

MANAGEMENT INFORMATION SYSTEMS 8/E

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Chapter 18

Information Resources

Information Systems

Objectives

- Be familiar with the organizational structure of the information services unit.
- Understand the need to MIR on a firmwide basis.
- Know the key elements of a model of an information resources IS.
- Understand how information product and service quality can be achieved by information specialists and users.
- Understand the CIO's responsibility as the manager of information to keep the firm's information resources secure from unauthorized use, disclosure, modification, and destruction.
- Know how consolidation, outsourcing, and downsizing are affecting the CIO and the information services unit.
- Understand that, although the MIS concept has been implemented on a global scale, major differences in how the concept is implemented can exist from one country to another.

Information Resources Include:

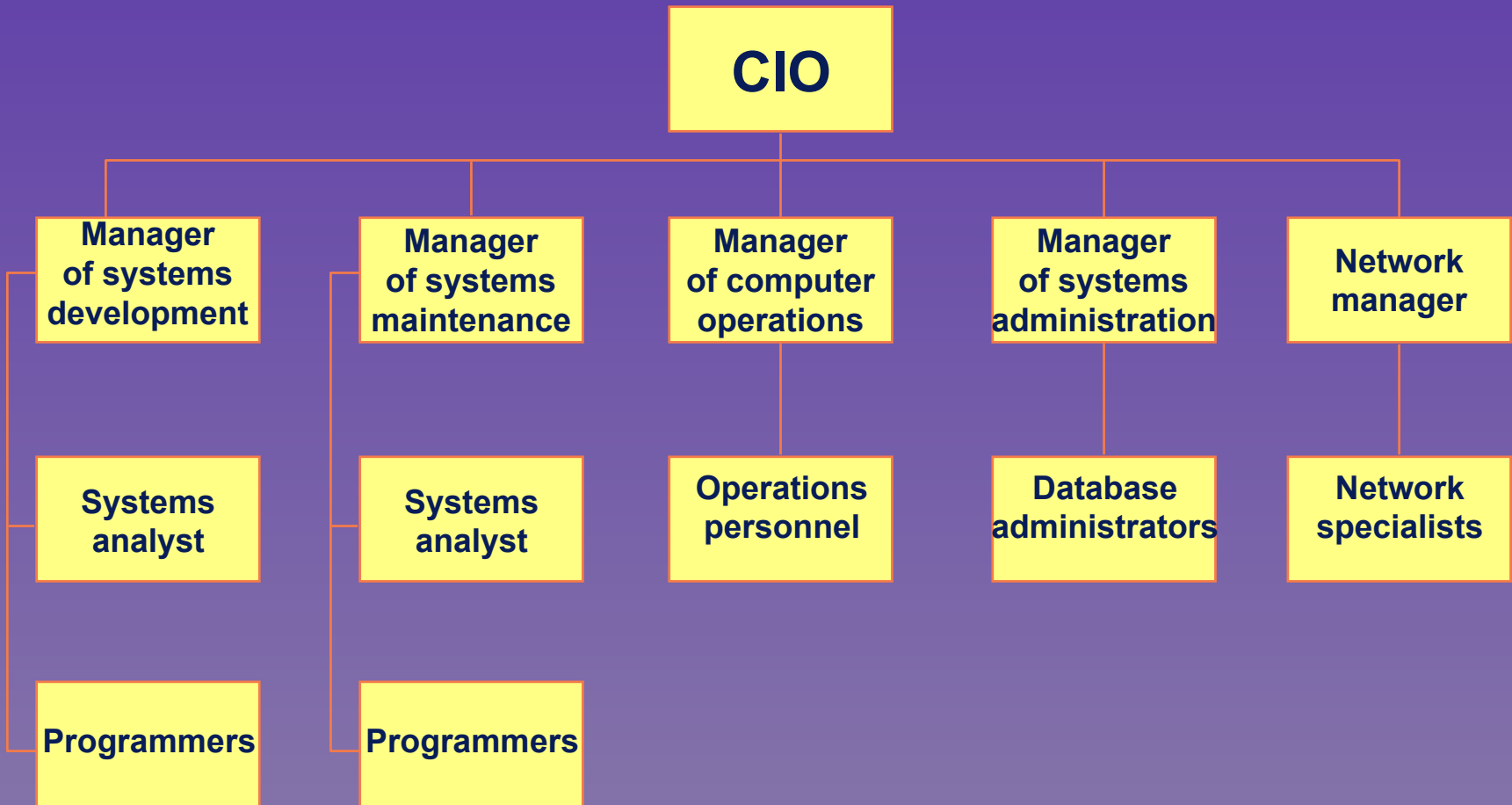
- Specialists
 - Systems analysts, programmers, database administrators, network specialists, operations personnel, and others
- Hardware
- Software
- Users
- Data
- Information

