



PROGRAM MATERIALS

Program #2937

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Law Firms at a Crossroads: The New Paths to Safeguarding Data as Attacks Ramp Up

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Law Firms at a Crossroads: The New Paths to Safeguarding Data as Attacks Ramp Up

Narrative: How do you protect your firm? The vast majority of cyber-related vulnerabilities can be traced to staff and third parties who accidentally or deliberately don't follow security protocols or are tricked into downloading malicious code. Led by Keith Wojcieszek, former head of the USSS Cyber Intelligence Section, Criminal Investigation Division, and Brian Lapidus, global leader of Kroll's Identity Theft and Breach Notification practice, this session will provide an overview of the latest cyber threats, insights into risks posed by the dark web, the opportunities presented by incorporating cyber intelligence into engagements, and practical steps to minimize its risks to data security, privacy, and overall firm reputation.

Learning Objectives

- Understand the threat landscape and current cyber security environment in which law firms operate today
- Identify and differentiate the various trends in current cyber threats to which law firms are vulnerable
- Discover the types of intelligence that can be gleaned from the dark web
- Analyze the best practices for ensuring a law firm's cyber resiliency

Timed Outline

- | | |
|---------|---|
| 10 min. | The current landscape: Law firms at a crossroads
Data breaches at law firms of all sizes
The growing interest in cybersecurity at law firms |
| 15 min. | Cyber threats: The latest and greatest trends
Spearfishing
Email-based wire fraud
Website browser vulnerabilities
Social engineering
Exploits
RAM scrapers
Ransomware |
| 10 min. | Threat intelligence: What information can we glean from the Dark Web?
Alerts to potential threats
Know when sensitive information has been compromised
Get a better understanding of where your firm fits in the current threat landscape |
| 20 min. | Best practices for minimizing risks to data security, privacy and overall firm reputation
The three pillars: People, process and technology
People ensure things get done
Process sets the guidelines
Technology enables quick and effective detection and containment
Breaches happen, so be sure to write your narrative beforehand |
| 5 min. | CONCLUSION

QUESTIONS |



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DUFF & PHELPS

Law Firms at a Crossroads: The New Paths to Safeguarding Data as Attacks Ramp Up

Speakers:

Keith Wojcieszek

Brian Lapidus

January 2019

Presenters



- Brian Lapidus
- Practice Leader, Identity Theft and Breach Notification

Brian helps clients and their advisors, including boards of directors, legal counsel and insurance providers, resolve the myriad complex issues resulting from a data breach. The team has facilitated the response for nearly 1,500 data breaches worldwide, many for clients in highly regulated industries such as healthcare, financial services and higher education. The team regularly delivers notification and remediation services in highly sensitive cases at the direction of a client's outside legal counsel, thereby maintaining a level of attorney-client privilege in all matters pertaining to the breach.



- Keith Wojcieszek
- Associate Managing Director, Cyber Risk

Keith Wojcieszek is an Associate Managing Director in the Cyber Risk practice of Kroll, a division of Duff & Phelps, based in Washington, D.C. Keith joined Kroll from the United States Secret Service, where he served with distinction for 15 years. Keith is a strategic problem-solver, who draws on not only his wealth of advanced technical expertise, but also his extensive experience working with diverse international stakeholders on complex transnational investigations and initiatives.



The Current Landscape

It's rough out there...



22 Million

PII

2012 - 2014

Security clearance

information part of the breach



TARGET

110 Million

Credit cards

2013

\$162 Million

estimated cost of the breach

YAHOO!

3 Billion

User accounts

2013-2014

\$350 Million

est. decrease in sale price to Verizon



145 Million

User accounts

2014

Days: 229

hackers had access to internal data

JPMorganChase



83 Million

Contact Information

2014

\$250 Million

spent on security annually

EQUIFAX®

143 Million

PII

2017

2+ months

est. time to discover the breach

SOURCE: The 16 biggest data breaches of the 21st century, [CSO](#), October 11, 2017

And the incident is just the beginning...

REMEDiation



BUSINESS DISRUPTION



CUSTOMER CHURN



FINES



LEGAL COSTS



BRAND REPUTATION



FINANCIAL LOSS



NOTIFICATION COSTS

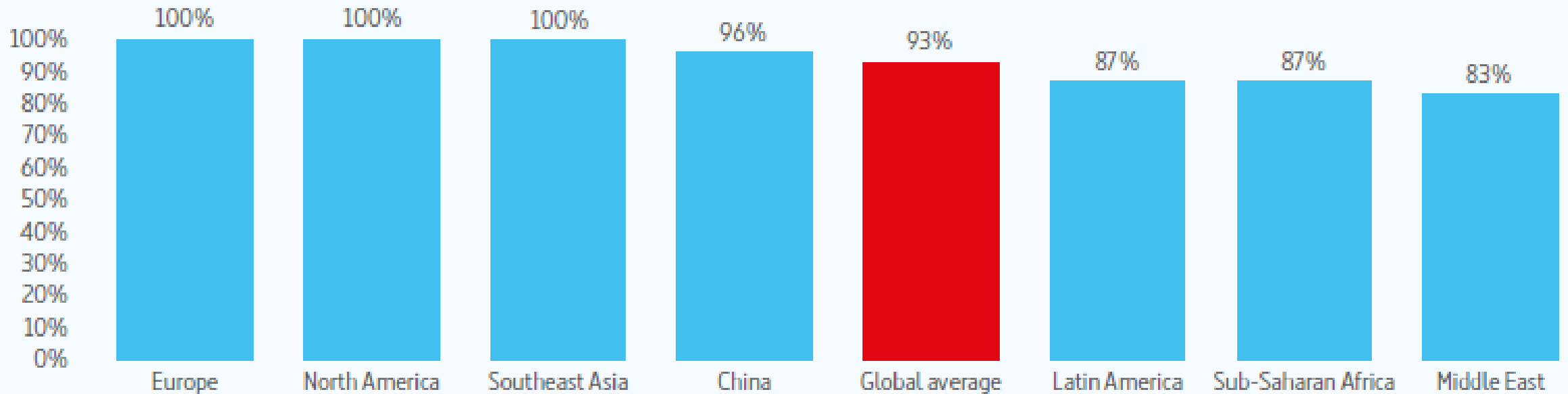


ONGOING MONITORING



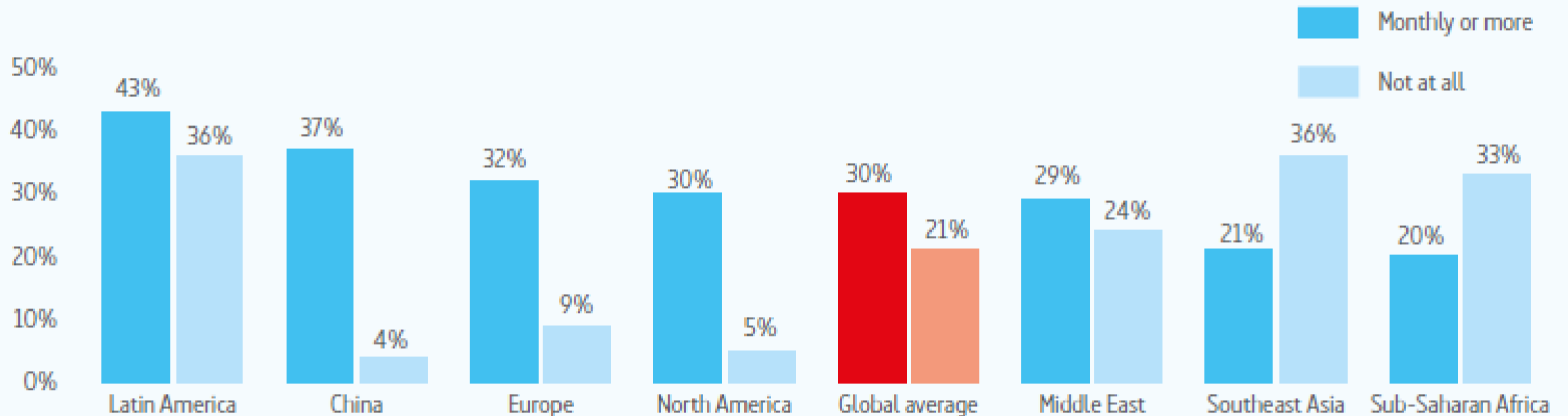
Legal teams are clearly concerned ...

Percentage of GCs somewhat or very concerned about the potential consequences of a cyber incident



... but slow to take action

How frequently respondents connect with their IT team to discuss cyber-related topics and organisational readiness



2

Cyber Threats: The Latest and Greatest Trends

Full Range of Internal and External Assessments

BREAK IN



TRICK THE USER



EXPLOIT A VULNERABILITY



GET AN INSIDER



Threat Landscape

This is a short list ... there are over 100,000 more

ATTACK METHODS

- Spearfishing
- Web site infection
- Social Engineering
- Exploits
 - Zero day exploits
 - Plug-in exploits
- RAM Scrapers
- Ransomware
- DDOS attacks

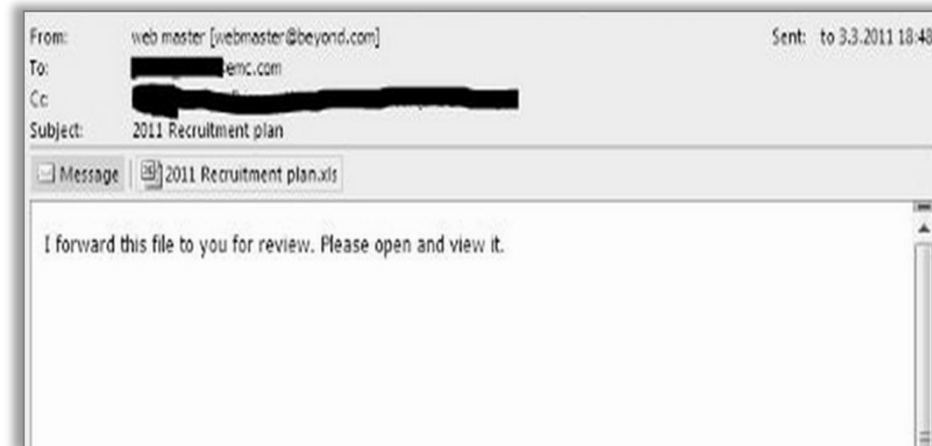
ATTACK TOOLS

- Droppers
- Popular malware families
 - “GameoverZeus”
 - “Trojan.swifi”
 - “W32.Ramnit”
- Web shells
- Key loggers

Spearfish Attack

Targeted phishing email

- Trick users into opening attachments with Dropper
- Most targeted areas:
 - Manufacturing
 - Finance
 - Insurance
 - Real Estate
- Droppers can now display text in attachments



Email-based Wire Fraud

The CEO wire transfer scam

- It is often NOT a breach
- Company is “footprinted” by attacker using website and / or social media
- Wire authorizer identified in business structure
- Travel/holiday plans of key executive
- Variants
 - Takeover of supplier email
 - Vendor check payment scam
 - Tax payment scam



Website Browser Vulnerabilities

CEO wire transfer scam

- The con man approach
 - Relies on the helpful nature of human beings AND
 - Our inability to remember things like passwords and security codes Search Browser History
- Man-in-Browser attack



Why Steal Cookies?

To impersonate another. Cookies act as ID for many sites, and can provide access to online accounts

Social Engineering

Talking your way into a system

- Web site Infection: Infected site injects code into users browser to:
 - Place malware
 - Steal cookies
 - Search browser history
- Man-in-Browser attack
- Many different forms
 - Call Victim, pretend to be IT
 - Call ISP as police
 - Send emails as CEO to staff setting up a wire transfer
 - Review public postings and guess password
 - Call IT support as victim and get passwords reset....



Exploits

Vulnerable systems

- Example- the Drupal Issue
 - Open source web development platform
 - 1 Million sites
 - Whitehouse.gov
 - Stanford University
 - World Economic Forum
 - Had error in **one line** of code
- Most Common software with Exploits
 - Plug Ins for viewing data
 - Browsers
 - Operating Systems



RAM Scrapers

Finding the weaknesses in systems

- Variants
 - 'RawPOS'
 - 'ChewBacca'
 - 'Dexter'
- Software based attack
 - Targets credit processing machines at their source- before data can be encrypted.
 - Collects data in parallel with normal processes- hides in the data
 - Sends data out using internet traffic
- Multiple vectors
 - RDA breach
 - Middleware attacks
 - Privilege escalation



Ransomware

Cyber extortion: Data held for ransom

- Attack comes via either a spam email, or targeted 'spearfish' email.
- Comes in as an attachment
 - Unpaid invoice (.xl)
 - Word Document (.doc)
 - Free video player (.exe)
- Attachment is often password protected to stop anti virus software from searching it
- Once the user opens the attachment, Dropper places malware on system
 - Shows the user a meaningless image or file.
- The malware contacts a Command and Control server via POST/ GET commands and downloads information gathering malware
- The malware then maps the victims computer starting with C: and goes to all attached drives and devices
 - Runs RSA 2048 bit encryption
- Leaves behind an HTML calling card telling you how to pay



Modern Cyber Tools

Building a mature security program

TRADITIONAL

- Anti-Virus
 - Pattern or signature-based detection
- Firewall
 - Rule-based restrictions
 - Packet filtering
- Help Desk
 - Service center to handle internal IT support
- IDS/Web monitoring
 - Network monitoring
 - Filtering of user-based traffic

MODERN

- Endpoint Threat Monitoring
 - Host based IOC searching
- Next Generation Firewall
 - Application layer firewall protections
- SIEM
 - Log aggregation and correlation
- SOC
 - Security center – assists IT with incidents
- Data Loss Prevention tools
 - Asset and document monitoring

3

Threat Intelligence: What information can we glean from the Dark Web?

By leveraging the Dark Web, an organization can efficiently expand its visibility into risks with minimal technology/IT overhead

