



SUPPLY CHAIN RESILIENCE

10 YEAR TREND ANALYSIS



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Foreword

BCI

The BCI's 25th Anniversary is not the only milestone we are celebrating in 2019. This year also marks the 10th anniversary of the BCI Supply Chain Resilience Report.



This provides the perfect opportunity for the BCI's Thought Leadership team to look back over the responses contained in successive reports produced annually since 2009. The Supply Chain Resilience - 10 Year Trend Analysis Report contains the trends and key findings that have emerged over the last decade.

Back in 2009, much of the world was still emerging from the aftermath of the Global Financial Crisis, and the responses provided in the original Supply Chain Resilience Report reflect this. Since then, as the influence of globalisation has spread, supply chain risks have risen in significance. Many organizations have seen operating activities become more distributed as well as an increased reliance on third party organizations for products and services.

A review over such an extended timeframe allows us to reflect on how the Business Continuity industry has evolved and adapted to a changing threat environment. The Supply Chain Resilience - 10 Year Trend Analysis Report mirrors the findings of the BCI's most recent Horizon Scan report and highlights how novel disruptive threats have grown out of the new technologies that drive economic activity. For example, the report illustrates how supply chains are just as vulnerable as other organizational activities to the disruptive impacts of a cyber-attack or data breach.

The report also reminds us that the consequences of supply chain disruption are not confined to large global organizations. Over the 10-year period, respondents identified delayed cash flow as the fastest growing consequence of supply chain disruption. The financial impact of an interruption to supply continuity can quickly cause material damage to SME organizations which often have to operate with limited funding resources.

Encouragingly, the report confirms that most organizations are aware of these risks and are taking steps to enhance their supply chain resilience. The analysis indicates that organizations are performing due diligence deeper into their supply chains, not just addressing direct supplier relationships, but going further to consider second, third and even fifth tier supply dependencies.

I would like to thank Zurich, the BCI's partner in producing the Supply Chain Resilience - 10 Year Trend Analysis Report. I also thank you for reading this report and for finding time to review the BCI's analysis from the last 10 years.

Tim Janes

Hon FBCI

Chair of the BCI





Foreword Zurich



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 trends noted across the decade since the report's first publication and the learnings that organizations can make from them.

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.

However, 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. For example, do all businesses know who are supplying their key components or materials at the primary level? And if they do, have they drilled down below that to understand the key suppliers of their suppliers (which, in many cases, will be global in nature)?

Although there is increasing awareness of supply chain risk, in all likelihood very few organizations have this level of information 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.

Following extensive research by the BCI, the purpose of this report is to answer a number of key questions for organizations around the resilience of their supply chain, in terms of what the current and emerging key risks are and what organizations can learn from the past 10 years of research.

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.

The good news is that research shows that the number of organizations experiencing at least one supply chain disruption has fallen by nearly 16% (15.8%) between 2010 and 2018 (based on respondent responses) but, as with all risks, it is far better to be proactive than reactive.

Ian McNeil

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

1

Executive Summary





FEWER SUPPLY CHAIN DISRUPTIONS AND DEEPER DUE DILIGENCE:

56.5% of organizations experienced a disruption in 2018 compared to 72.3% in 2010, a drop of 15.8%. However, the proportion of these disruptions that occur in Tier 1 has decreased from 60.1% to 52.1% from 2010 to 2018, compared to a rise from 8.4% to 11.0% in Tier 3. Whilst the deeper due diligence organizations are now performing on their supply chain is to be welcomed, there is clearly still work to be done to ensure better business continuity arrangements are in place within the most visible part of the supply chain, Tier 1.



SHIFTING THREAT LANDSCAPE:

Supply chain disruptions such as cyber-attack and data breach and loss of talent/skills have become more evident since 2014. Consistently high rated causes of disruption include unplanned IT and telecommunication outages as well as adverse weather, which has rarely dropped from the top five causes.



ISO 22301 LAUNCH CHANGED THE WAY ORGANIZATIONS CHECK BUSINESS CONTINUITY ARRANGEMENTS:

Nearly half (45.2%) of respondents are using this method to check that plans are in place. The number of organizations requesting alignment to a known standard has increased from 36.5% in 2012 to 51.0% in 2018. Furthermore, checks as to whether a supplier has certified to a known standard increased from 11.8% in 2010 to 51.0% in 2018.



TOP MANAGEMENT COMMITMENT TO MANAGING SUPPLY CHAIN RISK REMAINS LOW:

Those surveyed who believe that their organization's top management commitment is "low" or "none" has not fallen below 20% since survey conception.

LEVELS OF REPORTING

Percentage of organizations recording, measuring and reporting on performance-affecting supply chain disruptions



FREQUENCY AND ORIGIN OF SUPPLY CHAIN DISRUPTIONS

Percentage of organizations suffering at least one supply chain disruption in the past year

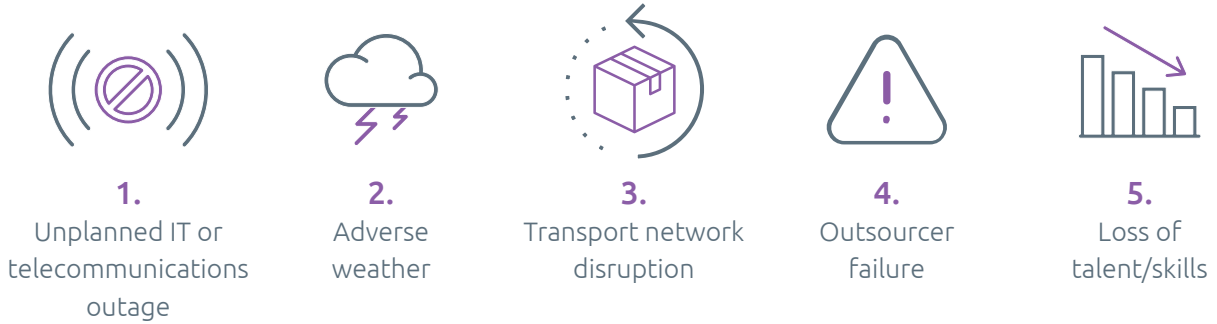


Percentage of disruptions occurring at Tier 1

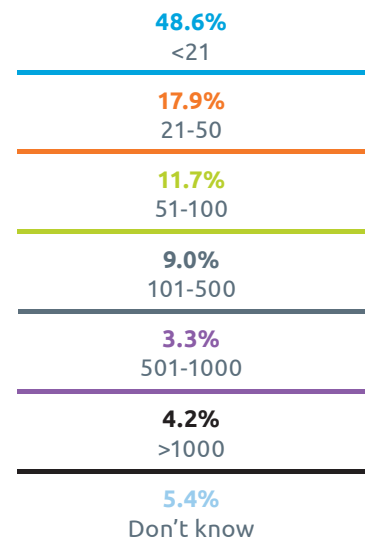
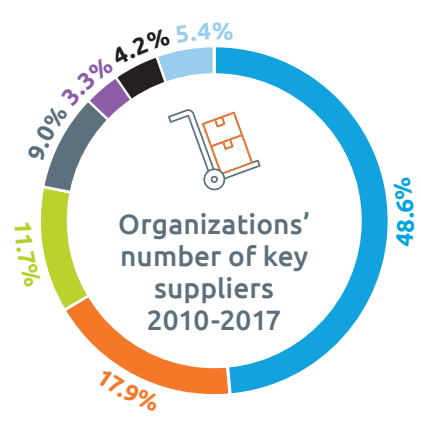
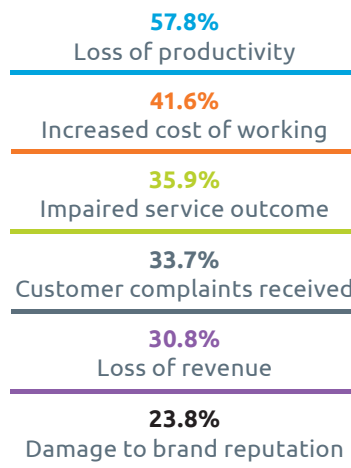
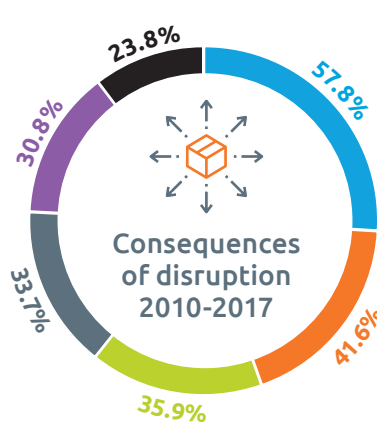
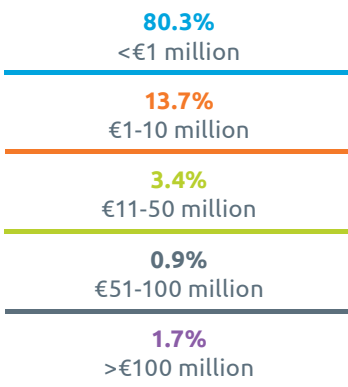
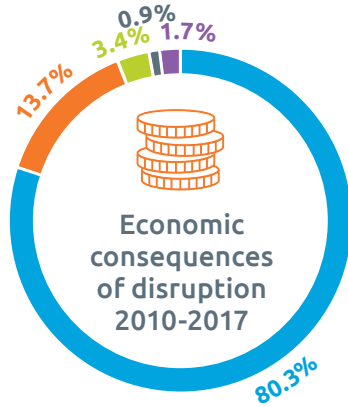
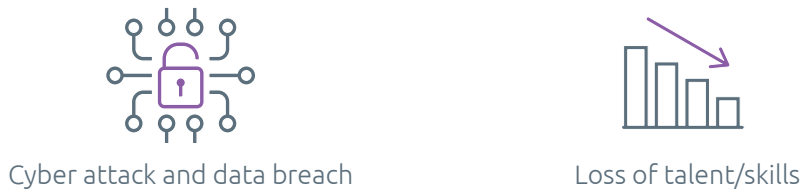


CAUSES AND CONSEQUENCES OF SUPPLY CHAIN DISRUPTION

Top five causes of disruption, 2009-2018

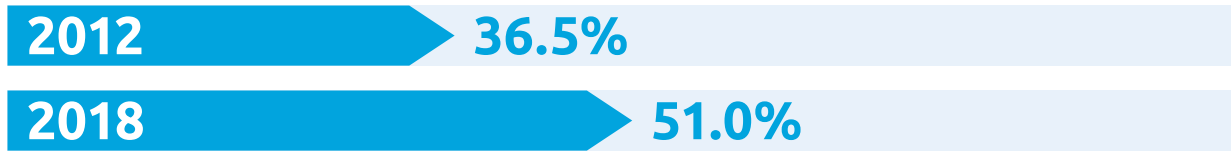


Emerging causes of disruption

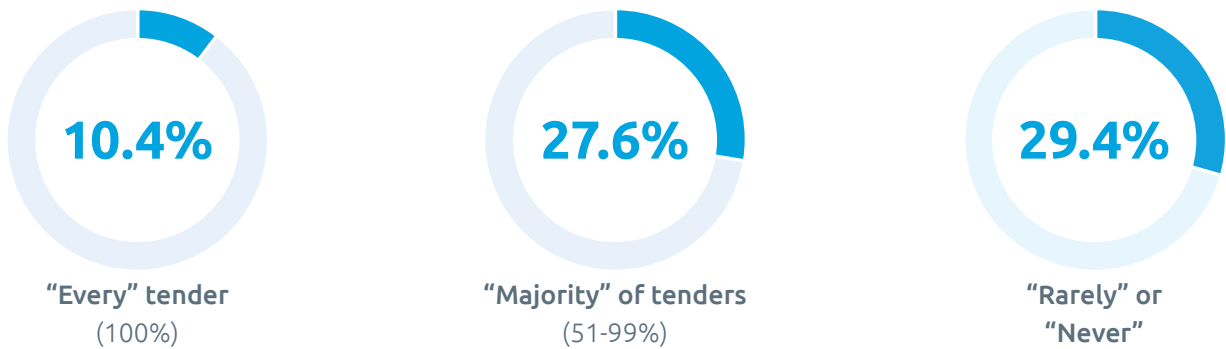


BUSINESS CONTINUITY ARRANGEMENTS AND DUE DILIGENCE

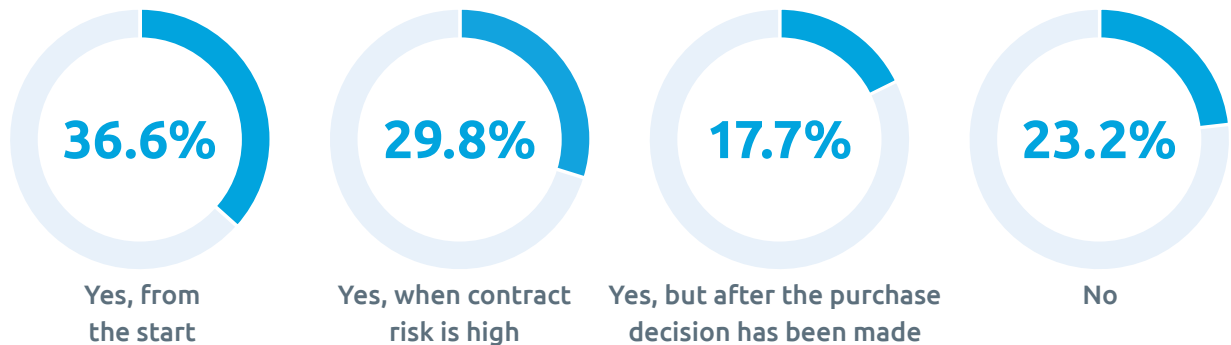
Organizations using ISO 22301 to check business continuity arrangements of suppliers



The frequency that organizations are asked to provide assurance to new clients regarding their own business continuity arrangements

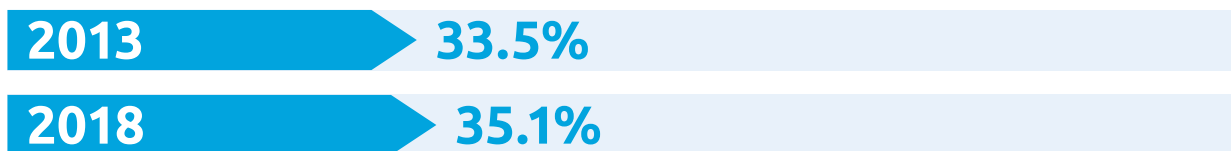


The frequency of business continuity featuring in supplier contractual discussions

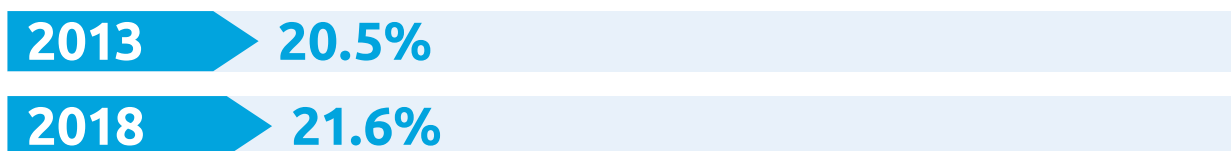


How would you assess your organization's top level management commitment to managing supplier chain risk?

