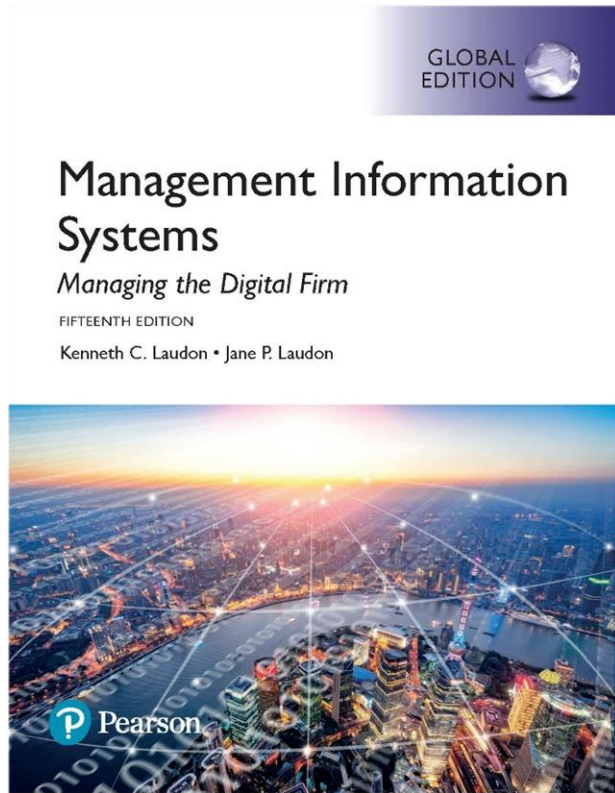


Management Information Systems: Managing the Digital Firm

Fifteenth edition



Chapter 1 Information Systems in Global Business Today

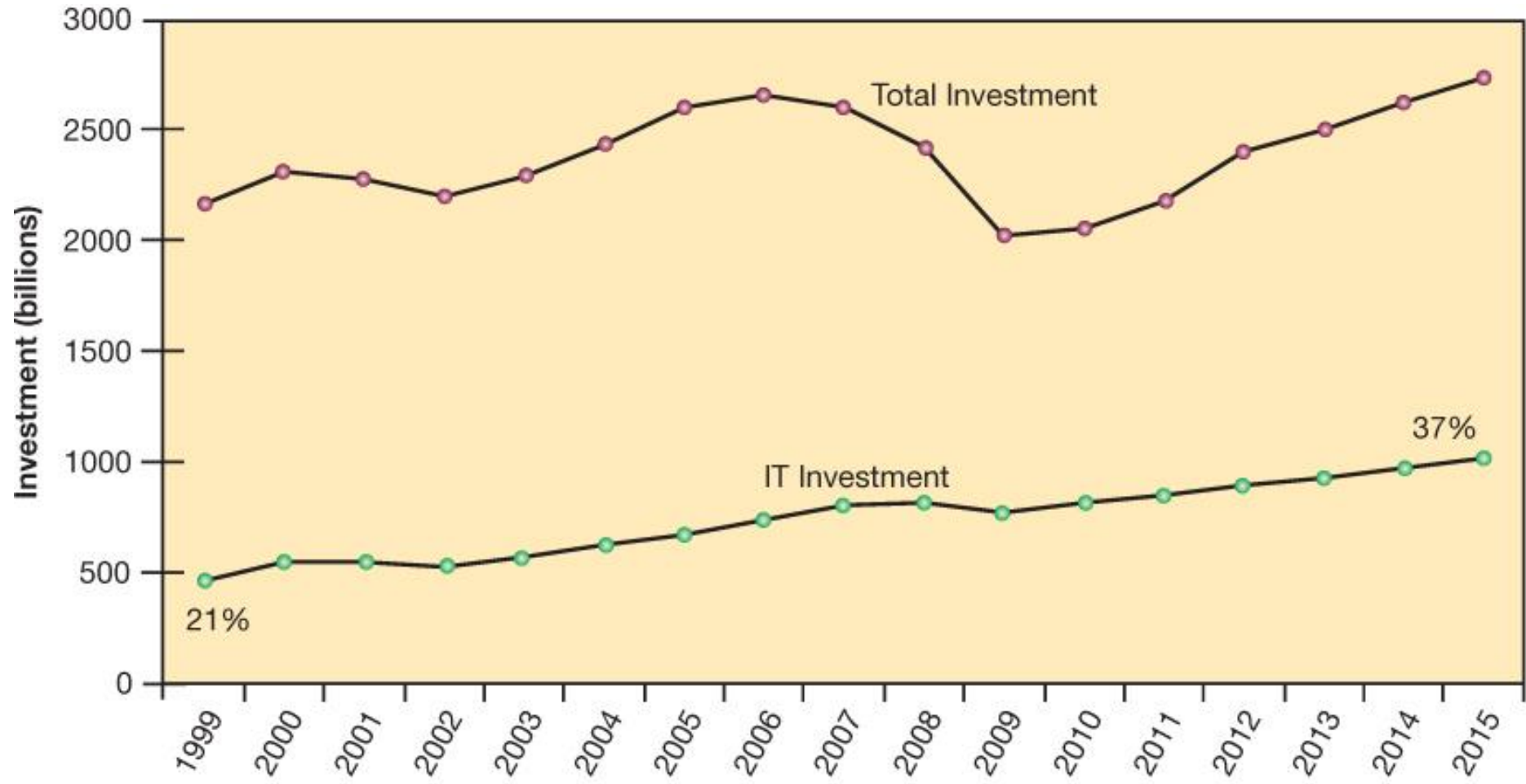
Learning Objectives

- 1-1 How are information systems transforming business, and why are they so essential for running and managing a business today?
- 1-2 What is an information system? How does it work? What are its management, organization, and technology components? Why are complementary assets essential for ensuring that information systems provide genuine value for organizations?
- 1-3 What academic disciplines are used to study information systems, and how does each contribute to an understanding of information systems?

How Information Systems Are Transforming Business

- Mobile digital platform
- Systems used to improve customer experience, respond to customer demand, reduce inventories, and more
- Growing online newspaper readership
- Expanding e-commerce and Internet advertising
- New federal security and accounting laws

Figure 1.1: Information Technology Capital Investment



