ISD100-Introduction to Systems & Informatics

Business Information Systems

Dr. Riham Moharam

Faculty of Information Technology & Computer Science

Sinai University

North Sinai, Egypt

Outline

- Business Information Systems.
  - Transactions Processing Systems.
  - E-Commerce and Mobile Commerce.
  - Management Information Systems (MIS).
  - Decision Support Systems (DSS).
- Specialized Business Information Systems.
- Systems Development.

Business Information Systems

- Most common types of information systems.
- Information systems are used in all functional areas of business organizations, such as:
  - Accounting and finance
  - Customer service
  - Human resources
  - Research and development
  - Sales and marketing
- Information systems are also used in nearly every industry, such as:
  - Agriculture
  - Health care
  - Professional services

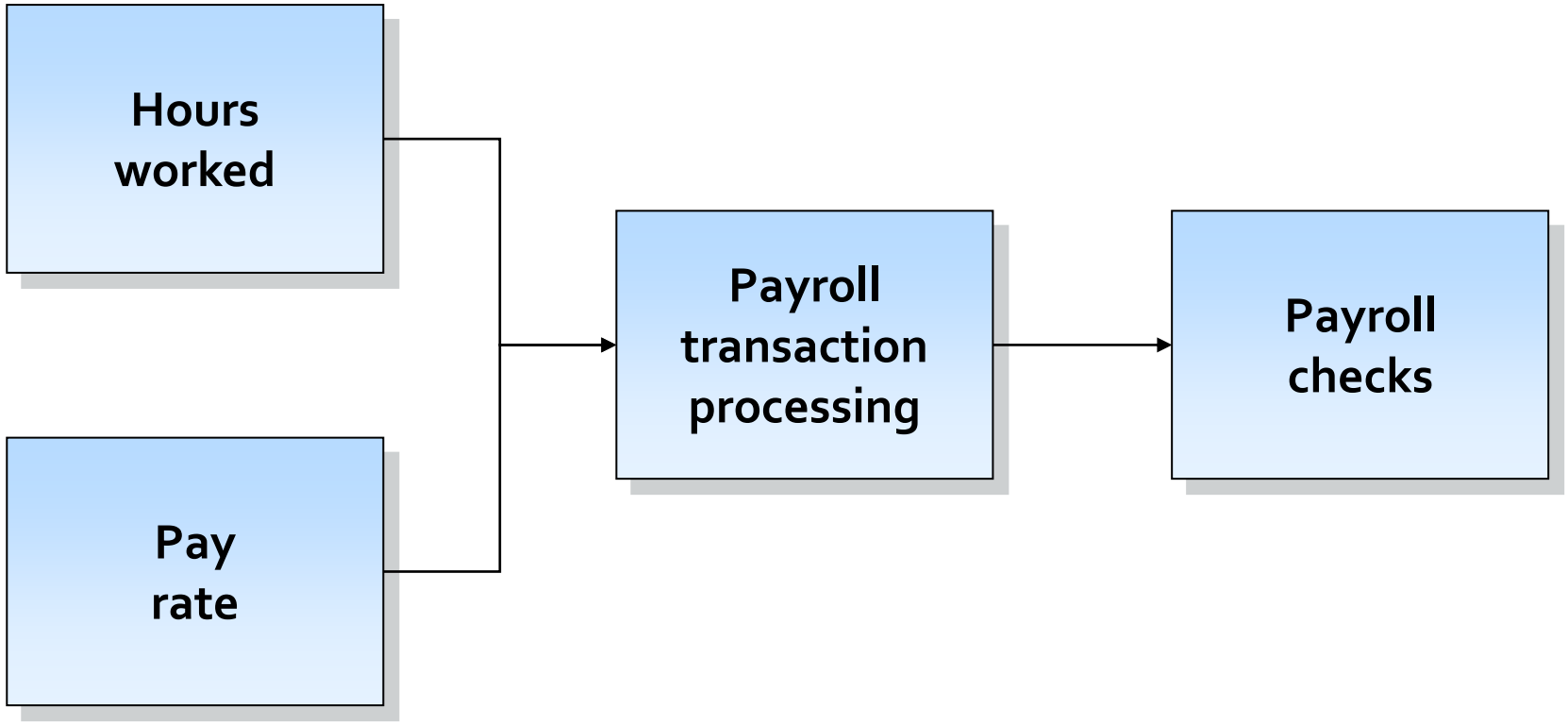
Business Information Systems

- Types:
  - Transaction processing systems.
  - E-commerce systems.
  - Management information systems.
  - Decision support systems.

Transactions Processing Systems

- Transaction:
  - Any business-related exchange
  - E.g., generating a weekly payroll
- Transaction processing system (TPS):
  - An organized collection of **people**, **procedures**, **software**, **databases**, and **devices** used to record completed for business related exchanges.

