Chapter 2

GLOBAL E-BUSINESS AND COLLABORATION

VIDEO CASES

Case 1: How FedEx Works: Enterprise Systems

Case 2: Oracle's Austin Data Center Instructional Video 1: FedEx Improves Customer Experience with Integrated Mapping and Location Data

Learning Objectives

- Define and describe business processes and their relationship to information systems.
- Evaluate the role played by systems serving the various levels of management in a business and their relationship to each other.
- Explain how enterprise applications improve organizational performance.

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Learning Objectives (cont.)

- Explain the importance of collaboration and teamwork in business and how they are supported by technology.
- Assess the role of the information systems function in a business.

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America's Cup 2010: USA Wins with Information Technology

- **Problem:** Using IT to win the America's Cup race
- **Solutions:** New technology for physical engineering of boat; sensor network to monitor conditions and data analysis to improve the performance of sails and more.
- **IBM Oracle Database** 11g data management software provided real time analysis of boat's sensor data.
- Demonstrates IT's role in fostering innovation and improving performance.
- Illustrates the benefits of using data analysis and IT to improve products

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Business Processes and Information Systems

- **Business processes:**
  - Workflows of material, information, knowledge
  - Sets of activities, steps
  - May be tied to functional area or be cross-functional
- **Businesses: Can be seen as collection of business processes**
- **Business processes may be assets or liabilities**

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Business Processes and Information Systems

- **Examples of functional business processes**
  - **Manufacturing and production**
    - Assembling the product
  - **Sales and marketing**
    - Identifying customers
  - **Finance and accounting**
    - Creating financial statements
  - **Human resources**
    - Hiring employees

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Business Processes and Information Systems