Represents a large
organizational
investment!

Information Specialists

- Most located in the information services unit
- There is a trend to locate specialists throughout the firm
- Actual organization chart depends on the needs of the firm

A Functional Organization Structure for Information Services



Information Resources

- Most are located in information services
- Most that are centrally located are CIO's responsibility
- Those located in functional areas are the responsibility of the area manager

Model of an IRIS

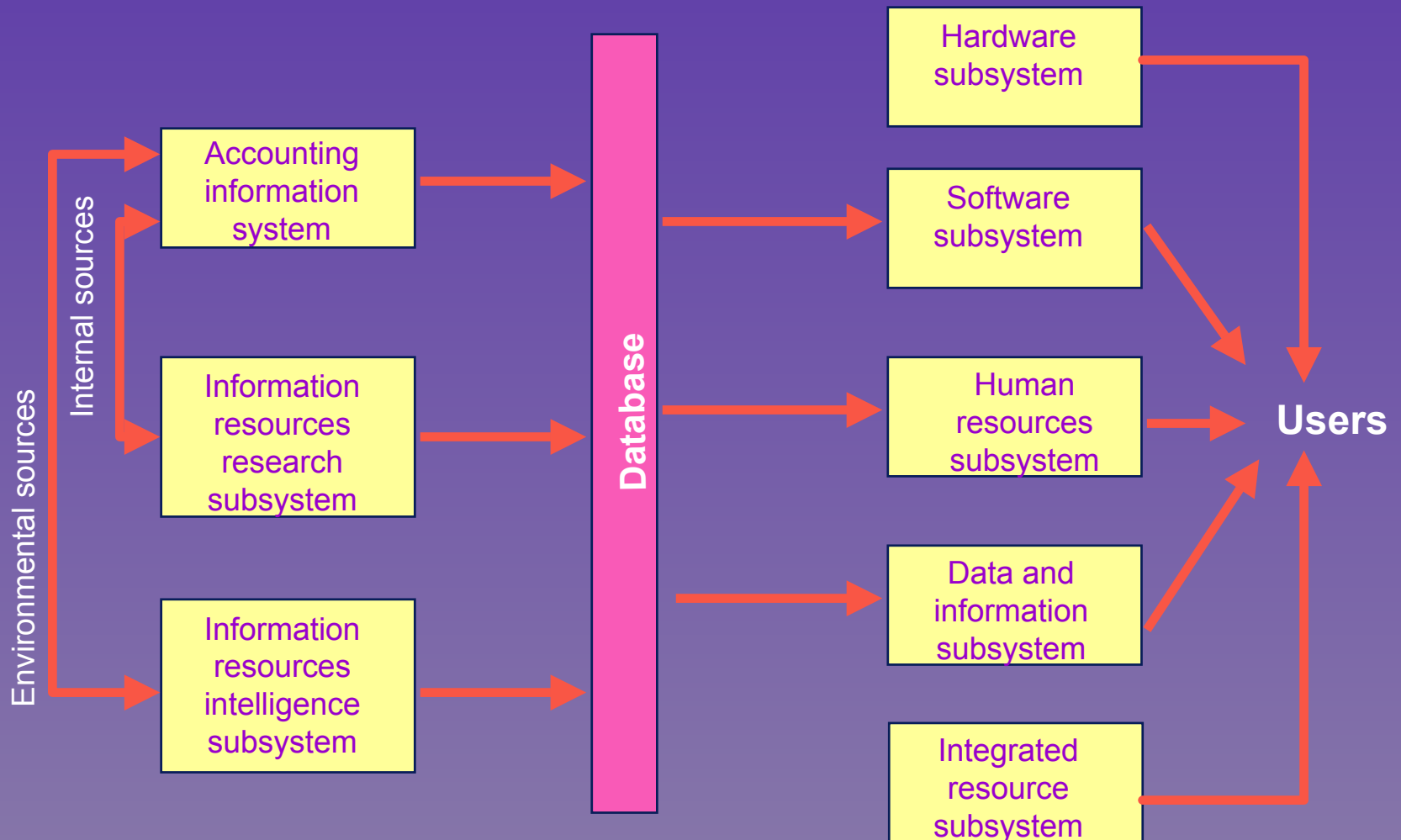
■ Input subsystems

- AIS
- Information resources research
- Information resources intelligence

■ Output subsystems

- Hardware
- Software
- Human resources
- Data and Information
- Integrated resource

A Model of an Information Resources Information System



Information Resources Research Subsystem

- Describes functions involved in special research projects within the firm
- Performed by systems analysts interacting with users

Information Resources Intelligence Subsystem

- Describes functions involved in gathering information from elements in the firm's environment
 - Government
 - Suppliers
 - Labor unions
 - Global community
 - Customers
 - Competitors

CIO Responsibilities

