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On the Rise: How Inflationary Pressures and Rising Interest Rates Could Impact the Equipment Finance Industry

By Jeff Jensen, Elizabeth Rust, and Serena Mackool

Over the last decade, the equipment finance industry and the U.S. economy have operated in a climate of low interest rates and low inflation. How will the industry respond in the face of rising interest rates and inflationary pressures? Here are three scenarios, with ideas on how industry leaders might adjust their business operations in response.

The Business Guide to Improving Information Security

By Joseph Granneman

The continuing increase in large-scale cybersecurity breaches has businesses searching for solutions to reduce their risk. Despite an explosion of new information security products and services, no single tool can reduce risk. Equipment financing companies must build a formal information security framework, complete with policies and procedures.

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The Business Guide to Improving Information Security

By Joseph Granneman

The continuing increase in large-scale cybersecurity breaches has businesses searching for solutions to reduce their risk. Despite an explosion of new information security products and services, no single tool can reduce risk. Equipment financing companies must build a formal information security framework, complete with policies and procedures.

2018 has seen the continuing trend of cybersecurity incidents and large-scale data breaches across every industry. Companies continue to utilize technology to gain efficiency and productivity, only to find that these same tools can be used against them.

Online systems that store or process any type of financial data become targets of the modern-day criminal. Intellectual property or trade secrets become the target of a new type of industrial espionage performed using technology. Companies that do not even believe they have anything of interest to criminals suddenly find all their computer systems crippled and held for ransom.

The truth is that all businesses are so hyperconnected through technology that there is no business that is truly not at risk of cyberattack. The very existence of the technology creates a potential opportunity for exploitation by an adversary.

There are common threads among most of the successful cyberattacks and data breaches that have been reported. These common threads involve basic failures in understanding the risks involved with the use of technology. Basic controls such as strong passwords, multifactor authentication, and vulnerability management programs would have prevented many of these cyberattacks.

The problem is that many companies lack a formalized program with the expertise necessary to understand and mitigate these risks. The employee making a risk-based cybersecurity decision for the business is too often unware of the potential risks. The rationale is that this decisionmaker does not know how to breach the security of the system, so why would anyone else? This lack of mature risk management is one of the main reasons that businesses continue to make the same mistakes in cybersecurity.

Business is about profiting from risk. Leasing and financing businesses have their industry- specific risks that are professionally managed by knowledgeable staff. A business that used staff untrained in these types of risks would eventually fail due to a lack of understanding.

Managing the cybersecurity risk of the business with untrained staff will deliver the same outcomes. Businesses that can apply their existing risk-management experience to cybersecurity can successfully avoid becoming yet another data-breach headline.

There is no silver bullet to managing cybersecurity. Contrary to popular belief, there is no singular product like an operating system, firewall, or specific antivirus version that can reduce cybersecurity risk. To have any impact on cybersecurity risk, these tools must be orchestrated with the appropriate policies and procedures. That is why this article contains a framework for building a formal risk-based information management program instead of offering specific product or technical recommendations.

SECURITY AS A BUSINESS IMPERATIVE

Businesses that successfully implement a formal information security risk-management

TERMS USED IN THIS ARTICLE

GDPR – The European Union's General Data Protection Regulation, effective May 2018.

GLBA – The Gramm-Leach-Bliley Act, also known as the Financial Modernization Act of 1999. Congress passed it to control the ways that financial institutions deal with the private information of individuals.

HIPAA – The Health Information Portability and Accountability Act of 1996. It defines the privacy and security requirements for healthcare providers and payers to protect patient information.

Lean – A formalized approach to reducing waste in manufacturing and business processes to improve efficiency.

Network Drawing – A technical document that shows both the physical and logical locations of network electronics. It includes the communications flows that occur between different nodes on the network.

NIST – The National Institute of Standards and Technology, a U.S. government agency. It defines information security standards and controls that can be used by any organization.

PCI – Or PCI DSS, the global data security standard adopted by the payment card brands for all entities that process, store, or transmit cardholder data.

PII – Personally Identifiable Information, which is defined as a minimum of name, address, and account number. This information is the basis for all privacy regulation and may include other specific information elements, depending on the scope of the legislation.

Six Sigma – A formalized approach to eliminating defects through business process optimization.

