MARSH | Microsoft

INSIGHTS | NOVEMBER 2019

2019 Global Cyber Risk Perception Survey

Manufacturing Industry Report

MARSH & McLENNAN COMPANIES


PLANNED
01:29:18
01:29:18 / 01:29:18
DOWNTIME
SETUP
01:29:18
RUNNING
Time in Running
01:29:18
01:29:18 / 01:29:18
SHIFT
JOB
OUT
EVENTS
STARTS
SLEEVES IN
245649/900000
SLEEVES OUT
245617/900000

INSIGHTS | NOVEMBER 2019

2019 Global Cyber Risk Perception Survey

CONTENTS

Introduction

As much as any industry, manufacturing is undergoing rapid transformation driven by continual advances in areas ranging from artificial intelligence and the Internet of Things (IoT) to autonomous technology and data availability. And while the speed of change keeps increasing, cyber risks seem to evolve even faster.

We've seen cyber risk move beyond data breaches and privacy concerns to complex schemes capable of disrupting entire businesses, industries, and supply chains. As risk professionals and other leaders in the manufacturing sector are learning, cyber risk can be mitigated, managed, and recovered from, but not eliminated.

The recently released *2019 Global Cyber Risk Perception Survey* from Marsh and Microsoft builds on a related survey conducted in 2017, and released in 2018. It explores cyber risk perceptions and risk management at organisations worldwide, especially in the context of a rapidly evolving business technology environment. In this industry-focused report of 2019 data, we look at how respondents from manufacturing organisations perceive and manage cyber risk.

Overall, manufacturers' perception of cyber threats mirrored other industries: The concern level has increased since 2017, but belief in their ability to manage cyber risk — their cyber confidence — declined.

One key difference between manufacturers' perceptions of cyber risk compared to other industries is in the level of concern regarding supply chain risk — manufacturers rank supply chain risk third in their list of concerns, after cyber threats and economic uncertainty, whereas other industries rank it seventh.

There are some interesting nuances to how manufacturers see the interplay between cyber threats and supply chain risk; for example, while supply chain risk ranks higher on the concern list for manufacturers than for other industries, perceptions of risk posed by supply chain partners are significantly lower among manufacturers than in other industries — a somewhat counterintuitive finding.

We also found that our manufacturing based respondents were less likely than those companies in other industries to employ an economic approach to measuring or expressing their cyber risk and a larger number had no method at all to do so. Likewise, fewer manufacturers have implemented key cyber risk resilience actions such as training, loss modelling, supply chain risk assessment, or updating cyber event response plans, focusing instead on technical, preventive actions.

We hope you find the manufacturing-focused *2019 Global Cyber Risk Perception Survey Report* to be a useful tool in generating discussion in your organisation and with your external advisors as you navigate the rapidly evolving cyber risk landscape. We encourage all companies to build cyber resilience, and to approach cyber risk as a critical threat that, with vigilance and application of best practices, can be managed confidently. Finally, we thank the many clients and others who shared their perspectives on this important topic.

Manufacturers See Cyber Risk as a Top Concern

Manufacturers globally reported a sharp rise in concern between 2017 and 2019 regarding cyber-attacks and cyber threats.

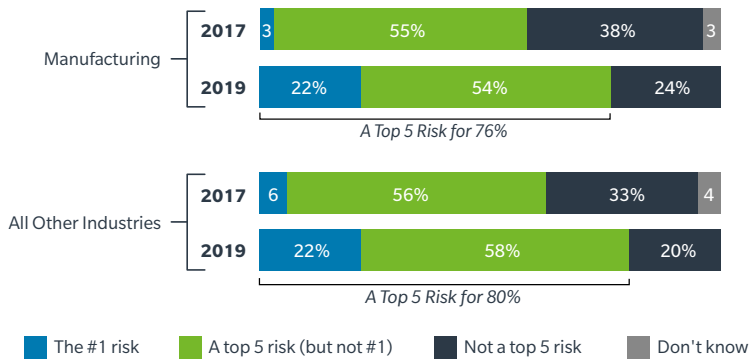
More than three-quarters (76%) of manufacturing organisations responding to the Marsh Microsoft *2019 Cyber Risk Perception Survey* ranked cyber risks in the top five concerns for their organisation — similar to the 80% of organisations in other industries that said the same (see Figure 1).

There was also a sizable spike since 2017 — to 22% in 2019 — in the number of manufacturers and others citing cyber risks as their organisations' number one risk concern.

FIGURE 1

Cyber risk is a top-five concern for manufacturing organisations, with 22% ranking it #1.

Q. Of the following business threats, please rank the top 5 that are the biggest concerns to your organisation (cyber-attacks/cyber threats shown).



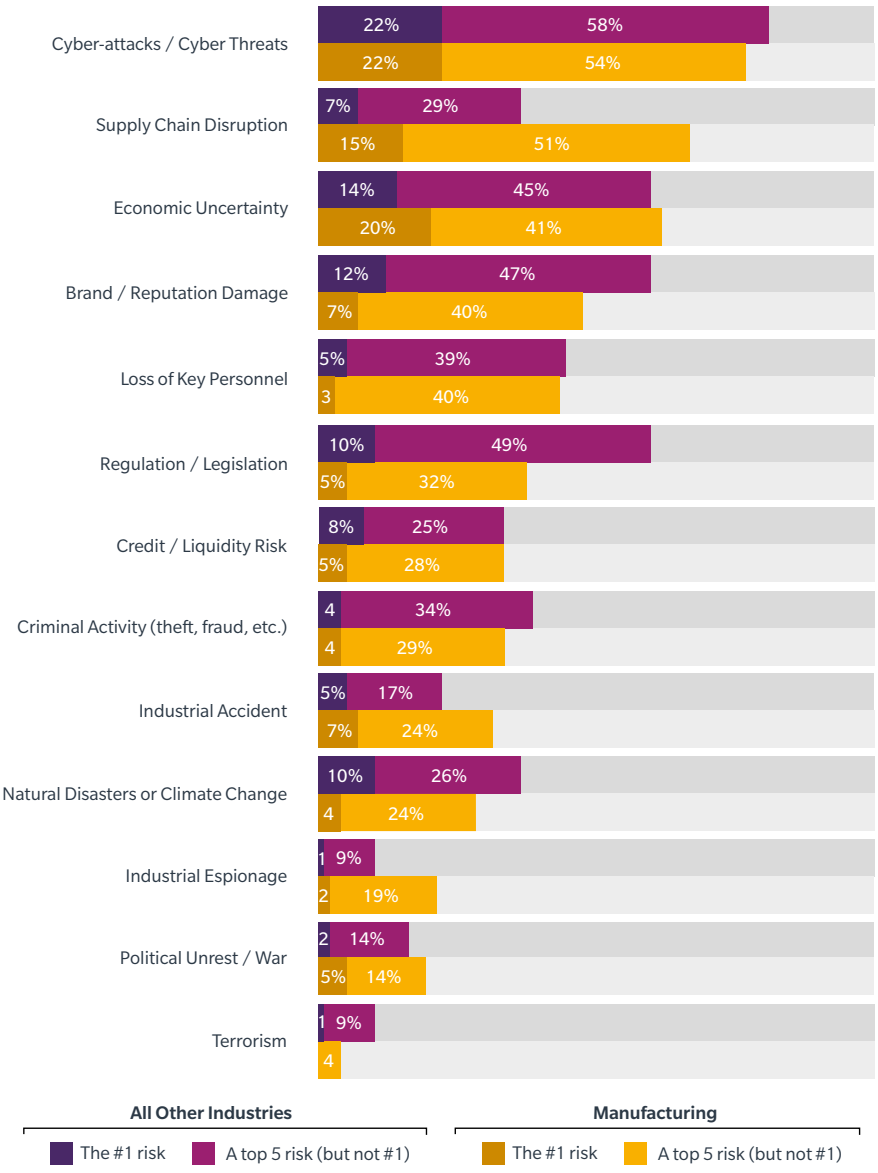
Driven in part by the steady drumbeat of incidents in the news, cyber risks have risen above all other strategic business concerns for most organisations in manufacturing as well as all other industries (see Figure 2).

