Concept and Management

information system

Learning Objectives

1. Describe the components of computer-based information systems.
2. Describe the various types of information systems by breadth of support.
3. Identify the major information systems that support each organizational level.
4. Describe strategic information systems (SISs), and explain their advantages.
5. Describe Porter's competitive forces and value chain models, and explain how IT helps companies improve their competitive positions.
6. Describe five strategies that companies can use to achieve competitive advantage in their industries.
7. Describe how information resources are managed, and discuss the roles of the information systems department and the end users.

Computer-Based Information Systems (CBIS)

- ***An information system*** (IS) collects, processes, stores, analyzes, and disseminates information for a specific purpose.
- ***A computer-based information system*** (CBIS) is an information system that uses computer technology to perform some or all of its intended tasks.

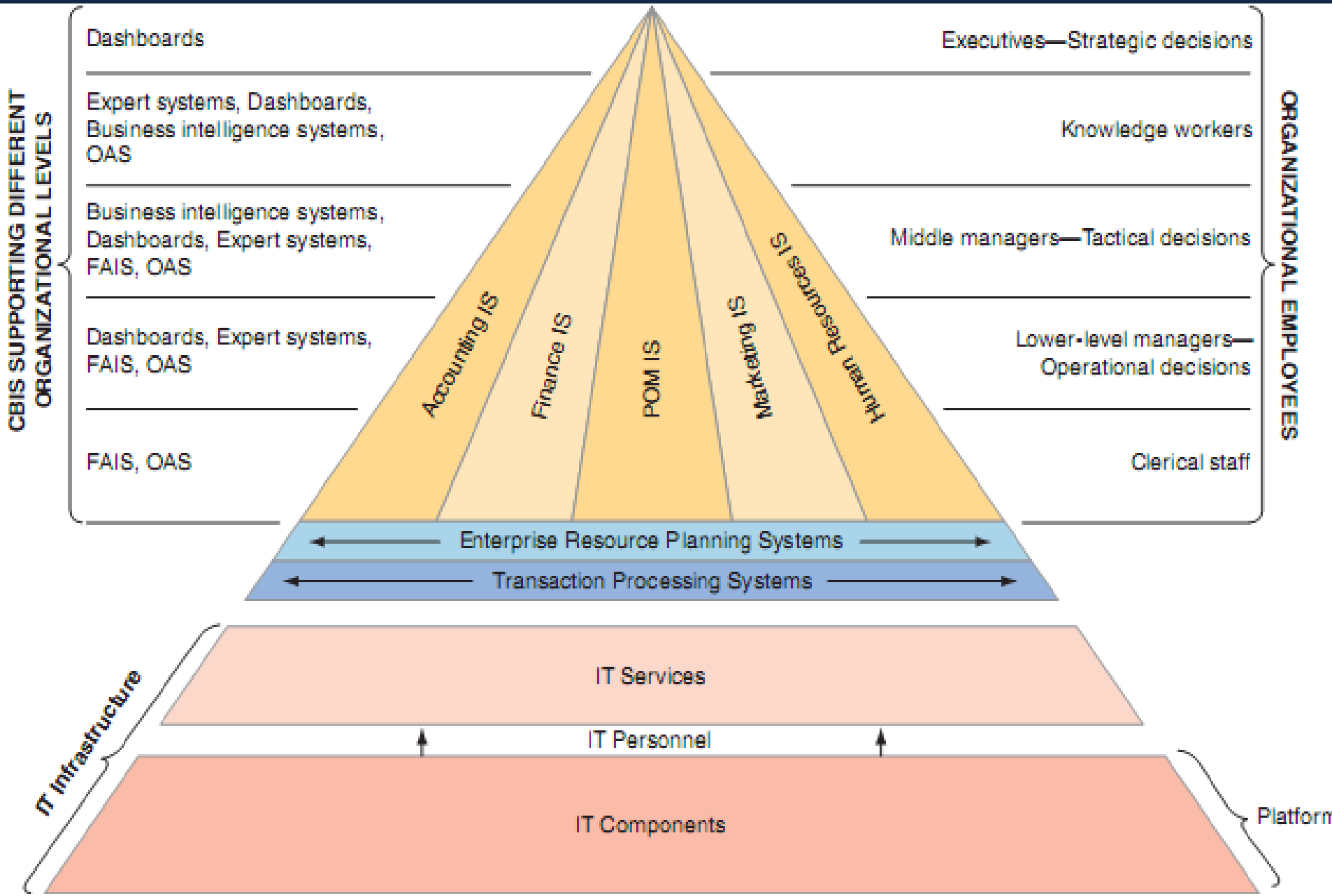
Components of information systems

- Hardware
- Software
- A Database
- A network
- Procedures
- People

Major Capabilities of IS

- Perform high-speed, high-volume, numerical computations.
- Provide fast, accurate communication and collaboration within and among organizations.
- Store huge amounts of information in an easy-to-access, yet small space.
- Allow quick and inexpensive access to vast amounts of information, worldwide.
- Interpret vast amounts of data quickly and efficiently.
- Increase the effectiveness and efficiency of people working in groups in one place or in several locations, anywhere.