SOX – The Sarbanes-Oxley Act, enacted in 2002. It established auditing and financial regulations for public companies. The intent was to protect shareholders, employees, and the public from accounting errors and fraudulent financial practices. The Securities and Exchange Commission enforces SOX.

program recognize that cybersecurity must be a business priority. This means that information security risk has been interwoven into every technology initiative.

It is important for organizations to realize that they must build security processes into technology solutions early in the adoption phase. Security controls that are applied after a system or process is already in production are not nearly as effective.

Businesses looking for motivation to build a formal information security program need only to look at the increase in regulatory and commercial penalties for data breaches. Regulations such as HIPAA, GLBA, SOX, and GDPR (see sidebar) are increasing financial penalties and civil liabilities. Commercial requirements for simply accepting a credit card are enforced through PCI (see sidebar), which specifies its own penalties.

Other businesses are awakening to the potential risks involved with third-party data hosting as well. Companies that host any type of personally identifiable information (PII, see sidebar) are now being thoroughly scrutinized through due-diligence processes and contractual obligations.

It is important to note that these regulations and requirements do not apply only to technology companies. Leasing and finance companies are storing, processing, and transmitting this type of information as a part of normal business operations, using technology while not being a technology company.

The Cost of Major Breaches

Motivation to build a formal information security management program can also come from the potential impacts of a data breach. History has shown that the impacts vary widely, depending on the industry and the size of the breach. Target was forced to pay $18.5 million in damages and suffered a temporary reduction in stock price for its 2013 credit card breach. Small businesses may not be able to absorb the expenses associated with a major breach, including managing brand damage that in turn results in loss of revenue and potential insolvency.

Examples of negative business impacts are easy to find and well documented in the news. There are also less-well-known business opportunities to be found in building an information security program. Companies that develop software or services will find that they can use the discipline of information security to increase the quality of their offerings. Information security programs can be used to gain competitive advantage over other companies in the same space.

Information security can also be used to increase efficiencies and reduce costs. Processes and procedures need to be reviewed or created to build a formal information security program. These business process reviews can be integrated with Lean or Six Sigma optimizations (see sidebar) to increase operational efficiency while improving security-risk posture.

Information security programs thrive on standardization of processes and procedures, rendering them a perfect match for process optimization projects.

BUILDING A FORMAL RISK-BASED INFORMATION SECURITY PROGRAM

First Step: The Leader

The first step in building an information security program is to recruit a leader with security expertise to direct it. This is a key requirement for helping the company understand its true cybersecurity risk profile. This position is usually titled "chief information security officer" (CISO), and he or she becomes a member of the executive team.

This position needs to report at the same level as other executive officers of the company and should not report to the CIO or CFO. The CISO is a type of audit function that needs to have segregation of duties from IT operations to be effective. The driving motivation for the CISO should not be based solely on cost, which can happen if the position reports to a CFO. In other words, to build an independent, value-based information security program, the CISO should report to the CEO and the board of the company.

The next step is to develop a funding strategy for the information security program. The CISO cannot be effective without the additional staff and tools to build the program. There is no predefined rule for the amount of funding that will be required. Financial institutions have been known to spend 15% of their IT budgets on information security, while healthcare institutions lag at around 3%.

The amount of funding depends on the industry (industry vertical), size of the organization, and the level of technical debt that has been incurred. Technical debt refers to the number of outdated or unsupported systems that must be addressed, and it dramatically affects required funding levels.

It is important to consider that spending will increase moderately over the life of the security program, as shown in Figure 1. Determining a funding strategy early on will help to define the options available during the planning phase.

