Security Testing Playbook

Protect • Comply • Thrive

it governance™

Better Security, Better Value

Today, most buyers see no real difference between cyber testing vendor propositions.

Information technology is driving business efficiency and productivity, and the digital economy is thriving as growing numbers of organisations are benefiting from the opportunities the Internet brings. However, cyber crime is increasingly easy to perpetrate, and the threats the modern organisation faces are intensifying.

According to research by Kaspersky Lab, the average total cost of a data breach for small and medium-sized businesses (SMBs) amounts to £69,000, and this is more than ten times higher among enterprises (£620,000), demonstrating that cyber threats are expensive to fight for companies of all sizes.

Alongside the increased cost of cyber crime, attackers are getting smarter. Criminals are evolving new business models, such as ransomware-as-a-service, which mean that attackers are finding it easier to scale cyber crime globally.

The majority of cyber crimes are opportunistic. Automated attacks exploit known vulnerabilities in unpatched software, untrained staff are lured into opening malicious attachments or clicking malicious links in phishing emails, and drive-by attacks install malware on users' machines. This is why it is so important to secure your network and applications from attackers and to train all staff to be aware of their responsibilities.

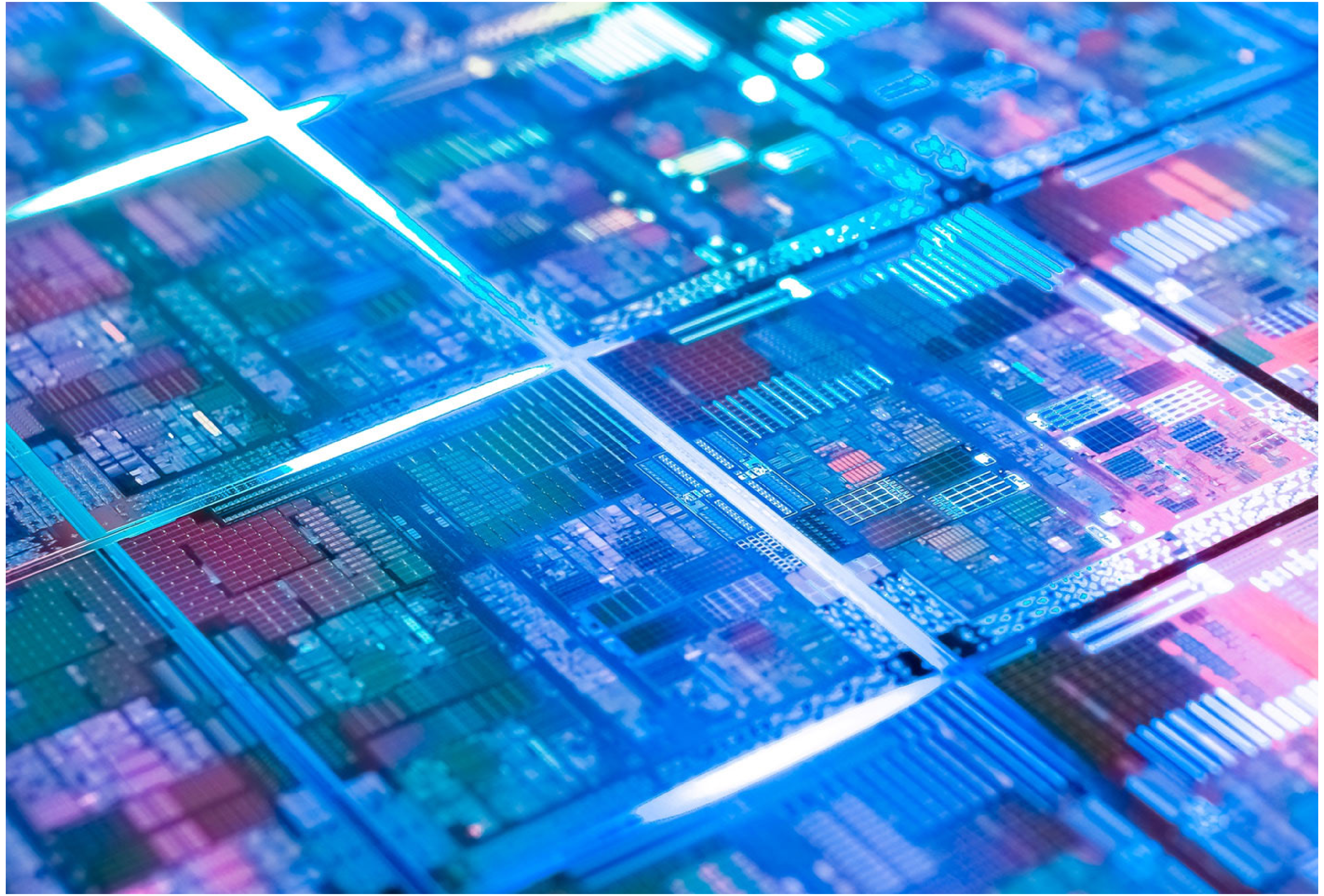
Finding the internal resource to do so, however, is no mean feat. The well-documented cyber security skills gap shows no sign of closing: as demand for cyber security specialists has increased, they have become even more difficult to hire.

