelligence (27.5%), and Blockchain (18.4%).

Different sectors adopt different technologies for their supply chain management needs. Organizations in financial services and IT select big data analytics as their number one technology. Professional services and manufacturing prefer IoT, and public sector and defence use geospatial and location intelligence as their top technology choice.

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

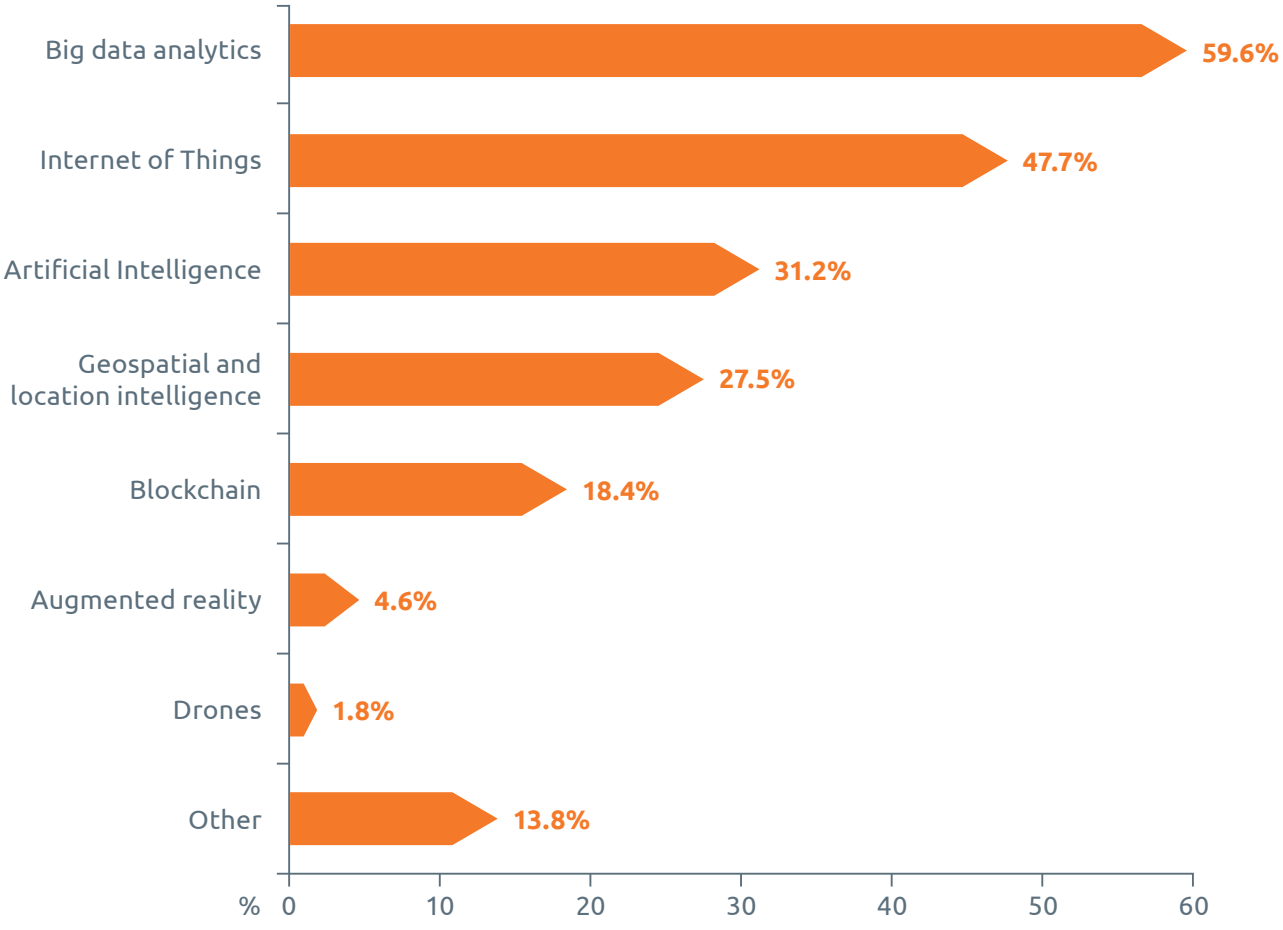


Figure 3. Implementation of new technologies for supply chain management, in %

Excel remains the software most used to predict, record and report on performance-affecting supply chain disruptions (73.0%). Third-party due diligence solutions is a distant second with half as many respondents (36.9%) selecting it. The top five is completed by enterprise risk management software (33.3%), social media/news tracking devices (31.0%), and financial insolvency models (23.4%). BCM software moves to sixth place from fourth and is used by less than a quarter (20.2%) of organizations.

What types of indicators do you rely on to predict, monitor, record, measure, and report on performance-affecting supply chain disruptions? Please tick all that apply.

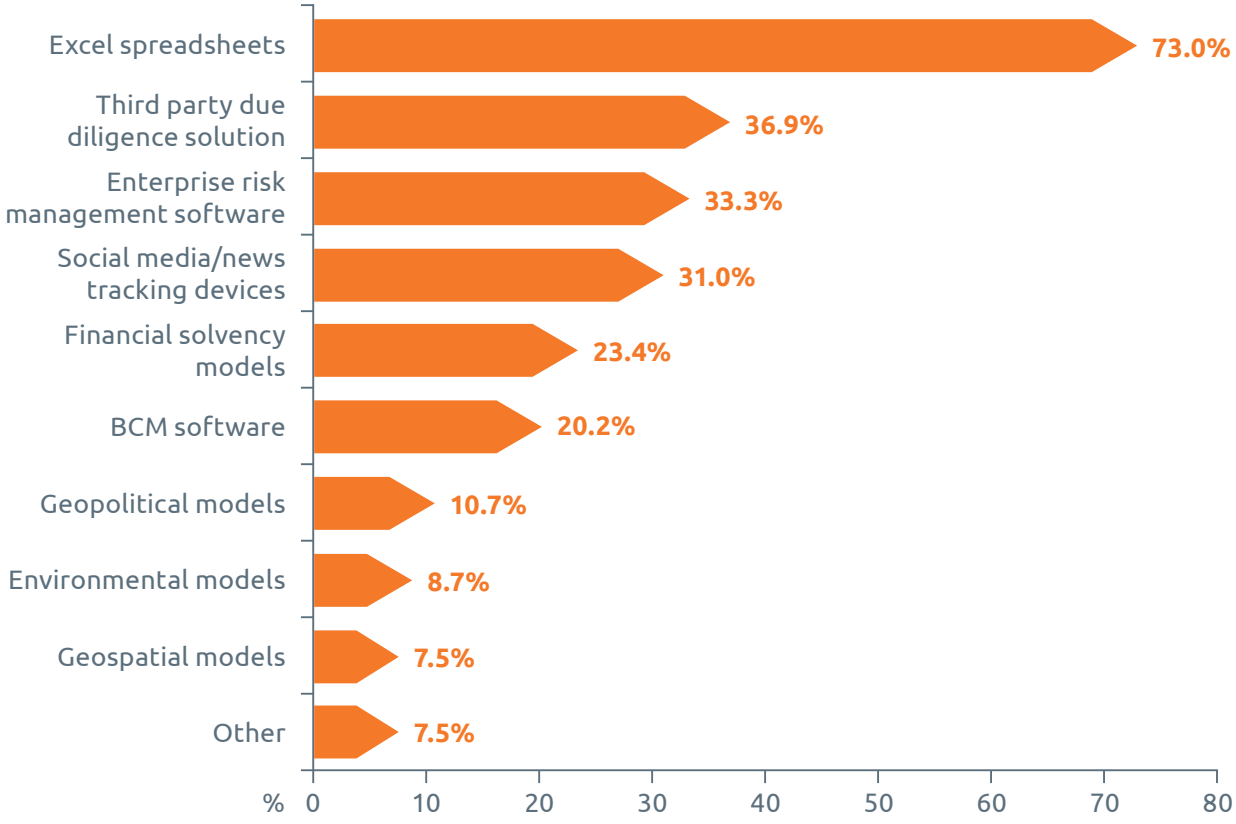
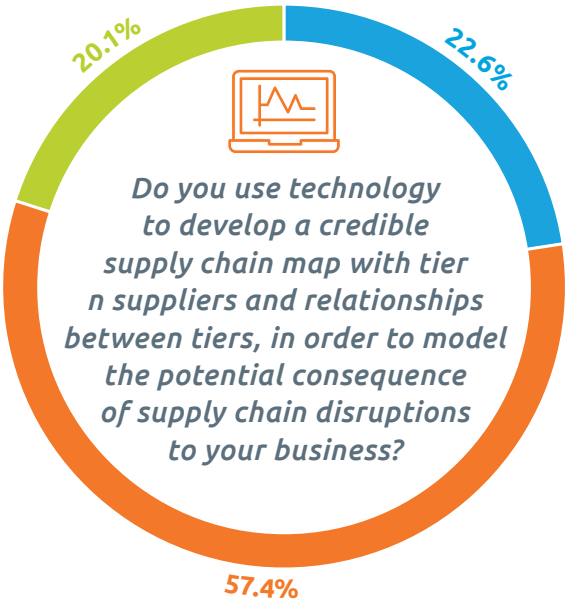


Figure 4. Types of software organizations use for supply chain management, in %

A fifth of organizations (22.6%) use technology to develop a supply chain map with tier n suppliers and relationships between tiers. The remaining 77.4% either use another method or are unsure of what is used in their organization. Good visibility and depth of the supply chain is pivotal to developing a resilient supply chain, though visibility of tier n suppliers is difficult to achieve.

Technology solutions reduce poor visibility and allow organizations to identify potential disruptions. They create a more resilient supply chain, and help organizations to improve their competitive edge such as responding to current trends. For example, it has become a global expectation for customers to know that what they are buying was sourced ethically, and technology solutions allow organizations to know this information quickly and with confidence.



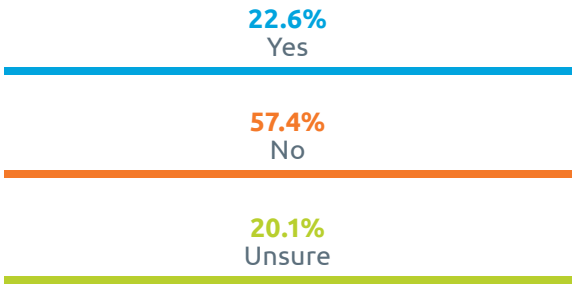


Figure 5. Use of technology to develop a supply chain map with tier n suppliers and relationship between tiers, in %

3 Frequency and origin of supply chain disruption

FREQUENCY AND ORIGIN OF SUPPLY CHAIN DISRUPTION

- **Reports of disruptions have dropped this year which may be due to fewer disruptions occurring, or because organizations are getting better at predicting them.**
- **Organizations are better at managing immediate suppliers, as tier 2 and 3 incidents increase.**

Fewer organizations experienced disruptions over the past year compared with 2018 (51.9% down from 56.5%). This decrease is encouraging: the rise in reporting of supply chain disruptions (discussed in the previous section) could have led to a greater number of disruptions recorded. Mooted reasons for slightly higher figures in last year's report include adverse weather-related disruptions: severe snowstorms across multiple continents, hurricane Harvey in North America and an extreme heatwave in Australasia. Drones also caused havoc at a number of multinational airports[2].

One of the most encouraging findings in this year's analysis is that the number of organizations suffering more than five disruptions fell by a third (from 15.0% in 2018 to 10.0%). The uptick in recording and measuring disruptions appears to be helping organizations better predict and manage them.

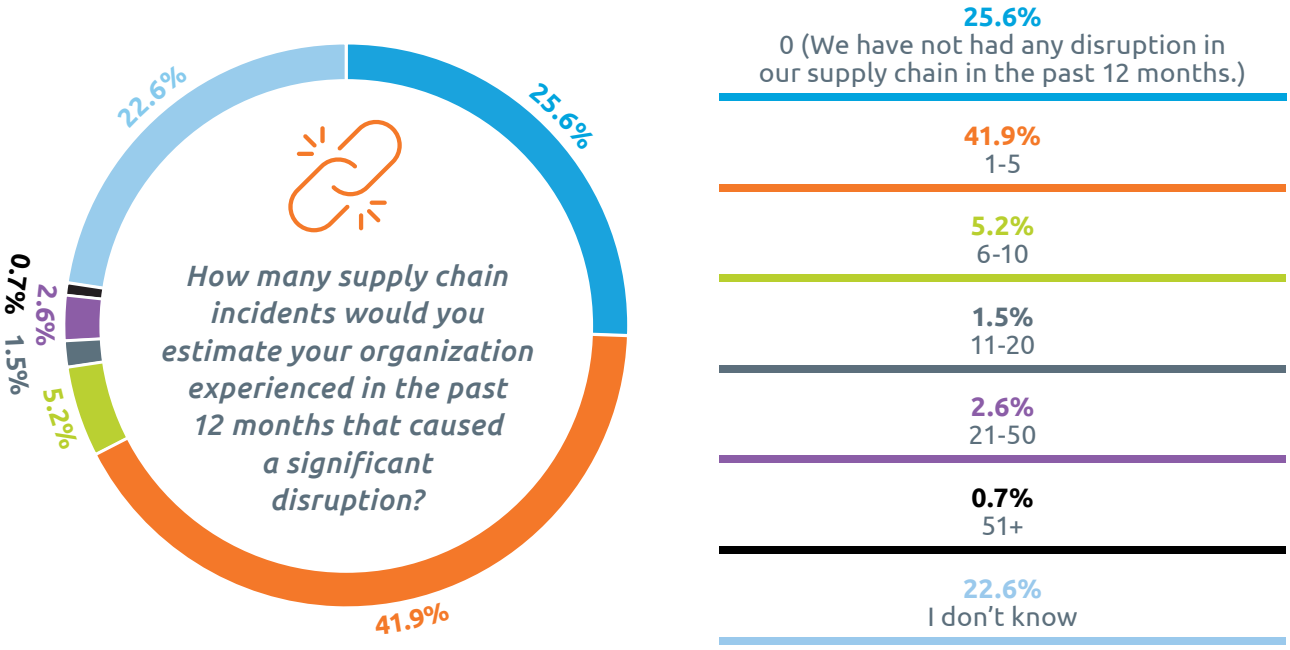


Figure 6. Frequency of supply chain disruptions in the past twelve months, in %

2 The BCI (2019), BCI Supply Chain Resilience - 10 Year Trend Analysis report

Incidents with immediate suppliers fell below 50% for the first time since 2016 (48.9%), indicating a rise in incidents deeper into the supply chain. Tier 2 incidents rose to 24.9% (from 23.2% last year), and those occurring in tier 3 and beyond rose to 12.2% (from 11.0% in 2018). This indicates that organizations are more proficient at managing incidents with their immediate suppliers. The introduction of the new Bank of England/Prudential Regulatory Authority paper is encouraging a deeper level of due diligence within the supply chain. Although currently reserved to the financial services sector in the United Kingdom, there are already discussions about adopting similar guidance both globally and across multiple sectors.