Payroll Example



E-Commerce and Mobile Commerce

- **Electronic commerce (E-commerce) :**
- Involves any business transaction executed electronically.
  - E-commerce occurs between:
    - Companies (business-to-business, B2B).
    - Companies and consumers (business-to-consumers, B2C).
    - Consumer and other consumer (consumer-to-consumer, C2C).
    - Business and the public sector.
    - Consumers and the public sector.
- Can enhance a company's stock prices and market value.

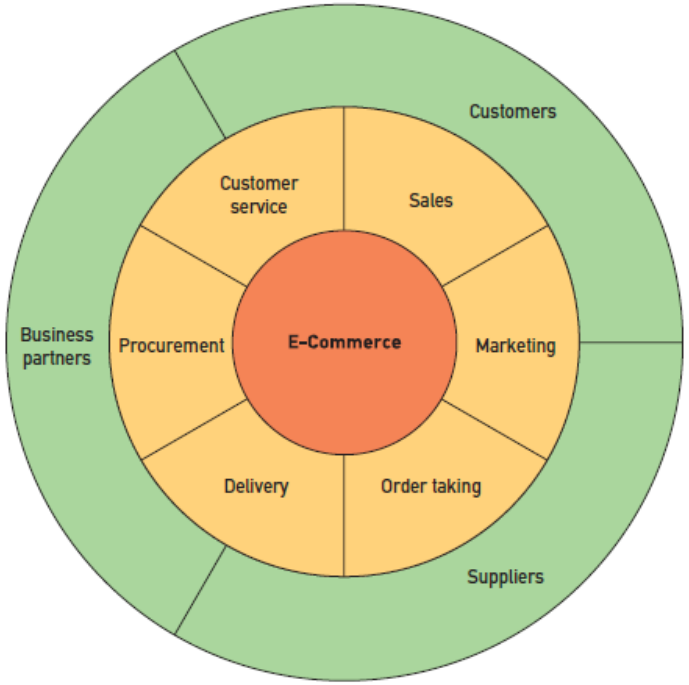


FIGURE 1.8
The scope of e-commerce
E-commerce covers a wide range of business activities.

