



# 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



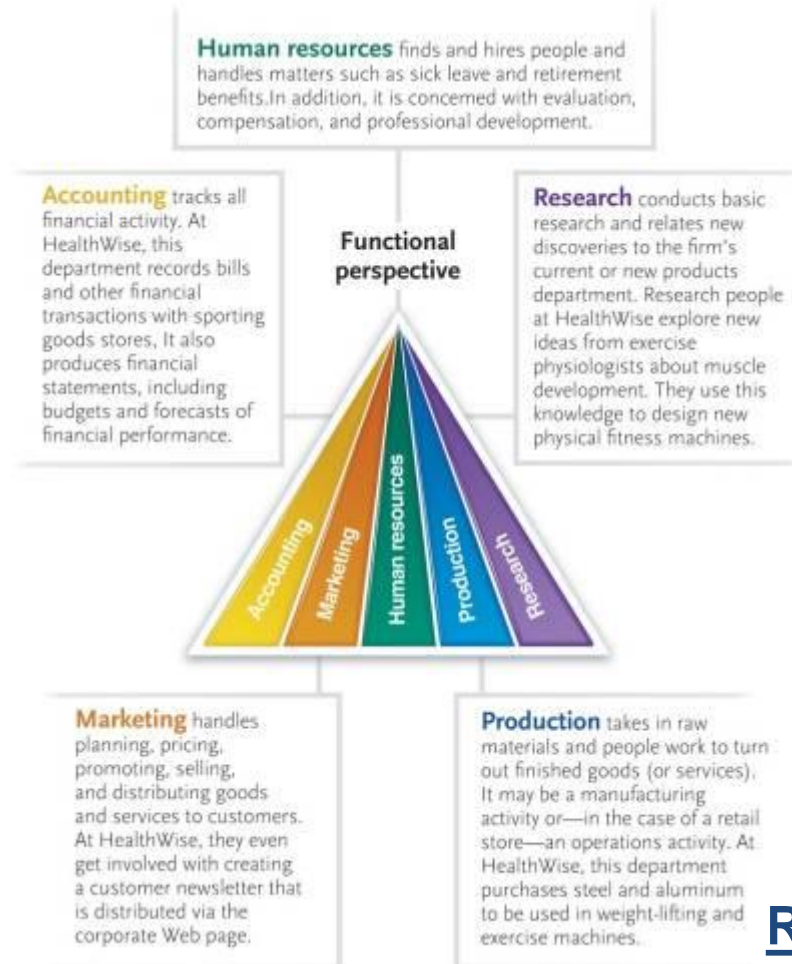
# Organizational Information Flow

- 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



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# Management Levels

- Management is usually divided into three levels: **Top**, **Middle**, and **Supervisors**



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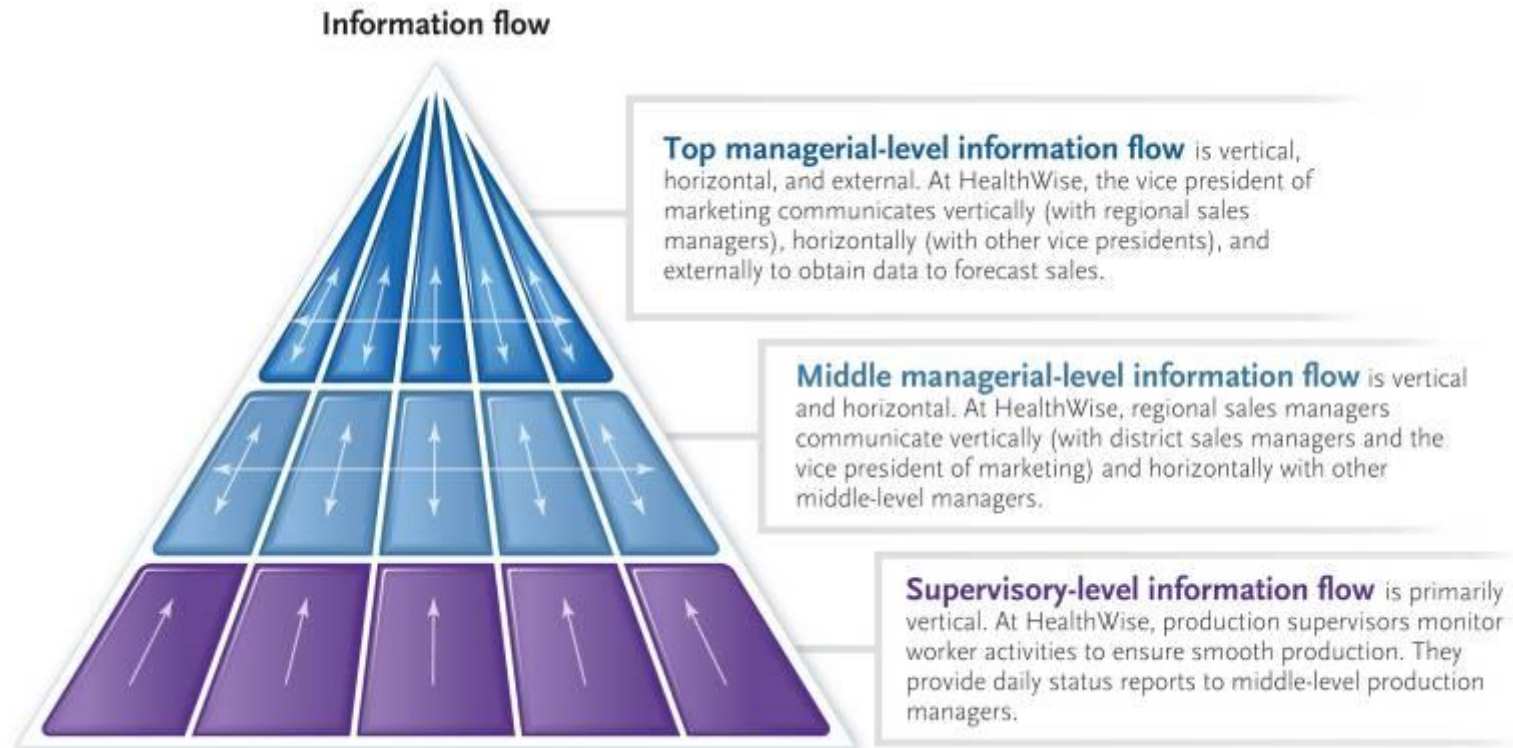
# Information Flow (Page 1 of 2)