At the same time, manufacturers were significantly more likely than firms in other sectors to cite supply chain disruption as a top-five concern — 66% vs. 36%, respectively. In fact, 15% of manufacturing firms view supply chain disruption as the number one risk to their business, versus just 7% of organisations in other industries. The main driver of this difference is likely to be the crucial role that supply chains, and supply chain partners, play in the core business operations of manufacturers relative to companies in other industries.

FIGURE 2

Cyber risks are the top concern for manufacturing organisations; supply chain disruptions are also high on the list.

Q. Of the following business threats, please rank the top 5 that are the biggest concerns to your organisation.



Confidence in Cyber Resilience Falls for Manufacturers and Others

While organisational concern over cyber risks surged over the past two years, there was a simultaneous decline in organisations' confidence around overall cyber resilience.

We asked respondents to rate current confidence levels across three key areas of cyber resilience — understanding/assessing, mitigating/preventing, and managing/responding to cyber risks. Manufacturing organisations and firms in all other industries reported lower levels of confidence in all three areas in 2019 than in 2017.

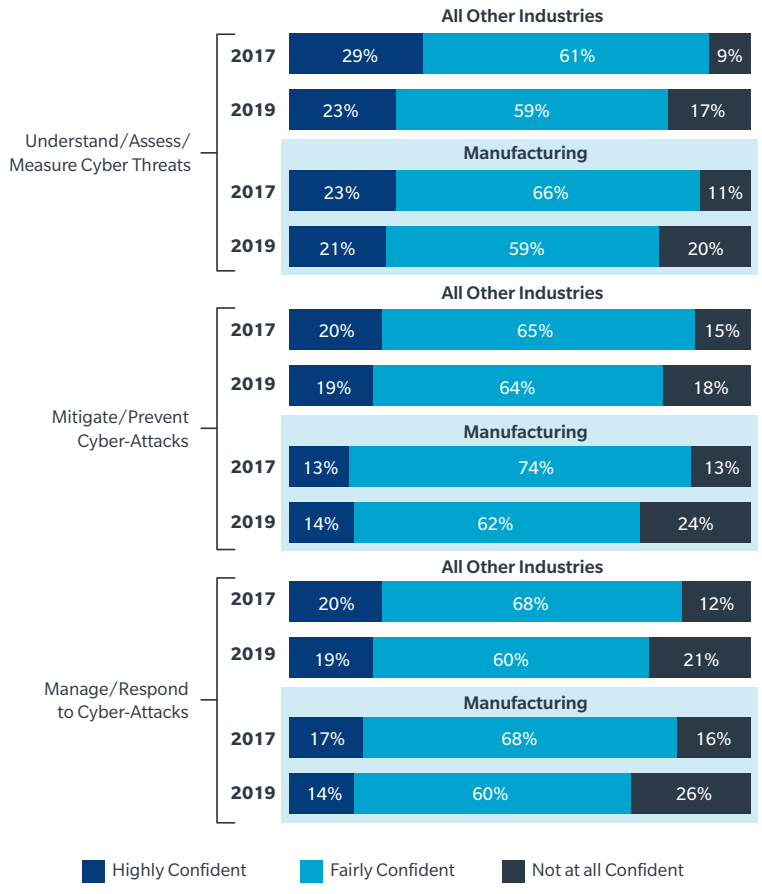
Moreover, manufacturers now consistently rate their confidence levels lower across all three areas of cyber resilience than do organisations in other industries. Almost twice as many manufacturing firms claim they are "not at all confident" in their capabilities to mitigate/prevent or manage/respond to cyber-attacks than said they are "highly confident" around these two areas.

Almost twice as many manufacturing firms claim they are "not at all confident" in their capabilities to mitigate/prevent or manage/respond to cyber-attacks than said they are "highly confident" around these two areas.

FIGURE 3

Confidence in cyber resilience measures slipped from 2017 to 2019.

Q: For each of the following, please indicate your level of confidence in your organisation's ability to...



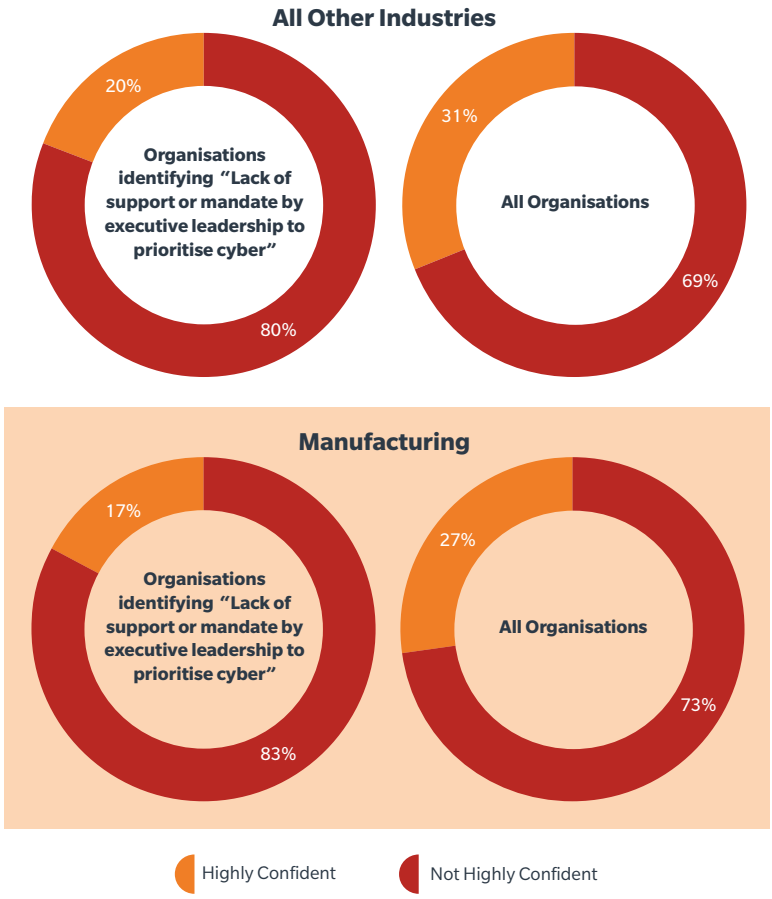
The decline in organisational confidence in cyber resilience capabilities may be partly driven by a lack of executive leadership on issues and initiatives related to cyber risk.

Organisations that cited "lack of support or mandate from executive leadership to prioritise cyber" as a major barrier to effective risk management were significantly less confident in their overall cyber resilience compared to those that did not cite lack of management support (see Figure 4).

FIGURE 4

Confidence in cyber resilience is low where senior leaders don't prioritise cyber.

Q: Which of the following do you consider major challenges or barriers to effective cyber risk management for your organisation?



Lack of senior leadership involvement in championing cyber risk management for the organisation is a problem in all industries. This is illustrated by the average amount of time spent on cyber risk and cybersecurity by people in different roles and functions (see Figure 5).

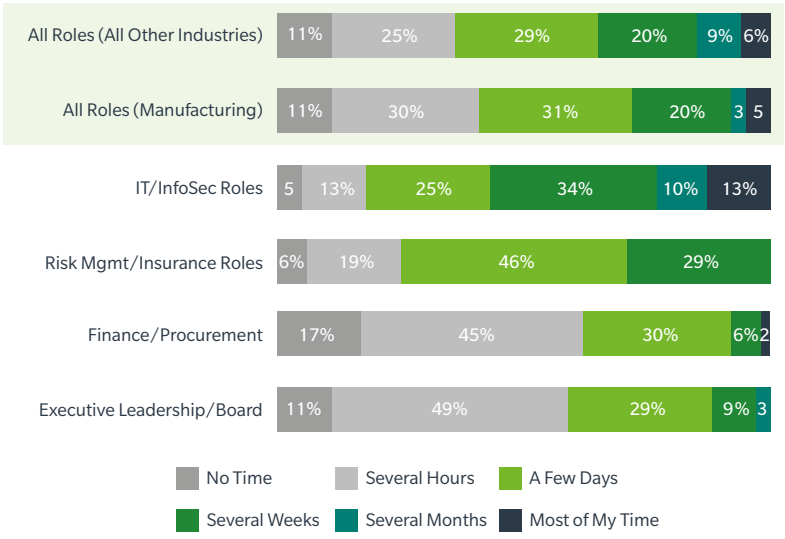
At manufacturing firms, a clear majority (60%) of executive leaders and board members reported spending just hours each year focused on cyber risk and/or cybersecurity. No manufacturer's risk management/insurance professionals reported spending more than a few weeks focused on these issues, despite the prominence of cyber risk as a top strategic threat for manufacturing organisations.