"High"



"Low"



2

Levels of Reporting



LEVELS OF REPORTING

These questions were only introduced into the Supply Chain Resilience Report in 2010, so all responses in this section cover the period from 2010-2018.

MORE ORGANIZATIONS ARE REPORTING ON SUPPLY CHAIN DISRUPTIONS THAN IN 2010

More organizations are recording, measuring and reporting on performance-affecting supply chain disruptions than ever before. More than half (58.6%) of those surveyed were engaging in some level of reporting in 2010, in comparison to nearly three quarters (73.0%) in 2018. In addition, the scale of reporting has increased considerably throughout the last eight years. Firm-wide reporting of supply chain disruptions was conducted by just 17.5% of organizations in 2010 but by 30.0% in 2018, an increase of 12.5%. Although reporting on disruptions helps organizations gain visibility over their supply chains, more than a quarter (27.0%) of those surveyed in 2018 stated that their organization continues not to report on supply chain disruptions, yet this is an improvement from just over two fifths in 2010 (41.4%).

Do you record, measure, and report on performance-affecting supply chain disruptions (i.e. Where an unplanned cost has been incurred or loss of productivity or revenue experienced)?

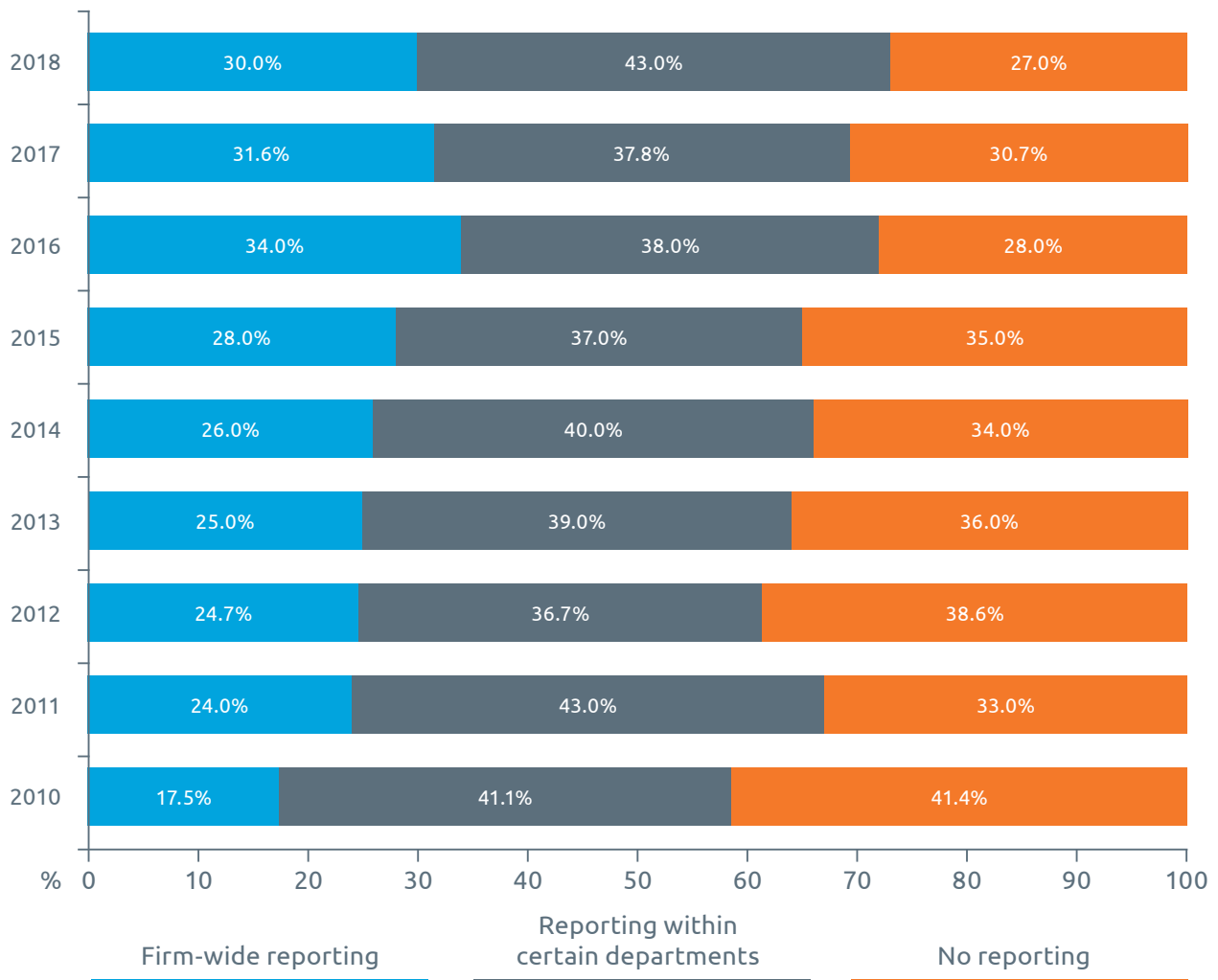


Figure 1. Levels of reporting of supply chain disruptions, in % (2010-2018)

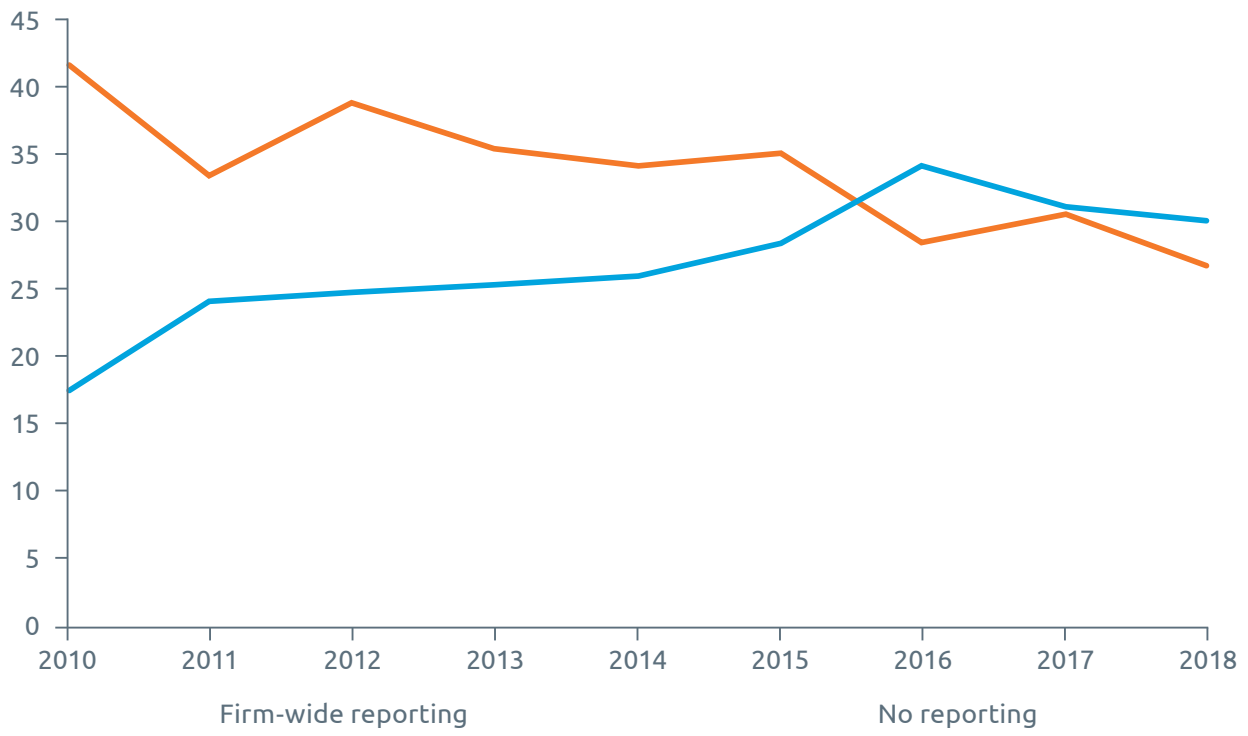


Figure 2A. Firm-wide reporting VS No reporting

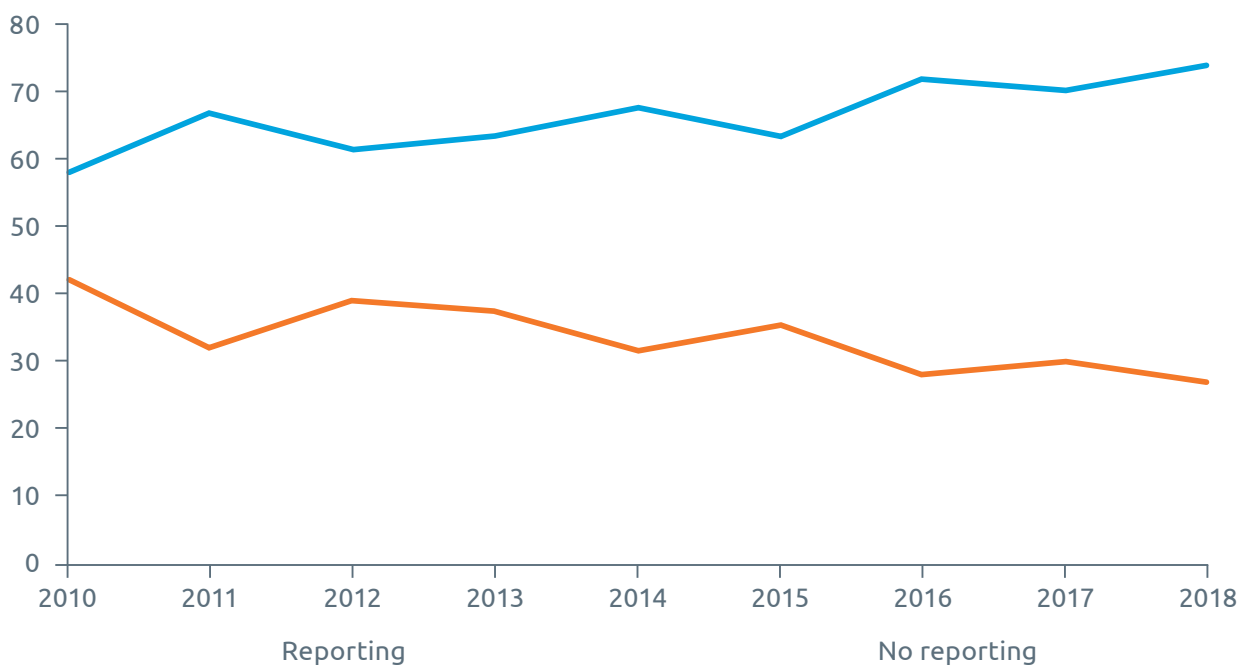


Figure 2B. Reporting VS No reporting

SIZE MATTERS: LARGE ORGANIZATIONS LEAD, BUT SMES MAKE PROGRESS

- Large organizations lead, but SMEs are improving reporting levels faster
- SMEs are more likely to report firm-wide than large organizations
- Reporting levels of the public administration sector are most improved since 2010 but the financial services and IT sectors most consistent

Large organizations are more likely to report on supply chain disruptions than small to mid-sized organizations. In 2010, less than a third (31.9%) of large organizations indicated that they did not report on supply chain disruptions, whereas more than two fifths (42.3%) of SMEs reported not doing so. By 2018, only a quarter (25.7%) of large organizations surveyed did not report on supply chain disruptions, while a third (33.3%) of SMEs did not do so. Larger organizations, by character, have complex, multinational supply chains which require greater management, due diligence and accountability and have teams to manage the supply chain. Smaller organizations often do not have the resource to have a dedicated supply chain manager and many of these organizations, particularly those in a service-orientated industry, have such small supply chains they can be managed by an administration team within the organization. However, data from the 2018 survey suggests that SMEs are more likely to report on disruptions across the firm (32.5%) than large organizations (29.2%), perhaps because it is easier for an SME to gain an overview of their entire organization in order to report while large organizations may face obstacles when attempting interdepartmental communication.