Extracting Signal From Noise

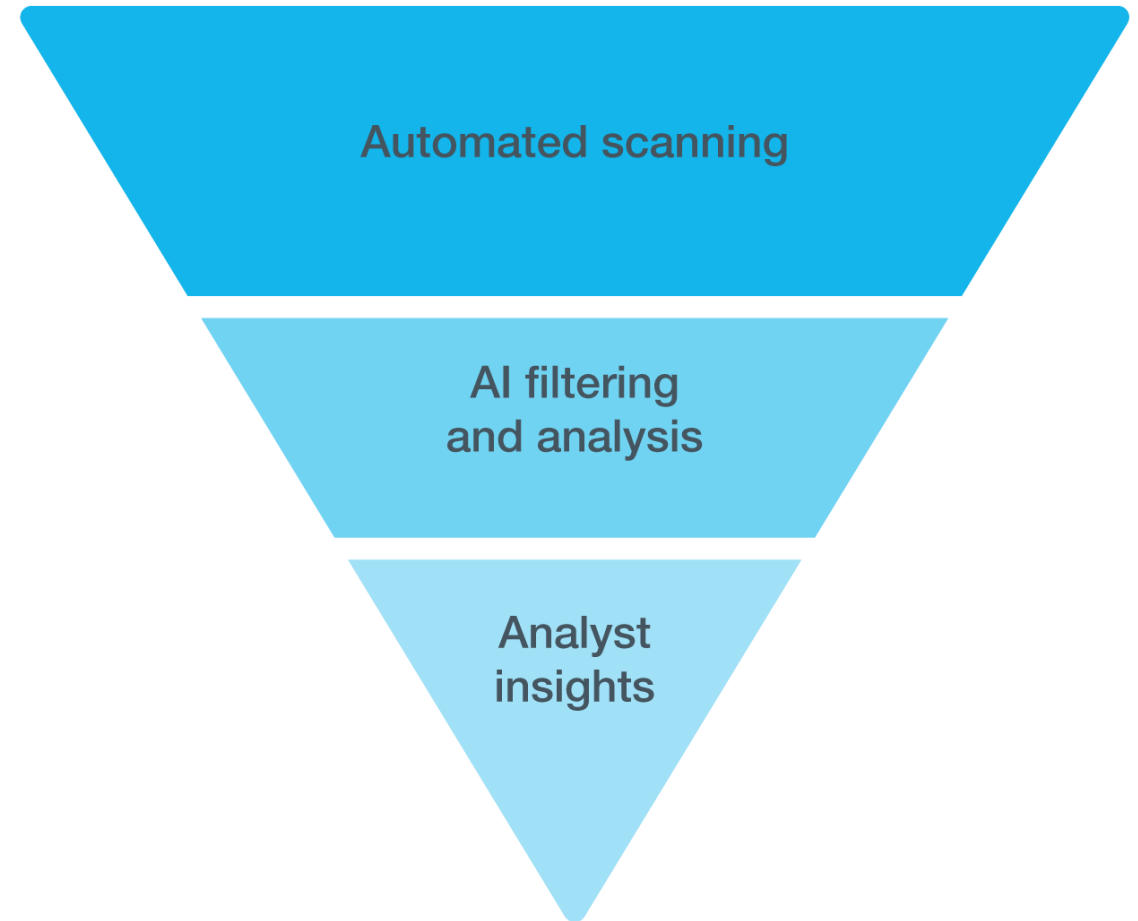
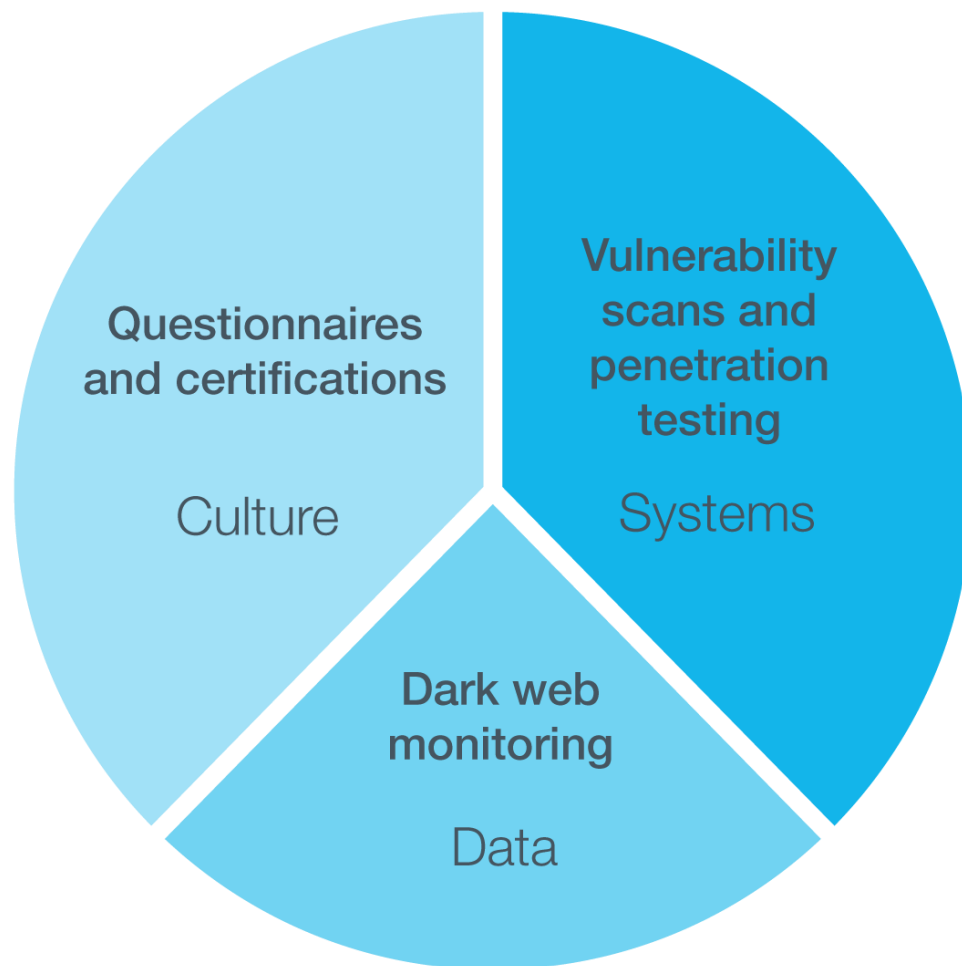


Figure 2: Dark web monitoring should combine AI and analyst insights.



Optimized Third Party Risk Program

Figure 1: Adding dark web monitoring to vendor due diligence provides a holistic look at cybersecurity through the lenses of culture, systems and data.

Strategic approach to Information

- Knowing the **extent to which sensitive data has been exposed** is itself valuable information
- Exposed information plays a key role in due diligence procedures and often **impact valuation**
- Mapping exposed information can also be important in litigation

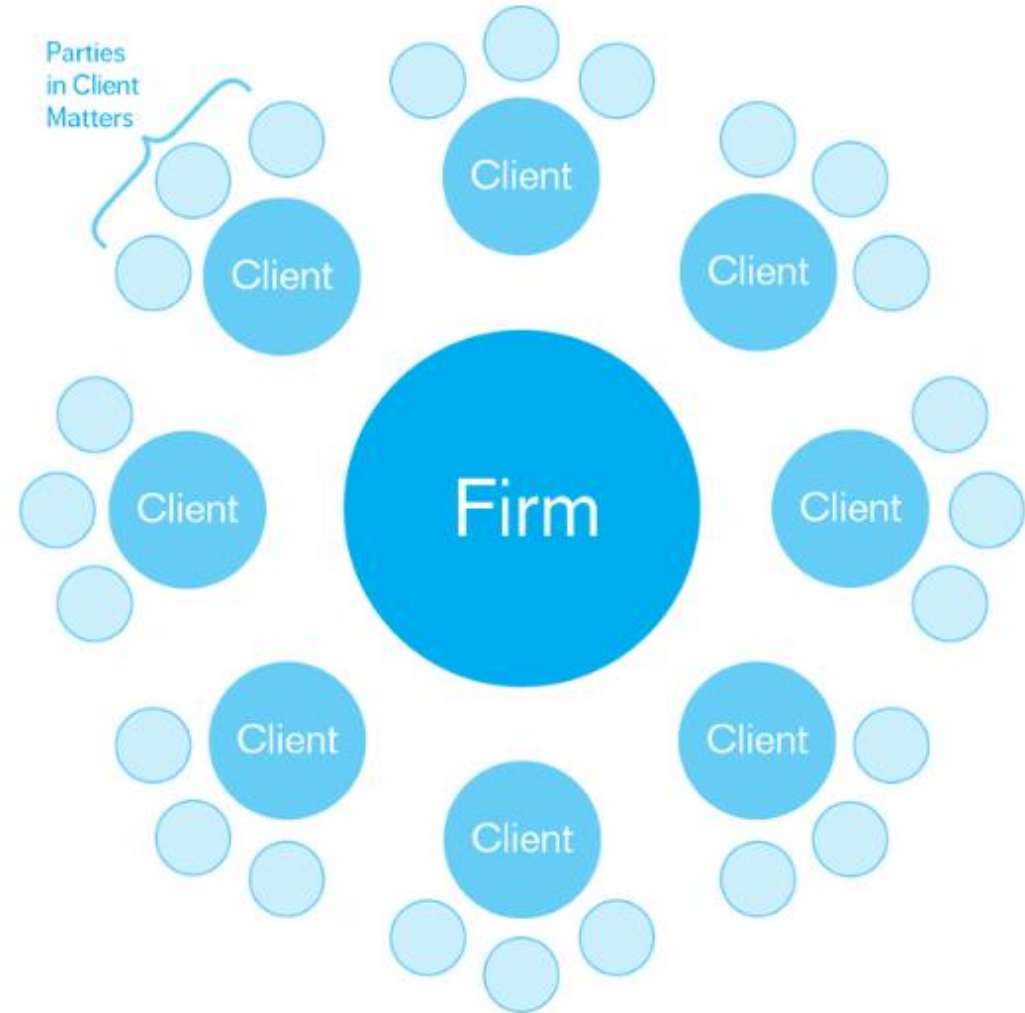


Figure 1: Information exists across a web formed by law firms, their clients, and parties in client matters

Examples of files

What Kroll finds on the dark web

71.237.57.
AURORA, COLORADO, US

[71.237.57.] 2006 ETrade 1099.pdf
[71.237.57.] 2007 Collins Tax Return.pdf
[71.237.57.] 2007 Federal Tax Return.pdf
[71.237.57.] 2007 Form 1040.pdf
[71.237.57.] 2007 tax return.pdf
[71.237.57.] 2007 taxes.pdf
[71.237.57.] 2007.pdf
[71.237.57.] 2007Jan19-2007Feb20.pdf
[71.237.57.] 2008 Collins J Form 1040 Individual Tax
[71.237.57.] 2008 dewberry J Form 1040 Individual Tax
[71.237.57.] 2008 Mann N Tax Return.pdf
[71.237.57.] 2008 Morgan B Tax Return.pdf
[71.237.57.] 2008 SMITH W Form 1040 Individual Tax
[71.237.57.] 2008 Tax Return (Original)0001.pdf
[71.237.57.] 2008 tax return.pdf
[71.237.57.] 2008TaxReturn.PDF
[71.237.57.] 2008TaxReturn-1.PDF
[71.237.57.] 2009 Carlos Aguilar.pdf
[71.237.57.] 2009 NJ State Tax Return.pdf
[71.237.57.] 2009 Signed Tax.PDF
[71.237.57.] 2009 Tax Return (2).pdf
[71.237.57.] 2009 Tax return Taurus.pdf
[71.237.57.] 2009 Tax Return.pdf
[71.237.57.] 2009 Zuker L Form 1040 Individual Tax R
[71.237.57.] 2009_Ska Ska Student Loan.pdf
[71.237.57.] 2009-2010-student-staff-application.pdf
[71.237.57.] 2009-Tax-MacCauley.pdf
[71.237.57.] 2009TaxReturn.PDF
[71.237.57.] 2009zooeemploymentapplication.pdf
[71.237.57.] 2010 Carlos Aguilar Taxes.pdf
[71.237.57.] 2010 CDTC Application Rev. 10.pdf
[71.237.57.] 2010 MIPR, Property Tax Refund Return
[71.237.57.] 2010 Smith H Form 1040 Individual Tax F
[71.237.57.] 2010 tax billa.pdf
[71.237.57.] 2010 Tax Return.pdf
[71.237.57.] 2010 TaxReturn PIN 30680.pdf
[71.237.57.] 2010_EmploymentApplication ragin wate
[71.237.57.] 2010-08-19 Internet and Phone Banking L
[71.237.57.] 2010-BC-Finance-Ministry-Press-Release
[71.237.57.] 2010ScholarshipApplication-Atlantic City
[71.237.57.] 2010TaxReturn.PDF
[71.237.57.] 2011 Complete Employee Application pd
[71.237.57.] 2011 Cricket Application Packet.pdf

[71.237.57.] Tax.PDF
[71.237.57.] tax.txt
[71.237.57.] TAX_FORMS_2ND_QTR_2006.pdf
[71.237.57.] Tax_Manizza_2009.pdf
[71.237.57.] Tax_Plan_Facts_FINAL.pdf
[71.237.57.] tax-al.pdf
[71.237.57.] Taxes 2007 for DUMmIES.pdf
[71.237.57.] taxes.pdf
[71.237.57.] taxes_et_redevances_fsse_2011.pdf
[71.237.57.] taxes_f.pdf
[71.237.57.] taxinv13.10.09.PDF
[71.237.57.] TaxInvoice_82d7d09d-455d-47cb-86ba-0294b399c5c5.pdf
[71.237.57.] Taxonomy_2009.pdf
[71.237.57.] TaxPayment0012799130.pdf
[71.237.57.] TaxReturn (1).pdf
[71.237.57.] TaxReturn [675A168].pdf
[71.237.57.] TaxReturn [F3F2588].pdf
[71.237.57.] TaxReturn 2010 daniel.pdf
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[71.237.57.] TaxReturn-8.pdf
[71.237.57.] TaxReturn2009.pdf
[71.237.57.] TaxReturn2009-2.pdf
[71.237.57.] TaxReturn2010.pdf
[71.237.57.] TaxReturn2011.pdf
[71.237.57.] TaxReturnforma.pdf
[71.237.57.] TaxReturnJamilied2010.pdf
[71.237.57.] TaxTable2007.pdf
[71.237.57.] tax ext.pdf
[71.237.57.] TFC-1 Application-1.pdf

Do not write or stamp in this space.
Your social security number
Spouse's social security number
You must enter your social security number(s) above.
Checking a box below will not change your tax or refund.
☐ You ☐ Spouse
Living person. (See person is a child this child's
child (see instructions)
Boxes checked on 1a and 1c
No. of children on 1c who:
• lived with you - - - 1
• did not live with you due to divorce or separation (see instructions) - - -

Flagship Carrier Airline



The airline had asked us to monitor its own presence on the dark web. While doing so, we discovered that a sizable batch of the airline's customer itineraries had been exposed—not due to a breach of its own network but rather a breach of a travel agency network. Critically, the travel agency was unaware that the breach had occurred.

4

Best Practices: Minimize Risks to Data Security, Privacy and Overall Firm Reputation

Most effective strategy to mitigate risk

1. Technology
2. Process
3. People



1. People
2. Process
3. Technology

People make security happen

Employees are the first line of defense

- Cyber-related vulnerabilities often originate with staff, contractors, third party vendors who accidentally or deliberately don't follow security protocols
- Security is everyone's responsibility, and leadership must set the tone at the top
- Keep top of mind with ongoing security awareness campaigns, training, and testing
 - Remind users of best practices
 - Make sure they know how to report suspicious activity
- The value of the CISO, or the vCISO

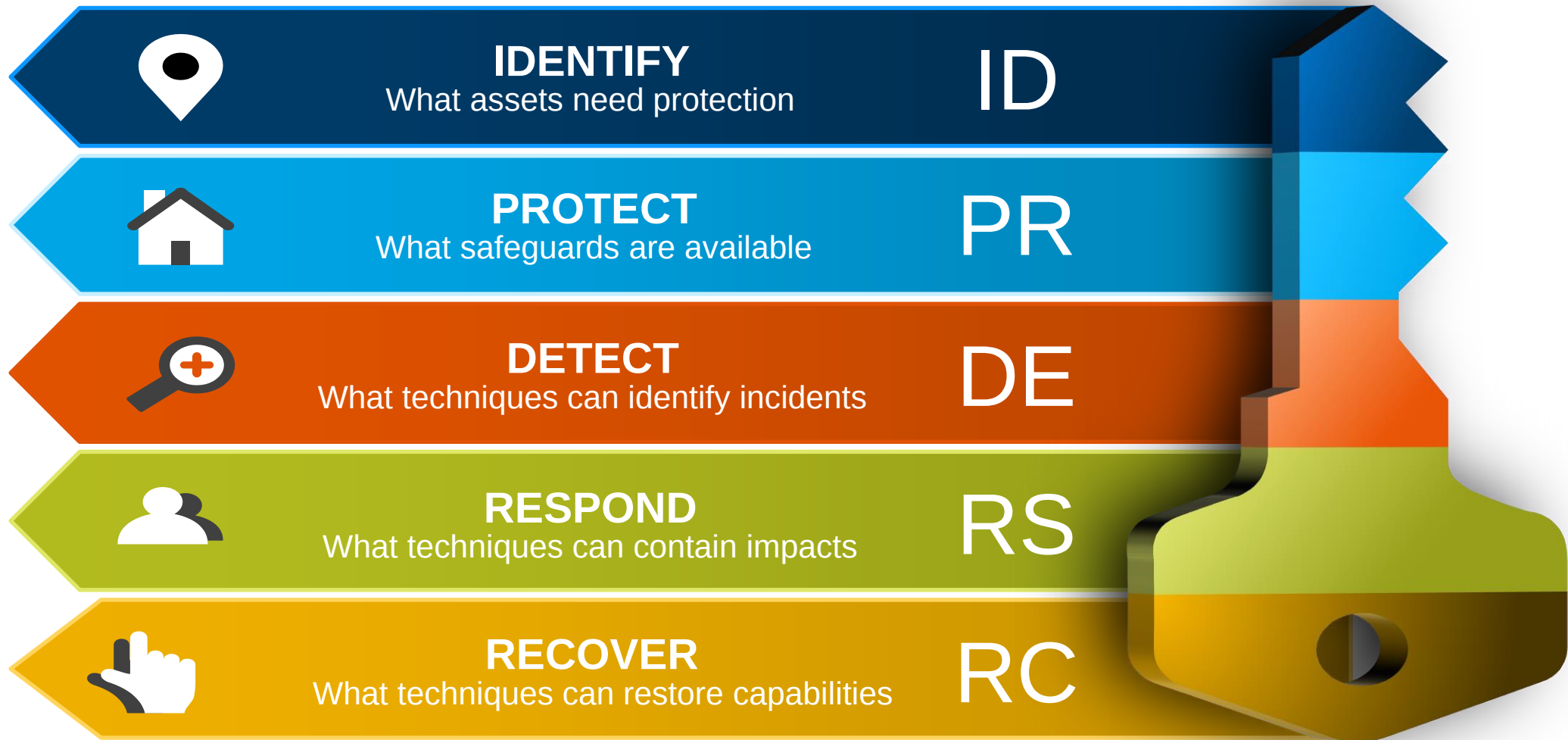
Process: Expectation Setting

Policies and processes set the guidelines

- Create and implement policies and processes that promote information security, based on current a current framework
 - Addresses acceptable uses of corporate IT resources
 - Data classification
 - Principle of least privilege
 - Mobile resources
 - Social media
 - Many more
- Use restricted client portals that encrypt documents and messages to promote greater security

Leverage a Framework

Five concurrent & continuous functions



Framework and implementation

RISK INFORMED

Risk-management processes and program are in place but are not integrated enterprise-wide; collaboration is understood but organization lacks formal capabilities

REPEATABLE

Formal policies for risk-management processes and programs are in place enterprise-wide, with partial external collaboration

PARTIAL

Risk-management is ad hoc, with limited awareness of risks and no collaboration with others

ADAPTIVE

Risk-management processes and programs are based on lessons learned and embedded in culture, proactive collaboration



Technology for quick, effective response

Tools for detection and containment

- Deploying tools like endpoint threat monitoring help with false positives and enable quick containment and remediation efforts
- As discussed previously, dark web monitoring is a trend that can identify potential threats originating outside your network.

