

# 2018 Communications, Media, and Technology Risk Study

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Welcome to Marsh's 2018 *Communications, Media, and Technology Risk Study*. Over the past year, the speed of technology innovation kept its blistering pace. Companies have no choice but to keep up or risk dropping to the back of the pack — and eventually out of the race altogether.

Pushed on by a data-driven economy and the ubiquity of technology in society, CMT companies are meeting the challenges by taking a hard look at their traditional way of doing business. This is causing a major shift in business strategy and operating models within sectors and subsectors as CMT companies strive to stay current with consumer demands.

For example, customers expect communication service companies to provide uninterrupted connectivity, with no geographic boundaries. Software firms are seeing their legacy business models upended by disruptive innovation. Media organizations face competition from an expanding set of other businesses. Hardware and electronics companies feel the pressure from shortening product development cycles. And the list goes on.

To understand how these shifts affect companies' risk decisions, we surveyed risk professionals and other executives from CMT sectors globally.

We thank all of those who participated in this year's survey. If you have any comments or questions about the results or our interpretations, please drop me a line at the address below or reach out to your Marsh representative. You can also send us a Tweet to @MarshGlobal using the hashtag #MarshCMTRisk.



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# Seismic Shifts

- The digital economy, Internet of Things (IoT), and Fourth Industrial Revolution (4IR) **blur the lines between digital, social, and physical** and redefine the needs, expectations, opportunities, and risks.
- Consumers demand **highly customized content** in multiple formats, delivered through multiple platforms.
- Opportunities for technology to **disrupt an unlimited range** of traditional business models.
- Product development and **release cycles shorten**, with rapid loss of market share becoming a reality if releases are delayed or disappoint.
- **Regulatory and civic oversight increase** in areas including content, access, net neutrality, antitrust, data, and privacy.
- The blistering pace of innovation and the ubiquitous demand for technology **force companies to continually reinvent themselves**.
- **Technology failures lead to more acute consequences**, forcing technology providers to accept contractual responsibility.
- The proliferation of **social and technology ecosystems** leads to further integration of a wide range of services and solutions built upon sophisticated technology platforms.
- The **convergence of the sharing economy and autonomous mobility** point to massive shifts in investments, resource allocation, and risks.
- The digitization of content and the data economy, along with increasing investments in IoT and artificial intelligence (AI), drive **insatiable demand for storage, bandwidth, and seamless connectivity**.
- The **integration of AI into all aspects** of IoT, data analytics, and software open up new areas of risk.



## 15

Cross-industry initiatives developing AI governance standards

SOURCE: AFP MINDSHIFT: EMERGING TECHNOLOGIES AND THE FINANCE FUNCTION



## 100 GB

Data generated every hour by the sensors in a new car

SOURCE: INTERNATIONAL BUSINESS TIMES



## 90%

Of the world's data was created in the last two years

SOURCE: IBM



## 30 Billion

Connected devices in use by 2030

...and could grow to...



## 100 Trillion?

Best guess for connected devices by 2050

SOURCE: OLIVER WYMAN



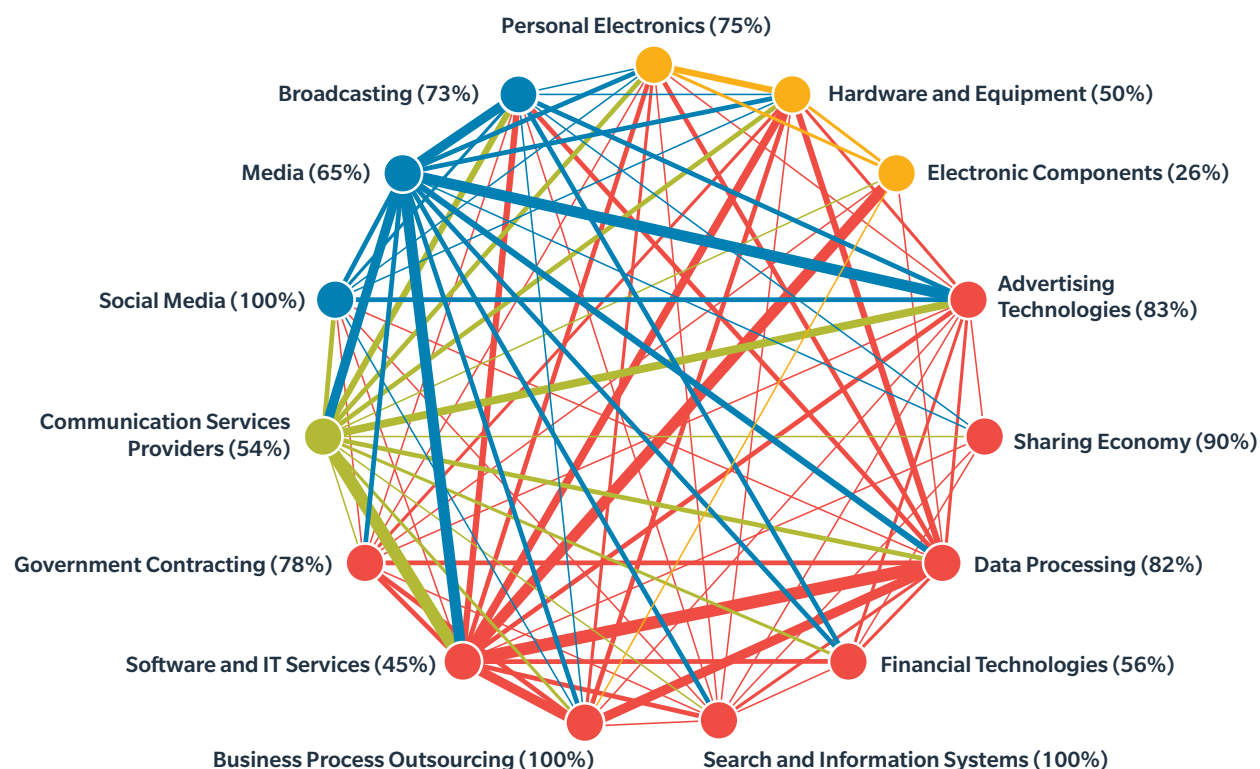
# CMT Companies Operate Across Multiple Sectors

FIGURE  
1

Competition, customer demands, and consolidation mean most CMT companies now span numerous lines of business

Which of the following best describes your company? Select all that apply.