It should be noted that nearly a third of organizations (32.6%) do not analyse the source of the disruption. Some of this will be accounted for by organizations who currently do not record, report and monitor supply chain disruptions. Supply chain complexity is increasing and organizations are encouraged to go to tier 3 and beyond for their critical suppliers.

Considering the significant incidents you are aware of in the last 12 months, which of the following apply in your experience? The predominant source of disruption across all events was:

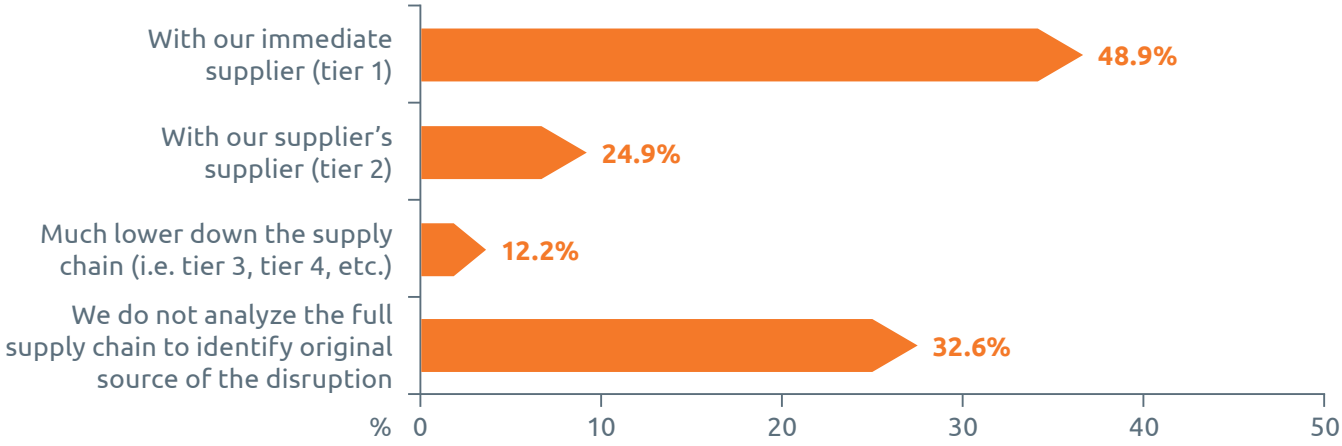
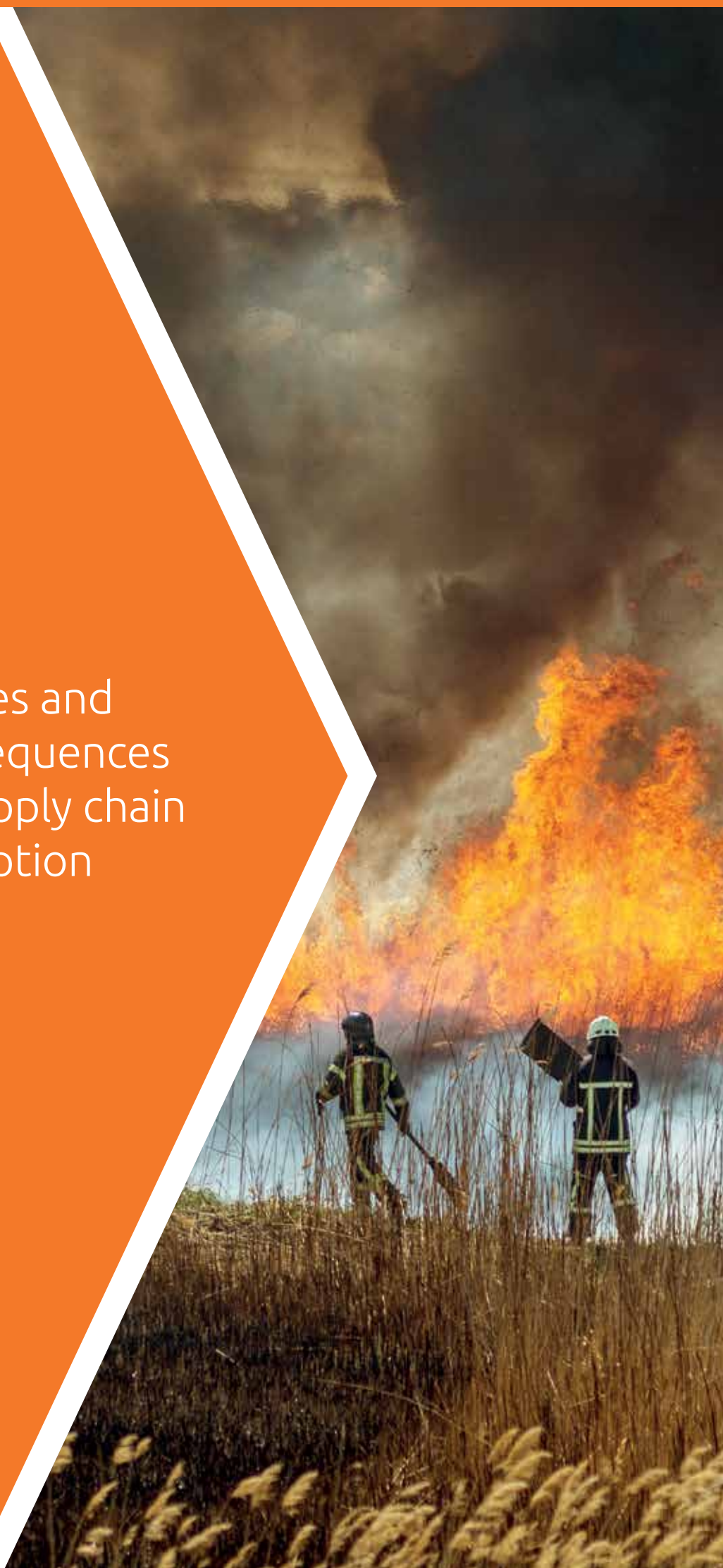


Figure 7. Origin of supply chain disruptions in the past twelve months, in %

4 Causes and consequences of supply chain disruption



CAUSES AND CONSEQUENCES OF SUPPLY CHAIN DISRUPTION

- **IT and telecoms outages remain the primary cause of supply chain disruption, with civil unrest and political change leaping up the list.**
- **Cyber-attacks and data breaches are the leading cause of concern for organizations over the next 12 months, with the threat of political change moving into third place.**
- **Black swan events such as acts of terrorism and fire now top the list of threats for the next five years.**
- **Loss of productivity is the most common impact of supply chain disruption whether looking at all disruptions or just the most major ones.**

Organizations reporting an outage has dropped below half this year to 44.1%, down from 53.5% in 2018. The top five disruptions remain unchanged, with unplanned IT or telecommunications outages topping the list with 44.1%. Second-placed adverse weather sees a drop this year with just over a third of organizations reporting this as a disruption (35.1% compared with 40.7% in 2018). About a quarter of organizations (26.1%) suffered a cyber-attack or data breach that caused a supply chain disruption compared to 30.3% in 2018. Loss of talent/key skills and transport network disruption take up fourth and fifth place with 21.2% and 15.8% of organizations respectively reporting such incidents in the past year. Both were also down on the previous year: nearly a third (30.3%) of organizations reported a disruption due to loss of talent/skills and over a quarter (25.9%) were due to transport network disruption.

The largest changes in the rankings are civil unrest/conflict and political change. Civil unrest moved from 15th position in 2018 to 10th position this year. Political change, which was not in the top 20 last year, entered the table in 11th place with 10.4% of organizations reporting this as a source of disruption.

Please indicate which of the following threats have caused any significant disruption to the supply chain of your organization in the past twelve months.

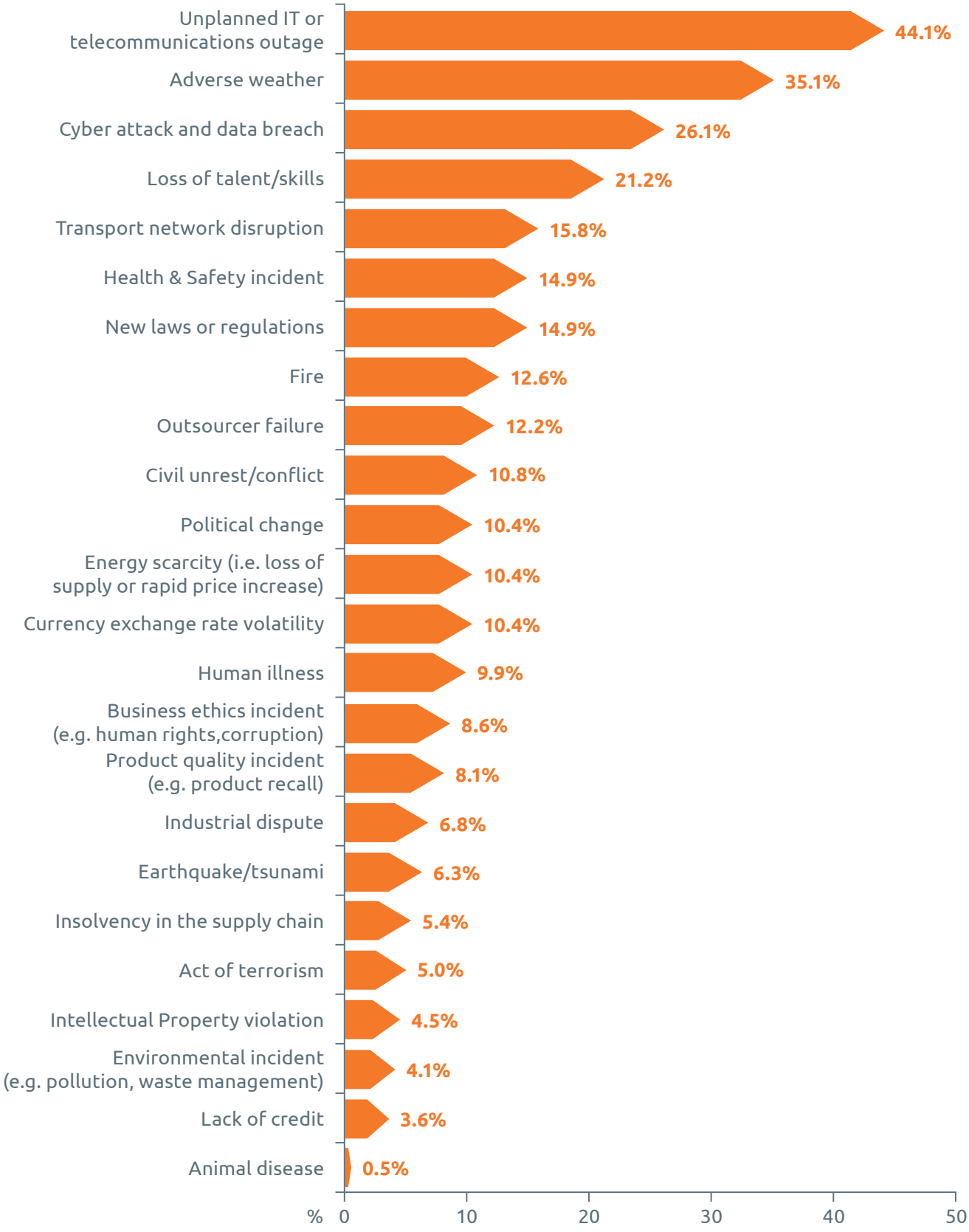


Figure 8a. Causes of supply chain disruption in the past twelve months, in %

CAUSES OF SUPPLY CHAIN DISRUPTION

The survey also examines the greatest threats to respondents' supply chains over the next 12 months. Echoing the BCI Horizon Scan Report 2019, threats perceived to be difficult to control and that receive the greatest coverage in the media rank higher than those actually encountered over the past year.

