MARSH

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Communications, Media and Technology Risk Study

CONTENTS

INTRODUCTION

Digital innovation. Consolidation in the supply chain. Mergers. Convergence. The risk landscape for communications, media, and technology (CMT) companies is changing faster than ever. Especially for companies that are growing rapidly, entering new business areas, or launching new strategies, risks are not only increasing, but becoming more complex.

So how are CMT risk professionals addressing this changing landscape? What are their most critical risks? How confident are they that these risks are being addressed? Where should they focus their limited resources?

Those were the major questions we sought to answer in Marsh's 2015-2016 *Communications, Media and Technology Risk Study*. We surveyed and talked to risk professionals at CMT companies across the US. Some of them are involved full-time in risk management. Others, whose roles extend into financial, legal, or operational areas, have "part-time" risk responsibilities.

Software, hardware, media, and communication services companies are all represented with more than 25% of respondents saying they worked for a company involved in multiple CMT sectors.

The common thread is they all have a deep interest in understanding CMT risk issues, as well as in providing insights for others into key risks. We thank them for participating.

We hope you find this information useful and encourage you to use it in conversations around risk at your own organization. And we look forward to continuing the conversation with you.

Tom Quigley

US CMT Industry Leader

RISK PROFILES BECOMING MORE COMPLEX

For all their differences — from customers to products to strategy — CMT companies agree: Their risks are growing (see FIGURE 1). Nearly 90% of respondents to Marsh's Communications, Media and Technology Risk Survey said they expect their companies' risks to either increase as the business grows, become more complex, or both.

Given the changes that their industries are experiencing, this is not a complete surprise. For example, 26% of our respondents work for companies that now cross into multiple sectors of the CMT landscape. As companies in the industry continue to converge, the new (or newly focused) entities typically see their risks increase as the business grows.

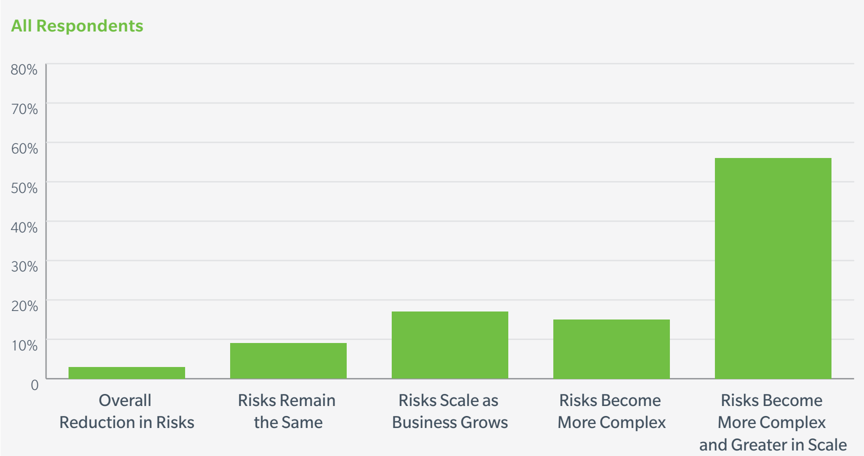
But many are realizing that risk becomes more complex as the business model changes. For example, software companies must plan for media liability if they begin creating content. Communication services and hardware companies are developing original media content to deliver exclusively through their services or devices, leading to new reputational, business interruption, and content production risks.

Even companies that remain within one industry are experiencing new complexities and risks:

- Traditional media companies must adapt to digital delivery.
- Software and hardware companies are diving into new business models, such as mobile payments, the sharing economy, and medical tracking technology.

FIGURE 1: CHANGING VIEW OF RISK PROFILE

How would you best describe the changes you expect to see in your company's risk profile over the next few years?



"When you think about growth, you scale everything equally —even risk — until you start looking at the details and you realize how complex the risks get."

– Risk professional at a multinational IT services company

- Hardware companies that push into IT services or add new connectivity and tracking to existing devices through the "internet of things" all face complexities not envisioned five years ago.

Business interruption risks are more immediate and costly as customers feel the effects of a service outage almost immediately.

