The Role of Compliance in Cybersecurity

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I welcome audience participation
**COMPLIANCE:**

Merriam Webster Definition
- “the act or process of complying to a desire, demand, proposal, or regimen or to coercion;
- “conformity in fulfilling official requirements;
- “a disposition to yield to others
- “the ability of an object to yield elastically when a force is applied.”

**CYBERSECURITY:**

Merriam Webster Definition
measures taken to protect a computer or computer system (as on the Internet) against unauthorized access or attack

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**Epidemic of Rising Cybercrime Costs**

The average cost of a data breach is up to 20% million to 25% million per year. The breach rate is up to 30% per year.

The average cost of a data breach is up to 30% million to 35% million per year.

The breach rate is up to 40% per year.

The cost of a data breach is up to 40% million to 45% million per year.

The breach rate is up to 50% per year.

The average cost of a data breach is up to 50% million to 55% million per year.

The breach rate is up to 60% per year.

The average cost of a data breach is up to 60% million to 65% million per year.

The breach rate is up to 70% per year.

The average cost of a data breach is up to 70% million to 75% million per year.

The breach rate is up to 80% per year.

The average cost of a data breach is up to 80% million to 85% million per year.

The breach rate is up to 90% per year.

The average cost of a data breach is up to 90% million to 95% million per year.

The breach rate is up to 100% per year.

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**Global Cost of Cybercrime Estimates**

- Wall Street Journal: $100B
- Lloyds: $400B
- Juniper: $2.1T
- Cybersecurity Ventures: $6T
85%

So what does this have to do with me?
The cyber regulatory environment is maturing. PCI DSS * HIPAA * Sarbanes-Oxley * GDPR

It’s our responsibility to ensure compliance with those laws, regulations, and policies.

But even total regulatory compliance does not guarantee cybersecurity.

Compliance has a continuous role to play in preparing for, responding to, and recovering from cyber incidents.

Cybersecurity Road Map for Compliance Professionals

What questions should you be asking?

• Does the organization have an Enterprise Risk Management Strategy and does it address cyber risk?
• What is the Cybersecurity Governance Structure?
• Has the organization performed a Risk Assessment and/or Business Impact Analysis for cybersecurity risks?
• Does the organization have a Crisis Management Team for cyber events?
• Does the organization have a Crisis Response Plan for cyber events?
• What third party service provider policies and governing agreements (SLAs) are in place and are they appropriately managed and adhered to?
Enterprise Risk Management Strategy

- NIST Maturity Framework and model under NIST 800-53
- COSO Enterprise Risk Management–Integrating with Strategy and Performance (updated 2017) (greater emphasis on culture, business value of ERM, and role of IT)
- Cybersecurity-specific Frameworks:
  - ISO/IEC Security Control Standards (focuses on information security management systems)
  - Federal Financial Institutions Examination Council (FFIEC) Cybersecurity Assessment (focuses on financial institutions)
  - SEC/OCIE Cybersecurity Initiative (focuses on Investment Firms)
  - FCC Cyber Security Planning Guide (focuses on Small Businesses)
  - NIST Cybersecurity Framework (focuses on Manufacturing)

Cybersecurity Governance Structure

- Guidance: ISO 27001: This is a key resource for Cybersecurity Governance processes; NIST SP 800-53 also provides a selection of controls.
- Ways to measure meaningfulness of a Cybersecurity Governance Structure:
  - Robust Policy Framework
  - Metrics (e.g. statistics on phishing email click rate, repeat offenders, intrusion attempts, training completion rates, etc.)
  - Culture (transparency, accountability)
  - Budget
  - Audit/Risk Committee Reporting Practices (frequency, audience)
  - Internal Reporting Mechanisms (communication & escalation practices, bifurcated channels)
  - Compliance Penalties/Incentives

Let's take a moment to talk about Reporting….

- How are you informed?
- Do you play any role in determining when and how to inform regulators, other government authorities, shareholders, and/or customers?
Let's take a moment to talk about Incentives…

- Sentencing Guidelines (2004 amendments)
- Opportunity to build cross-functional relationships
- Compliance can provide added value to management
- Tangible Assets
- Monetary
- On the Spot
- Publication

Risk Assessments

- Four Key Aspects
  - Assets (physical assets/personnel/intellectual property/data)
  - Threats (insiders/cybercriminals/competitors/nation-states)
  - Vulnerabilities (lack of robust controls/poorly trained workforce)
  - Impact (safety/mission/business)

Business Impact Analysis

NIST SP 800-34 Rev. 1 provides a BIA Template, consisting of three steps:
1. Determine mission/business processes and recovery criticality (mission/business/safety)
2. Identify Resource Requirements
3. Identify Recovery Priorities for System Resources

Cyber Event Crisis Management Team

Commitment

Strategic direction
Designated Responsibility

The Crisis Management Team MUST consist of executive level professionals beyond IT

CEO, CIO, CISO, General Counsel, System Administrative/Application owners, Human Resource, Public Relations
Was someone missing from that list?

Yes. You.
Prevention

Perhaps the step with which organizations are most familiar, but also most remiss....