What's New In Management Information Systems (1 of 2)

- Technology
 - Cloud computing
 - Big data and the Internet of Things (IoT)
 - Mobile digital platform
- Management
 - Online collaboration and social networking software
 - Business intelligence
 - Virtual meetings

What's New In Management Information Systems (2 of 2)

- Organizations
 - Social business
 - Telework
 - Co-creation of business value

Globalization Challenges and Opportunities: A Flattened World

- Internet has drastically reduced costs of operating on global scale
- Increases in foreign trade, outsourcing
- Presents both challenges and opportunities

The Emerging Digital Firm

- In a fully digital firm:
 - Significant business relationships are digitally enabled and mediated
 - Core business processes are accomplished through digital networks
 - Key corporate assets are managed digitally
- Digital firms offer greater flexibility in organization and management
 - Time shifting, space shifting

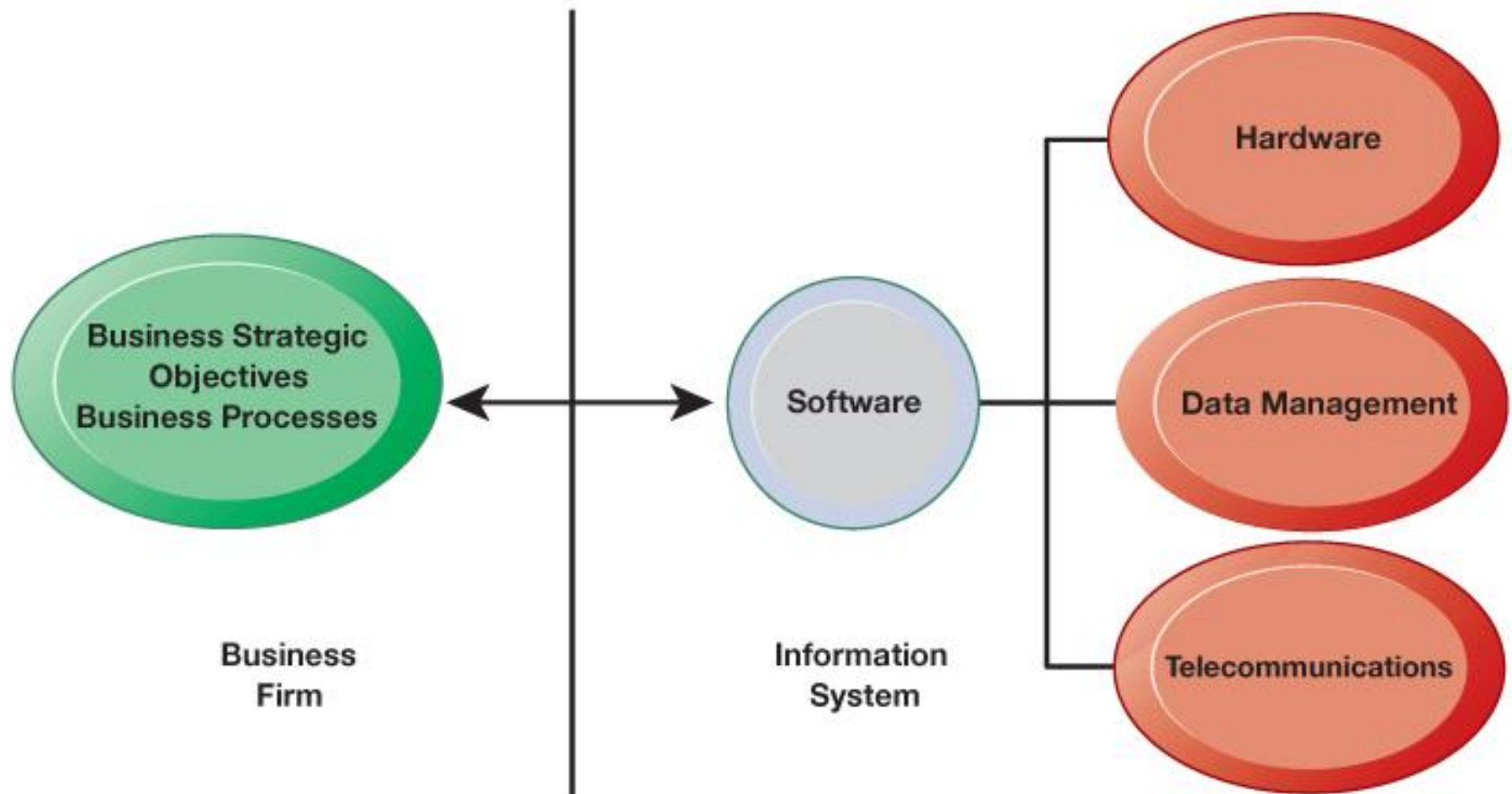
Strategic Business Objectives of Information Systems (1 of 2)