SOME SECTORS PLAY CATCH UP, ALL SHOW IMPROVEMENT

Reporting levels differ between sectors but overall, all sectors are reporting on supply chain disruptions more than they were eight years ago. In 2010, only just over four in ten (42.9%) public sector organizations engaged in any level of supply chain disruption reporting, yet reporting levels increased to over two-thirds by 2018 (67.2%).

The financial services and IT sectors have shown the most consistent reporting since 2010, when both stated reporting levels of seven in ten (71.4% and 70.0% respectively), which approached eight in ten (77.0% and 76.2%) in 2018. The sector most likely to report on supply chain disruptions in 2018 was manufacturing (82.1%). This is to be expected given the complexity of manufacturing supply chains as well as the number of business-critical suppliers involved in the supply chain. Natural disasters such as the 2011 Japanese tsunami can have a lasting impact on manufacturers. According to Forbes, the disaster caused major supplier problems for General Motors, which sourced 2% of its parts in the Japanese market. Six weeks after the catastrophe, GM were still locating suppliers within the area. In response to the incident, GM sought to develop its business continuity arrangements by aligning its resilience professionals with its strategic risk department. In 2016, Japan suffered a magnitude 7.0 earthquake, and GM was able to understand the supplier impact within six hours.

3

Frequency and Origin of Supply Chain Disruptions



FREQUENCY AND ORIGIN OF SUPPLY CHAIN DISRUPTIONS

The question displayed in Figure 3 was introduced into the Supply Chain Resilience Report in 2010, whereas the question showed in Figure 4 was introduced in 2011. Responses in this section therefore cover the periods 2010-2018/2011-2018.

- Most organizations (56.5%) experienced at least one supply chain disruption in 2018 but this is down from nearly three quarters (72.3%) in 2010
- More organizations are reporting that they did not experience any supply chain disruptions in 2018 (27.9%) than in 2010 (27.7%)
- Most supply chain disruptions occur at Tier 1, although the number that occur at Tier 3 has increased

Although the majority (56.5%) of those surveyed in 2018 reported that their organization had experienced at least one supply chain disruption, this has fallen by 15.8% since 2010 (72.3%). In addition, more than a quarter (27.9%) of those surveyed in 2018 estimated that their organization had experienced no supply chain incidents in the last 12 months, the highest proportion to do so since this part of the survey was conceived in 2010.

How many supply chain incidents would you estimate your organization experienced in the past 12 months that caused disruption to your organization?

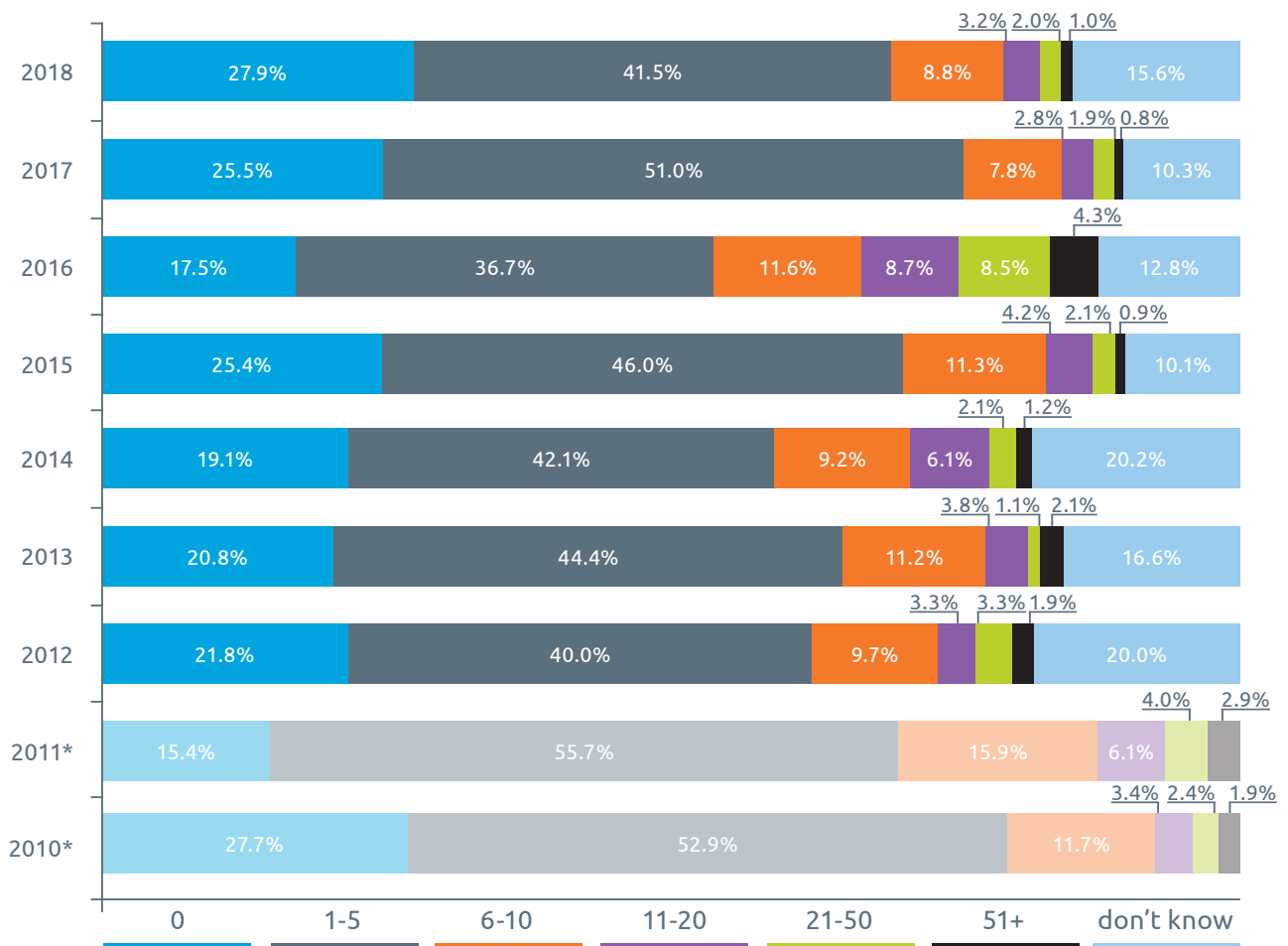


Figure 3. Frequency of supply chain disruptions, in % (2010-2018)

* The response 'Don't know' was added in 2012. This means data from 2010-11 cannot be compared on a like-for-like basis to 2012-2018.

Most supply chain disruptions occur at Tier 1, but the number that originate at Tier 3 is increasing. In both 2011 and 2018, the majority of those surveyed reported that the most common source of supply chain disruptions was Tier 1 (52.1% and 60.1%, respectively). The number of disruptions that originate at Tier 3 have also increased, although at a lesser rate than the increase seen at Tier 1. In 2011, just 8.4% of those surveyed reported that Tier 3 was the origin of a supply chain disruption. However, by 2018, this had risen to 11.0%, an increase of 2.6%. The increase underlines that supply chain disruptions are more likely to occur beyond Tier 1 and Tier 2 in today's interconnected world, but equally indicates the increased depth of diligence organizations are performing within their supply chains beyond Tiers 1 and 2.

Considering the supply chain incidents you are aware of in the last 12 months, which of the following apply in your experience? (Please indicate the tiers in which your organization experienced supply chain disruption in the past year)

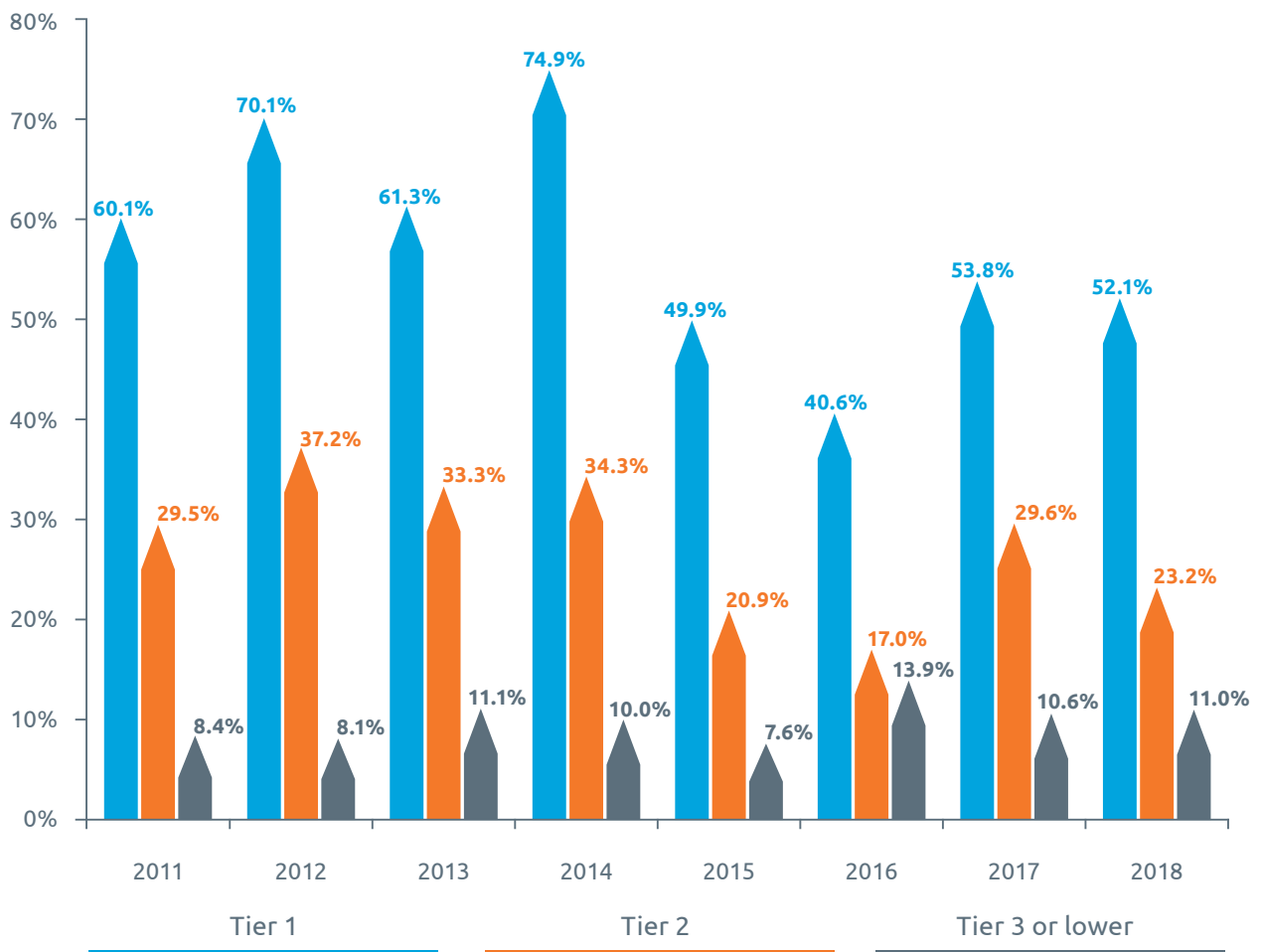


Figure 4. Origin of supply chain disruptions, in % (2011-2018)

Figure 4 does not include respondents from organizations that do not analyse their supply chain to identify the original source of disruption (Figure 5)

FREQUENCY AND ORIGIN OF SUPPLY CHAIN DISRUPTIONS

In a worrying development, more organizations are *not* analysing their supply chain to determine the original source of disruption now than in 2011. Of those surveyed in 2011, nearly a quarter (23.4%) reported that their organization did not analyse their supply chain to identify the original source of disruption. This rose in 2018 to three in ten (30.3%), an increase on 2017 (27.2%). We would encourage organizations to analyse the origin of supply chain disruptions more as it may reveal pain points within their supply chain.