Perhaps unsurprisingly, this skills shortage is why Cybersecurity Ventures predicts global spending on cyber security products and services will exceed $1 trillion over the next five years (Cybersecurity Ventures, 2016 Cybercrime Report).

However, many buyers find the information security marketplace overcrowded and confusing, with seemingly little or no difference between vendor propositions.

So what sets a good security testing company apart from the rest of the field?

Keep reading



If a business is connected to the internet in any way, it needs to achieve some level of cyber security. Many buyers find the marketplace over-crowded and confusing, with seemingly little or no difference between cyber testing vendor propositions.

So what sets a good security testing company apart from the rest of the field?

The most important factors to consider when evaluating a cyber testing company are:

Whether it has proven expertise in ethical hacking and data protection

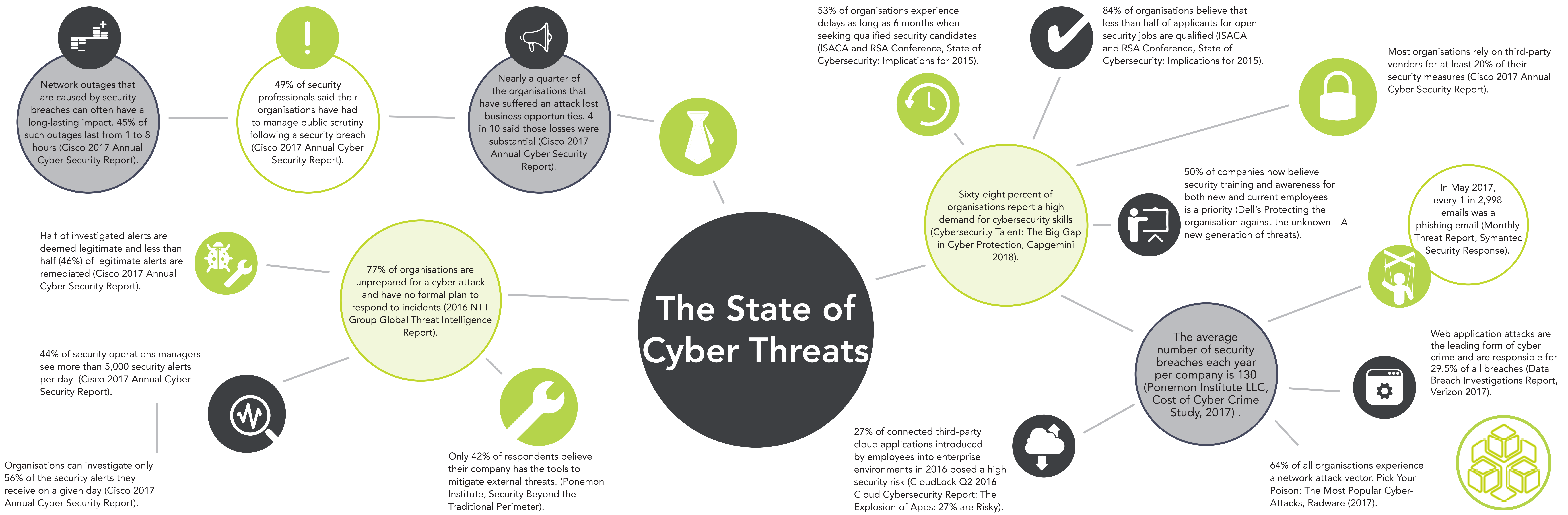
Top vendors have robust threat assessment methodologies and tests that validate the risks posed by specific security vulnerabilities or flawed processes so that you can prioritise remediation. Such companies can demonstrate their ethical hacking capabilities with documentation of previous exercises. There is a reason these companies have good reputations: they can back up their claims quickly and efficiently.