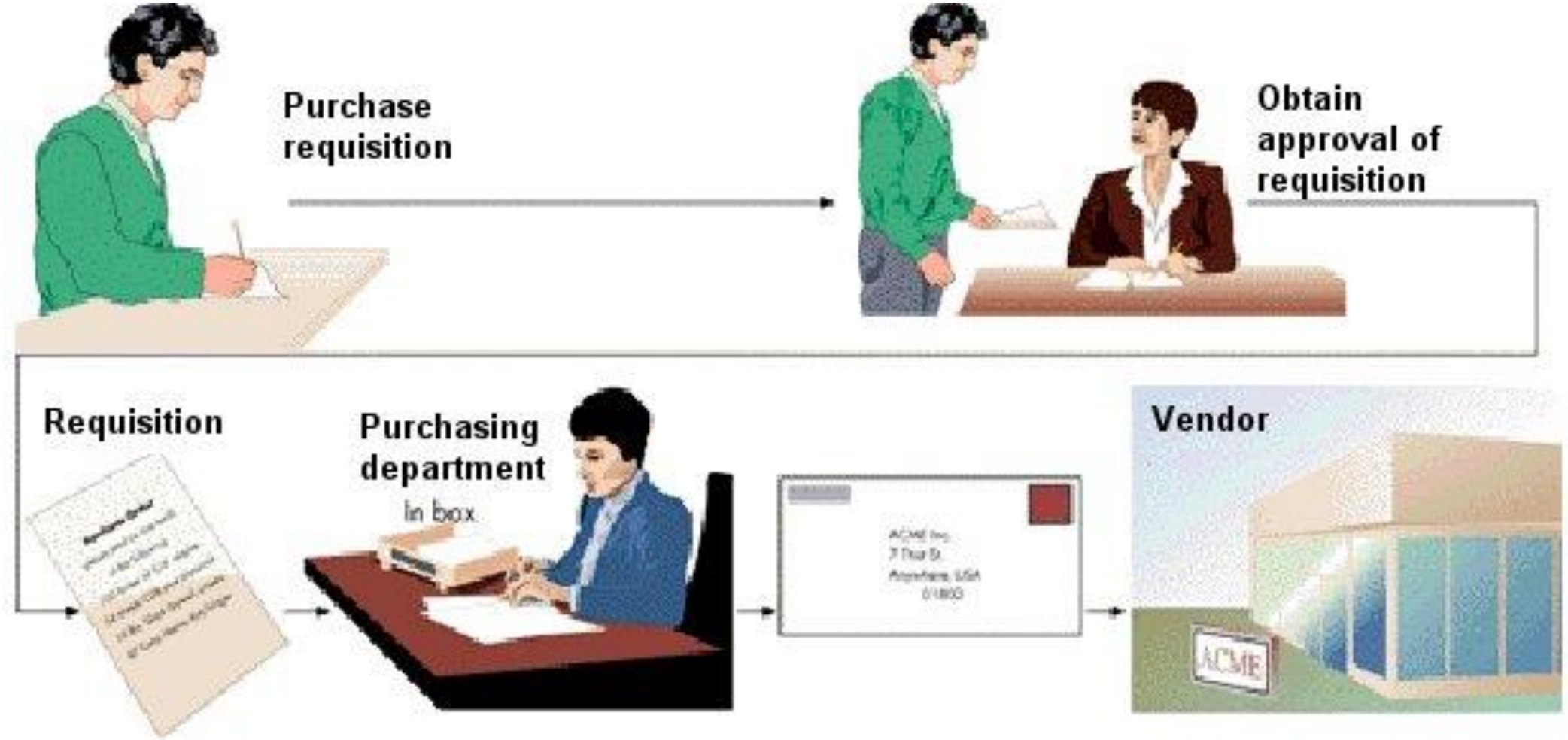
Electronic and Mobile Commerce

- **Mobile commerce (m-commerce)**: the use of mobile, wireless devices to place orders and conduct business.
  - Used to support all forms of e-commerce:
    - Business-to-business (B2B)
    - Business-to-consumer (B2C)
    - Consumer-to-consumer (C2C)
    - Government-to-citizen (G2C)
- **Electronic business (E-business)**: use of information systems and the Internet to perform business-related tasks and functions.

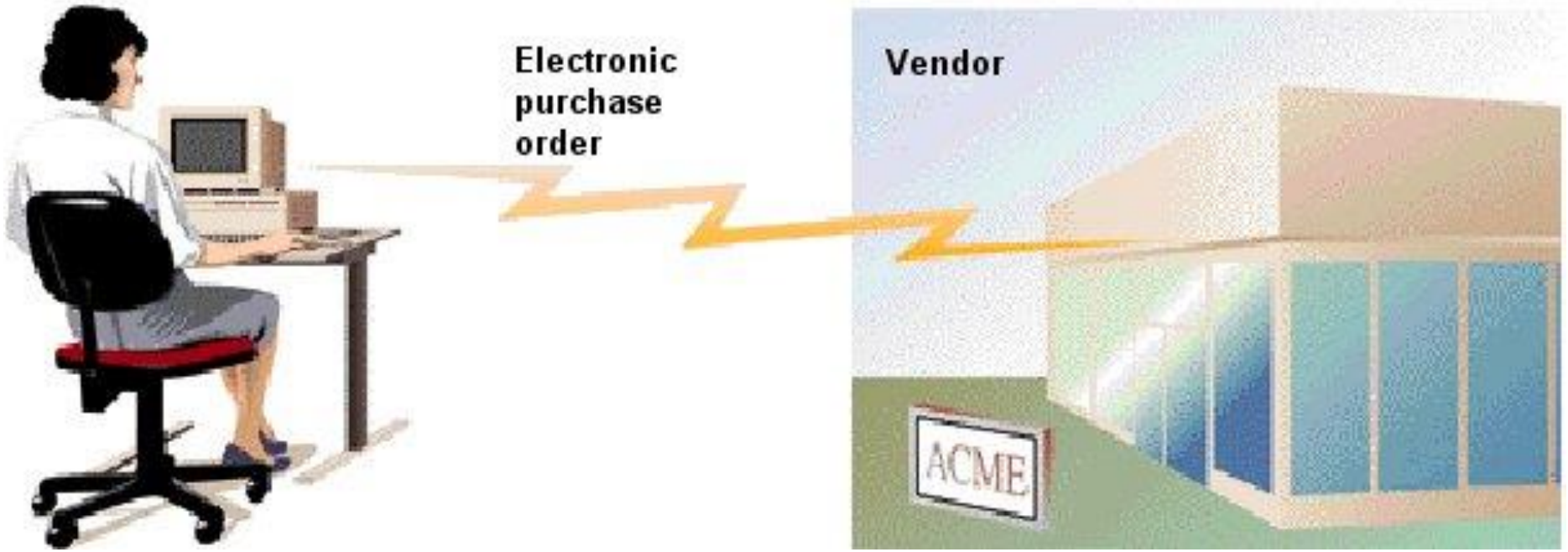
TABLE 1.6 Benefits of e-commerce

Benefit	How Achieved
Build new revenue streams	• Reach a broader geographic dispersion of consumers
Create and enhance relationships with customers and business partners	• Increase customer engagement • Improve loyalty of customers who initially buy offline • Increase opportunity to build loyalty through multiple channels
Improve operating efficiencies	• Lower customer acquisition cost • Lower operating costs per sale • Reduce the expense of supporting and servicing existing customers

