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- **Foundations of Information Systems in Business**
- **Information Systems in Global Business Today**



DARMAJAYA

Source:

O'Brien, James A. and Marakas, George M. 2011. *Management Information Systems*.

Laudon, Kenneth C. and Laudon, Jane P. 2014. *Management Information Systems: Managing the Digital Firm*.



FOUNDATION CONCEPTS

- Why study information systems and information technology?
 - Vital component of successful businesses
 - Helps businesses expand and compete
 - Improves efficiency and effectiveness of business processes
 - Facilitates managerial decision making and workgroup collaboration

SYSTEM

WHAT IS A SYSTEM

- A set of interrelated components
- With a clearly defined boundary
- Working together
- To achieve a common set of objectives

SYSTEM

What is an Information System?

- An organized combination of...
 - People
 - Hardware and software
 - Communication networks
 - Data resources
 - Policies and procedures
- This system...
 - Stores, retrieves, transforms, and disseminates information in an organization

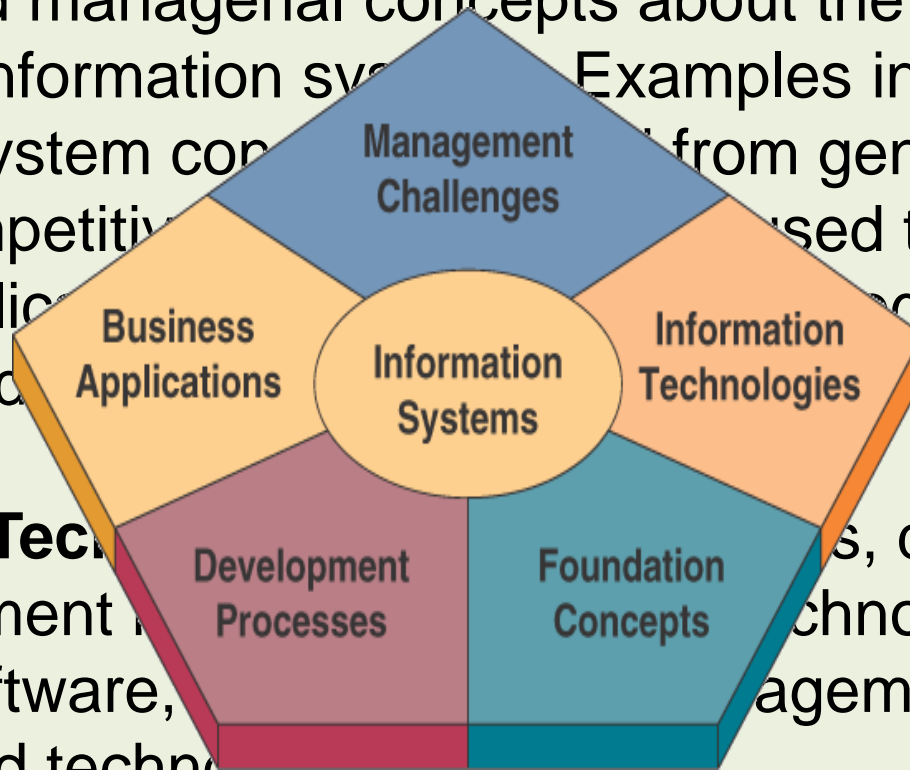


INFORMATION TECHNOLOGIES

- INFORMATION SYSTEMS
 - ALL THE COMPONENTS AND RESOURCES NECESSARY TO DELIVER INFORMATION AND FUNCTIONS TO THE ORGANIZATION
 - COULD BE PAPER BASED
- INFORMATION TECHNOLOGIES
 - HARDWARE, SOFTWARE, NETWORKING, DATA MANAGEMENT
- OUR FOCUS WILL BE ON COMPUTER-BASED INFORMATION SYSTEMS (CBIS)

WHAT SHOULD BUSINESS PROFESSIONALS KNOW?

Foundation Concepts. Fundamental behavioral, technical, business, and managerial concepts about the components and roles of information systems. Examples include basic information system concepts from general systems theory or competitive advantage used to develop business applications for competitive advantage.