Nearly two-thirds (61.1%) are concerned that cyber-attacks and data breaches will cause disruption to their supply chain over the next year. The disconnect is apparent given that a much lower percentage of organizations (26.1%) experienced a disruption by the same cause in 2019. 50.9% are concerned about IT/telecommunications outages causing disruption to their supply chain over the next 12 months, which is much closer to the number of reported disruptions over the past year. Respondents feel more in control of their own systems and so less likely to fear a disruption, whereas cyber-attacks and data breaches are less predictable, can cause supply chain disruption, and result in significant financial and reputational cost.

World economic events continue to put pressure on supply chains. The global trade war, continuing uncertainty over Brexit and increasing environmental concerns all impact supply chains. For example, the Honda workers' union estimated the closure of its factory in Swindon, UK, could potentially impact 12,000 jobs in its global supply chain. The recent World Trade Organization ruling that will see tariffs imposed on $7.5bn of EU goods will also impact global supply chains. Even environmental issues are impacting modern supply chains: the Paris Agreement, reached in 2015, could force organizations to make drastic changes to their supply chains: McKinsey estimates that consumer-packaged goods companies will have to reduce their carbon intensity by more than 90% between 2015 and 2050 if they want to reach their targets and increase sales at a projected rate of 5.3%[3]. Such drastic changes could result in multiple insolvencies within organizations' current supply chains.

Related disruptions rank amongst the highest rated causes of concern over the next 12 months. Political change is the third highest ranked concern with 43.7% of respondents concerned that this will be a potential risk to their supply chain. New laws/regulations is ranked at fifth (40.1%), loss of talent/key skills is sixth (38.3%) with currency rate volatility and outsourcer failure at eighth (32.9%) and tenth (31.5%) respectively.

3 Bové, A, Swartz, S 2016 Starting at the source: Sustainability in supply chains, McKinsey, viewed 15 October 2019, www.mckinsey.com/business-functions/sustainability/our-insights/starting-at-the-source-sustainability-in-supply-chains

Please indicate which of the following threats are a cause of concern for the next twelve months.

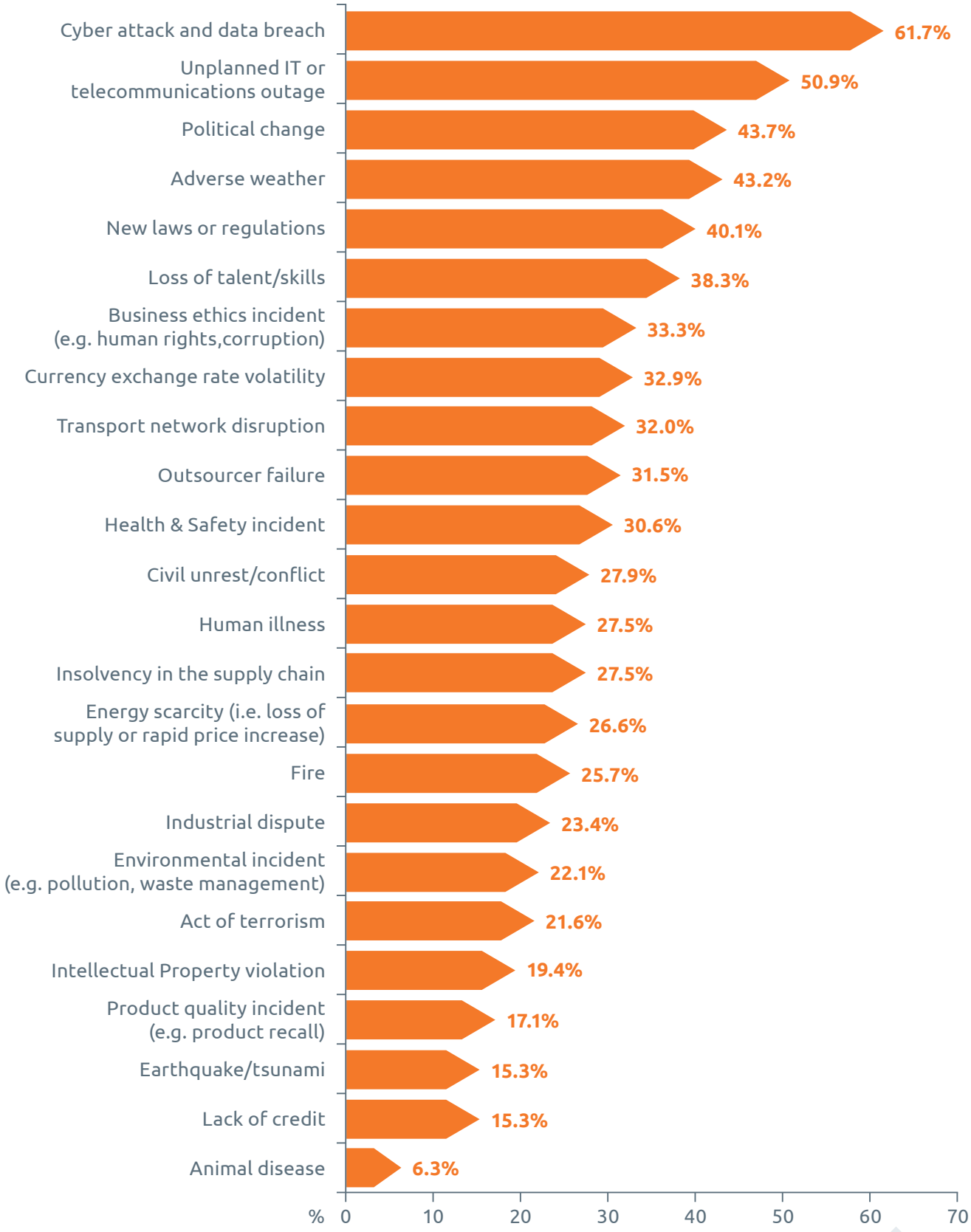


Figure 8b. Causes of supply chain disruption in the next twelve months, in %

When looking ahead five years, respondents' concerns were much less focused with geopolitical rather than organizational threats jumping to the fore. Acts of terrorism jumps from fifth position in 2018 to the top of the list (39.6%) of threats over the next five years. By its nature, it is difficult to predict where and how terrorists will act. Identifying acts of terrorism as a significant cause for concern for the future allows organizations to put in place appropriate mitigation plans.

The threat of disruption due to fire moves from tenth place (28.2%) in 2018 to second place (33.3%) in 2019. 2019 saw wildfires on multiple continents and looks to be an increasing threat due to climate change. Unsurprisingly, respondents from the Americas are the highest proportion of respondents (43.8%) to select fire as a cause for concern. Cyber-attacks and data breaches (32.4%) and unplanned IT or telecommunications outages (32.4%) move down into third and fourth places respectively, and loss of talent/skills takes up fifth place (30.6%).

Insolvency in the supply chain (29.7%) moves into the top ten this year and is joined by the new option of political change (27.9%).

Please indicate which of the following threats are a cause of concern for the next five years.

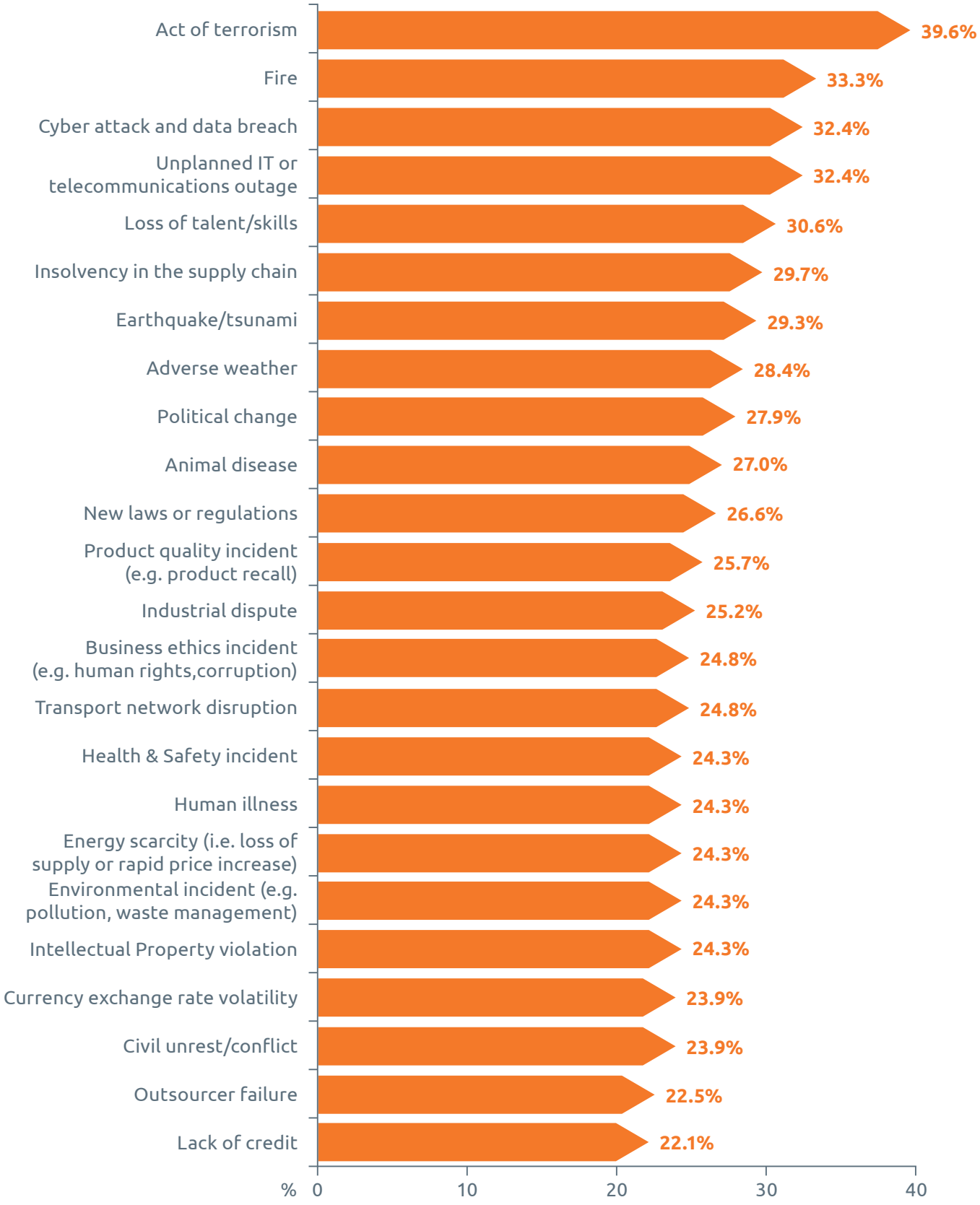


Figure 8c. Causes of supply chain disruption in the next five years, in %

IMPACT OF SUPPLY CHAIN DISRUPTION

Loss of productivity (50.3%), customer complaints (41.5%) and increased cost of working (39.9%) remain the top three most common impacts suffered by organizations due to supply chain disruptions in the past 12 months. Loss of revenue (36.1%) and service outcome impairment (33.9%) were at fourth and fifth places respectively, switching places from last year. The same is true when looking at the impacts of the most major supply chain disruptions experienced in the last 12 months by organizations (Figure 9b).

Which of the following impacts or consequences arose from any of the incidents/ disruptions experienced in the last 12 months? Tick as many as applicable.

