Information Systems

Chapter 11
Competencies (Page 1 of 2)

- Explain the functional view of an organization and describe each function.
- Describe the management levels and the informational needs for each level in an organization.
- Discuss how information flows within an organization.
- Discuss computer-based information systems.
Competencies (Page 2 of 2)

- Distinguish among a transaction processing system, a management information system, a decision support system, and an executive support system.
- Distinguish between office automation systems and knowledge work systems.
- Explain the difference between data workers and knowledge workers.
Introduction

- An information system is a collection of people, procedures, software, hardware, and data
  - They all work together to provide information essential to running an organization
  - Computers are used in organizations to keep records of events
- Competent end users need to understand how the information flows as it moves through an organization
Organizational Information Flow

- Information flows vertically and horizontally throughout an organization
- **Information systems** support the natural flow of information within an organization's structure

- **5 Functional Areas**
- **Management Levels**
- **Information Flow**
Five Functions of an Organization

- Accounting
- Marketing
- Human Resources
- Production
- Research
Management is usually divided into three levels: **Top, Middle, and Supervisors**

- **Top managers** are responsible for long-range planning. At HealthWise, the vice president of marketing develops long-term marketing strategies to introduce newly developed products.

- **Middle managers** are responsible for tactical planning. At HealthWise, regional sales managers set sales goals, monitor progress to meet goals, and initiate corrective action as needed.

- **Supervisors** are responsible for operational matters. At HealthWise, a production supervisor monitors the inventory for parts and reorders when low.
Each level of management has different information needs

The information flows to support these needs

- **Top management**
  - Vertical, horizontal, and external
- **Middle management**
  - Vertical and horizontal
- **Supervisor**
  - Primarily vertical
**Top managerial-level information flow** is vertical, horizontal, and external. At HealthWise, the vice president of marketing communicates vertically (with regional sales managers), horizontally (with other vice presidents), and externally to obtain data to forecast sales.

**Middle managerial-level information flow** is vertical and horizontal. At HealthWise, regional sales managers communicate vertically (with district sales managers and the vice president of marketing) and horizontally with other middle-level managers.

**Supervisory-level information flow** is primarily vertical. At HealthWise, production supervisors monitor worker activities to ensure smooth production. They provide daily status reports to middle-level production managers.
Computer-Based Information Systems

**Executive support systems (ESS)** use internal data from MIS and TPS and external data to support top-level managers. At HealthWise, the marketing vice president uses his ESS to view current marketing operations and to develop long-term marketing strategies.

**Decision support systems (DSS)** use data from TPS and a set of flexible analytical tools to support middle managers. At HealthWise, the regional sales managers use the DSS to evaluate the impact of a recent national promotion campaign on regional sales and corporate profit.

**Management information systems (MIS)** use data from the TPS to support middle-level managers. At HealthWise, regional sales managers use their MIS reports to monitor weekly divisional sales and to compare actual sales to established sales goals.

**Transaction processing systems (TPS)** record day-to-day transactions to support supervisors. At HealthWise, production supervisors use their TPS to record and to monitor current inventory levels and production line output.
Transaction Processing Systems (TPS)

- Records day-to-day transactions in a database
- Also called data processing systems (DPS)
- One of the most essential uses of a TPS is in Accounting
TPS for Accounting

- Sales order processing
- Accounts receivable
- Inventory and purchasing
Management Information Systems (MIS)

- Produces standardized reports to support decision-making by middle managers
- Integrates data and summarizes details from databases in a structured form
- Produces predetermined reports
  - Periodic reports
  - Exception reports
  - Demand reports

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Decision Support Systems (DSS)

- Flexible tool for analyzing data for decision-making purposes
- Enables managers to get answers to unexpected and generally non-recurring problems
  - Reports do not have a fixed format
- Microsoft Access is often used to provide an easy front-end interface for performing SQL decision support queries
Parts of a DSS

- **User**
  - A decision-maker, like yourself

- **System software**
  - Operating system
  - Easy to learn and use

- **Data**
  - Internal data
  - External data

- **Decision models**
DSS Decision Models

- **Strategic models**
  - Assists top level management in long-range planning

- **Tactical models**
  - Assists middle-management control the work
  - Financial and sales promotion planning

- **Operational models**
  - Assists lower-level managers accomplish the daily activities and objectives
Executive Support Systems (ESS)

- Designed for top management
- Sophisticated software for presenting, summarizing, and analyzing data, but specifically designed to be easy-to-use
- Provides immediate access to a company's key performance indicators
Other Information Systems

- Information workers
  - Data workers
  - Knowledge workers
- Office automation systems (OASs)
  - Supports data workers
  - Project management programs
  - Videoconferencing systems
- Knowledge work systems (KWSs)
  - Use specialized systems, such as CAD/CAM
- Information systems managers oversee the work of programmers, computer specialist, systems analysts, and other computer professionals

- Employers look for individuals with strong technical backgrounds, with a Master’s degree
  - Strong leadership and communications skills

- Information systems managers can expect to earn from $79,000 to $129,500 annually
A Look to the Future

- Information overload
  - May have a negative effect
  - E-mail is one of the major sources of overload

- How to handle e-mail
  - Be selective
  - Remove
  - Protect
  - Be brief
  - Stop spam
  - Don't respond
Name and discuss the five common functions of most organizations.

Discuss the roles of the three kinds of management in a corporation.

What are the four most common computer-based information systems?
Open-Ended Questions (Page 2 of 2)

- Describe the different reports and their roles in managerial decision making.

- What is the difference between an office automation system and a knowledge work system?