Summary

01

Have a narrative before the incident

02

Choose & implement a cyber security framework

03

Use governance structures to operationalize the framework

04

InfoSec Maturity = detect and respond capability

Contact Details



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Law Firms at a Crossroads: New paths to safeguarding data as cyber criminals ramp up attacks

Given the volume, depth of detail and uniqueness of the data they hold, law firms have emerged as prime targets for criminal networks. This comes as no surprise to most legal professionals and law firms who recognize the threat and have taken various steps to strengthen their defenses.

For example, the [2017/2018 Kroll-Legal Week Cyber Report](#) found that more general counsel are taking a larger management role around cyber security issues: 45% said their role has expanded in the area of planning, 40% monitoring, 37% reporting and 43% responding to a cyber incident. From another perspective, a [survey of 200 U.S. law firms](#) last October revealed that 41% were planning to increase spending on cyber security tools and services in the next 12 months.

Yet, despite greater attention and increased spending, [significant data breaches at law firms of all sizes](#) continue to make news. Equally troubling, breached law firm data is showing up on the dark web alongside data that was not stolen, but rather accidentally exposed by employees or third parties. In May 2018, Kroll performed an analysis of the deep and dark web, and for every law firm in our sample, we found company emails and passwords up for grabs, creating a clear risk for fraudulent credential reuse. The source in many cases: employees who used their company email addresses to sign up for third party services.

With the trust of clients at stake, law firms are at a cyber security crossroads

At the heart of every attorney-client relationship is the client's expectation that all forms of communications will be privileged and kept in strict confidence. In fact, the protections afforded by attorney-client privilege are why many clients primarily seek help from attorneys instead of potentially other professional advisors. The thought of client information breached, sold or otherwise divulged is the stuff of lawyers' (and their clients') nightmares.

Because current cyber security strategies are often coming up short, law firms should consider a more holistic approach, one that addresses data security from multiple directions but in an integrated way. Defensive measures continue to be a vital part of the security equation, but today, best practice also calls for sophisticated threat hunting, detection, investigation and response capabilities. This is the path to cyber resiliency, which enables you to more quickly and effectively neutralize harm caused by cyber criminals.

Cyber resiliency starts with a better understanding of the fundamentals: What do hackers want and why? How are they getting past existing defenses?

Law firm data can be monetized in a multitude of ways

Cyber criminals are among the most inventive and motivated people on the planet when it comes to monetizing data. The data held by law firms is particularly valuable because it can be leveraged in a

multitude of ways – e.g., facilitating insider trading, setting up sophisticated counterfeiting operations, getting to the Patent Office or market first by stealing intellectual property, running blackmail schemes or exercising personal vendettas that ruin reputations. Of course, there is always the irresistible appeal of stealing the identities of wealthy or well-connected clients for financial or other personal gain.

Primary tactics used by cyber criminals and why they work

Data losses at law firms can often be traced to one of three primary attack vectors:

1. **Phishing/Spearfishing/Business Email Compromise.** This is currently the most common method of attack. On average, [12-30% of people click on phishing messages](#).
2. **Ransomware.** [Three main delivery methods](#) account for the majority of ransomware infections: a user visits a compromised website that hides malicious code; a user opens a malicious email attachment; or a user clicks on a malicious link within an email message.
3. **Distributed Denial-of-Service (DDoS) Attacks.** By overloading a firm's servers, criminals severely disrupt the firm's ability to conduct business. However, DDOS attacks may also serve as a distraction to conduct a more sophisticated attack.

People, Processes, Technology: Three pillars of cyber resiliency

In our experience, organizations are best positioned to mitigate data-related threats if they take a multidimensional approach to cyber security. Whether you are a GC involved in managing cyber risk for your firm or a law firm of any size or clientele, the same principles apply: Integrate strategies that address people, processes and technology and you will be in a stronger position to protect your data, ultimately safeguarding your reputation and vital client relationships.

Information security is everyone's responsibility

The vast majority of cyber-related vulnerabilities can be traced to staff and third parties who accidentally or deliberately don't follow security protocols or are tricked into downloading malicious code.

- Executive leadership and managing partners must set the tone at the top that information security is everyone's responsibility.
- Make employees and third parties your first line of defense by delivering ongoing security awareness campaigns and training, and then testing that training. Periodically remind users of basic best practices that include using company email accounts strictly for internal and client communications and carefully examining all incoming emails before clicking on any link or attachment. Also, employees should know how to raise an alert if they accidentally click on or open something suspicious.

Many organizations, including law firms, are finding great value in having a Chief Information Security Officer (CISO) on their executive team. This expert has the specialized technical knowledge and corporate governance experience to help organizations develop risk-based strategies appropriate for their needs. Engaging a [virtual CISO](#) on an interim or longer-term basis can be a good option for smaller firms or those in the midst of conducting an executive search.

Policies and processes set expectations

Several resources exist to help law firms create and implement policies and processes that promote information security, such as best practices outlined in [SOC 2](#), [ISO 27001](#), the [NIST Cybersecurity Framework](#) or [CIS Controls](#).

At a minimum, law firms should have policies that address acceptable uses of corporate IT resources, data classification and “principle of least privilege”, mobile resources and social media, to name a few. Staff as well as third parties should be required to comply with all policies.

Additionally, law firms should strongly consider using restricted client portals that encrypt documents and messages to promote greater security. According to the [American Bar Association TechReport 2017](#), many law firms aren’t using encryption for emails to clients, leaving the door open for hijacked communications, spoofed emails, etc.

Technology trends shifting to detection and containment

[Given enough time and resources](#), a cyber criminal will eventually find a way into your law firm’s systems. Therefore, a more effective technology trend has been to deploy endpoint threat monitoring solutions, the most sophisticated of which reduce the burden of dealing with false positives and enable quick containment and remediation efforts.

Investing in [a dark web monitoring solution](#) can also alert you of potential threats that can originate from outside your network. For example, Kroll recently found several highly sensitive and attorney-client privileged documents belonging to one of our clients, a Fortune 100 global financial services company, exposed on the dark web. The source: a paralegal for one of our client’s outside law firms who was inadvertently disclosing this content while accessing free music and movies on P2P networks.

Clients need to know that their attorneys are protecting the sensitive information entrusted to them, and law firms need to take steps that signal their commitment to modern data security. By adopting more effective cyber security measures, law firms can help keep criminals at bay, preserve the trust of clients and stand out as a provider of choice in today’s highly competitive legal and professional services market.

Dark Web Monitoring: A Strategic Advantage for Law Firms and Their Clients

Anju Chopra and Brian Lapidus

In a law firm's role as strategic advisor to its clients, the ability to gather, analyze and protect information is critical. Firms that can excel in their handling of information are thus likely to enjoy an advantage at a time when even the top of the legal marketplace is experiencing sustained competition and commodification pressures.

One way that firms can raise the sophistication of their approach to information is by including *dark web monitoring* in their research and due diligence arsenal. Dark web monitoring allows firms to see what sensitive information may have made its way onto the thriving global underground marketplace where cybercriminals buy and sell exposed data. But while dark web monitoring offers an important measure of the quality of a law firm's cybersecurity, it is an even more powerful *strategic* tool that can help lawyers advise clients on a wide range of legal and business matters.

To see how this is so, consider the amount of sensitive information that exists across the web of relationships formed by the firm, its clients and the parties those clients interact with—adversaries in legal matters, potential joint-venture partners, acquisition targets and so on (see Figure 1). Some of this information, like employee login credentials and board minutes, is internal to each party, and some, like terms sheets and strategic plans, may be confidentially shared between parties. In either case, the inadvertent exposure of that sensitive information can have significant negative effects on the party or parties involved, including decreasing the value of assets or potential strategic moves, reputational damage and signaling out the entities for further cyberattacks.

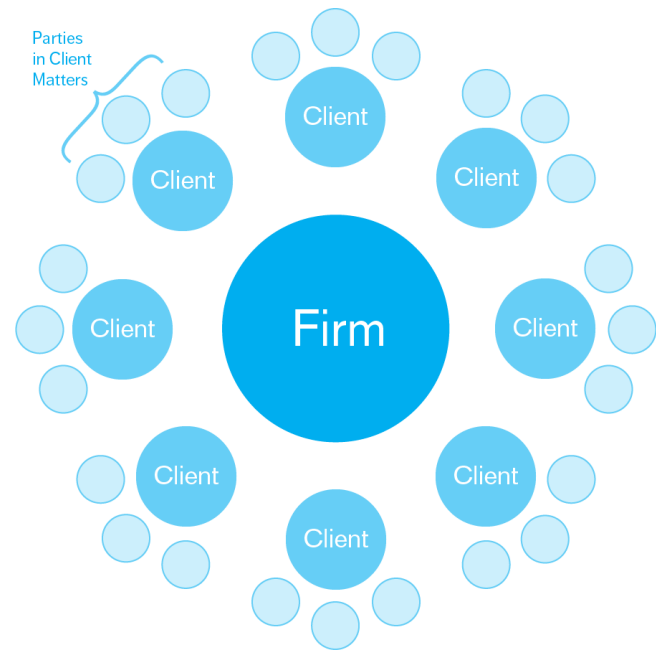


Figure 1: Information exists across a web formed by law firms, their clients, and parties in client matters.

Unfortunately, such inadvertent exposure can occur in a number of ways, including direct attacks by cybercriminals, infiltration through a trusted vendor whose system has been compromised, or an employee working remotely over an insufficiently secure network. Once that information has been exposed, whether through human error, theft, or misdirection, it is at risk of being bought and sold on the dark web. As organizations and individuals become more digitally interconnected at work and at home, the possibilities for these negative outcomes is growing and will continue to do so.

Taking a more strategic view of information and its exposure

In this environment, *knowing the extent to which sensitive data has been exposed is itself valuable information*. To start at the center of our relationship web, for example, a law firm obviously needs to

know if any of its information has made it outside its firewall and possibly into the wrong hands. This knowledge not only allows the firm to take whatever remediation is necessary, but it provides a more complete picture of the effectiveness of the firm's cybersecurity than can be had by penetration or vulnerability testing alone. (While those traditional assessments are important, they are focused more on the firm's *system* than on the data housed within that system.) It is also important to remember that in responding to a cyberattack, time is of the essence—and [months can elapse](#) between a breach's occurrence and its discovery. Because dark web monitoring directly tracks the information underground, the process provides a valuable early-warning system on cyber intrusions.

As one moves out from the center, however, the insights a law firm can glean go beyond the state of its cyber hygiene to take on powerful strategic overtones. The extent to which a client's intellectual property has been exposed and may be available to other parties, for example, can have direct bearing on negotiations or disputes in which the client is involved.

Tracking exposed information can also play a key role in the due diligence that needs to be conducted into other parties in client matters. For example, the exposure of an acquisition target's trade secrets may [affect the valuation](#) of that target—both because trade secrets are exposed and because that exposure may indicate further problems or cybersecurity deficiencies that an acquirer may have to address. (Consider that the acquirer may be liable for remedying the damage caused by a target's exposed confidential customer financial or health records.) Similarly, a client may need assurances from a potential joint venture partner with exposed information so that the client is not placing sensitive information that it shares with that partner at risk.

Mapping exposed information can also be important in litigation. If, for example, a client is a defendant in a suit claiming damages because the client allegedly exposed sensitive customer information, being able to show that the information had been previously exposed elsewhere may offer a potent defense.

Piercing the “information underground”

Dark web monitoring allows law firms to assess the exposure of sensitive information across the firm's relationship universe by penetrating the unindexed websites, chat rooms and networks, often accessible only with private credentials and the use of a special browser, that cybercriminals use to communicate and conduct business with one another. Comprehensive

[dark web monitoring platforms](#) gather and filter dark web data in three steps (see Figure 2). First, computer programs use IP addresses, email addresses, keywords and other markers provided by the law firm and its IT department to scour the dark web and identify information of potential interest. Artificial intelligence programs then employ disambiguation, contextual analysis and other tools to analyze that data to extract signal from noise.

The intelligence gathered through these automated methods is then reviewed and further refined by an experienced analyst, who adds additional information that may be gathered from private chat rooms where cybercrimes and the data generated from those crimes are discussed. The end result is the

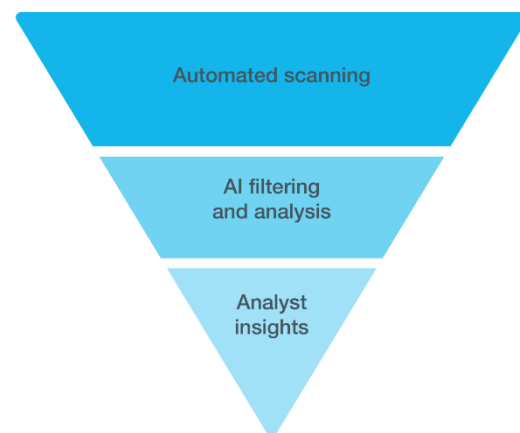


Figure 2: Dark web monitoring gathers and filters hard-to-access information using both technology and insight from experienced specialists.

mapping of the exposed information of the entity being examined—the law firm, a client or a party to client matter—which can then be used to provide important insight tailored to the topic at hand, whether a real-world evaluation of the effectiveness of the firm’s own cybersecurity, the vulnerabilities of a client in delicate negotiations or potential liability issues surrounding an acquisition target.

A powerful—and easy to implement—tool

Two aspects of dark web monitoring make it particularly attractive for law firms from an operational perspective. First, unlike some types of cyber monitoring, it is non-invasive. Dark web monitoring requires no integration with the computer network of the law firm, its clients, or anyone else. Second, the insights and context provided by the specialists analyzing the data provide a sophisticated look into emerging threats from the perspective of the cybercriminals who design and implement those intrusions. This intelligence can help law firm IT managers better tailor their cybersecurity strategies and resources—an important advantage given that the information held by law firms makes them [perpetually high-value targets](#) for cyberattack.

More than ever, information—and particularly sensitive information—is a key currency fueling opportunity, valuation and transactions. Dark web monitoring gives law firms critical insight into this asset, helping them to provide informed, nuanced advice to their clients in strategic matters while keeping a close eye on their own cybersecurity performance.