- Automate both semiautomatic business processes and manual tasks.

Information Systems within Organizations



IS Support

- IS support parts of organizations
  - FAIS
- IS support entire organizations
  - ERP and Transaction Processing System
- IS support groups of organizations.
  - Supply Chain and ECommerce

Application Programs

- ***An application program*** is a computer program designed to support a specific task or business process.

Functional Area Information System (FAIS)

- Accounting
- Finance
- Production/Operation Management
- Marketing
- Human Resource

Enterprise resource planning (ERP) systems

- ERP systems are designed to correct a lack of communication among the functional area ISs.
- ERP systems were an important innovation because the various functional area ISs were often developed as standalone systems and did not communicate effectively (if at all) with one another.
- ERP systems resolve this problem by tightly integrating the functional area ISs via a common database.
- In doing so, they enhance communications among the functional areas of an organization.

A transaction processing system (TPS)

- A TPS supports the monitoring, collection, storage, and processing of data from the organization’s basic business transactions, each of which generates data.
- The TPS collects data continuously,typically in real and provides the input data for the corporate databases.
- The TPSs are considered critical to the success of any enterprise because they support core operations.

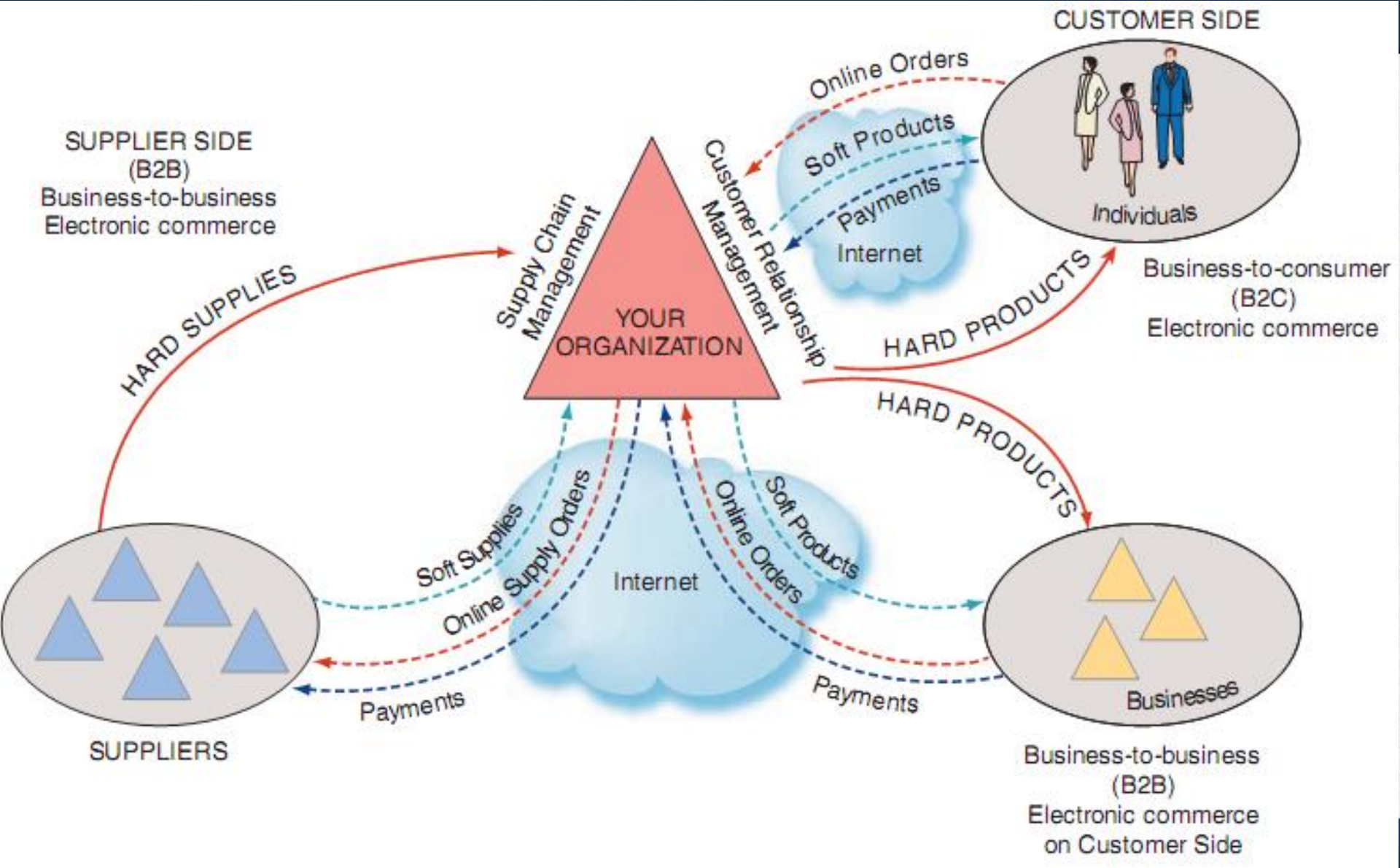
Interorganizational Information Systems (IOSs)