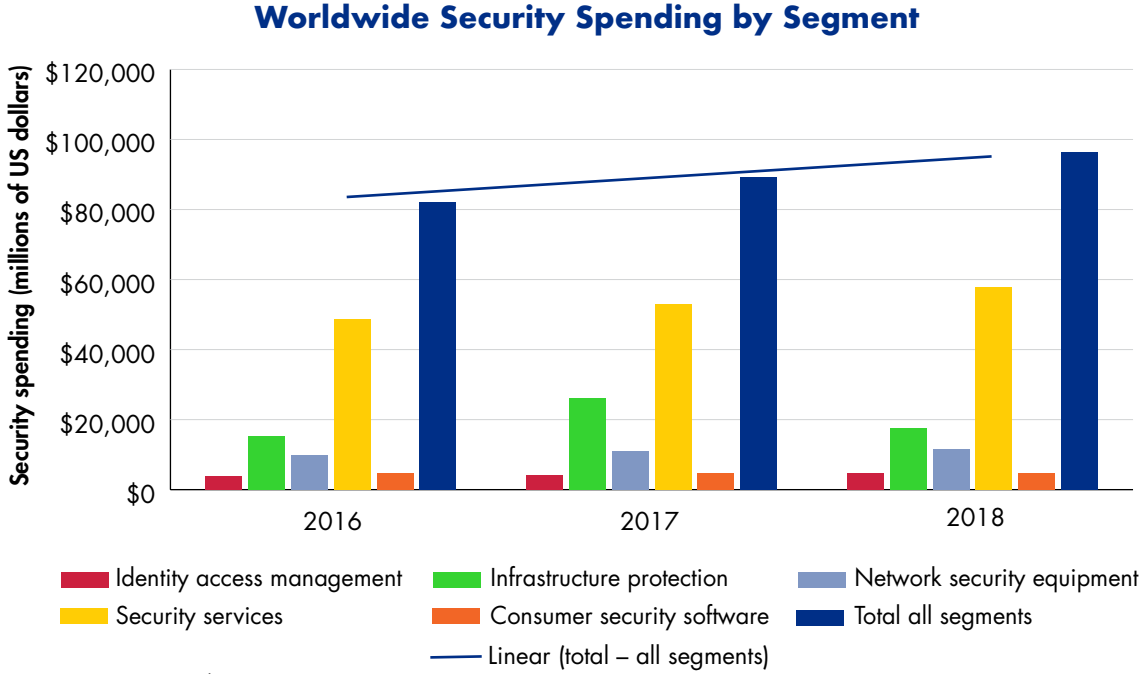
The CISO cannot personally lead all the process changes required to implement a formal information security program. Progress ultimately depends on the organization's support of the information security program. This is best accomplished through creation of an information security governance committee. This formal group is made up of representatives from different departments within the organization.

This committee provides the platform for the CISO to present strategies and opportunities for changing organizational processes. Committee representatives can discuss, approve, or modify the proposals before implementation and provide feedback from the business unit perspective. The information security governance committee will own the security strategy decisions, which helps prevent the perception that the CISO is making decisions from a silo.

The CISO should chair the information security governance committee, which should report to a board-level audit committee. Accountability at the board

The information security governance committee will own the security strategy decisions, which helps prevent the perception that the CISO is making decisions from a silo.

Figure 1. Worldwide Security Spending Trends



Source: Gartner, December 2017.

The charter should keep the committee focused on high-level initiatives and out of the technical details. Subcommittees or project workgroups can meet more frequently and address these technical issues.

level is crucial to the success of the program.

The committee needs a formal charter that defines both the accountability and the authority to act on information security related issues. The charter should include the ability to identify risk, define strategies and priorities, and assign organizational ownership to security initiatives. The charter should keep the committee focused on high-level initiatives and out of the technical details. Subcommittees or project workgroups can meet more frequently and address these technical issues.

Once this committee is in place, the information security program should develop specific goals. Regulatory compliance, despite its often negative connotations, can be a good starting point for any business to begin building a formal security program. Information security regulations define the base required capabilities of the organization's information security program and can be used to identify quick wins in reducing compliance risk.

Increasing Penalties

Penalties continue to increase for noncompliance with information security regulations. When credit cards are breached, the payment card industry (PCI, see sidebar) can fine a company between $5,000 and $10,000 per month, going back to the initial date of noncompliance.

HIPAA can fine up to $1.5 million for a breach of identifiable patient information. HIPAA has also been used to bring civil lawsuits stating that patient privacy is a basic expectation of patient care.

The European Union's new General Data Protection Regulation (GDPR), effective in May 2018, has penalties of €20 million, or 4% of global revenue, whichever is higher for breaching the personal information of EU citizens. These penalties can provide the necessary motivation to build an information security program and help justify the required investment.

Leasing and financing companies could be affected by these regulations and not even be aware of the requirements. An organization's marketing and leasing equipment to EU citizens could be covered by the GDPR, for example.

Organizations that are processing payments through credit cards, either online or through the use of card readers, fall under PCI requirements. Organizations that lease equipment to healthcare organizations may find themselves required to sign a business associate agreement that binds the organization to HIPAA compliance.

Any organization in the United States that allows personally identifiable information to be breached is subject to Federal Trade Commission penalties and the breach notification requirements enacted by all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. Information security compliance is now just a cost of doing business in the 21st century.

