

Matakuliah : H0472 / Konsep Sistem Informasi

Tahun : 2006

Versi : 1

Pertemuan 10

Membuat dan mengelola resiko dan kriminalitas sistem informasi

Learning Outcomes

Pada akhir pertemuan ini, diharapkan mahasiswa akan mampu :

- Menjelaskan sistem keamanan dan kontrol pada Teknologi Informasi

Outline Materi

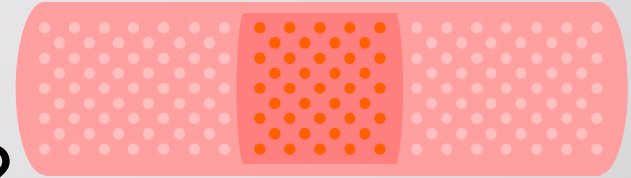
- Ancaman terhadap kegagalan project
- Ancaman terhadap tidak berfungsinya sistem
- Ancaman terhadap kriminalitas komputer

Information System Security and Control

- Threat of Project Failure
- Threat of Accidents and Malfunctions
- Threat of Computer Crime
- Factors That Increase the Risks
- Methods for Minimizing Risks

Introductory Case: London Ambulance Service

- Wow, what a mess!
- What did they do wrong?
- Did they do anything right?
- Was this a system that should have even been attempted?



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Threat of Project Failure

- When can projects fail?

INITIATION

- The reasons for building the system have too little support.
- The system seems too expensive.

DEVELOPMENT

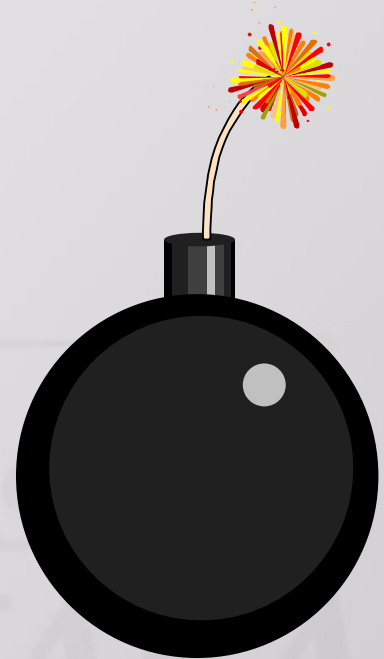
- It is too difficult to define the requirements.
- The system is not technically feasible.
- The project is too difficult is too difficult for technical staff assigned.

IMPLEMENTATION

- The system requires too great a change from existing work practices.
- Potential users dislike the system or resist using it.
- Too little effort is put into the implementation.