For many CMT companies, risk oversight is handled through finance, human resources, or another function, by so-called "part-time" risk managers. Our respondents who manage risk as only part of their job function were less likely than full-time risk managers to view risks as growing in both scale and complexity. In fact, the part-timers were more than three times as likely to see the increasing risks as purely a matter of scale: bigger company = bigger risk. Those whose only job is managing risk, on the other hand, were far more likely to see not just the scale but the complexity of the task increase (See FIGURE 2).

This differing view may reflect the need to closely examine the details of risk to fully understand the best ways to mitigate it, respondents said.

Whether the company has a full- or part-time risk manager, companies with established processes for identifying risks may better understand their complexity. How are the risk managers gathering the information they need to properly shape and understand their risks?

Companies without full-time risk managers are trying to gain a better understanding of their risks by establishing more formalized communication processes. For example, rather than relying on the levels of insurance requested by their customers, some companies are using analytics to better show what the true risks are, and buying insurance based on what is needed. "We are trying to do a better job of actually understanding our risks rather than just doing what our customers tell us to do," said the assistant general counsel of a telecommunications company.

> "We are trying to do a better job of actually understanding our risks rather than just doing what our customers tell us to do."
>
> **- Assistant general counsel at a telecommunications company**

FIGURE 2: CHANGING VIEW OF RISK PROFILE

How would you best describe the changes you expect to see in your company's risk profile over the next few years?

TOP RISKS FOR CMT COMPANIES

The majority of CMT companies surveyed viewed data security and privacy (cyber risk) and technology errors and omissions as their top risk issues -- and they are concerned about their ability to manage them with available insurance solutions (see FIGURE 3).

Nearly 90% of respondents cited cyber as their top concern, while only 38% believe they have mostly or entirely mitigated their data security and privacy risks through insurance or other risk treatments. Regarding the limitations of cyber insurance, the treasurer from a networking equipment company said, "There are a tremendous amount of sublimits associated with these coverages. It seems as though when you really need it, it is limited on what it will cover."

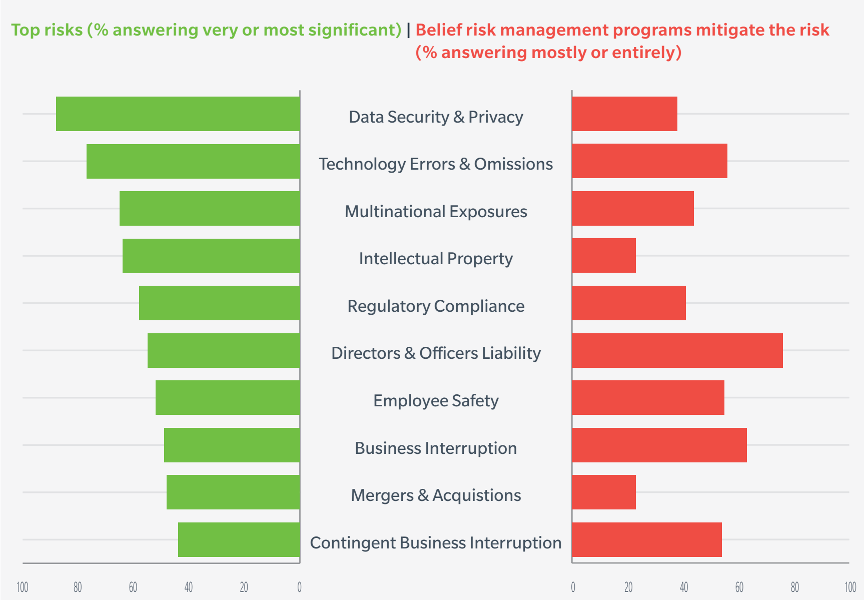
A slightly higher percentage (56%) expressed satisfaction with existing risk transfer and mitigation options for the closely related risk of technology errors and omissions (tech E&O), which ranked second among the top risk issues. Companies may view E&O risk as not so much about actual losses due to technology errors and omissions but more about responding to lawsuits related to those errors.

A number of other top risks scored low in the ability to mitigate them:

"Respondents appear to be most concerned with risks resulting from innovation and expanding business models."