- Can be top-level executive who participates on executive and MIS steering committee
- Contributes to strategic planning for firm and IS functions
- Primary source of leadership for:
 - Achieving and maintaining information quality
 - Keeping information resources secure
 - Planning for contingencies
 - Keeping information costs under control

Achieving Quality Products and Services

- 1) Identify IS customers
 - MIS steering committee
 - Use of a formal system works best
- 2) Define customer quality needs
 - Product quality needs
 - Service quality needs

IS Takes Six Basic Steps in Achieving Quality Management



Comparison of How IS and Middle-Level Manager-Users Perceive Product Quality

Dimension	Perceived Value		
	IS	User	Aggregate
Accurate	4.91	4.88	4.89
Trusts output	4.90	4.86	4.87
Works as specified	4.75	4.73	4.73
User friendly	4.50	4.75	4.68
Relevant	4.59	4.53	4.53
Fast response time	4.12	4.55	4.42
Meets all user needs	4.22	4.48	4.41
No downtime	3.96	4.25	4.16
Delivered on time	3.80	4.16	4.05
Has user documentation	4.21	3.93	4.01
Can be changed quickly	3.84	4.04	3.98
Delivered on budget	3.45	3.67	3.61
Low cost of operation	3.19	3.49	3.40
Has programmer documentation	3.74	3.23	3.39
Uses new technology	3.04	3.28	3.21

Achieving Quality Products and Services (cont.)