Considering the supply chain incidents you are aware of in the last 12 months, which of the following apply in your experience? (Respondents from organizations that do not analyse their supply chain to identify the original source of disruptions)

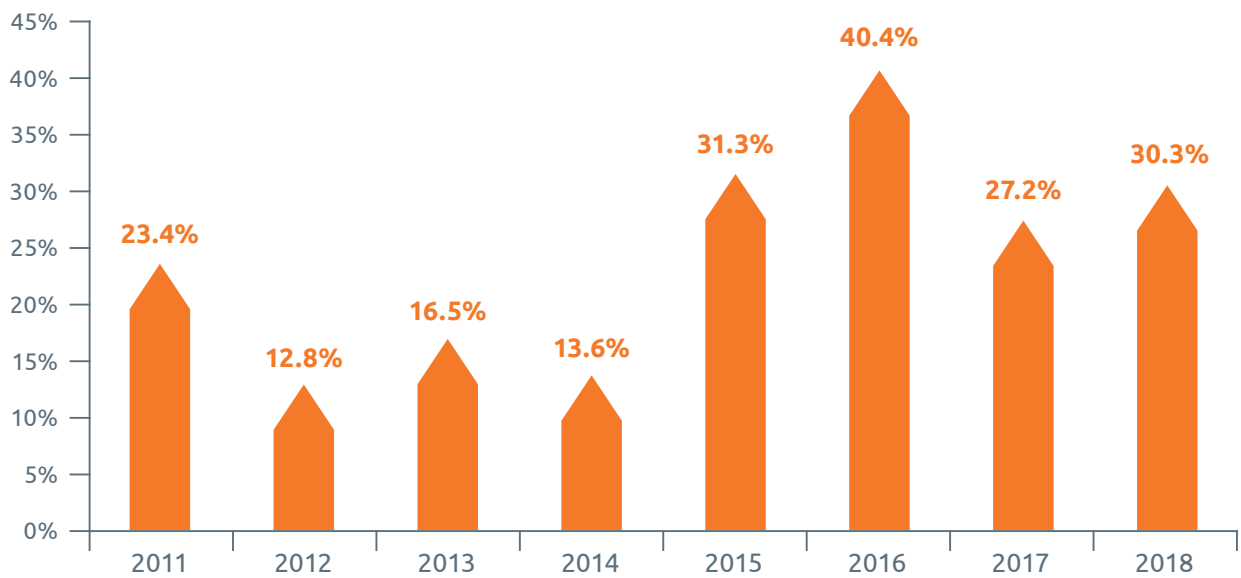


Figure 5. Organizations that do not analyse their supply chain to identify the original source of disruptions, in % (2011-2018)



4

Causes and Consequences of Supply Chain Disruption



CAUSES OF SUPPLY CHAIN DISRUPTION

- **The threat landscape has changed over the past 10 years, with new disruptions such as cyber attacks being increasingly labelled as a cause for disruption ahead of more traditional concerns such as a change in government, regulatory position or law**
- **Despite the changing threat landscape, traditional causes of disruption such as IT outages and adverse weather remain at the top of the list for supply chain disruption**
- **Changing macroeconomic conditions year-to-year result in significant changes in the top 10 each year**

Organizations are increasingly becoming more dynamic and interconnected through global value chains/global networks. Whilst this can be beneficial to organizations in many areas (e.g. by reducing cost and improving competitiveness), it increases their vulnerability to disruptions. Therefore, it is of paramount importance that organizations identify and understand the potential causes of disruption along their multi-layered supply chain network. This will provide a framework of what causes to focus on and consequently put appropriate measures in place to mitigate and manage them, especially for critical suppliers. Indeed, this is not an easy task given the increasing complexity of the supply chain and the fact that these disruptions are often exogenous.

Organizations have identified a total of 22 causes of supply chain disruption since the report was first produced ten years ago. The analysis will focus on supply chain disruptions that have been consistent over the years and thus appeared at least five times in the top ten over the last decade.



	Disruption	Value*
1	Unplanned IT or telecommunications outage	98
2	Adverse weather	83
3	Transport network distribution	64
4	Outsourcer failure	63
5	Loss of talent/skills	58
6	Cyber attack and data breach	40.5
7	Insolvency in the supply chain	21
8	New laws or regulations**	20
9	Human illness	14
10	Energy scarcity	13
11	Product quality incident	13
12	Change in government, regulatory position, law	12
13	Currency exchange rate volatility	10
14	Fire	8
15	Health and safety incident	7
16	Earthquake/tsunami	7
17	Industrial dispute	3
18	Lack of credit	3
19	Volcanic ash cloud	3
20	Business ethics incident	2
21	Act of terrorism	2
22	Civil unrest/conflict	2

* When a disruption appears in the top 10 list, the first ranked disruption is valued as "10" and the tenth ranked is valued as "1". If a disruption is first for each of the 10 years of study, it would receive a maximum rank of 100

** In Figures 6A and 6B, 'New laws or regulations' merged with 'Change in government, regulatory position, law' due to a change of wording in 2014

Table 1. Causes of Supply Chain Disruption 2009-2018

THE THREAT LANDSCAPE HAS CHANGED OVER THE PAST 10 YEARS

The threat landscape has shifted over the last decade. Whilst the usual/traditional causes (e.g. Unplanned IT or telecommunications outages, adverse weather, transport network disruption and outsourcer failure) maintain their dominance over the years, new disruptions such as cyber attack and data breach and loss of talent/skills are now making consistent appearances in the top five. Conversely, some disruptions make fleeting appearances due to macroeconomic or environmental issues. Insolvency in the supply chain, for example, reached its peak in 2009 as the fourth greatest disruption during the global financial and economic crisis. Since then, it has never re-entered the top five. Similarly, volcanic ash cloud saw a single appearance in 2011 due to the Eyjafjallajökull eruptions in Iceland which caused major air travel disruption for a week in Northern Europe.

THE LANDSCAPE MAY BE CHANGING, BUT IT OUTAGES AND ADVERSE WEATHER ARE CONSISTENTLY AT THE TOP OF THE TABLE FOR CAUSES OF DISRUPTION

Unplanned IT or telecommunications outages and adverse weather were consistently ranked as the top two causes of supply chain disruption over the past 10 years. After a brief hiatus from the top five in 2016-17, adverse weather returned to second place in 2018 due to events such as Hurricane Harvey in North America, severe snowstorms in Europe and North America and extreme heatwaves in Australasia. Whilst organizations cannot control weather events, they can take necessary measures to mitigate their impact, such as taking out the right insurance policy and determining which critical suppliers may be hit by severe weather due to their geographical location.

TRANSPORT NETWORK DISRUPTION IS A REGULAR FEATURE IN THE TOP 10 – AND COULD CLIMB THE RANKINGS MORE OVER THE NEXT FEW YEARS

Transport network disruption has consistently featured in the top ten causes of supply chain disruption over the past 10 years and has maintained a presence in the top five since 2013. Unlike disruptions from natural disasters, transport network disruption occurs as a subset of certain triggers. For example, adverse weather, terrorist attacks and failure of critical infrastructure can all contribute to transport network disruption. In 2018, flights were grounded for several days after a drone entered the airspace above Gatwick airport, London which cost businesses over £50m in lost revenue and caused severe logistical disruption. A significant political event, such as a no-deal Brexit, also has the potential to cause severe disruption to the road networks (and already is in parts of Northern France due to strikes from customs staff crippling the road network).

OUTSOURCER FAILURE AND LOSS OF TALENT/KEY SKILLS CONTINUE TO FEATURE HIGHLY

Outsourcer failure is the fourth most common disruption for survey respondents. In a globalised business environment, many organizations outsource at least one major business function, commonly logistics, IT, financial services or customer support. Whilst the cost saving from outsourcing is beneficial for organizations, it also exposes them to increased vulnerability to disruptions, especially if they adopt a single supplier model.

MACROECONOMIC CONDITIONS CAUSE TANGIBLE ISSUES WITHIN THE SUPPLY CHAIN

Apart from 2010 when hiring started to increase post-financial crisis, loss of talent/skills has remained in the top ten since this survey began. It has consistently featured in the top five since 2012, moving up to number two in 2016 as the global economy started to face stronger economic headwinds such as the Brexit vote in the UK, the trade war between the United States and China and increasing political tensions in certain areas.

Change in government, regulatory position, law entered the top ten in 2009 in tenth place, dropped for the next two years and then returned as number five in 2012, the year of the United States presidential election. As we are currently witnessing significant global policy changes in major global economies, especially in the area of international trade, it is not surprising that its presence in the top ten has remained consistent ever since. Moreover, we are also witnessing the ongoing process of a potential policy/regulatory change for operational resilience in the financial services industry in the UK, which will have tangible impacts within the supply chain. It is conceivable that similar models could be rolled out both to other sectors and other geographies around the world.

EMERGING THREATS NEED TO BE MONITORED CLOSELY

Cyber attack and data breach is one of the key emerging threats, consistently featuring as one of the top three threats in the last four years. The emergence of new technologies (such as blockchain, the Internet of Things and artificial intelligence) and digitalisation of supply chain has further exacerbated the cybersecurity concern and it is likely to grow in significance as cyber attacks and data breaches become more sophisticated over time. The 2017 Equifax data breach where nearly 150 million records of data were stolen in a cyber attack should serve as a warning to organizations, especially given the fact that Equifax argued that the breach originated from third-party software it was using. Additionally, given the introduction of GDPR guidelines, data breaches now carry very significant financial penalties.

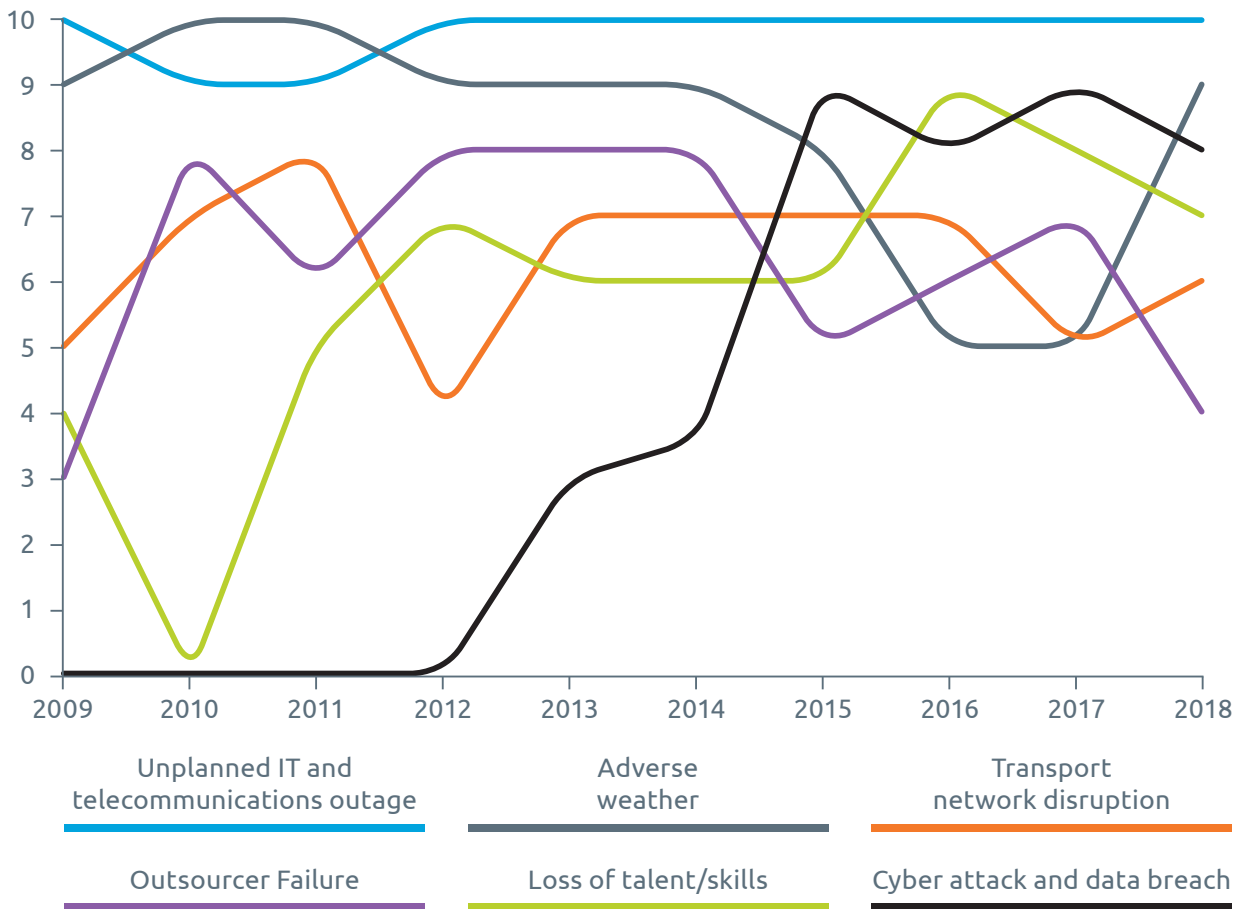


Figure 6A. Most common causes of supply chain disruptions (2009-2018)