The Order Fulfillment Process

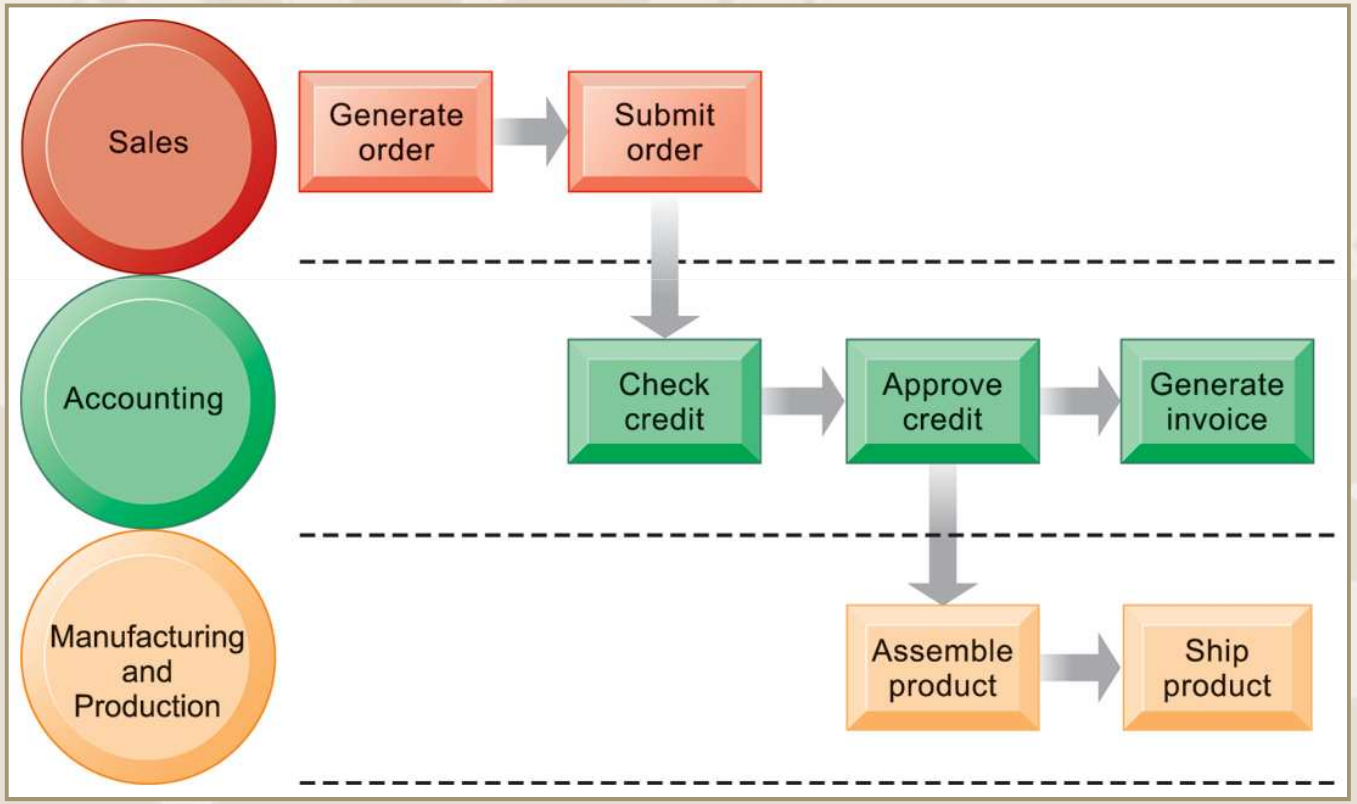

FIGURE 2-1 Fulfilling a customer order involves a complex set of steps that requires the close coordination of the sales, accounting, and manufacturing functions.

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Business Processes and Information Systems

- **Information technology enhances business processes in two main ways:**
  1. **Increasing efficiency of existing processes**
     - Automating steps that were manual
  2. **Enabling entirely new processes that are capable of transforming the businesses**
     - Change flow of information
