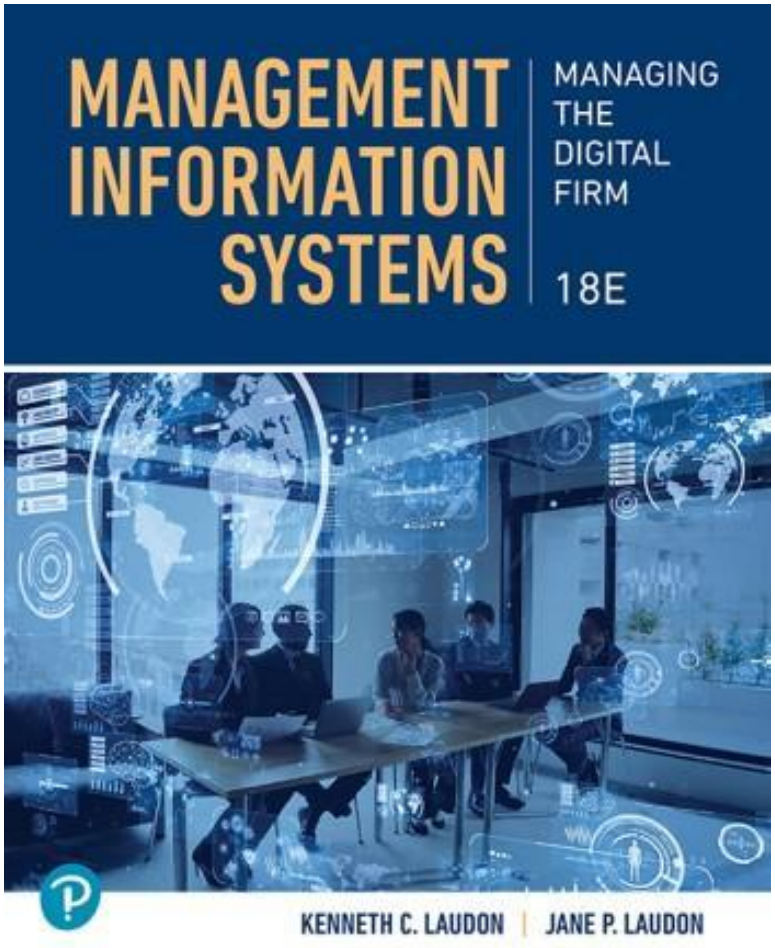
Management Information Systems: Managing the Digital Firm

Eighteenth Edition



Chapter 1

Information Systems in Global Business Today

Learning Objectives (1 of 3)

1.1 Understand how information systems transform business and careers.

1.2 Describe key challenges and opportunities created by new MIS technologies.

1.3 Describe key features of a digital firm.

1.4 Describe the business objectives of information systems.

Learning Objectives (2 of 3)

1.5 Explain what an information system is and how it works.

1.6 Describe organizational, management, and technology dimensions of information systems.

1.7 Understand the importance of IoT, big data, cloud computing, and AI.

1.8 Understand why complementary assets are essential.

Learning Objectives (3 of 3)

1.9 Describe different approaches used to study information systems.

1.10 Understand how this book prepares you for the future.

1.11 Understand how the information in this chapter can help your career.

Understand How Information Systems Transform Business and Careers (1 of 3)