CAUSES AND CONSEQUENCES OF SUPPLY CHAIN DISRUPTION

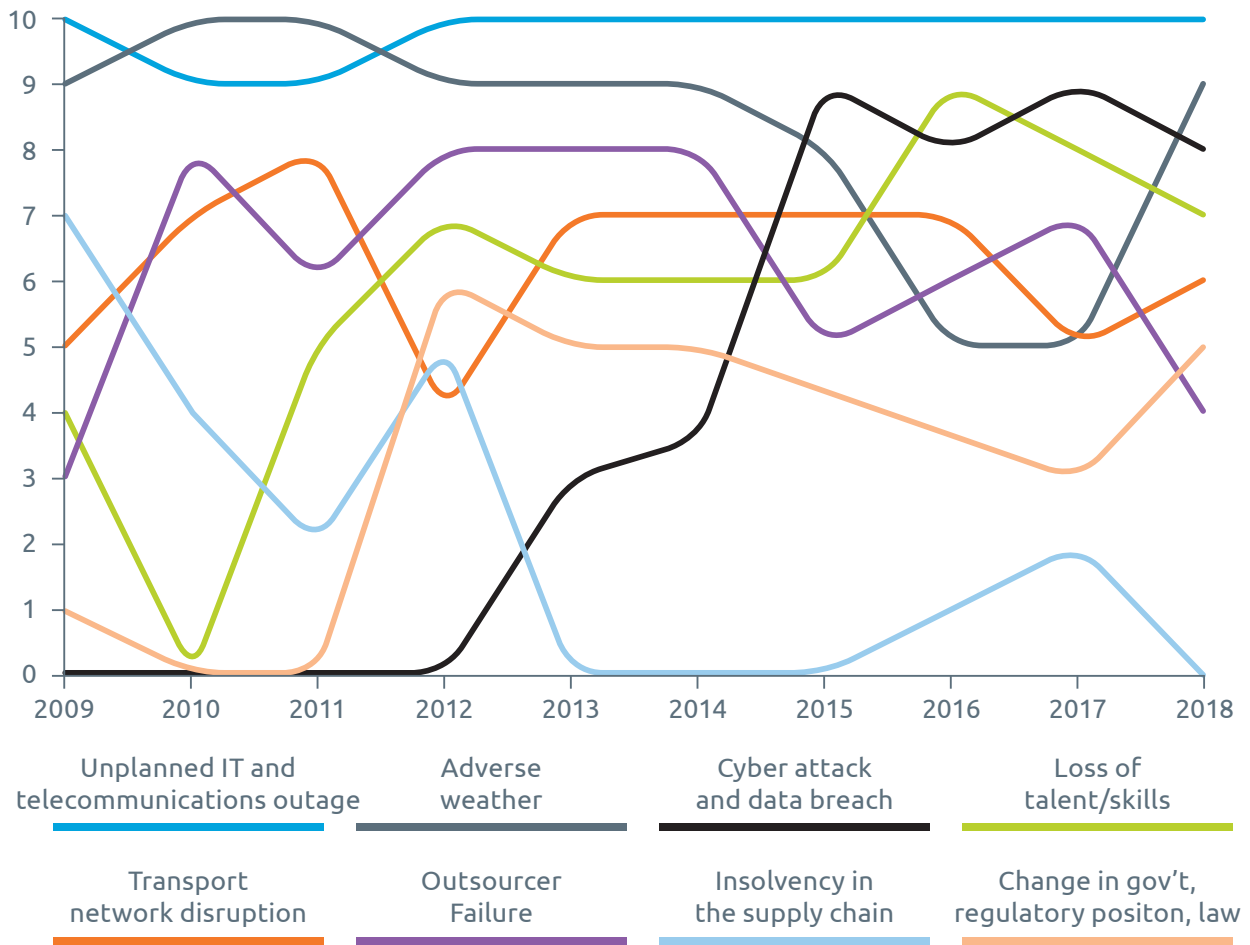


Figure 6B. Most common causes of supply chain disruptions (2009-2018)



CONSEQUENCES OF SUPPLY CHAIN DISRUPTION

- The cost of supply chain disruptions has increased notably over the past five years
- Delayed cash flows, which became less of an issue post-financial crisis, has been identified by respondents as the fastest growing cause of supply chain disruption over the most recent five-year period

Loss of productivity (57.8%), increased cost of working (41.6%) and impaired service outcome (35.9%) are the top three impacts of supply chain disruption over the last ten years. If we compare the first and second periods (2009-2013 and 2009-2017) the only disruption which moved places was delayed cash flows, jumping from ninth to sixth place between the two periods. Meanwhile, loss of productivity increased by 5.8%, increased cost of working by 2.9% and impaired service outcome by 1.5%. We will be monitoring these changes over the next few years to determine whether these increases translate to higher financial losses for organizations. Furthermore, organizations may suffer multiple consequences as a result of a single incident of disruption. For example, an impaired service outcome might lead to increased customer complaints which could result in damage to brand reputation whereas an unplanned loss of productivity may lead to the delay of a new product and/or further damage to brand reputation.

Which of the following impacts or consequences arose from the supply chain incidents/ disruptions that your organization experienced in the last 12 months?

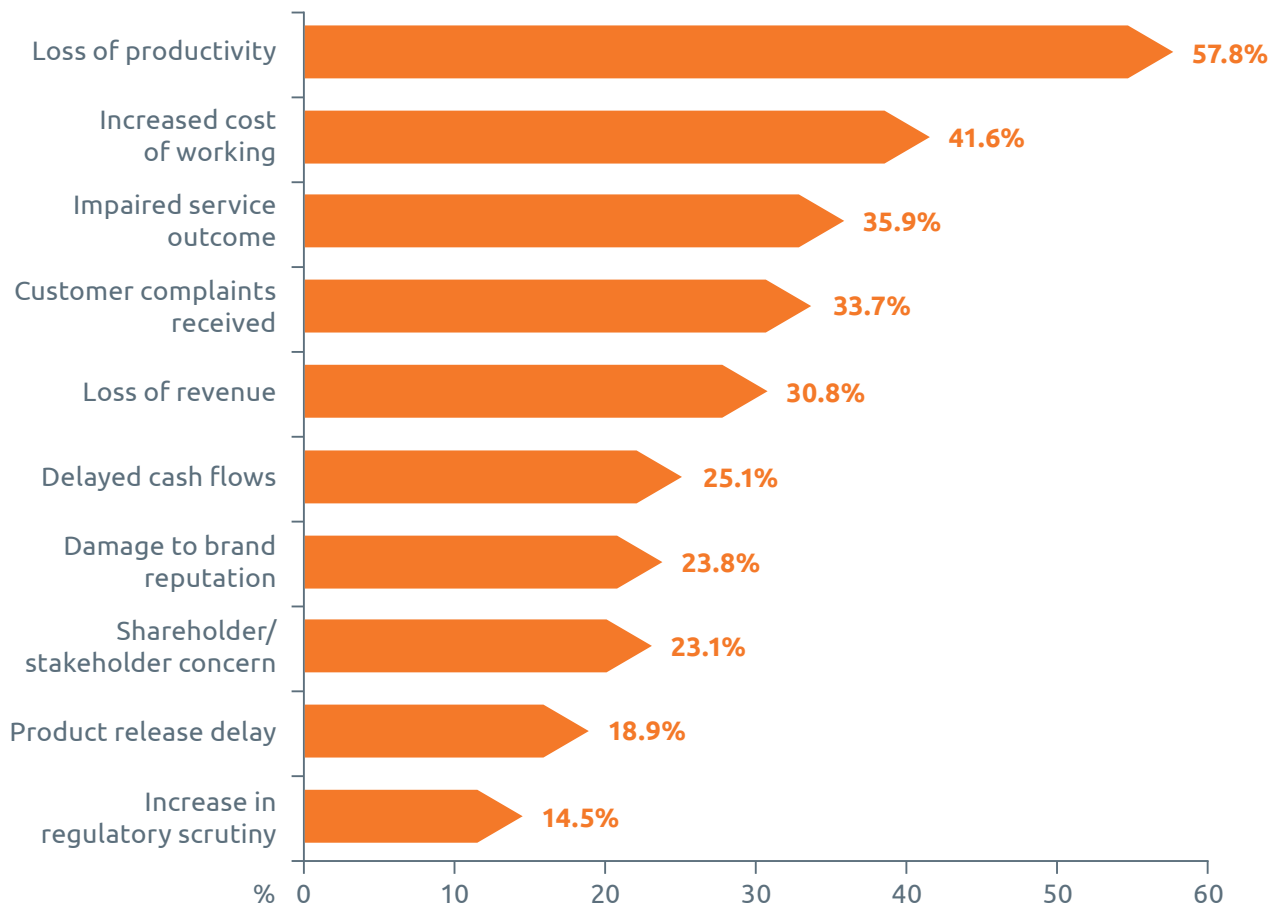
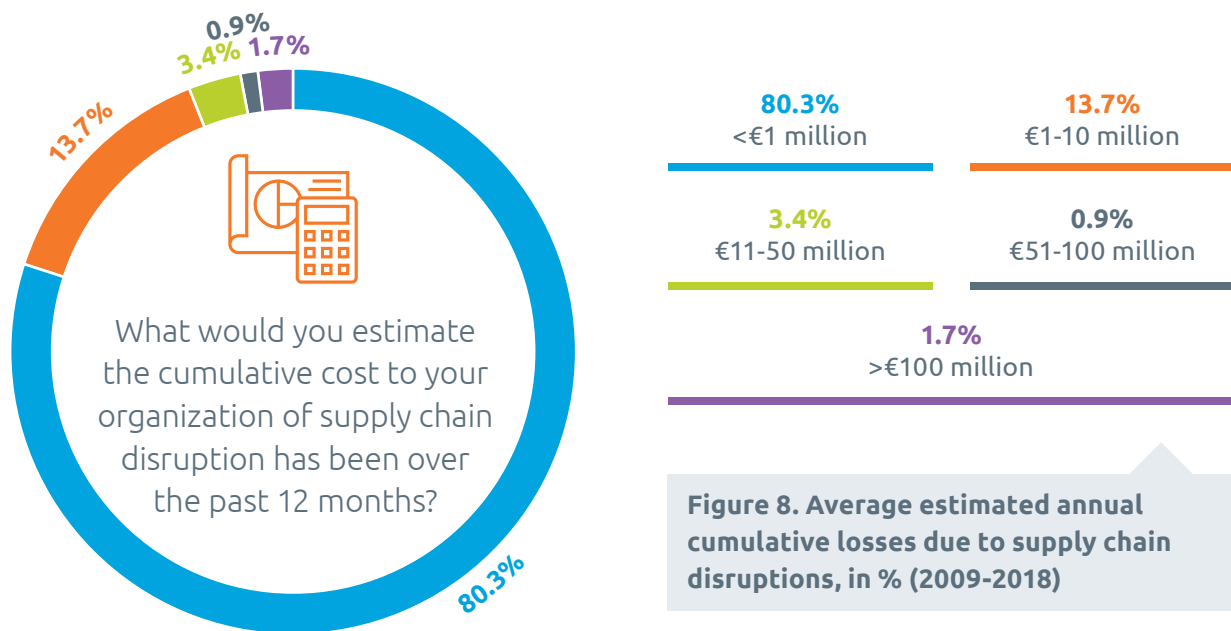


Figure 7. Most common impacts of supply chain disruptions, in % (2009-2017)

CAUSES AND CONSEQUENCES OF SUPPLY CHAIN DISRUPTION

On average, most organizations (80.3%) incurred annual losses of less than €1 million due to supply chain disruption. However, a significant minority (5.9%) reported more than €11 million losses per annum – and this number has been growing steadily over the 10-year study period. The number of organizations that suffered a small loss (<€1m per annum) decreased by 7.0% when comparing the two periods 2009-2013 to 2009-2018. However, the number of organizations incurring losses from €1-10m and over €100m grew by 4.7% and 0.7% respectively over the same two periods. With the increased due diligence organizations are now undertaking within their supply chain together with the introduction of new technologies, we hope that this is a trend that will be reversed over the next five-year period.



SUPPLY CHAIN SIZE AND SCALE

This question was introduced into the Supply Chain Resilience Report in 2010, so all responses in this section cover the period from 2010-2018.

- Organizations have fewer suppliers now than they did five years ago, despite increasing interconnectedness through the global network.
- A significant minority of respondents (5.0%) are unaware of who their key suppliers are

Over the 10-year study period, 49.0% of respondents reported that their organization has less than 21 key suppliers, whereas 16.0% have more than 100 key suppliers – a difference which can be largely accounted for by respondents’ differing company sizes and sectors. However, a notable trend is that the size of supply chains is shrinking. For example, large organizations with less than 21 key suppliers increased by 5.6%, while those with more than 100 decreased by 6.2%.

Likewise, financial services, manufacturing and professional services sectors experienced similar trends; a decrease in organizations with more than 100 key suppliers and an increase in those with less than 21 key suppliers. What is more concerning is the 5.0% of the organizations who do not know who their key suppliers are. Identifying key suppliers when conducting a Business Impact Analysis (BIA) is one of the key tasks for any organization to complete in order to raise the level of their supply chain resilience, as suggested in the Good Practice Guidelines (GPG) 2018.