     - Replace sequential steps with parallel steps
     - Eliminate delays in decision making

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Types of Information Systems

- **Transaction processing systems**
  - **Perform and record daily routine transactions necessary to conduct business**
    - Examples: sales order entry, payroll, shipping
  - **Allow managers to monitor status of operations and relations with external environment**
  - **Serve operational levels**
  - **Serve predefined, structured goals and decision making**

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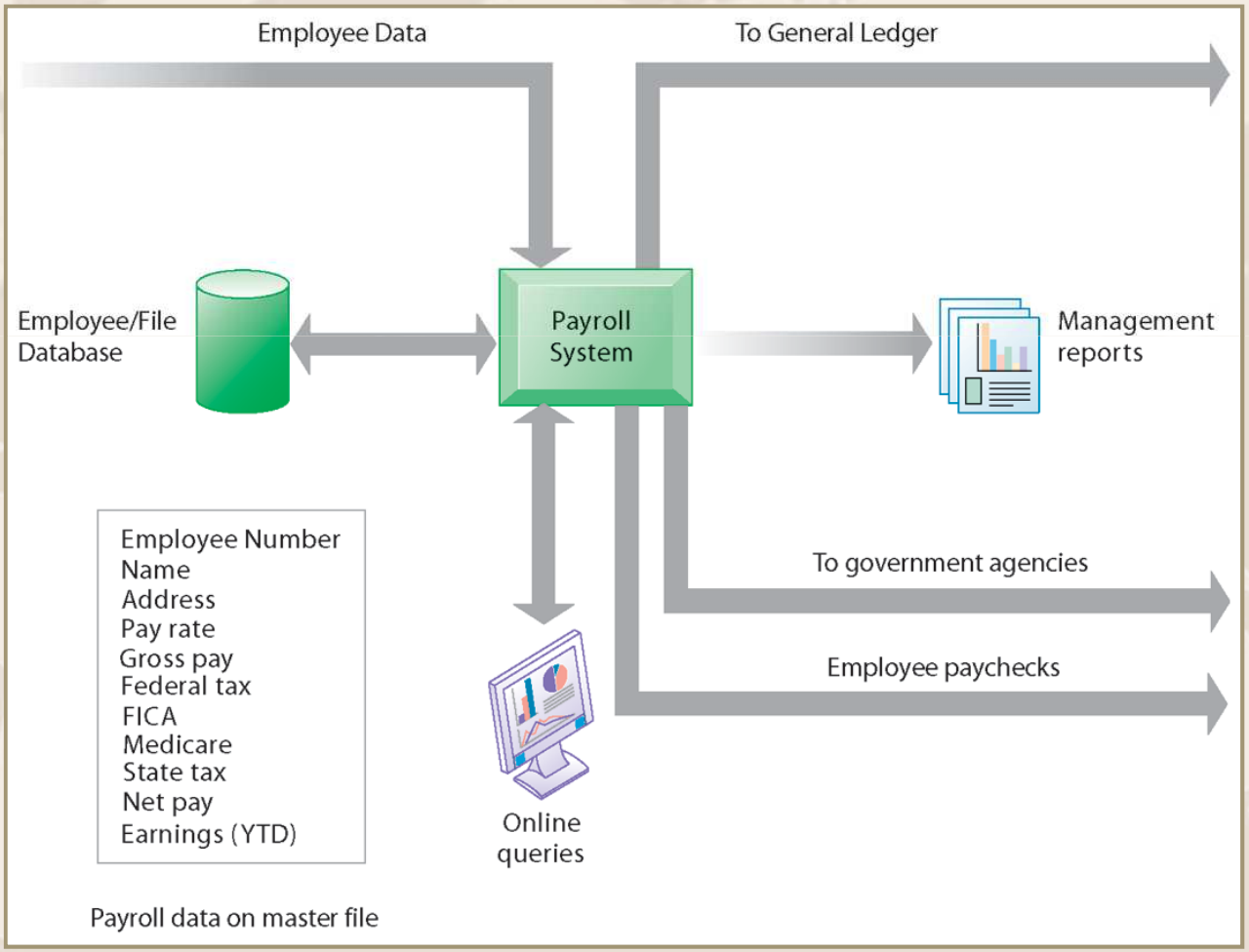
Types of Information Systems