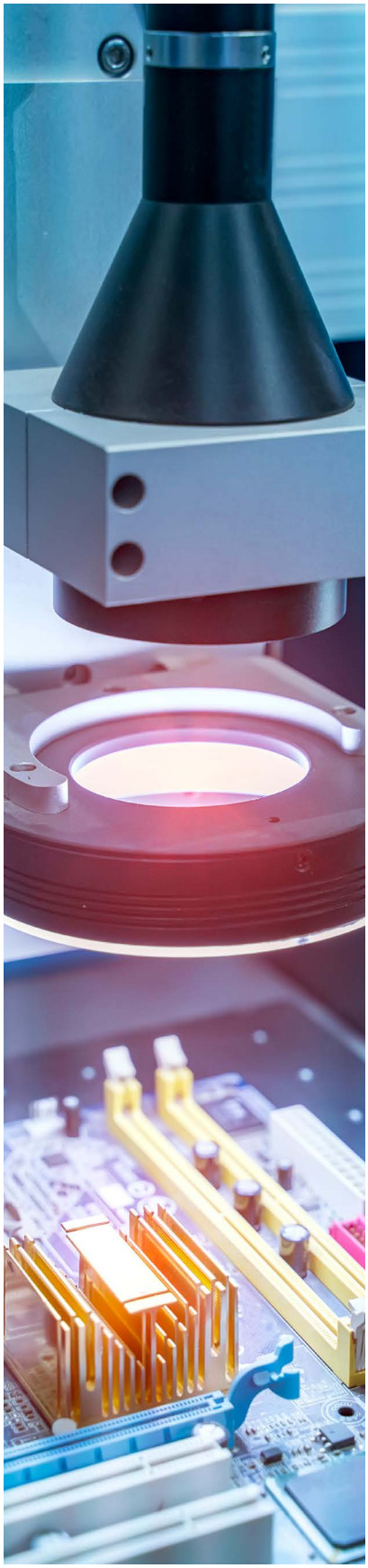
Worldwide, there seems to be a clear need for more time and focus on cyber risk by risk managers and senior leaders risk at manufacturers — a finding that applies to organisations across all industries.

FIGURE 5

Most executive leaders at manufacturers spend just a few hours per year focused on cyber risk and/or cybersecurity.

Q: Over the past 12 months, approximately how much of your total professional time has been spent on cyber risk and/or cybersecurity?





Another notable challenge for manufacturers in managing cyber risk is the low appreciation for external standards and guidelines.

Manufacturing firms responding to the survey are significantly more likely than firms in other industries to view both governmental laws and regulations and "soft" industry standards as having little effect on improving their cybersecurity and reducing overall cyber risk (see Figure 6).

Only 27% of manufacturers agree that government regulations are "very effective" in helping them improve their cybersecurity postures, and only 20% say the same about industry standards, such as NIST and ISO.

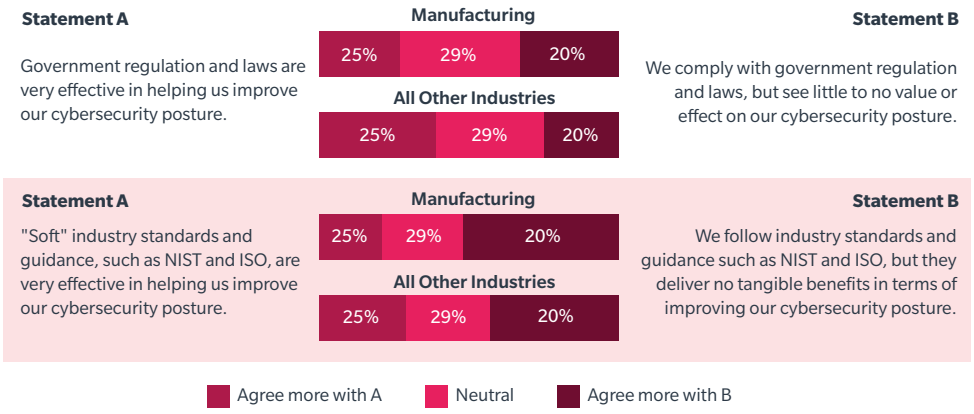
In fact, 34% of manufacturing organisations see statutory regulations as being of "little to no value" and a majority (52%) say the same about industry standards — both significantly higher responses than in other industries.

This variance may point to an opportunity for the manufacturing sector to ramp up its engagement and dialogue with public sector entities to identify ways to strengthen the perceived effectiveness of cyber regulation and industry standards.

FIGURE 6

Manufacturing organisations are likely to view government regulations and industry standards as having little impact on cybersecurity posture.

Q: For each of the following pairs of statements, please indicate which choice most closely reflects your organisation's views



Manufacturers Don't See Suppliers as Posing Major Cyber Risk

Manufacturers in our 2019 survey expressed much higher levels of concern about supply chain disruption compared to companies in all other industries.

Two-thirds (66%) of manufacturers ranked supply chain disruption as their third-greatest concern, after cyber risks and economic uncertainty. This is significantly higher than the 36% of firms in other sectors that cited supply chain disruption in their top five concerns, ranking it seventh.

One might assume that manufacturers perceive greater levels of cyber risk from their supply chain partners than do organisations in other industries, because manufacturing core operations tend to rely more heavily on supply chain integrity and security.

But our survey results indicate otherwise. For example, when asked to rate the level of cyber risk posed to their organisation by their supply chain partners, manufacturers report significantly lower levels of concern than organisations in other industries.

Only 30% of manufacturers rate their level of concern about supply chain risk from their partners as "somewhat" or "very high," compared to 40% in other industries (see Figure 7).

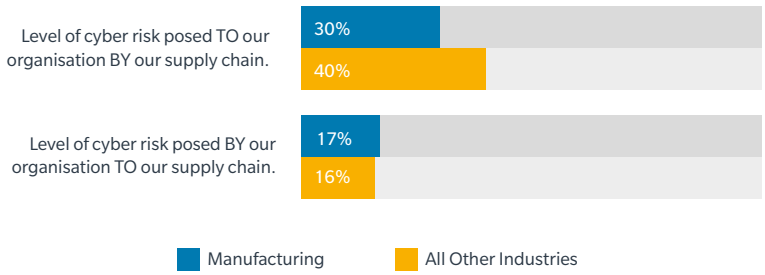
This disconnect between high concern over supply chain risk generally, and lower concern over risk from supply chain partners, is a bit of a conundrum.

On the other hand, manufacturers reacted in about the same low proportion as did other industries regarding the level of cyber risk their organisation poses to their supply chain partners. Only 17% of manufacturers — and 16% in other industries — said that their concern about risk they themselves pose was "somewhat" or "very high."

FIGURE 7

Manufacturers are less concerned than those in other sectors about the cyber risks posed by their supply chains, but are similar in their view of the cyber risk they pose to suppliers.

Q: What level of cyber risk is posed to your organisation BY its supply chain / third parties? And the reverse: What level of cyber risk does your organisation pose TO its supply chain / third parties?



For all organisations, including manufacturers, the gap between perceptions of risk posed by the supply chain versus the risk posed to the supply chain increases when we look at the results based on company size (see Figure 8).