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

Strategic Business Objectives of Information Systems (2 of 2)

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

Figure 1.2: The Interdependence Between Organizations and Information Systems



Operational Intelligence

- Improvement of efficiency to attain higher profitability
- Information systems, technology an important tool in achieving greater efficiency and productivity
- Walmart's Retail Link system links suppliers to stores for superior replenishment system

New Products, Services, and Business Models

- Business model: describes how company produces, delivers, and sells product or service to create wealth
- Information systems and technology a major enabling tool for new products, services, business models
 - Examples: Apple's iPad, Google's Android OS, and Netflix

Customer and Supplier Intimacy

- Serving customers well leads them to return, increasing revenue and profits
 - Example: High-end hotels that use computers to track customer preferences and then monitor and customize the environment
- Intimacy with suppliers allows them to provide vital inputs, which lowers costs
 - Example: JCPenney's information system which links sales records to contract manufacturer

Improved Decision Making

- Without accurate information:
 - Managers must use forecasts, best guesses, luck
 - Results in:
 - Overproduction, underproduction
 - Misallocation of resources
 - Poor response times
 - Poor outcomes raise costs, lose customers
- Example: Verizon's web-based digital dashboard to provide managers with real-time data on customer complaints, network performance, line outages, and so on

Competitive Advantage

- Delivering better performance
- Charging less for superior products
- Responding to customers and suppliers in real time
- Examples: Apple, Walmart, UPS