- Patching
- Anti-virus
- IDS/IPS systems
- Data minimization
- Multifactor Authentication
- Encryption
- Access Control Management

Is there a compliance element to prevention?

Preparation

- Draft Incident Response Plan*
- Form Incident Response Team (lower level than Crisis Response Team; Must also be multi-disciplinary. Consider several for different incident types/impacted systems)
- Prepare cyber-specific Crisis Communication Plan (specific standards of procedures for communicating internally or externally; e.g. with stakeholders, governmental authorities, regulators, press, customers, etc.)*
- Create Robust Policy*
- Create Checklists
- Conduct Training (consider incentivized war games, not just tabletop exercises)*
- Testing Regimes
- Gather Threat Intelligence
- Jumpbags (Standalone Computer Essentials, Printer, Camera, Hardcopies of Checklists, Incident Response Plan, Crisis Communication Plan, etc.)
- Outsourced monitoring, auditing, penetration testing*

See the 2016 European Union Agency for Network and Information Security document “Strategies for Incident Response and Cyber Crisis Cooperation” for additional insights.
Detection

- **Indicators**: Logs reflecting unauthorized use of vulnerability scanners, vulnerability
  scanners, unusually heavy network traffic, antivirus deactivation, bounced emails, erased
  logs, etc.
- **Tools**: Firewalls; Intrusion Detection Systems (IDSs); Intrusion Prevention Systems (IPSs);
  Antivirus and Anti-Spam Software; System Activity Logs; Application Activity Logs;
  Network Analyzers; File Integrity Check Products; System Information and Event
  Management Products (SIEM); and Vulnerability Scanners.

Analysis

- Is it a legitimate threat (or a false positive)?
- What type of attack is it? What stage is it in?
- What impact would it have if successful?
- If it has succeeded, what systems, networks, data breached?
- What are the origins of the attack?

Containment

- Isolate affected systems, hardware, etc. Shutdown not always advisable, because it may limit monitoring and attribution.
Communication
Timely
Accurate
Honest

Note: There is no requirement for information to be complete.

Do you have your privacy officer on speed dial?

You should.

Evolution of Reporting Requirements

State Laws: All 50 states have reporting laws

PCI DSS: Varies based upon merchant level

HIPAA: Covered entities must provide notification of the breach to affected individuals no later than 60 days after discovery of breach

Sarbanes Oxley: Auditing IT Infrastructure

GDPR: 72 hours after discovery of CIA breach
Feared Consequences of Reporting:

- Reputational Damage
- Loss of Business
- Decreased Value
- Legal Liability
Actual Consequences of Non-Reporting:

- Reputational Damage
- Loss of Business
- Decreased Value
- Legal Liability

Recovery:

Rebuilding * Restoring * Reinstalling * Patching

It's a marathon, not a sprint

The old adage, if it's not broke don't fix it, may help budgets and bottom lines, but also help your adversary.

- Kevin Hiltbold, Optiv

NIST Cyber Recovery Playbook Essentials:
- Documentation
- Communication
- Practice
Recovery presents a window of opportunity for Compliance. Don't waste it.

Third Party Risk Management

- According to Soha Systems, Despite Record Breaches, Secure Third Party Access Still Not an IT Priority, June 14, 2016:
  - “Research has revealed that third parties cause 63 percent of all data breaches.”
  - For example: Target/HVAC breach; Reported cost to Target was $148M (See, Rachel Abrams, Target Puts Data Breach Costs at $148 Million, and Forecasts Profit Drop, Aug. 5, 2014)
  - “Deloitte, in its Global Survey 2016 of third party risk, reported that 87 percent of respondents had faced a disruptive incident with third parties in the last two to three years.”
  - In May 2016, Ponemon Institute published “survey that revealed that 75 percent of IT and security professionals said the risk of a breach from a third party is serious and increasing.”
- 2018 Examples: BestBuy/Kmart/Delta/Sears; Saks Fifth Avenue/Lord & Taylor; Applebee’s; Chili’s; Under Armour; My Heritage
- Potential Mitigations Include:
  - Perform thorough Due Diligence (with emphasis on cyber hygiene)
  - Map your data and vendors (Determine which vendors are of highest impact; Update regularly)
  - Perform active oversight (Consider creating a Third-party Management Committee)
  - Ensure robust contractual provisions (Access, Audit, Incident Reporting, Liability, Termination)
PRIMARY TAKEAWAY:
Be engaged in your organization’s cybersecurity
- Enhances your organization’s resiliency posture
- Builds relational ties between compliance and other verticals
- Demonstrates value of Compliance to organization

QUESTIONS?
Cybersecurity Resources

The following are a series of expert blogs that offer cybersecurity background and news:

- https://krebsonsecurity.com
- https://www.privacyrights.org
- https://www.csoonline.com
- https://www.securityforum.org
- https://bankinfosecurity.com
- https://lawandsecurity.org
- https://darkwebnews.com
- https://thehackernews.com
- https://www.tripwire.com/state-of-security/
- https://www.schneier.com/
- https://nakedsecurity.sophos.com/
- https://www.darkreading.com/
- https://taosecurity.com/
- https://twitter.com/threatpost
- http://resources.infosecinstitute.com