Firms with the largest revenues are more likely than smaller ones to perceive a higher level of cyber risk posed to their organisations by their supply chains, rather than vice versa.

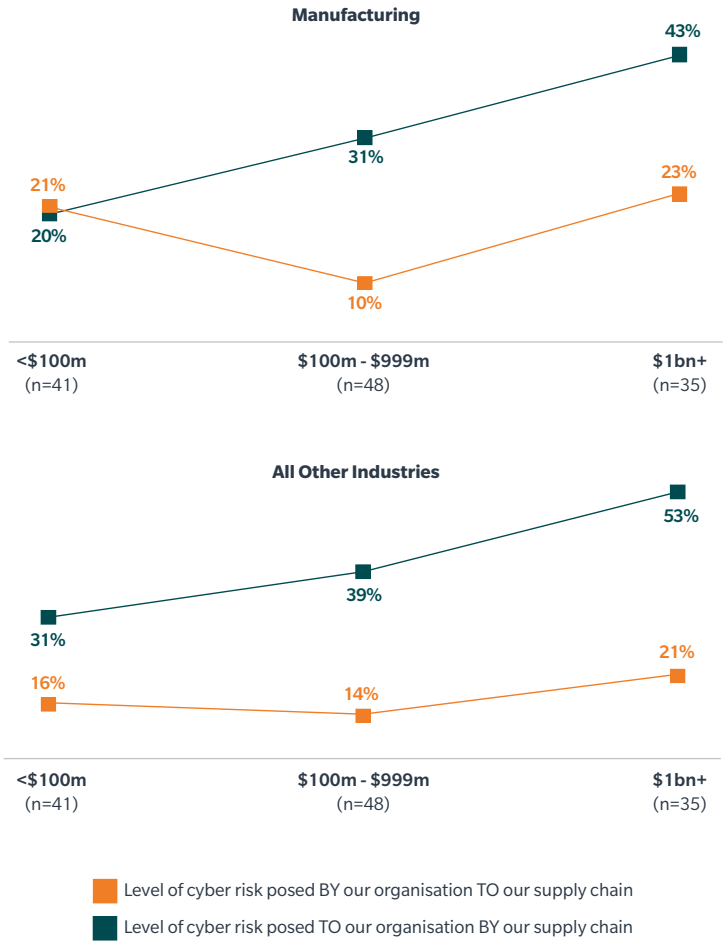
However, among manufacturers of every organisational size/revenue, fewer cited high cyber risks from their supply chains than did similar-sized organisations in other industries.

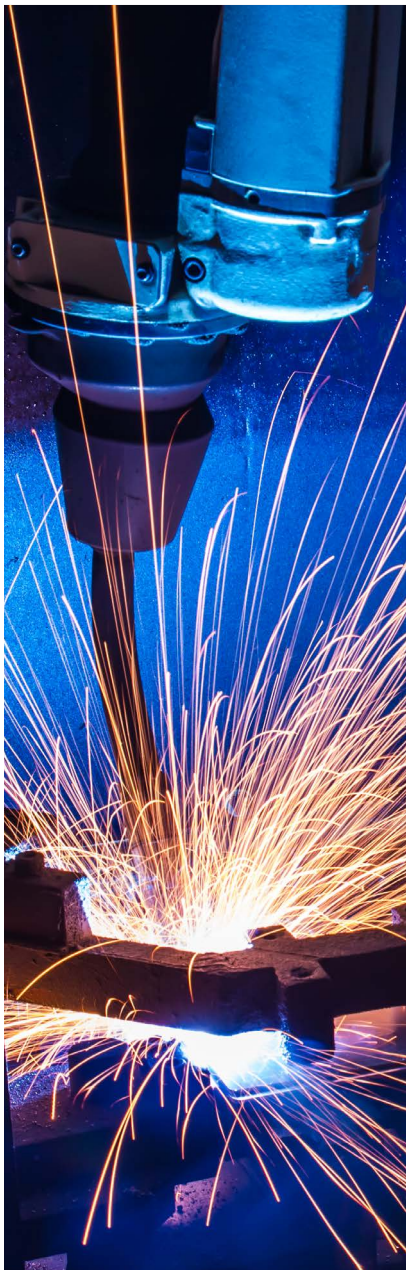
This is surprising given the significantly higher levels of concern expressed by manufacturers about "supply chain disruption" compared to those in other industries.

FIGURE 8

Large manufacturing firms are more likely than smaller manufacturers to perceive a high level of cyber risks posed to their organisations by their supply chain partners

Q: What level of cyber risk is posed to your organisation BY its supply chain / third parties? And the reverse: What level of cyber risk does your organisation pose TO its supply chain / third parties?



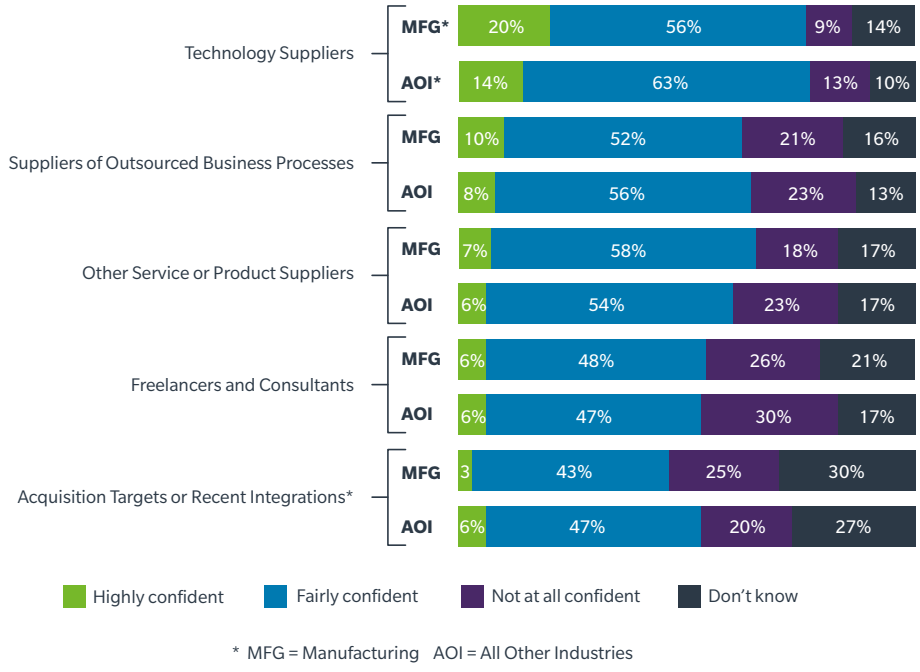


Firms engaged in manufacturing and other industries exhibit similar levels of confidence regarding their ability to mitigate cyber risks posed by suppliers (see Figure 9). In the case of cyber risks presented by technology suppliers, manufacturers have significantly higher confidence that they can prevent or mitigate such risks compared to firms in all other industries.

FIGURE 9

Few manufacturing organisations are highly confident in their ability to mitigate cyber risks posed by various third parties.

Q: How confident are you in your organisation's ability to prevent / mitigate cyber risk from the following?



* MFG = Manufacturing AOI = All Other Industries

Manufacturers Less Likely to Employ Economic Cyber Risk Assessment

What's behind the disconnect between manufacturers' high level of concern about supply chain disruption, and relatively lower level of concern about supply chain risk?

One possible explanation lies in the approach to assessing and expressing cyber risk exposures: Manufacturers appear to be significantly less likely to employ a rigorous economic approach to measuring or expressing their cyber risk exposures compared to other industries (see Figure 10).

