

Chapter 1

Information Systems in Business Today

VIDEO CASES

Case 1: UPS Global Operations with the DIAD IV

Case 2: Google Data Center Efficiency Best Practices

Instructional Video 1: Green Energy Efficiency in a Data

Center Using Tivoli Architecture

Instructional Video 2: Tour IBM's Raleigh Data Center



Management Information Systems

Chapter 1: Information Systems in Global Business Today

Learning Objectives

- Understand the effects of information systems on business and their relationship to globalization.
- Explain why information systems are so essential in business today.
- Define an information system and describe its management, organization, and technology components.

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Learning Objectives (cont.)

- Define complementary assets and explain how they ensure that information systems provide genuine value to an organization.
- Describe the different academic disciplines used to study information systems and explain how each contributes to our understanding of them.
- Explain what is meant by a sociotechnical systems perspective.

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Shortening Lines at Disney World: Technology to the Rescue

- **Problem:** Long lines limit how many rides, shops, and restaurants a customer can visit during a stay.
- **Solutions:** Enhance customer satisfaction and spending by using information systems to spot gridlock and improve crowd flow.
- Operational Command Center uses video cameras, digital maps, computer programs, and mobile apps to monitor attendance, registers, and spot and prevent gridlock
- Demonstrates IT's role in increasing value and revenue in any business.
- Illustrates the potential for technology to improve customer experience.

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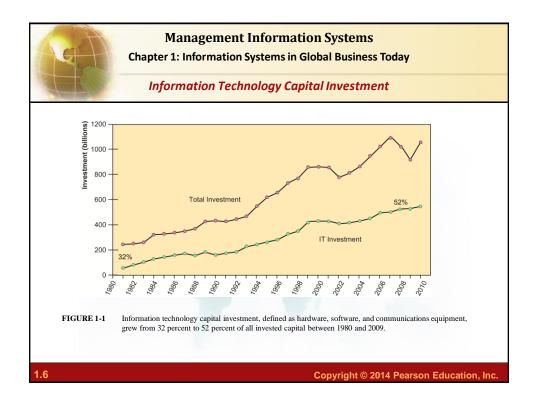


Chapter 1: Information Systems in Global Business Today

The Role of Information Systems in Business Today

- How information systems are transforming business
 - Emerging mobile digital platform
 - Growing business use of "big data"
 - Growth in cloud computing
- Globalization opportunities
 - Internet has drastically reduced costs of operating on global scale
 - Increases in foreign trade, outsourcing
 - Presents both challenges and opportunities

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Interactive Session: Management

RUNNING THE BUSINESS FROM THE PALM OF YOUR HAND

Read the Interactive Session and discuss the following questions

- What kinds of applications are described in the case? What business functions do they support? How do they improve operational efficiency and decision making?
- Identify the problems that businesses in this case study solved by using mobile digital devices.
- What kinds of businesses are most likely to benefit from equipping their employees with mobile devices?
- Discuss the implications of this statement: "The iPhone is not a game changer, it's an industry changer."

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The Role of Information Systems in Business Today

- In the emerging, 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

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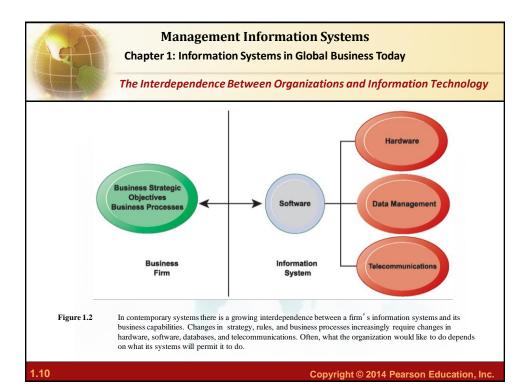


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The Role of Information Systems in Business Today

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

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The Role of Information Systems in Business Today

Operational excellence:

- 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

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• 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

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The Role of Information Systems in Business Today

Customer and supplier intimacy:

- Serving customers well leads to customers returning, which raises revenues and profits.
 - Example: High-end hotels that use computers to track customer preferences and used to monitor and customize 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

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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

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The Role of Information Systems in Business Today

Competitive advantage

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

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The Role of Information Systems in Business Today

Survival

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

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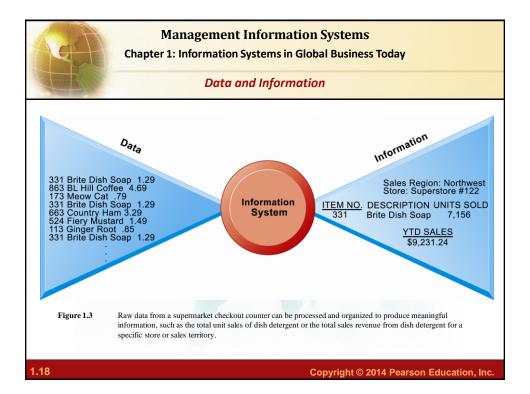


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Perspectives on Information Systems

- 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.