Compliance can become complex when dealing with multiple requirements — for example, in the case of an organization that must comply with GDPR, PCI, and HIPAA. Information security frameworks can be used to build out general security requirements that can be mapped to other compliance regulations. This allows the company to build a single set of policies and technical security controls, instead of generating unique controls for each compliance requirement, thereby reducing expense and complexity.

In short, information security frameworks will help to reduce overall security risk, whereas compliance requirements tend to be more focused on providing documentation.

The Role of NIST

There are many security frameworks available, but the most commonly used ones were developed by the National Institute of Standards and Technology and are available for free. NIST Special Publication 800–53 is one of the older frameworks but is still as current as when it was first published.

This document was used as a template for compliance regulations including HIPAA and GLBA. However, it contains a large set of controls that may be overwhelming for smaller businesses. NIST SP 800–171 contains a subset of the controls defined in SP 800–53; thus, it may be more appropriate for these organizations.

The NIST SP 800–171 framework has become more popular lately due to becoming a requirement for U.S. government manufacturing subcontractors. NIST has recently created other resources that may be easier to navigate, including the NIST Cybersecurity Framework and NISTIR 7261. The latter focuses specifically on small business information security.

ASSESS AND ANALYZE CURRENT ORGANIZATIONAL INFORMATION SECURITY POSTURE

Once the information security leadership, governance struc-

ture, and security framework have been created, the organization can assess its security posture. This begins by creating an inventory of information assets ranked by their business value. Applications that house key business processes or confidential information should be ranked higher.

A best practice is to classify the types of data used by the organization into three or four categories based on this system ranking. These classifications could be "Confidential," "Financial," "Ephemeral," and "Public," for example.

Security controls can now be mapped from the security frameworks to each one of these categories. These controls will include items such as authentication requirements, encryption requirements, authorization protocols, and audit requirements for each data classification type.

Technical Documentation

The inventory of information assets should also include technical documentation, such as system configurations and network drawings for both internal and internet-facing systems. Network drawings (see sidebar) should include traffic flows to record how confidential data is transmitted across the environment. System configurations should include age of the operating system, security patching schedule, and antivirus capabilities.

Network infrastructure, cloud-based applications, mobile devices, and removable media must also be included in this inventory. Although this amount of data collection may seem rudimentary, many organizations will have trouble finding basic network documentation. However, this information is key to building an accurate risk model. It is impossible to defend systems that are unknown to the organization.

With the inventory complete, a thorough risk analysis of the core technologies and business operations of the organization can begin. The technical assessments include implementing regular commercial vulnerability scanning to gain a baseline understanding of the environment.

The value of the assets, as assigned during the inventory phase, can be overlaid with the results from the vulnerability assessment to determine the high-risk assets. A third-party penetration test can then be used to validate these findings and discover any other potential security flaws in the internal, external (internet-facing), and wireless network-based systems.

Policies and Procedures

Policies and procedures require creation or review to conform to the security framework selected earlier in the program. Security policies play a key role in any information security program: they define the requirements and standards to manage overall risk.

Security policies will cover technical requirements such as encryption standards and password complexity requirements. They also define the processes for provisioning user accounts and assigning the minimum necessary permissions. These policies are the basic building blocks of the information security program.

Documentation of critical business processes must be created or reviewed to understand the technical interdependencies of current applications. Many organizations mistakenly believe that the priority of each application to business operations is fully understood. Priorities are often overstated for applications that may not have direct revenue impacts, while some critical applications can go unnoticed because staff takes them for granted.

Mapping out these processes using a Lean or Six Sigma approach will help pinpoint these critical applications as well as opportunities for process improvement. The results of this process mapping will also provide the necessary information to develop a business impact analysis for building a disaster recovery plan.

Supply chain management is a specific business process that needs to be reviewed for potential information security risks. The U.S. government will not use equipment or components from specific companies in certain parts of the world. It has become common for state intelligence agencies to intercept shipments of computers, phones, or networking equipment and install backdoors or hidden accounts to perform surveillance on the intended customer. Vendors for any critical infrastructure must be reviewed in light of the origin of their equipment and any potential government ownership. Vendors can then be selected based on the risk tolerance of the organization.

> The inventory of information assets should also include technical documentation, such as system configurations and network drawings for both internal and internet-facing systems.