Information Technologies. Hardware, software, and management information systems, developments, and Internet-based technologies. Technology—that is, hardware, software, and management information systems, developments, and Internet-based technologies.

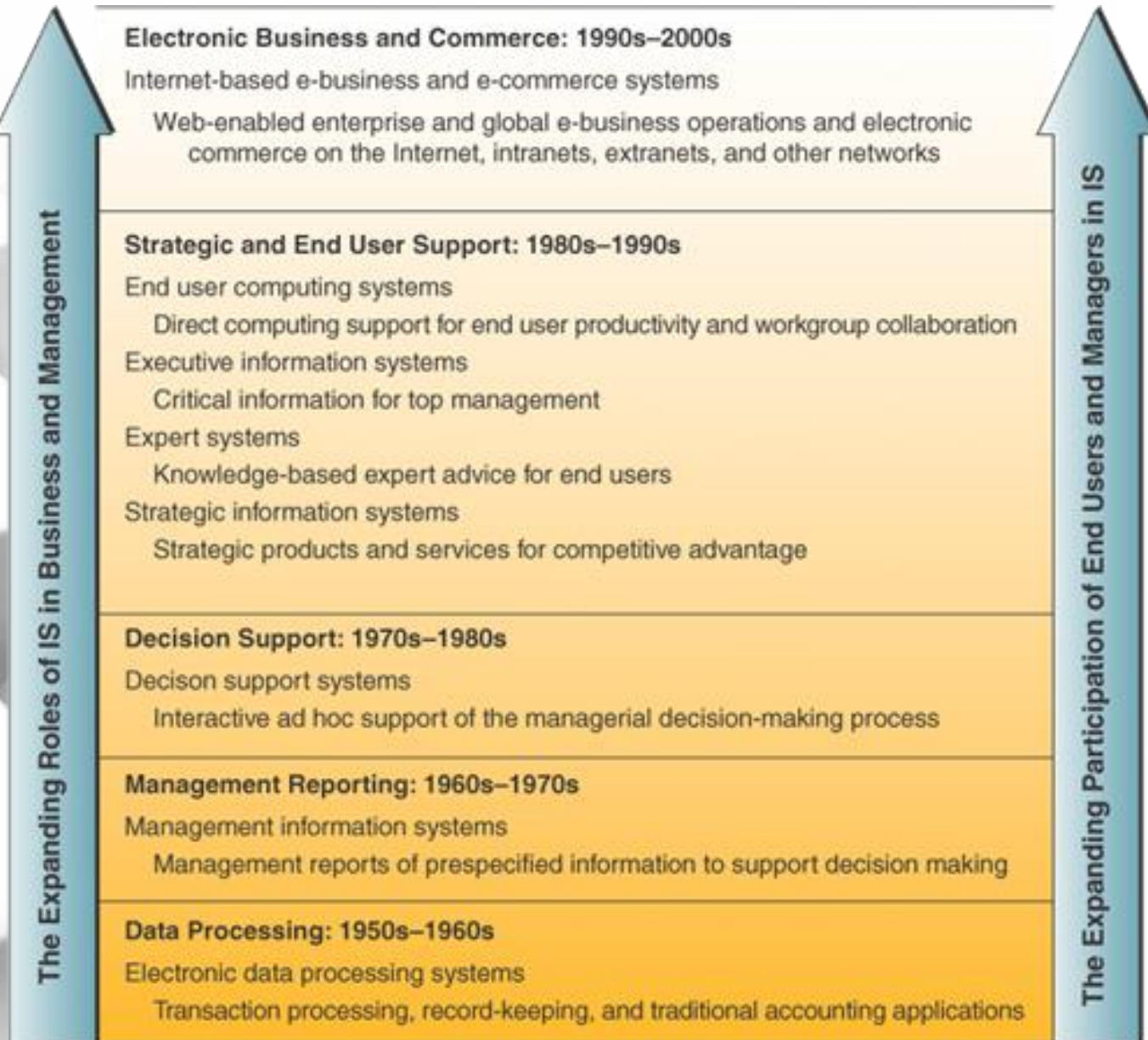
Business Information Systems. A framework that outlines the major areas of information systems for the operations, management, and competitive advantage of a business. Knowledge needed by business professionals.

