Cybersecurity: It's not just for businesses

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Introduction

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- For many entities, business value resides in its **data and network** systems
- A sophisticated community of "hacktivists," organized cyber criminals / syndicates, and state-sponsored spies, wants to cause **competitive harm** by exploiting technical and social vulnerabilities of information assets
- This combination leads to a **high-likelihood of data breaches**

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They mess up your stuff just because:

- …they don't like you
- …they don't like your mission
- …they can

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Cyber criminals are organized and operate like a business, focused on the profit motive:

- Identity theft
- Fraudulent credit card transactions
- Ransomware

State-sponsored cyber espionage

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We have enemies who don't like our national policies and want to destabilize our economy. This is known as cyberterrorism or cyberwarfare.

View the Mandiant report at:
intelreport.mandiant.com

Industries targeted by cyber threats

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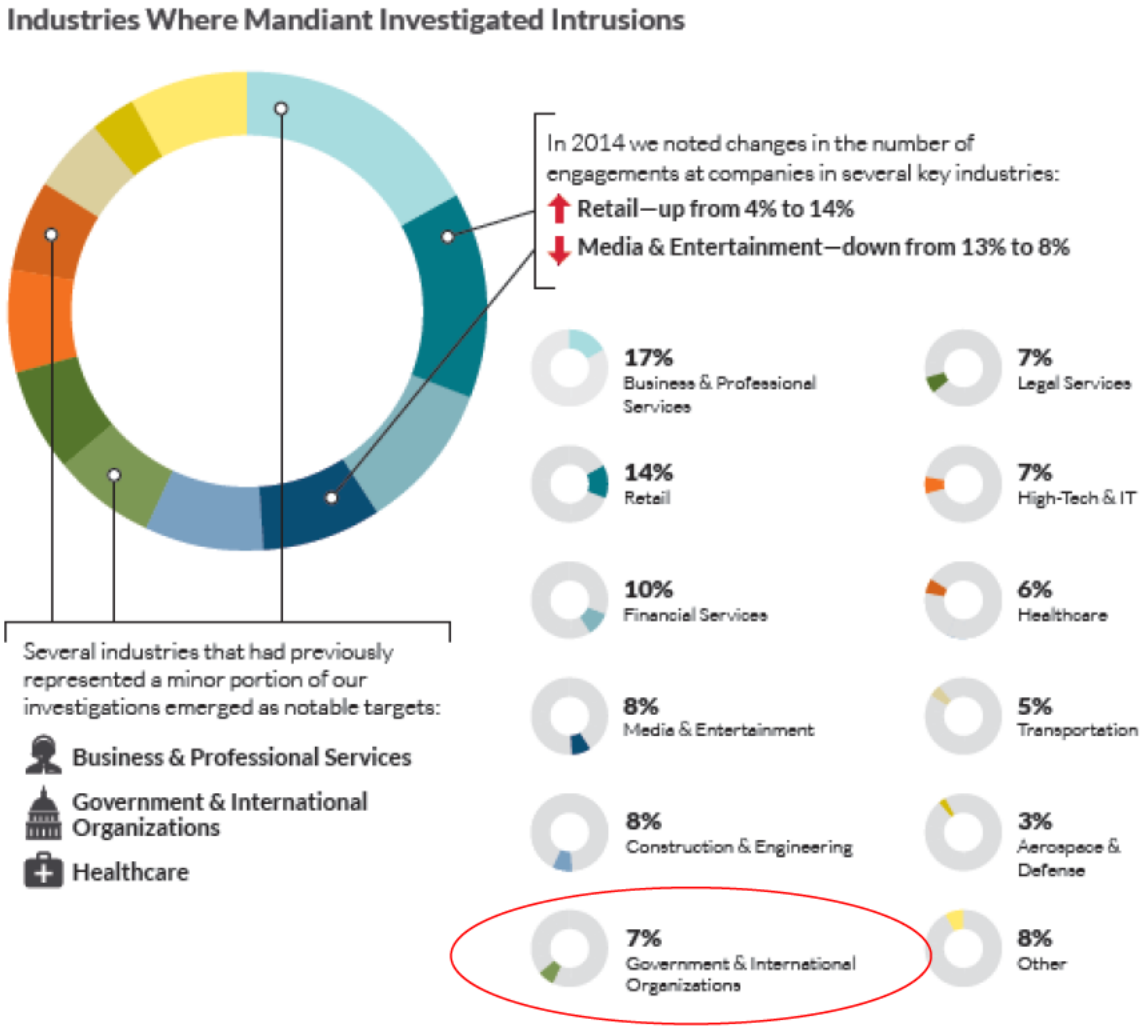