- 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



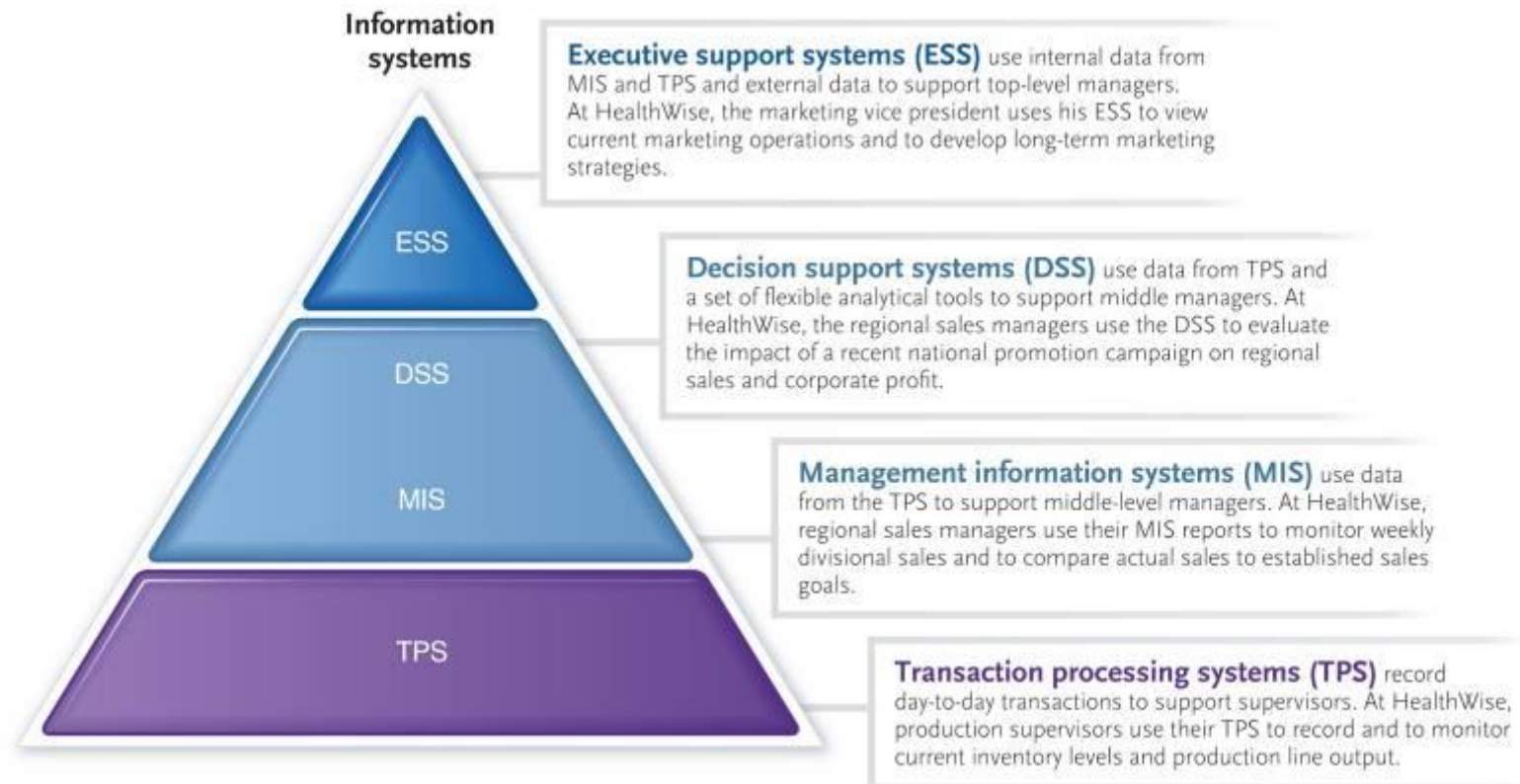


# Information Flow (Page 2 of 2)



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# Computer-Based Information Systems