Fundamental ROLES of IS in Business

Information Systems



TRENDS IN INFORMATION SYSTEMS

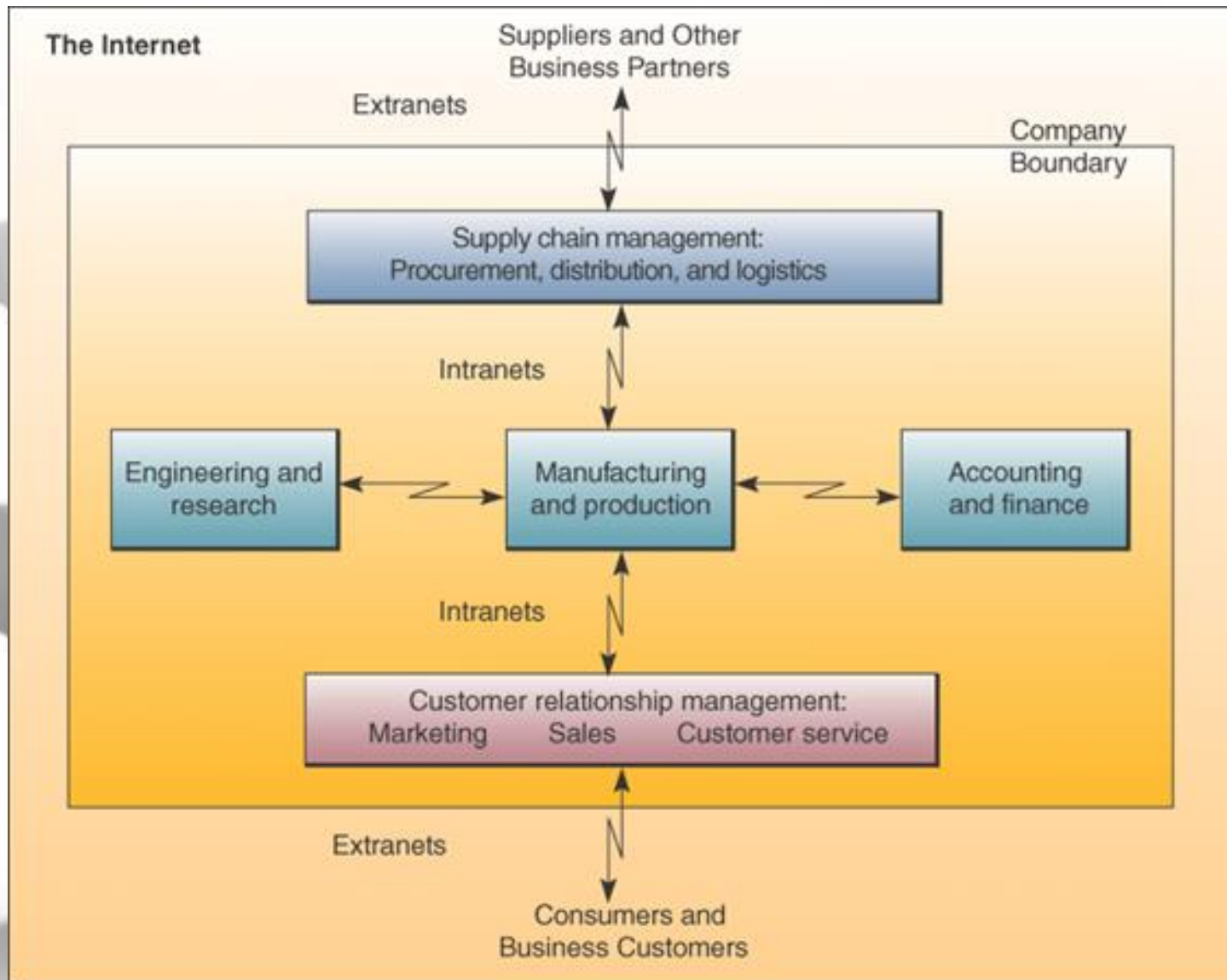




WHAT IS ELECTRONIC BUSINESS (E-BUSINESS)?