■ Media ■ Communication Services ■ Software and IT Services  
■ Hardware and Electronic Components (%) Percent of companies in multiple sectors



*Thicker lines indicate more frequent convergence among respondents.*

The overlapping lines of business at CMT companies grow more complicated every day (see Figure 1).

Communications companies are expanding their range of services to include creating original, exclusive content. Software companies and online communities are developing expanded platforms and ecosystems that touch all facets of a business or

consumer. Hardware companies are integrating software and IoT connectivity into their devices.

As CMT leaders respond to business shifts and lead the way in disruption, we expect to see continued disruption, complexity, and convergence.



# Top Risks Reflect High Dependency upon Technology Infrastructure

Risk professionals at CMT companies are most concerned with what will hamper their ability to keep products and services up and running, including how to protect against cyber events, according to survey respondents (see Figure 2). This is the third year in a row that data security and privacy and technology errors and omissions have ranked in the top two spots in the survey. At the same time, they signaled only average confidence in their

organization's ability to protect against these technology-related risks, likely reflecting such factors as:

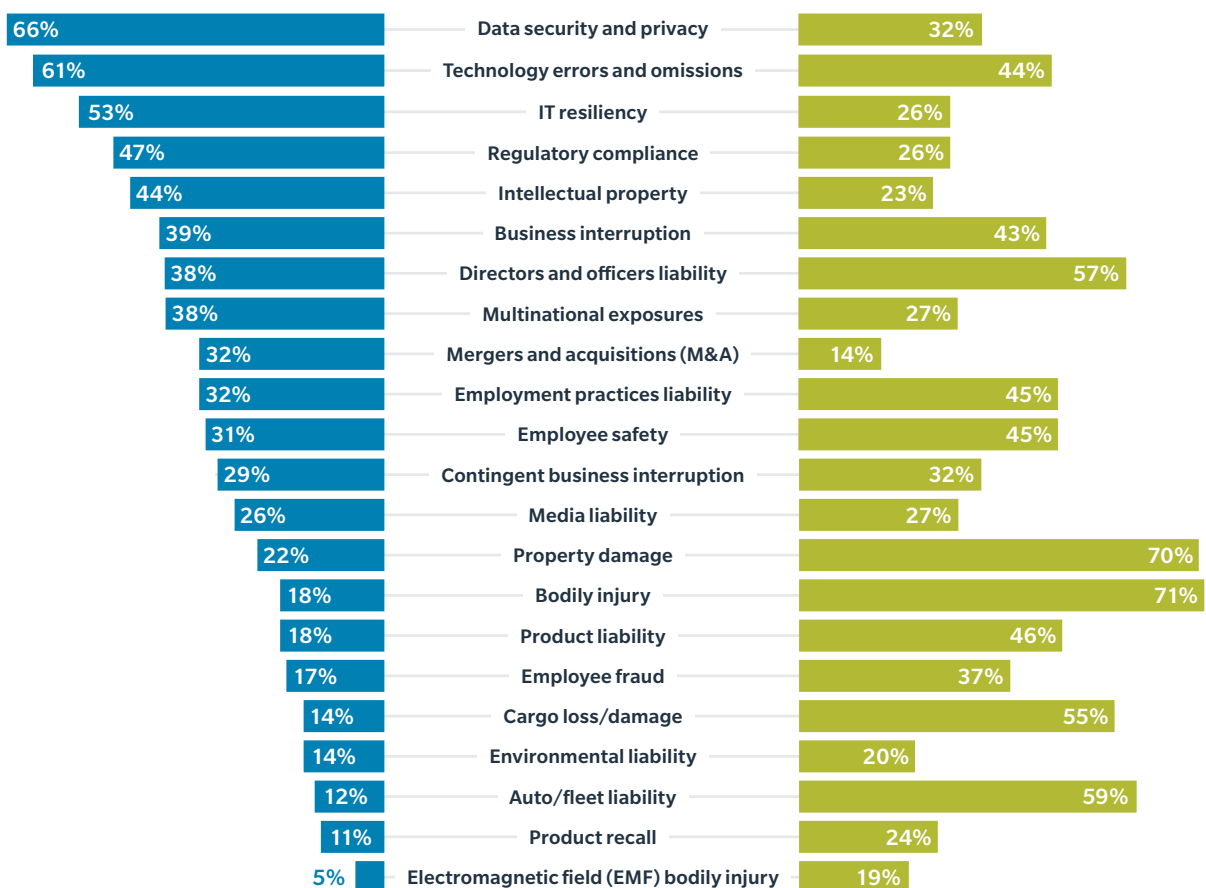
- Understanding and quantifying potential loss scenarios.
- Fully aligning security and business continuity planning.
- Challenges in securing risk transfer solutions for all potential loss scenarios.

FIGURE  
2

Top CMT risks center on keeping technology functioning properly

How do you view the following risks to your company?  
How well are these risks mitigated?

■ Risks of high or highest concern  
■ Confidence in risk mitigation



Percent of respondents selecting the risk as a high or highest concern.

Percent of respondents choosing completely or mostly mitigated.

# Risks Vary by Sector

The top two risks — data security and privacy, and tech E&O — appeared in the top five risks for every CMT sector in the survey. Beyond those two, respondents ranked risks based on their sector’s business model.

For example, communication services companies were the only sector to include business interruption and mergers and acquisitions in their top five risks. This reflects the need to supply uninterrupted levels of service in order to satisfy customer demands, as well as the push for greater economies of scale through acquisitions.

Media companies, unsurprisingly, ranked media liability in the top five — but notably two notches below tech E&O. While the threat of a lawsuit due to libel or other errors looms large over media companies, the inability to deliver the content due to a technical failure is a greater concern.

Respondents in hardware and electronic components companies were the only ones not to rank data security and privacy as the top concern. Tech E&O topped the list for hardware companies, reflecting the need to blend hardware and software solutions.