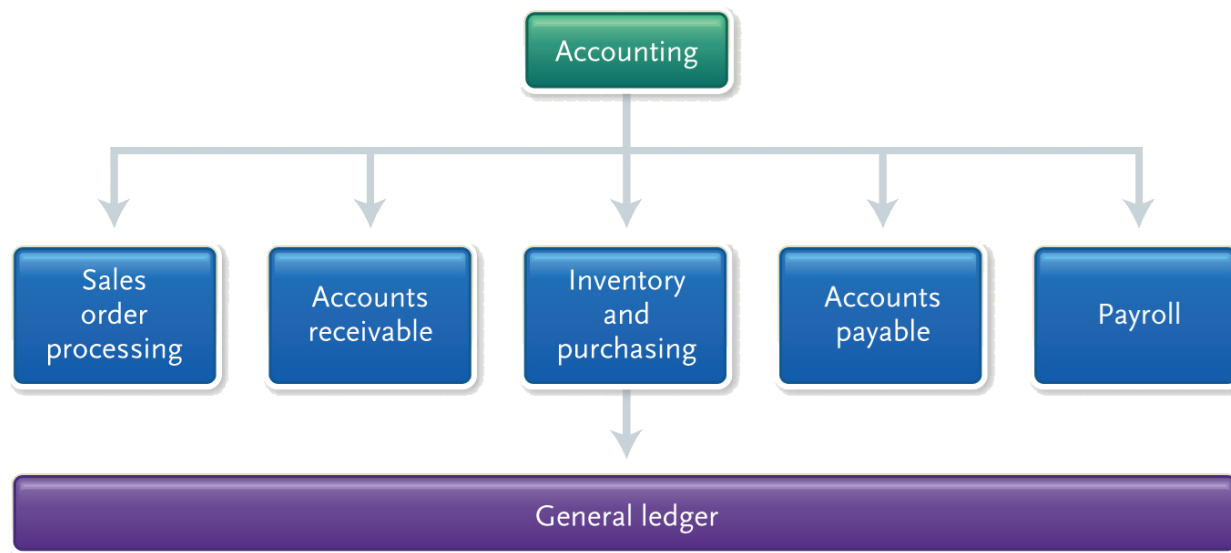
# Transaction Processing Systems (TPS)

- 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



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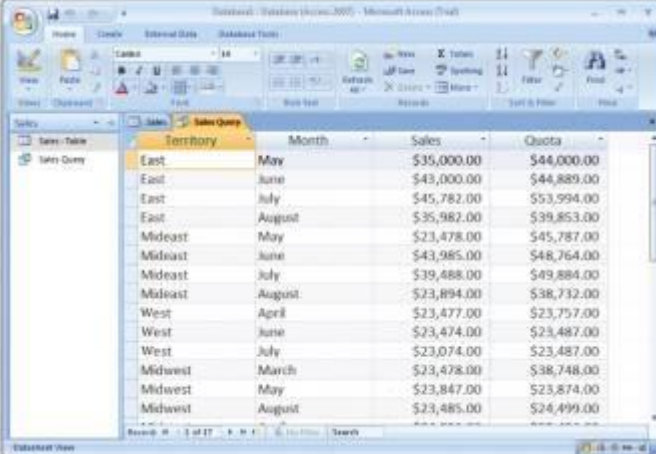
# Management Information Systems (MIS)

- 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

Region	Actual Sales	Target	Difference
Central	\$166,430	\$175,000	(\$8,570)
Northern	137,228	130,000	7,228
Southern	137,772	135,000	2,772
Eastern	152,289	155,000	(2,711)
Western	167,017	160,000	7,017

# 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



The screenshot shows a Microsoft Access window displaying a data table. The table has four columns: Territory, Month, Sales, and Quota. The data is organized by territory and then by month. The sales and quota values are displayed in currency format.

Territory	Month	Sales	Quota
East	May	\$35,000.00	\$44,000.00
East	June	\$43,000.00	\$44,889.00
East	July	\$45,782.00	\$53,994.00
East	August	\$35,982.00	\$39,853.00
Midwest	May	\$23,478.00	\$45,787.00
Midwest	June	\$43,985.00	\$48,764.00
Midwest	July	\$39,888.00	\$49,884.00
Midwest	August	\$23,894.00	\$38,732.00
West	April	\$23,477.00	\$23,757.00
West	June	\$23,474.00	\$23,487.00
West	July	\$23,074.00	\$23,487.00
Midwest	March	\$23,478.00	\$38,748.00
Midwest	May	\$23,847.00	\$23,874.00
Midwest	August	\$23,485.00	\$24,499.00

# 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



# Careers In IT

- **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



# Open-Ended Questions (Page 1 of 2)

- 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?