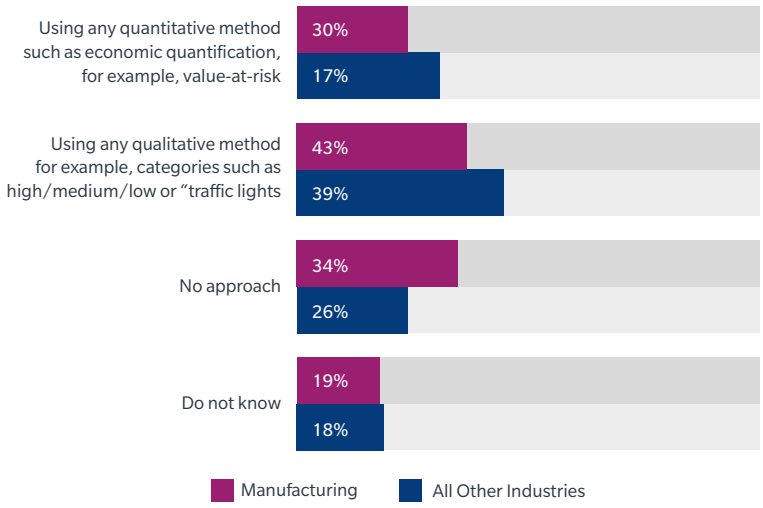
The relatively lower use of economic — or any — cyber risk assessment methods by manufacturers may make them less aware or knowledgeable about potential losses and liabilities in the event of a cyber incident.

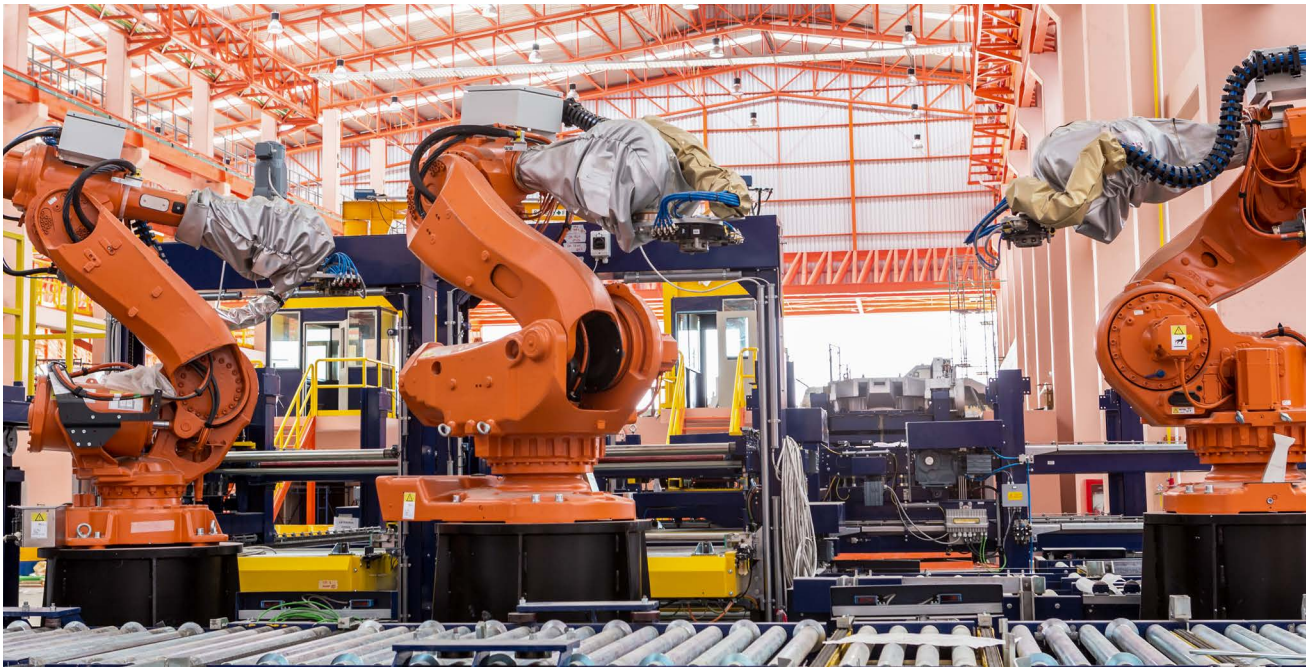
This may help explain why manufacturers report lower levels of concern and/or higher levels of confidence regarding supply chain-related cyber risks compared to companies in other industries.

FIGURE 10

Over a third of manufacturing firms have no formal approach to quantifying cyber risk.

Q: In general, how does your organisation measure or express its cyber risk exposure?





Mitigating Cyber Risks Requires Action and Investment in Multiple Areas

Many organisations are engaging in more — and a broader expanse of — measures to assess, mitigate, and manage their cyber risk exposures. Most, however, continue to focus on technical and preventive activities, such as improving security of digital devices and strengthening cybersecurity policies and procedures.

Manufacturing firms appear to lag slightly behind organisations in other industries when it comes to most actions taken to improve cyber risk resilience.

In particular, manufacturers were significantly less likely than other industries to have conducted penetration testing (45% vs. 54%, respectively), implemented awareness training for employees (58% vs. 67%), identified external resources for incident support (36% vs. 46%), and conducted tabletop exercises or management training (20% vs. 30%) within the past 12 to 24 months.

FIGURE 11

Fewer manufacturers have implemented key cyber risk resilience actions, focusing instead on technical actions.

Q: Please indicate whether your organisation has taken the specific actions listed below within the past 12 to 24 months.