FIGURE

3

Top five risks  
by sector

ALL	MEDIA	COMM. SERVICES	HARDWARE	SOFTWARE
Data security and privacy	Data security and privacy	Data security and privacy	<b>Tech E&amp;O</b>	Data security and privacy
Tech E&O	Tech E&O	Tech E&O	<b>Intellectual property</b>	Tech E&O
IT resiliency	IT resiliency	<b>Business interruption</b>	Regulatory compliance	IT resiliency
Regulatory compliance	<b>Media liability</b>	<b>M&amp;A</b>	<b>D&amp;O</b>	Intellectual property
Intellectual property	<b>Employment practices liability</b>	IT resiliency	Data security and privacy	Regulatory compliance



# Growing Dependence on Technology Drives Increased Risk Complexity

Respondents do not expect key risks to become easier to measure and mitigate in the future. The top 10 current risks for CMT companies also ranked among the top 11 risks expected to grow in complexity in the next three to five years (see Figure 4).

Five risks stood out as those which respondents believe are most likely to grow in complexity, with more than 50% of respondents

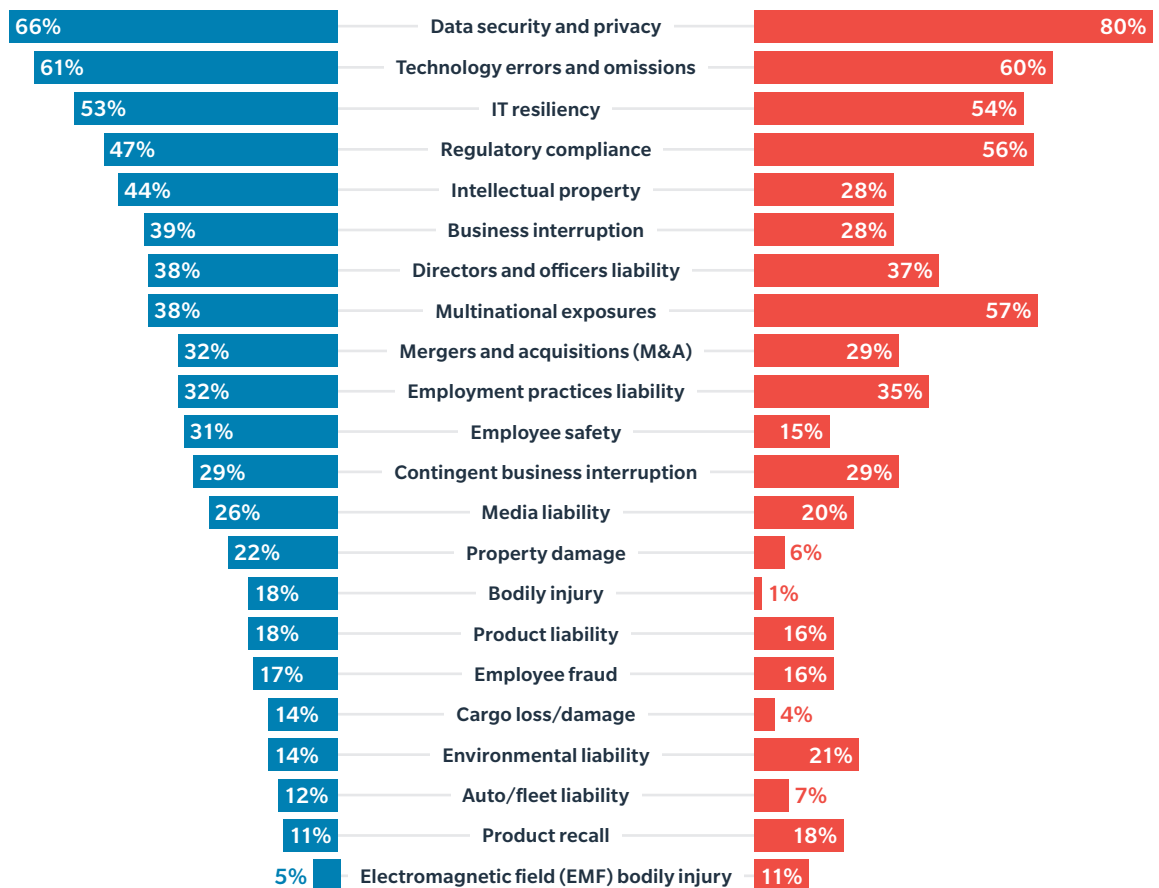
citing data security and privacy, tech E&O, multinational exposures, regulatory compliance, and IT resiliency. This reflects the changing nature of the business. As CMT devices and services become more interconnected, securing them and ensuring they stay online becomes more difficult. At the same time, regulations related to privacy are expanding, and CMT companies are increasing their global footprint, bringing on more multinational exposures.

FIGURE  
4

Risks related to technology and global expansion are most likely to increase in complexity

How do you view the following risks to your company? How do you view the following risks changing in the next three to five years?

■ Risks of high or highest concern  
■ Growing complexity



Percent of respondents selecting the risk as a high or highest concern.

Percent of respondents expecting risk to grow in complexity.