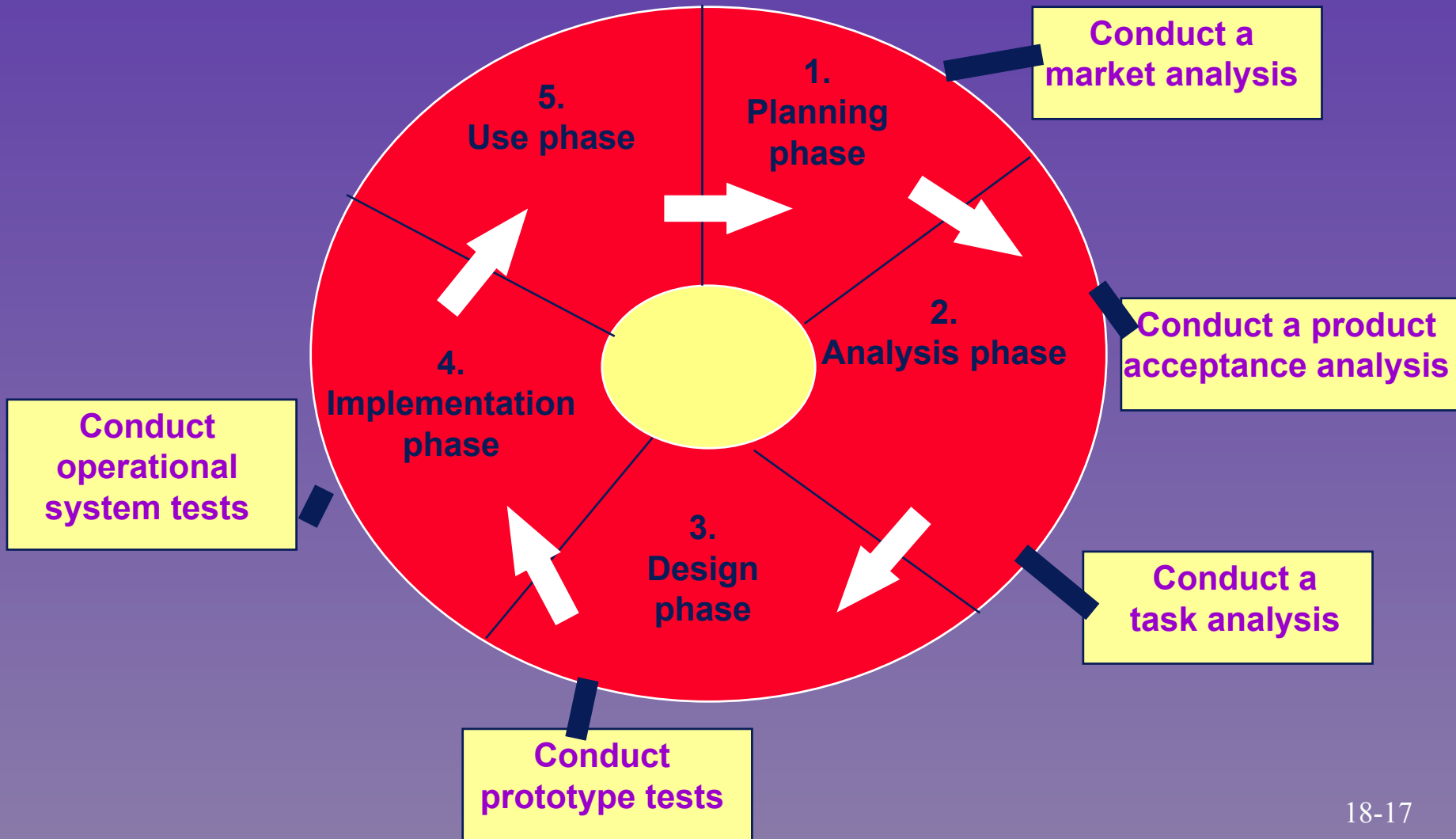
- 3) Establish quality metrics
 - Information *product* quality
 - Information *service* quality
- 4) Define the IS quality strategy
 - Recruiting and training
 - User-oriented systems development
 - » Market analysis
 - » Product acceptance analysis
 - » Task analysis
 - » Prototype tests
 - » Operational Systems tests

Basic Competencies Expected of IS Job Applicants

1. Concern for effectiveness
2. Initiative
3. Enthusiasm for work
4. Self-confidence
5. Concern with impact
6. Interpersonal astuteness
7. Conceptual thinking
8. Analytical thinking
9. Effective communication
10. Flexibility

See Table 18.2

Special Attention to Human Factors Ensures That Users' Needs are Incorporated into Systems Designs



Achieving Quality Products and Services (cont.)