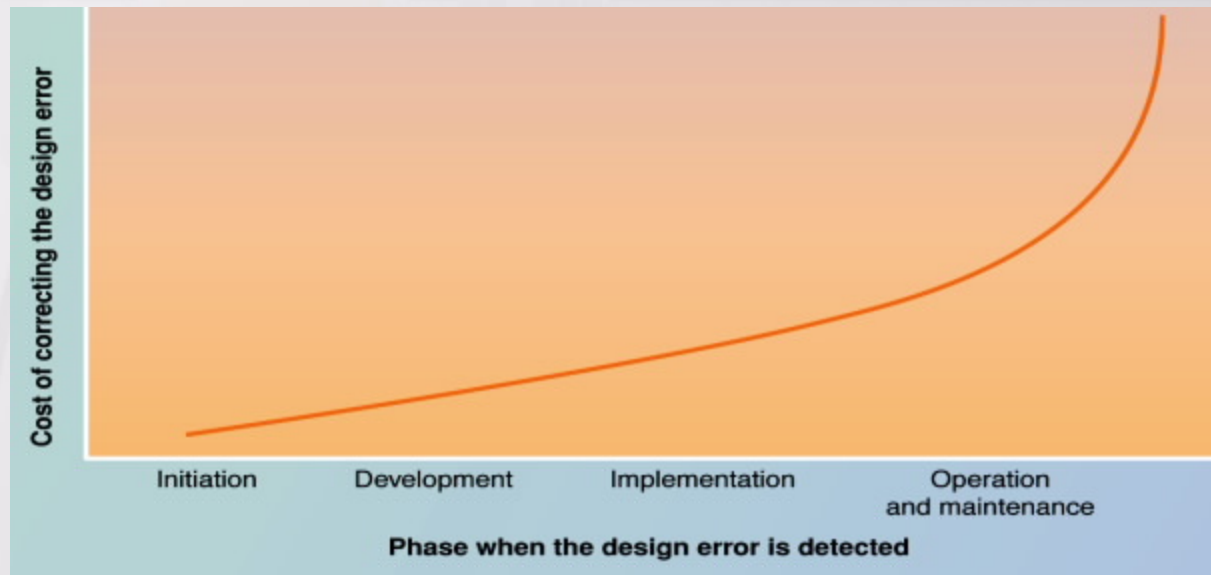
OPERATION AND MAINTENANCE

- System controls are insufficient.
- Too little effort goes into supporting effective use.
- The system is not updated as business needs change.



Threat of Project Failure

- Remember this?
- What do you think the curve would look like for cost of failure?



Threat of Accidents and Malfunctions

- Operator error
- Hardware malfunction
 - Intel Pentium bug
 - Was like the embedded chip issue for Y2K
- Software bugs
- Data errors
- Damage to physical facilities
 - We'll talk more about this for disaster recovery
- Inadequate system performance
 - London ambulance case

Threat of Computer Crime

- Theft
 - Physical (esp. laptops)
 - Case of a laptop taken from the Pentagon in a conference room...
 - Recently heard about Silicon Valley exec who lost laptop
 - CCI insurance
 - Logical
 - Unauthorized use
 - Fraudulent data entry
 - Unauthorized use/modification of data
- Sabotage and Vandalism
 - Trap door, Trojan Horse, Virus



Factors that Increase Risk

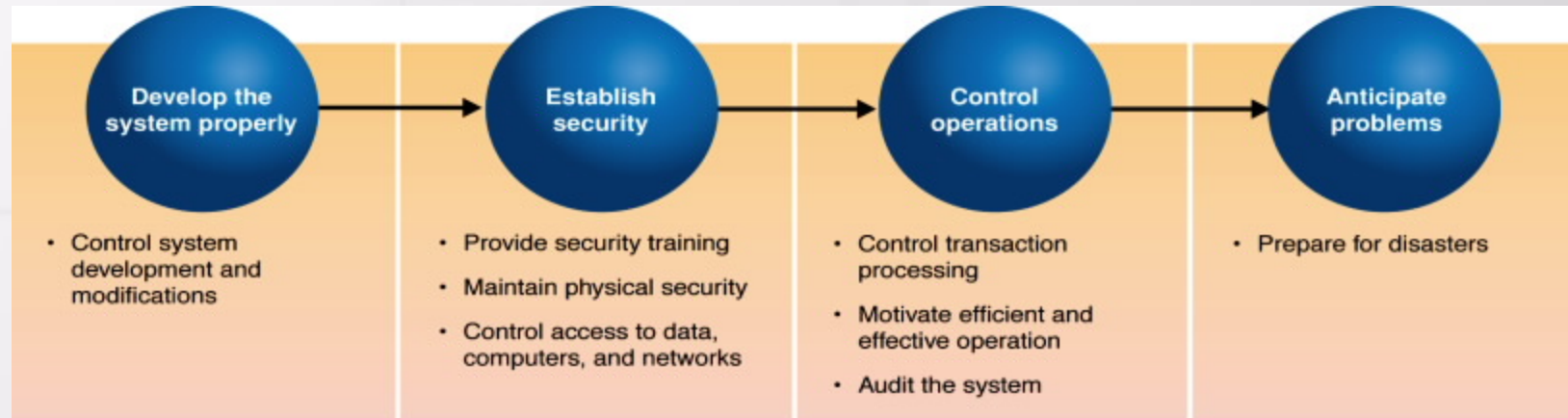
- Nature of Complex Systems
- Human Limitations
- Pressures in the Business Environment



Methods for Minimizing Risks

- Controlling System Development and Modifications
- Providing Security Training
- Maintaining Physical Security
- Controlling Access to Data, Computers, and Networks
- Controlling Transaction Processing
- Motivating Efficient and Effective Operation
- Auditing the Information System
- Preparing for Disasters