- USING INTERNET TECHNOLOGIES TO EMPOWER...
 - BUSINESS PROCESSES
 - ELECTRONIC COMMERCE
 - COLLABORATION WITHIN A COMPANY
 - COLLABORATION WITH CUSTOMERS, SUPPLIERS, AND OTHER BUSINESS STAKEHOLDERS
- IN ESSENCE, AN ONLINE EXCHANGE OF VALUE

HOW E-BUSINESS IS BEING USED



E-BUSINESS USE

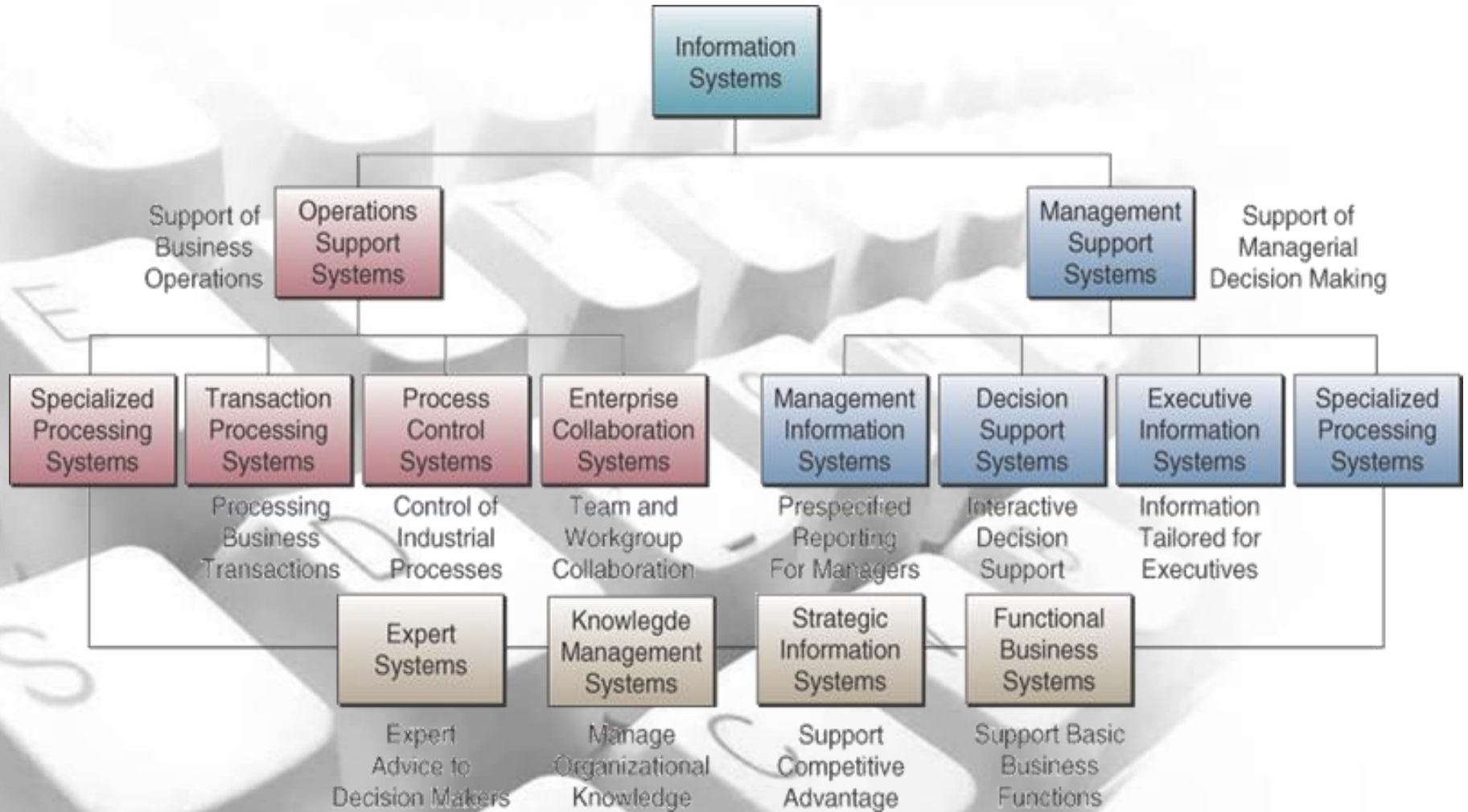
- Reengineering
 - Internal business processes
- Enterprise collaboration systems
 - Support communications, coordination and coordination among teams and work groups
- Electronic commerce
 - Buying, selling, marketing, and servicing of products and services over networks