Whether it has the ability to adapt to emerging threats and compliance requirements

Top vendors have the flexibility to adapt to the evolving threat landscape. Cyber threats take a variety of forms and can originate from both external and internal actors. Cyber testing firms need to offer a range of disciplines to cover all threat vectors to provide protection from the inside as well as from the outside.

Whether it can provide assurance that work will be conducted by qualified individuals

Vendors should be held to standards of excellence. Testers should have practical experience and professional certifications or credentials to certify their competency. Accreditations, such as CREST, provide organisations wishing to buy penetration testing services with confidence that the work will be carried out by qualified individuals with up-to-date knowledge, skill, and knowledge of the latest vulnerabilities and techniques used by real attackers.



The State of Cyber Threats

Network outages that are caused by security breaches can often have a long-lasting impact. 45% of such outages last from 1 to 8 hours (Cisco 2017 Annual Cyber Security Report).

49% of security professionals said their organisations have had to manage public scrutiny following a security breach (Cisco 2017 Annual Cyber Security Report).

Nearly a quarter of the organisations that have suffered an attack lost business opportunities. 4 in 10 said those losses were substantial (Cisco 2017 Annual Cyber Security Report).

Half of investigated alerts are deemed legitimate and less than half (46%) of legitimate alerts are remediated (Cisco 2017 Annual Cyber Security Report).

77% of organisations are unprepared for a cyber attack and have no formal plan to respond to incidents (2016 NTT Group Global Threat Intelligence Report).

44% of security operations managers see more than 5,000 security alerts per day (Cisco 2017 Annual Cyber Security Report).

Organisations can investigate only 56% of the security alerts they receive on a given day (Cisco 2017 Annual Cyber Security Report).

Only 42% of respondents believe their company has the tools to mitigate external threats. (Ponemon Institute, Security Beyond the Traditional Perimeter).

53% of organisations experience delays as long as 6 months when seeking qualified security candidates (ISACA and RSA Conference, State of Cybersecurity: Implications for 2015).

84% of organisations believe that less than half of applicants for open security jobs are qualified (ISACA and RSA Conference, State of Cybersecurity: Implications for 2015).

Most organisations rely on third-party vendors for at least 20% of their security measures (Cisco 2017 Annual Cyber Security Report).

Sixty-eight percent of organisations report a high demand for cybersecurity skills (Cybersecurity Talent: The Big Gap in Cyber Protection, Capgemini 2018).

50% of companies now believe security training and awareness for both new and current employees is a priority (Dell's Protecting the organisation against the unknown – A new generation of threats).

In May 2017, every 1 in 2,998 emails was a phishing email (Monthly Threat Report, Symantec Security Response).

The average number of security breaches each year per company is 130 (Ponemon Institute LLC, Cost of Cyber Crime Study, 2017) .

Web application attacks are the leading form of cyber crime and are responsible for 29.5% of all breaches (Data Breach Investigations Report, Verizon 2017).

27% of connected third-party cloud applications introduced by employees into enterprise environments in 2016 posed a high security risk (CloudLock Q2 2016 Cloud Cybersecurity Report: The Explosion of Apps: 27% are Risky).

64% of all organisations experience a network attack vector. Pick Your Poison: The Most Popular Cyber-Attacks, Radware (2017).

How strong are your foundations?

The following are typical signs that your cyber security foundations are not as strong as they should be.

Your organisation is not aware of the common vulnerabilities and exploits used by attackers.

There has been no assessment of your organisation's vulnerability to attack or the value and exploitability of critical assets.

Your organisation has yet to implement your cyber security policy as an issue because your staff are not sufficiently aware of or engaged with it.

You struggle to understand how compliance rules fit or need to be integrated into your wider cyber security plans, policies and defences.

Your organisation lacks sufficient controls to set and monitor user access levels to prevent privilege abuse and the potential loss of data.

You lack a recovery plan, even though having one is critical to your response time and for the resumption of business activities.

The hardware that your organisation relies upon doesn't allow you to install the newest patches for the software you use.

Your organisation currently lacks the capability to detect external cyber threats.

You lack the ability to analyse data to get a clear assessment of the vulnerabilities and the levels of risk they present to your organisation.

Critical employees are not qualified or capable of acting in the organisation's best interest in the event of a cyber breach.