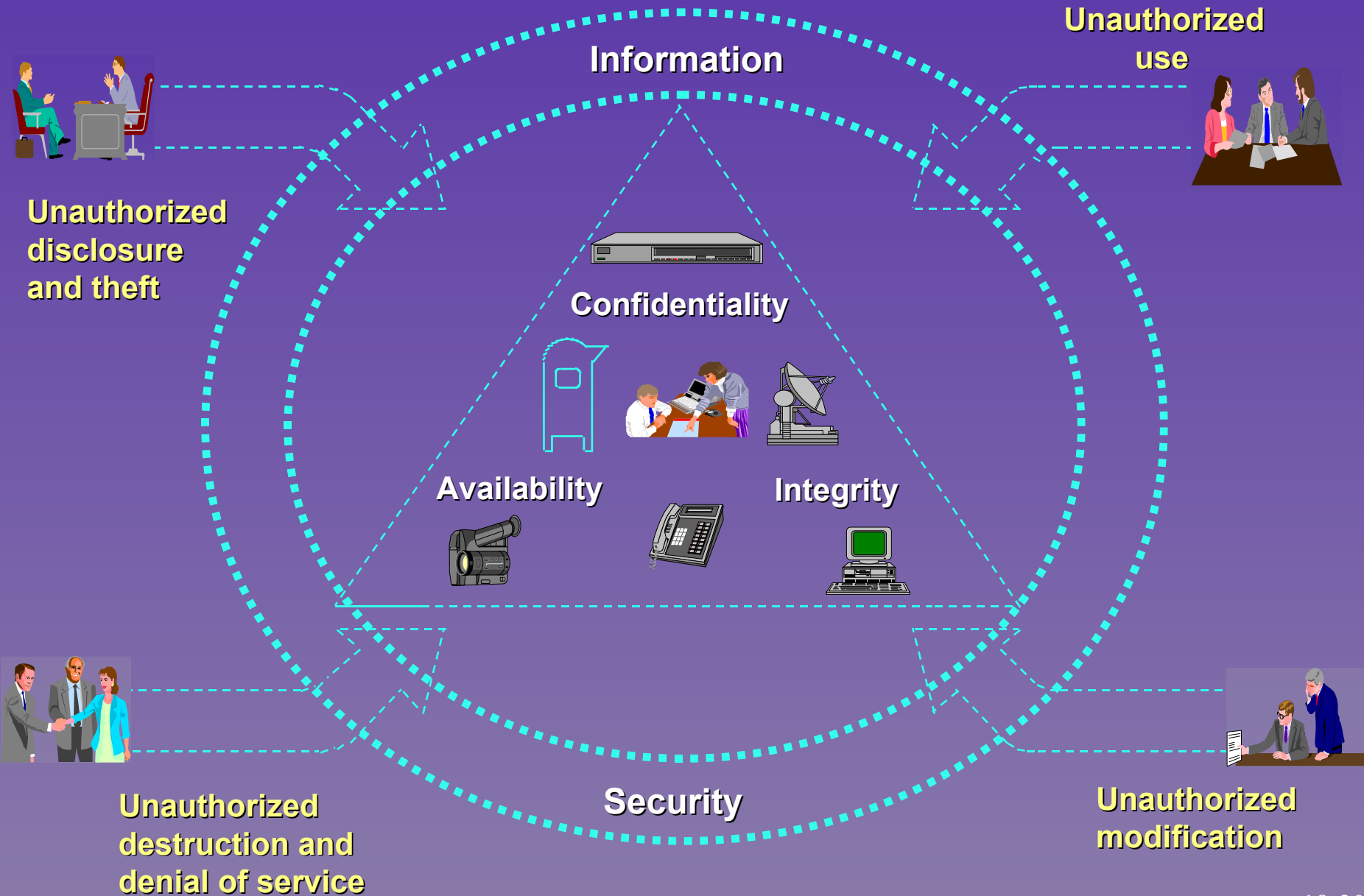
- 5) Implement IS quality programs
 - Implementation varies with firm
- 6) Monitor IS quality
 - Performance of IS specialists and the unit