Cyber risk:

GCs take responsibility



A global report on the cyber-related challenges facing in-house teams

By Dominic Carman

Confronting constant threats from an increasingly diverse set of cyber risks, no business can doubt the need for strong cybersecurity. Or at least none of them should. As the nature and type of threat continuously evolves, existing security measures can suddenly be rendered inadequate or ineffective, exposing sensitive company or customer data and making that data vulnerable to compromise.

Cyber risks are not only increasing, but their nature and scope have evolved to include financial, legal, regulatory, and reputational risks. As a result, the responsibility of the general counsel is expanding to address these additional areas of risk. Some GCs have fully embraced their widening mandate, particularly driven by the global expansion of data protection and privacy regulations. Others may not yet realise the full breadth of their increased responsibility, perhaps where the lack of a mature regulatory framework in their region has kept organisational cyber risk lower on their priority list. Further, some may even be avoiding the increased responsibility because they consider themselves unprepared to understand or manage cyber risks.

The public manifestation of cyber risk comes with the disclosure of data breaches, which is occurring with increasing frequency due to the ubiquitous digitisation of valuable information. Inevitably, these breaches attract considerable media attention focused on the potential impact of the breach on those individuals whose information has been lost. Last year, Yahoo revealed two separate data breaches — the largest in U.S. history — with hackers stealing information relating to 1 billion user records. The company did not disclose the 2014 data breach to the public until September 2016.

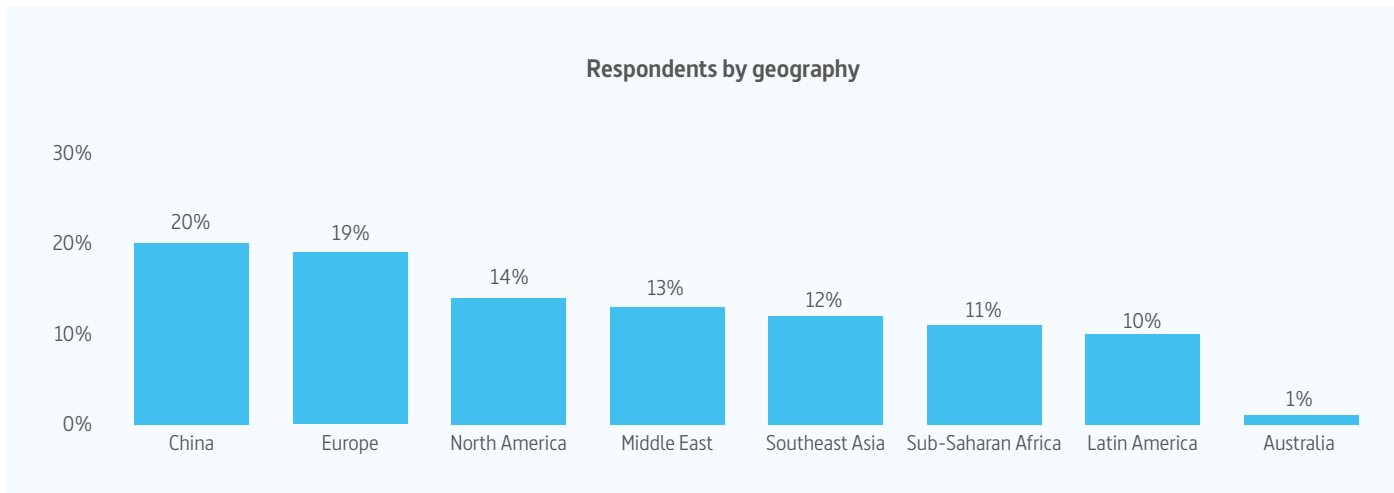
Yahoo general counsel Ron Bell had to resign after an investigation initiated by a Special Board Committee concluded

that the company's legal team failed to inquire sufficiently into the circumstances surrounding the cybersecurity breach. Yahoo explained in a March 2017 filing with the US Securities and Exchange Commission that certain senior executives at Yahoo as well as members of its legal team "had sufficient information to warrant substantial further inquiry in 2014" about a hack into



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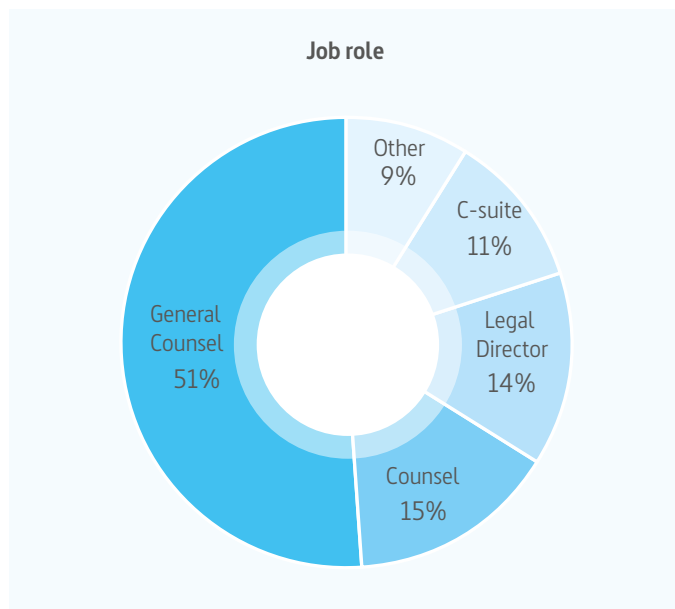


the company's networks, but "they did not sufficiently pursue it". For many GCs, this very public assignment of blame was a wake-up call.

More recently, the enormous data breach suffered by Equifax serves to accentuate the critical need to commit time, energy, and resources to cybersecurity. In September 2017, Equifax announced that it had suffered a cyber-attack which resulted in the loss of the personal information of more than 145 million consumers, both in the US and globally. The fall-out was immediate and dramatic — demonstrating in real terms the devastating impacts that a data breach can have on a company's value, reputation, and management. In a matter of days Equifax's stock value had plummeted by more than 40%, and in a matter of weeks, the company's CEO and other senior officials were either forced to resign or otherwise exit the business.

Surpassing oil, data has suddenly become the world's most valuable commodity. Alphabet (Google's parent company), Amazon, Apple, Facebook and Microsoft are now the five most valuable listed companies in the world. Predictions for future levels of cybercrime are remarkable with the annual cost of data breaches forecast to exceed \$2tn globally by 2020, nearly four times the 2015 level. To combat its effects, annual spending on IT security is also predicted to exceed \$170bn by 2020, more than double the 2017 figure.

This report addresses the themes of cyber resilience and responsibility, in particular what general counsel are doing, and should be doing, to adjust to the changes in this dangerous new world. Invariably, the result is an ever growing level of responsibility for protecting, planning, monitoring, reporting, training, and responding to the myriad elements of cybersecurity



that now fall within their domain. Critically, GCs also have to take ownership of the company's cyber incident response plan, and ensure that it is tested, up to date and ready to implement in the event of an incident.

In partnership with Kroll, Legal Week surveyed 138 respondents: general counsel (51%) counsel (15%) legal director (14%) C-suite (11%) and other (9%). Research was undertaken globally in July and August 2017 across the following regions: Europe, Latin America, Middle East, North America, Southeast Asia, Sub-Saharan Africa, and China. Further in-depth interviews



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The expanding role of the GC before and after a cyber incident (% saying role has expanded)

	Global	China	Europe	Lat Am	Middle East	N America	SE Asia	SS Africa
Planning	45%	30%	50%	64%	50%	63%	31%	33%
Responding	43%	48%	30%	57%	35%	63%	44%	27%
Monitoring	40%	44%	26%	57%	41%	47%	38%	33%
Reporting	37%	30%	35%	50%	41%	47%	31%	33%

were conducted with general counsel in North America, Europe, Asia, and the Middle East.

Interviews with general counsel drawn from different organisations in disparate locations reveal many of their concerns to be similar, even if their levels of concern, awareness of risk and proportionate responses are often very different. How each general counsel responds also differs because the structure and operation of each organisation is unique. Accordingly, the majority of the report focusses on universal themes before examining specific regional issues and stages of development in corporate response to the cybersecurity challenge.

The expanding role of the GC

According to Philip Bramwell, GC at BAE Systems, “general counsel have become the Ministry of Thorny Issues in many large enterprises.” There is substance in his humour. The survey data shows that the role of the GC has grown in relation to cyber risk: 45% say their role has expanded in the area of planning, 40% monitoring, 37% reporting, and 43% responding to a cyber incident. The detail behind the headline global response figures show wide variations, both between regions and across different areas of responsibility within regions.

These increases stretch well beyond compliance and keeping up with, and staying within, the law. It is also driven by practical concerns from C-suite executives about what is being done to mitigate possible threats and ensuring that best practice is implemented and the highest standards applied uniformly throughout the organisation. Increasingly, the buck stops with the GC.

“If you take a pie-chart of my time, a significant part of it is going towards thinking about, talking to and working with others to make sure that our cyber-posture is strong and robust,” says Martin Felli, CLO at Arizona-headquartered JDA.

“You need to have a voracious appetite and prioritise this issue,” adds Alexander Niejelow, Senior Vice President and Group Head of Global Public Policy at MasterCard and a former Director of Cybersecurity Policy at the White House from 2013-15. “And that frankly, is going to be a fundamental advantage for you as an individual in your role as a general counsel, and more specifically with the business and shareholders, if there are shareholders that you represent.”

A global issue

Of course, businesses are no more uniform than the customers that they serve. Distinct regional variations emerge from the survey between different parts of the world, dependent upon the prevailing legislation, regulation, culture, education, and business norms.

Yet cyber threats have no borders. With global data communications, every hacker, regardless of their physical location, is the virtual neighbour of every one of their potential targets.

A common international standard for cybersecurity legislation and regulation remains a distant prospect. Although U.S. cybersecurity legislation has been in force for many years, other jurisdictions have only more recently started to play catch up. Additionally, the SEC, FCC, FTC and other U.S. federal agencies have released several iterations of regulations that, though not being codified, have the effect of being laws for organisations subject to those regulatory bodies. Regardless, there has been a protracted political impasse in updating outdated parts of existing U.S. legislation — most of it enacted between 1996 and 2002 — to reflect significant changes in technology and the multiple attendant risks which it creates. Despite the recent data breaches that have befallen U.S. companies, new legislation and regulation to enforce stronger cybersecurity requirements more widely still has some way to go.

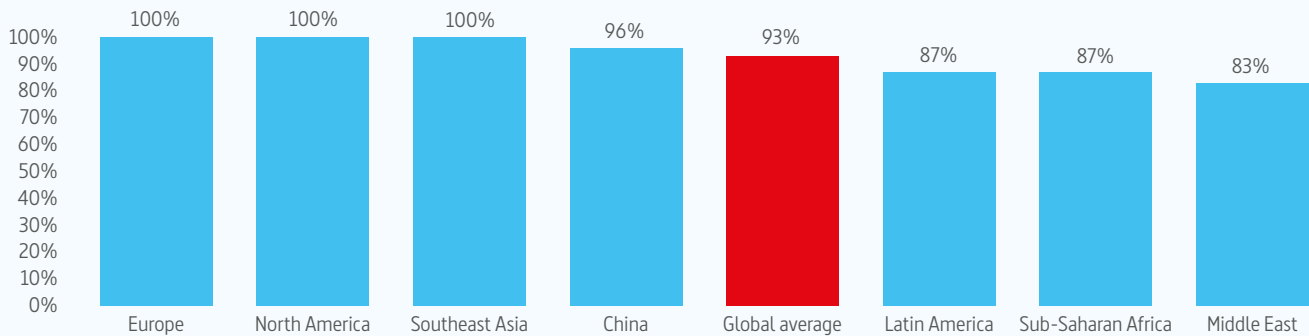
45%
of GCs say their
role has expanded
in the area of
planning for a
cyber incident



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Percentage of GCs somewhat or very concerned about the potential consequences of a cyber incident



In 2015, two major new pieces of EU legislation were agreed: the General Data Protection Regulation (GDPR) and the Network and Information Security Directive (NIS). GDPR was adopted in April 2016 and becomes enforceable from May 2018. Any firm that handles personal data of EU residents will be affected.

Non-compliance could lead to substantial penalties, with fines of up to €20m or 4% of global turnover — whichever is the greater. As the first piece of EU-wide legislation on cybersecurity, the NIS Directive (with the goal of setting high common standards for network and information security across the EU for essential service providers) came into effect in August 2016 with each EU member state also having until May 2018 to incorporate the Directive's requirements into their national laws, and six months to identify companies subject to those requirements.

Regulation changes behaviour, especially corporate behaviour: every general counsel wants their company to comply with the law. "GDPR is very much a top three item on most general counsel's list," says Bramwell. "It is a big opportunity for data security providers," suggests Robert Blok, Group Legal Director at Virgin Management, "for the way that the Virgin businesses work — being able to manage customer data well, as well as being a very responsible holder and user of that data."

One Middle East-based GC says: "The EU approach to data protection is a tide that raises all boats. If you're going to handle

the data for customers in the EU, and pretty soon if you're going to be marketing to people in the EU, you've got to meet a certain standard which is set by the EU. And once legal obligations are there, then a sensible business puts in place a process to ensure that those obligations are met."



"We are collectively better off, from a safety and security, innovation, and trade standpoint — by working towards a common set of strong baseline cybersecurity standards"

Alexander Niejelow, SVP, MasterCard

Compliance matters elsewhere, too. Stephen Hibbert, GC at Qatar Rail, has seen his authority and time spent both increase in response to cyber prevention over the last year. "It comes off the back of laws being enacted in Qatar that are specifically addressed to cybersecurity, as well as the high media profile of stories relating to cyber activities by adverse parties," he says.

Working closely with regulatory authorities can also pay dividends. In Singapore, RedMart (owned by Lazada Group (Alibaba)) has been recognised by the Personal Data Protection Commission (PDPC) as a model e-commerce company, explains general counsel Chris Chan. As the country highlights the importance of cybersecurity and data protection, this also gives RedMart a platform to share its best practices. The PDPC even filmed Chan for a prime time TV show as a new way of engaging Singaporeans about the digital economy.



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"I spend approximately 30% of my time on government affairs and meeting the various agencies to discuss e-commerce," says Chan. "The Ministry of Manpower, the Competition Commission, the Economic Development Board, the Agri-Food and Veterinary Authority, the Academy of Law, and the PDPC are just a few that are learning more about e-commerce." Singapore is considering amending the Personal Data Protection Act (PDPA) of 2012 and recently released a new Cybersecurity Bill for public consultation.

"In most African jurisdictions, cybersecurity and data privacy laws really are at the very early stages," says Bertandt Delpont, Head of Legal Africa at British Telecom. "There are a lot of conferences starting to look at that and a huge contingent looking at the European standards. But most of it is in the early development phase now, even in South Africa."

Multinational companies have to consider a range of jurisdictional issues where laws vary widely, or are in different stages of development. "We have a presence in a lot of geographic locations," says Felli. "Some regions are more problematic. There are some countries in particular where there is a heightened circumspection in the way we look at them. Do we want to have data centres in that country? It becomes a potential concern when there are local regulatory regimes that could impact on the business."

"With the EU and GDPR, we need to be focused on how we design our cybersecurity. From a security perspective, we want to be best in class, or attempt to be best in class. So that the bottom, the lowest common denominator would at least address across the globe, whatever regulatory regime is brought up."

At Kroll, Senior Managing Director, Global Cyber Security and Investigations Practice Leader Jason Smolanoff concludes: "Everyone's waiting for GDPR to be enforced. Is GDPR much different from the Privacy Shield program from a roll out perspective? Not really, with the exception of enforcement. Fines can be significantly higher and more importantly, many are waiting to determine if the courts will uphold the penalties. That obviously hasn't been tested yet."



Understanding the specific risks to your business

Reggie Davis, GC at DocuSign, demonstrates his appetite. "Cybersecurity can be quite technical and complicated," he says. "But if you're going to be effective in terms of understanding and communicating the risk and explaining it, both to your board of directors, your executives and to a judge if you find yourself involved in litigation, you really have to reduce it down to more simple, human terms."