FIGURE 3: TOP 10 RISKS FOR CMT COMPANIES

How significant are these risks for your company? How confident are you that your risk management program mitigates the risk?



- Intellectual property (IP) ranked fourth in concern, but near the bottom in the effectiveness of solutions, with only 23% saying existing treatments could mostly or entirely mitigate the risk. There are relatively few insurance options covering IP, and yet it remains a significant concern as CMT companies face a range of IP issues, from patent infringement to theft of code.

- Mergers and acquisitions was another top 10 risk that found only 23% of respondents satisfied that existing solutions fully met their needs.

- Multinational exposures ranked third, yet only 44% of respondents said existing risk and insurance treatments could mostly or entirely mitigate the risk.

The overall lack of confidence in the solutions shows the need for CMT companies to dig deeper to design programs that integrate the full set of insurance coverages and broader risk management solutions, such as internal system design, business continuity plans, and supply chain management plans.

The risks for which CMT companies showed the most confidence regarding available solutions were among the more "traditional" insurance areas: directors and officers (D&O) at 76%, property damage at 73%, auto liability at 66%, and business interruption at 63%.

Among those more traditional risks, a key concern for CMT companies relates to physical damage to an owned facility or a key supplier's facility. It's interesting to note that the confidence in the insurance program for property-related exposures declines as control of the risk moves further from the company's control:

- 73% said they were confident in the mitigation around property damage.
- 63% said the same for business interruption.
- 54% said the same for contingent business interruption.

TOP FIVE RISKS BY SECTOR

Rank	Hardware	Software	Communication Services	Media
1	Data security and privacy	Data security and privacy	Data security and privacy	Data Security and privacy
2	Intellectual property	Tech E&O	Tech E&O	Media liability
3	Tech E&O	Multinational	D&O	Tech E&O
4	Business interruption	Regulatory compliance	Intellectual property / Business interruption / M&A / Multinational*	Employee safety
5	Multinational	Intellectual property	* Four-way tie	Multinational

DESIGNING AND VALUING A RISK MANAGEMENT PROGRAM

When asked how risk management most provides value to their organization, the most cited choices, in order, were:

1. Protect capital.
2. Protect human capital.
3. Protect management.
4. Protect brand and reputation.
5. Comply with regulations.

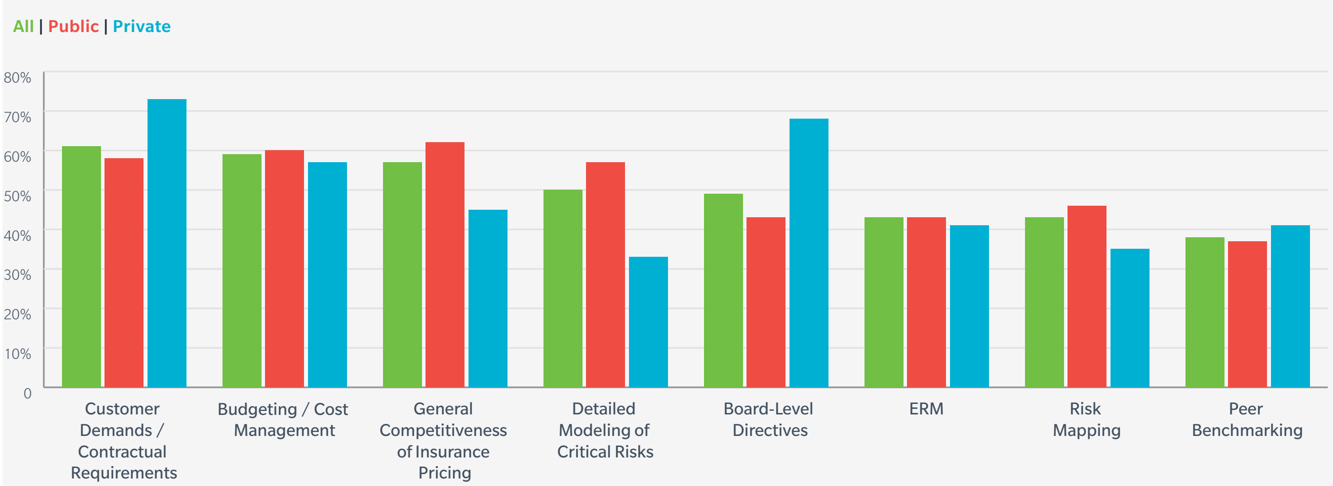
Risk management is valued because of its ability to protect or shield assets — including people — and to comply with regulations. However, when asked what factors they rely upon to design their insurance programs, respondents pointed to three areas, two of which centered on price (see FIGURE 4):

- Insurers' competitiveness around price.
- Budgets and cost management.
- Customer demands and contractual requirements.