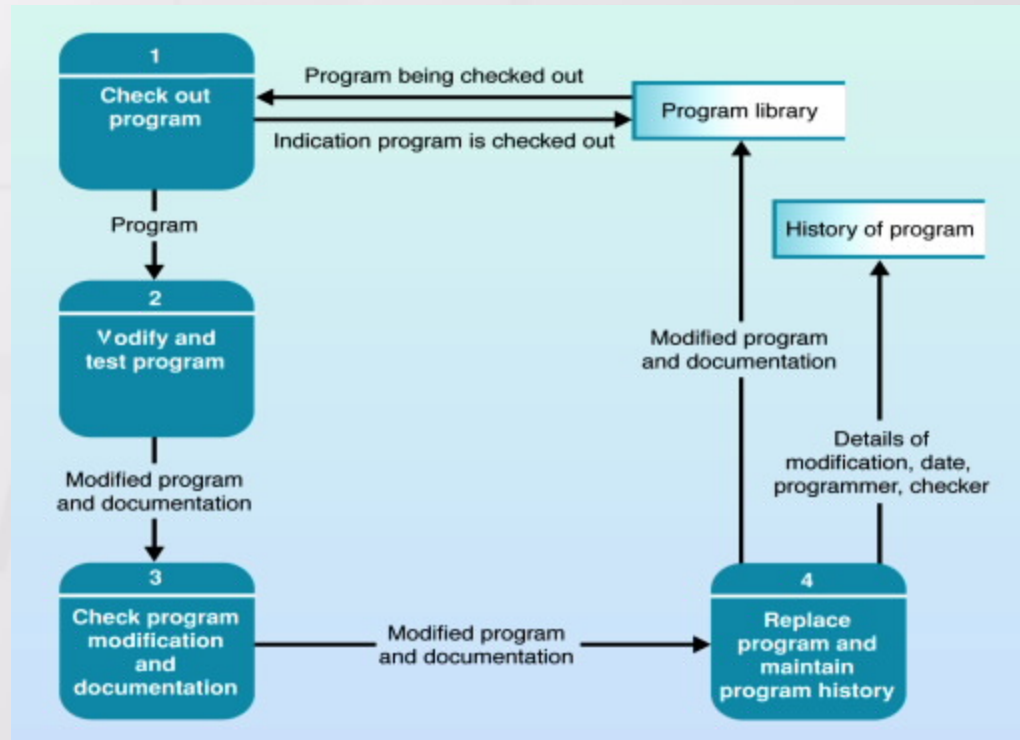
Minimize Risks...



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Build the system correctly...

- Software change control



Train the users about security...



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Maintain physical security...

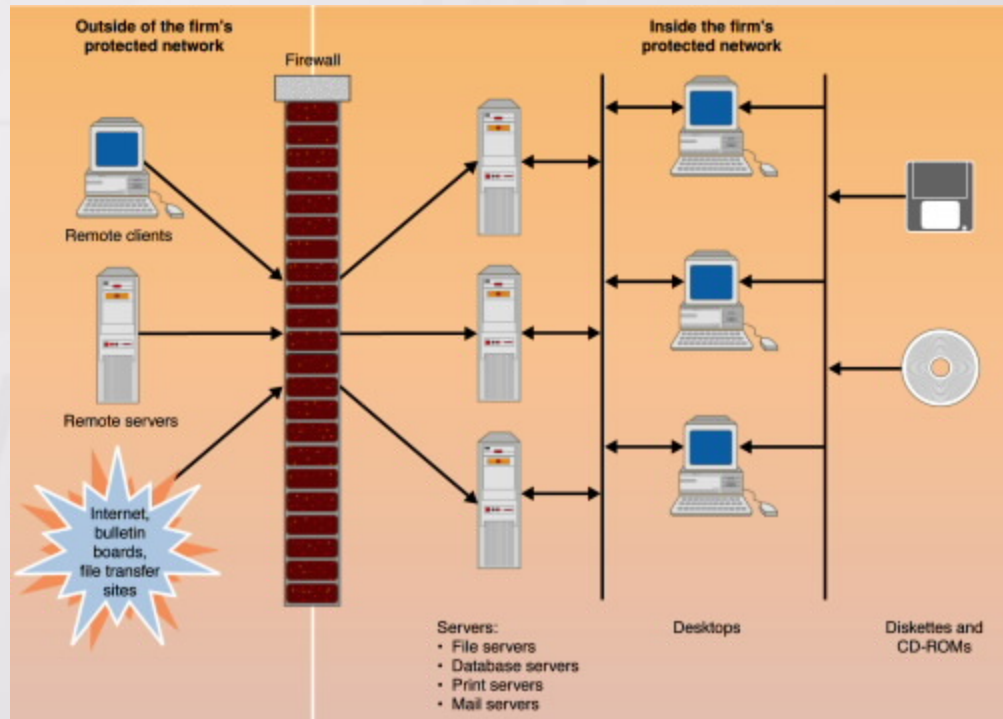


Prevent unauthorized access to hardware and software...