"This means having the support of very good technical people and developing a good relationship with them, and then basically sitting them down and having them walk you through, in excruciating detail, and explaining to the point that you



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actually understand it. What is the technology involved? How is it working? Is it working well? What is the potential gap analysis that we need to do and where are we at in terms of augmenting any gaps? That's quite interesting and fun, and I've got a captive audience from people at the board meeting."

Andrew Beckett, Managing Director, EMEA Cyber Security and Investigations Practice Leader, Kroll, adds: "Lawyers are highly intelligent. It helps if they're IT literate, but they don't have to be an expert. Spending time with your IT security team in advance of a breach and rehearsing those scenarios will give you sufficient exposure to the language and the technicalities that you can do the job effectively. Barristers in court, if they're prosecuting a surgeon for malpractice, they don't need to understand brain surgery; they need to understand the process that the surgeon is supposed to be following and how you make risk decisions about what they're doing next."

Survey data shows that 30% of GCs at US companies discuss cyber-related topics and organisational readiness every month with their IT team. Comparable figures for China (37%) and Europe (32%) are slightly higher. Figures for those who never discuss these matters at all are more revealing: South East Asia (36%) and Latin America (36%); Sub-Saharan Africa (33%); Middle East (24%); Europe (9%); North America (5%) and China (4%).

Davis adds that "We're seeing more movement towards GCs having a broader management role around security issues: driving security committees and security councils. It is one of the largest risk factors out there. Anyone in a general counsel function would do well in terms of understanding the technical issues and then being able to translate that in a way that makes sense to the board of directors around how are we assessing and understanding what

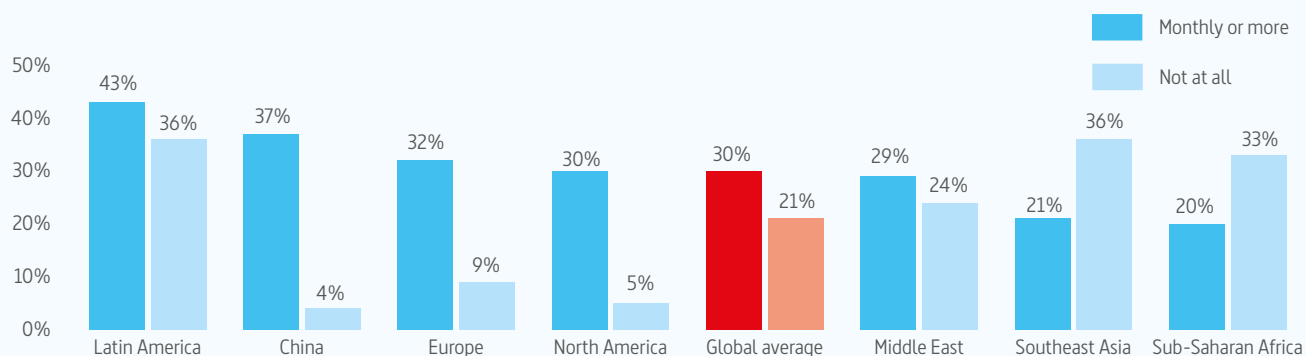
30%
of GCs discuss
cyber-related topics
and organisational
readiness every month
with their IT team



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How frequently respondents connect with their IT team to discuss cyber-related topics and organisational readiness



our true risk and potential exposure is, and what are the steps we're taking to mitigate that risk and exposure."

The Middle East-based GC further develops the point. "Within my peer group I'm increasingly seeing general counsel here in the Middle East become COOs," he says. "I've had the conversations with people in the last month who that's either happened to here, or they've indicated that's going to happen. This change is indicative of the extent to which the GC role is really broadening into a back office process management and risk management role."

He offers a strategic risk management approach. "Is data security or a data security breach a massive iceberg on the horizon for a business like ours, or indeed any other business? Absolutely yes. If you contextualise it in that way, then this is something general counsel should be doing. They should be looking for these kinds of risks. They should be steering the company away from them. They should be preparing to handle this kind of stuff. That is completely in line with what they are really there to do."

Although general counsel are increasingly tasked with monitoring, preventing and reporting various facets of cybersecurity because of compliance, a practical problem frequently arises: how much they really understand the technology. "If you drew a Venn diagram of lawyers and those with a profound understanding of information technology and communication networks, there's probably a pretty thin

overlap," says Bramwell. He offers a different take from Davis: "I don't think we should expect to be gifted naturals in this area. We can apply the general principles, but specialist expertise is critical. Some of the law firms do an outstanding job of building cybersecurity expertise themselves and are able to advise general counsel."

Alan Konevsky, Group Head, Strategic Initiatives Counsel at MasterCard, explains the internal challenge: "The core thing that's evolved — quite clearly — is that it used to be



"If you drew a Venn diagram of lawyers and those with a profound understanding of IT and communication networks, there's probably a pretty thin overlap"

Philip Bramwell, GC at BAE Systems

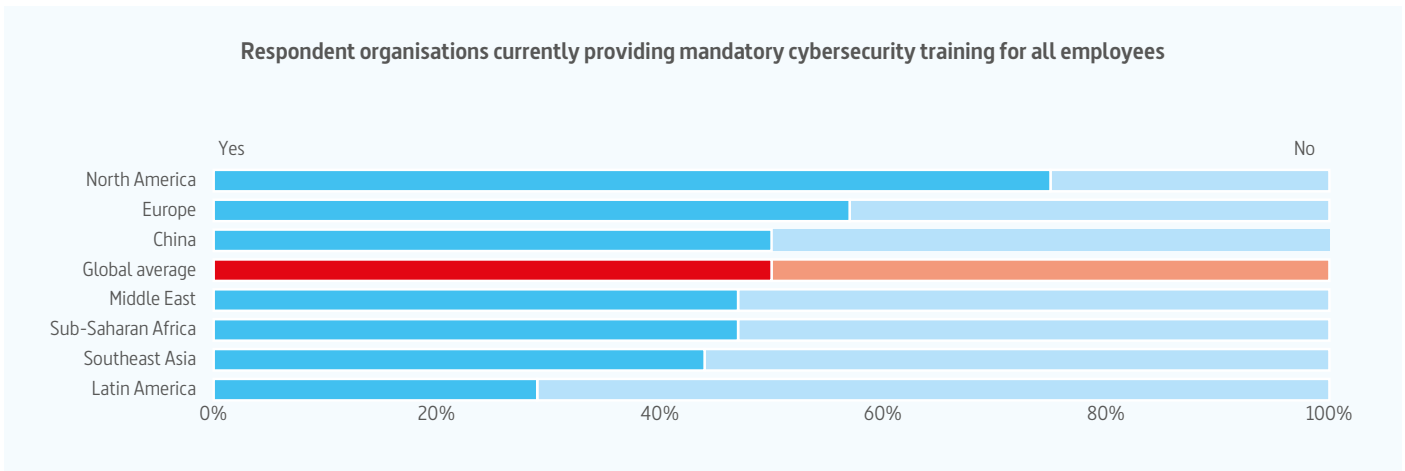
that anyone could be in the frame or frame of mind of being a cybersecurity expert — you were an IT person, a data privacy person, a technology person. You're the 'computer guy', you deal with it. That simply doesn't work anymore. You need people who understand this evolving landscape and crucially, the technology, in a holistic, prophylactic way that captures the significant opportunities to innovate and differentiate, as well as the existential risks. You're looking for a skill set that is not a unicorn, but it's scarce."

Beckett adds: "One of the best things that a general counsel can do is understand the limitations of some of their internal team, and surround themselves with trained experts who are skilled



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in managing complex data breach and computer intrusion investigations — to help them properly manage very complex regulatory, reputational, legal and other financial matters that could arise as a result of those incidents.”

Mandatory training for all employees delivers one of the sharpest regional divides in the data. While 75% of all North American respondents have it, only 29% of those from Latin America do with most other regions falling somewhere in between. “More attention is being paid to the on boarding process of new employees, in the continuous education of employees on an ongoing basis through online training,” says Bertrandt.

Beyond formal training at the outset, effective continuous training is multidimensional. The Middle East-based GC adds: “It’s a cliché, but information security is a team effort. Given the likeliest sources of a data compromise, it’s critical to the effectiveness of cyber risk mitigation strategies that awareness of cybersecurity risks is raised among all staff members. In most companies this necessitates the involvement of senior personnel (up to and including the CEO) to highlight the threat and the actions which staff are expected to take in response.”

Felli speaks to the international training challenge. “We have robust training that our employees need to take across the globe,” he says. “Where we’ve found specific issues that have impacted or affected

us, we have put in place targeted specialised training, either to the group, the individuals, or the region so that there’s a heightened awareness that a particular issue pertains to them. We don’t necessarily take a peanut butter approach, which is where you spread the same training around the whole world, although there is an element of that. There’s also an element of targeted tailored training to very sensitive groups: finance, legal, HR, internal audit, and some other groups.”

Incident response planning

Should the worst happen, general counsel need to have a plan of what to do in the event of a cyber incident. That means having an Incident Response Plan (IRP) which determines the critical stakeholders within a company and their respective roles and responsibilities when responding to an incident. However, the level of direct central responsibility that GCs have for IRPs varies enormously: Latin America (0%); China (20%); Middle East (22%); Southeast Asia (29%); Sub-Saharan Africa (43%); Europe (53%); North America (60%).



“Where we’ve found specific issues that have impacted or affected us, we have put in place targeted specialised training, either to the group, the individuals, or the region”

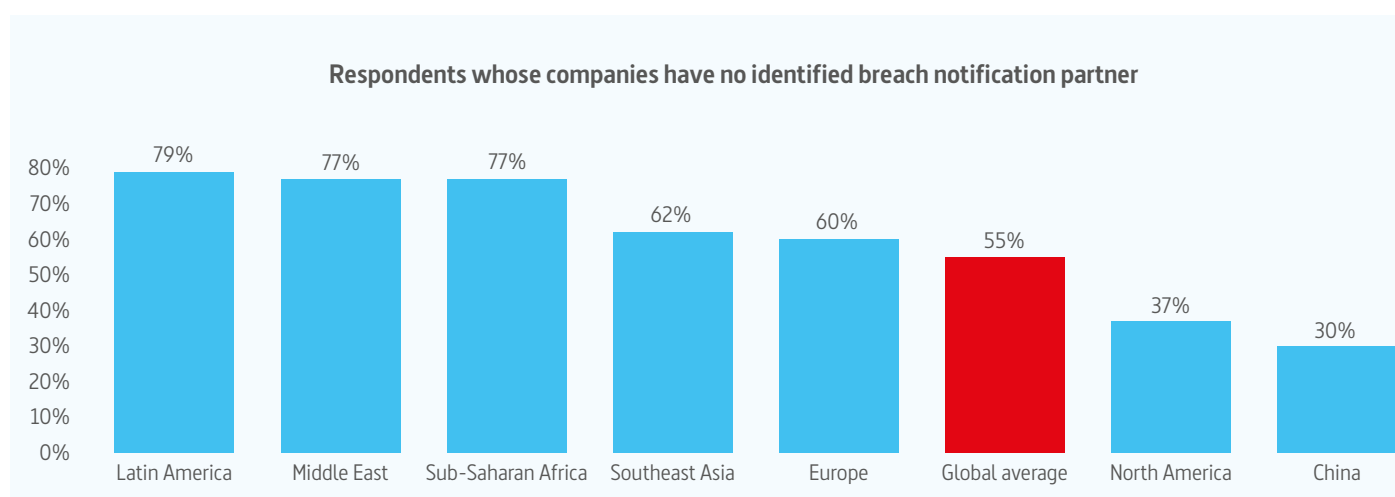
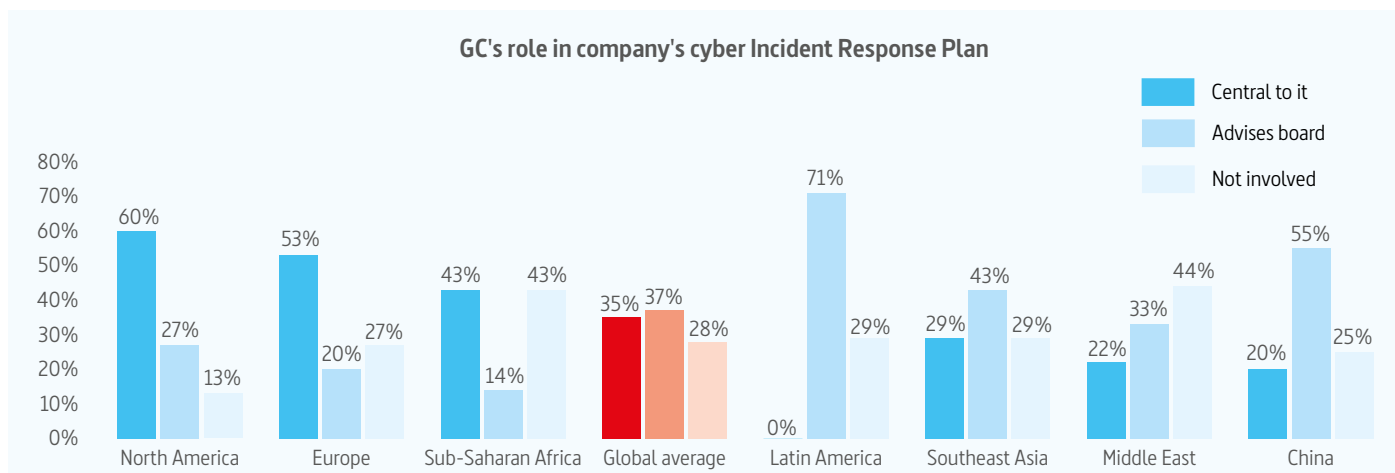
Martin Felli, CLO, JDA

Planning for breach notification is perhaps a key litmus test of how well-conceived an IRP may be. When asked whether



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they had identified a breach notification partner, the level of negative response — no identified need for a breach notification partner — was as follows: Latin America 79%, Sub-Saharan Africa 77%, Middle East 77%, Southeast Asia 62%, Europe 60%, North America 37% and China 30%.

Much of the difference in breach notification may be driven by different levels of compliance regulation across jurisdictions, ranging from non-existent to significant. Looking at the wider picture of communication, further divergence appears, both between regions and with whom communication is planned.

Cybersecurity is “not a risk that should stay within the expert IT community within an enterprise because it will tend not to get allocated sufficient resource and attention,” says Bramwell. “There will not be appropriate response plans if the risk should impact you. Pretty much all large enterprises will be subject to

routine attacks and one will get through sooner or later. General Counsel had better have a plan in place for an incident response. They’ve got to practise it. Then they’ll get the appreciation, get the resources, and get the understanding.”

Beckett adds: “General counsel need to have an inquiring mind, an intelligence that they bring to the table which is essential in running the Incident Response Plan, but they do not need to have an absolutely detailed knowledge of cyber forensics. Surrounding yourself with experts, skilled in Incident Response preparation and execution is critical to augmenting the general counsel’s team.”

Konevsky explains how this has developed: “You need people who understand how these things flow into your industry, to your business model, and to your organisation. Then you engineer a response plan. From a corporate readiness perspective, you



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Percentage of respondents whose cyber IRP includes communications with external stakeholders

	Global	China	Europe	Lat Am	Middle East	N America	SE Asia	SS Africa
Law enforcement	74%	85%	86%	100%	33%	67%	80%	20%
Regulators	68%	68%	79%	71%	17%	60%	100%	83%
Partners	64%	63%	82%	83%	33%	60%	60%	60%
Investors	54%	40%	73%	57%	29%	73%	40%	60%
Insurers	54%	40%	50%	57%	43%	67%	60%	80%
Vendors	53%	63%	73%	57%	0%	53%	40%	40%
Customers	50%	47%	54%	57%	33%	53%	40%	60%

can't lurch from crisis to crisis and believe this is kind of an emergency response plan that you put in place and that's great. It's a fundamental part of your business DNA."

Insurance

Insurance is another aspect of cyber risk for which increasing numbers of general counsel have either a supervisory or direct role. The cyber insurance market is growing fast. A recent Financial Times report said that global written premiums for cyber insurance at Lloyd's estimated the 2016 figure at \$2.5 billion — up 50% on the year. Citing Allianz estimates, the FT said the figure may grow to \$20 billion by 2025. But there are regional variations. While 53% of Middle Eastern and 45% of US respondents have it, surprisingly, only 27% of those in Europe do. Less surprising is that only 21% of those in Latin America and 20% of those in Africa have cyber coverage.