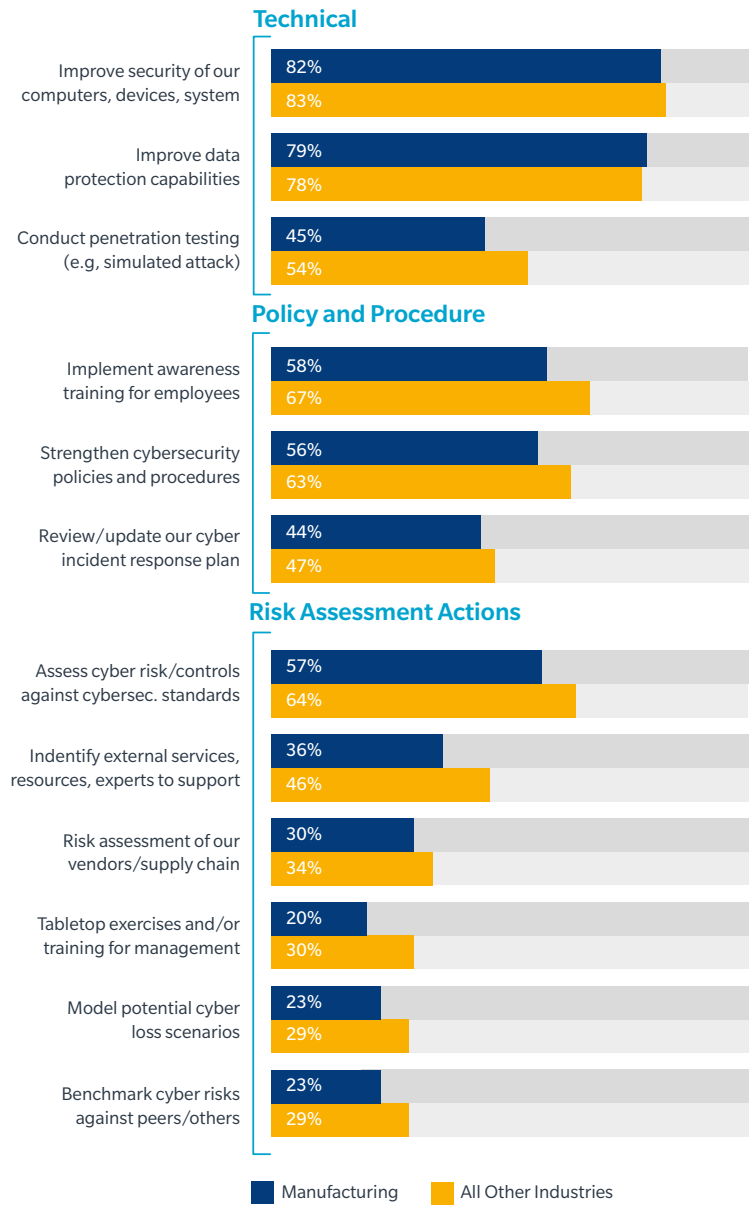
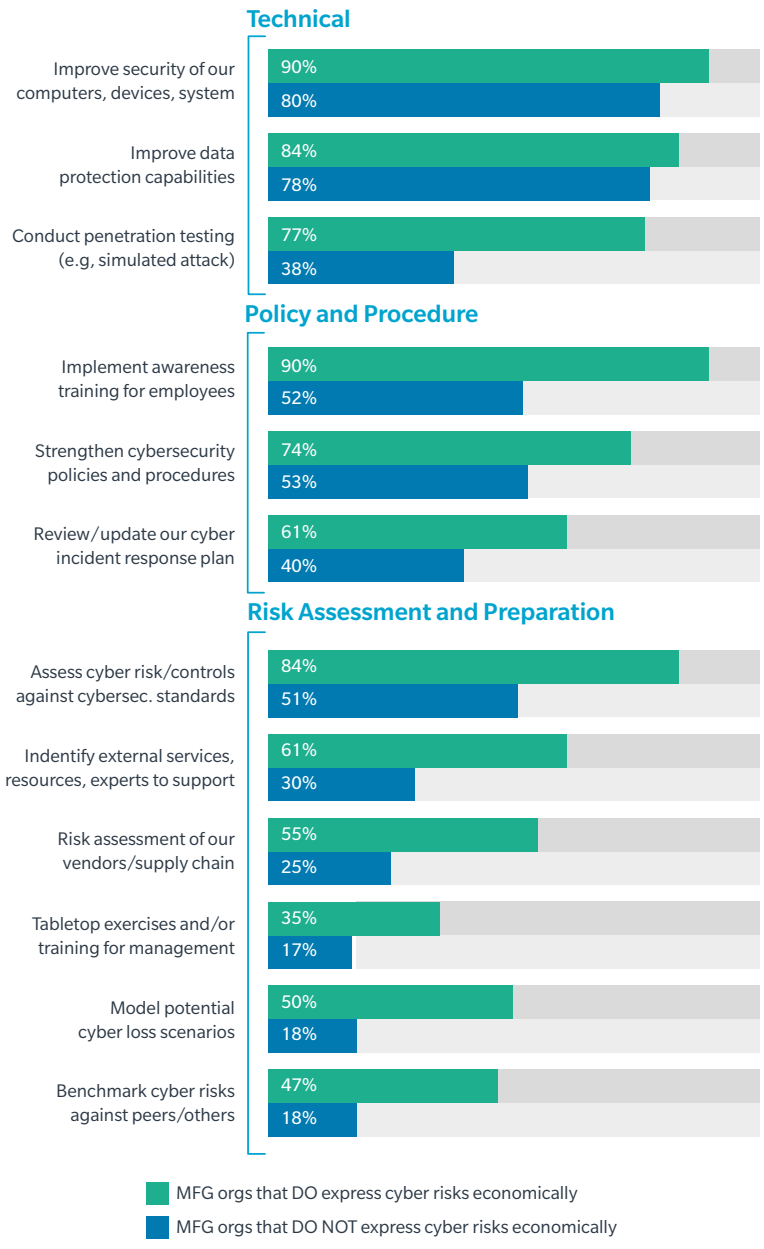


FIGURE 12

Manufacturers that quantify risks in economic terms are likely to implement a wider range of actions to understand and enhance cyber resilience.

Q: For each of the following pairs of statements, please indicate which most strongly reflects your organisation's attitude.



Notably, the 2019 survey found a consistently higher level of sophistication regarding cyber risk resilience exhibited by organisations that measure or express current exposures in economic terms, vs. those that do not.

Organisations that express the risks in economic terms were clearly and consistently ahead of organisations that do not in terms of understanding, confidence, and actions taken around cyber risk.

This general finding is true for manufacturing firms. A relatively small number of manufacturers currently express their cyber risk exposures in economic terms, and those that do have, on average, engaged in a significantly wider range and number of resilience-building actions compared to manufacturers that do not quantify their cyber risk (see Figure 12).

Manufacturers Less Likely to Use Cyber Insurance

Best practice consensus holds that effective cyber risk management requires a holistic breadth of actions and tools, rather than a single emphasis on technology or other "silver bullets".

Organisations should develop multi-pronged approaches that enhance and reinforce key capabilities, resources, and systems in order to reduce their overall level of cyber risk while simultaneously increasing the ability to assess, prevent, and recover from a potential incident or attack.

Cyber insurance and/or alternative risk transfer mechanisms can be key component(s) of a comprehensive cyber risk management strategy.

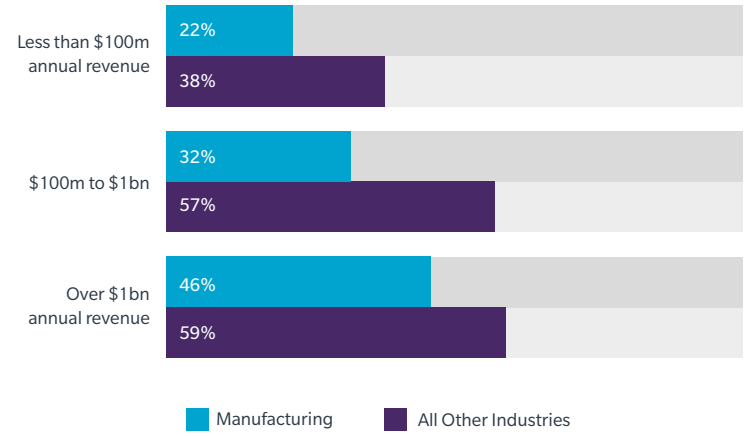
Risk transfer can help firms fill gaps in resilience capabilities and/or effectively cover potentially large costs and penalties arising from a cyber incident. In this area, too, our survey shows that manufacturers have significant ground to make up compared to other industries.

Less than one-third of manufacturing firms said they have cyber insurance policies in place, compared to half of those in other industries (see Figure 13). This disparity is even greater for firms with less than $1 billion in annual revenue.

FIGURE 13

Manufacturing firms are less likely than those in other industries to have cyber insurance policies in place.

Q: What is your organisation's status with regard to cyber insurance?