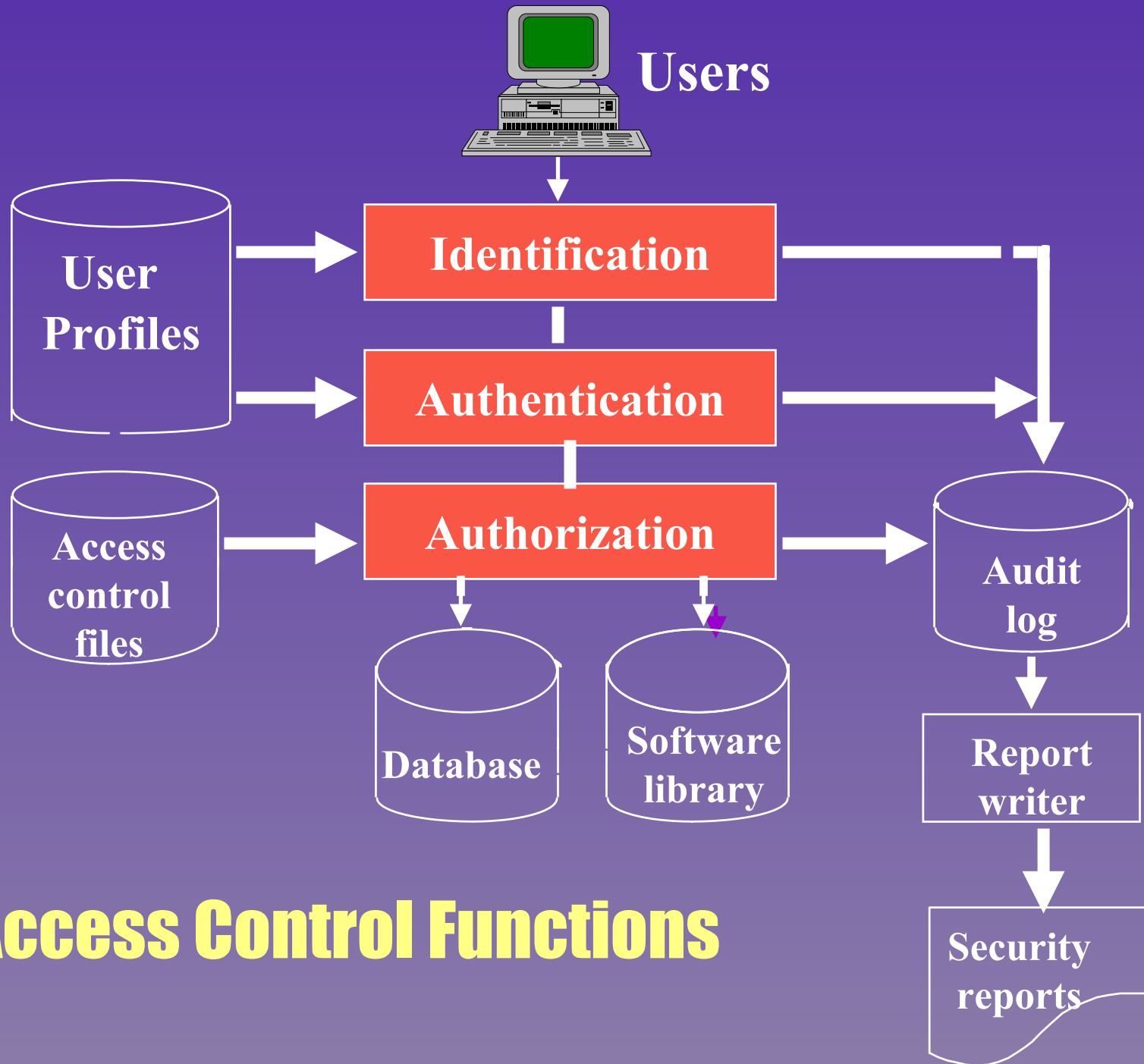
Security Objectives

- Confidentiality
- Availability
- Integrity

Current attention is focused on malicious software such as computer viruses.

Unauthorized Acts Threaten System Security Objectives





Access Control Functions

Access Control

■ Identification

- What you know (password) or
- Where you are (terminal location)

■ Authentication

- What you have (badge)

■ Authorization

- Level of use

*High-grade threats are
from sophisticated
computer criminals*

Contingency Planning

- Emergency plan
- Backup plan
 - Redundancy
 - Diversity
 - Mobility
 - » Reciprocal agreement
 - » Hot site
 - » Cold site
 - » Empty shell

Vital Records Plan

- Electronic vaulting
 - Day end backup of files electronically
- Remote journaling
 - Transmission of transaction data as the transactions occur
 - Used to update remote database in batch form later
- Database shadowing
 - Involves updating of duplicate database at remote site as transaction occur

Cost-Reduction Strategies

■ Consolidation

- Reduces number of separate locations for information resources
- Easiest to achieve in terms of information resources
- More difficult by end-user computing needs

Cost-Reduction Strategies (cont.)

■ Downsizing

- Migrating to smaller platforms
- Advantage of cost reduction
- Advantage of increased productivity with PCs located in user areas
- Risk of lost security

Cost-Reduction Strategies [cont.]

■ Outsourcing

- Data entry and simple processing (editing, formatting)
- Contract programming
- Facilities management (FM)
- Systems integration (SI)
- Support for maintenance, service, or disaster recovery

Objectives of Outsourcing

- Manage costs better
- Reduce
- Contain
- Predict
- Obtain relief from systems maintenance so as to concentrate on new system development
- Acquire needed expertise

Information Management in Three Pacific Rim Countries

- Countries were U.S., Korea, and Mexico
- Centralization versus decentralization
 - Most firms were centralized
- CIO participation in strategic business planning
 - CIO has a long way to go before achieving status as a top-level executive

Information Management in Three Pacific Rim Countries (cont.)

- Information systems planning
 - Most firms have IS plan
 - CIO is primarily responsible
- Sharing information resources with users
 - In general, CIOs support end-user computing trends