However, when asked about the coverage and exclusions which apply to their cyber insurance, how much GCs know about the detail of what is covered varies widely. For example, 33% of GCs in the Middle East, 67% of GCs in Latin America and 75% of GCs in Southeast Asia do not know if employee mistakes are covered. For coverage of third party providers/vendors and Hacking/Phishing/Malware/Ransomware, 100% of GCs in Southeast Asia do not know if their organisations are covered.

"You used to have an absolutely huge document full of things that you had to do and things that would invalidate your policy," says Blok. "Now it seems there really is a broad spectrum of policy covers that you can opt for. The balance is also crucial

between considering insurance, and whether that's appropriate, but also considering whether whatever money you're paying on a premium might be better spent on your security measures: to make sure it doesn't happen at all, rather than you've got compensation in the event it does. The PR side, for example, is something you can't really insure for, in practice." In talking about the Virgin Group, which is so intertwined with its founder Sir Richard Branson, Blok's point is very specific.

In a wider context, Beckett says: "Effectively, for any risk, an enterprise has three choices. They can accept the risk; they can mitigate the risk; they can transfer the risk. Whether it be the risk of fire or the risk of a cyber breach, insurance has a role to play. The issue that GCs face on behalf of their companies is making sure that the insurance they buy is relevant and covers the aspect of risk that needs to be transferred. Too often, we see inappropriate broad scope cyber insurance with relatively high premiums being looked at or taken by our clients. When in fact what they actually need is something far more specific for specific risk."

Bramwell adds: "Being based in London, we're fortunate that we've got the world's most sophisticated insurance market: we're able to get coverage. Business interruption insurance is held by most companies. Whilst you're unlikely to be able to insure against consequential losses or sometimes for reputational damage, to the extent that your physical infrastructure is denied to you for a period of time and your business suffers as a result, then you're likely to be able to get cover, albeit it may always not be huge."

Felli adds: "Many people in the cybersecurity world would tell you it's not a matter of if, but when you get hit in one form or



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Percentage of respondents whose cyber insurance policy covers/excludes the following risks

	Covered	Excluded	Don't know
Hacking/phishing/ malware/ransomware	75%	0%	25%
System glitch/error	74%	5%	21%
Employee mistakes	72%	5%	23%
Lost/stolen items with sensitive data	71%	24%	5%
Malicious insider	69%	5%	26%
Mistakes by third-party providers/vendors	55%	24%	21%

other. Either you have been attacked and you don't know about it, you've been attacked and you know about it, or you will be attacked at some point.

Insurance has to be a component in your arsenal in trying to fight this menace. Protecting against it is an important investment. Having insurance definitely does make a lot of sense, even if it's only for the purpose of your customers or vendors being comfortable that you're a responsible business partner."

At Qatar Rail, Hibbert has been looking at an insurance programme for the railway project. "It appears that it's being readily offered these days by most major insurance providers, a hot topic in the insurance market. But it's a different question as to what is the thing that's being insured. You can take security from insurance if you've got a huge consumer base like a bank and you get claims for a cyber-attack causing data loss. It's not irrelevant for us, it certainly is relevant, but it's probably a far more second-order issue than the primary protection."

Likewise, Madeleine Truter, GC of Setso, comments: "In South Africa, we are ranked number three in 2017 for cyber attacks. Insurance is very difficult for us because it's hard to quantify. There's no financial metrics that you can use to quantify. You only really know what the damage is after the

fact. That's not even really for reputational damage. The actual cost of having to appoint experts to remedy and put in fixes for business interruption factors. We're not really sure that the quantum that we've insured for would be adequate. I think that is the case with most companies."

Smolanoff develops the point: 'reading the policy carefully and understanding what you need is really quite important. That goes to the bigger picture of risk management. A GC overseeing information security should really take a step back and ask themselves a big question: "Why do I need an information security program?" Many times when I ask that question, you'll hear crickets in the room afterwards because people naturally think, "Well, we must have one". The question is: why do you have one? Because if you don't understand why you need it, you can't appropriately manage the risks that the company is facing.'



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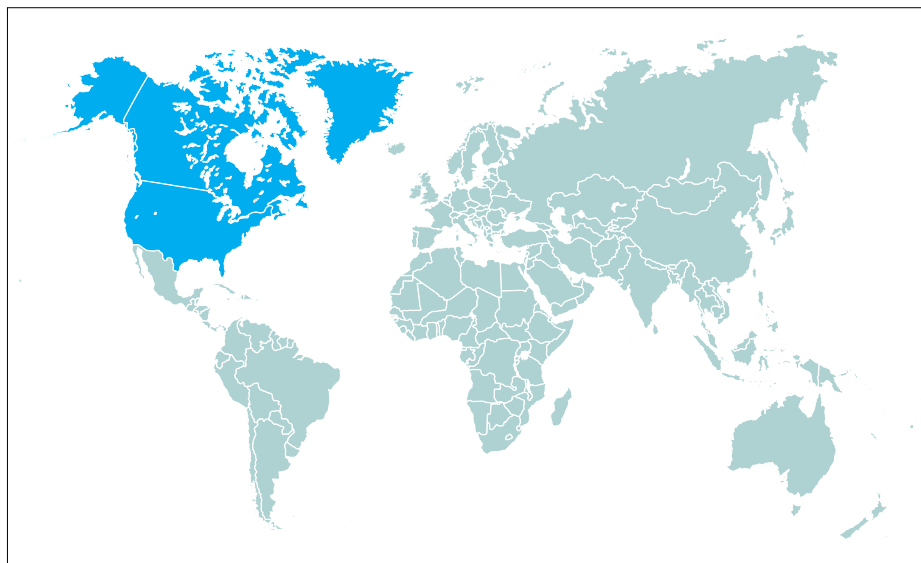
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Region focus: North America

Although other regions are catching up fast, a uniform consensus exists that North America is currently the most advanced in cyber resilience. This is reinforced by domestic laws together with moves towards updating a raft of aging legislation being repeatedly frustrated. Yet on virtually every metric determined by the survey — from training and monitoring to insurance and planning — North America is ahead at least by a nose, sometimes by a distance.

Perhaps in recognition of the dangers, GCs in North America have a lower level of confidence about their organisation's ability to detect a cyber incident: only 15% are very confident compared to 26% in Europe, 40% in Sub-Saharan Africa, 43% in Latin America, and 44% in both the Middle East and China.

The commentary provided by survey respondents offers some valuable insight into GCs' thoughts about cyber risk and its potential impact. Their concerns are palpable. "We hired a department to monitor cybersecurity and protect data," says a GC respondent." Another offers a frank



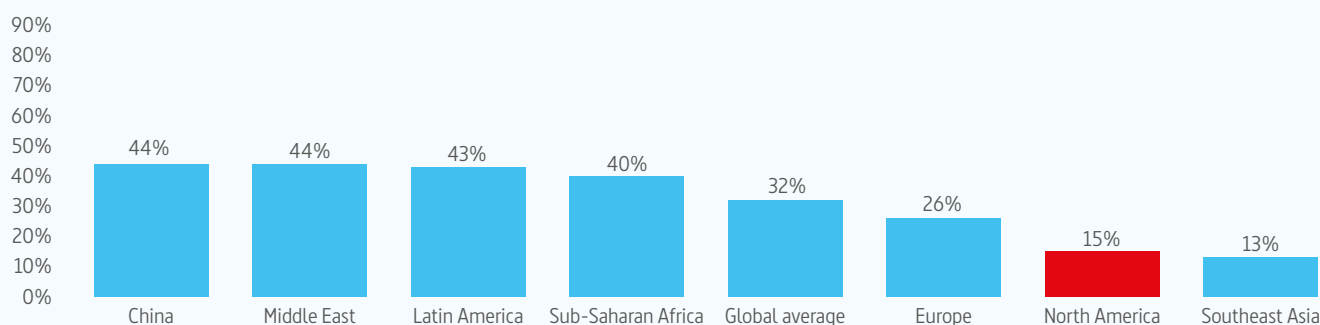
15%
of GCs in North America are very confident about their organisation's ability to detect a cyber incident – compared to 44% in China

insight: "Financial, reputational and operational risk (especially for those engaged with protected health information) pose a significant concern at the executive level of our organisation."

Neither complacency nor hubris are evident. This is perhaps a key benchmark of how seriously general counsel perceive the potential threat. "The sophistication of hackers probably exceeds our capability to detect all intrusions but I think we can detect almost all of them," suggests one GC.

"We have procedures and programs in place to

Respondents that are VERY confident in their organisation's ability to detect a cyber incident



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detect cyber incidents but you can never be TOO confident,” says another. “Computer hackers always seem to be one step ahead,” volunteers a third. A final comment shows how concerned one GC is: “Our inability to properly adapt leads to an ever emerging threat ratio.

Underpinning these comments is an acute awareness by general counsel of data breaches and cyber risks, what those risks mean for their company and their responsibility for managing them. “The largest risk that a company faces, comes not from the investigation or remediation, but from the disclosure of the incident itself,” says Smolanoff. “That carries with it reputational risk, legal risk, regulatory risk, and financial risk. That’s where the rubber meets the road. The GC is going to be the person who owns all of that risk.”

“General counsel are becoming the quarterbacks. They’re increasingly owning the risk that’s associated with a breach and as a result, are taking on more and more cybersecurity responsibilities”

Jason Smolanoff, Senior Managing Director, Global Cyber Security and Investigations Practice Leader, Kroll



CASE STUDY: NORTH AMERICA

Supporting client with managing an advanced persistent threat

Kroll responded and provided incident response services to an airline company after it identified a significant computer security incident. Over the course of six weeks, Kroll characterised the incident as an advanced persistent threat attack, worked with the company to deny the attacker further access, and remediated the affected systems. Kroll also assisted the company and outside counsel with the identification and documentation of all sensitive and regulated data which may have been exposed and provided comprehensive breach notification and credit monitoring services to assist the client in satisfying its disclosure obligations.



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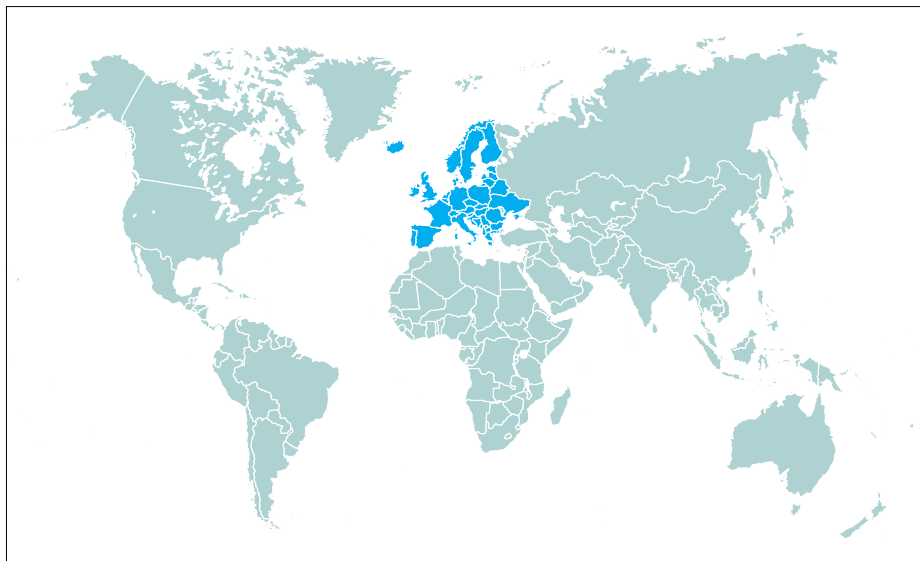
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Region focus: Europe

The introduction of two EU Directives, GDPR and NIS, is a game changer for Europe and for the businesses which will operate there in the future. They put data privacy and cybersecurity centre stage. This is reflected in the high percentages of European respondents who often rank just behind North America in their collective survey responses. However, in some areas, for example cyber insurance coverage (North America – 45% purchase coverage; Europe – 27% purchase coverage) and cyber training (North America – 75%, Europe – 57%), the gap is more notable.

European general counsel interviewed for this report express their own views on the issue, sometimes with alarming candour:

- “No one really understands the concept of cyber risk, or its likelihood”
- “Cyber risk is getting more attention recently because losses to companies are very large and many people are not aware of the risks”
- “Whilst the main risk functions recognise the issues, investment is not currently matching those concerns”

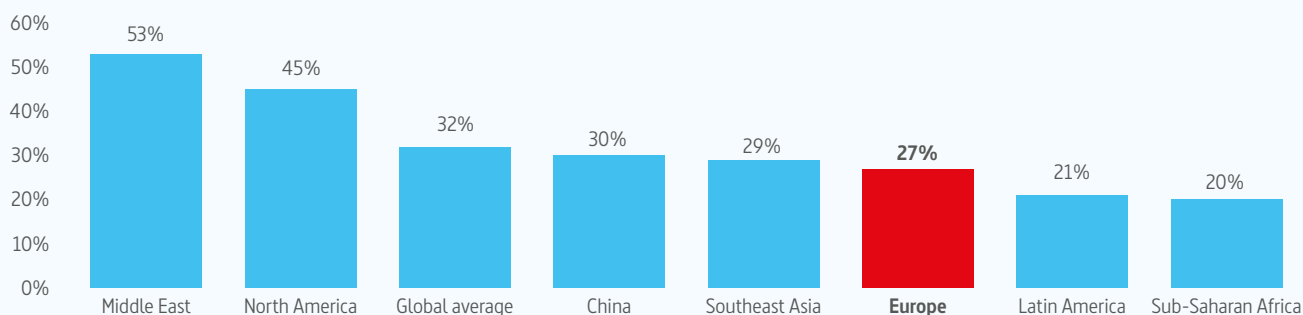


- “Cyber attacks can be very elaborate and may not be easy to detect regardless of how competent staff are and how good internal systems and controls are”

One GC, who is certainly alert to the danger, adds: “It requires continuous attention; the nature of threats keeps changing; the effects of a successful attack will probably be enormous.” There are others who express more confidence in their company’s response:

- “We have considered this important for a long time; the relevant monitoring and personnel have been in place for a long time”

Percentage of respondents whose company has a cyber insurance policy



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57%

of respondents in Europe have mandatory staff cyber training, compared to 75% in North America

- “Our CSO has made it a priority to create awareness, to monitor continuously and to have external parties flag threads and incidents”
- “Cyber risk is high on our list of priorities and we follow up on making sure that we are as prepared as we can be”

“If there are GCs in companies who have decided not to address the new directives, their lives could get very interesting over the next two to three years, as regulation around data protection increases,” says Beckett.

“Roughly 75% of boards in Europe don’t have anybody, either executive or non-executive, who understands cyber and the cyber threat, who could provide top level leadership – unlike North America where GCs are taking a huge role in terms of the lead,” he adds.

“Roughly 75% of boards in Europe don’t have anybody, either executive or non-executive, who understands cyber and the cyber threat, who could provide top level leadership – unlike North America”

Andrew Beckett, Managing Director, EMEA Cyber Security and Investigations Practice Leader, Kroll



CASE STUDY: EMEA

Whistleblower Investigation of Insider Data Theft

Kroll was contacted by the general counsel of a private equity house whose investee company had received a whistleblower letter. The letter suggested that various senior employees were preparing to leave the investee company and were actively downloading client data ahead of their departure. Kroll engaged directly with the investee company and, having taken specialist legal advice concerning data privacy issues, undertook a forensic electronic retrieval of information at the investee company’s premises. This forensic review, together with a series of onsite interviews, validated the whistleblower’s claims. The investee company commenced legal proceedings against the departing staff.