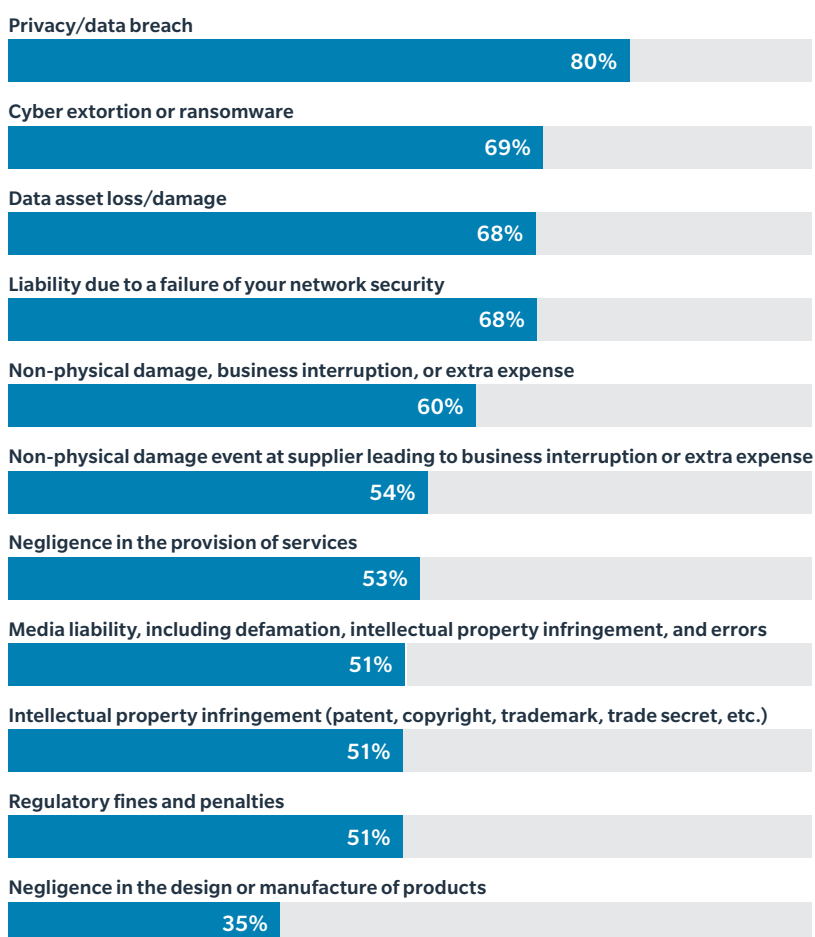
# Tech E&O: More than Just Data Breaches

For CMT companies, the risks of a technology failure extend far beyond a cyber-attack or a data breach. Respondents recognize that tech E&O exposures can manifest in a variety of loss types. While a privacy or data breach was the most commonly chosen loss type, at least 50% of respondents considered 10 of the 11 risks in the survey to be an exposure. Most CMT companies understand the complexity and connections between these risks; for example more than 80% of our CMT clients use a blended cyber/tech E&O policy to treat these risks.

FIGURE  
5

Tech E&O loss incidents extend beyond data breaches

Which of the following specific loss incidents related to technology failures do you believe could lead to either a direct loss or claim against your company? (Choose all that apply.)



# Disruptive Technology — New Opportunities, New Risks

Emerging business models and disruptive technologies represent both an opportunity for growth and a further increase in risk complexity for CMT companies (see Figure 6).

More than 75% of respondents said data and digitization were an opportunity, while only 28% said the same for 3D printing. At the same time, most respondents agreed that these technologies bring increased complexity. Two-thirds or more of respondents cited technologies they thought would increase risk complexity in the next three to five years. Thus, even companies that don't see an opportunity in certain areas do see increased risk there.

This embrace and understanding of disruptive technologies and their risks stands in stark contrast to how other industries view disruptive technologies. In a recent Marsh survey of risk managers across all industries, 55% had not even conducted a risk assessment related to disruptive technology.

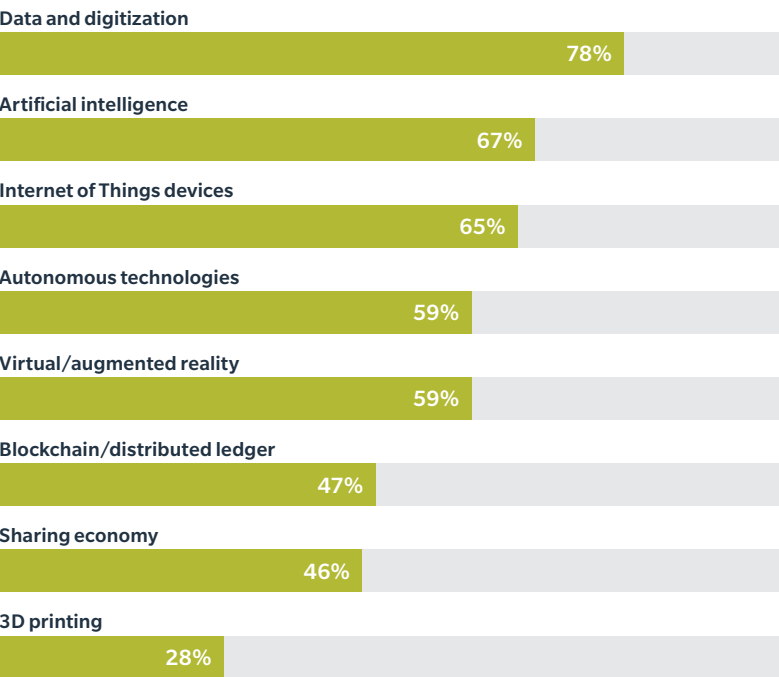
2/3

*of respondents  
believe specific  
disruptive technologies  
will increase risk  
complexity in the next  
three to five years.*

FIGURE  
6

Many CMT companies recognize disruptive technology as an opportunity

Do these technologies represent a threat or opportunity in the next 3-5 years? (Percent selecting opportunity)



# IoT: Limitless Connections, Unlimited Ways to Fail

IoT is viewed as a growth opportunity over the next 3 to 5 years by 65% of survey respondents, with nearly half saying their organization already creates or provides products and services for IoT devices. However, many respondents may be underestimating their real-world IoT risks, such as from bodily injury. Further, we question whether the most effective means of studying and understanding IoT risks are being widely used.

We believe the number of CMT respondents saying their products or services are used by other companies in IoT devices (48%) is low (see Figure 7). The results from our respondents align with those from Marsh's 2017 *Excellence in Risk Management* survey, which found a gap in understanding at many organizations about the pervasiveness of the IoT and other technologies.

In that study, 52% of risk professionals across all industries said their organization does not use or plan to use the IoT, which conflicts with other data that shows 90% of companies will be using the IoT within two years.