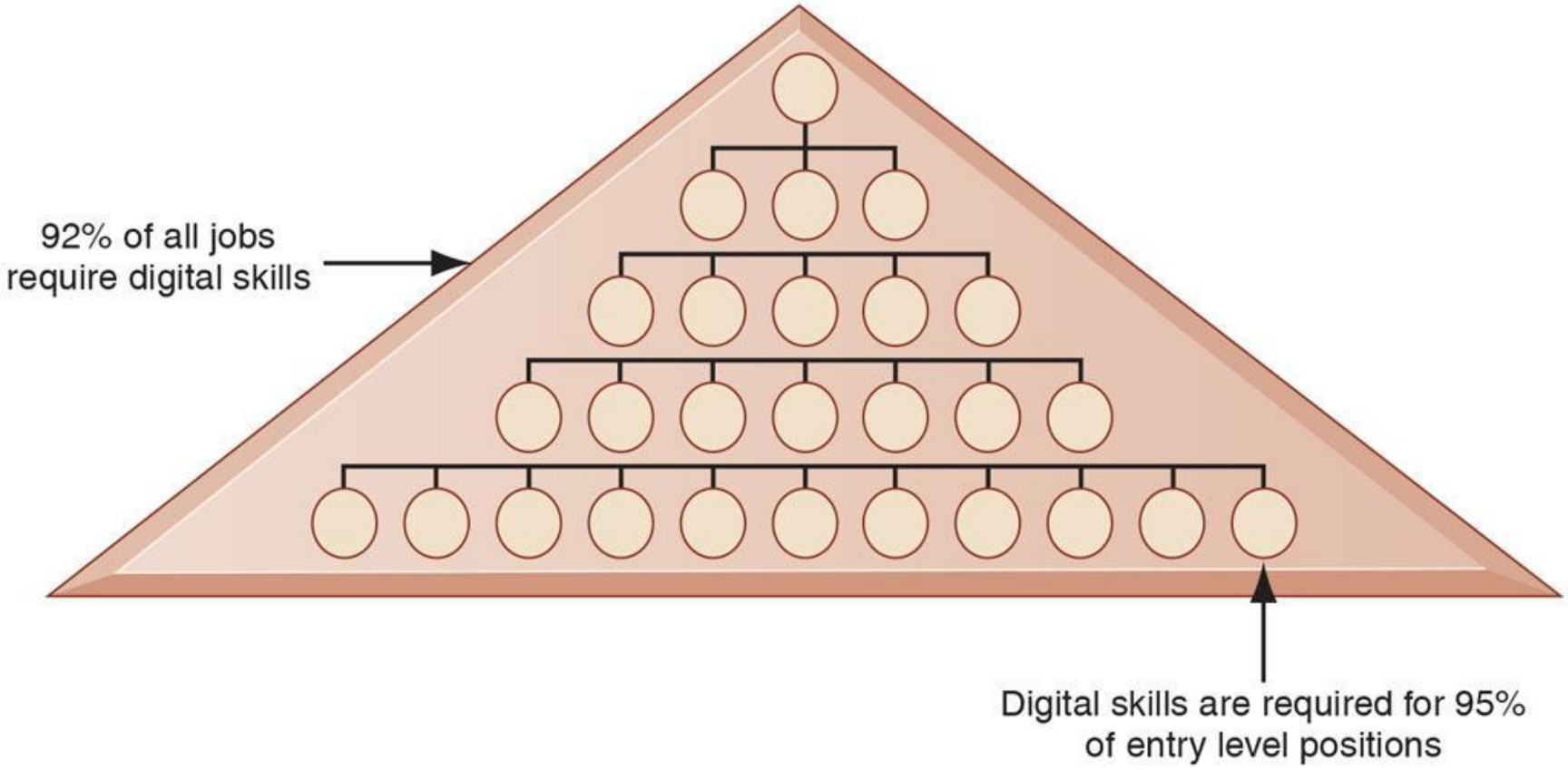
- According to research firm Gartner:
  - Firms spent more than $20 trillion on information technology and IT services worldwide between 2019 and 2023
  - An additional $5 trillion expected in 2024
- Expected online purchases for 2024:
  - Around 2.9 billion people worldwide expected to purchase something online

"If a business isn't using information systems connected to the Internet and mobile apps, chances are it isn't being as effective as it could be."

Understand How Information Systems Transform Business and Careers (2 of 3)

- Technology-driven changes are transforming jobs and careers:
  - How you work, where you work, and how well you will be compensated
- Many millions of new jobs have been created
  - Not only for IT specialists but also for business professionals who use IT tools
- Gaining a deeper understanding of how technology works and is evolving is essential
  - AI tools, for example

Figure 1.1 High Demand for Digital Skills



Describe Key Challenges and Opportunities Created by New MIS Technologies (1 of 3)

- Some of the major challenges that technology changes have created in using management information systems include:
  - Cloud computing
  - Big data and the Internet of Things (IoT)
  - Artificial intelligence (AI)
  - The mobile platform

Describe Key Challenges and Opportunities Created by New MIS Technologies (2 of 3)

- Some of the major challenges that technology changes have created in using management information systems include:
  - Return on investment (ROI)
  - Online collaboration and social networks
  - Security and privacy
  - Social business
  - Remote and hybrid work

Describe Key Challenges and Opportunities Created by New MIS Technologies (3 of 3)

- Globalization challenges and opportunities
  - Globalization
    - The flow of goods, services, capital, people, and ideas across international boundaries
  - The level of globalization in the world today has been made possible by advances in information technology
  - Globalization gives businesses the opportunity to
    - Expand into new markets
    - Reach international buyers
    - Increase revenue

Describe Key Features of a Digital Firm (1 of 2)

- In a fully digital firm
  - Significant business relationships are digitally enabled and mediated
  - Corporate assets are managed through digital means
- Core business processes are accomplished through digital networks