The Security Culture

In addition, the chief information security officer must gauge the information security culture of the organization. This includes reviewing the IT staff security skill set and measuring the general security awareness of all employees. Information security is most effective when it is interwoven into standard business and IT processes.

Subjective by nature, the measurement of these cultural aspects of information security can be challenging. However, driving change through a culture shift will yield the most benefits.

Using all of the collected information, the CISO can begin to design a formal strategy for information security initiatives. The strategy should span no more than three years.

This is especially true for IT staff, who are usually responsible for implementing and maintaining company infrastructure and applications.

Culture can be measured using various tools and techniques. Surveys and questionnaires can provide the security program with interesting insights into the organizational culture and technical knowledge. Valuable information can emerge from questions about difficulty with password changes or the risks involved with using mobile devices.

IT staff members can be interviewed regarding their strategy for implementing a DMZ (internet-facing servers) or their current process for handling removable media like USB drives. Training programs can then target problem areas in which technical knowledge is found lacking or where the resistance to change may be the strongest.

Risk Tolerance

By way of comparison, executive-level surveys should target larger cultural issues that affect overall information security strategy. The security program must incorporate an understanding of the organization's risk tolerance level, for example. A security program is a function of organizational risk management and must be compatible with the organizational business model.

Information security risk tolerance will be very different for a company hosting websites with marketing material, when compared to a bank website with online transactions. These organizations share certain risks associated with having a website on the internet. However, the risks for the bank website are considerably higher than those for the marketing firm.

The organization may decide to join an information sharing and analysis center (ISAC) to share threat information and gain a better understanding of the risks in its specific vertical. ISACs are industry-specific groups whose many company members share cyberthreat information and best practices. Moreover, these groups share technical details about the viruses their members have encountered and disseminate warnings about scams targeting their specific vertical.

The Financial Services Information Sharing and Analysis Center (https://www.fsisac.com) may best fit the needs of the equipment leasing and financing industry.

BUILD AND IMPLEMENT THE PLAN

Using all of the collected information, the CISO can begin to design a formal strategy for information security initiatives. The strategy should span no more than three years, given that security threats change too rapidly for longer plans to be valid.

Budgets and resource commitments essential to the desired results must be part of the strategy, based on the initial funding decisions. Staffing requirements for both internal and outsourced positions are also vital to the strategy. Threat intelligence gained from internal assessments and through ISAC membership should help shape the strategy and identify areas of risk.

The CISO should present the complete formal strategy to the information security governance committee. He or she can focus on opportunities for reducing expenses or opportunities for additional revenue or competitive advantage, based on security initiatives.

The risks identified in the assessment need to be presented to the committee along with multiple options for remediation. Potential quick wins should be identified to bolster short-term support for the adoption of the long-term plan.

To build organizational ownership of the security strategy, the CISO presents only the options with recommended actions. However, the CISO does need to take organizational risk tolerance into account while developing these options.

The Implementation Team

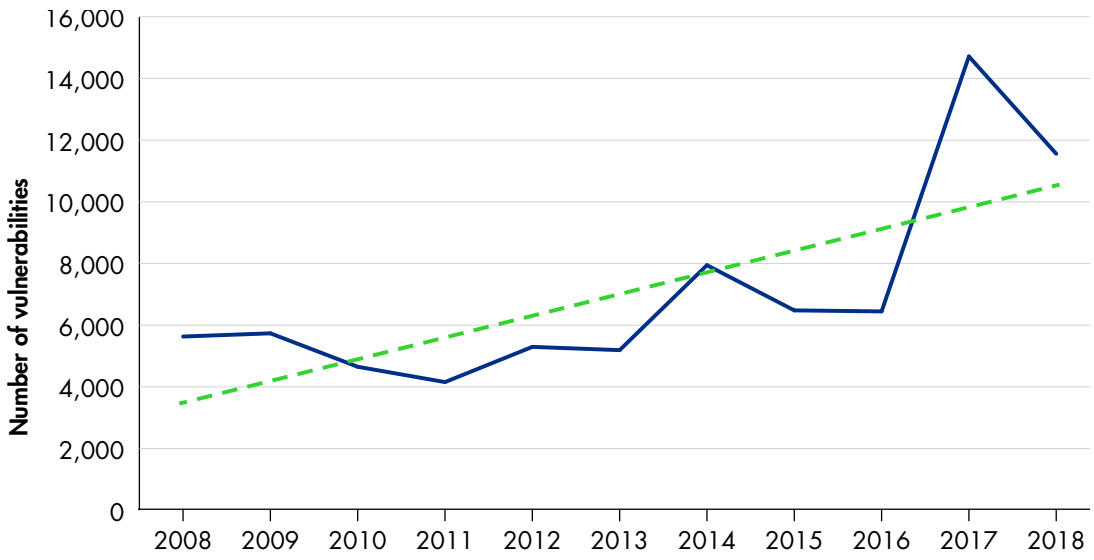
Once the information security governance committee has adopted the formal security strategy, the next task is to build the team that will implement it. Many organizations skip over this step, mistakenly believing that simply hiring a CISO is enough to manage information security risk. This is equivalent to hiring a football coach without the team and expecting to win championships. Information security is also a team effort, involving people with different skill sets to effectively manage risk, just as a football team requires players at different positions to play the game.