So, what are the implications? For one, there may be a lack of understanding of the full range of risks presented by being a part of an IoT device or system (see Figure 8). The top three IoT loss exposures cited by respondents related to cyber events: system or network failure, security failure, and privacy breach. Well under half cited pure financial loss (43%), property damage (36%), or bodily injury (29%) as exposures.

FIGURE  
7

Many CMT risk professionals may be unaware of connections to the Internet of Things

Are your products and services used by other companies in IoT devices?

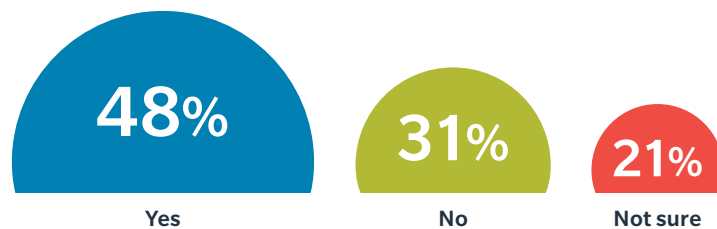
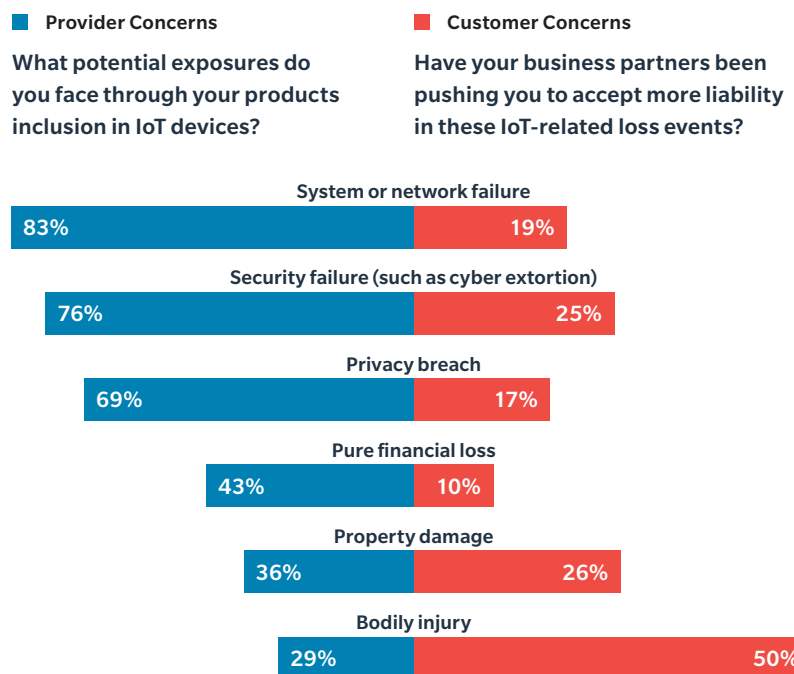


FIGURE  
8

System operation and security dominate IoT provider concerns; Users increasing concerned with physical risks





Take bodily injury as an example of where the dots need to be connected. The failure of a connected device — through a production error, a cyber-attack, or other cause — has the potential to cause injury. The reality of this can be inferred from the fact that half of respondents said their partners are asking for increased protection against the risk. Yet many IoT providers seem not to be making the same connection that their customers, suppliers, and other partners are (see Figure 8). IoT risks are new and not well understood, though companies are using a variety of tools to try to understand the specific IoT risks they face and what the potential impact may be. The most common way organizations are assessing and modeling risks related to IoT devices is through

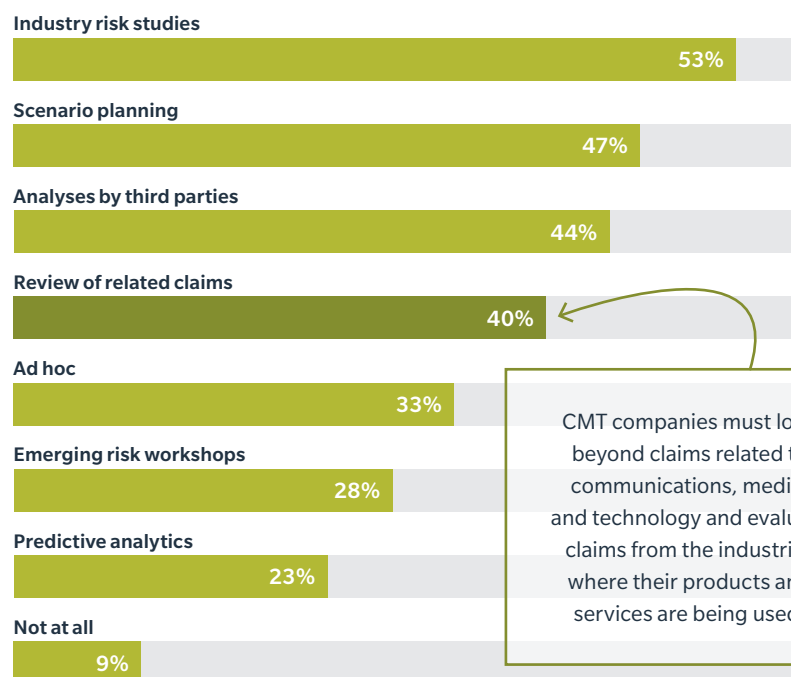
industry risk studies (see Figure 9). While these can be important, they are just one piece of the puzzle and may limit their evaluation to one sector or subsector.

Companies would benefit by doing even more to understand and evaluate their IoT involvement, with specific emphasis on new risks created. It's encouraging to see that the second and third most popular IoT risk evaluation methods were scenario planning, which encourages a creative look at how events could play out, and analyses by third parties, which brings an outside eye onto a firm's unique issues. Both of these methods allow ample room to analyze a company's risks from convergence into various sectors.

FIGURE  
9

Scenario planning and third-party studies can help analyze convergence risks

#### How do you assess and model risks related to IoT devices?



CMT companies must look beyond claims related to communications, media, and technology and evaluate claims from the industries where their products and services are being used.