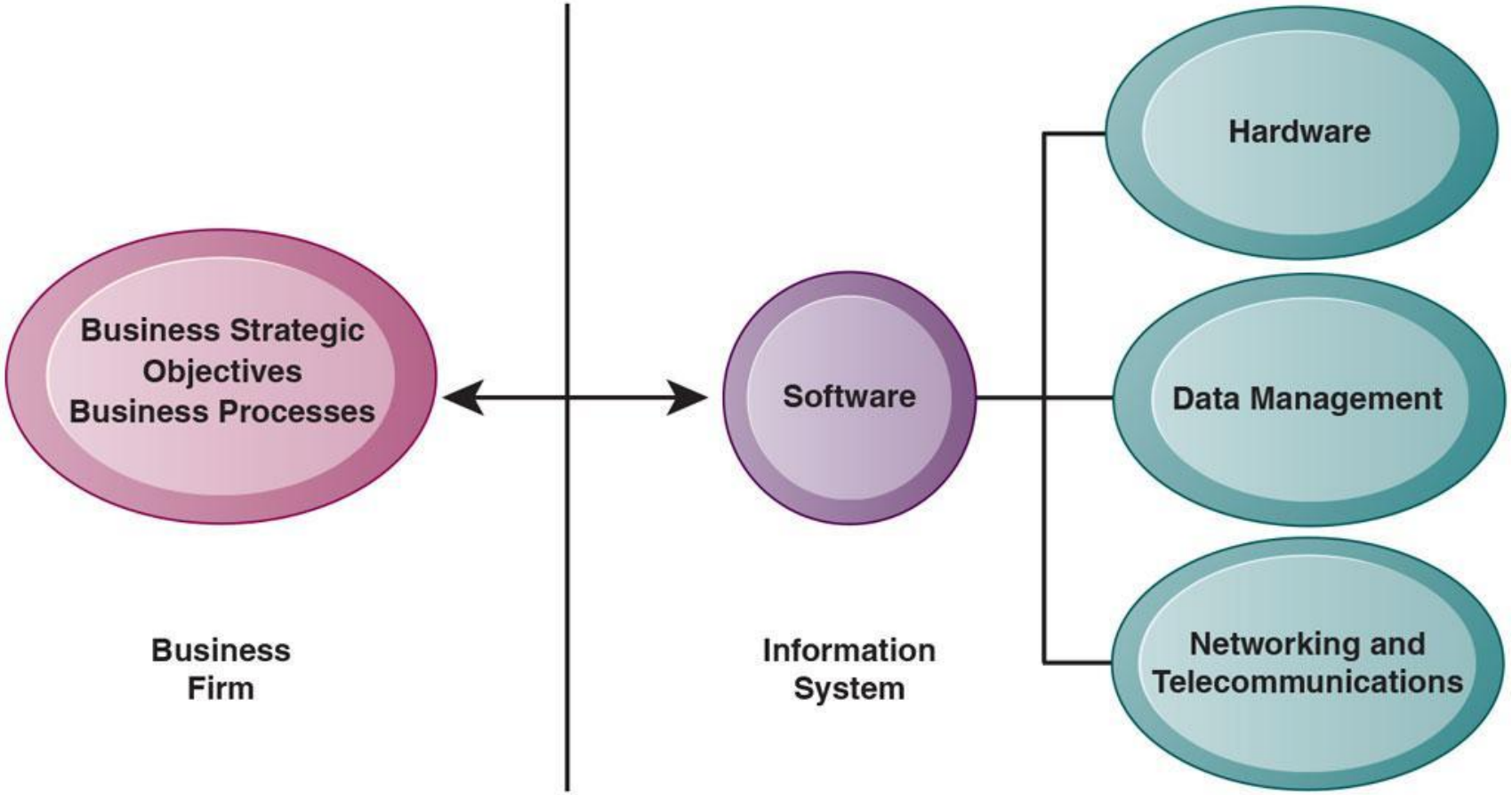
Describe Key Features of a Digital Firm (2 of 2)

- Key corporate assets are managed digitally
  - Intellectual property, core competencies, financial assets, human assets
- Digital firms offer greater flexibility in organization and management
- Time shifting, space shifting are the norm

Describe the Business Objectives of Information Systems (1 of 2)

- Growing interdependence between
  - Ability to use information technology
  - Ability to implement corporate strategies and achieve corporate goals