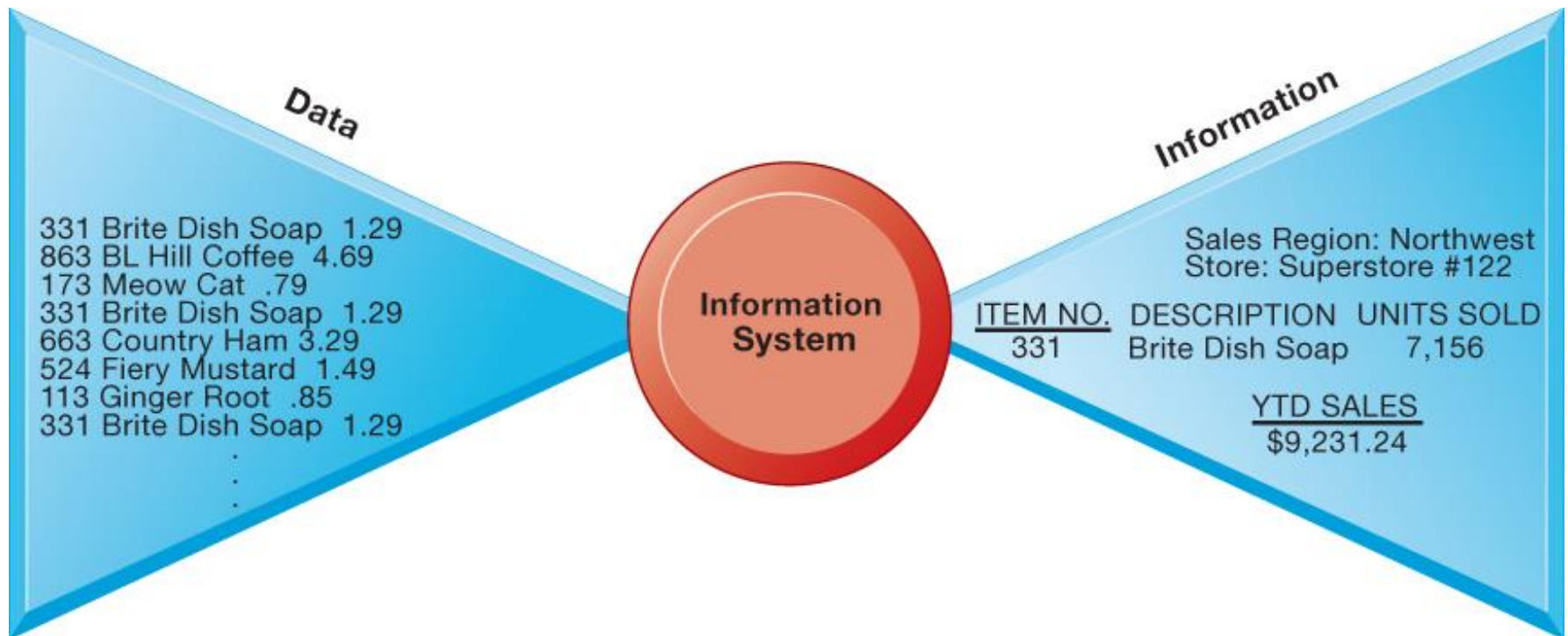
Survival

- Information technologies as necessity of business
- Industry-level changes
 - Example: Citibank's introduction of ATMs
- Governmental regulations requiring record-keeping
 - Examples: Toxic Substances Control Act, Sarbanes-Oxley Act
 - Dodd-Frank Act

What Is an Information System? (1 of 2)

- Information system
 - Set of interrelated components
 - Collect, process, store, and distribute information
 - Support decision making, coordination, and control
- Information vs. data
 - Data are streams of raw facts
 - Information is data shaped into meaningful form

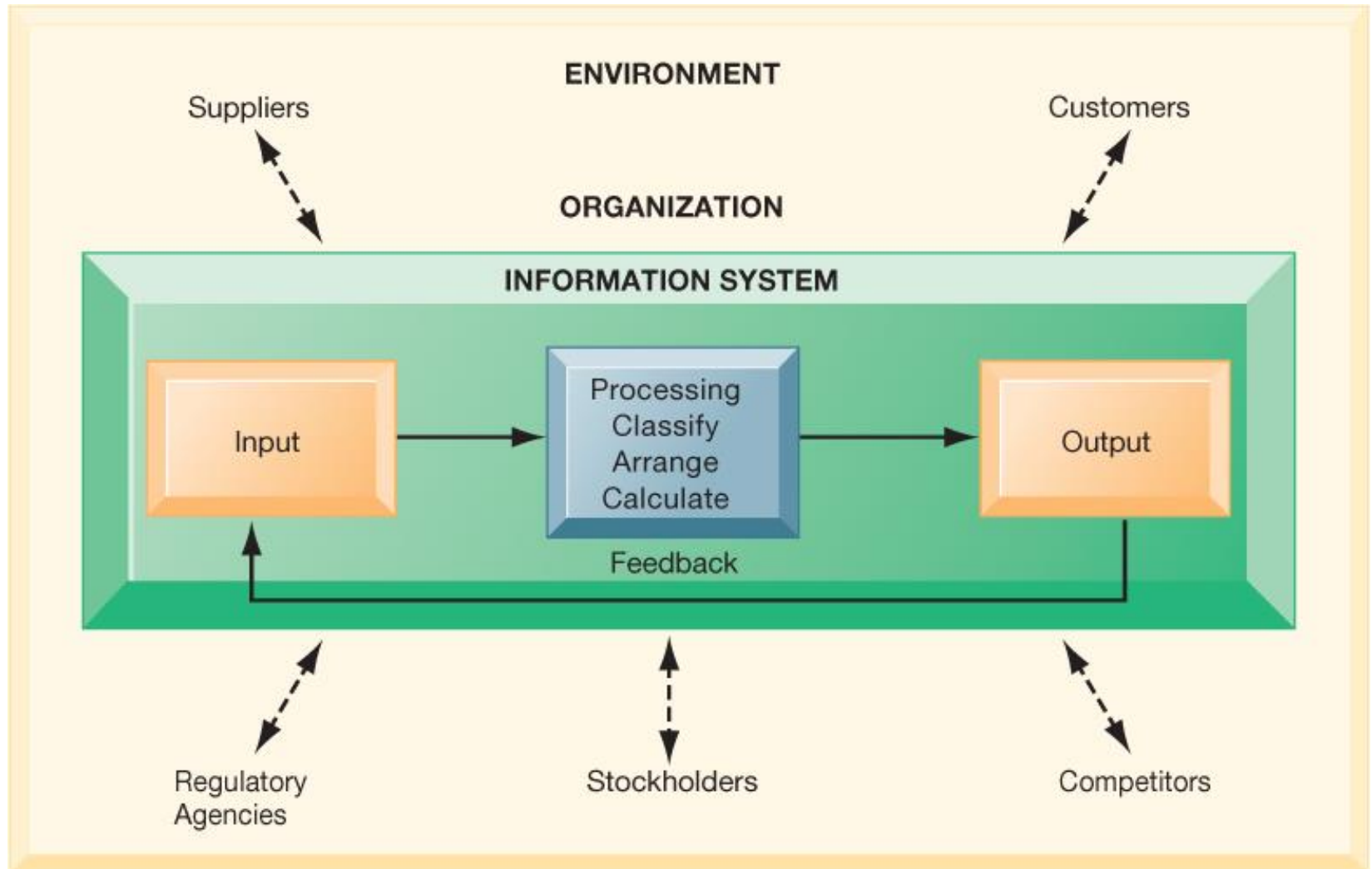
Figure 1.3: Data and Information



What Is an Information System? (2 of 2)