Your organisational mindset is focused more upon investigating individual incidents than investing in prevention activities.

You lack the necessary resources to ensure an adequate level of protection from common vulnerabilities and attacks.

These are not uncommon issues. Most CIOs and CISOs will admit they encounter these warning signs from time to time, even though most will have spent significant time and resource on strengthening their company's defences against cyber security risks.

So what are the main causes of these issues?

Why this is happening

The face of cyber security is changing constantly. Here are ten cyber predictions and trends that organisations need to be aware of when preparing their cyber security defences.

Organisations will have to automate to keep up with criminals

Attackers' capability to write bespoke, targeted code will continue to improve faster than the defenders' ability to prevent or counter attacks, and there will continue to be a shortage of people with the right expertise to counter this ever-growing threat. As well as investing in skills and recruitment, the solution lies in automating manual processes and implementing system analytics.

Breaches will get more complicated and harder to beat

Ransomware will remain a significant threat. Ransomware's impact across all sectors and geographies will force the security industry to take decisive actions. Initiatives like the No More Ransom! collaboration, the development and release of anti-ransomware technologies, and continued law enforcement actions will reduce the volume and effectiveness of ransomware attacks.

Companies will need to get firm on bring-your-own-device (BYOD) policies

Employees will continue to disregard corporate protocols and download malware-laden mobile apps from unauthorized app stores onto the devices they use to connect to corporate networks. Even when they follow recommended practices, there's still a risk; reputable stores have sometimes been fooled by rogue developers who create malicious development environments designed to hide malware in apps that appear to be safe.

There will be more security available in the Cloud

One thing is certain: the Cloud is not going away, and more enterprises will migrate key services to the Cloud and start designing their future intelligent infrastructures on Cloud-based models.

An attack that disrupts or takes down a major Cloud provider would affect all of their customers' businesses. Because of the potential scale of impact, motives will be difficult to determine, but will vary from causing general chaos to targeting a specific competitor or organisation.

Organisations handling EU residents' data will be concerned about the General Data Protection Regulation (GDPR)

The GDPR, which will apply from May 2018, helps to protect EU residents' privacy and personal data.

Firms that do not comply with the GDPR could face hefty fines of up to €20 million or 4% of their annual global turnover (whichever is higher). With the enforcement deadline so near, expect the GDPR compliance focus to shift from legal to chief information security officers.

The Internet of Things (IoT) will have repercussions across the business spectrum

The IoT merges the physical and online worlds, opening up a host of new opportunities and challenges for companies, governments and consumers.

When businesses provide suppliers with access to IoT devices on their networks, they risk opening the door to hackers. Once inside, hackers can take over connected devices and use them as part of a bigger hack or distributed denial-of-service attack.

Collaboration will be the solution for just about every aspect of supply-chain management except one: cyber security

The very nature of global supply chains demands that companies exchange sensitive information with multiple partners, some of them several tiers removed from the provider. Their ability to protect data can be highly variable.

To be safe, companies must continually ensure confidence in third parties' data safeguards, security policies and procedures, and determine whether their security posture is sufficient to respond to a data breach or cyber attack.

Organisations will need to focus on data integrity

Attackers will start to set their sights on compromising data integrity. This type of attack, in comparison with a straightforward theft of data, will serve to cause long-term reputational damage to individuals or groups by getting people to question the integrity of the data.

Organisations must get serious about monitoring and managing third-party risk

The emphasis will likely shift from snapshot-in-time monitoring to continuous monitoring. The increased regulatory focus on vendor risk, coupled with the GDPR, means that firms won't be able to continue outsourcing their security risk to third parties, and will require significant internalisation of threat detection services.

The cyber security skills shortage will hold steady

Cyber security has been identified as the number one "problematic shortage" area across all of IT for the past six years in a row. In 2017, 45% of organisations say they have a "problematic shortage" of cyber security skills (Enterprise Strategy Group, 2016 IT Spending Intentions Survey).

What should you be looking for from your suppliers?

You should consider several factors when deciding to hire a security testing consulting partner to make sure you choose one that has the necessary tools and offers the right mix of know-how and experience to provide holistic, cost-effective and compliant security solutions. Such factors include the following:

1. Primary focus on cyber security

A good vendor won't rely solely on technological solutions but will take a holistic approach to protecting your organisation.