Figure 1.2 Interdependence of Organizations and Information Systems



New business models, products, and services

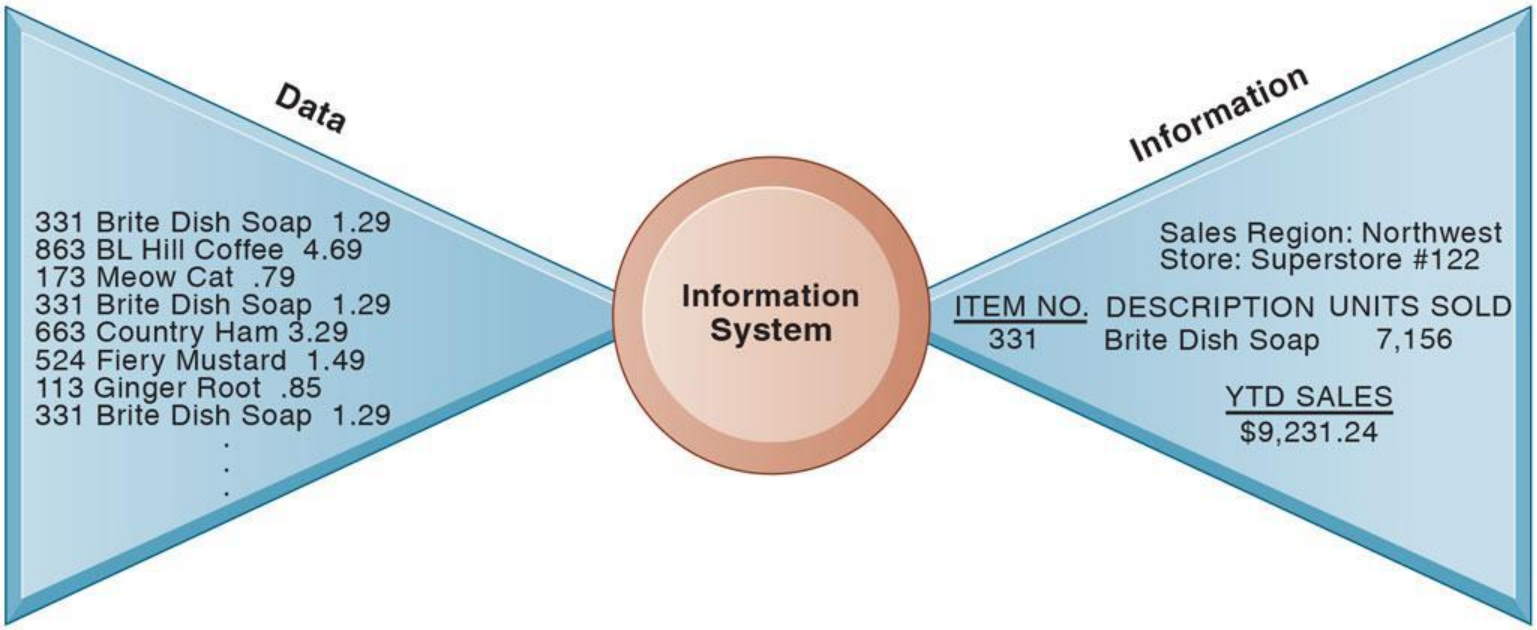
- Firms invest heavily in information systems to achieve six strategic business objectives:
  - Operational excellence
  - New products, services, and business models
  - Customer and supplier intimacy
  - Improved decision making
  - Competitive advantage
  - Survival

Explain What an Information System Is and How It Works (1 of 5)

- Information technology: the hardware and software a business uses to achieve objectives
- Information system: interrelated components that manage information to
  - Support decision making and control
  - Help with analysis, visualization, and product creation

Explain What an Information System Is and How It Works (2 of 5)

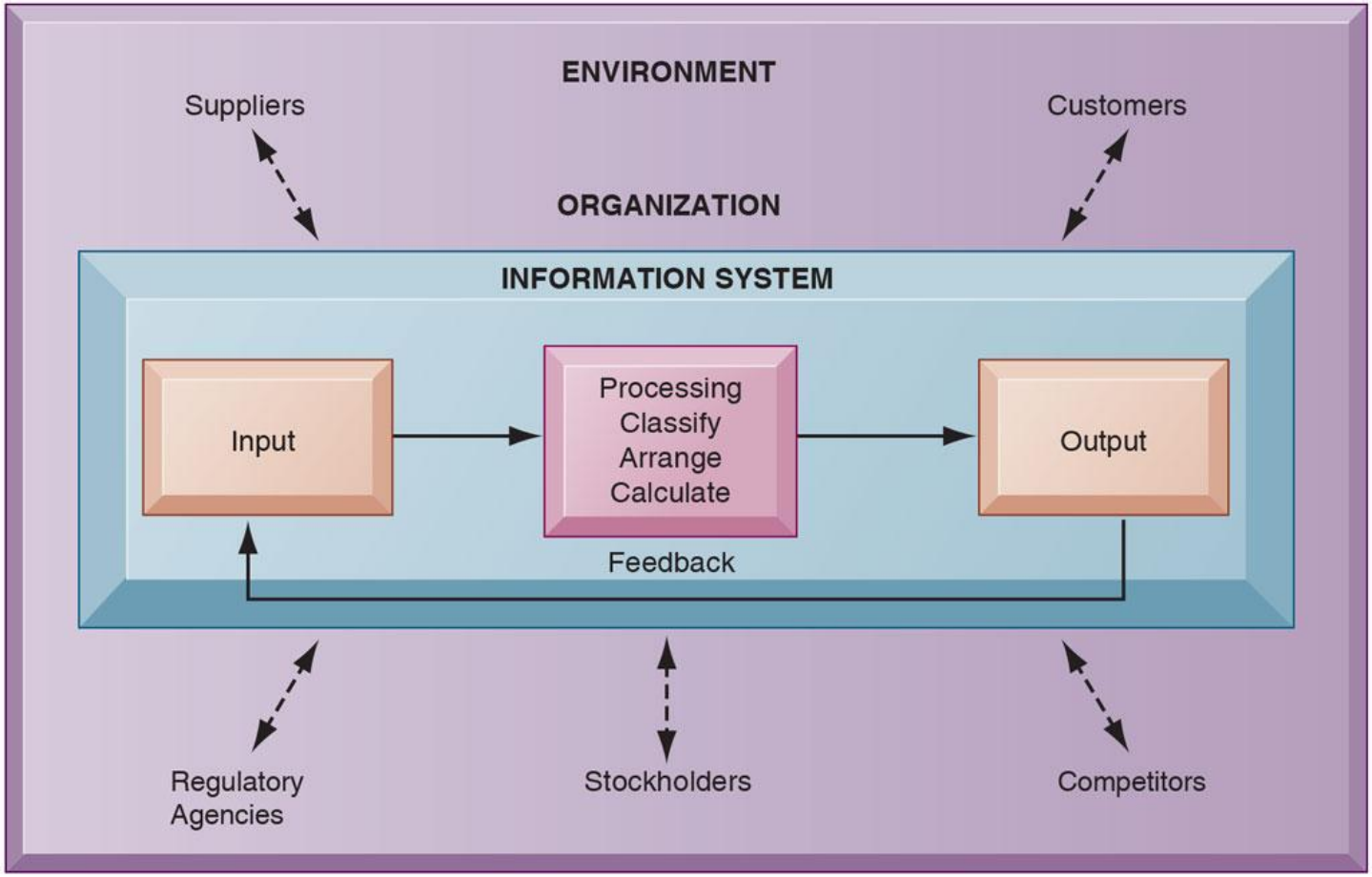
- Data: streams of raw facts
- Information: data shaped into meaningful, useful form