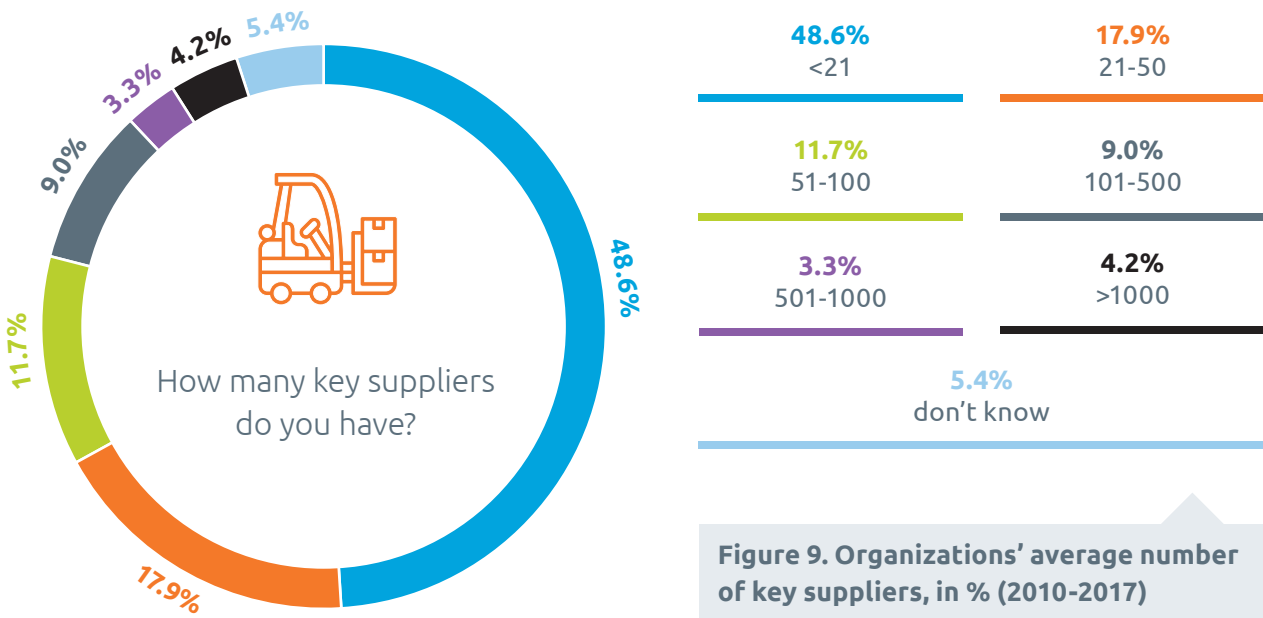


Figure 9. Organizations' average number of key suppliers, in % (2010-2017)

5

Business Continuity Arrangements and Due Diligence



BUSINESS CONTINUITY ARRANGEMENTS AND DUE DILIGENCE

These questions were only introduced into the Supply Chain Resilience Report in 2010, so all responses in this section cover the period from 2010-2018.

AWARENESS OF BUSINESS CONTINUITY ARRANGEMENTS IN THE SUPPLY CHAIN IS LOW

- Organizations lack the time and resource to perform deep due diligence (Tier 3 and beyond) throughout the supply chain
- Organizations typically take an informed approach to due diligence based on risk profile
- Regulated sectors lead the way in supply chain due diligence due to the threat of significant financial and reputational damage if they were to fail

Conducting due diligence of key suppliers is good practice for any organization, and most larger organizations will have comprehensive plans in place to evaluate the effectiveness of suppliers' business continuity arrangements. Some financial services companies will go as far as evaluating suppliers as far as Tier 5 if they support a critical service which would lead to significant financial and reputational damage if it were to fail.

Indeed, in an ideal world, all businesses would conduct due diligence on all critical suppliers and their suppliers' suppliers. However, in the real world, organizations lack the time and resource to do this, particularly smaller organizations. Because of this, most organizations take an informed approach to performing due diligence based on risk profile. The aspects to consider can be usefully classified under a Business Impact Analysis as those that relate initially to the individual supplier/supply and potentially even just the particular supplier site and then to the aggregated risk:

1. Individual risk considerations

- Is the supplier a sole source supplier and hence the revenue and profit impact will be significant?
- What are geolocational risks such as natural catastrophe or geopolitical risks?
- Financial exposure in terms of general industry margin and specific suppliers' financial status.
- Capacity utilisation and market availability
- Relationship with the supplier; are you a customer of choice?
- Regulatory and technological restrictions which make replacement more difficult e.g. specialist machine tools or moulds that you have provided to the supplier
- Reputational and information security requirements which make replacement more complex

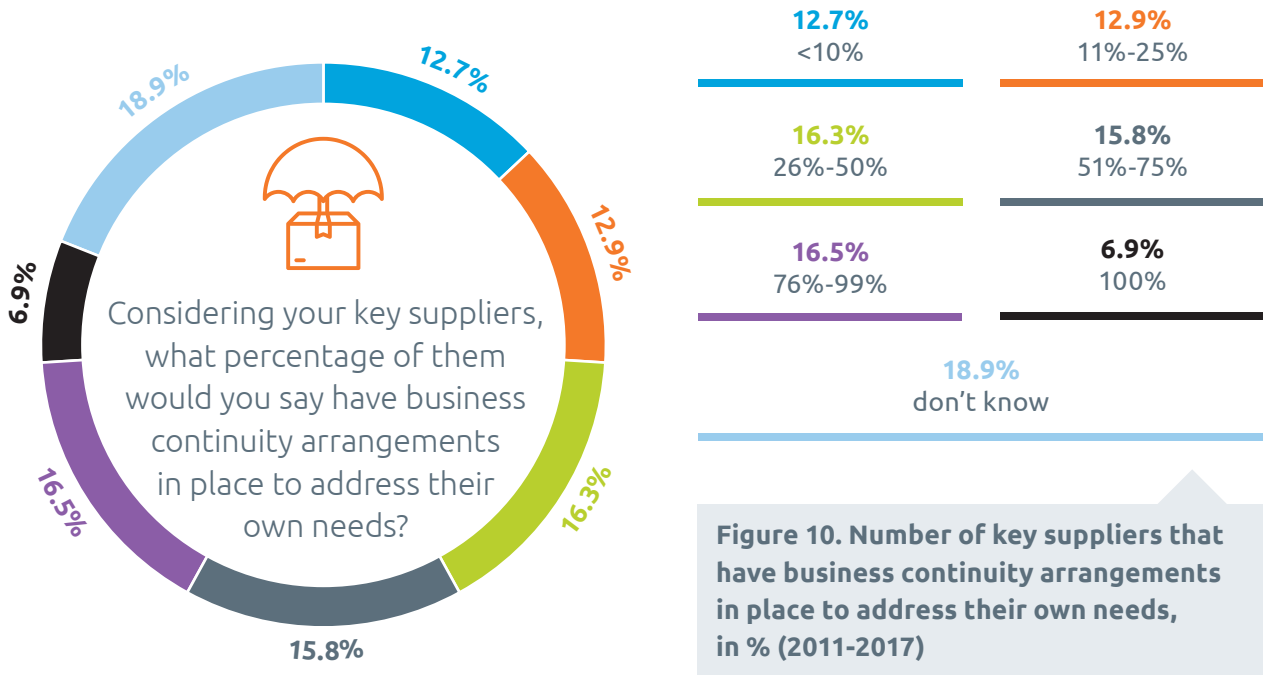
2. Aggregated risk considerations

- Accumulated exposures e.g. a substantial part of worldwide capacity for a component is in one potential natural catastrophe area or geopolitical area.
- Supplier production site not only produces a tier 1 key component but is also involved with sub-component manufacture for other key suppliers.
- Suppliers are part of one financially exposed group
- Over reliance from a financial impact perspective on one logistics point or piece of National Infrastructure.

"A key element to understand the knock on effects of potential supply chain disruption is for a business to carry out a business impact analysis of its supply chain(s). This will allow businesses of any kind to look at not only individual supplier risks but also the accumulation aspects which may be present. By understanding this risk profile in full, resources and efforts can be prioritised to address the areas of highest risk exposure."

Sarah Pearson
Strategic Risk Practice Leader
Zurich Risk Engineering
Zurich Insurance plc

Given the risk-informed approach, it is therefore hardly a surprise that just 7.0% of those surveyed reported 100% of suppliers have business continuity arrangements in place to address their own needs. The third of respondents who claim 51-99% of their suppliers have business continuity arrangements in place is around the mark we would expect. However, the 26.0% of respondents who claim that less than 25.0% of suppliers have business continuity arrangements in place for their own needs is a concern and we would encourage those organizations to ensure at least their business critical suppliers do have a plan in place for failure.



INCREASING USE OF THE ISO22301 STANDARD WITHIN INDUSTRY HAS LED TO AN INCREASING NUMBER OF BUSINESSES USING IT TO PERFORM DUE DILIGENCE ON SUPPLIERS

- The launch of the ISO 22301 standard in 2012 has seen it being used increasingly to ensure suppliers have business continuity arrangements in place
- Organizations are now requesting the detail of suppliers’ entire Business Continuity Management (BCM) plan rather than fulfilling a “tick box” exercise to ensure a supplier merely has a plan in place
- Individual accountability for BC plans within organizations is also coming to the fore, with an increasing number of respondents seeking the credentials of those who run the BCM

The most commonly requested information from suppliers to verify business continuity arrangements are in place is ensuring alignment to a recognised standard with nearly half (45.2%) of respondents using this method to check plans are in place. The number of organizations requesting this has increased from 36.5% in 2012 to 51.0% in 2018. The increase in the use of this particular method can be largely attributed to the introduction of the ISO 22301 standard: 2012 saw the introduction of this new business continuity management system standard and uptake of this has increased to 69.0% of organizations (2015: 51.0%) according to the BCI’s Horizon Scan 2019 report. A further 13.0% of organizations are planning to move towards it this year suggesting this method of due diligence will increase further over time.

Furthermore, whilst seeking whether a supplier is certified to a certain standard is one of the lower rated options by survey respondents (33.0%), this particular method has seen the greatest increase of any other method of due diligence: just 11.8% of respondents used this method in 2010 when the question was asked compared to 51.0% in 2018 – a compound annual growth rate (CAGR) of 20.1%. Such an increase is further testament to the popularity of the ISO 22301 standard compared to its predecessor, BS25999-2:2007.

The second most commonly used method to perform supplier due diligence is to check an organization’s entire BCM programme rather than ensuring the presence of a BC plan. Rather encouragingly, merely checking for the presence of a BC plan has decreased in popularity by over half (-51.8%) from 2010-18 compared to an increase of 62.6% to 50.7% of respondents who now check the entire programme. This demonstrates a willingness not only to perform a higher level of due diligence of the supply chain, but also shows increasing evidence that suppliers have comprehensive BC plans available themselves to enable the scrutiny to take place.

The two other points worth noting are the respondents who have selected credentials of those who run the BCM and looking where responsibility for BCM is held. These two responses saw 8-year CAGRs of 13.1% and 10.7% respectively. These increases tie in with trends we have noticed within our own membership base: our members are reporting an organizational shift towards resilience, with BC increasingly being the responsibility of the board. However, whilst board responsibility might be viewed as a positive by some professionals (e.g. increasing the visibility of BC at senior levels), some will require more validation of the professional integrity of those who run the BCM – particularly if those on the board are not BC practitioners.

What information do you seek to better understand the BCM of key suppliers?

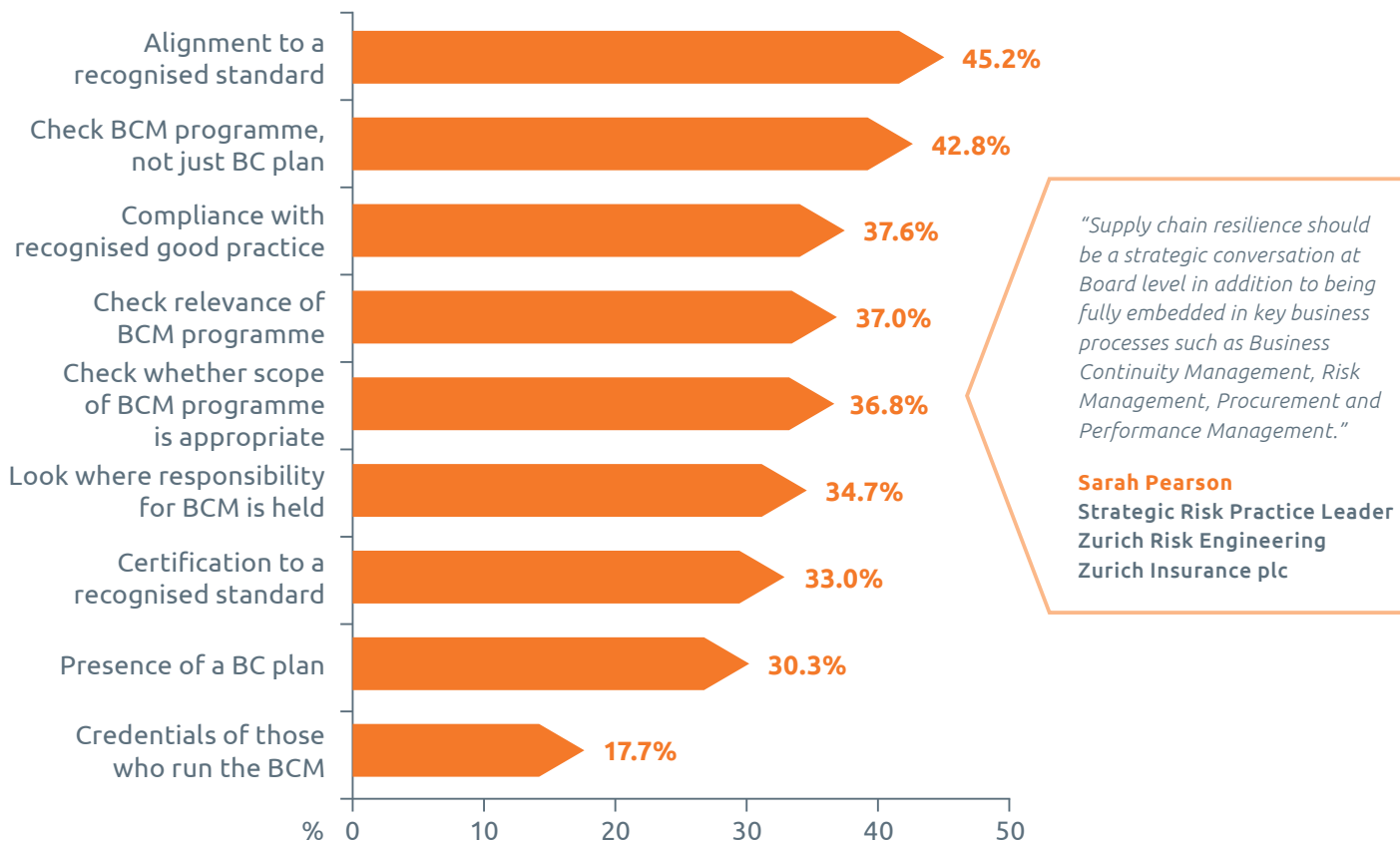


Figure 11. Information organizations most commonly seek to understand the BCM of key suppliers, in % (2010-2018)

THE TIMEFRAME FOR REVIEWING SUPPLIERS HAS CHANGED LITTLE OVER THE PAST 10 YEARS

- Most respondents report they review their business continuity plan (BCP) with their suppliers at scheduled points during the year
- Over 80.0% of respondents do not review plans after a major incident, preferring to adhere to a structured review cycle

The triggers for an organization to review its business continuity plan (BCP) with its key suppliers has changed little over the past 10 years: the highest rated response each year is to carry out the review at contract renewal time; an answer selected by 40.4% of respondents. Nearly a third of organizations (31.8%) review their BCP at scheduled review meetings, with 28.8% of respondents choosing to review in an ad-hoc way.