A Payroll TPS

A TPS for payroll processing captures employee payment transaction data (such as a time card). System outputs include online and hard-copy reports for management and employee paychecks.

FIGURE 2-2



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Types of Information Systems

- Management information systems
  - Serve middle management
  - Provide reports on firm's current performance, based on data from TPS
  - Provide answers to routine questions with predefined procedure for answering them
  - Typically have little analytic capability

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Types of Information Systems

How Management Information Systems Obtain Their Data from the Organization's TPS

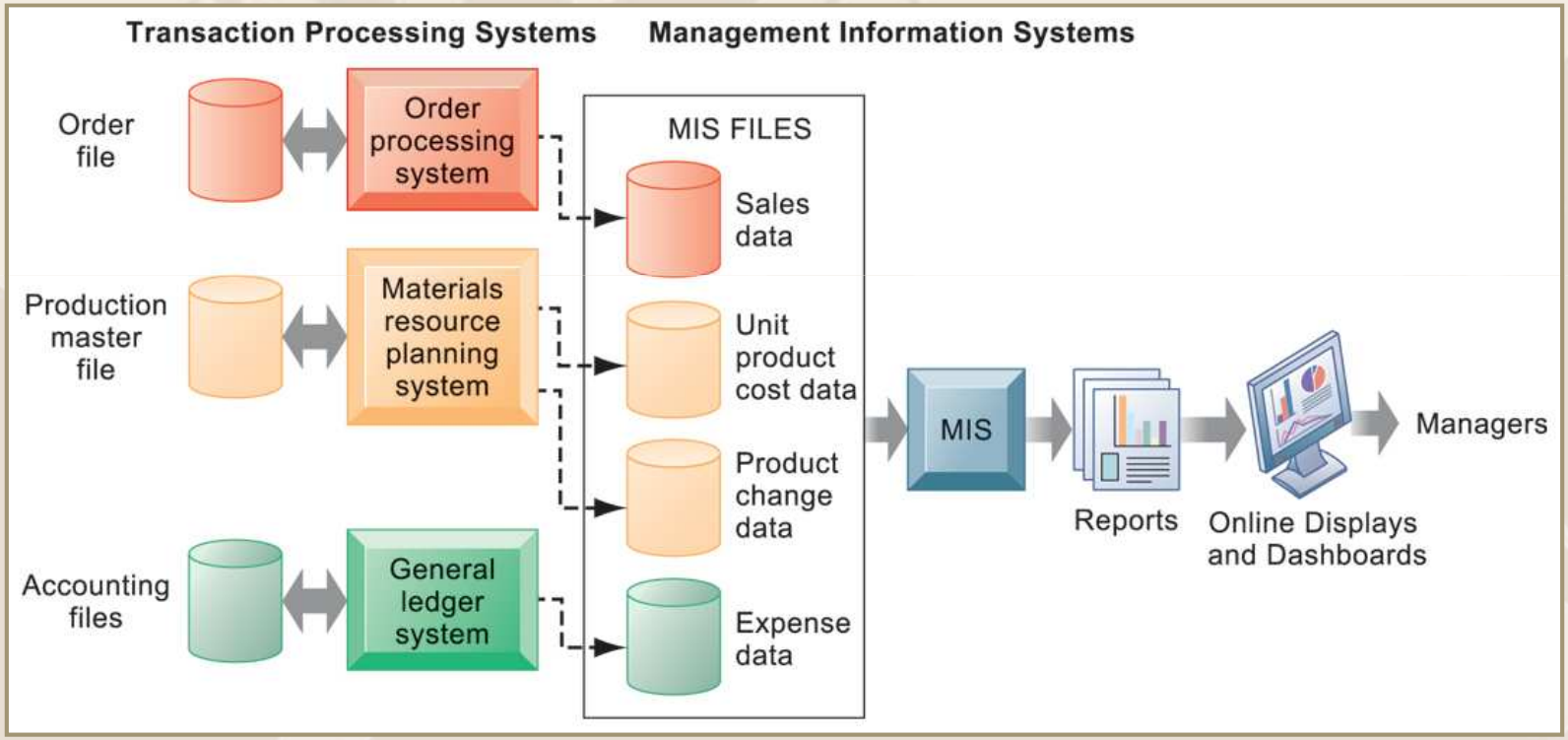

FIGURE 2-3 In the system illustrated by this diagram, three TPS supply summarized transaction data to the MIS reporting system at the end of the time period. Managers gain access to the organizational data through the MIS, which provides them with the appropriate reports.

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Types of Information Systems

Sample MIS Report

Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2011

PRODUCT CODE	PRODUCT DESCRIPTION	SALES REGION	ACTUAL SALES	PLANNED	ACTUAL versus PLANNED
4469	Carpet Cleaner	Northeast	4,066,700	4,800,000	0.85
		South	3,778,112	3,750,000	1.01
		Midwest	4,867,001	4,600,000	1.06
		West	4,003,440	4,400,000	0.91
	TOTAL		16,715,253	17,550,000	0.95
5674	Room Freshener	Northeast	3,676,700	3,900,000	0.94
		South	5,608,112	4,700,000	1.19
		Midwest	4,711,001	4,200,000	1.12
		West	4,563,440	4,900,000	0.93
	TOTAL		18,559,253	17,700,000	1.05

FIGURE 2-4 This report, showing summarized annual sales data, was produced by the MIS in Figure 2-3.

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Types of Information Systems

- **Decision support systems**
  - **Serve middle management**
  - **Support non-routine decision making**
    - Example: What is impact on production schedule if December sales doubled?
  - **Often use external information as well from TPS and MIS**
  - **Model driven DSS**
    - Voyage-estimating systems
  - **Data driven DSS**
    - Intrawest's marketing analysis systems

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Types of Information Systems