Purchase Order Example - Traditional

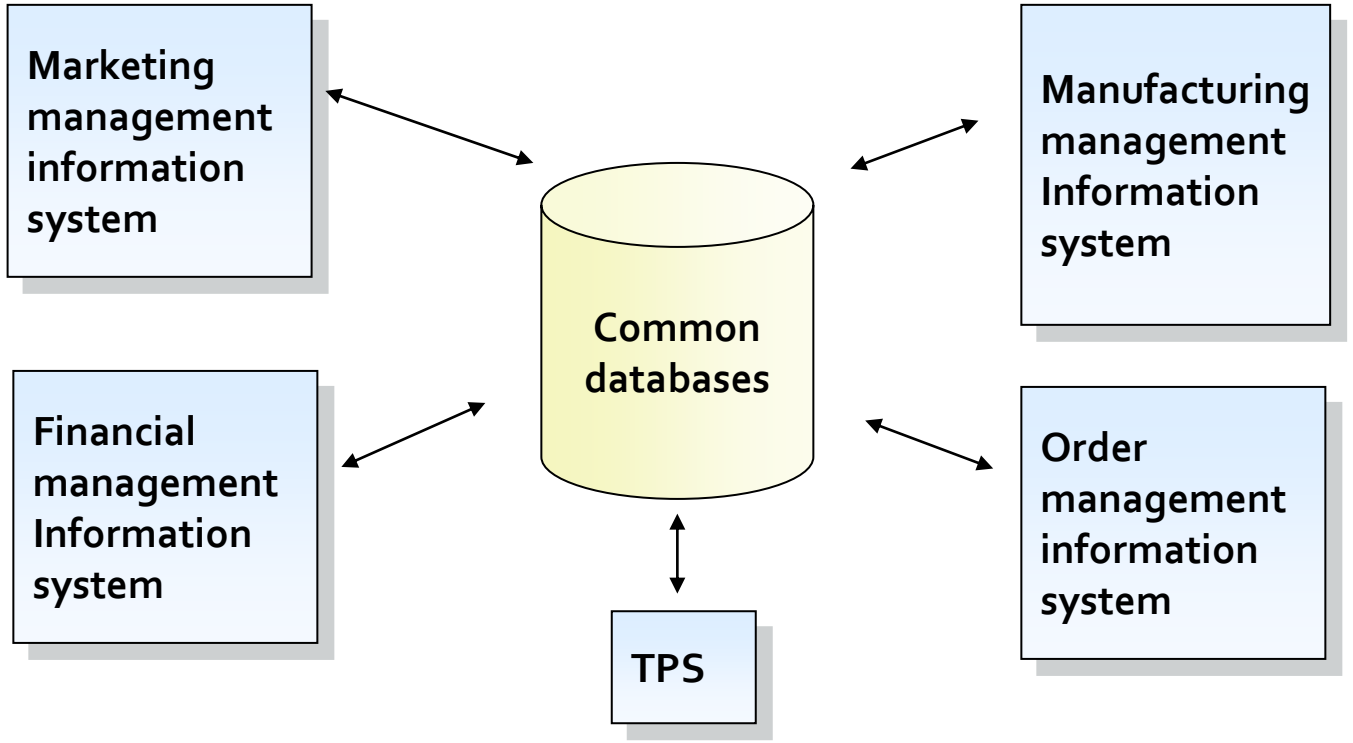


Purchase Order Example – E-Commerce



Management Information Systems (MIS)

- **MIS** is:
  - An organized collection of people, procedures, software, databases, and devices used **to provide routine information to managers and decision makers.**



Management Information Systems (MIS)