- Three activities of information systems produce information organizations need
 - Input: Captures raw data from organization or external environment
 - Processing: Converts raw data into meaningful form
 - Output: Transfers processed information to people or activities that use it
 - Feedback: Output is returned to appropriate members of organization to help evaluate or correct input stage

Figure 1.4: Functions of an Information System



Dimensions of Information Systems

- Organizations
- Management
- Technology

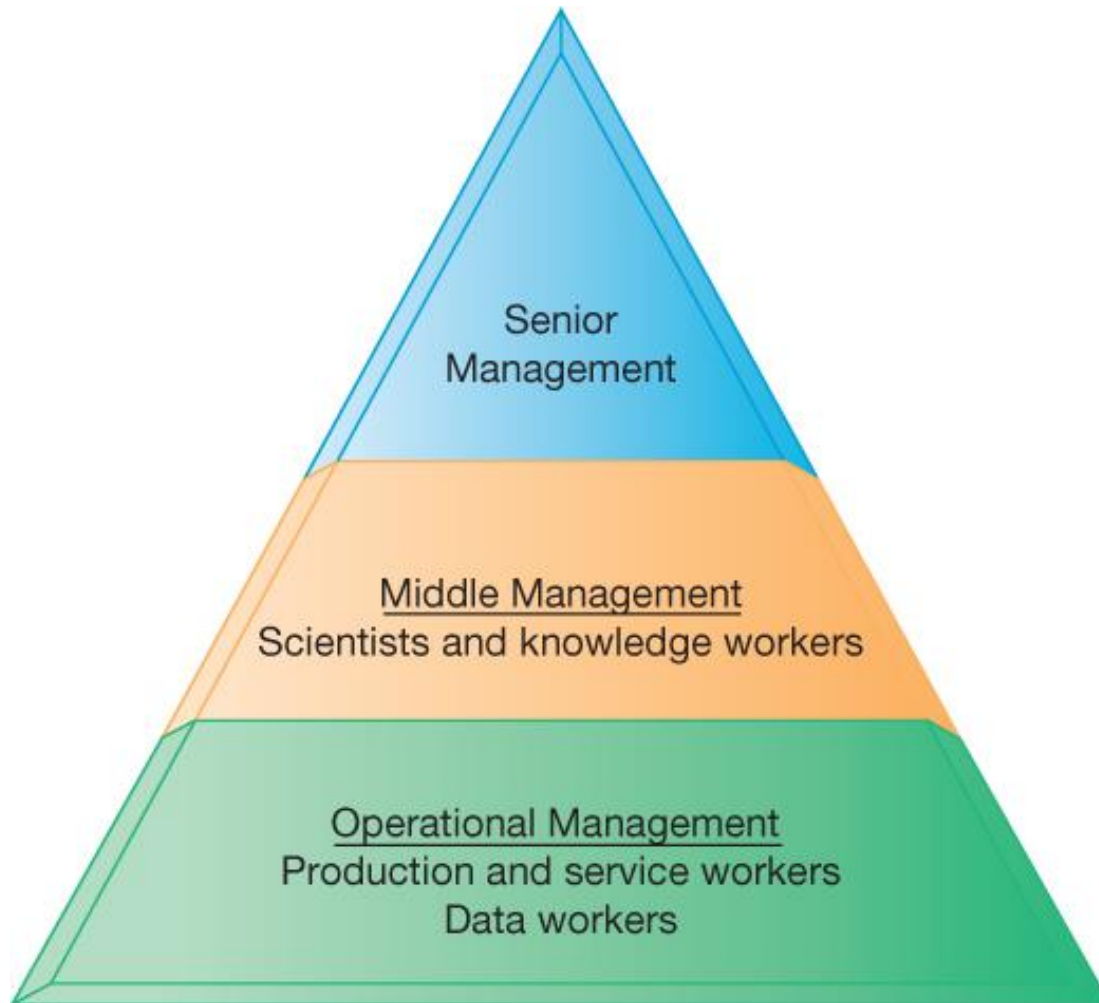
Figure 1.5: Information Systems Are More Than Computers



Dimensions of Information Systems: Organizations (1 of 2)

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

Figure 1.6: Levels in a Firm



Dimensions of Information Systems: Organizations (2 of 2)