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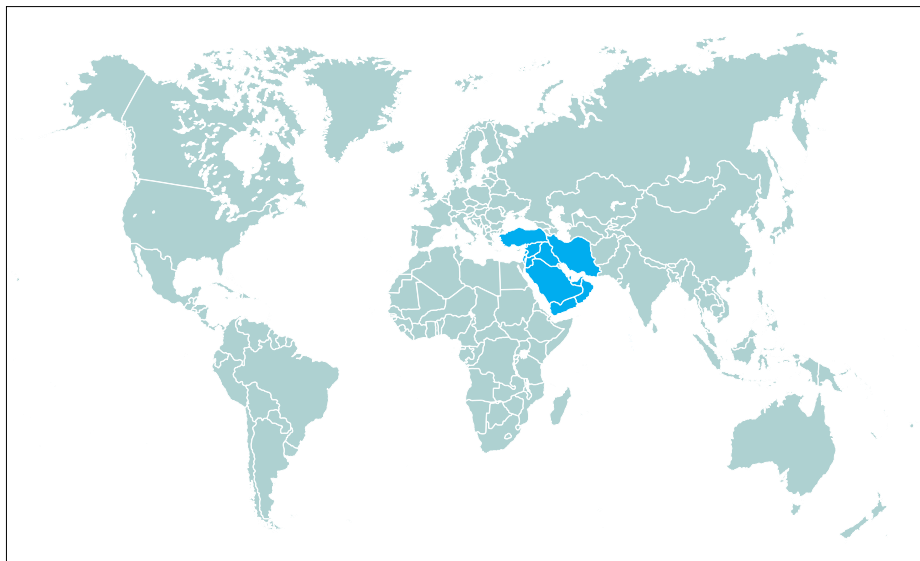
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Region focus: Middle East

Although some Middle East countries have data protection or cybersecurity laws in place, the development of both, where applicable, is in its infancy. Last November, Qatar was one of the first GCC member states to issue a data protection law comparable to those applicable in the EU, though the UAE has also had a data protection law since 2007. With differing levels of regulatory maturity across the region, it is perhaps no surprise therefore that 69% of respondent GCs in the region have no technical incident response partner identified while 77% of them have no identified need for a breach notification partner.

Commentary from survey respondents is much thinner on the ground. “Risk management focuses a lot on cyber risks attacks and latest developments,” says one. “A very efficient department handles cyber attacks,” suggests another.

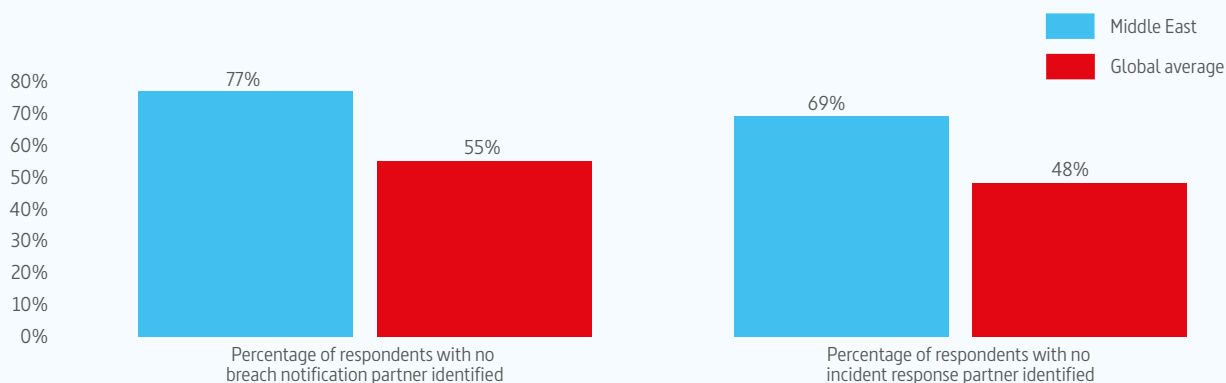
Stephen Hibbert, GC of Qatar Rail, says that his role for monitoring and implementing cybersecurity has increased notably. “Qatar Rail was established in 2011,” he says, “and is considered



77%
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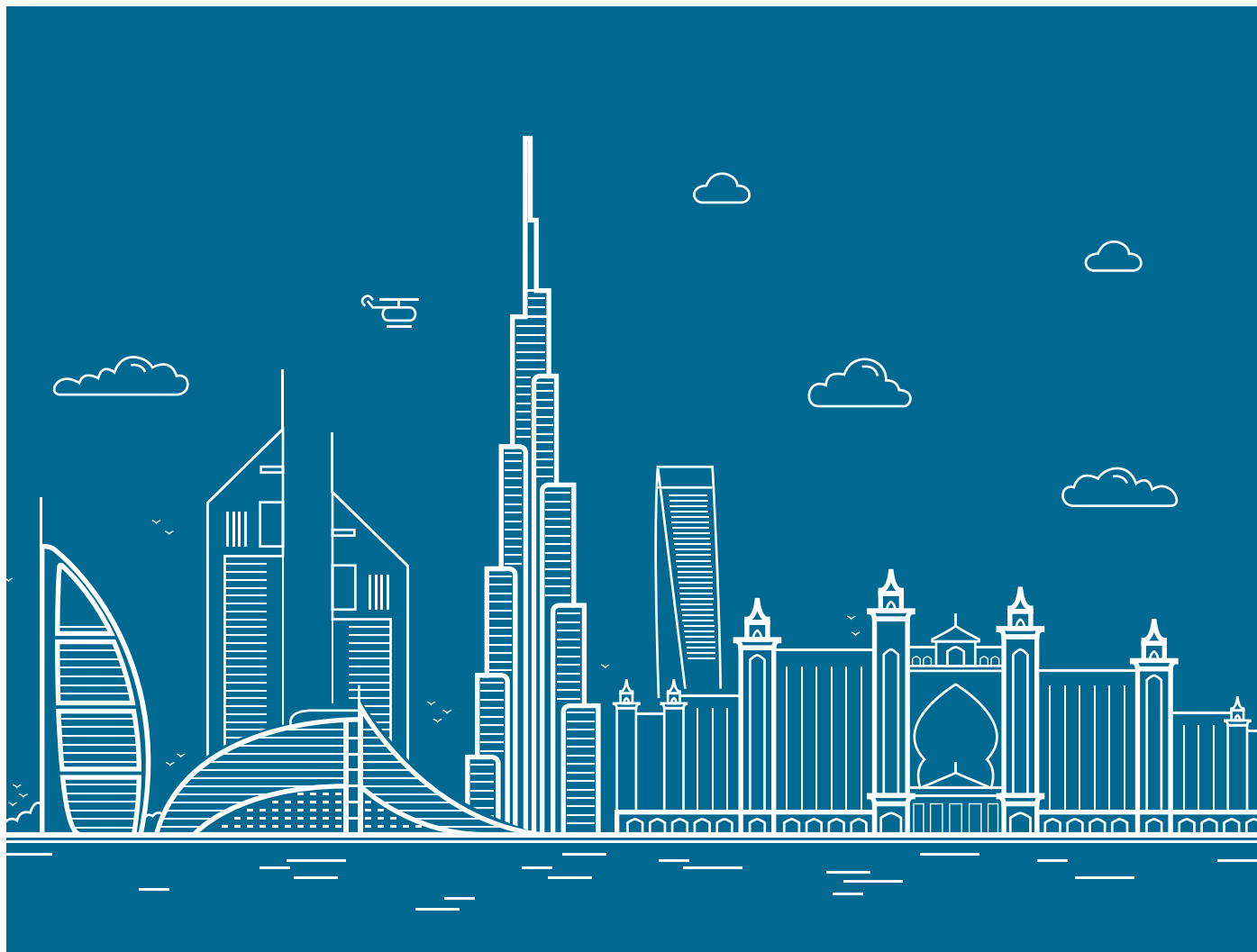
a new industry in Qatar and the surrounding area. Nevertheless, there is a potential risk for every business. Our technology record would show that in the last 18 months we’ve gone up another level of cyber protection. There has been a heightened awareness in our organisation and across government in Qatar.”

In the UAE, the Middle East-based GC adds: “General counsel here are seeing trends in how data subjects expect their data to be handled, and the direction of governance trends in their home countries — particularly if they are from the EU or



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North America. They're trying to bring those strategic themes into the day to day operations of the businesses that they advise."

Beckett agrees: "Our clients have traditionally contacted us to help them address cyber crime, cyber enabled crime or leaks of

information across the region. These days they are increasingly asking about cyber defence and for advice on preparing for GDPR compliance in relation to the data they hold on European operations or relating to European citizens."

"Our technology record would show that in the last 18 months we've gone up another level of cyber protection. There has been a heightened awareness in our organisation and across government in Qatar"

Stephen Hibbert, GC, Qatar Rail



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Region focus: China

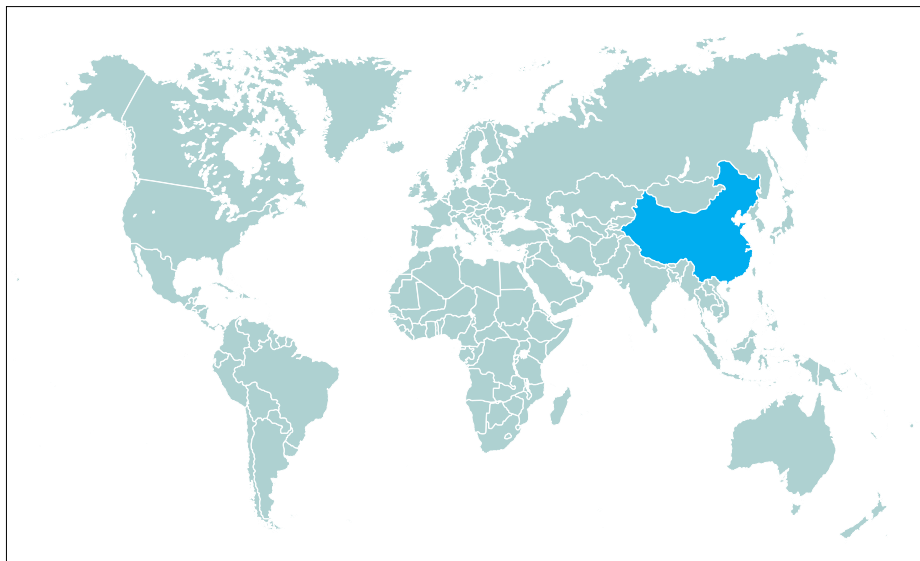
China's first cybersecurity law became effective in June 2017. The introduction of a much needed data protection law was a milestone. But there are concerns about cost and other factors in relation to data localisation requirements, especially regarding trade secrets and intellectual property. Some aspects of the law are wide-ranging and vague because interpretation of them is as yet untested, which creates significant uncertainty.

Notwithstanding the legal changes, China ranks near the global average in areas such as insurance, training, monitoring and responsibility, although respondents (74%) almost match North America (75%) in having a written and current cyber IRP. Overall, they speak to a clear perception of risk, as well as some alarm:

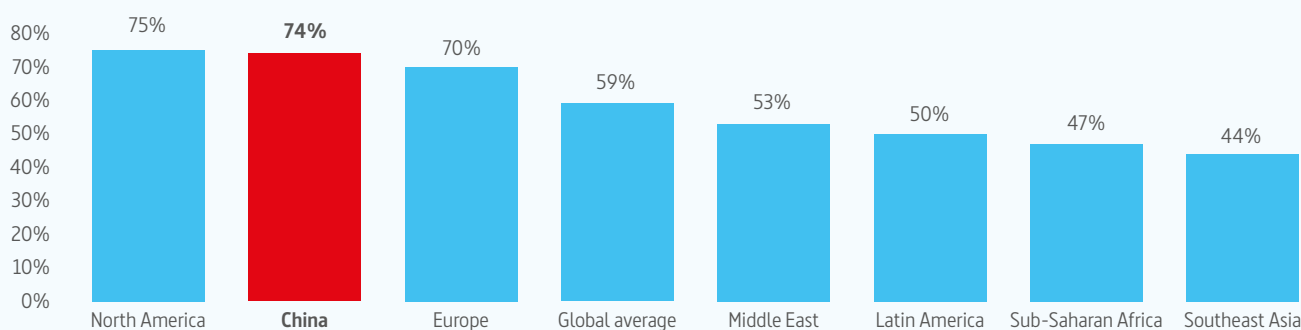
- “We can obviously see that the amount of cyber risks are much higher than before, more and more companies are losing because of network leaks”
- “The network risk is serious, but as long as we have prevention, it can be controlled”
- “We're in a really bad cyber environment, but other senior

executives of our company have not yet attached importance to this work”

- “Cyber-hacking is terrible for corporate secrets, and if this happens, we will suffer huge economic losses”
- “Because the network risk factor is very high now. Once it happens, the loss can be very serious”
- “We still have a lot of work to do, and the company's defence level is not up to par”
- “There are too few employees on this and hardware firewall is not good enough”
- “Risks here are unique, and we worry about things that don't take into account, unexpected risks are not controllable”



Percentage of respondents with a written and current cyber Incident Response Plan



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74%

of respondents in
China have a written
and current cyber
Incident Response
Plan



- “The organisation has a very rich experience of resisting cyber events and has not made any mistakes over the years”
- “Our team is experienced and can control the risks”

Many businesses in China are investing heavily in cybersecurity with 63% of GCs there very concerned and 33% somewhat concerned about the potential consequences of a cyber incident.

Paul Jackson, Managing Director, Asia-Pacific Cyber Security and Investigations Practice Leader, Kroll, says: “The message I try and get across is: Your organisation is spending huge amounts of money on cybersecurity, in terms of people, process, and technology. The real questions you should be asking are: Is it being spent in the right places? Has it been correctly spent? Are you getting value for your money, and is it really protecting you?”

“Your organisation is spending huge amounts of money on cybersecurity, in terms of people, process, and technology. Is it being spent in the right places? Are you getting value for your money, and is it really protecting you?”

Paul Jackson, Managing Director, Asia-Pacific Cyber Security and Investigations Practice Leader, Kroll



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Region focus: Southeast Asia

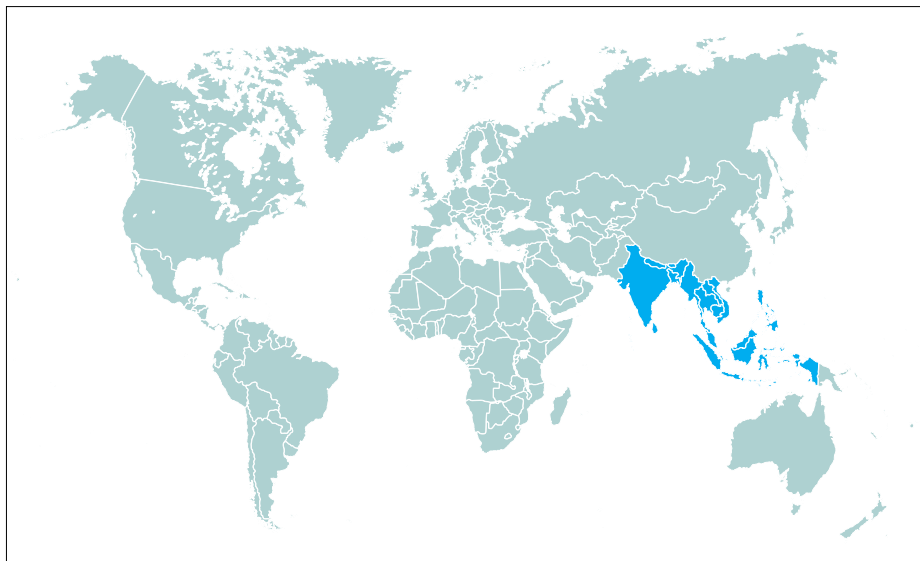
Southeast Asia traditionally has a diverse set of laws. The response to cybersecurity legislation in the region is no different. The hardest part for general counsel, many of whom operate across multiple jurisdictions in the region, is the struggle to maintain an up-to-date knowledge and understanding of the different cybersecurity and privacy laws and their implications for multinational businesses.

The survey revealed that general counsel in the region have seen their remit expand to encompass responsibility for cyber planning (31%); monitoring (38%); reporting (31%) and responding (44%) – one of the lowest regions overall.

Apart from one respondent who admits “We prioritise cyber risk to a lesser level than other risks,” responses from other general counsel sometimes indicate that cybersecurity decisions are made elsewhere in the business: “Our network department has a very strong ability to deal with such events with specialised mechanisms”; “The company has also invested a lot of money in this”; “The company’s supervision department is very strict and it is very good for our network environment”.