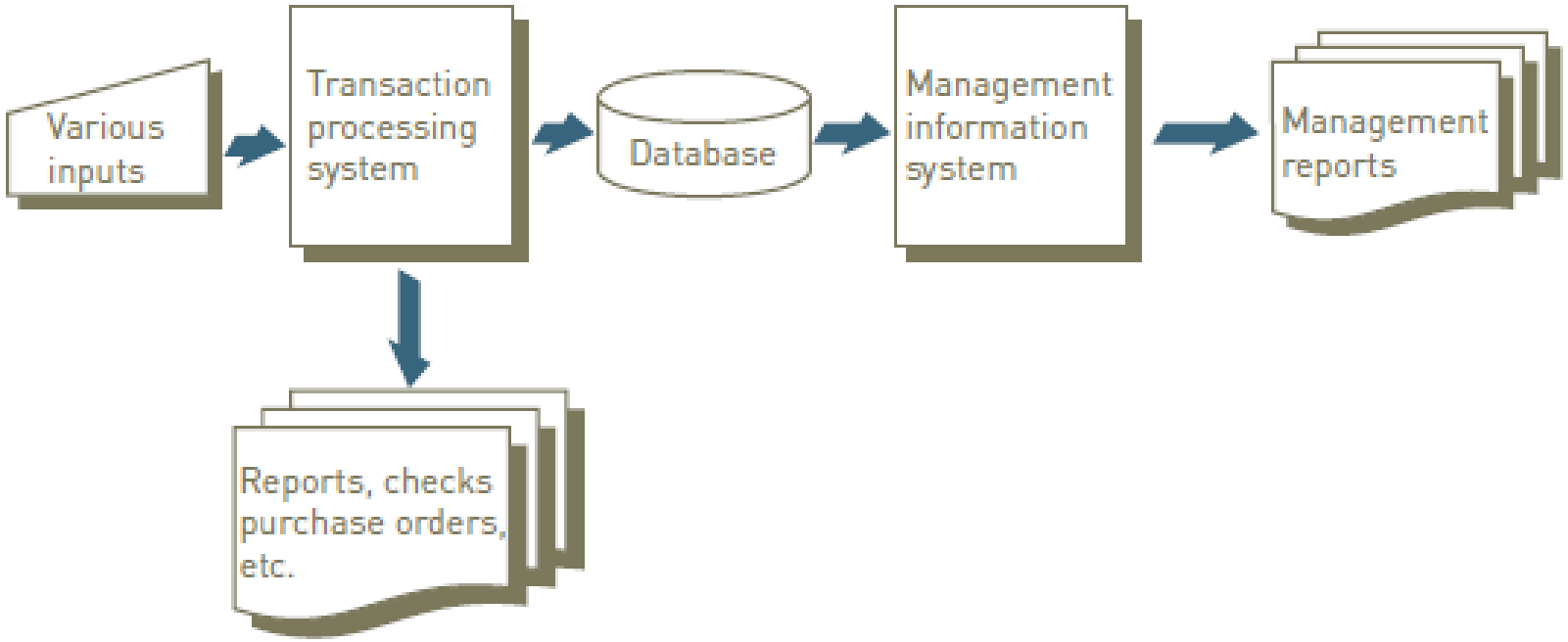


FIGURE 1.9

TPS and MIS

The TPS and MIS work together to process business transaction and create standard management reports.

Enterprise Resource Planning (ERP)

- Enterprise resource planning (ERP):
  - A set of integrated programs that manages the vital business operations for an entire multisite, global organization.
- Most ERP systems provide integrated software to support manufacturing and finance
  - Also provide support for ***business analytics*** and ***e-business.***

Decision Support Systems (DSS)

- Decision support system (DSS):
  - Organized collection of people, procedures, software, databases, and devices used to **support problem-specific decision making.**
- Can include:
  - A collection of **models** used to support a decision maker or user (model base).
  - A collection of **facts and information** to assist in decision making (database).
  - **Systems and procedures** (user interface or dialogue manager) that help decision makers and other users interact with the DSS.

Decision Support Systems (DSS)