Explain What an Information System Is and How It Works (3 of 5)

- Activities in an information system that produce information:
  - Input
  - Processing
  - Output
  - Feedback
- Sharp distinction between computer or computer program versus information system

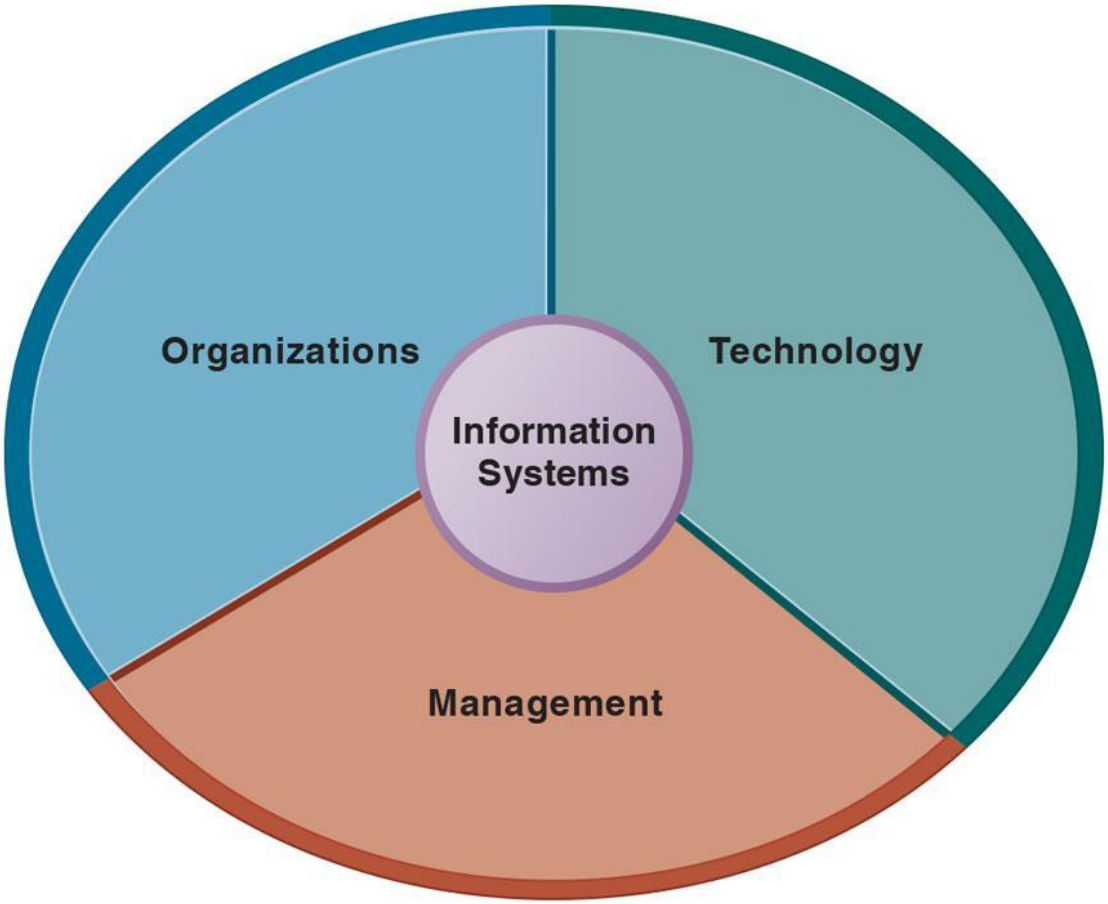
Figure 1.4 Functions of an Information System