- Manual data handling
- Access privileges
- Access control
 - What you know
 - What you have
 - Where you are
 - Who you are

Prevent unauthorized access to hardware and software...

- Be aware of network issues
 - Encrypt if necessary



Perform transactions

correctly...

- Segregation of duties
- Data validation
- Error correction
- Backup & recovery



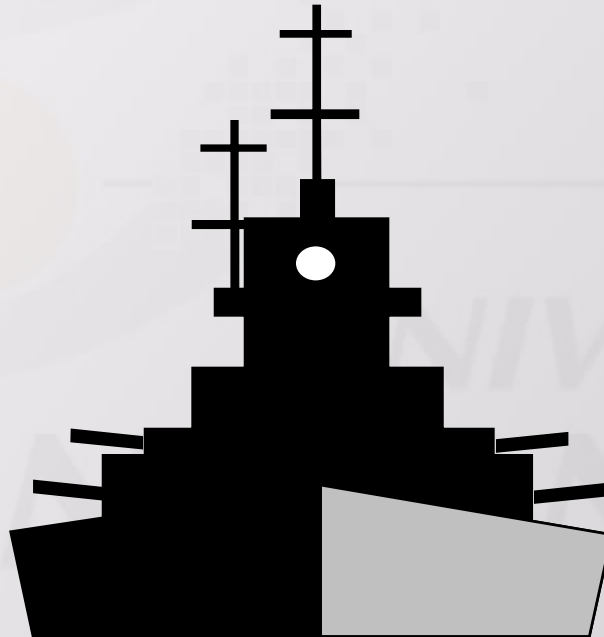
Innovate for efficiency...

- Monitor systems
- Look for opportunities
- Look for incentives
- Look for disincentives



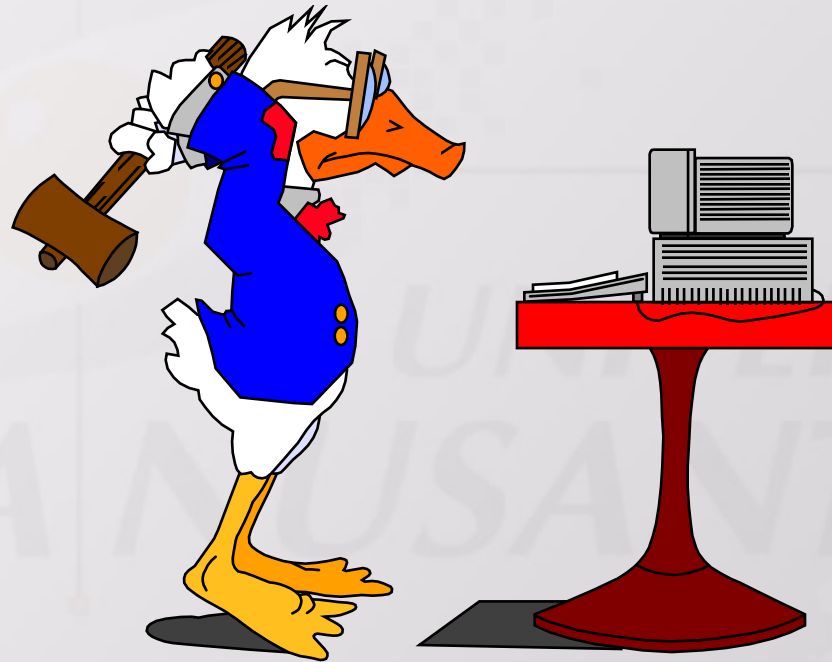
Audit your system...

- Trust but verify...



Prepare for disasters...

- Remember Murphy's Law



Closing

- Ancaman terhadap kegagalan project
- Ancaman terhadap tidak berfungsinya sistem
- Ancaman terhadap kriminalitas komputer