60%

3+ Tools to  
evaluate IoT Risk

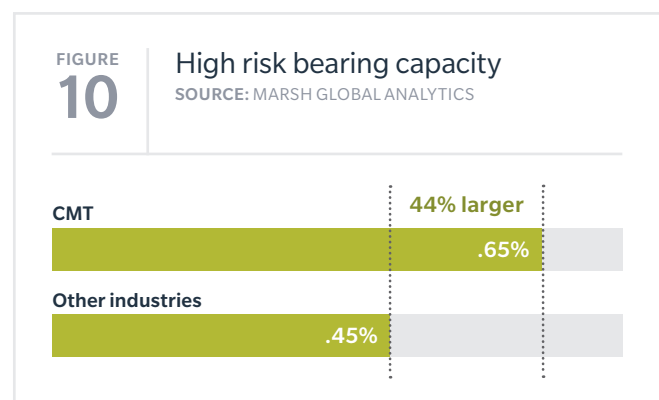
10%

Not assessing or  
modeling IoT Risk at all

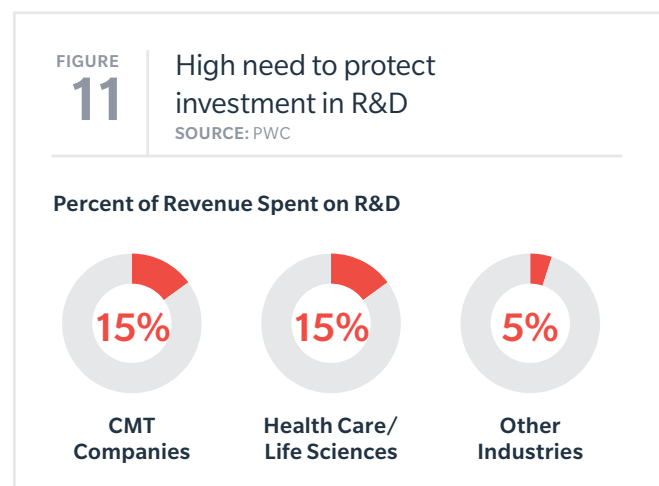
# Deep Reserves, Alternative Risk Solutions

CMT companies tend to have greater capital reserves than peer industries and may be seeing less value in traditional insurance solutions due to their above-average ability to retain losses. The five largest market cap companies in the US are all technology companies — with a combined market cap of more than \$3.3 trillion.

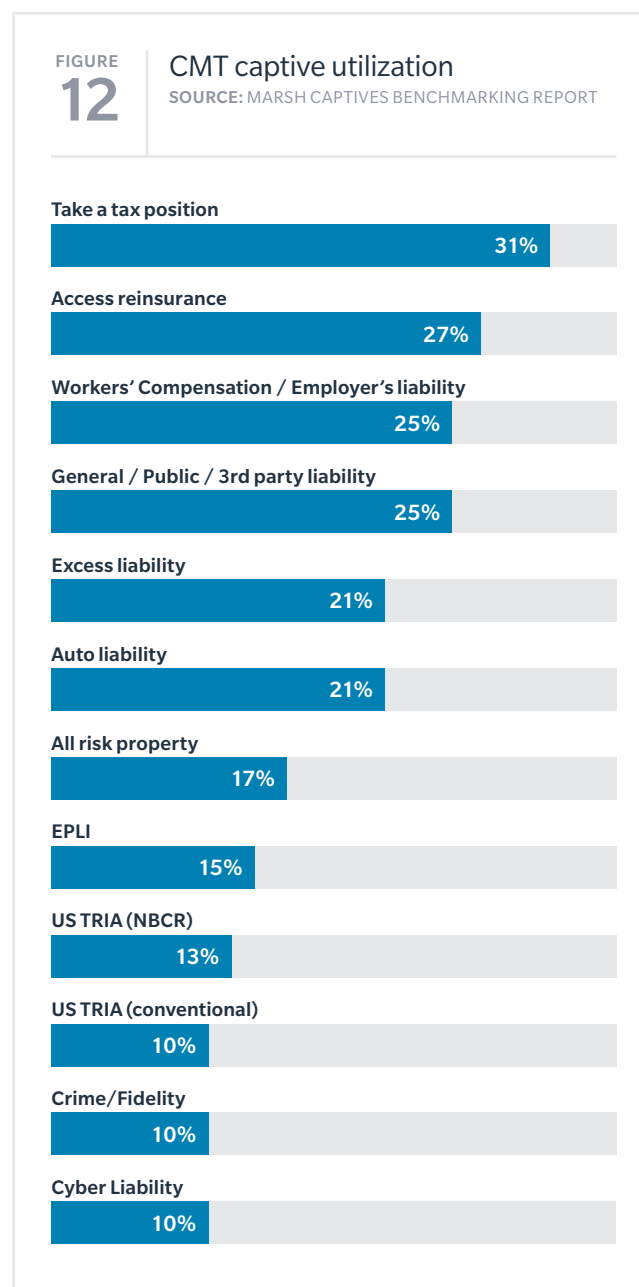
CMT companies' risk bearing capacity as a percent of revenue is, on average, 44% higher than companies in other industries, according to Marsh Global Analytics. Similarly, their working capital as a percent of revenue is, on average, 75% greater than other industries.



However, this capital is needed to fund growth and innovation rather than pay off losses. CMT companies spend two to three times as much of their revenue on R&D compared to other industries. Only health care and life sciences companies invest as much in R&D as do CMT companies.



Because of these large capital bases and the need for massive R&D investment, CMT companies must identify a range of alternative risk solutions to manage their risks, such as integrated risk, alternative risk capital, parametric risk solutions, and captives. In fact, CMT companies manage the second most premium value in captives of any industry.



# Risk Management Job Disruption

As CMT companies respond to the disruptive technologies that are changing the industry, their risk management functions will not be immune to disruption. A study by Oxford University researchers estimates that 47% of jobs in the US are at risk of automation — and finance functions are not immune. Rote functions such as data assembly, basic analytics, transaction processing, and compliance tasks could be automated with 60% to 80% cost savings, fewer errors, and 100% compliance with regulations, according to the report.