Explain What an Information System Is and How It Works (4 of 5)

- To understand information systems fully:
  - You need to be aware of the broader organizational, managerial, and information technology dimensions of systems
  - Also, their power to provide solutions to challenges and problems in the business environment

Figure 1.5 Information Systems Are More Than Computers

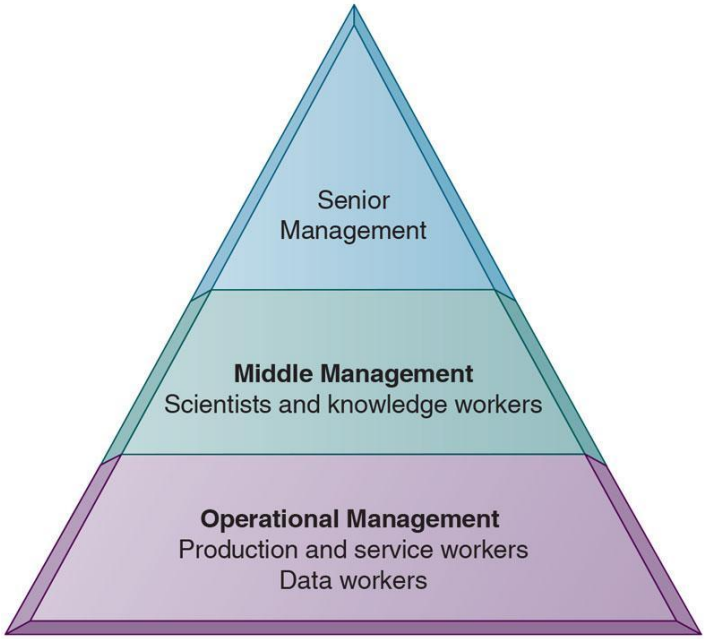


Explain What an Information System Is and How It Works (5 of 5)

- The field of management information systems (MIS):
  - Tries to achieve broader information systems literacy
  - MIS deals with behavioral issues as well as technical issues surrounding the development, use, and impact of information systems that managers and employees in the firm use

Describe Organizational, Management, and Technology Dimensions of Information Systems (1 of 5)

- Organizations
  - Hierarchy of authority, responsibility
    - Senior management
    - Middle management
    - Operational management
    - Knowledge workers
    - Data workers
    - Production or service workers



Describe Organizational, Management, and Technology Dimensions of Information Systems (2 of 5)

- Separation of business functions
  - Sales and marketing
  - Human resources
  - Finance and accounting
  - Manufacturing and production
- Each organization has a unique culture
  - Fundamental set of assumptions, values, and ways of doing things accepted by most of its members

Describe Organizational, Management, and Technology Dimensions of Information Systems (3 of 5)

- Management
  - To make sense of the many situations that organizations face
  - To make decisions
  - To formulate action plans to solve organizational problem
  - Perceive business challenges in the environment

Describe Organizational, Management, and Technology Dimensions of Information Systems (4 of 5)

- Technology
  - Information technology is one of many tools managers use to cope with change and complexity
    - Computer hardware
    - Computer software
    - Data management technology
    - Networking and communications technology
    - Networks

Describe Organizational, Management, and Technology Dimensions of Information Systems (5 of 5)

- Technology
  - Information technology is one of many tools managers use to cope with change and complexity
    - The Internet
    - Intranet
    - Extranet
    - World Wide Web
    - information technology infrastructure (IT infrastructure)

Understand the Importance of IoT, Big Data, Cloud Computing, and AI (1 of 3)

- The Internet of Things (IoT)
  - A network of physical objects—"things"—that are embedded with sensors, software, and other technologies
  - Enabling them to connect and exchange data with other devices and systems via the Internet
- Cloud computing
  - A model of computing in which processing, storage, software, and other services are provided as a shared pool of resources
  - Accessed via the Internet