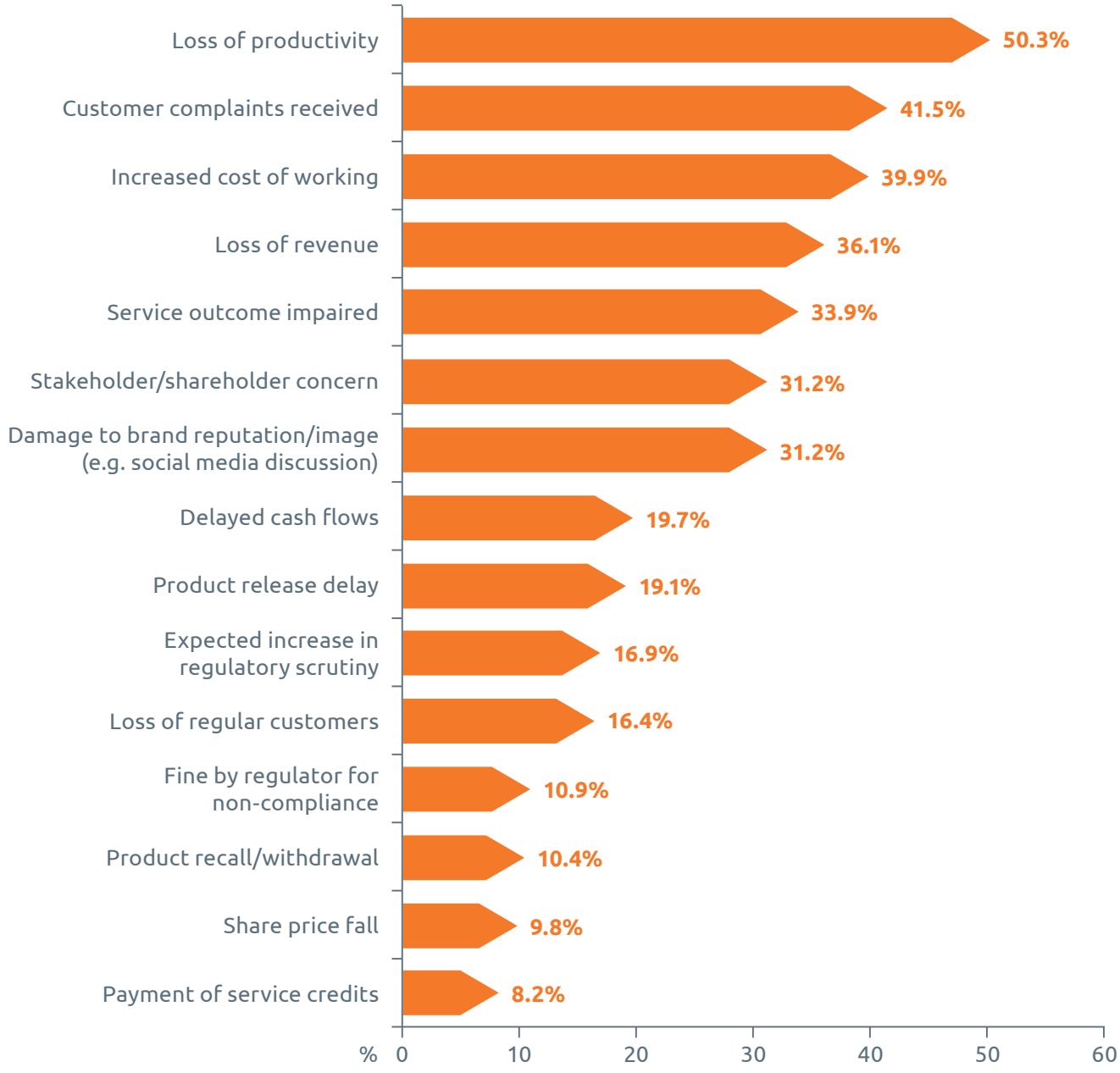


Figure 9a. Most common impacts from any of the supply chain disruptions experienced in the past twelve months, in %

*Which of the following impacts or consequences arose from **your single most major** incident/disruption experienced in the last 12 months? Tick as many as applicable.*

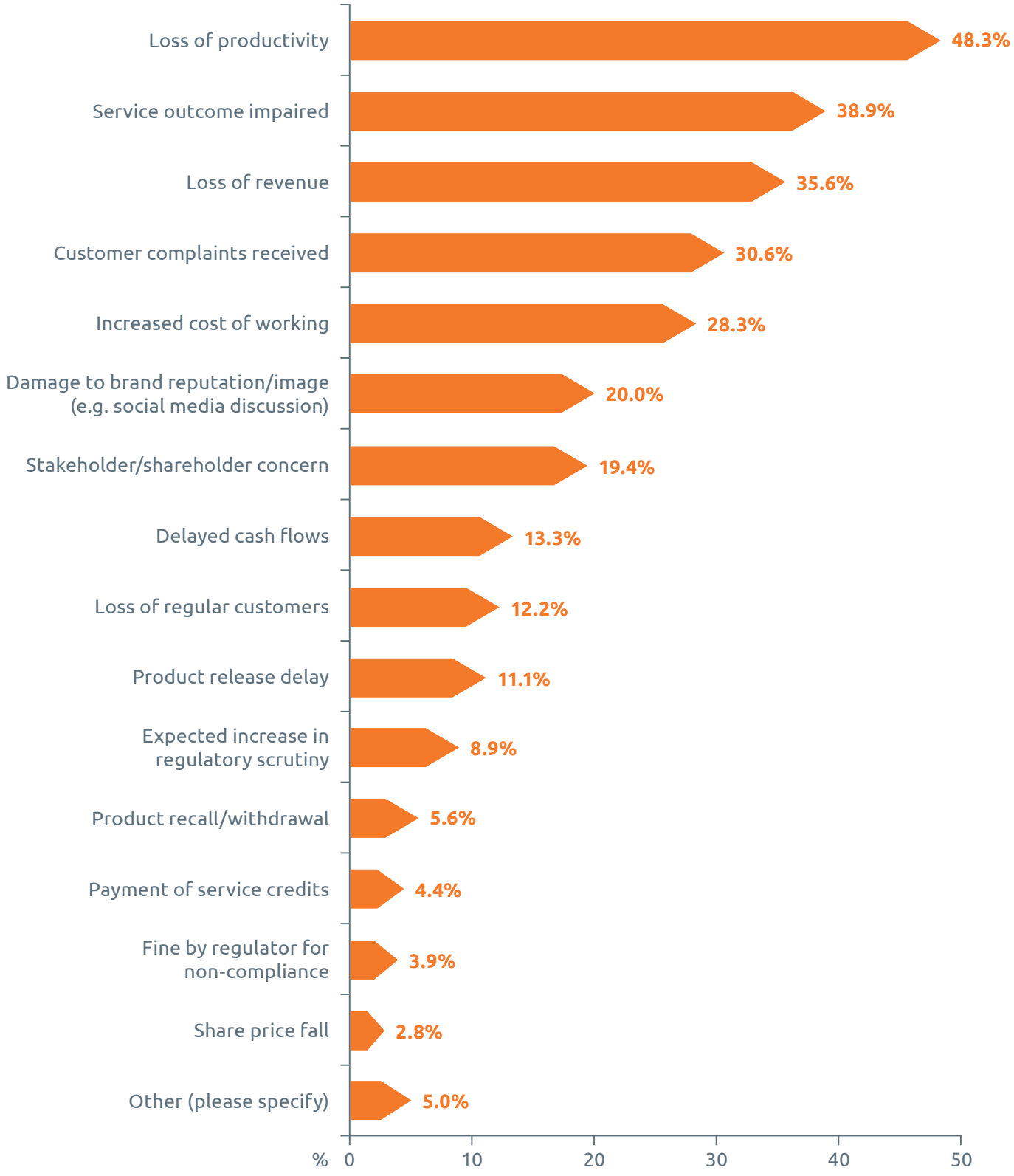
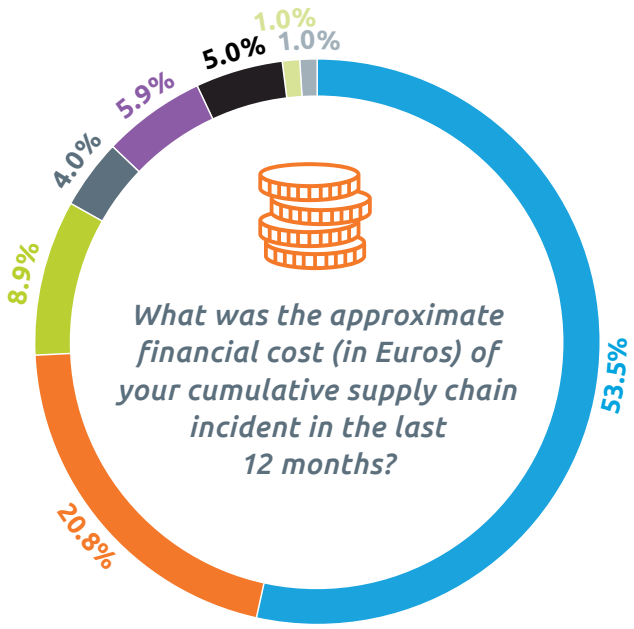


Figure 9b. Impacts from major supply chain disruption experienced in the past twelve months, in %

Quantifying the financial losses due to supply chain disruptions is vital for organizations. Knowing the exact financial losses incurred informs which remedy to go for, whether it is insurance, write off or other viable options. The average cumulative cost of supply chain disruptions experienced by organizations in the past 12 months is €10.5 million. This is calculated using the grouped mean.

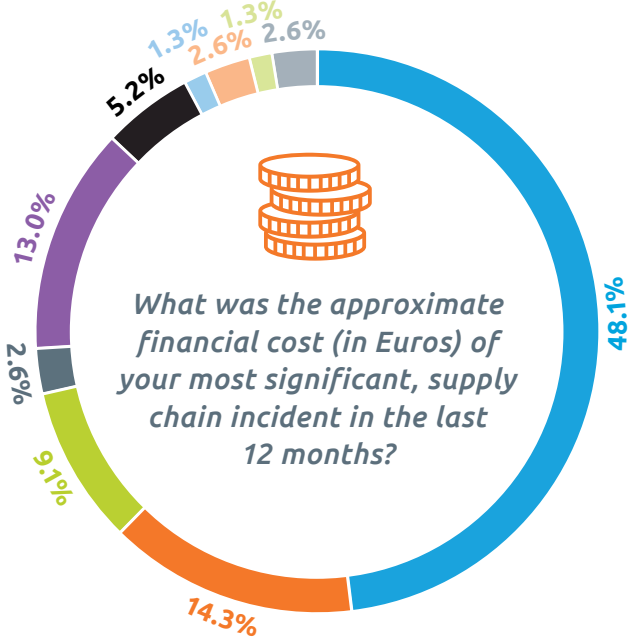
More than one in ten (12.9%) organizations suffered losses of more than one million euros. However, the figure has decreased from 34.0% to 12.9% between 2016 and 2019, a drop of over 60%. The positive downward trend has been observed since 2017, which suggests organizations are finding better ways to reduce the cost of supply chain disruptions. Conversely, this could also imply that respondents were unable to quantify their financial losses or that the full cost of more contemporary disruptions has yet to be fully realised.

Looking at the financial losses due to the single most significant supply chain disruptions in the past 12 months, more organizations suffered losses of more than a million euros compared to last year (26.0% to 23.0%), a 3.0% rise.



53.5% Less than €50,000	20.8% €50,001-250,000
8.9% €250,001-500,000	4.0% €501,000-1,000,000
5.9% €1-10 million	5.0% €11-50 million
0.0% €51-100 million	0.0% €101-250 million
1.0% €251-500 million	1.0% Greater than €500 million

Figure 10a. Cumulative financial losses due to supply chain disruptions in the last twelve months, in %



48.1% Less than €50,000	14.3% €50,001-250,000
9.1% €250,001-500,000	2.6% €501,000-1,000,000
13.0% €1-10 million	5.2% €11-50 million
1.3% €51-100 million	2.6% €101-250 million
1.3% €251-500 million	2.6% Greater than €500 million

Figure 10b. Financial losses due to the most significant supply chain disruption in the last twelve months, in %

5 Insurance uptake

INSURANCE UPTAKE

- **Organizations are slowly getting better at covering their losses but a majority are still unable to quantify the financial damage they experience.**
- **There is a significant gap between perceived risks and disruption experienced, which may in part explain why not all losses are covered.**
- **Many respondents do not find the insurance solutions available to them fit for purpose.**

Nearly half (45.2%) of organizations that experienced significant supply chain disruptions were unable to quantify how much of those losses were insured. Where the financial impact was quantified, 56.9% reported partial insured losses. This is an increase of eight percentage points from 2018 which suggests businesses are getting better at identifying potential disruptions and purchasing adequate coverage. Large businesses were better covered overall compared to SMEs who reported only half of those experiencing significant disruptions had some of their losses covered.

Professional services organizations had the highest number of losses completely uninsured (52.4%) which correlates with the sector's response to Question 19 where only 11.8% felt the market supplied sufficient insurance solutions. The percentage of businesses that had their losses fully insured remains about 13% (12.8%) for the third year running. This number was fairly consistent across all types of organizations.