2. Accredited penetration testers

You should use a vendor with a CREST-certified penetration testing team or testers accredited to equivalent CREST levels. You can also find certified companies through the CREST Approved members list of companies.

3. Service breadth and experience

To deliver the right solution for you rather than a one-size-fits-all approach, your chosen vendor needs to have experience across a diverse set of disciplines and customers. This enables you to leverage the experiences and lessons of other firms.

4. Long-term-relationship focus

A good vendor will invest the time to learn about your organisation's needs, help you to reduce costs and help to redefine the scope of your cyber security plan over time as your requirements evolve.

5. 100% vendor agnostic

Your chosen vendor should not be affiliated with any hardware and/or software solution. If they're not vendor-agnostic, there's no guarantee of independent, unbiased advice.

6. Compliance experience

A good partner will be able to structure a framework to achieve all of your compliance, legal and stakeholder requirements, which should be agreed from the outset as part of your testing program.

7. Specialised training

Helping you to improve your cyber security posture may require training, whether of your entire staff, security team or executive leadership. If a vendor is proficient in the technical aspects of security, but cannot offer training as well, their utility is limited.

How we take action

Cyber security comes down to preventing breaches, detecting the ones that happen and then responding intelligently to minimise their impact.

As attacks become easier to perpetrate, and the potential damage caused by cyber attacks becomes increasingly disruptive, organisations must improve their cyber defences.

The traditional approach to IT security, which focuses on the technological aspects, is only one part of the solution. In order to protect their business assets in cyberspace – including reputation, IP, employees and customers – organisations need to take a risk-based approach to cyber security.

CYBER ESSENTIALS CONSULTANCY AND CERTIFICATION

Cyber Essentials highlights some of the most fundamental technical security controls that an organisation should have in place to secure itself against internet based security threats. Getting certified enables organisations to be better prepared against the vast majority of cyber threats and inspire confidence in those that do business with them.

HOW?

We can help you achieve certification to either Cyber Essentials or Cyber Essentials Plus. Our CE portal enables companies to follow a convenient do-it-yourself approach, including managing and tracking the certification process.

LEVEL 1 PENETRATION TESTING

For the majority of organisations, a level 1 penetration test will be appropriate to help mitigate the threat of the opportunist attacker who is looking for easy targets by exploiting known vulnerabilities.

HOW?

This test involves manual assessments with automated scans to assess the true extent of the vulnerabilities affecting your applications, systems or networks. By combining a level 1 test with regular vulnerability scanning, you can prioritise the resolution of identified issues and establish a comprehensive assessment of your risk from external threats.

LEVEL 2 PENETRATION TESTING

A level 2 penetration test is appropriate and necessary for organisations that may be specifically targeted by attackers, perhaps because of the information they hold or the nature of their business.

HOW?

A level 2 penetration test identifies security holes and vulnerabilities in your hardware and software (including printers, fax machines and workstations), systems or web applications and then trying to exploit them.

PENETRATION TESTING AND COMPLIANCE

Various regulations and standards have multiple components specifically related to system auditing and security, and either indicate or specify that penetration testing is necessary to determine whether identified vulnerabilities pose a genuine risk to an organisation.

HOW?

Our expertise in standards such as the PCI DSS, the GDPR and ISO 27001 means we can offer an integrated approach to your testing challenges and develop suitable solutions that will enable you to reduce your risks and ensure compliance with standards, frameworks, legislation and other business requirements.

IT HEALTH CHECK

Are the right IT security controls in place to protect the information that is critical to your business? Performing an IT health check provides senior management with an independent and holistic view of IT security and challenges, and recommendations for improvements.

HOW?

We can undertake an analysis of your chosen systems and network to identify any vulnerabilities that may compromise the confidentiality, integrity or availability of information held.

TRAINING AND ON-GOING SUPPORT

In the context of cyber security, the adage that you are only as strong as your weakest link is particularly pertinent; it is important to consider your cyber security strategy as a whole, and that means not just managing your technology but also your people.

HOW?

We offer training courses (both classroom and in-house) for all staff, from basic foundation level through to advanced courses.