TYPES OF INFORMATION SYSTEMS

- Operations Support Systems
 - Efficiently process business transactions
 - Control industrial processes
 - Support communication and collaboration
 - Update corporate databases
- Management Support Systems
 - Provide information as reports and displays
 - Give direct computer support to managers during decision-making

PURPOSES OF INFORMATION SYSTEMS





OPERATIONS SUPPORT SYSTEMS

- What do they do?
 - Efficiently process business transactions
 - Control industrial processes
 - Support communications and collaboration
 - Update corporate databases

Management Support Systems

- What do they do?
 - Provide information and support for effective decision making by managers
 - Management information systems
 - Decision support systems
 - Executive information systems

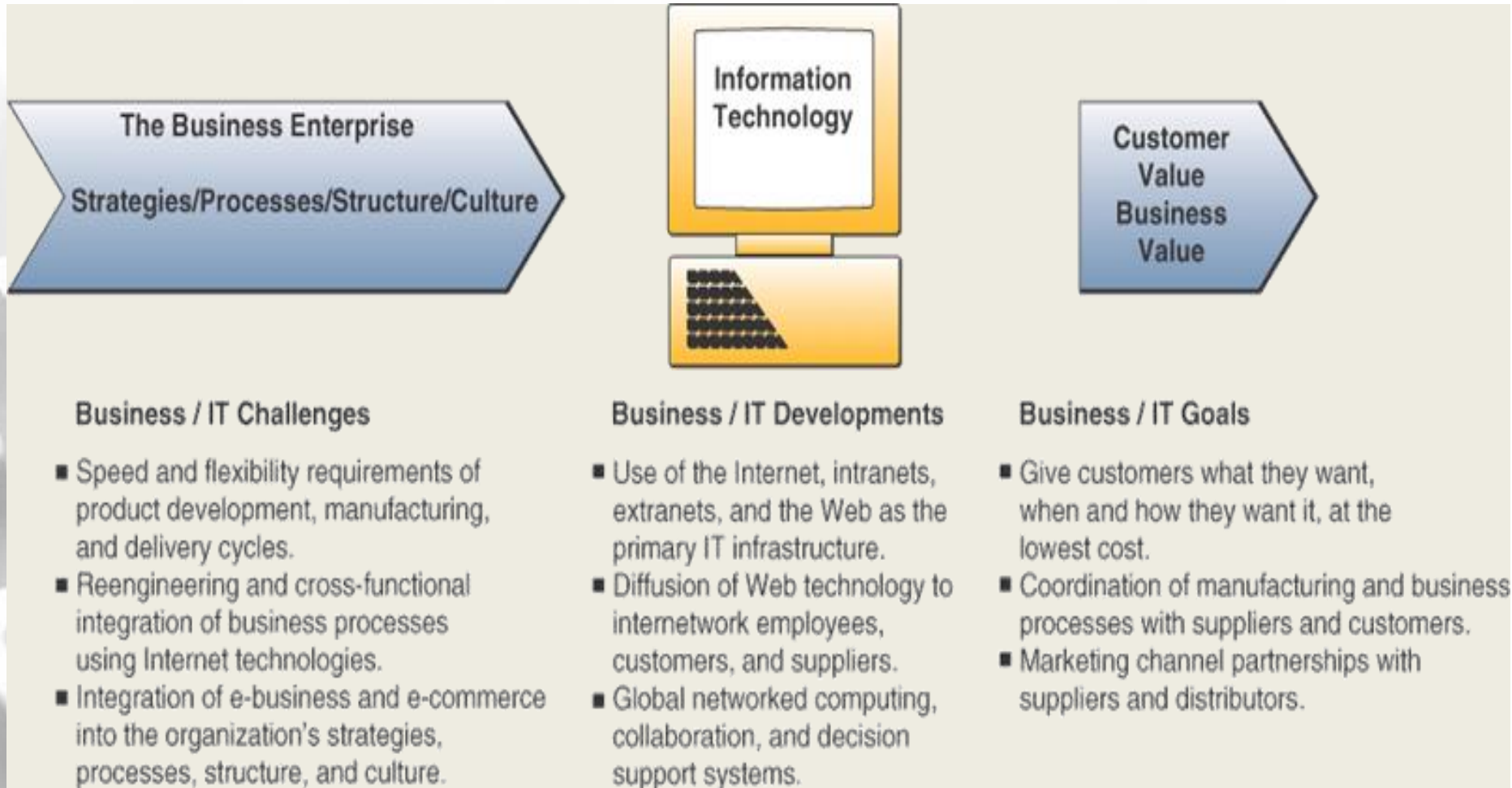
TYPES OF MANAGEMENT SUPPORT SYSTEMS

- MANAGEMENT INFORMATION SYSTEMS (MIS)
 - REPORTS AND DISPLAYS
 - EXAMPLE: DAILY SALES ANALYSIS REPORTS
- DECISION SUPPORT SYSTEMS (DSS)
 - INTERACTIVE AND AD HOC SUPPORT
 - EXAMPLE: A WHAT-IF ANALYSIS TO DETERMINE WHERE TO SPEND ADVERTISING DOLLARS
- EXECUTIVE INFORMATION SYSTEMS (EIS)
 - CRITICAL INFORMATION FOR EXECUTIVES AND MANAGERS
 - EXAMPLE: EASY ACCESS TO ACTIONS OF COMPETITORS

Other Information Systems

- Expert Systems - provide expert advice
 - Example: credit application advisor
- Knowledge Management Systems - support creation, organization, and dissemination of business knowledge throughout company
 - Example: intranet access to best business practices
- Strategic Information Systems - help get a strategic advantage over customer
 - Example: shipment tracking, e-commerce Web systems
- Functional Business Systems - focus on operational and managerial applications of basic business functions
 - Example: accounting, finance, or marketing

IT CHALLENGES AND OPPORTUNITIES





Smart Systems and Smart Ways of Working Help Toyota Become Number One

- **Problem:** Tough competition and demanding customers.
- **Solutions:** Redesigned order and production processes reduce costs, increase revenue, and improve customer service.
- **Oracle E-Business Suite** makes it possible to build cars to order and forecast demand and production requirements more accurately.
- Demonstrates IT's role in analyzing market trends and monitoring quality, efficiency, and costs.
- Illustrates the emerging digital firm landscape where businesses can use tools to analyze critical data.