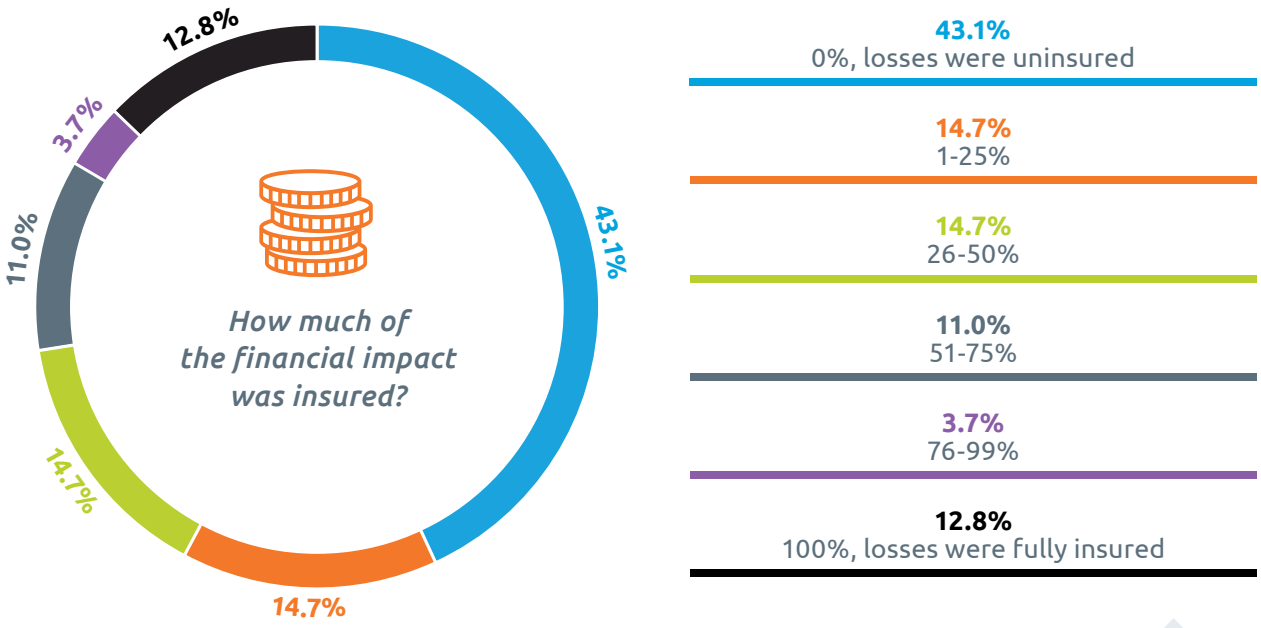
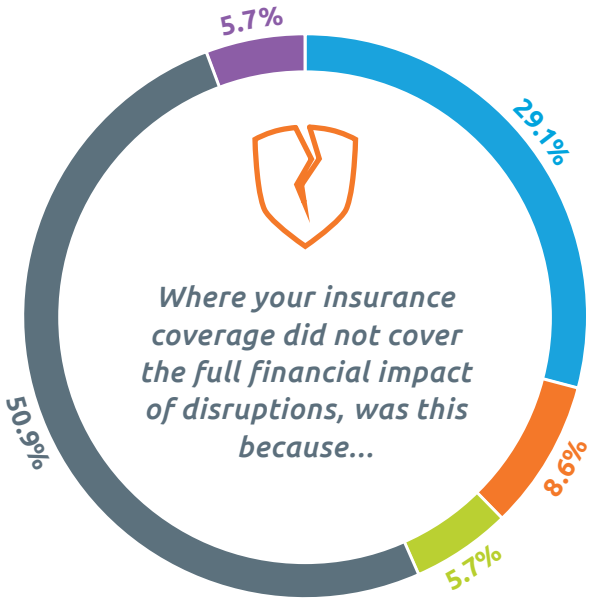


Figure 11. The proportion of the financial impact that was insured, in %

There was a small downward shift (13%) of respondents that did not fully insure their losses and did not know the reason for this (50.9% in 2019). Organizations with insurance that only covered traditional physical damage events or who were not aware of new non damage supply chain cover, dropped by just over a third compared with 2018 (from 21.9% to 14.3%). Both of these changes point to organizations getting better at understanding the risks in their supply chain and purchasing adequate insurance. In particular, 69.0% of SMEs reported that they knew why some or all of their losses were not covered, suggesting they are closer to the details of their supply chains.

Nearly a third (29.1%) of respondents said losses were not covered because a risk-based decision was made on insurance coverage requirements which suggests organizations have more work to do to bridge the assessment gap.



29.1%
A risk based decision was made on insurance coverage requirements

8.6%
You had only covered traditional physical damage events

5.7%
You were not aware of new non damage supply chain covers

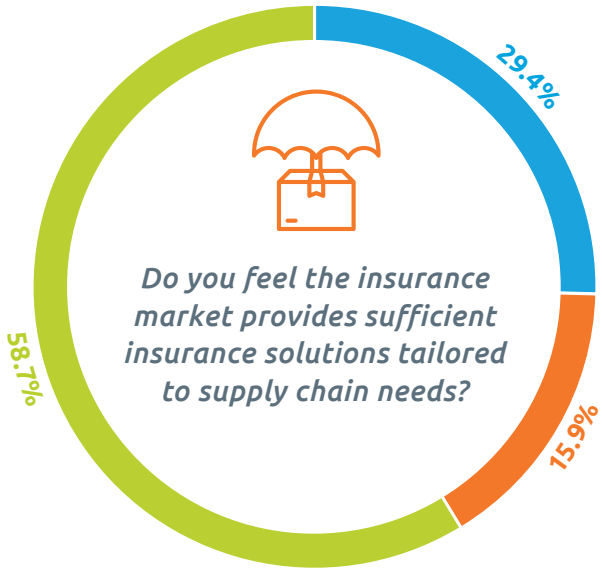
50.9%
Do not know

5.7%
Other (please specify)

Figure 12. Reason insurance coverage did not cover the full financial impact of disruptions, in %

With millions of pounds tied up in supply chains it is critical that companies secure adequate insurance. A new question this year asked respondents if the insurance market provides sufficient insurance solutions tailored to their supply chain needs. 25.4% claimed that the insurance market did provide sufficient solutions, with just 15.9% believing it did not. The majority of respondents (58.7%) said they were unsure. IT companies felt happiest with the cover available to them (40.9%) while the professional services sector were the least satisfied (11.8%).

Respondents who answered no to Question 19 were asked what area of coverage they felt was missing. A popular response was that cyber-attacks and data breaches were not adequately covered. Others felt the insurance needed more tailoring to their specific business needs.



25.4%
Yes

15.9%
No

58.7%
Unsure

Figure 13. Organizations' opinions on insurance market providing sufficient insurance solutions tailored to their supply chain needs, in %

6 Business continuity arrangements and due diligence

BUSINESS CONTINUITY ARRANGEMENTS AND DUE DILIGENCE

- **Respondents indicate a steady decline in commitment from top level management to supply chain risk**
- **SMEs are at a higher risk of experiencing more impact than large organizations after an incident, and there is more risk with higher tiered key suppliers.**
- **The higher the supplier tier, the deeper organizations will go to understand the business continuity arrangements in place.**
- **Financial and insurance services come on top for asking new and key suppliers about their BC arrangements.**
- **More organizations this year have ensured their key suppliers' BC arrangements are fit for purpose compared with last year, but it is still a small proportion.**

After a positive leap in 2017, top level management commitment has dropped for the second year running to 25.6%, its lowest level in five years. Interestingly, this correlates with the response to the question of who should be responsible for organizational resilience in the 2019 Horizon Scan Report where 26% of respondents said accountability should sit with top management.

Medium commitment remains at a high level. However, zero commitment is also at its highest since 2014. Overall this suggests that top level management are prioritising other parts of their businesses or delegating responsibility to other areas.

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

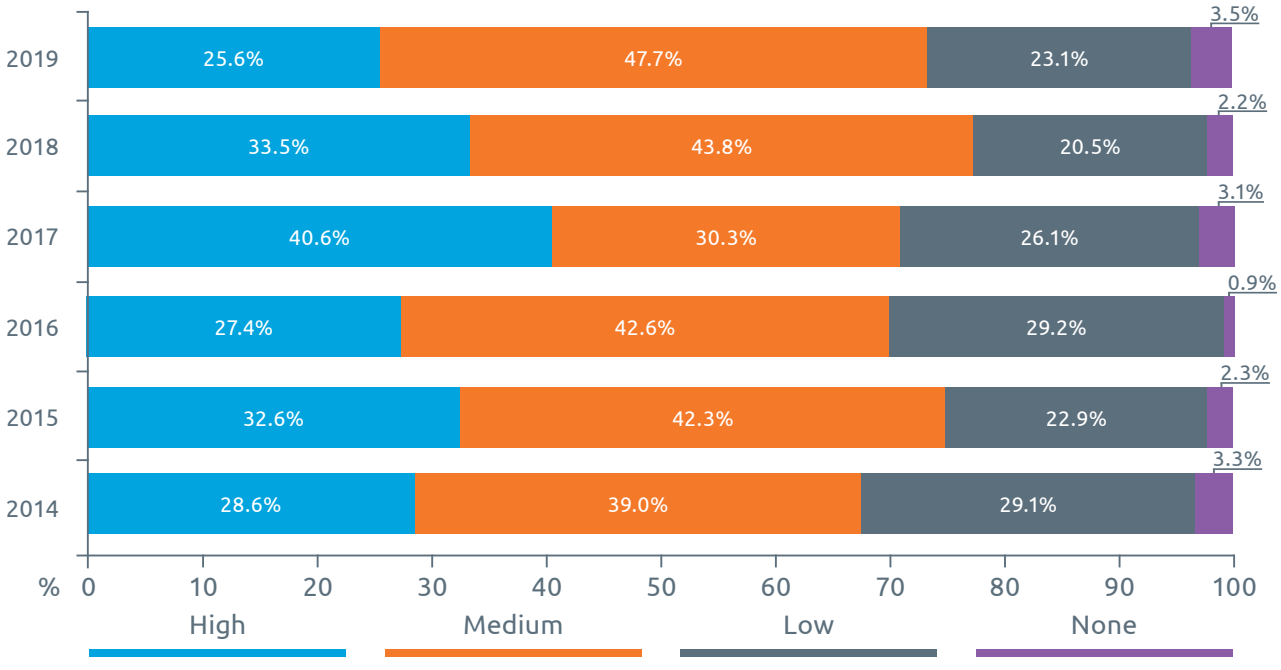
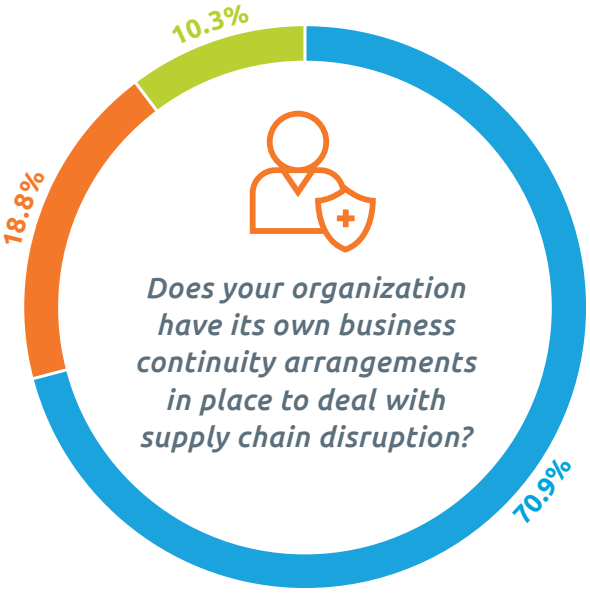


Figure 14. Top-level management commitment to managing supply chain risk, in %

It is good practice to develop strategies to counteract the impacts of likely risks without drawing too much on past events. Business continuity management (BCM) planning is an important risk mitigation technique which underpins any decision to extend or optimize supply chains[4]. Slightly less respondents (70.9%) said their organization has business continuity arrangements to deal with supply chain disruptions compared to 76.0% in 2018. There is a higher representation of business continuity (BC) professionals (75.5%) compared with non-BC professionals (67.2%). The low number may be due to respondents not having access to the necessary information, or it may not be a responsibility within their role.

A fifth (18.8%) of organizations do not have business continuity arrangements implemented to deal with supply chains. This has remained fairly static since the 2013 survey where 19.3% of organizations did not have business continuity arrangements in place to deal with supply chain disruption. Marginally more large businesses have BC arrangements (71.6%) compared with SMEs (66.7%). There is usually more impact on small businesses with 40%-60% not reopening following a major incident[5,6]. A higher percentage of those embedding technology in their supply chain management (74.6%) said they had BC arrangements in place to deal with supply chain disruption compared to those without (66.7%).



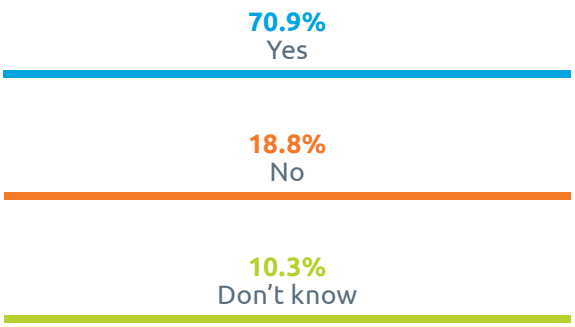


Figure 15. Having own business continuity arrangments in place to deal with supply chain disruption, in %

Two thirds (66.8%) of respondents ask both new and existing key suppliers whether they have BC arrangements in place. Financial and insurance services topped the list: 84.8% ask about key suppliers' BC arrangements, nearly double the amount in the public admin and defence sector (45.2%).

In Deloitte's 2017 global extended enterprise risk management survey, nearly three quarters (74%) of organizations have encountered a disruptive event with third parties in the last three years. A fifth have experienced a complete third-party failure or an incident with major consequences. Social media allows information to travel rapidly so issues with suppliers can progress from trivial to catastrophic at uncontrollable speed.

