

# DEVELOPING CYBERSECURITY PROGRAMS AND POLICIES



## Developing Cybersecurity Programs and Policies

**Omar Santos** 



## Developing Cybersecurity Programs and Policies

#### **Table of Contents**

$(\cdot, \alpha)$	vei	ľ

Title Page

Copyright Page

About the Author

Contents

Chapter 1: Understanding Cybersecurity Policy and

Governance

Information Security vs. Cybersecurity Policies

Looking at Policy Through the Ages

Policy in Ancient Times

The United States Constitution as a Policy Revolution

Policy Today

#### Cybersecurity Policy

What Are Assets?

Successful Policy Characteristics

What Is the Role of Government?

Additional Federal Banking Regulations

Government Cybersecurity Regulations in Other Countries

The Challenges of Global Policies

#### Cybersecurity Policy Life Cycle

Policy Development

Policy Publication



Policy Adoption Policy Review

Summary

## Chapter 2: Cybersecurity Policy Organization, Format, and Styles

#### **Policy Hierarchy**

Standards

**Baselines** 

Guidelines

**Procedures** 

Plans and Programs

#### Writing Style and Technique

Using Plain Language

The Plain Language Movement

Plain Language Techniques for Policy Writing

#### **Policy Format**

**Understand Your Audience** 

Policy Format Types

Policy Components

Summary

#### Chapter 3: Cybersecurity Framework

#### Confidentiality, Integrity, and Availability

What Is Confidentiality?

What Is Integrity?

What Is Availability?

Who Is Responsible for CIA?

#### NISTs Cybersecurity Framework

What Is NISTs Function?



So, What About ISO?

NIST Cybersecurity Framework

ISO Standards

#### Summary

#### Chapter 4: Governance and Risk Management

#### **Understanding Cybersecurity Policies**

What Is Governance?

What Is Meant by Strategic Alignment?

Regulatory Requirements

User-Level Cybersecurity Policies

Vendor Cybersecurity Policies

Cybersecurity Vulnerability Disclosure Policies

Client Synopsis of Cybersecurity Policies

Who Authorizes Cybersecurity Policy?

What Is a Distributed Governance Model?

**Evaluating Cybersecurity Policies** 

Revising Cybersecurity Policies: Change Drivers

NIST Cybersecurity Framework Governance Subcategories and Informative References

Regulatory Requirements

#### Cybersecurity Risk

Is Risk Bad?

Understanding Risk Management

Risk Appetite and Tolerance

What Is a Risk Assessment?

Risk Assessment Methodologies

#### Summary

## Chapter 5: Asset Management and Data Loss Prevention Information Assets and Systems



Who Is Responsible for Information Assets?

#### Information Classification

How Does the Federal Government Classify Data?

Why Is National Security Information Classified Differently?

Who Decides How National Security Data Is Classified?

How Does the Private Sector Classify Data?

Can Information Be Reclassified or Even Declassified?

#### Labeling and Handling Standards

Why Label?

Why Handling Standards?

#### Information Systems Inventory

Why an Inventory Is Necessary and What Should Be Inventoried

### Understanding Data Loss Prevention Technologies Summary

#### Chapter 6: Human Resources Security

#### The Employee Life Cycle

What Does Recruitment Have to Do with Security?

What Happens in the Onboarding Phase?

What Is User Provisioning?

What Should an Employee Learn During Orientation?

Why Is Termination Considered the Most Dangerous Phase?

#### The Importance of Employee Agreements

What Are Confidentiality or Nondisclosure Agreements?

What Is an Acceptable Use Agreement?

#### The Importance of Security Education and Training

Influencing Behavior with Security Awareness

Teaching a Skill with Security Training

Security Education Is Knowledge Driven

Summary



#### Chapter 7: Physical and Environmental Security

Understanding the Secure Facility Layered Defense Model

How Do We Secure the Site?

How Is Physical Access Controlled?

#### **Protecting Equipment**

No Power, No Processing?

How Dangerous Is Fire?

What About Disposal?

Stop, Thief!

#### Summary

#### Chapter 8: Communications and Operations Security

#### Standard Operating Procedures

Why Document SOPs?

**Developing SOPs** 

#### **Operational Change Control**

Why Manage Change?

Why Is Patching Handled Differently?

#### Malware Protection

Are There Different Types of Malware?

How Is Malware Controlled?

What Is Antivirus Software?

#### **Data Replication**

Is There a Recommended Backup or Replication Strategy?

#### Secure Messaging

What Makes Email a Security Risk?

Are Email Servers at Risk?

Other Collaboration and Communication Tools

Activity Monitoring and Log Analysis



What Is Log Management?