Source: Mandiant M-trends 2015 Threat report

How compromises are detected

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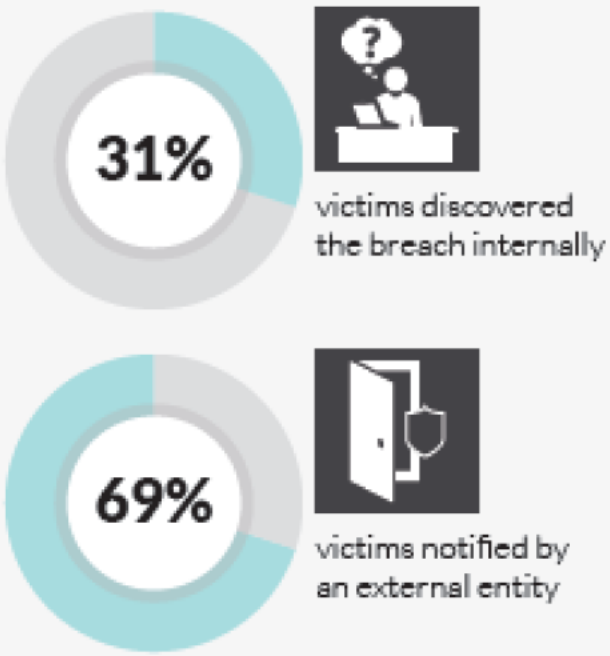
How Compromises Are Being Detected



Time from Earliest Evidence of Compromise to Discovery of Compromise

median number of days that threat groups were present on a victim's network before detection

24 days less than 2013

Longest Presence: 2,982 days

Source: Mandiant M-trends 2015 Threat report

Evolving cyber-risk landscape

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Past	Present	Impact on Risk
Mostly physical assets (plants, equipment) - relatively few digitized assets.	Highly digitized asset base (IP, financial, PII), mobile and cloud technologies.	> More data and platforms to secure and manage > Data can be outside of your control > More people with access to data
Simple, unsophisticated attacks (e.g., web site defacement intended to embarrass).	Advanced Persistent Threats (APTs) involve high degree of complexity and sophistication.	> Bad actors are dedicated professionals > Need to defend against professional grade tools
Relatively self-contained IT environment with limited use of 3rd parties for hosting and cloud services.	Concept of "digital ecosystem" involving outside stakeholders and 3rd parties/vendors.	> Potential for undefined /unverified security obligations and vendor responsibilities
IT budgeted HW/SW expenditures; managed deployment and use.	Departments outside of IT can implement rogue cloud services.	> Lack of control over enterprise data
Limited use of mobile data access. IT provided a restricted list of mobile device choices which provided robust security support.	Mobile user access to applications containing personal/financial data and use of BYOD is nearly commonplace.	> More challenging for IT to assure security of "end point" devices.

What does it mean for governmental entities?

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- Entities should expect to get hacked and to be breached
- Robust cyber security management programs are needed to manage the risk to the entity
- Stakeholders in the cyber security management program are cross-functional—not just IT

Key components of effective cybersecurity programs

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01 - Data classification and security risk assessment

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- Understand all information systems at a granular level
- Figure out what assets really matter (crown jewels)
- Translate and align to entity objectives and priorities
- A clear definition of risk tolerance levels is required
- The assessment must be unique to the entity and its industry
- The process must be iterative and dynamic, adopting to constant change
- Standard frameworks improve effectiveness (e.g., NIST, COSO)

02 - Security control implementation

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- Policies and procedures must be documented
- Layered security is critical (multiple lines of defense)
- Use a combination of preventative and detective controls (IT and business controls)
- Support with cyber-focused standards (e.g., ISO, SANS, NIST)
- Event correlation is becoming increasingly important
- Ongoing assessment is critical to keep pace with change
- Ultimately, controls must be deployed that are commensurate with the value of the assets you are trying to protect
- Don’t forget security awareness training for users

03 - Security control verification

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- Validate that security controls are properly designed and implemented
- Test effectiveness through internal and external vulnerability and penetration testing
- Leverage independent experts (similar to traditional internal audit function) to validate controls
- Establish security baseline metrics and measure efficacy over time
- Identify improvement opportunities
- Promote changes to enhance the overall security posture

04 - Breach response planning and testing

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- Anticipate “when” not “if”
- Identify threats and plan realistic scenarios to test systems
- Document formal response and recovery procedures
- Practice in an environment that allows consideration without urgency
- Based on test results, identify gaps and areas for improvement
- Distribute plan, procedures, and testing results to stakeholders to raise awareness
- Practice makes perfect*

05 - Risk acceptance and transfer

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- Comprehensive risk consideration
- Acceptance: cost to mitigate > risk reduction
- Transfer: let someone else pick up the tab
- Understand cyber-liability policies and the ability to limit financial impact of a security breach
- Evaluate agreements with third parties to understand contractual responsibilities related to risk
- Regularly re-evaluate systems during risk assessments

Summary

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- Effective cybersecurity management doesn't mean you won't get hacked
- Effective cybersecurity management programs need to start with solid data classification and a security-focused risk assessment
- Effective cybersecurity management is a continuous process

Disclosures

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The information provided here is of a general nature and is not intended to address the specific circumstances of any individual or entity. In specific circumstances, the services of a professional should be sought.

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