The essential information security roles to be filled are similar in all organizations. Roles can be combined based on the size and complexity of the information technology environment. They can also be assigned outside of the information security department and fulfilled by existing IT staff. Table 1 presents

Table 1. Common Information Security Roles and Activities

Role	Activity
Identity management	Adding, creating, and removing access to employees based on job roles
Asset management	Maintaining a list of all equipment and locations of high-priority organizational data
Disaster recovery	Maintaining the capability to restore the technical environment after a disaster
Compliance	Auditing current processes and documentation to maintain compliance with required regulations such as PCI, HIPAA, GDPR, and SOX
Configuration management	Maintaining and monitoring the secure configuration of workstations, servers, and other devices
Monitoring and alerting	Reviewing system activity for anything suspicious or out of the ordinary and escalating to Incident Response when appropriate
Vulnerability management	Monitoring and regularly applying software security patches to all systems
Incident response	Responding to security events, preventing damage and preserving evidence
Penetration testing	Assessing technical systems using tools and techniques commonly used by attackers

Figure 2. Software Vulnerabilities Reported by Year



Source: "CVE Details by Date," MITRE Corp.

examples of common information security roles and their typical activities.

Vulnerability Management

Vulnerability management is one activity that can generate a quick win in implementing the security strategy. Vulnerabilities are software defects or misconfigured systems that allow an attacker to bypass security controls. The number of reported vulnerabilities continues to increase each year, as shown in Figure 2, but the risk can be mitigated by applying software patches and changing default passwords.

The WannaCry ransomware outbreak of 2017 was caused by those organizations failing to apply a security patch released by Microsoft two months before the attack started. The Mirai botnet that disrupted internet access on the East Coast of the United States in October 2016 was powered by systems using default credentials. The botnet continually scanned the internet for devices that would allow a login using a username of "admin" and password of "admin" to propagate the attack.

Another quick win can occur by implementing a phishing awareness program. According to the 2018 Verizon Data Breach Investigations Report, phishing was used in 98% of the social attacks and 93% of the reported security breaches. Email was used 96% of the time as the attack vector of choice in these incidents.

Criminals use phishing because it is the easiest way to bypass firewalls and other technical controls and gain access to credentials or to spread ransomware. Organizations can use services to phish their own users or to train them to identify suspect messages. A well-managed internal phishing program can dramatically reduce the risk

Criminals use phishing because it is the easiest way to bypass firewalls and other technical controls and gain access to credentials or to spread ransomware.

of falling victim to a real phishing attack.

The solution is to build a formal information security program based on a standardized framework to identify assets, develop policies, assess vulnerabilities, and manage overall risk.

Continual Measurement

It is important to continually measure the progress of the information security strategy and program metrics. The CISO should issue status reports on the major initiatives and regulatory compliance to the governance committee as well as give current program statistics. Security incidents should be one of the key metrics analyzed and reported, because the program's direction may need to change to mitigate a related vulnerability.

Progress in remediating the risks identified during the assessments should be reported as well. The cost of these specific remediations should be tracked and reported to verify that the expenses do not exceed the risks being addressed.

SUMMARY

The continuing increase in cybersecurity incidents has businesses searching for solutions to reduce their risk. There has been an explosion in information security products and services marketed to address this growing need. However, no simple solution or single product can actually reduce organizational security.

The solution is to build a formal information security program based on a standardized framework to identify assets, develop policies, assess vulnerabilities, and manage overall risk. The current business technology environment is too complex for ad hoc security solutions. Organizations that ignore security risk management, assuming that their antivirus or firewall alone will save them, will become the data-breach headlines of the future.

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