- Separation of business functions
 - Sales and marketing
 - Human resources
 - Finance and accounting
 - Manufacturing and production
- Unique business processes
- Unique business culture
- Organizational politics

Dimensions of Information Systems: Management

- Managers set organizational strategy for responding to business challenges
- In addition, managers must act creatively
 - Creation of new products and services
 - Occasionally re-creating the organization

Dimensions of Information Systems: Technology

- Computer hardware and software
- Data management technology
- Networking and telecommunications technology
 - Networks, the Internet, intranets and extranets, World Wide Web
- IT infrastructure: provides platform that system is built on

It Isn't Just Technology: A Business Perspective on Information Systems (1 of 3)

- Information system is instrument for creating value
- Investments in information technology will result in superior returns
 - Productivity increases
 - Revenue increases
 - Superior long-term strategic positioning

It Isn't Just Technology: A Business Perspective on Information Systems (2 of 3)

- Business information value chain
 - Raw data acquired and transformed through stages that add value to that information
 - Value of information system determined in part by extent to which it leads to better decisions, greater efficiency, and higher profits
- Business perspective
 - Calls attention to organizational and managerial nature of information systems

It Isn't Just Technology: A Business Perspective on Information Systems (3 of 3)

- Investing in information technology does not guarantee good returns
- There is considerable variation in the returns firms receive from systems investments
- Factors
 - Adopting the right business model
 - Investing in complementary assets (organizational and management capital)