4 PwC 2011, Business continuity and supply chain risk, PwC, viewed 15 October 2019, www.pwc.co.uk/assets/pdf/business-continuity-and-suppy-chain-risk-april-2011.pdf

5 Chris 2019, 5 Common Risk Management Mistakes SMB Executives Make, IndustryStar, viewed 15 October 2019, www.industrystarsolutions.com/blog/2019/09/5-common-risk-management-mistakes-smb-executives-make

6 Jonathan 2018, 5 Major Supply Chain Disruptions & How to Reduce Their Impact, IndustryStar, viewed 15 October 2019, www.industrystarsolutions.com/blog/2018/09/5-supply-chain-disruptions-reduce-impact

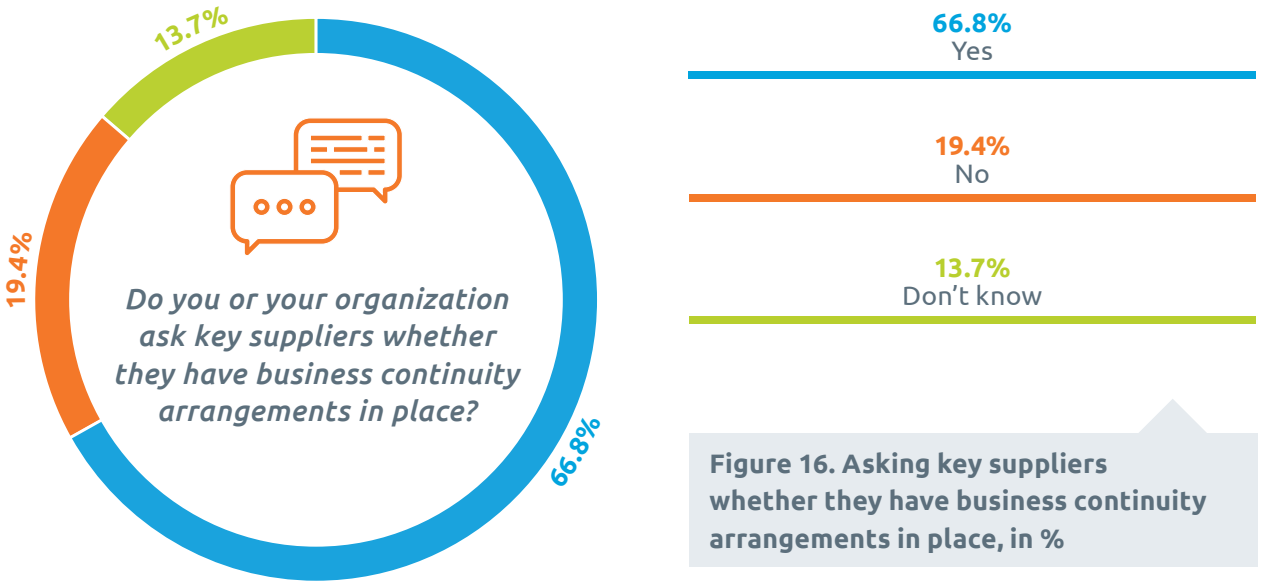


Figure 16. Asking key suppliers whether they have business continuity arrangements in place, in %

Organizations reported that on average 60% of their suppliers have BC arrangements in place to address their own needs. Financial and insurance services top the list with 76% of suppliers on average having BC arrangements in place. IT ranks second (59%), followed by professional services (52%), public administration and defence (52%) and manufacturing (50%). This is echoed in research from PwC that shows whilst most manufacturers maintain contingent supplies, these tend to provide cover for short-term disruption only[7]. It is important that both organizations and their key suppliers have contingency plans in place for worst case scenarios, and to understand risk scenarios will be viewed differently depending on the psychological risk tolerance of each stakeholder[8].

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

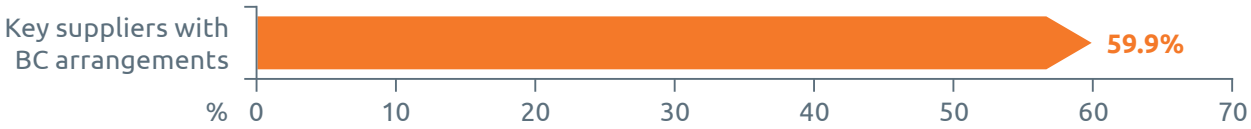


Figure 17. Average percentage of key suppliers with business continuity arrangements in place, in %

Organizations can use various sources to gain better perspective about the BC arrangements of key suppliers. In first place, 64% of organizations said that they look at the business continuity plan and identify the responsible officer. Unsurprisingly, more BC professionals than non-BC professionals said that they require a BC plan and details of who holds responsibility for it (69.3% and 59.6% respectively). Joint second is certification or alignment to a recognised standard such as ISO 22301, and compliance with recognised good practice (e.g. BCI's Good Practice Guidelines).

Only 13% said they do not collect any information. One key issue is understanding the rules and regulations you actually need to follow: "A lot of times, businesses don't even know what they're supposed to comply with," Glenn Yauch, Deloitte Risk and Financial Advisory principal with Deloitte & Touche LLP's Strategic and Reputation Risk practice.

7 PwC n.d., Supply chain resilience, PwC, viewed 15 October, PwC, www.pwc.com/us/en/services/consulting/risk-regulatory/supply-chain-resilience.html

8 Deloitte n.d., Trend report: Supply chain resilience, Deloitte, viewed 15 October, www2.deloitte.com/us/en/pages/risk/articles/improving-supply-chain-resilience.html

What information do you seek in order to better understand the business continuity arrangements of key suppliers? We look for:

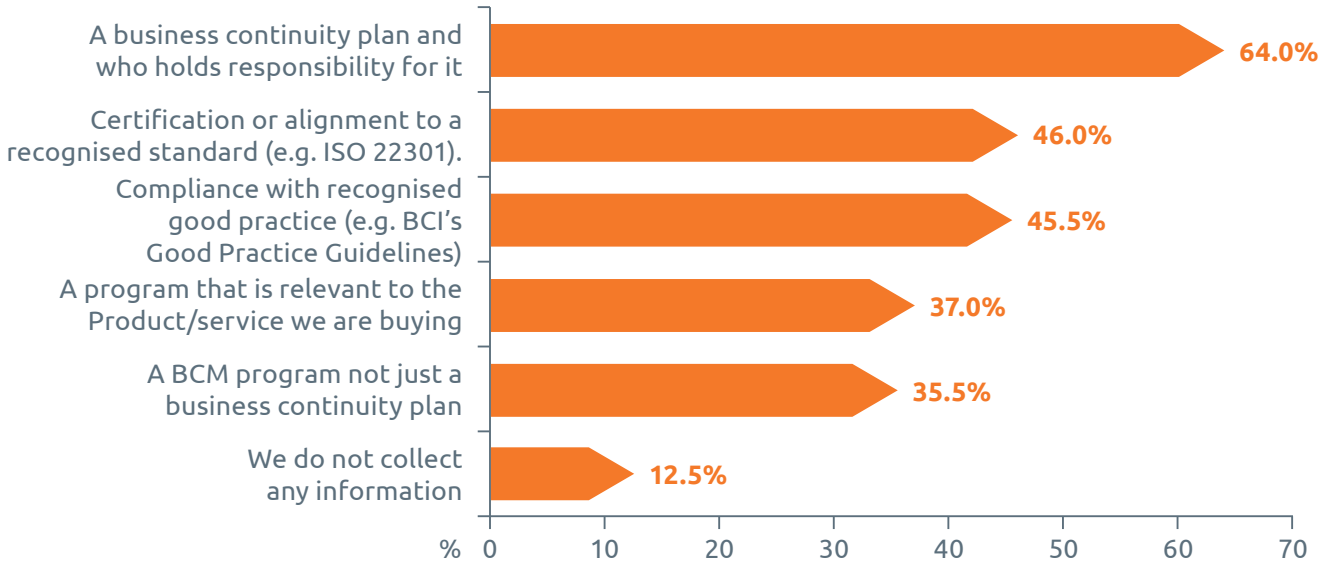


Figure 18. Information organizations most commonly seek to understand the business continuity arrangements of key suppliers, in %

Organizations can collect information in several ways to gain a better understanding of the key supplier's BC arrangements. Just over half (55.1%) provide the key suppliers with a self-assessment questionnaire. Looking at the responses of BC professionals, 63.6% provide key suppliers with a self-assessment questionnaire and 54.5% require copies of supplier documentation. For other professionals, 59.6% provide key suppliers with a self-assessment form and 46.3% require copies of supplier documentation.

How do you collect this information? We...

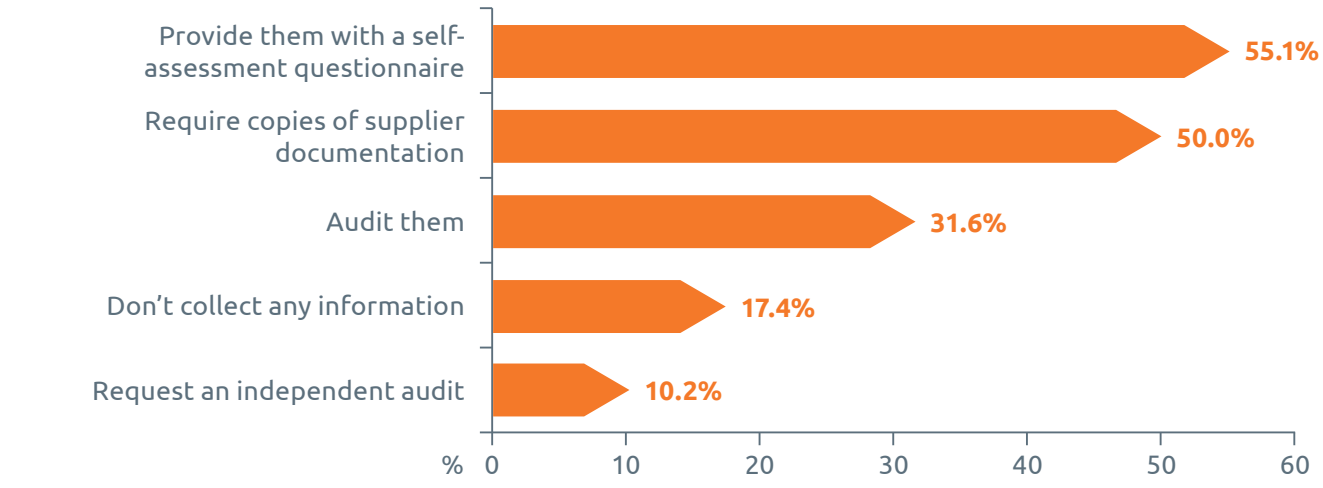


Figure 19. Methods used by organizations to collect information on key suppliers' business continuity arrangements, in %

Almost a third (31.3%) have business continuity as an integral part of the procurement process from the start, down from 36.6% in 2018. Organizations that include business continuity in contractual discussions when the contract risk has been deemed high increased from 30.9% to 37.5%. A fifth (20.3%) of organizations do not include business continuity as part of their supplier contractual discussions.

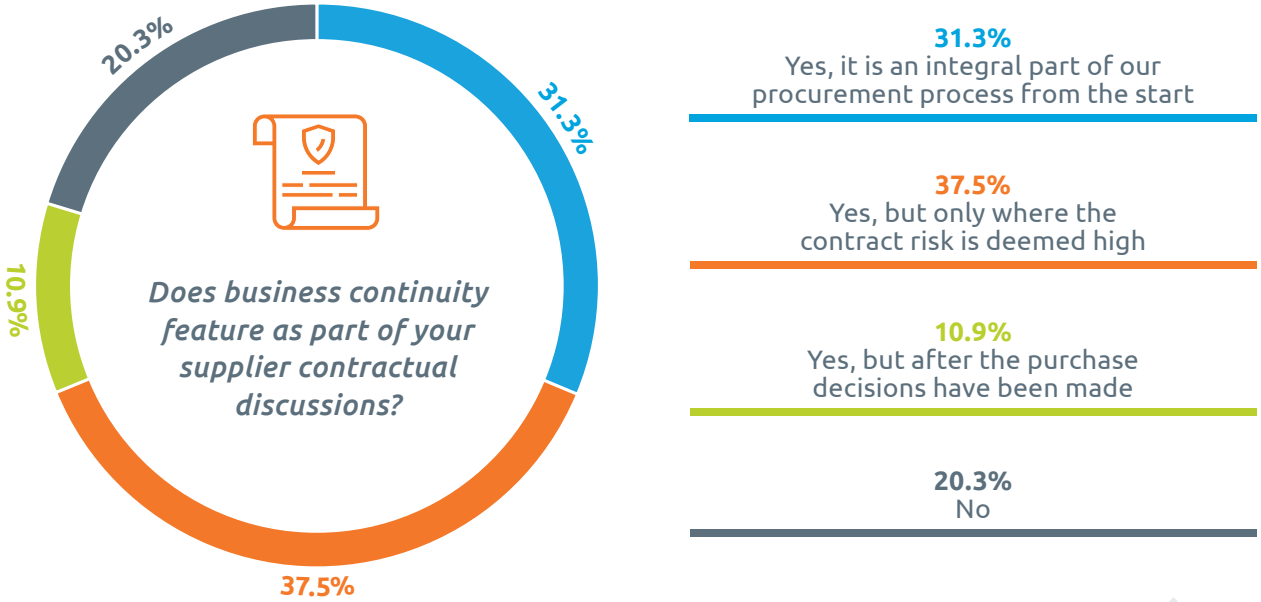


Figure 20. Percentage of organizations for whom BC features as part of the organizations' contractual discussion with suppliers, in %

The analysis shows that 41.3% of organizations say they seek to understand the BC arrangements for all tier 1 suppliers. This tier is high risk for organizations and experiences the majority of major disruptions: 48.9% in 2019. For tier 2 suppliers, this number drops to 13.0%, with most respondents (34.6%) saying they seek to understand BC arrangements for only some of these suppliers and 15.7% of organizations do not look for any.

The further down the supply chain, the less organizations focus on suppliers' BC arrangements: 28.2% of organizations never seek to understand the BC arrangements of their tier 3 key suppliers, going down to 39.4% for tier 4 suppliers. Supplier assessments must be ongoing and structured to obtain meaningful data. It is a leading practice to assess riskier suppliers more frequently than those considered less of a risk; essentially taking a risk-based approach[8]. When there is a need to increase business from a key supplier, or if a partner experiences a problem, it is good practice to reassess the risks of that supplier. It is also important to factor sub-tier suppliers as they can cause disruption. Supplier monitoring can be carried out with technological-enabled servers for planning and assurance[9].