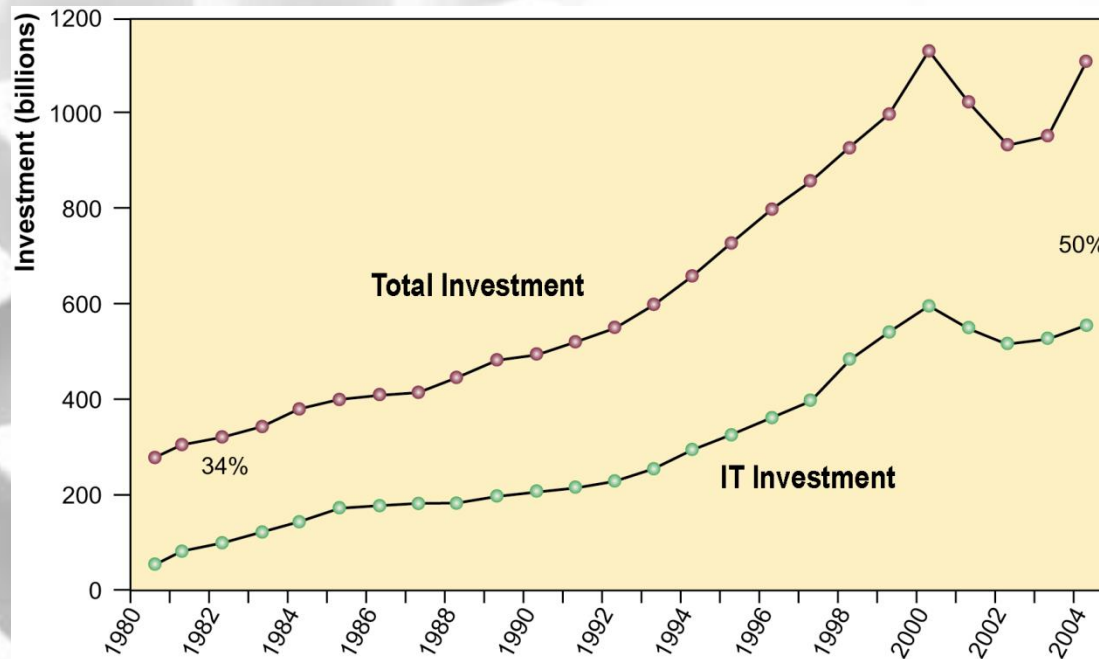


The Role of Information Systems in Business Today

- **How information systems are transforming business**
- **Globalization opportunities**
- **The emerging digital firm**
- **Strategic business objectives of information systems**
 - **Operational excellence**
 - **New products, services, and business models**
 - **Customer and supplier intimacy**
 - **Improved decision making**
 - **Competitive advantage**
 - **Survival**

The Role of Information Systems in Business Today

Information Technology Capital Investment



Information technology investment, defined as hardware, software, and communications equipment, grew from 34% to 50% between 1980 and 2004.

Source: Based on data in U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, 2006.

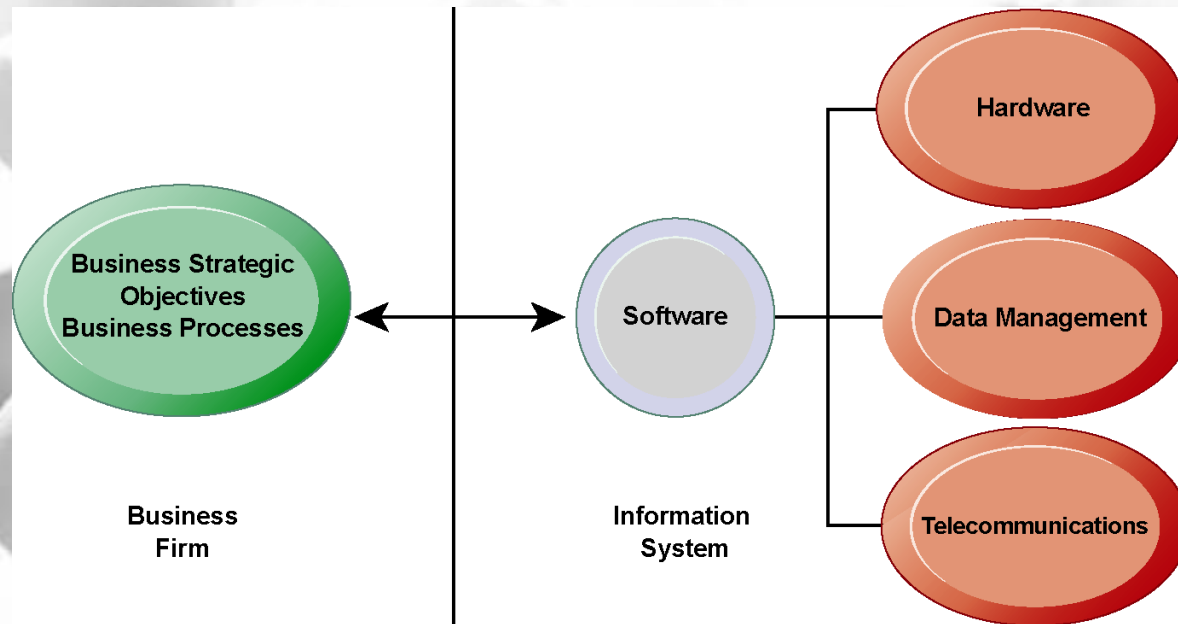
The Role of Information Systems in Business Today

Virtual Management at Accenture

- Read the Interactive Session: Organizations, and then discuss the following questions:
 - **What are the advantages of working** in a virtual environment like the one created by Accenture? What are the disadvantages?
 - **Would you like to work at a company** like Accenture? Why or why not? Explain your answer.
 - **What kinds of companies could benefit** from being run virtually like Accenture? Could all companies be run virtually like Accenture?