Figure 1.7: The Business Information Value Chain

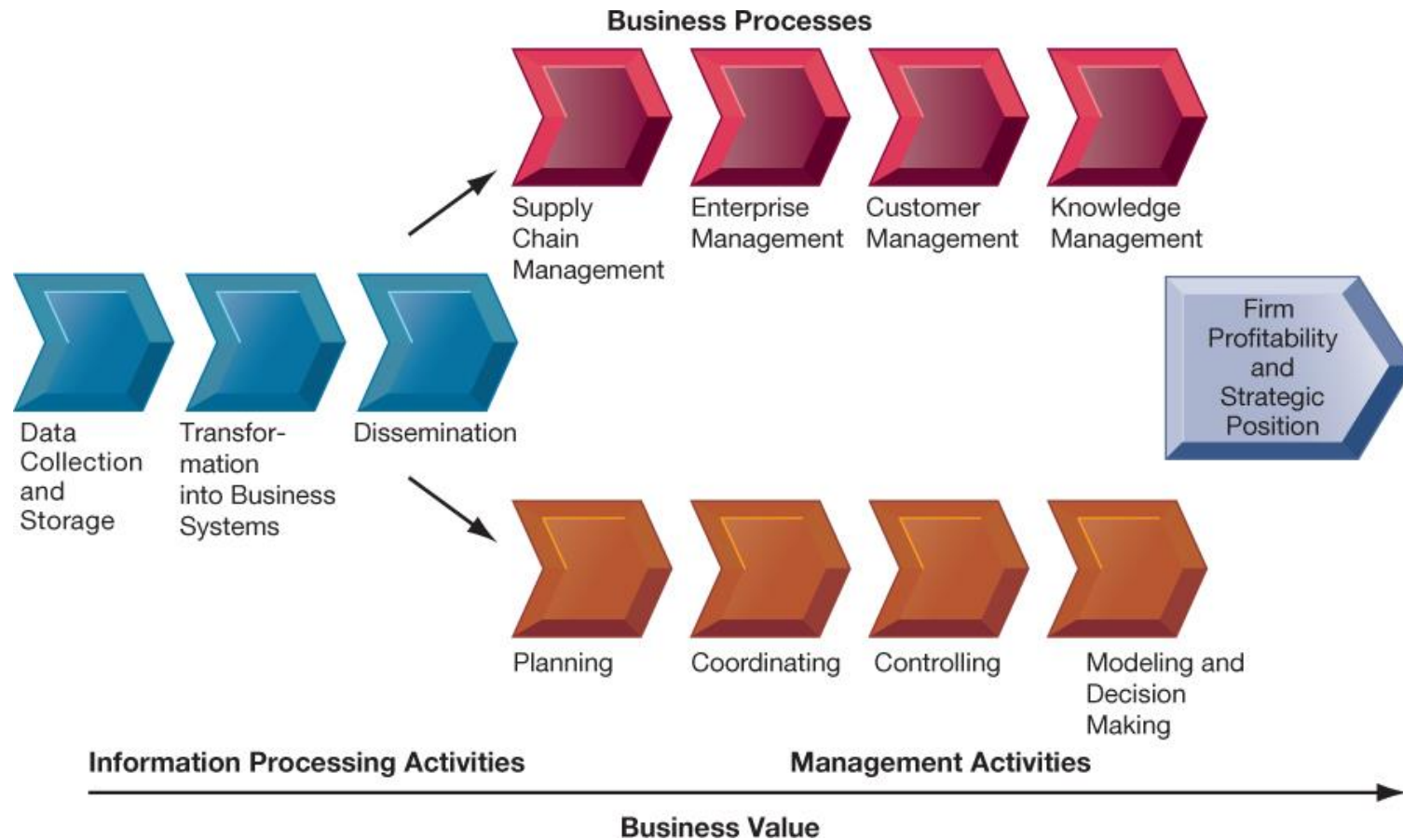
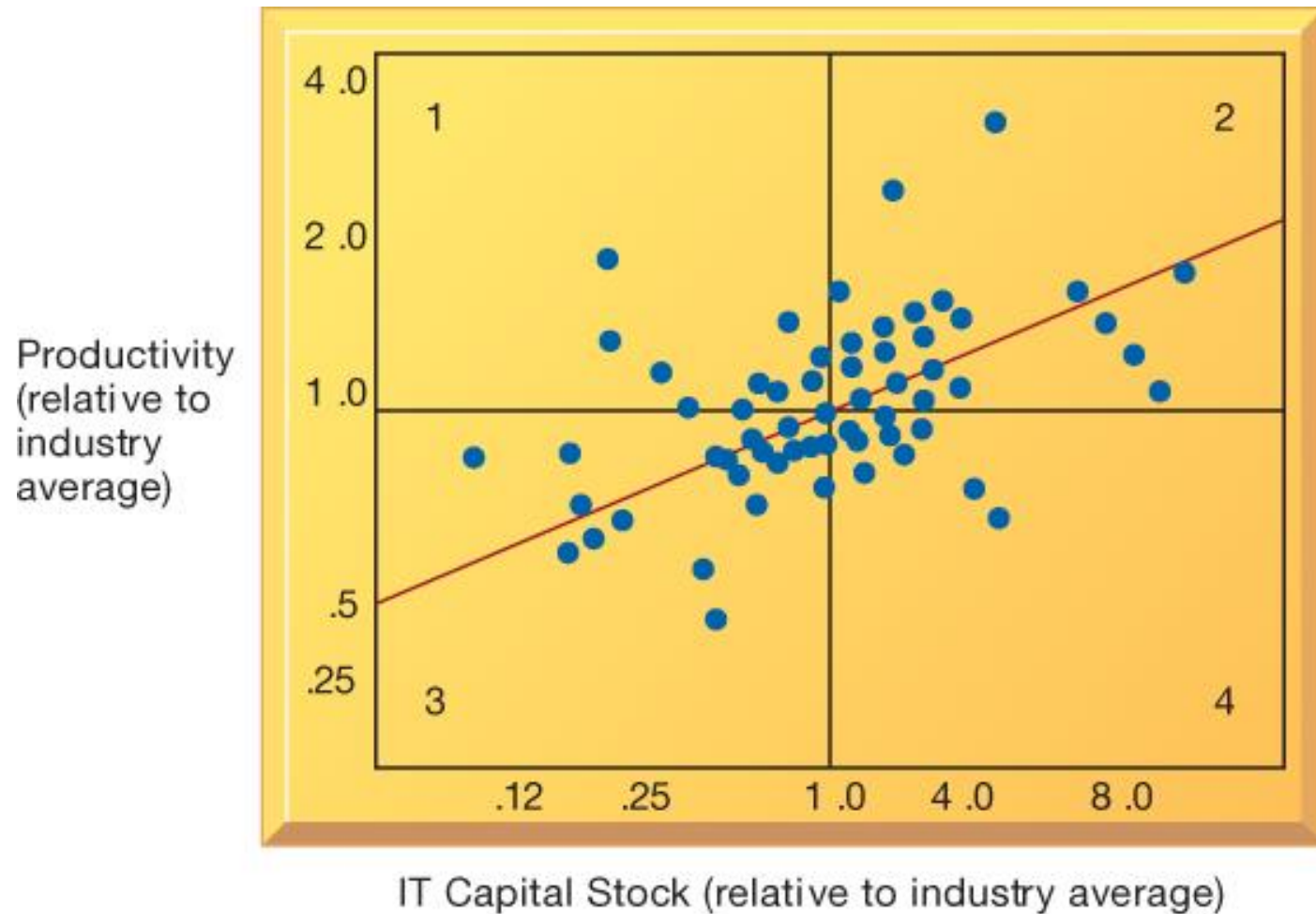


