

Chapter 11

Computer Crime and Information Technology Security

Outline

- Expected outcomes
- Computer crime
- Risks and threats
- Computer criminals
- Internal control issues
- CoBIT framework

Expected outcomes

- Explain Carter's taxonomy of computer crime.
- Identify and describe business risks and threats to information systems.
- Name & describe common types of computer criminals.
- Discuss ways to prevent & detect computer crime.
- Explain CoBIT's information criteria & accountability framework.
- Explain how CoBIT can be used to strengthen internal controls against computer crime.

Computer crime

- Carter's taxonomy
 - Target
Targets the system or its data
 - Instrumentality
Uses computer to further a criminal end; i.e., to commit the crime
 - Incidental
Computer not required, but related to crime
 - Associated
New versions of old crimes
- A single crime can fit more than one category.

Risks and threats

- Fraud
- Error
- Service interruption and delays
- Disclosure of confidential information
- Intrusions
- Information theft
- Information manipulation
- Malicious software
- Denial-of-service attacks
- Web site defacements
- Extortion

Computer criminals

- Script kiddies
 - Hackers
 - Cyber-criminals
 - Organized crime
 - Corporate spies
 - Terrorists
 - Insiders
- **Lecture break 11-1**
 - Divide the class into seven groups.
 - Assume the “identity” of one type of computer criminal.
 - Suggest how your “type” might enact one or two of the risks / threats from the previous slide.

Internal control issues

- C-I-A- triad

With respect to information systems, organizations need to protect:

- Confidentiality
- Integrity
- Availability



Internal control issues

- Physical controls
 - Protect the physical aspects of information systems
 - Examples
 - Locked doors
 - Security personnel
 - Alarm systems

Internal control issues

- Technical controls
 - Protect electronic aspects of information system
 - Examples
 - Firewalls
 - Data encryption
 - Anti-virus software

Internal control issues

- Administrative controls
 - Policies that may relate to either physical and / or electronic aspects of the system
 - Examples
 - Password strength and rotation policies
 - Adequate supervision
 - Procedures manuals

Internal control issues

- **Lecture break 11-2**
 - Consider the work you completed in Lecture break 11-1.
 - Suggest one helpful internal control in each category:
 - Physical
 - Technical
 - Administrative

CoBIT framework

- Developed by Information Systems Audit and Control Association (www.isaca.org)
- Control Objectives for Information and Related Technology
- Comprehensive framework for addressing the totality of an organization's IT

CoBIT framework

- Components
 - Domains of knowledge: tasks to complete
 - Plan and organize
 - Acquire and implement
 - Deliver and support
 - Monitor and evaluate
 - Notice the connection with the systems development life cycle
- Points of view: issues to consider in each domain
 - Business objectives: how does each domain relate to the entity's overall goals?
 - Information technology resources: what IT resources are needed within each domain?
 - Information technology processes: how should those resources be managed?

CoBIT framework

- Components
 - **Information criteria:**
what characteristics
should the information
have to make it most
useful?
- ❖ Effectiveness
 - ❖ Efficiency
 - ❖ Confidentiality
 - ❖ Integrity
 - ❖ Availability
 - ❖ Compliance
 - ❖ Reliability

Notice the relationship between the information criteria, the CIA triad and the qualitative characteristics in the FASB conceptual framework.

CoBIT framework

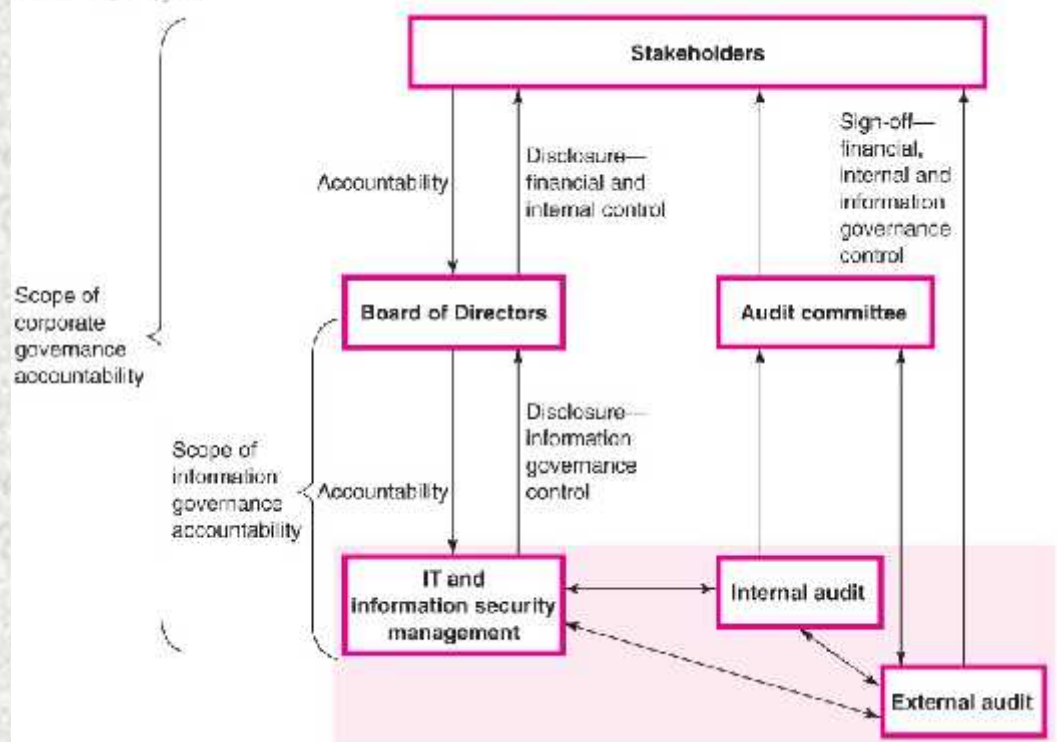
- Components

Accountability

framework: what reporting relationships does an

organization need to ensure everything else is working?

Source: Poels, 2006, p. 24



Classroom assessment

- This chapter has focused on:
 - Carter's taxonomy of computer crime
 - Risks and threats to information systems
 - Computer criminals
 - Internal control issues
 - CoBIT framework
- Which of those areas do you understand best? Prepare a short written summary of it.
- Which do you understand least? Jot down two questions you have about it.