- IOSs : Information systems that connect two or more organizations.
- Supply Chain
- Ecommerce

Supply Chain

- Describes the flow of materials, information, money, and services from suppliers of raw material through factories and warehouses to the end customers.
- Shows physical flows, information flows, and financial flows.
- Soft Products : Information flows, financial flows, and digitizable products
- Hard Products : Physical Products

Information Systems outide Organizations



Electronic commerce systems

- Enable organizations to conduct transactions, called business-to-business (B2B) electronic commerce, and customers to conduct transactions with businesses, called business-to-consumer (B2C) electronic commerce.
- All transactions are typically Internet based.

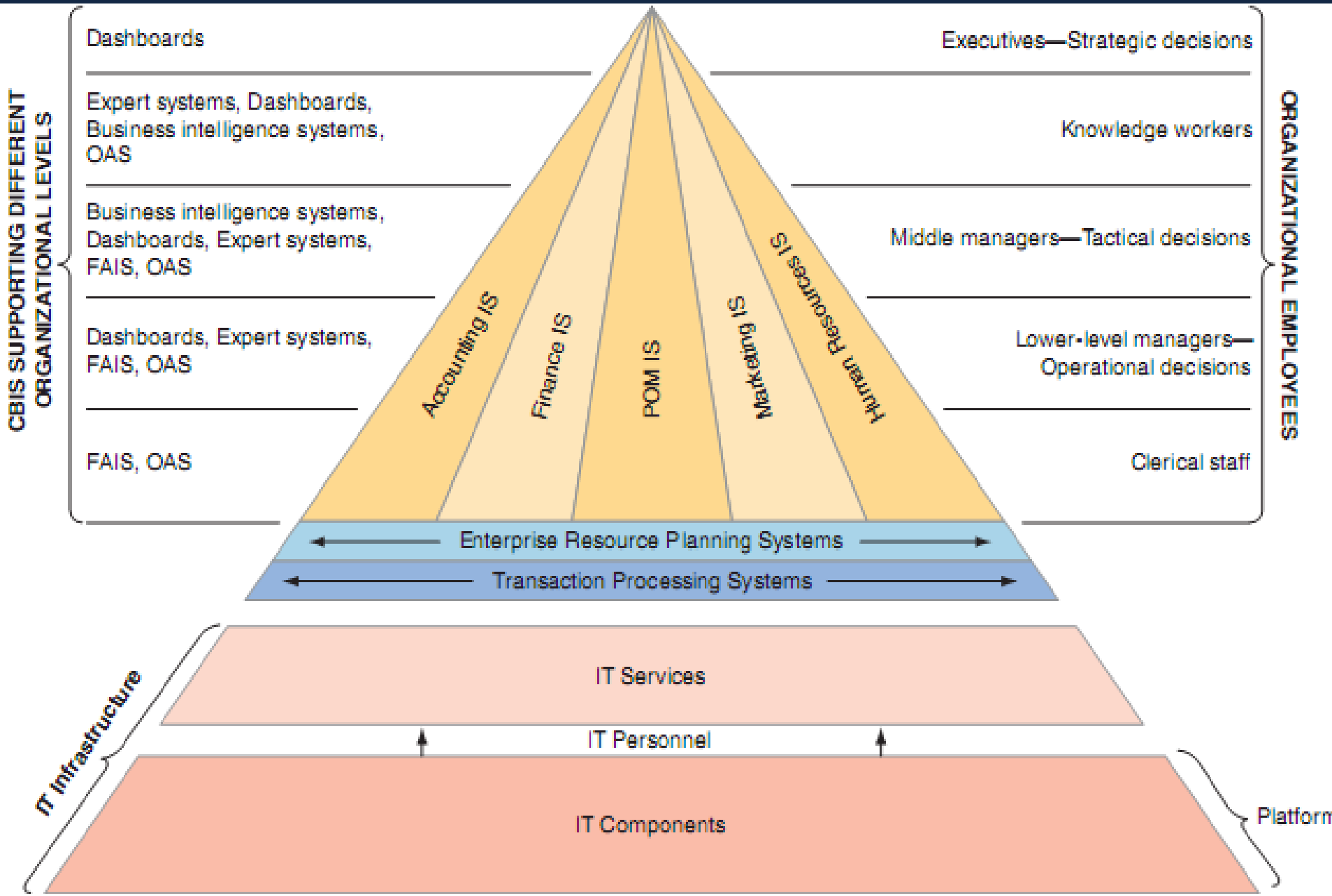
Support for Organizational Employees

- Clerical workers
- Lower-level managers
- Middle managers
- Knowledge workers
- Executives

Office automation systems (OASs)

- OASs support the clerical staff, lower and middle managers, and knowledge workers.
- These employees use OASs to develop :
  - documents (word processing and desktop publishing software),
  - schedule resources (electronic calendars),
  - communicate (e-mail, voice mail, videoconferencing, and groupware).

Information Systems within Organizations



Functional area information systems (FAISs)

- FAISs summarize data and prepare reports, primarily for middle managers but sometimes for lower-level managers as well.
- Because these reports typically concern a specific functional area, report generators (RPGs) are an important type of functional area IS.

Business intelligence (BI) systems

- BI systems provide computer-based support for complex, non-routine decisions, primarily for middle managers and knowledge workers.
- These systems are typically used with a data warehouse and allow users to perform their own data analysis.