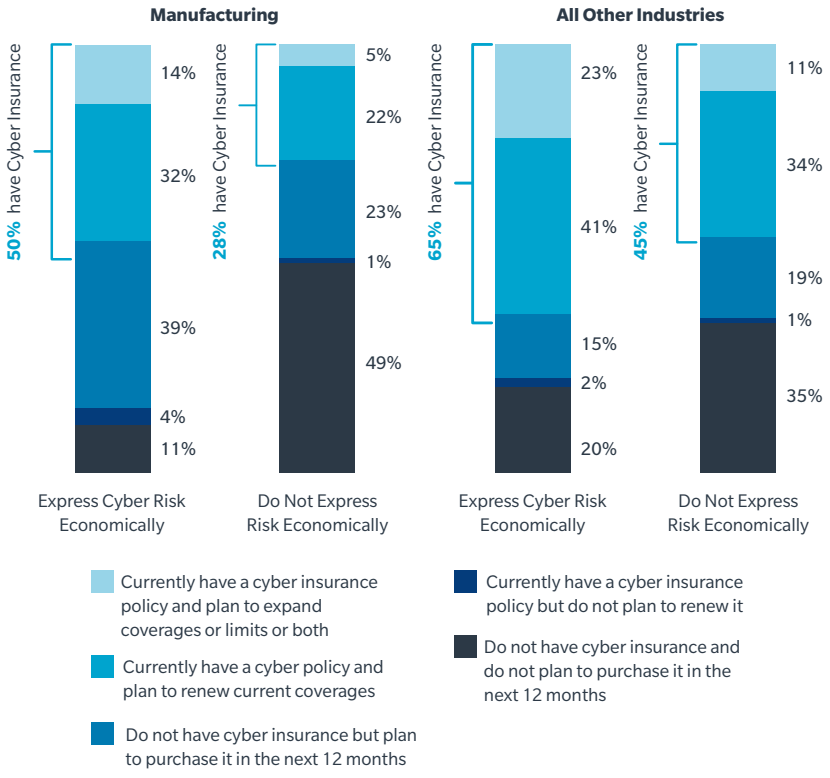


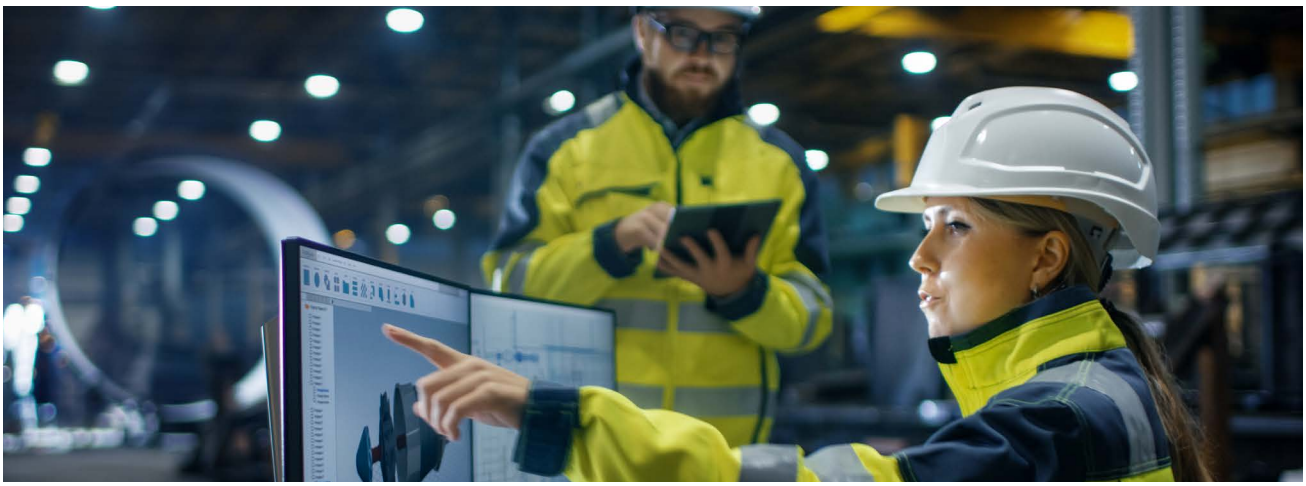
As with other cyber risk mitigation actions, adoption of cyber insurance is higher among organisations that have quantified their cyber risks economically (see Figure 14). Most manufacturers that quantify cyber risk (85%) currently have, will expand, or plan to purchase cyber insurance, compared to only 50% that do not quantify their cyber risk.

FIGURE 14

Manufacturing firms are less likely than those in all other industries to purchase cyber insurance.

Q: What is your organisation's status with regard to cyber insurance?





Plans for the Future

The 2019 survey asked organisations about their recent cyber risk resilience actions and about areas in which they expect to ramp up risk-related activities and investments over the next three years.

Across all industries, the majority of organisations said they expect to increase spending on cybersecurity technology/mitigation, as well as on staff training related to cyber risks (see Figure 15). This is no surprise given that these areas have been in focus for cyber risk initiatives and investments for most organisations over the past two years.

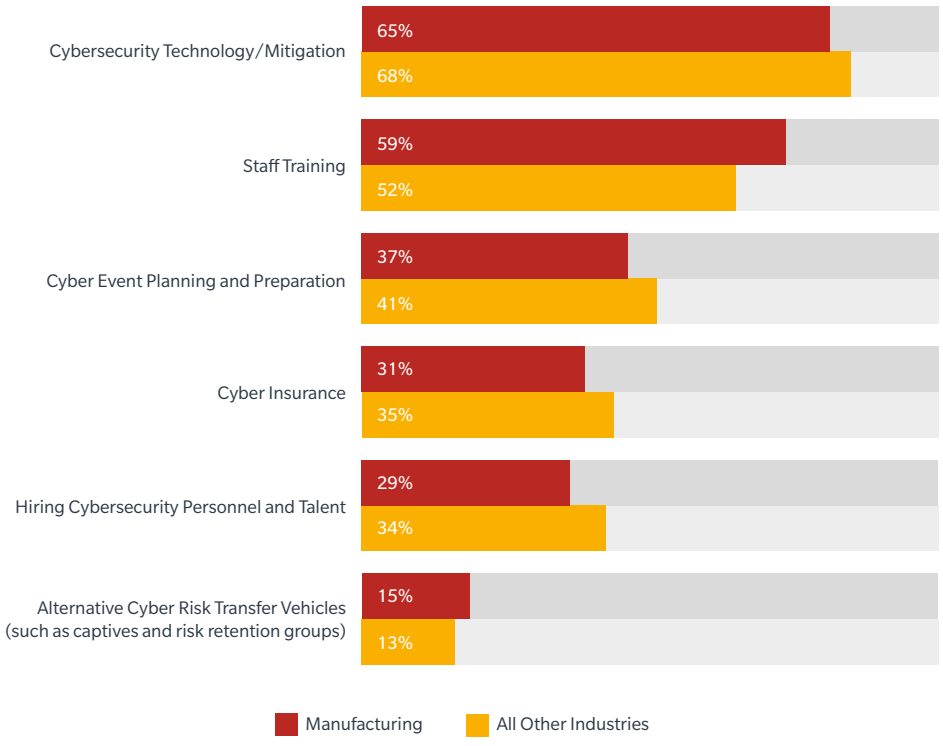
In contrast, just over one third expect to invest in planning and preparation for cyber event response, and slightly less expect to invest in insurance/risk transfer and staffing (see Figure 15).

Investments in cyber resilience measures, generally, continue to take a back seat to preventive and technological tactics. Organisations worldwide — including manufacturers — may want to re-examine their near-term action and investment plans and ensure they are implementing a comprehensive and balanced strategy to build resilience for the inevitable cyber incidents.

FIGURE 15

Cybersecurity technology and staff training top the list of future investment allocations for risk management.

Q: How do you expect your investment allocations in the following areas of risk management to evolve over the next three years?



Conclusion

As cyber risks become increasingly complex and challenging, there are encouraging signs in our *2019 Global Cyber Risk Perception Survey* that enterprises are, slowly but surely, starting to implement best practices in cyber risk management. Nearly all recognise the magnitude of cyber risk, many are shifting aspects of their approach to match the threat, and most are doing a good job in traditional cybersecurity — protecting the perimeter.

The most savvy organisations are building cyber resilience through comprehensive, balanced cyber risk management strategies, rather than concentrating solely on prevention. These more complex approaches account for the need to build capabilities in understanding, assessing, and quantifying cyber risks in the first place, as well as adding the tools and the resources to respond to and recover from cyber incidents when they inevitably occur.