The Role of Information Systems in Business Today

The Interdependence Between Organizations and Information Technology



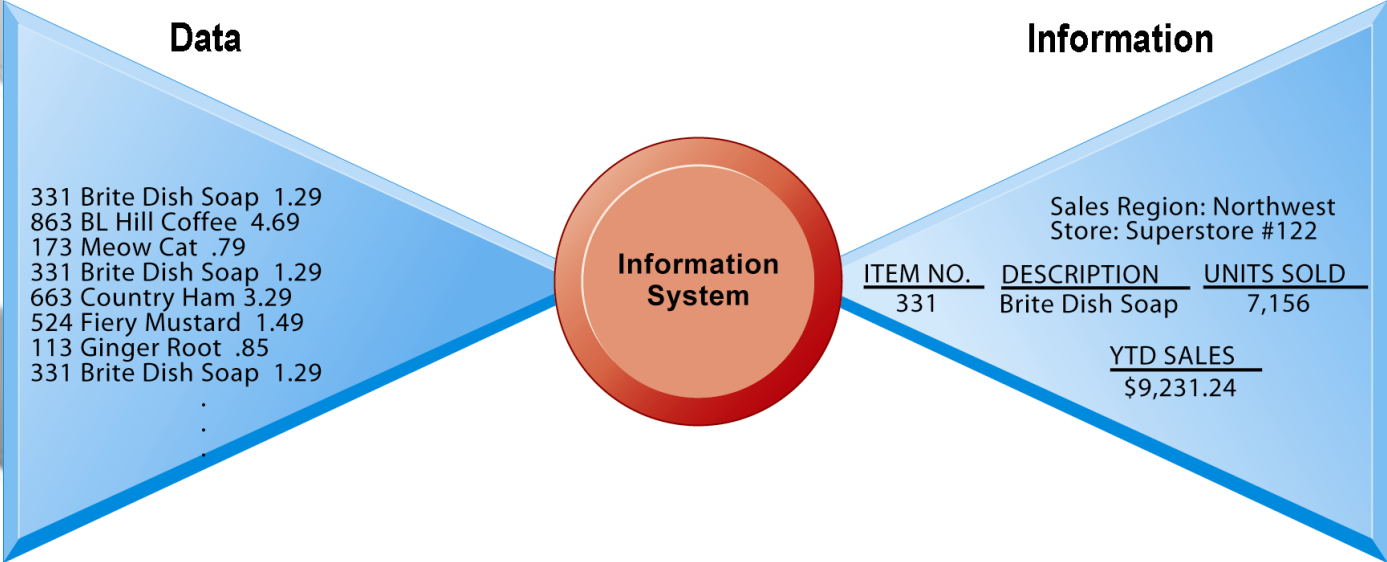
There is a growing interdependence between a firm's information systems and its business capabilities. Changes in strategy, rules, and business processes increasingly require changes in hardware, software, databases, and telecommunications. Often, what the organization would like to do depends on what its systems will permit it to do.

Perspectives on Information Systems

- **What is an information system?**
- **Dimensions of information systems**
 - Organizations
 - Management
 - Technology
- **It isn't just a technology: A Business perspective on information systems**
- **Complementary assets: Organizational capital and the right business model**

Perspectives on Information Systems

Data and Information



Raw data from a supermarket checkout counter can be processed and organized to produce meaningful information, such as the total unit sales of dish detergent or the total sales revenue from dish detergent for a specific store or sales territory.

Perspectives on Information Systems

Information Systems Are More Than Computers



Using information systems effectively requires an understanding of the organization, management, and information technology shaping the systems. An information system creates value for the firm as an organizational and management solution to challenges posed by the environment.



Perspectives on Information Systems

UPS Competes Globally with Information Technology

- **Read the Interactive Session: Technology, and then 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 problems do UPS's information systems solve? What would happen if these systems were not available?**

Contemporary Approaches to Information Systems

- **Technical approach**
- **Behavioral approach**
- **Approach of this text: Sociotechnical systems**