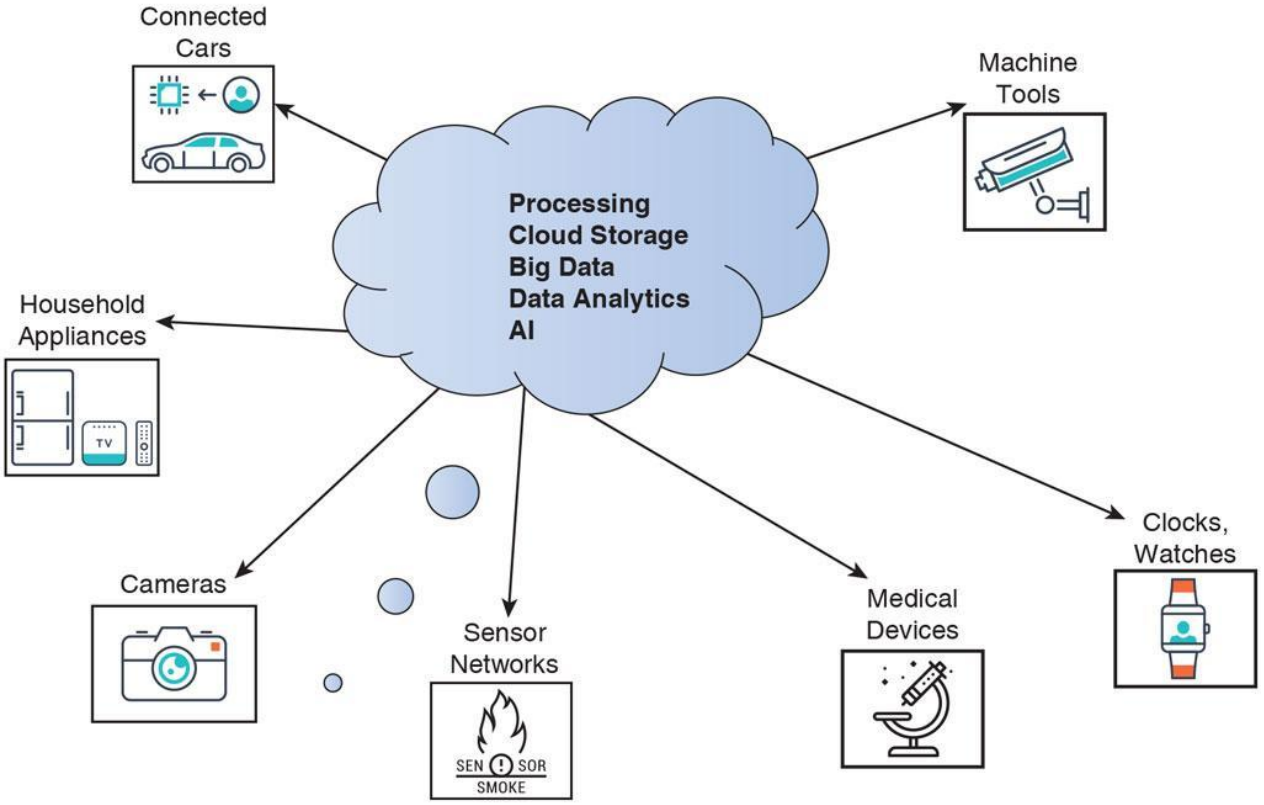
Understand the Importance of IoT, Big Data, Cloud Computing, and AI (2 of 3)

- Artificial intelligence (AI)
  - Computer systems able to perform tasks normally requiring human intelligence
    - Speech recognition, visual perception, recognizing patterns, making predictions, writing essays, learning from past experience
- Machine learning (ML)
  - A type of AI that is focused on building computer systems that can learn and improve on their own
  - Uses mathematical models (algorithms) to identify patterns and relationships in very large amounts of data

Understand the Importance of IoT, Big Data, Cloud Computing, and AI (3 of 3)

- Generative AI
  - Tools such as ChatGPT, Google's Gemini (formerly called Bard), and Microsoft's Copilot
    - Able to identify patterns and structures within existing data
    - Generates new and original content, including textual responses to questions, articles, essays, fiction, and poetry, new software programs, musical compositions, and successful answers to test questions

Figure 1.7 Cloud Computing, Big Data, Artificial Intelligence, and the Internet of Things (IoT)