While risk management is valued for protection, risk transfer programs tend to be designed around cost or meeting customer requirements. Reducing expenses ranked below six other drivers when respondents were asked how risk management adds value; however, budget and cost concerns were among the key drivers of program design.

Several respondents said this dichotomy is key to how different companies view risk management: "Are you a risk manager or are you an insurance buyer?" said the global

FIGURE 4: FACTORS INFLUENCING INSURANCE PROGRAM DESIGN



risk manager of a multinational technology company. "When you enter a new space or add a new risk, you have to look at the new assets you have to protect. You have to understand your new exposures. But too many times, it's just: 'Go buy some more insurance, but don't spend too much.' It can't just be about the dollar expense. We have to structure the program right with the right limits, the right retentions, the right protection." Thus, we see a balance between price and protection.

The soft insurance market of recent years combined with tighter margins for some CMT sectors, such as hardware and media, may also be driving insurance buying habits. Low-priced insurance can lead to larger purchases based simply on supply and demand. "People buy insurance on limits and price," the risk manager from a media company told us. "It's very hard to say no when someone is offering you $25 million more for a low price…even if you have never had a claim that approaches that limit."

Company ownership — public or private — also influences insurance program design. Public companies were more likely to rank analytics and risk mapping as critical design tools. Privately held companies relied more on customer demands, a situation driven partially by the demands of private equity firms. "Anyone who has been bought by a private equity firm knows the number one goal is cost cutting," said the risk manager of a business process outsourcer. "You are going to focus on returning money to the owners. Pricing is a huge issue for these firms."

Privately held companies' decisions may also arise from customers requiring higher insurance coverage from them. For example, one respondent from a public company said that his company expects its private vendors to have more insurance coverage than publicly held ones, simply because the financials are easier to review.

"Are you a risk manager or are you an insurance buyer?"

- Risk manager at a multinational technology company

CYBER-ATTACKS AND TECHNOLOGY FAILURES

Tech E&O and data security and privacy were two of the highest ranking risks for CMT companies, and go beyond the risk of a data breach typically faced in other industries. The way companies design their insurance programs to face these risks also shows their complexities.

Of the more than 500 CMT technology errors and omissions and cyber policies placed by Marsh, only 20% buy standalone cyber insurance. The other 80% integrate their cyber coverage into their technology E&O policies.

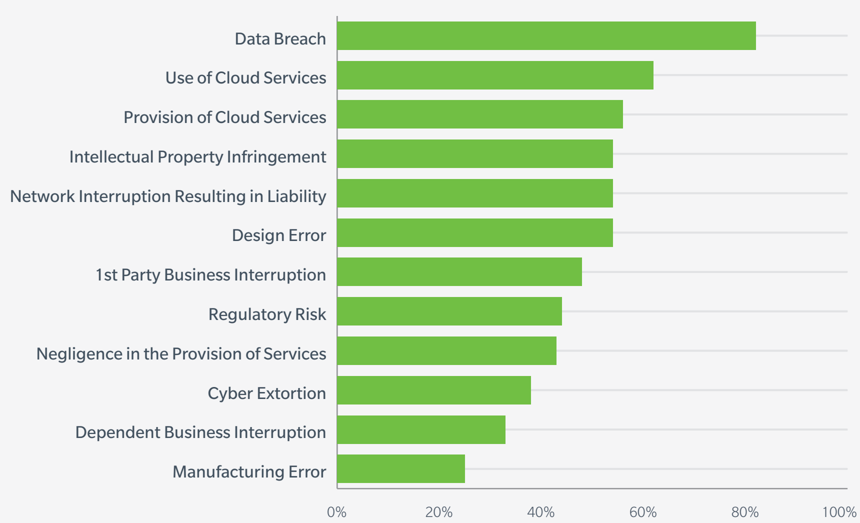
When asked what technology-related loss scenarios their companies face, respondents pointed first to data breaches, but more than half also cited five other areas: use of cloud services, provision of cloud services, intellectual property infringement, network interruption resulting in liability and design errors (see FIGURE 5). These diverse and critical risks demonstrate that designing a proper technology errors and omissions program is not simple.