15.0% of respondents claim never to review their plans with their suppliers – a figure that has remained stable over the 10 year period of this report publication. However, when reviewing the report data for those respondents who never review their plans, the same group also report the lowest number of disruptions: in 2018, just 10.0% of those who never review their plans had more than five disruptions over the course of the year compared to 15.0% of those who do carry out reviews. Furthermore, the bulk of respondents who claim to never review their supply chains are from small- to mid-sized organizations (80.0% of respondents work for organizations which employ under 5,000 people worldwide) and, by characteristic, have both less complex supply chains as well as less resource to carry out the reviews.

Perhaps more worrying is the 19.1% who review their BCP with key suppliers after a new/significant external risk/threat, the 18.4% who review after a major event from the organization’s end and the 16.8% who review after a major event from the supplier’s end. These figures have remained unchanged over the production period of the report. Such statistics suggest that over 80.0% of respondents fail to perform BCP reviews with suppliers after an incident occurring, preferring to adhere to a structured, planned approach rather than a reactive one. Whilst adopting a purely reactive strategy would not be advised, performing a short review after an incident in addition to a planned, regular meetings would better protect against incidents recurring.

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

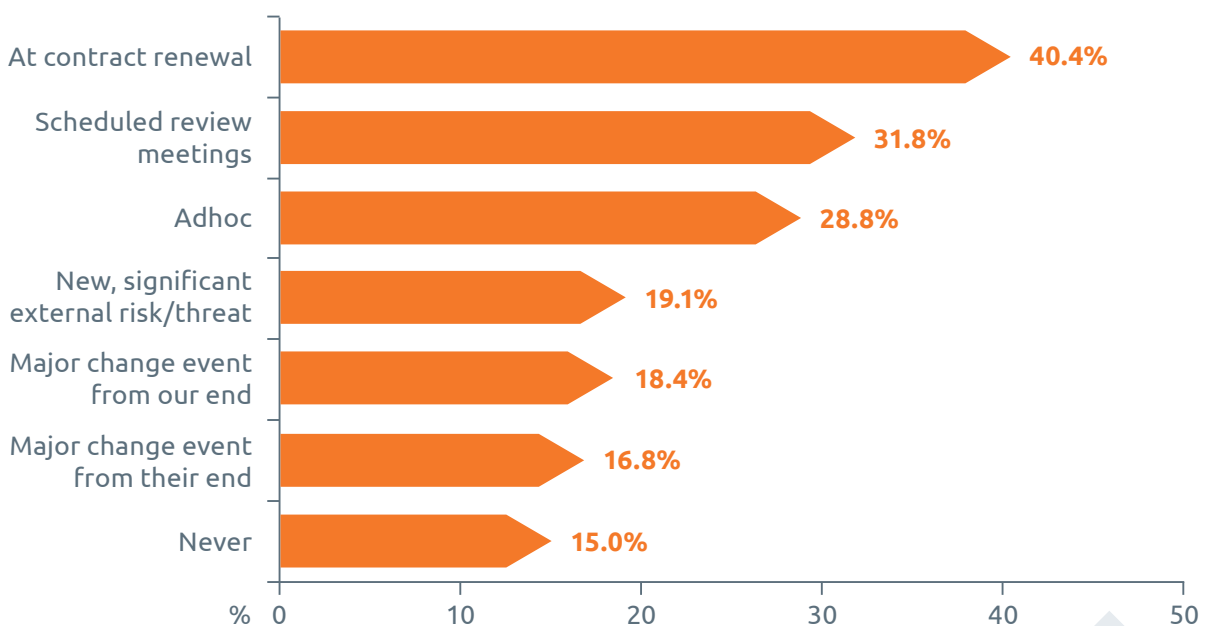


Figure 12. Frequency of supplier BC arrangement review by purchasing organizations, in % (2010-2018)

DUE DILIGENCE IS TWO-WAY – BUT BUSINESS CONTINUITY ARRANGEMENTS ARE RARELY QUESTIONED BY NEW CLIENTS

- 27.0% of respondents are asked about BC arrangements for “all” or “the majority” of tenders for new work
- The balance is unfavourable however: 30.0% are “rarely” or “never” asked

Just 10.4% of respondents claim they are asked about BC arrangements at every tender for new work and a further 17.2% are asked in the “majority” of tenders (51-99%): a total of 27.6%. With 29.4% of respondents claiming they are either “rarely” asked or “never” asked to provide assurance of their business continuity arrangements, the balance is tipped unfavourably towards lower levels of due diligence. These figures have changed little throughout the 10-year production time of the Supply Chain Resilience report and suggests a poor level of consideration to BCM due diligence across the supply chain. With boards becoming increasingly accountable for organizational resilience, this is a trend we hope would improve over coming years.

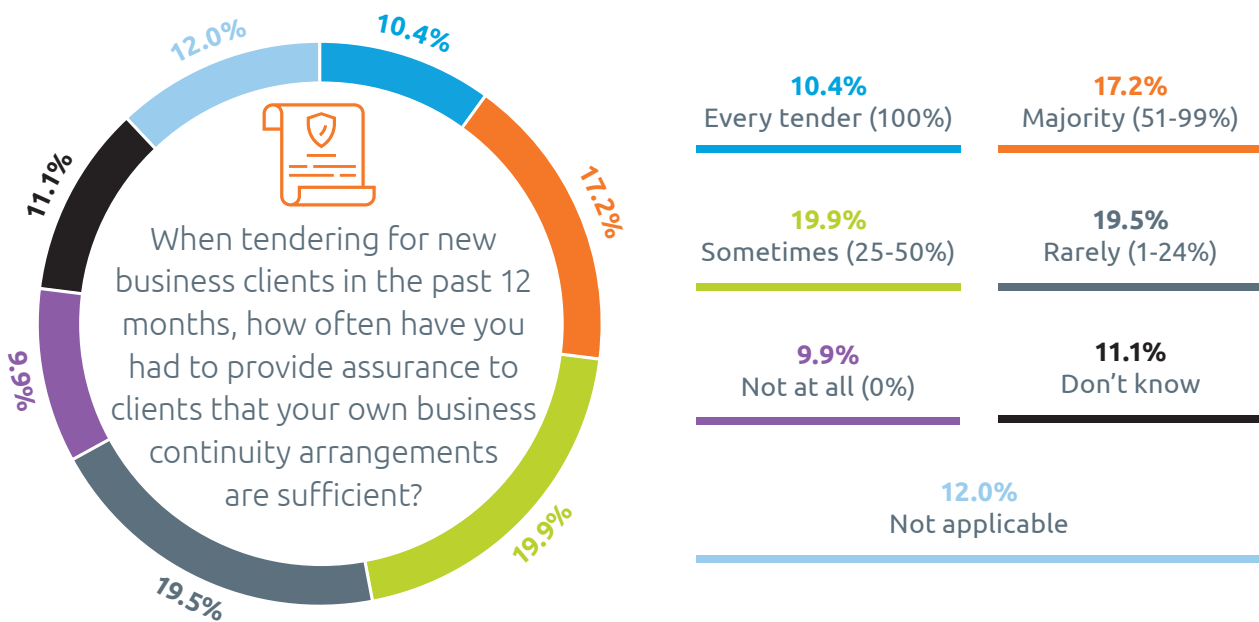


Figure 13. Average percentage that organizations have had to provide assurance to new business clients that their own business continuity arrangements are sufficient, in % (2011-2018)

BUSINESS CONTINUITY OFTEN ONLY FEATURES IN SUPPLIER CONTRACTUAL DISCUSSIONS IF THE CONTRACT RISK IS HIGH OR AFTER THE PURCHASE DECISION HAS ALREADY BEEN MADE

- 78.4% say that BC features in supplier contractual discussions, but 44% claim it only features “when contract risk is high” or “after the purchase decision has been made”
- Nearly a quarter (22.0%) indicate that BC does not feature at all

Only just over a third (34.1%) of those surveyed indicate that BC features “from the start” of contractual discussions with suppliers. Although a further 44.0% state that BC features, this is only when contract risk is high (27.8%) or after the purchase decision has been made (16.5%). Most concerning however is that just over a fifth (21.6%) reveal that BC does not feature as part of their contractual discussion with suppliers. The BCI’s Good Practice Guidelines (GPG) encourage that assessment of a supplier’s business continuity programme occurs before contracts are agreed and it is concerning to see such a low figure here. Failure to do so may result in increased cost if future contract enhancement is required.

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

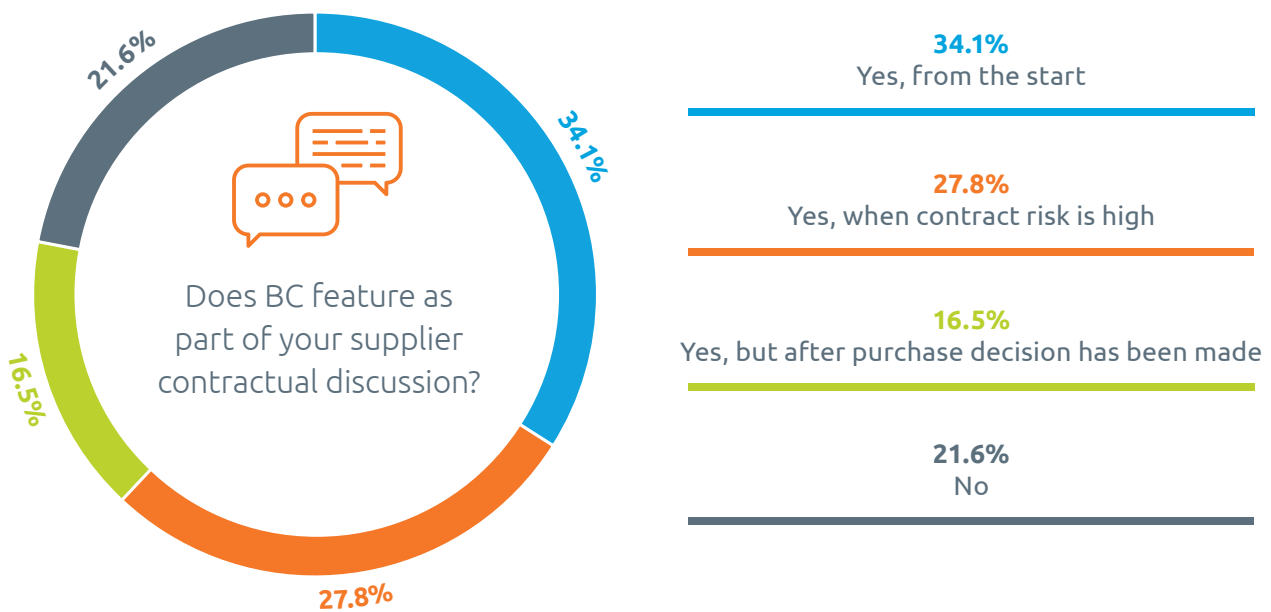


Figure 14. Average percentage of organizations for whom BC features as part of organizations’ contractual discussions with suppliers, in % (2011-2018)

MORE ORGANIZATIONS ARE ASSESSING SUPPLIER’S BUSINESS CONTINUITY EFFECTIVENESS

- Nearly half (49.9%) of those surveyed say that their organization does not check that their suppliers’ BCP might work in practice
- Most common forms of BCP assessment include “see all documented outcome reports and action plans” (29.1%), “run joint exercises” (18.4%) and/or “desktop exercises” (17.1%)

Although nearly half (49.9%) of those interviewed report their organization does not assess if suppliers’ BCPs work in practice, this was less reported in 2018 (46.7%) than in 2010 (49.7%) showing a gradual improvement. However, there is still clearly more to be done. Since 2010, the forms of assessment which have seen the biggest increase are running joint exercises (from 13.3% in 2010 to 25.6% in 2018) and desktop exercises (from 17.6% in 2010 to 25.6% in 2018). These findings indicate that organizations are increasingly adopting a collaborative approach when assessing the effectiveness of suppliers’ BC plans.