Expert systems (ESs)

- ESs attempt to duplicate the work of human experts by applying reasoning capabilities, knowledge, and expertise within a specific domain.
- These systems are primarily designed to support knowledge workers.

Dashboards (digital dashboards)

- Dashboards support all managers of the organization.
- Dashboards provide rapid access to timely information and direct access to structured information in the form of reports.
- Dashboards that are tailored to the information needs of executives are called executive dashboards.

Type of System	Function	Example
Functional area IS	Support the activities within a specific functional area.	System for processing payroll
Transaction processing system	Process transaction data from business events.	Wal-Mart checkout point-of-sale terminal
Enterprise resource planning system	Integrate all functional areas of the organization.	Oracle, SAP
Office automation system	Support daily work activities of individuals and groups.	Microsoft Office
Management information system	Produce reports summarized from transaction data, usually in one functional area.	Report on total sales for each customer
Decision support system	Provide access to data and analysis tools.	"What-if" analysis of changes in budget
Expert system	Mimic human expert in a particular area and make a decision.	Credit card approval analysis
Executive dashboard	Present structured, summarized information about aspects of business important to executives.	Status of sales by product
Supply chain management system	Manage flows of products, services, and information among organizations.	Wal-Mart retail link system connecting suppliers to Wal-Mart
Electronic commerce system	Enable transactions among organizations and between organizations and customers.	www.dell.com

Types of Organizational Information Systems