In this era of industry and job function disruption, risk professionals at CMT companies must change how they are viewed in the organization. They must shift their value away from lower-level tasks and functions to higher-level insights and analytics. These higher-level insights related to emerging risks and enterprise risk management will require a deep understanding of how the products and services are being used by your customers.

Developing expertise in every emerging technology — AI, blockchain, IoT, and whatever is next — is not possible, so risk professionals must build relationships with the experts within their companies. They will become the conduit to translate the development of disruption solutions into methods for understanding and managing the emerging risks.

How will your job change?



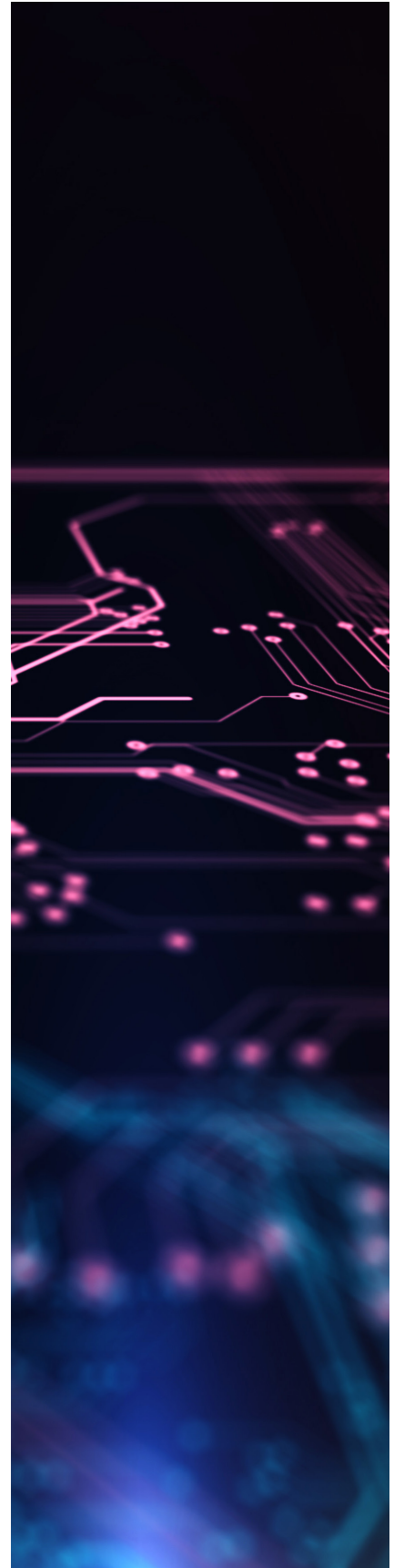
## Low-level tasks with potential to be automated

- ☐ Certificates of Insurance
- ☐ Values collection
- ☐ Invoicing and allocation
- ☐ Benchmarking
- ☐ Peer analysis
- ☐ Budgeting/Forecasting
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_



## Complex activities driving highest value

- ☐ Emerging risk assessments
- ☐ Scenario planning
- ☐ Enterprise Risk Management
- ☐ Risk quantification
- ☐ Coverage design and analysis
- ☐ Alternative program design
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_







# Staying in the Know

CMT risk professionals closely follow technology news stories, but they need to better connect and respond to a broader set of current events.

One way that risk professionals and others can lead the discussion around innovation is to use news events to generate conversations and actions. Some events are obvious attention getters. For example, two events in 2017 prompted action or investigation by about 70% of respondents: the WannaCry cyber-attack and an outage at a global cloud services provider. Those who initiated discussions based on these technology failures showed prescience — later in the year there were more major data breaches, additional failures of web service providers, errors in rollouts of software upgrades, and additional tech E&O failures.

But other events sparked far less conversation. For example, only 18% of respondents said that management troubles at a major sharing economy firm caused a reaction in their organization. This was a potential missed opportunity to get ahead of management issues that spread across technology companies, media companies, and others. As CMT companies converge with other industries, news about events elsewhere can be a harbinger of things to come, while providing risk managers an opportunity to lead discussions about emerging risks.



## 71%

of respondents' companies took action following the WannaCry attacks

...but only...



## 69%

of respondents' companies generated action after an outage at a web service provider

...but only...



## 18%

took action following accusations of gender bias and management problems at a prominent tech company.



## 24%

took action when technology at social media companies were misused to spread fake information.

# Remaining Relevant

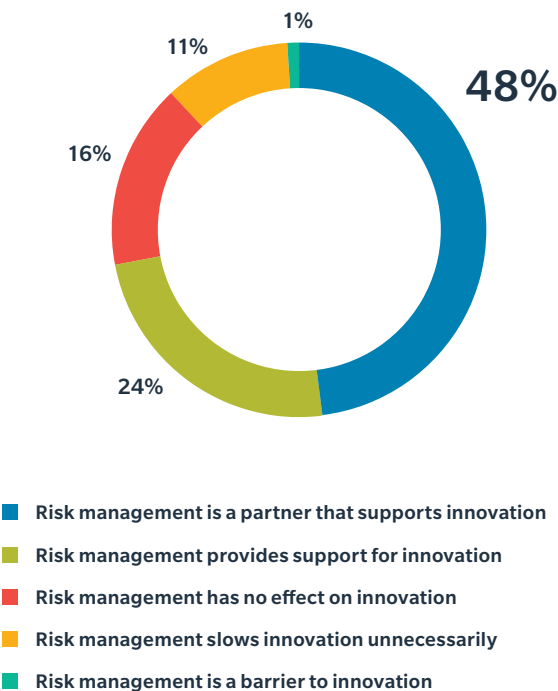
Given the relentless pace of innovation and disruption, how can CMT risk professionals stay relevant in 2018? They can become experts in emerging risks, innovations, and trends within and outside of their industry in order to increase the likelihood of gaining or maintaining a seat at the table for strategic decisions. Among other benefits, this will allow them to start supporting and enabling innovation.

Survey respondents feel risk management is highly regarded, with nearly 75% saying they are seen as “partners” or they “provide support” for innovation (see Figure 13).

FIGURE  
13

CMT risk managers view themselves as innovation partners

Which of the following statements best describes how risk management at your company is viewed in relation to innovation?