#### Service Provider Oversight

What Is Due Diligence?

What Should Be Included in Service Provider Contracts?

#### Threat Intelligence and Information Sharing

How Good Is Cyber Threat Intelligence if It Cannot Be Shared?

Summary

#### Chapter 9: Access Control Management

#### Access Control Fundamentals

What Is a Security Posture?

How Is Identity Verified?

What Is Authorization?

Accounting

#### Infrastructure Access Controls

Why Segment a Network?

What Is Layered Border Security?

Remote Access Security

#### User Access Controls

Why Manage User Access?

What Types of Access Should Be Monitored?

Summary

#### Chapter 10: Information Systems Acquisition,

Development, and Maintenance

#### System Security Requirements

What Is SDLC?

What About Commercially Available or Open Source Software?

The Testing Environment

**Protecting Test Data** 



#### Secure Code

The Open Web Application Security Project (OWASP)

#### Cryptography

Why Encrypt?

Regulatory Requirements

What Is a Key?

What Is PKI?

Why Protect Cryptographic Keys?

Digital Certificate Compromise

#### Summary

#### Chapter 11: Cybersecurity Incident Response

#### Incident Response

What Is an Incident?

How Are Incidents Reported?

What Is an Incident Response Program?

The Incident Response Process

Tabletop Exercises and Playbooks

Information Sharing and Coordination

Computer Security Incident Response Teams

Product Security Incident Response Teams (PSIRTs)

Incident Response Training and Exercises

#### What Happened? Investigation and Evidence Handling

**Documenting Incidents** 

Working with Law Enforcement

Understanding Forensic Analysis

#### **Data Breach Notification Requirements**

Is There a Federal Breach Notification Law?

Does Notification Work?

Summary



#### Chapter 12: Business Continuity Management

#### **Emergency Preparedness**

What Is a Resilient Organization?

Regulatory Requirements

#### **Business Continuity Risk Management**

What Is a Business Continuity Threat Assessment?

What Is a Business Continuity Risk Assessment?

What Is a Business Impact Assessment?

#### The Business Continuity Plan

Roles and Responsibilities

Disaster Response Plans

Operational Contingency Plans

The Disaster Recovery Phase

The Resumption Phase

#### Plan Testing and Maintenance

Why Is Testing Important?

Plan Maintenance

Summary

#### Chapter 13: Regulatory Compliance for Financial Institutions

#### The Gramm-Leach-Bliley Act

What Is a Financial Institution?

Regulatory Oversight

What Are the Interagency Guidelines?

#### New Yorks Department of Financial Services Cybersecurity Regulation (23 NYCRR Part 500)

#### What Is a Regulatory Examination?

**Examination Process** 

**Examination Ratings** 



#### Personal and Corporate Identity Theft

What Is Required by the Interagency Guidelines Supplement A?

What Is Required by the Supplement to the Authentication in an Internet Banking Environment Guidance?

#### Summary

#### Chapter 14: Regulatory Compliance for the Health-Care Sector

#### The HIPAA Security Rule

What Is the Objective of the HIPAA Security Rule?

How Is the HIPAA Security Rule Organized?

What Are the Physical Safeguards?

What Are the Technical Safeguards?

What Are the Organizational Requirements?

What Are the Policies and Procedures Standards?

The HIPAA Security Rule Mapping to NIST Cybersecurity Framework

#### The HITECH Act and the Omnibus Rule

What Changed for Business Associates?

What Are the Breach Notification Requirements?

Understanding the HIPAA Compliance Enforcement Process Summary

#### Chapter 15: PCI Compliance for Merchants

#### Protecting Cardholder Data

What Is the PAN?

The Luhn Algorithm

What Is the PCI DDS Framework?

Business-as-Usual Approach

What Are the PCI Requirements?

#### PCI Compliance

Who Is Required to Comply with PCI DSS?



What Is a Data Security Compliance Assessment?
What Is the PCI DSS Self-Assessment Questionnaire (SAQ)?
Are There Penalties for Noncompliance?

Summary

Chapter 16: NIST Cybersecurity Framework

Introducing the NIST Cybersecurity Framework Components

The Framework Core

Identify

Protect

Detect

Respond

Recover

Framework Implementation Tiers (Tiers)

Who Should Coordinate the Framework Implementation?

NISTs Recommended Steps to Establish or Improve a Cybersecurity Program

Communication with Stakeholders and Supply Chain Relationships

NISTs Cybersecurity Framework Reference Tool

Adopting the NIST Cybersecurity Framework in Real Life Summary

Appendix A: Cybersecurity Program Resources

Appendix B: Answers to the Multiple Choice Questions

Index