8 Deloitte n.d., Trend report: Supply chain resilience, Deloitte, viewed 15 October, www2.deloitte.com/us/en/pages/risk/articles/improving-supply-chain-resilience.html

9 Jonathan 2018, 5 Reasons the Blockchain Could Improve Your Supply Chain, IndustryStar, viewed 15 October 2019, www.industrystarsolutions.com/blog/2018/06/5-reasons-blockchain-improve-supply-chain

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

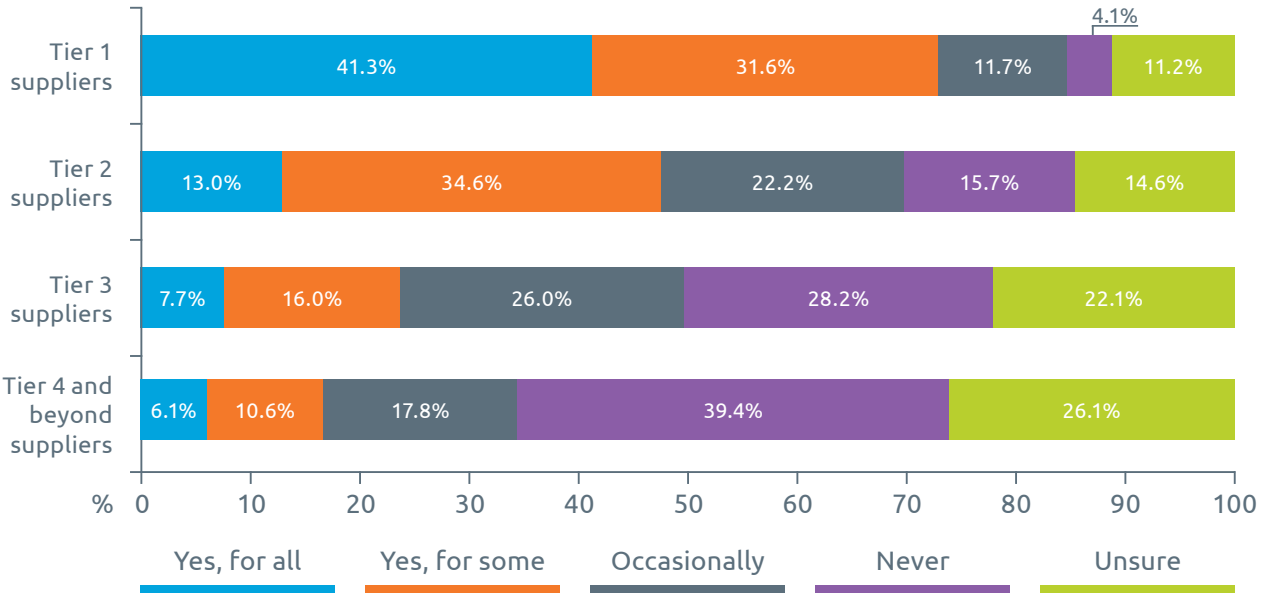


Figure 21. Understanding the business continuity arrangments of key suppliers, in %

It is important that key suppliers' BC arrangements are checked and validated to ensure they are fit for purpose, and there are various methods organizations can use to carry out these activities. It is alarming to see that 54.3% of organizations have not checked or validated their key suppliers' plans, and that this number has increased since 2018 (46.7%). The reason for this is often down to a lack of knowledge or training – key suppliers' BC arrangements should be part of their own organization's business impact analysis and business continuity planning.

About a third (35.0%) of respondents document outcome reports and action plans, whilst just 22.3% validated the BC documents through exercises which could be a tabletop or joint exercise. Scenario-based exercises are a key tool used to identify and manage challenges and opportunities that shape a supply chain resilience strategy[10]. It is preferable to test plans before they are needed[11].

Workshops and/or awareness campaigns ranked lowest with 14.2% of respondents using these tools to validate key suppliers' BC arrangements. These activities can ensure BC staff understand how key suppliers' BC arrangements work in practice to minimise risk during a BC incident. It is also important that staff are educated in best practice such as having the ability to recognise suspicious behaviour and stopping unwanted emails getting far into the organization.

10 PwC n.d., Supply chain resilience, PwC, viewed 15 October, PwC, www.pwc.com/us/en/services/consulting/risk-regulatory/supply-chain-resilience.html

11 Crane, W 2019, Is Your Supply Chain Ready for the Next Downturn?, IndustryStar, viewed 15 October 2019, www.industrystarsolutions.com/blog/2019/08/your-supply-chain-ready-next-downturn

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

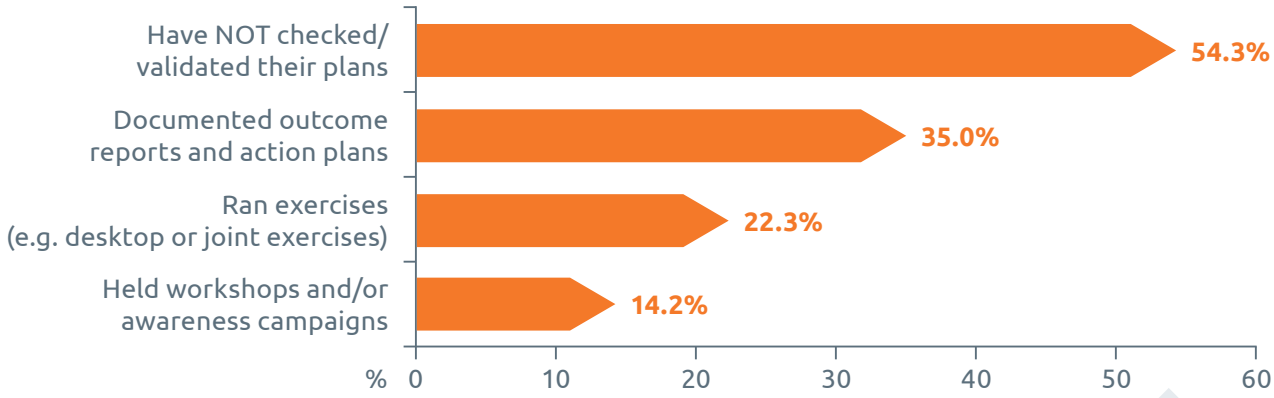


Figure 22. Validating suppliers' business continuity arrangements might work in practice, in %

There may be times during the BCM cycle (even after the initial review) when BC requirements with key suppliers need to be reviewed. This might be after a BC incident which resulted in a supplier not being able to deliver a key product in the time required. It is important to identify key dates in the review programme, depending on the tier of the supplier and what they provide to the organization. 41.7% of organizations review their BC requirements with key suppliers and capabilities to meet them at contract renewal. Only 20.6% of organizations review their business continuity after a major change event to the organization or the key supplier. This percentage is slightly higher than organizations that never review BC requirements with key suppliers and their capabilities to meet them (17.6%). In comparison with last year's survey, there was only a marginal increase in responses, with the largest increase in respondents selecting the 'a new, significant external risk/ threat is identified' option.

How often do you review your business continuity requirements with key suppliers and their capability to meet them? Tick as many as applicable.

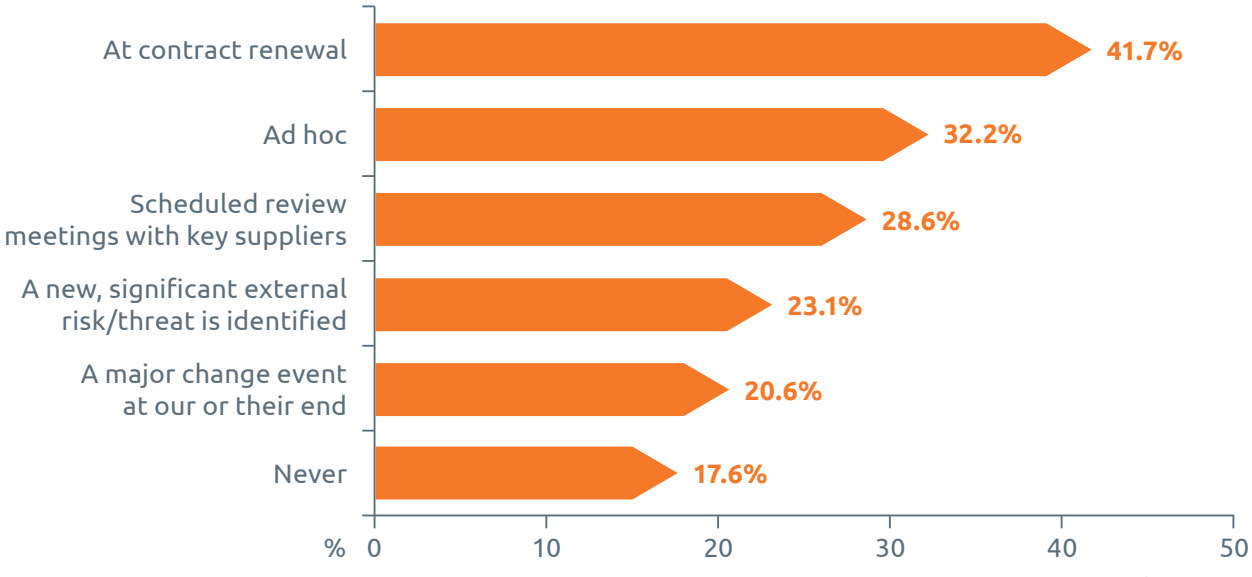
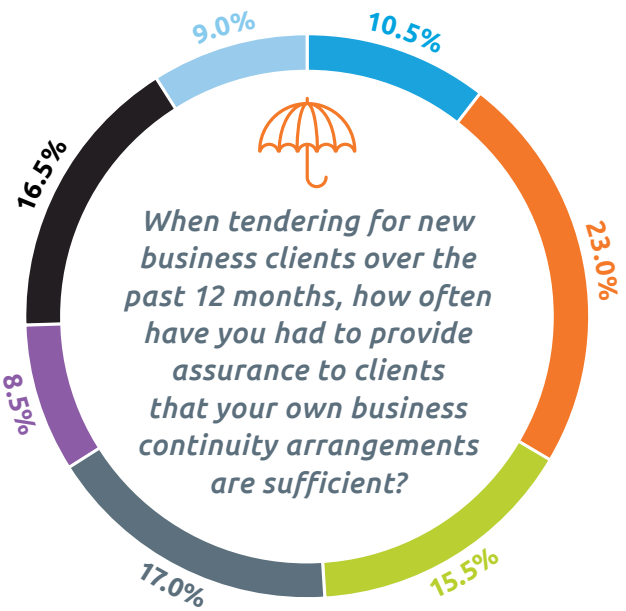


Figure 23. Frequency of supplier BC arrangement review by purchasing organizations, in %

Over the past 12 months, only 23.0% organizations have had to provide assurance to new clients that their business has sufficient BC arrangements for the majority (51-99%) of tenders they have submitted. Whilst this is the highest response, it is still a relatively low percentage. Perhaps of more concern was the second highest response: 17.0% of those questioned only rarely (0-24% of tenders) have to provide assurance to new clients that BC arrangements were sufficient. Encouraging however, in comparison with last year's survey, those that were asked the majority of the time have increased, and those asked rarely have decreased.

Business leaders who spend time and energy to engage academia and develop a standardized education protocol can ensure their supply chain networks remain cutting edge. This includes standardized supply chain management training in areas such as end-to-end transparency and risk and reward trade-offs, which ensures all participants are aligned in regard to day-to-day operations. It also enables businesses to hold partners to standards such as ISO22301. This transparency can only improve communication across the board[10].



10.5%
Every tender/proposal (100%)

23.0%
Majority (51-99%)

15.5%
Sometimes (25-50%)

17.0%
Rarely (1-24%)

8.5%
Not at all (0%)

16.5%
Don't know

9.0%
Not applicable

Figure 24. How frequent organizations have had to provide assure new business clients that their own business arrangments are sufficient, in %

10 PwC n.d., Supply chain resilience, PwC, viewed 15 October, PwC, www.pwc.com/us/en/services/consulting/risk-regulatory/supply-chain-resilience.html

TOP 20 LESSONS FOR PRACTITIONERS

By Catherine Thomas MBCI (Research and Insight Manager, BCI)

1. Ensure staff have a baseline understanding of business continuity and supply chains to put into their plans. This can be achieved by training sessions and focusing on specific areas of supply chain disruption.
2. Ensure staff understand the diversity of key suppliers' organizations, and where the risks are if there is an issue with the supply chain.
3. Research the historical and political climate of geographical locations of key suppliers.
4. Build good working relationships with internal departments such as IT, and ensure their plans are incorporated.
5. Build strong stakeholder relationships with key suppliers beyond tier 2.
6. Ensure there is a diverse network of suppliers and distribution networks.
7. Ensure the business continuity plan and related documents complement both the organization and the key suppliers and align with the organization's behavioural values.
8. Ensure staff are aware of guidance such as the ISO22301 and that the plans align with this guidance.
9. Sign up to apps and alerts that may help identify potential disruptions from the perspectives of both the organization and its key supplier e.g. a weather alert app or a logistics locator.
10. Implement an auditing programme to ensure key suppliers have business continuity plans in place.
11. Ensure your own organization has an auditing programme in place, and that it is adhered to.
12. 12.2% of disruptions to supply chains occur in tier 3 and beyond, yet 67.6% do not seek to understand the business continuity arrangements of key suppliers in those tiers. Ensure these are included in business continuity planning.
13. Read key suppliers' business continuity plans to ensure you understand them and that they complement your organization's own business continuity plans.
14. Set up a training programme for both internal staff and external key suppliers.
15. Devise an exercise programme to run through scenarios of the plans, both internally and externally, to ensure they are fit for purpose and encompass all potential outcomes in the case of a business continuity disruption.
16. Review historical supply chain disruptions and carry out risk assessments for short- and long-term horizon scanning.
17. Ensure engagement from top management and business leads.
18. Prepare and implement strategies from both top management and business leads to ensure minimal disruption to the organization.
19. Be transparent with key suppliers about potential risks and ways to minimize them.
20. Communicate internally and externally if there is a supply chain disruption or a near miss. The event can be reviewed as part of the business continuity plan if it has not been previously covered.