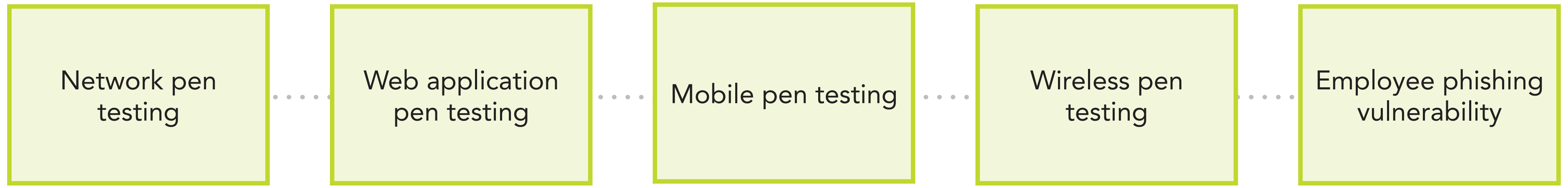
With our Live Online consultancy service, you can purchase consultancy support by the hour, so you can get the support you need quickly.

Our services

Penetration testing

Penetration testing (or 'pen testing') is a process whereby an expert ethical hacker seeks to gain access to your systems, revealing areas of weakness and making suggestions for improvements.
As a CREST member company, IT Governance has been verified as meeting the rigorous standards mandated by CREST.

We are able to offer black-box ('blind') tests, white-box ('full disclosure') tests, or something in between, tailored to your requirements. We can extend this test to web applications and WLANs, with savings available for annual contracts. We also provide standardised assessments and tests that are based on a defined set of criteria, at an affordable, fixed price. We also offer affordable, transparent and rapid response to your queries.



Network pen testing

Web application pen testing

Mobile pen testing

Wireless pen testing

Employee phishing vulnerability

Assessments for the Cyber Essentials Scheme

Our CREST-approved technical services team will conduct vulnerability analysis and verification in line with the Cyber Essentials test specification. Our CE portal is the leading CREST-accredited route to CE certification.

PCI DSS consultancy service

Our status as an approved Qualified Security Assessor (QSA) company underpins our range of PCI DSS consultancy services, which include scoping, gap analysis, remediation support and audit. We offer the full range of PCI QSA services.

Our role is to ensure that an organisation is fully compliant with the requirements as specified in the PCI DSS. All QSA companies must comply with and adhere to a number of rigorous business and technical requirements as specified by the Payment Card Industry Security Standards Council (PCI SSC).

IT health checks

We offer IT health checks designed to provide you with a complete view of your system's strengths and vulnerabilities from an unbiased, expert perspective. Our IT health checks can be customised to your needs.

Training and knowledge transfer

We offer training courses (both classroom and in-house) for all staff, from basic foundation level through to advanced courses for IT practitioners and lead implementers seeking compliance with or certification to various standards, including ISO 27001 and the PCI DSS, as well as professional certifications like the CEH and CISSP.

Our unique and unrivalled training portfolio is designed to ensure organisational efficiency and compliance, as well as to support your career development.

Our courses lead to qualifications awarded by APMG, EXIN, BCS, (ISC)2®, ISACA® and the International Board for IT Governance Qualifications (IBITGQ).

Next steps
What you can do NOW

We have a team of sector specific account managers and security consultants available to discuss your cyber testing challenges. **Whether you have never undertaken a security test or already have a mature security programme in place, whether you are at the start of your compliance journey or looking to switch suppliers, we can help.**

Here's what you can do next:

Use the health check in this playbook as a starting point for a conversation:

- Identify the main challenges you're facing.
- We'll discuss possible root causes and gaps in your security – and how to fix them.

Or simply call
+44 (0)333 800 7000
to speak to a security specialist and
get more information.

Our credentials

- IT Governance is a global leader in information and cyber security management systems expertise.
- IT Governance is a CREST member company and has been verified as meeting the high standards mandated by CREST.
- Our expertise in standards such as the PCI DSS, ISO 27001, the GDPR and ISO 9001 means we can offer an integrated approach to compliance.
- We provide independent and unbiased advice – we are not affiliated with any software or hardware solution.
- IT Governance is an IBITGQ Accredited Training Organisation (ATO), and an official publisher of the IBITGQ study guides and courseware.
- Our cost-effective and customised advisory services provide a tailored route to achieving improved cyber security, scalable to your budget and needs.

CREST

PCI Security Standards Council
QUALIFIED SECURITY ASSESSOR

ACCREDITED IBITGQ TRAINING ORGANISATION

ISO 27001 CERTIFICATION EUROPE

ISO 9001 CERTIFICATION EUROPE

CYBER ESSENTIALS PLUS

Our customers

next

Volkswagen

PIZZA PAPA JOHNS

BETFRED

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