There were some interesting differences and similarities when top risks were viewed by sector:

- Data breach was the only risk that was chosen by 75% or more of respondents in all sectors.

FIGURE 5: TOP CYBER AND TECHNOLOGY RISKS

Some of the most challenging risks to understand and effectively insure are technology E&O and cyber risks. Which of the following loss incidents do you believe could represent a risk to your company? (% answering very or most significant risk)



- Communications and software and IT services companies were more likely to cite the provision of cloud services as a key risk.
- Communications services companies considered themselves least exposed to regulatory risks.
- Media companies were the most likely to see cyber extortion as a risk.

When asked about the tools and advice they use to design their insurance programs for cyber risk and technology E&O, respondents listed advice from brokers or risk consultants first. But that was the only factor chosen by more than half of the respondents (See FIGURE 6).

Of respondents who said advice from a broker or risk consultant was a top driver, 80% also marked at least two other tools as significant or high drivers in program design. In addressing the complex risks related to technology errors and omissions, there was no "silver bullet." Respondents relied on a combination of tools as significant or high drivers of their E&O program design:

- 11% used all seven of the tools in Figure 6
- 60% used at least four of the tools in Figure 6
- 80% used at least three of the tools in Figure 6

In discussions with respondents and Discussions with survey respondents and Marsh clients identified five pain points that must be addressed by the technology E&O program:

Customer demands: Customers are demanding more with respect to limitations of liability and tech E&O/ cyber insurance requirements.

Compliance: Organizations must confirm how policies in place conform to customer requests and educate customers as to the reasonableness of certain request.

Loss Potential: The increasing importance of technology in most all personal and business activity leads to greater financial impact (both first-and third-party) when technologies fail to perform.

Coverage: It's challenging to confirm which specific loss scenarios are covered or excluded from tech E&O policies. Without a formal process, there is a higher likelihood of a coverage "surprise."

Cost: Tech E&O / cyber coverages are seeing considerable rate increases, especially for those technologies supporting industries with significant personal data such as retail, health care, or financial institutions.

FIGURE 6: DESIGNING AN INSURANCE PROGRAM

Rank	Tools and Advice Used to Design Insurance Programs	Percentage Choosing
1	Advice from broker or risk consultant.	59%
2	Demands of most significant customers.	47%
3	Directives from company executives or board of directors.	47%
4	Broker modeling/analytics.	46%
5	Peer program benchmarking.	42%
6	Internal analytics.	40%
7	Past claims history.	31%

M&A

Communications, media, and technology companies have seen record levels of M&A activity in 2015. Within the semiconductor sector, for example, 32% of all publicly traded companies are expected to be acquired in 2015, according to analysts at FBR Capital Markets.

Respondents ranked M&A as the ninth most critical risk out of 20 possible choices, and yet only 23% believed they have mostly or entirely mitigated their M&A risks through insurance or other risk treatments.

That feeling may be due to the low level of involvement that many risk professionals have in M&A transactions (see FIGURE 7). Nearly three-quarters of respondents cited high levels of engagement in the post-closing program integration portion of M&A deals; however, fewer than half said they were similarly engaged with earlier M&A stages. When examined by job duties, we again found a difference between part- and full-time risk managers. Part-time risk managers — who may be their companies' CFOs, treasurers, general counsels and so on — were typically more engaged in all stages of the process. Full-time risk managers were typically not involved until the post-closing program integration. This comes at a time when recent Marsh data showed that the take-up rate for representation and warranty insurance policies more than doubled in 2014. Interest in insurance solutions during M&A is increasing, but it appears that CMT risk professionals are not always as involved in the transactions as they could be.