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Perspectives on Information Systems

- 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

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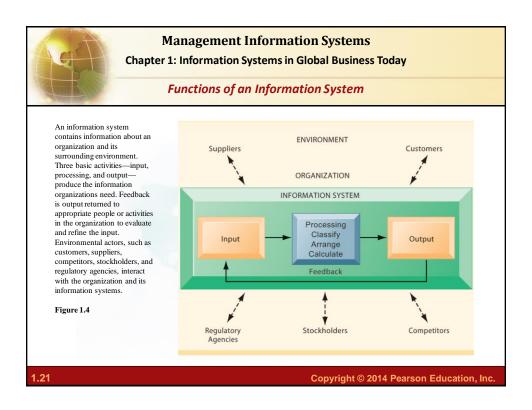
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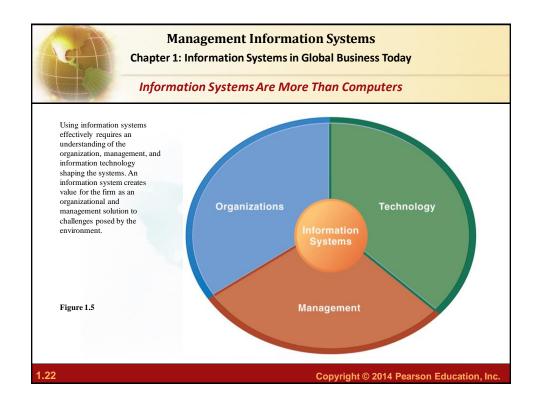
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Perspectives on Information Systems

- Feedback:
 - Output is returned to appropriate members of organization to help evaluate or correct input stage.
- Computer/Computer program vs. information system
 - Computers and software are technical foundation and tools, similar to the material and tools used to build a house.

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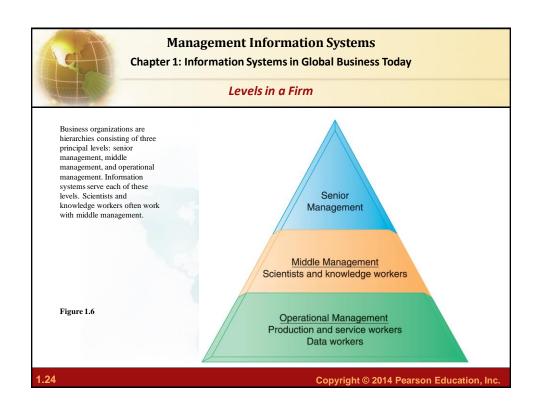


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Perspectives on Information Systems

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

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Perspectives on Information Systems

- Organizational dimension of information systems (cont.)
 - Separation of business functions
 - Sales and marketing
 - Human resources
 - Finance and accounting
 - Manufacturing and production
 - Unique business processes
 - Unique business culture
 - Organizational politics

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Perspectives on Information Systems

- Management dimension of information systems
 - 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

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Perspectives on Information Systems

- Technology dimension of information systems
 - 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

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Interactive Session: Organizations

UPS COMPETES GLOBALLY WITH I.T.

Read the Interactive Session and discuss the following questions

- What are the inputs, processing, and outputs of UPS's package tracking system?
- What technologies are used by UPS? How are these technologies related to UPS's business strategy?
- What business objectives do UPS's information systems address?
- What would happen if these systems were not available?

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Perspectives on Information Systems

Dimensions of UPS tracking system

- Organizational:
 - Procedures for tracking packages and managing inventory and provide information
- Management:
 - Monitor service levels and costs
- Technology:
 - Handheld computers, bar-code scanners, networks, desktop computers, and so on

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Perspectives on Information Systems

- Business perspective on information systems:
 - 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

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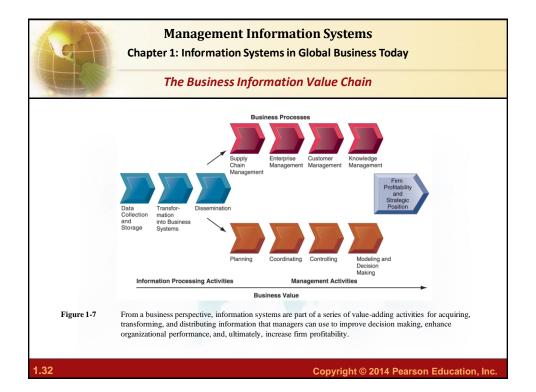
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Perspectives on Information Systems

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

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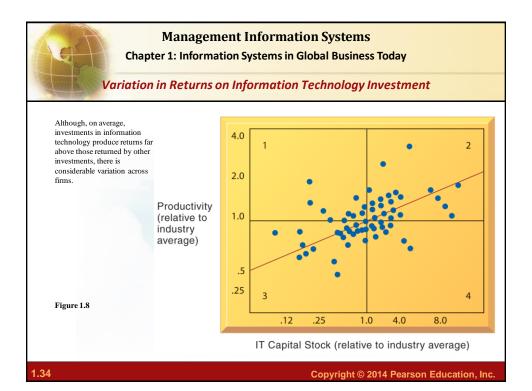


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Perspectives on Information Systems

- 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)

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Perspectives on Information Systems

Complementary assets:

- 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

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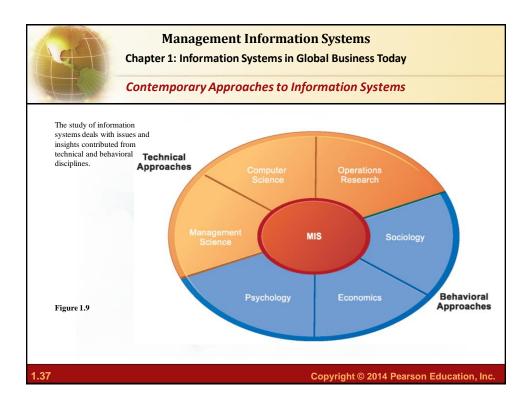
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Perspectives on Information Systems

Complementary assets include:

- Organizational assets, for example:
 - Appropriate business model
 - Efficient business processes
 - Managerial assets, for example:
 - Incentives for management innovation
 - Teamwork and collaborative work environments
 - Social assets, for example:
 - The Internet and telecommunications infrastructure
 - Technology standards

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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

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Contemporary Approaches to Information Systems

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)

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Contemporary Approaches to Information Systems

• Approach of this book: Sociotechnical view

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

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