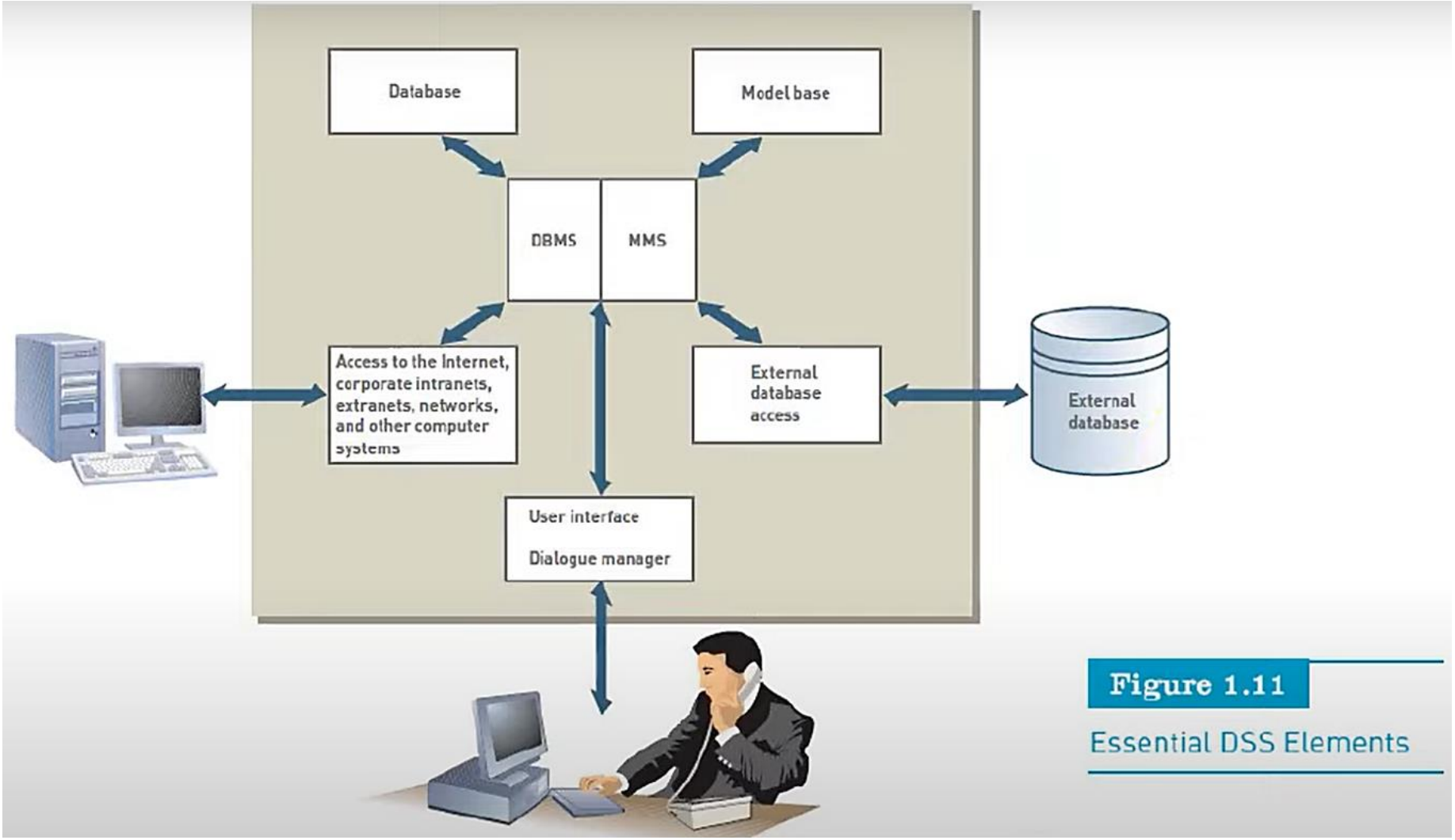


Figure 1.11

Essential DSS Elements

Specialized Business Information Systems

- Specialized business information systems:
  - Knowledge management systems (KMSs).
  - Artificial intelligence (AI).
  - Expert systems.
  - Virtual reality.

Specialized Business Information Systems

- **Knowledge management systems (KMSs):**
  - Organized collection of people, procedures, software, databases, and devices to:
    - ✓ Create, store, share, and use the organization's knowledge and experience.
- **Artificial intelligence (AI):**
  - Computer system takes on characteristics of human intelligence.
  - AI is a broad field that includes:
    - ✓ Expert systems and robotics.
    - ✓ Vision systems and natural language processing.
    - ✓ Learning systems and neural networks.