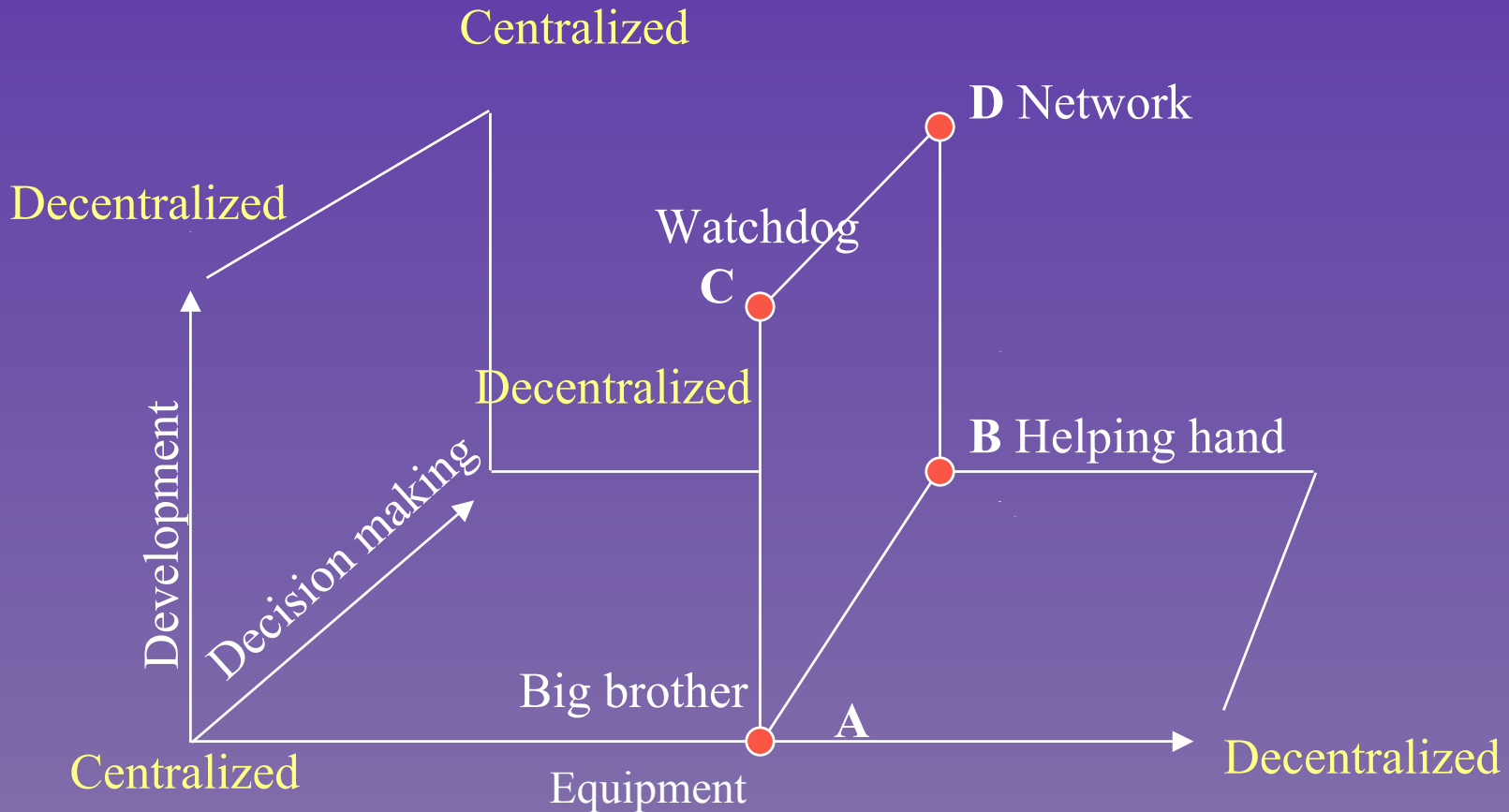
Proactive CIO Strategy

- 1) CIO must emphasize quality management of the IS resource
- 2) Achieve strong user ties
- 3) Strengthen executive ties
- 4) Assemble an IS management team
- 5) Assemble staff competent in leading-edge technologies and methodologies
- 6) Build an IRIS

The Future of the CIO

- Business computing is moving from centralized to decentralized computing in terms of:
 - Equipment
 - Development
 - Decision making
- CIO Roles
 - Big brother
 - Helping hand
 - Watchdog
 - Networker

Donovan's Four Stages of Decentralized Computing



Summary

- Information resources located in IS are the responsibility of the CIO
- IRIS is used to manage information resources within an organization
- CIO must:
 - Promote quality information products and services
 - Ensure security of IS
 - Prepare for disasters

Summary (cont.)

- IS cost cutting considerations
 - Consolidation
 - Downsizing
 - Outsourcing
- CIO can be proactive

Case Study

1. One of the environmental sources for information to the information resources intelligence subsystem is the government.

A) true

B) false

2. Which information resources information subsystem receives input from both internal and external sources?

A) accounting information system

B) information resource rese