Elsewhere, there may be some problems, as suggested by the following:

- “We are still in the process of building out a standard process for responding to cyber threats in our organisation”



CASE STUDY: APAC

Security review of websites hosted in five countries

An Asia-headquartered global logistics company engaged Kroll to review the security posture of its primary and subsidiaries’ websites hosted in five countries. In addition to penetration testing, Kroll’s team scrutinised the security controls of the websites’ supporting processes operated by third party vendors. Kroll identified critical security issues on multiple websites, attributable to lapses in the vendors’ security patch management process and an ineffective secure software development lifecycle. Kroll advised the client to improve its vendor oversight and to resolve the technical vulnerabilities, which could permit unauthorised access to the websites as well as to the underlying IT infrastructure and stored customer data.

Percentage of respondents whose remit has expanded over the past 12 months to include:

	Global	China	Europe	Lat Am	Middle East	N America	SE Asia	SS Africa
Planning for a cyber incident	45%	30%	50%	64%	50%	63%	31%	33%
Responding to a cyber incident	43%	48%	30%	57%	35%	63%	44%	27%
Monitoring a cyber incident	40%	44%	26%	57%	41%	47%	38%	33%
Reporting on a cyber incident	37%	30%	35%	50%	41%	47%	31%	33%



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- “We now have more and more Internet applications, but the risk is harder to control”
- “While there are steps put in place, these may not be adequate in the long run”
- “Unfortunately, the IT security measures we have in place have not been tested. It is therefore difficult to say if it is in fact adequate to withstand a cyber incident”

Jackson says: “In the region, there needs to be more reliance on independent third parties to verify. Given the changing legal and regulatory landscape, general counsel probably need to take more seriously their current cybersecurity posture and look to independent verification that the measures they’ve taken are effective. Otherwise, they run the risk of transgressing the governments’ frameworks that are in place.”



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Region focus: Sub-Saharan Africa

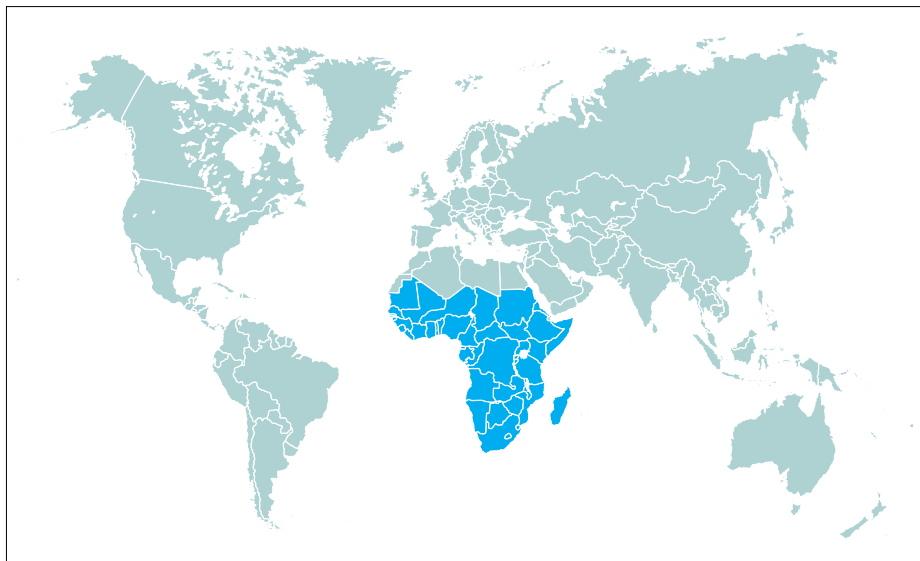
"I was certainly out of my depth," says Madeleine Truter. As GC of Setso Property Fund in Johannesburg, she recently dealt with the consequences of a cyber attack. "It was a very steep learning curve. I had to upskill myself on cybersecurity." Enhanced training and an upgraded response plan have been put in place. "In South Africa, there is an awareness of the risk of cyber attack, but most companies hope that it's not going to happen to them," she says.

That sentiment is echoed by the survey findings. Awareness, education, protection and acceptance of responsibility in Sub-Saharan Africa are generally among the lowest of any region. Only 27% of general counsel have seen an expansion of their responsibilities for responding to a cyber incident in the last year, compared to the global average of 43%, with 7% experiencing a decline. Responses cover the spectrum:

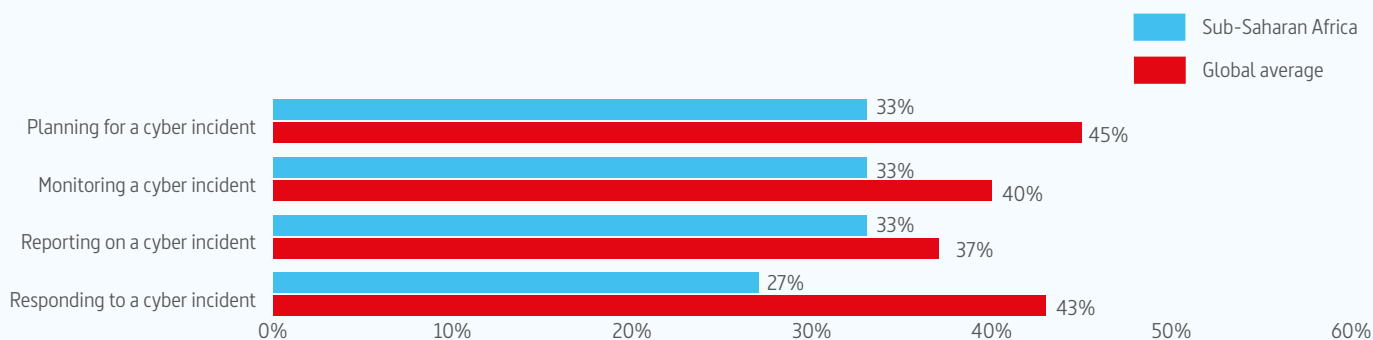
- "With the recent cyber attacks worldwide, we have become more concerned and have consulted with experts in the

field of cybersecurity for additional interventions to those already in place"

- "Cyber and data security is a top risk for our firm"
- "We have spent a considerable amount of time over the past year improving our processes, infrastructure and training"
- "Since we have not yet had to deal with a cyber incident, I do not know whether our systems are robust enough to withstand such an incident"
- "Although we have taken steps to address a cyber incident when it occurs, there is still some work to be done to improve this"



Percentage of respondents whose remit has expanded over the past 12 months to include:



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27%

of GCs in SSA have seen an expansion of their responsibilities for responding to a cyber incident in the last year, compared to 43% globally



As GC of BT Africa, which operates in 34 Sub-Saharan countries, Bertrandt explains the problem which his company has across the region: “There’s a huge tension that we’ve been experiencing between what the business customer wants, and what they are willing to pay for. Very often, the requirements at the contracting stage will be: we like all the bells and whistles as far as cyber protection and information protection is concerned. However, we are only willing to pay for a small portion of that.”

Beckett adds: “Most of the large reported breaches have happened in traditional western markets. That’s where the examples are of brand damage, share price damage that GCs and boards worry about so much.

“In Sub-Saharan Africa they’ve not had those examples: the cases, the press coverage of such incidents are far fewer and therefore the GCs don’t appear to have that on their radar to the same extent.”

“In South Africa, there is an awareness of the risk of cyber attack, but most companies hope that it’s not going to happen to them”

Madeleine Truter, General Counsel, Setso Property Fund



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Region focus: Latin America

Although a good number of general counsel were interviewed for the survey, none of those in Latin America agreed to a more in-depth interview on the detail of their approach to cybersecurity. In their narrative, many respondents in Latin America commented that they were “very confident” in their organisation’s ability to detect a cyber incident. Only 47% of survey respondents in the region said they were very concerned about a cyber attack, the joint lowest of any region, alongside Africa, while 57% said they were very confident of withstanding one, by far the highest, compared to 20% for North America and only 7% for Southeast Asia.

Of those who provided a written comment at the end of the survey, not one expressed any anxiety or concern about the risks that they might face. Quite the contrary. Their comments included the following:

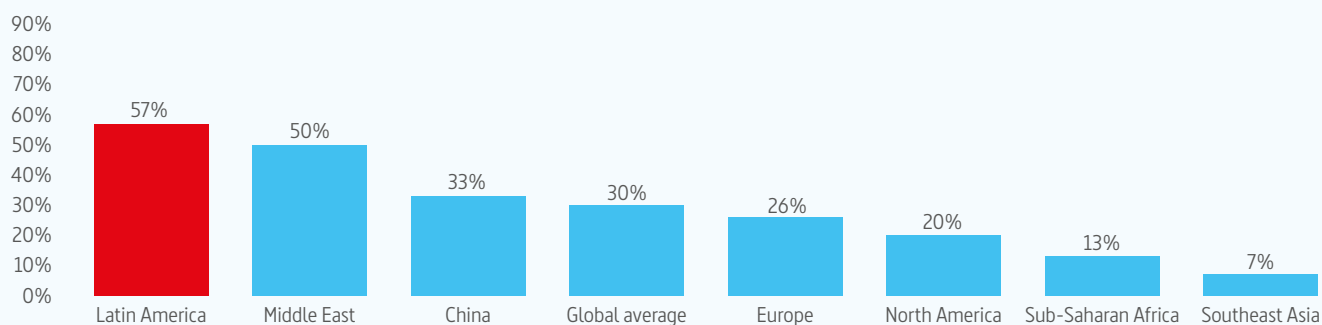
- “There are a lot of dedicated departments to this with a lot of capable people”
- “I have knowledge of all the policies we apply”
- “I believe we have the right infrastructure for a crisis event”



- “I am very confident because of the people who work on this and the use of state-of-the-art technology”
- “We have a robust contingency plan scheme to address business continuity”
- “The IT department is prepared for these types of risks”
- “We have the technical knowledge”

Such confidence may often be well-founded and entirely justified. Sometimes, it may not. Fernando Carbone, Senior Director, Cyber Security and Investigations at Kroll in Brazil, notes that “in talking to local companies, larger businesses are

Respondents that are VERY confident in their organisation's ability to withstand a cyber incident



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much more concerned with the protection of client and other sensitive data". He adds: "They have developed more mature planning for cybersecurity and incident response, but detection is still a major concern. However, many smaller companies are still deficient in their cybersecurity posture."

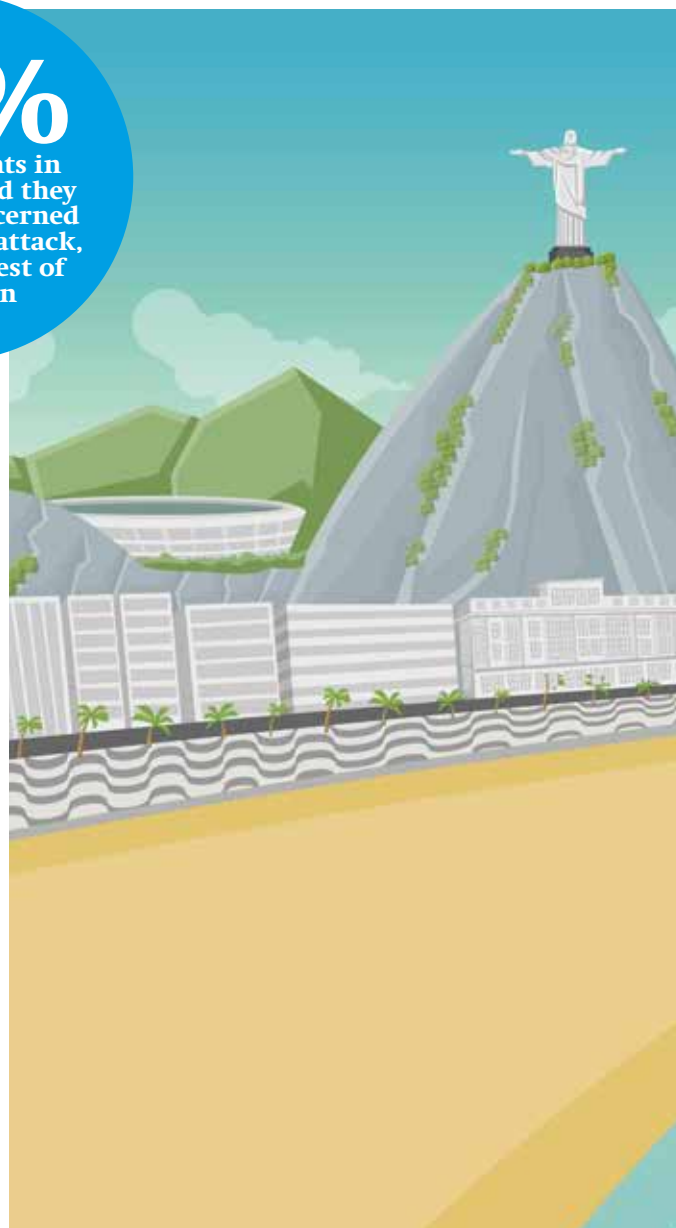
Carbone continues: "In Brazil, cybersecurity has not yet become a priority for most executives. In many companies, the responsibility for information security continues to remain with the IT team. Often there is a lack of understanding of the specific risks to the business, and how they should be addressed from a variety of perspectives, not just an IT viewpoint."

"By integrating cybersecurity into the corporate risk management program, companies can widen their scope to address additional areas including human, regulatory and reputational risks, as well as IT related issues."

He concludes that the market is less mature with less data protection regulation in place, often making cybersecurity a lower priority for GCs than in some other regions.

47%

of respondents in the region said they were very concerned about a cyber attack, the joint lowest of any region



CASE STUDY: LATIN AMERICA

Investigation and remediation of three-year network compromise

Kroll was engaged to provide incident response services for a large services and facilities management company in Brazil. An internal audit had alerted the client to a potential incident in its network. After completing an extensive computer forensic analysis, Kroll's experts determined that the company's internal systems had indeed been compromised – in fact, it was found that the network had been under attack for more than three years and the client's sensitive data had been exposed on the internet. Through advanced techniques, Kroll determined the root cause of the attack and assisted the client in the remediation process, which included the implementation of new security controls.

"Larger businesses in the region have developed more mature planning for cybersecurity and incident response. However, many smaller companies are still deficient in their cybersecurity posture"

Fernando Carbone, Senior Director, Cyber Security and Investigations, Kroll



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Conclusion

However important cybersecurity may be, there will never be an unlimited supply of resources to throw at the problem. Money, people and time are always limited. What is important is to understand that unless the risks are fully understood and put into context, the resources that are available are unlikely to be used in an optimal fashion.

Ignoring cybersecurity problems does not immunise an organisation against an incident. No security regime is perfect, but those that spend time understanding the risks and making the best use of available resources are more likely to

succeed in protecting the organisation, and being prepared to act swiftly and effectively when incidents occur.

What is clear from many survey respondents is yet another facet of human instinct: the desire not to admit something. To do so can be embarrassing. Very few of us readily want to admit to others: our mistakes, our weaknesses, our vulnerabilities, our lack of ability, our lack of understanding, or our lack of confidence. Professionally, lawyers sometimes have to, for the greater good of the organisation.

All of those admissions routinely apply to cyber risk and cyber protection. Mistakes are made. Systems are



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vulnerable. People often do not, or cannot, understand the extent of cyber threats or the true capacity of technology to resist them. They do not fully understand the role that risk transfer through insurance products can play in their overall strategy.

But denial and complacency are not the answer. They ignore existing risk and create further potential risk. Resilience and responsibility — the themes of this report — depend upon recognising and making those admissions continuously. Those who are less prepared often have more pressing regulatory priorities, dependent upon the regions they cover. To help drive the necessary changes, local regulation has a way to go.

The true quality of an effective general counsel therefore comes with the wisdom to recognise and admit their own areas of weakness, and more importantly, those of their business and the environment in which they operate. Then they do something about managing the risks facing them. In a word: responsibility. Taking responsibility for the cyber risks in their business is a hallmark not of weakness, but of real strength.

And increasingly, GCs are taking responsibility. “General counsel are becoming the quarterbacks,” says Smolanoff. “They’re increasingly owning the risk that’s associated with a breach and as a result, are taking on more and more cybersecurity responsibilities.”



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