Specialized Business Information Systems

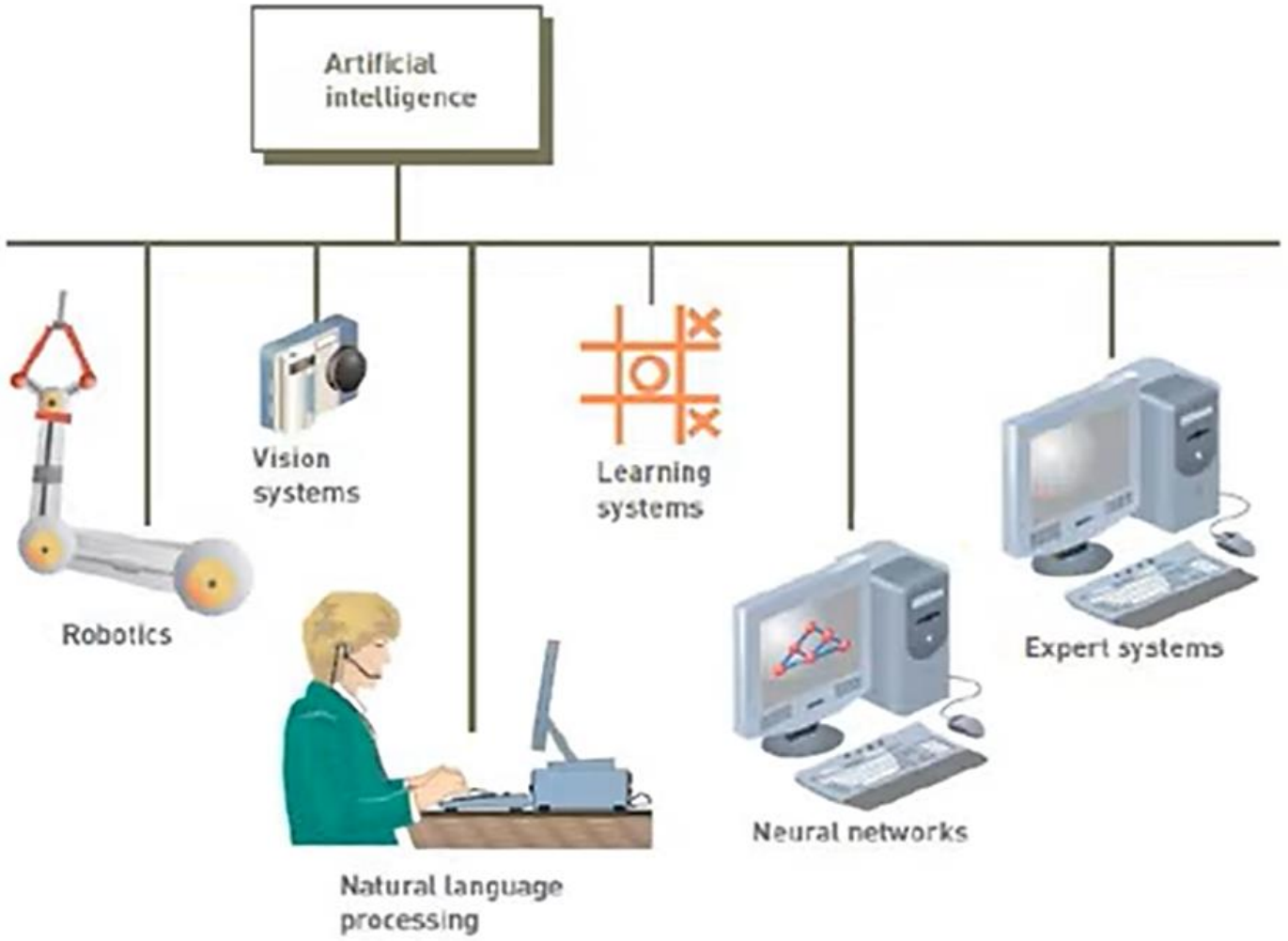


Figure 1.12

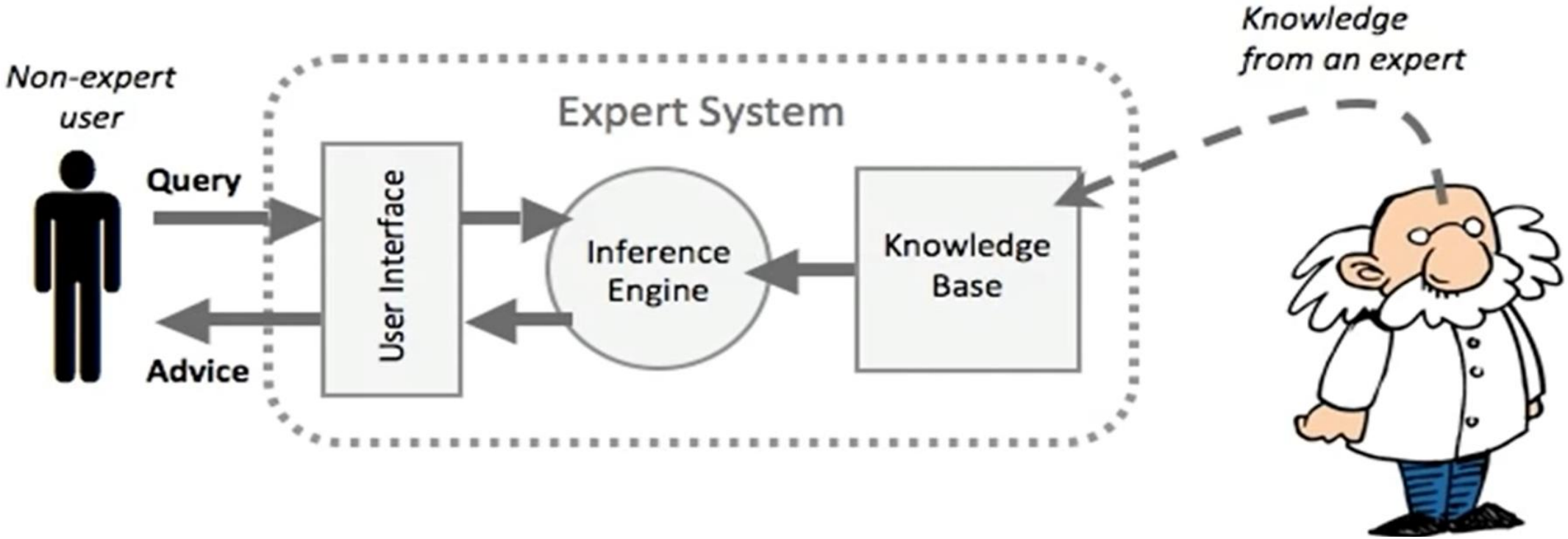
The Major Elements of Artificial Intelligence