Figure 1.8: Variation in Returns on Information Technology



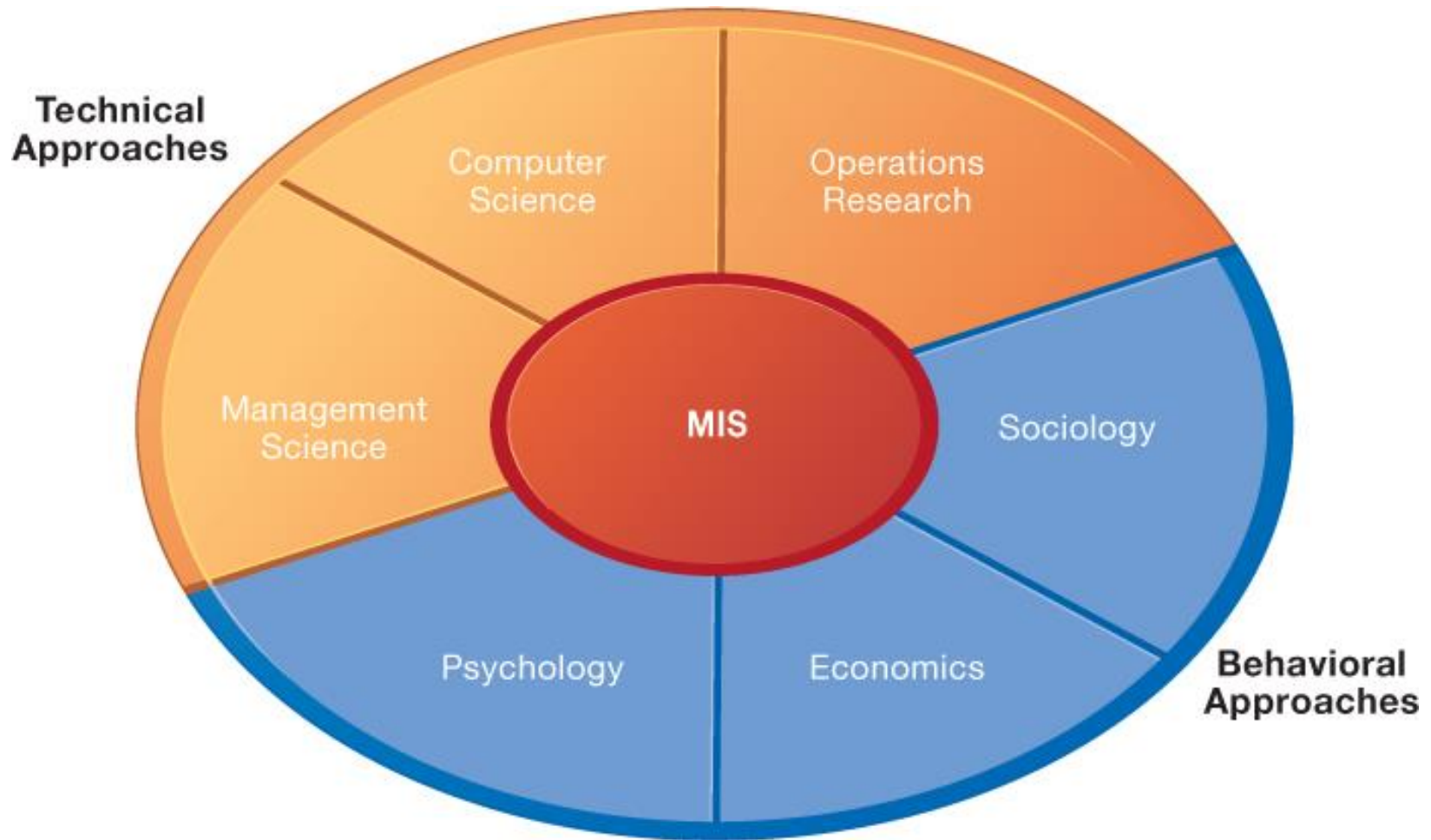
Complementary Assets: Organizational Capital and the Right Business Model (1 of 2)

- Assets required to derive value from a primary investment
- Firms supporting technology investments with investment in complementary assets receive superior returns
- Example: Invest in technology and the people to make it work properly

Complementary Assets: Organizational Capital and the Right Business Model (2 of 2)

- Complementary assets
 - Examples of organizational assets
 - Appropriate business model
 - Efficient business processes
 - Examples of managerial assets
 - Incentives for management innovation
 - Teamwork and collaborative work environments
 - Examples of social assets
 - The Internet and telecommunications infrastructure
 - Technology standards

Figure 1.9: Contemporary Approaches to Information Systems



Technical Approach

- Emphasizes mathematically based models
- Computer science, management science, operations research

Behavioral Approach

- Behavioral issues (strategic business integration, implementation, etc.)
- Psychology, economics, sociology

Approach of This Text: Sociotechnical Systems (1 of 2)

- Management information systems
 - Combines computer science, management science, operations research, and practical orientation with behavioral issues
- Four main actors
 - Suppliers of hardware and software
 - Business firms
 - Managers and employees
 - Firm's environment (legal, social, cultural context)

Approach of This Text: Sociotechnical Systems (2 of 2)

- Sociotechnical view
 - Optimal organizational performance achieved by jointly optimizing both social and technical systems used in production
 - Helps avoid purely technological approach

Figure 1.10: A Sociotechnical Perspective on Information Systems