How have you checked that suppliers’ BCPs might work in practice?

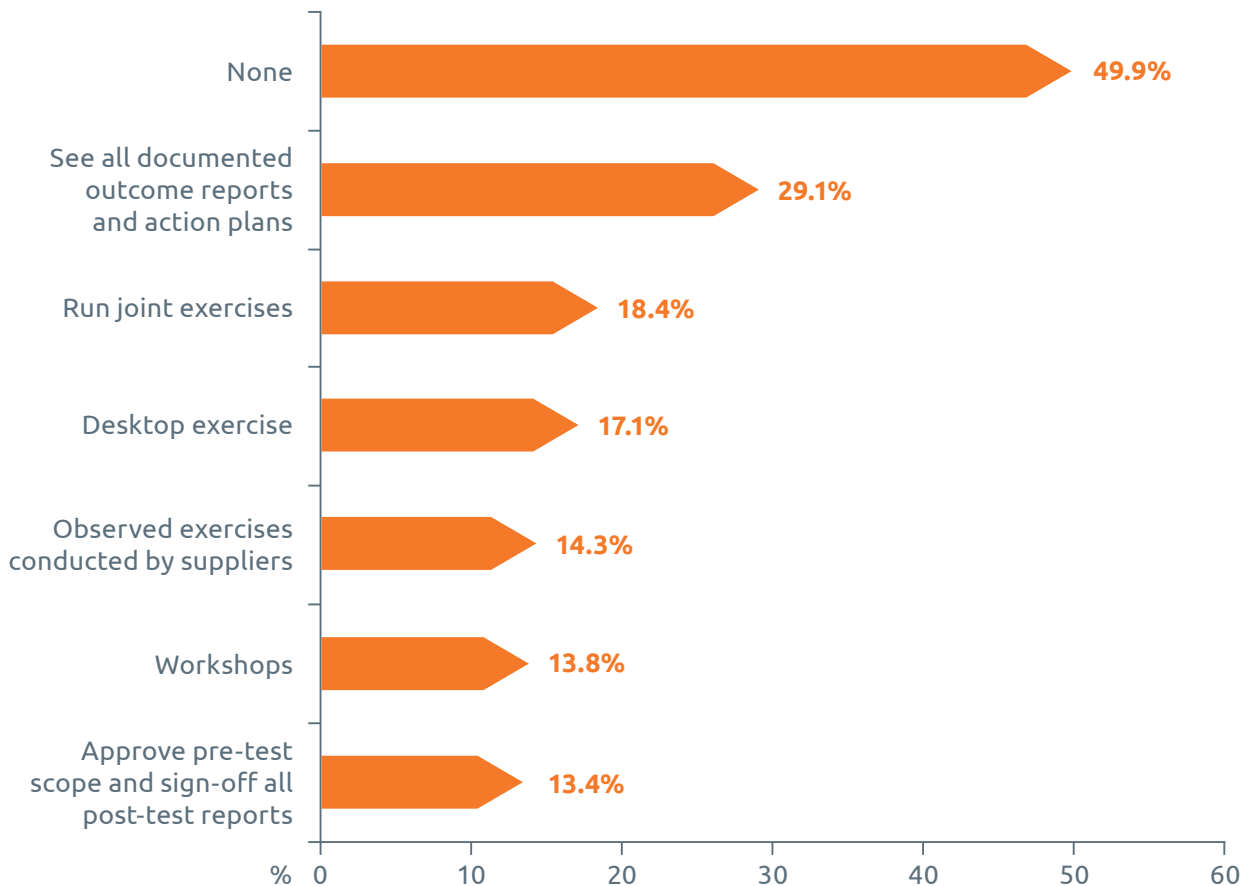


Figure 15A. How organizations have checked that suppliers’ BCPs might work in practice, in % (2010-2018)

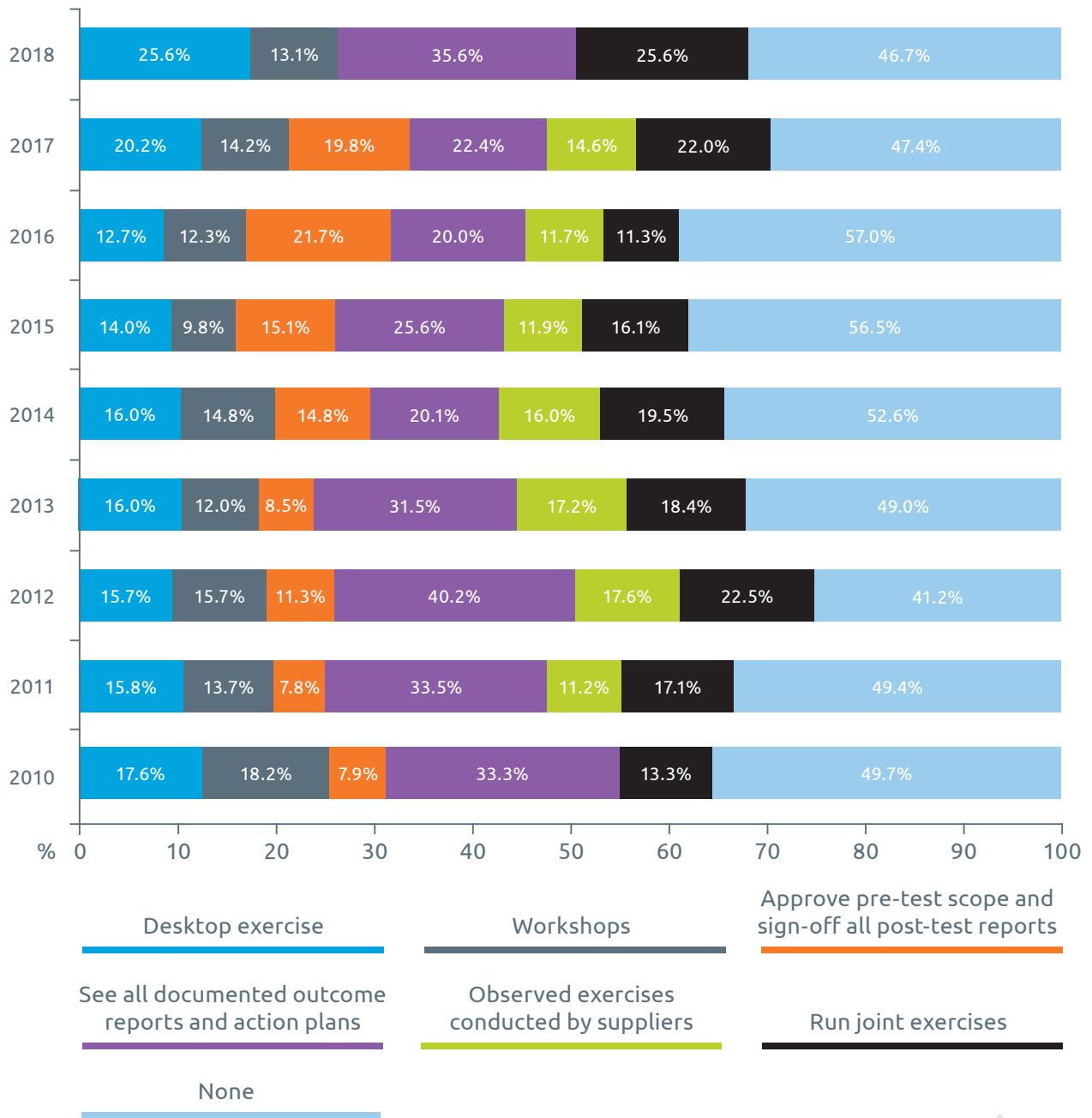


Figure 15B. How organizations have checked that suppliers' BCPs might work in practice, in % (2010-2018)

Respondents could select multiple answers

TOP LEVEL MANAGEMENT COMMITMENT TO MANAGING SUPPLIER CHAIN RISK REMAINS UNCHANGED

- Those surveyed who believe that their organization’s top management commitment is “low” or “none” has not fallen below 20% since survey conception
- No significant change in top level management commitment since the question was introduced in 2013

In 2018, 77.7% of those surveyed stated that they would assess their organization’s top management commitment as “high” or “medium”, the highest percentage since the question was introduced in 2013. It is an improvement on 2017 (70.6%) and 2016 (70.0%). However, nearly a quarter (22.5%) still rate their organization’s top management commitment as “low” or “none”. We would hope to see top management commit further to managing supply chain risk over time in order to achieve a more resilient organization overall.

There is also correlation between top level management commitment and whether organizations report or monitor supply chain disruptions. In 2018, of those who stated top-level management commitment was “high” or “medium”, only 18.0% reported that their organization did not report or monitor supply chain disruptions. Comparatively, of those who stated that top level management commitment was “low” or “none”, nearly half (46.4%) did not report or monitor supply chain disruptions. This trend is also present in the 2013 and 2015 surveys. At the very least, this correlation suggests that top level management commitment may lead to greater visibility of supply chain disruptions across the organization, or greater adoption of best practice behaviours.

How would you assess your organization’s top level management commitment to managing supplier chain risk?

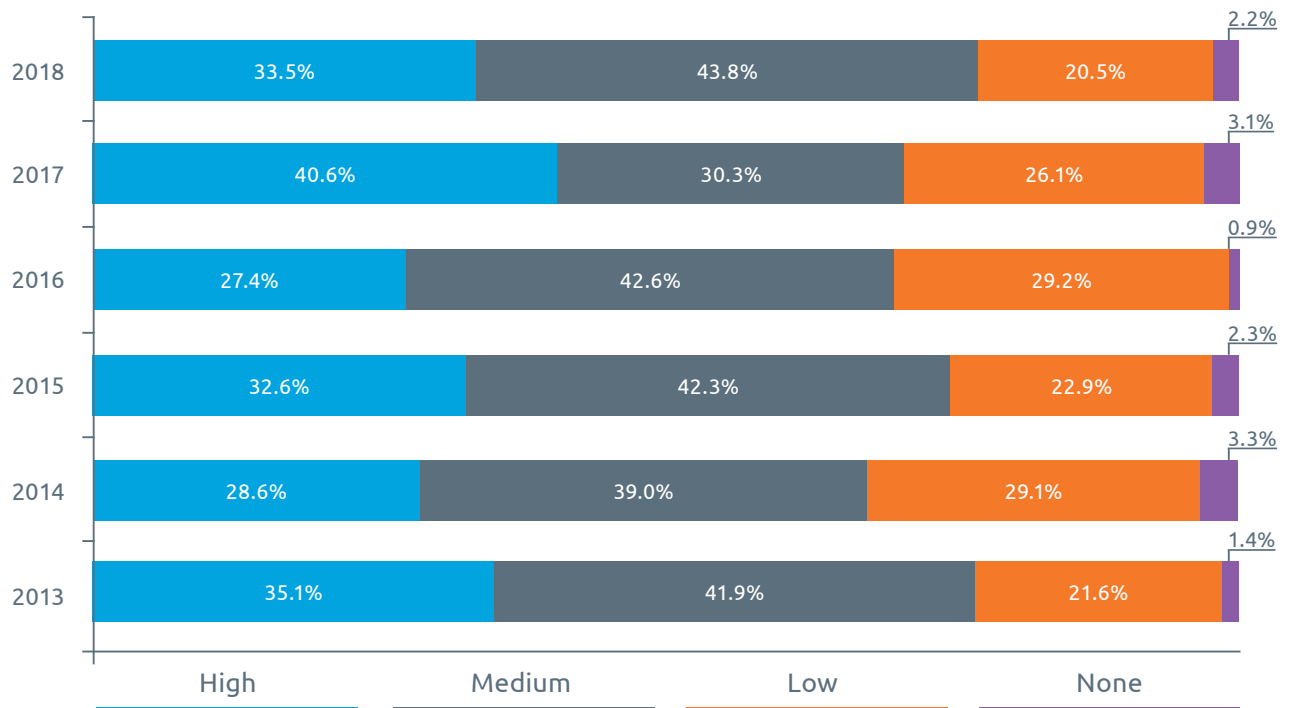


Figure 16. Top level management commitment to managing supply chain risk, in % (2013-2018)

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Annex





Total number of respondents

4706

 Year	 Number of respondents	 Number of countries	 Number of industry sectors
2009	201	-	15
2010	310	35	15
2011	559	62	14
2012	532	68	15
2013	519	71	15
2014	525	71	14
2015	537	67	14
2016	526	64	15
2017	408	64	14
2018	589	76	15

Table 1. Number of respondents, Supply Chain Resilience survey

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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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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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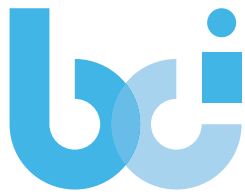
Daisy's commercial research background includes working for companies such as GlobalData and Vanson Bourne. She recently finished the Advanced Certificate in Market and Social Research. She is also a keen writer and has written for publications that specialise in trade and investment. Daisy holds a Masters in Arabic and Spanish from the University of Edinburgh.

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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 8,000 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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