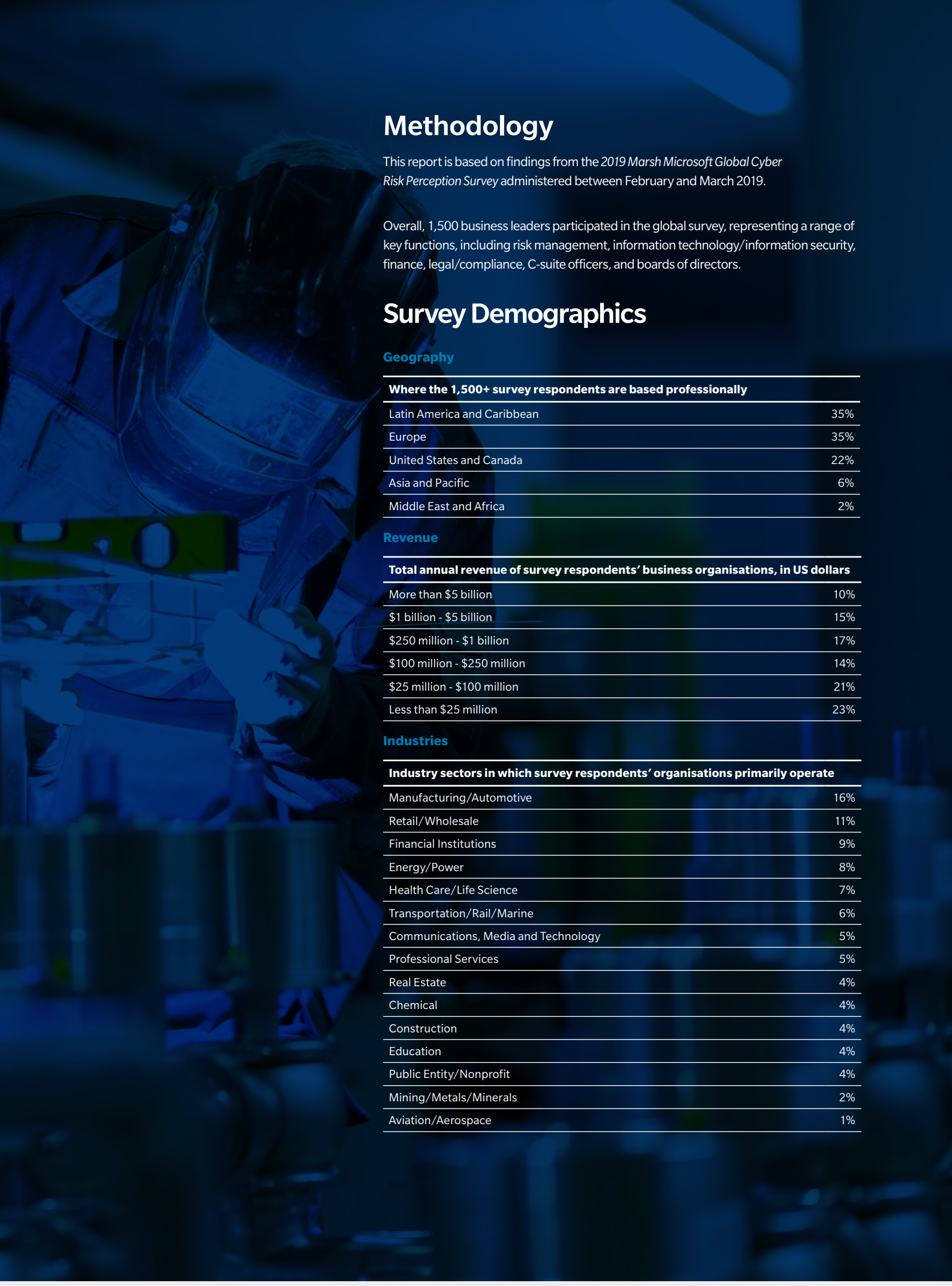
Nonetheless, this year's survey shows that there remains a considerable gap between where cyber sits on the corporate risk agenda and the overall level of rigor and maturity of organisational cyber risk management. Many enterprises globally could benefit by applying strategic risk management principles to their cyber risk approach, supported by more expertise, resources, and management attention as they build cyber resilience.

Especially in an "Internet of Everything" era with digitally dependent supply chains and innovative technology, yesterday's practices and mindsets are not enough, and may actually inhibit innovation. Optimising security from the "castle" the self-enclosed organisation — to the wider community is harder, but inevitable. It requires a shift from solely focusing on enterprise security to embracing responsibility for network security across the entire supply chain.

At a practical level, this year's survey points to a number of best practices that the most cyber resilient firms employ and which all firms should consider adopting:

- Create a strong organisational cybersecurity culture, with clear, shared standards for governance, accountability, resources, and actions.
- Quantify cyber risk to drive better informed capital allocation decisions, enable performance measurement, and frame cyber risk in the same economic terms as other enterprise risks.
- Evaluate the cyber risk implications of new technology as a continual and forward-looking process throughout the lifecycle of the technology.
- Manage supply chain risk as a collective issue, recognising the need for trust and shared security standards across the entire network, including the organisation's cyber impact on its partners.
- Pursue and support public-private partnerships around critical cyber risk issues that can deliver stronger protections and baseline best practice standards for all.

Despite the decline in organisational confidence in the ability to manage cyber risk, we are optimistic that more organisations are now clearly recognizing the critical nature of the threat, and beginning to seek out and embrace best practices. Effective cyber risk management requires a comprehensive approach employing risk assessment, measurement, mitigation, transfer, and planning, and the optimal programme will depend on each company's unique risk profile and tolerance. Still, these recommendations address many of the common and most urgent aspects of cyber risk that organisations today are challenged with, and should be viewed as signposts along the path to building true cyber resilience.



Methodology

This report is based on findings from the *2019 Marsh Microsoft Global Cyber Risk Perception Survey* administered between February and March 2019.

Overall, 1,500 business leaders participated in the global survey, representing a range of key functions, including risk management, information technology/information security, finance, legal/compliance, C-suite officers, and boards of directors.

Survey Demographics

Geography

Where the 1,500+ survey respondents are based professionally	
Latin America and Caribbean	35%
Europe	35%
United States and Canada	22%
Asia and Pacific	6%
Middle East and Africa	2%

Revenue

Total annual revenue of survey respondents' business organisations, in US dollars	
More than $5 billion	10%
$1 billion - $5 billion	15%
$250 million - $1 billion	17%
$100 million - $250 million	14%
$25 million - $100 million	21%
Less than $25 million	23%

Industries

Industry sectors in which survey respondents' organisations primarily operate	
Manufacturing/Automotive	16%
Retail/Wholesale	11%
Financial Institutions	9%
Energy/Power	8%
Health Care/Life Science	7%
Transportation/Rail/Marine	6%
Communications, Media and Technology	5%
Professional Services	5%
Real Estate	4%
Chemical	4%
Construction	4%
Education	4%
Public Entity/Nonprofit	4%
Mining/Metals/Minerals	2%
Aviation/Aerospace	1%


PLANNED
01:29:18
01:29:18 / 01:29:18
DOWNTIME
01:29:18
01:29:18 / 01:29:18
SETUP
01:29:18
RUNNING
Time in Running
01:29:18
01:29:18 / 01:29:18
SHIFT
JOB
OUT
EVENTS
STARTS
SLEEVES IN
245649/900000
SLEEVES OUT
245617/900000

ABOUT MARSH

Marsh is the world's leading insurance broker and risk adviser. With over 35,000 colleagues operating in more than 130 countries, Marsh serves commercial and individual clients with data driven risk solutions and advisory services. Marsh is a business of Marsh & McLennan Companies (NYSE: MMC), the leading global professional services firm in the areas of risk, strategy and people. With annual revenue approaching US$17 billion and 76,000 colleagues worldwide, MMC helps clients navigate an increasingly dynamic and complex environment through four market-leading businesses: Marsh, Guy Carpenter, Mercer, and Oliver Wyman. Follow Marsh on Twitter @MarshGlobal; LinkedIn; Facebook; and YouTube, or subscribe to *BRINK*.

ABOUT MICROSOFT

Microsoft (Nasdaq "MSFT" @microsoft) enables digital transformation for the era of an intelligent cloud and an intelligent edge. Its mission is to empower every person and every organisation on the planet to achieve more. Microsoft's Digital Diplomacy team, which partnered with Marsh on this report, combines technical expertise and public policy acumen to develop public policies that improve security and stability of cyberspace, and enable digital transformation of societies around the world.

ACKNOWLEDGEMENTS

Marsh and Microsoft thank B2B International for its help designing, analysing, and reporting the results of this survey. B2B International is the world's leading business-to-business market research firm. It specialises in developing custom market research and insight programmes for some of the world's leading industrial, financial and technology brands. B2B International counts 600 of the largest 1,500 corporations among its clients. B2B International is part of gyro, Dentsu Aegis Network's dedicated b2b creative agency.

For further information, please contact:

SARAH STEPHENS
FINPRO Cyber, Media & Technology Practice Leader
Marsh JLT Specialty
+44 (0)20 7558 3548
sarah.stephens@marsh.com