FIGURE 7: INVOLVEMENT IN M&A TRANSACTIONS

To what degree is your company's risk management team engaged in the following?

CONCLUSION

Based on our survey results and an examination of CMT-related risk trends, five key themes stand out for risk managers to consider.

Increasing Risk: CMT risk leaders surveyed overwhelmingly believe that risks will continue to grow both in scale and complexity. With the increased integration of technology into daily life, the ever-expanding digital universe, and the need to keep devices and content connected to the internet, there is every reason to believe that the complexity and scale of risk will continue to increase in 2016 and beyond.

Systemic Risk Drivers: CMT companies will face increasing risks not only from the growing complexities of their own businesses but from outside economic, technological, and regulatory forces. Risk professionals at these companies will face a barrage of issues related to regulatory compliance, mergers and acquisitions, supply chain interdependencies, industry convergence, innovation, globalization, economies of scale, and new technologies.

Risk Treatment Challenges: As risks increase in scale and complexity, mitigating them through insurance solutions alone becomes more of a challenge. CMT risk professionals will require greater levels of diligence, which may mean increased reliance on analytics and modeling, implementation of risk mitigation programs, or more flexible and innovative risk transfer programs.

Risk Modeling and Education: Identifying, quantifying, and mitigating these increasing risks will require more effective use of analytics to model the breadth of the emerging exposures that CMT companies face. Education will be critical to ensure there is a common understanding of just what the exposures — and their solutions — are.

Conflicting Priorities: A continuing challenge for CMT risk managers is to meet the requirements of multiple stakeholders. Protecting capital, management, brand, and reputation can often conflict with budget priorities, customer demands, and regulatory requirements. CMT risk managers will need to continually leverage all the tools and information available to best balance what are frequently conflicting priorities.

APPENDIX

This survey is based on responses from 120 risk professionals in the following industry sectors:

- 28% from software and IT services companies.
- 25% from media companies.
- 16% from hardware and electronic components.
- 5% from communication services.
- 26% from multiple sectors.

Due to multiple sector alignment:

- 50% have exposures in software and IT services.
- 37% in media.
- 31% in hardware and electronic components.
- 16% communication services.

Company size:

- 15% less than $1 billion in revenue.
- 35% between $1 billion and $5 billion in revenue.
- 50% greater than $5 billion in revenue.

Company ownership:

- 73% public.
- 27% private.

Geographic footprint (percent operating in the following areas):

- 100% in North America.
- 73% in Europe.
- 70% in Asia/Pacific.
- 31% in South America and the Caribbean.
- 22% in the Middle East.

About Marsh's CMT Practice

Marsh's US Communications, Media and Technology Practice serves more than 700 clients, with Centers of Excellence (COEs) in New York; Washington, DC; and the Silicon Valley. Placing more than $1.2 billion in premium on 3,700 lines annually, Marsh's CMT practice maintains a robust benchmarking system. With more than 100 CMT-dedicated colleagues in the US and 600 colleagues worldwide, Marsh's CMT practice is the thought leader in CMT risk. It hosts two national CMT risk conferences each year as well as client roundtables and quarterly webinars. The core of Marsh's CMT business is serving the needs of the 85% of our clients who are high-growth CMT companies, where risk management is only one of many competing priorities. Our global client list includes 7 of the 10 largest communications companies, 8 of the 10 largest media companies, and 9 of the 10 largest technology companies.

About Marsh

Marsh is a global leader in insurance broking and risk management. We help clients succeed by defining, designing, and delivering innovative industry-specific solutions that help them effectively manage risk. Marsh's approximately 27,000 colleagues work together to serve clients in more than 130 countries. Marsh is a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), a global team of professional services companies offering clients advice and solutions in the areas of risk, strategy, and people. With 57,000 employees worldwide and annual revenue exceeding $13 billion, Marsh & McLennan Companies is also the parent company of Guy Carpenter, a global leader in providing risk and reinsurance intermediary services; Mercer, a global leader in talent, health, retirement, and investment consulting; and Oliver Wyman, a global leader in management consulting. Follow Marsh on Twitter @MarshGlobal.

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