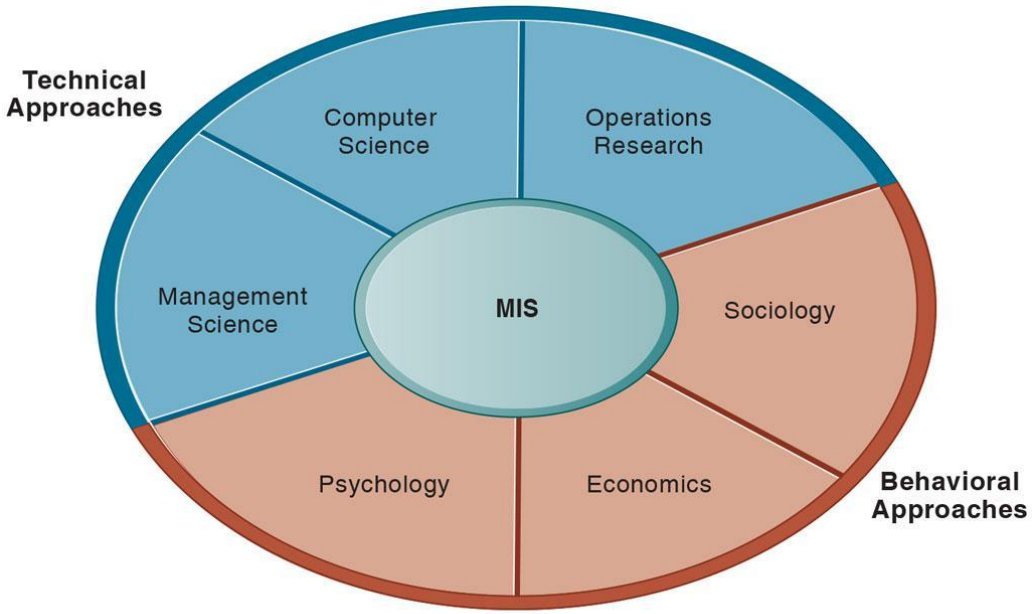


Understand Why Complementary Assets Are Essential

- An information system is an important instrument for creating value for a firm
- The business perspective calls attention to the organizational and managerial nature of information systems
- Complementary assets
  - Assets required to derive value from a primary investment

Describe Different Approaches Used to Study Information Systems (1 of 3)

- The study of information systems is a multidisciplinary field
- . No single theory or perspective dominates



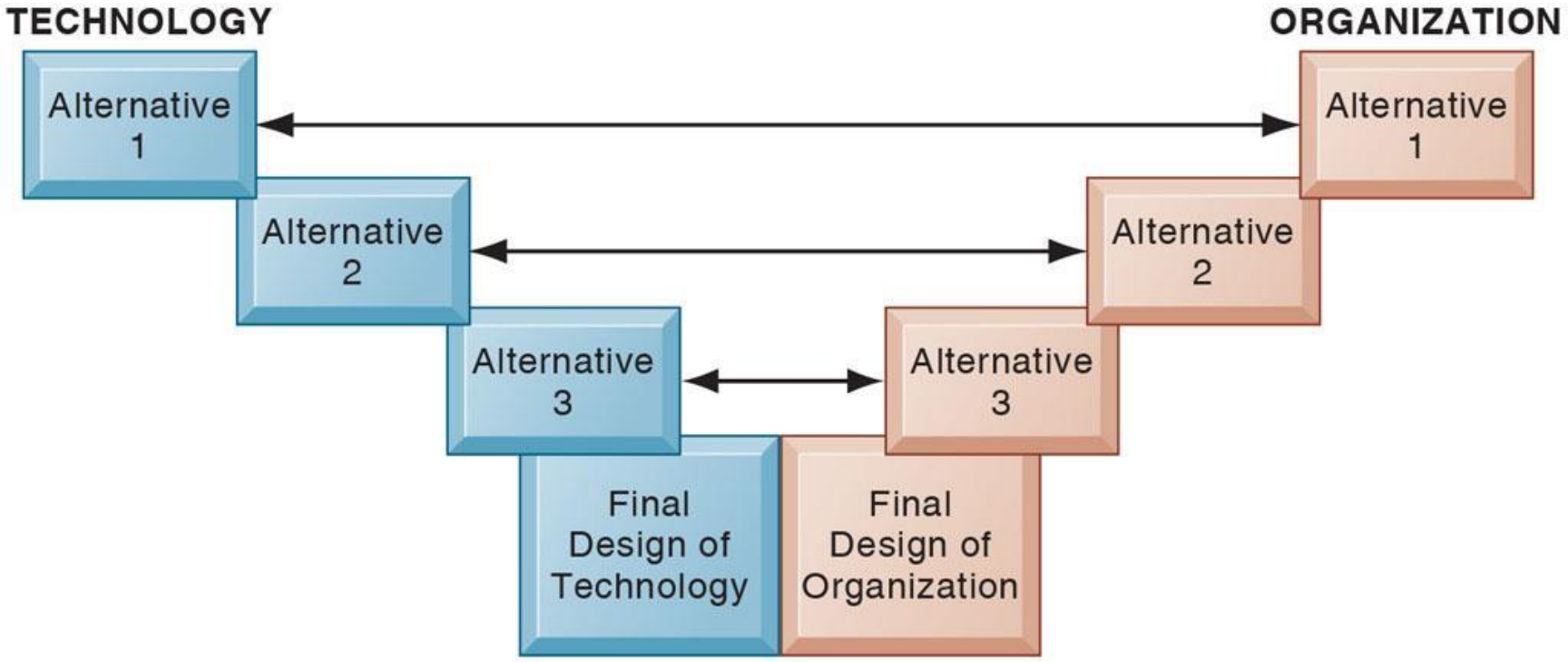
Describe Different Approaches Used to Study Information Systems (2 of 3)

- Technical approach to information systems
  - Emphasizes mathematically-based models to study information systems
  - Also physical technology and formal capabilities of these systems
- Behavioral approach
  - An important part of the information systems field is concerned with behavioral issues
  - Arise in the development and long-term maintenance of information systems

Describe Different Approaches Used to Study Information Systems (3 of 3)

- Sociotechnical view of systems
  - Optimal organizational performance is achieved by jointly optimizing both the social and technical systems used in production

Figure 1.9 A Sociotechnical Perspective on Information Systems



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