Specialized Business Information Systems

- **Expert systems:**
  - Give computer ability to make suggestions and function like an expert in a particular field.
  - **Ex:**
    - Diagnose human illnesses.
    - Make financial forecasts.
    - Schedule routes for delivery vehicles.
  - Consists of a collection of integrated and related components.
    - ✓ Knowledge base: Stores all relevant information, data, rules, cases, and relationships used by expert system.

Specialized Business Information Systems

- **Components of Expert Systems:**



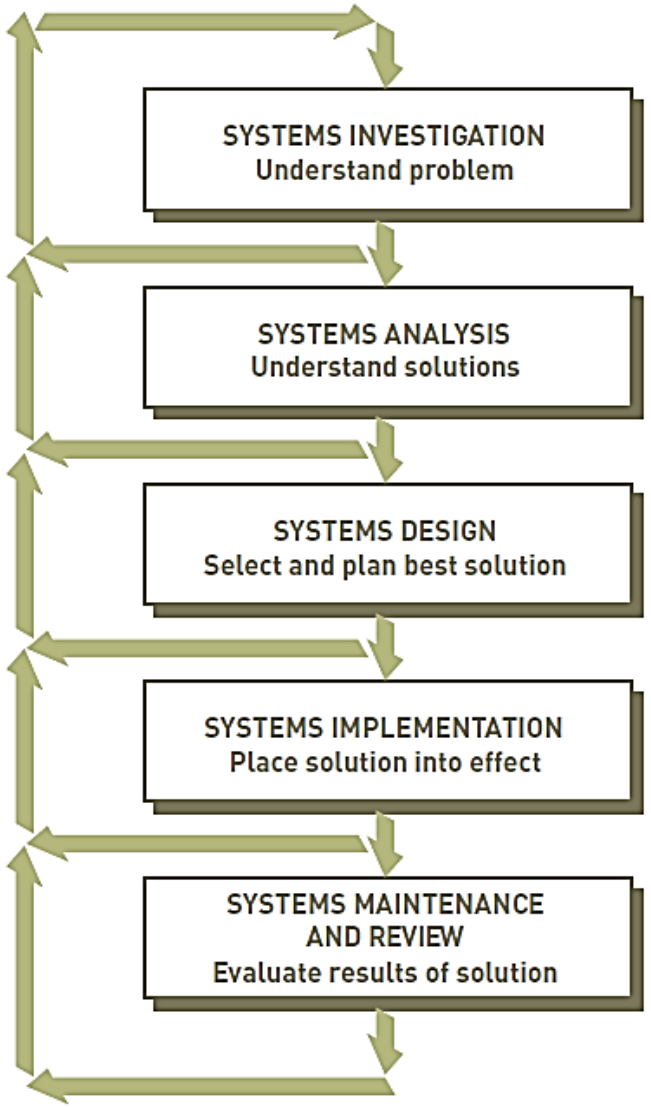
Specialized Business Information Systems

- **Virtual reality and multimedia:**
  - **Virtual reality:**
    - **Simulation** of a real or imagined environment that can be experienced visually in three dimensions.
  - **Multimedia:**
    - Can include **images**, the manipulation of **sound**, and special **3D effects**.

Systems Development

- **System development:**
  - The activity of **creating** or **modifying** existing business systems.
  - **Outsourcing:**
    - Allows a company to focus on what it does best and delegate other functions to companies with expertise in system development.

Systems Development



Systems Investigation and Analysis

- **Goals of systems investigation:**
  - To gain clear **understanding** of the **problem** to be solved or **opportunity** to be addressed.
- **System analysis:**
  - **Defines** the **problems** and **opportunities** of the existing system.

Systems Design, Implementation, Maintenance and Review

- **Systems design:**
  - Determine **how new system will work** to meet business needs defined during systems analysis.
- **Systems implementation:**
  - **Acquiring** various system components defined in design step, **assembling** them, and **putting** the new system into operation.
- **Systems maintenance and review:**
  - **Checks** and **modifies** the system so that it continues to **meet** changing business needs.