7

Annex

Number of respondents

352

Number of sectors

15

Number of Countries

65

Number of functional roles

13

What sector does your company belong to?

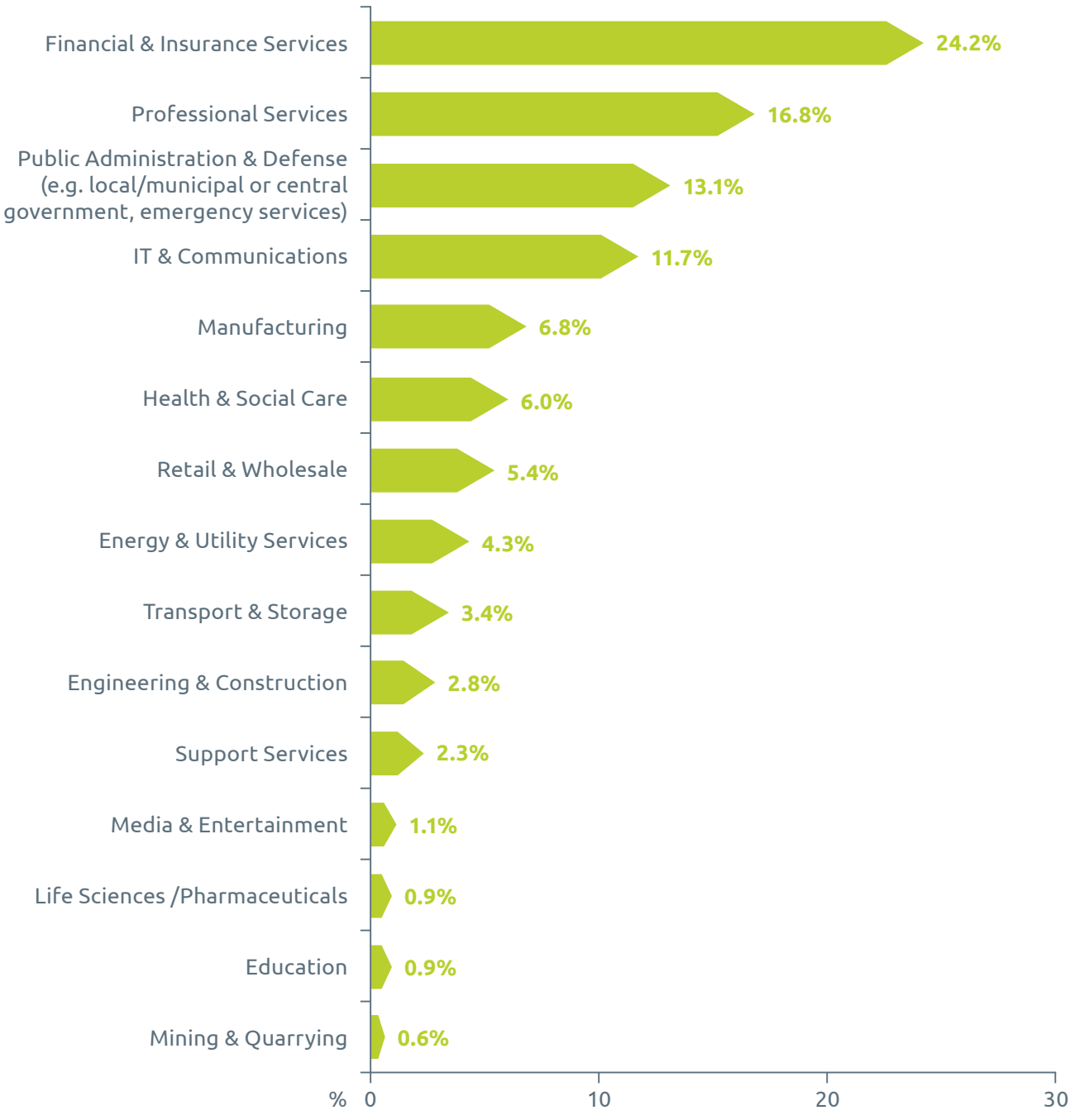
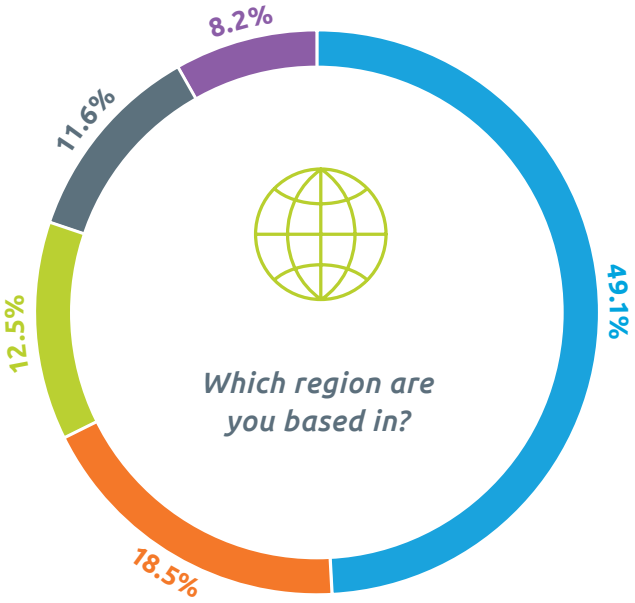


Figure 25. What sector does your organization belong to?



49.1% Europe

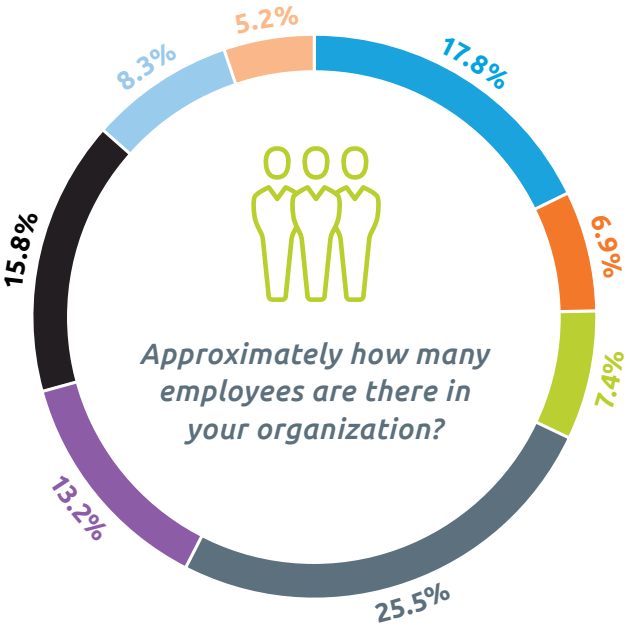
18.5% Americas

12.5% Middle East and Africa

11.6% Asia

8.2% Australisia

Figure 26. Which region are you based in?



17.8% 1-250

6.9% 251-500

7.4% 501-1000

25.5% 1,001 – 5,000

13.2% 5,001 – 10,000

15.8% 10,001 – 50,000

8.3% 50,001 – 100,000

5.2% More than 100,000

Figure 27. Approximately how many employees are there in your organization?

9.9% Less than €1 million

5.7% €1-10 million

2.0% €11-25 million

3.4% €26-50 million

5.1% €51-100 million

7.4% €101-250 million

3.4% €251-500 million

7.7% €501 million-€1 billion

15.6% €1-10 billion

7.7% €11-50 billion

2.8% Greater than €50 billion

29.3% I don't know

Figure 28. Please let us know the approximate global annual revenues for your organization (if known)

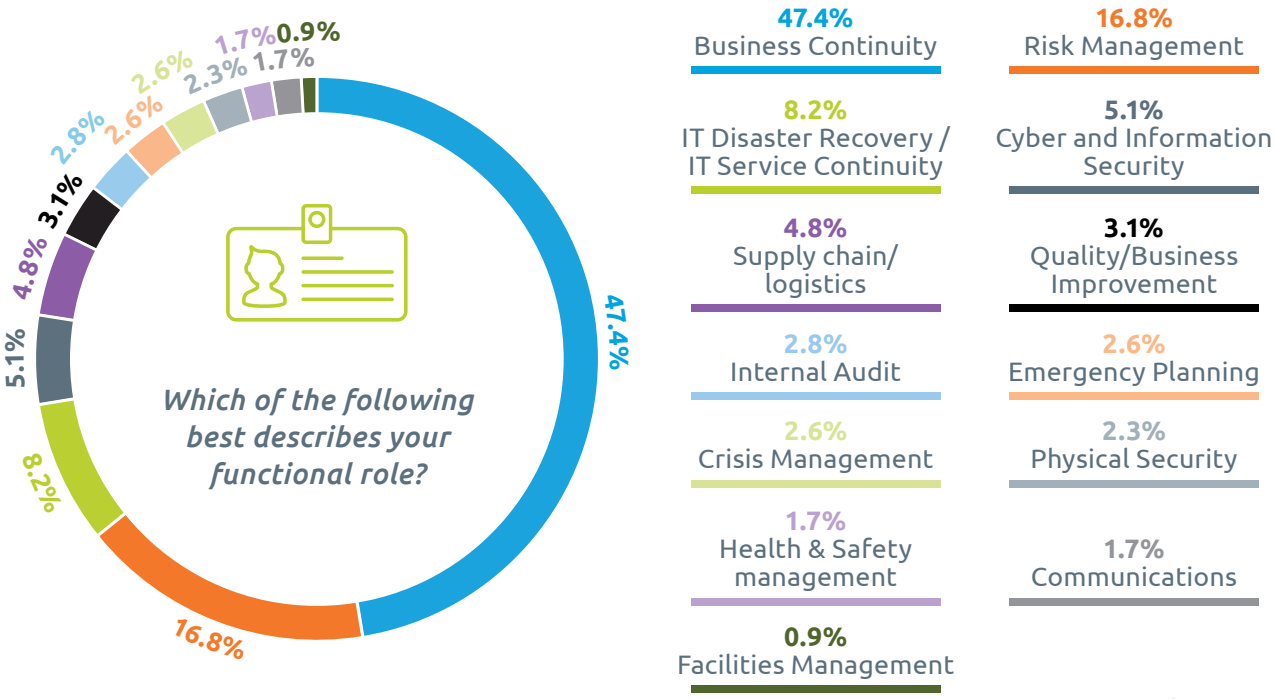


Figure 29. Which of the following best describes your functional role?

Rank	Europe	Americas	Middle East and Africa	Asia	Australisia
1	Unplanned IT or telecommunications outage **(42.6%)**	Adverse weather **(52.1%)**	Unplanned IT or telecommunications outage **(36.0%)**	Adverse weather **(28.6%)**	Unplanned IT or telecommunications outage **(65.0%)**
2	Adverse weather **(29.7%)**	Unplanned IT or telecommunications outage **(52.1%)**	Loss of talent/ skills **(36.0%)**	Unplanned IT or telecommunications outage **(28.6%)**	Adverse weather **(50.0%)**
3	Cyber attack and data breach **(20.8%)**	Cyber attack and data breach **(33.3%)**	Cyber attack and data breach **(32.0%)**	Civil unrest/ conflict **(21.4%)**	Cyber attack and data breach **(40.0%)**
4	Loss of talent/ skills **(19.8%)**	Health & Safety incident **(22.9%)**	Outsourcer failure **(32.0%)**	Transport network disruption **(21.4%)**	Health & Safety incident **(30.0%)**
5	New laws or regulations **(13.9%)**	Civil unrest/ conflict **(18.8%)**	Political change **(28.0%)**	Cyber attack and data breach **(17.9%)**	Fire **(25.0%)**
6		Loss of talent/ skills **(18.8%)**			New laws or regulations **(25.0%)**
7					Loss of talent/ skills **(25.0%)**
8					Outsourcer failure **(25.0%)**

Table 3. Causes of disruption by region

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.

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Catherine comes from a resilience background in central and local government with a particular focus in public health and community incident response. She holds a Masters degree in Forensic Investigation from Cranfield University and a BSc in Forensic Investigation from Canterbury Christ Church University. She has a background in research from an analytical and qualitative perspective and has a particular interest in delving into the qualitative detail behind our surveys through investigative research

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Kamal has more than five years' experience as a researcher in economics, working on economic growth and development. He previously worked as a Research Fellow/Economist at the United Nations, where he was attached to the Macroeconomic Policy Division and was responsible for conducting policy analysis and providing technical assistance to Member States. He holds a PhD in Economics (University of Hull) and a Masters in Development Economics and Policy (University of Manchester).

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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.

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