But do these perceptions match reality? Risk professionals must challenge themselves to review their day-to-day tasks and determine if they are truly leading conversations about emerging risks and solutions.

How can they do that?

First, risk managers should ensure they are leading discussions about all methods for managing risk. For example, risk finance can encompass alternative sources of capital or captives (as discussed earlier on page 11).

Second, risk managers should ask themselves if they are truly enabling innovation. Which of the following are you doing?

ARE YOU ENABLING INNOVATION?	
<input checked="" type="checkbox"/>	Embedding risk management team members in, or aligning them with, product development.
<input checked="" type="checkbox"/>	Building risk solutions into product or service offerings.
<input checked="" type="checkbox"/>	Developing revenue generating risk solutions.
<input checked="" type="checkbox"/>	Leading investment in emerging risk mitigation technologies or applications.
<input checked="" type="checkbox"/>	Freeing up capital/cash for R&D.
<input checked="" type="checkbox"/>	Broadening ERM focus.

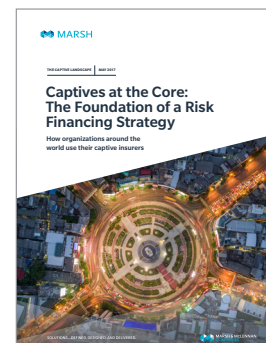
New disruptive technologies will emerge in 2018 that will further shake up the industry. Risk managers need to be prepared to lead the discussion of how these changes will affect their company’s risk profile and business strategy.

# Additional Insights

This survey and report are part of the thought leadership that Marsh & McLennan Companies produce each year, which includes research, insights, events, and occasional commentary on current items of interest to our clients.

Marsh's CMT Practice also hosts several national events throughout the year, which in 2018 are expected to include:

- CMT Risk Roundtable at RIMS Annual Conference.
- Government Contracting Risk Forum.
- Silicon Valley Technology Risk Forum.
- Media Client Council.



## About CMT



**2000+**  
CMT clients, globally



**\$2 Billion**  
in premium placed



**600+**  
dedicated CMT risk  
management professionals  
in a global network



**500**  
global offices with  
local, specialized  
CMT expertise



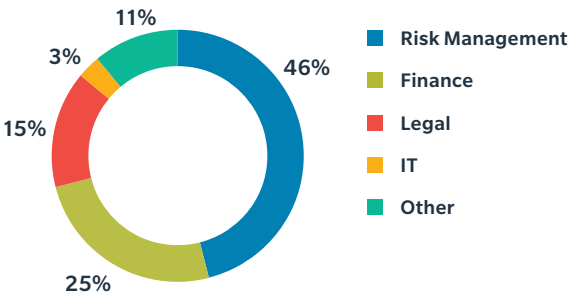
**85%**  
of our clients are  
high-growth, middle-  
market companies

*For more information, visit the CMT homepage on Marsh.com,  
or contact your local Marsh representative.*

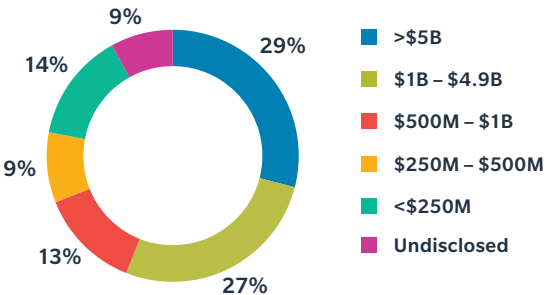


# Survey Demographics

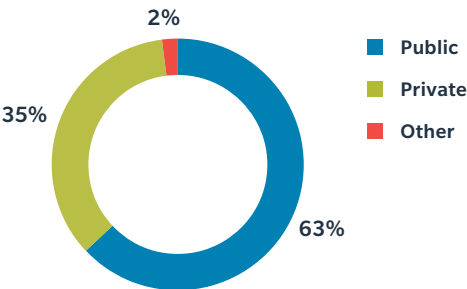
Respondents by Role



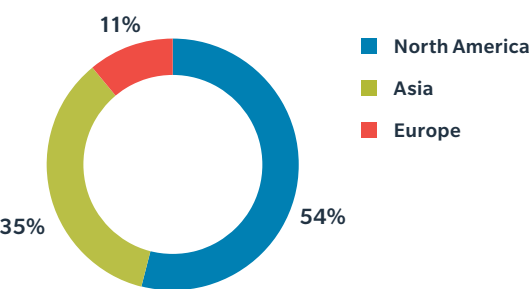
Respondents by Company Revenue



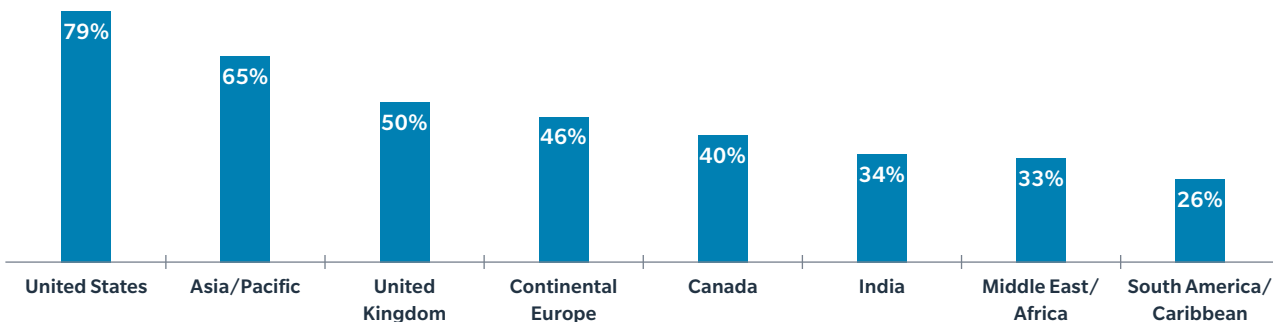
Respondents by Company Type



Company Headquarter Locations



Respondents with Exposures in Various Geographic Locations



## Notes

[illegible]



## ABOUT MARSH

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