Voyage-Estimating Decision Support System

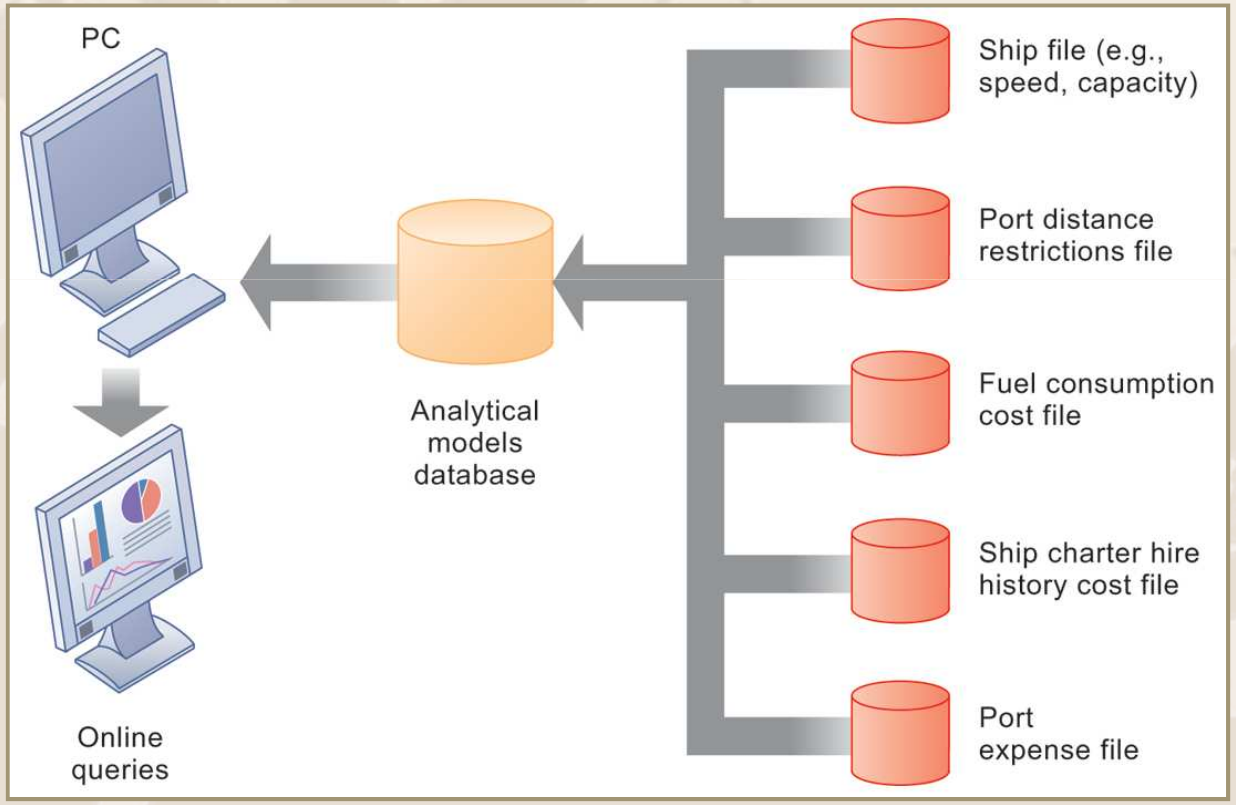

FIGURE 2-5 This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.

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Types of Information Systems

- **Business intelligence**
  - **Class of software applications**
  - **Analyze current and historical data to find patterns and trends and aid decision-making**
  - **Used in systems that support middle and senior management**
    - Data-driven DSS
    - Executive support systems (ESS)

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Types of Information Systems

- **Executive support systems**
  - **Support senior management**
  - **Address non-routine decisions**
    - Requiring judgment, evaluation, and insight
  - **Incorporate data about external events (e.g. new tax laws or competitors) as well as summarized information from internal MIS and DSS**
  - **Example:** Digital dashboard with real-time view of firm's financial performance: working capital, accounts receivable, accounts payable, cash flow, and inventory

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Types of Information Systems

- Systems from a constituency perspective
  - Transaction processing systems: supporting operational level employees
  - Management information systems and decision-support systems: supporting managers
  - Executive support systems: supporting executives

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Types of Information Systems

- **Relationship of systems to one another**
  - **TPS:** Major source of data for other systems
  - **ESS:** Recipient of data from lower-level systems
  - **Data may be exchanged between systems**
  - **In reality, most businesses' systems are only loosely integrated (but they are getting better!)**

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Types of Information Systems

DOMINO'S SIZZLES WITH PIZZA TRACKER

Read the Interactive Session and discuss the following questions

- **Describe Domino's business model and business strategy. What challenges is it facing?**
- **What systems have the company used or planned to use to overcome these challenge? What types of systems are they? What role will each play in helping Domino's overcome these challenge?**
- **What other types of system could help Domino's overcome its challenges?**

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Types of Information Systems

- **Enterprise applications**
  - **Systems for linking the enterprise**
  - **Span functional areas**
  - **Execute business processes across firm**
  - **Include all levels of management**
  - **Four major applications:**
    - Enterprise systems
    - Supply chain management systems
    - Customer relationship management systems
    - Knowledge management systems

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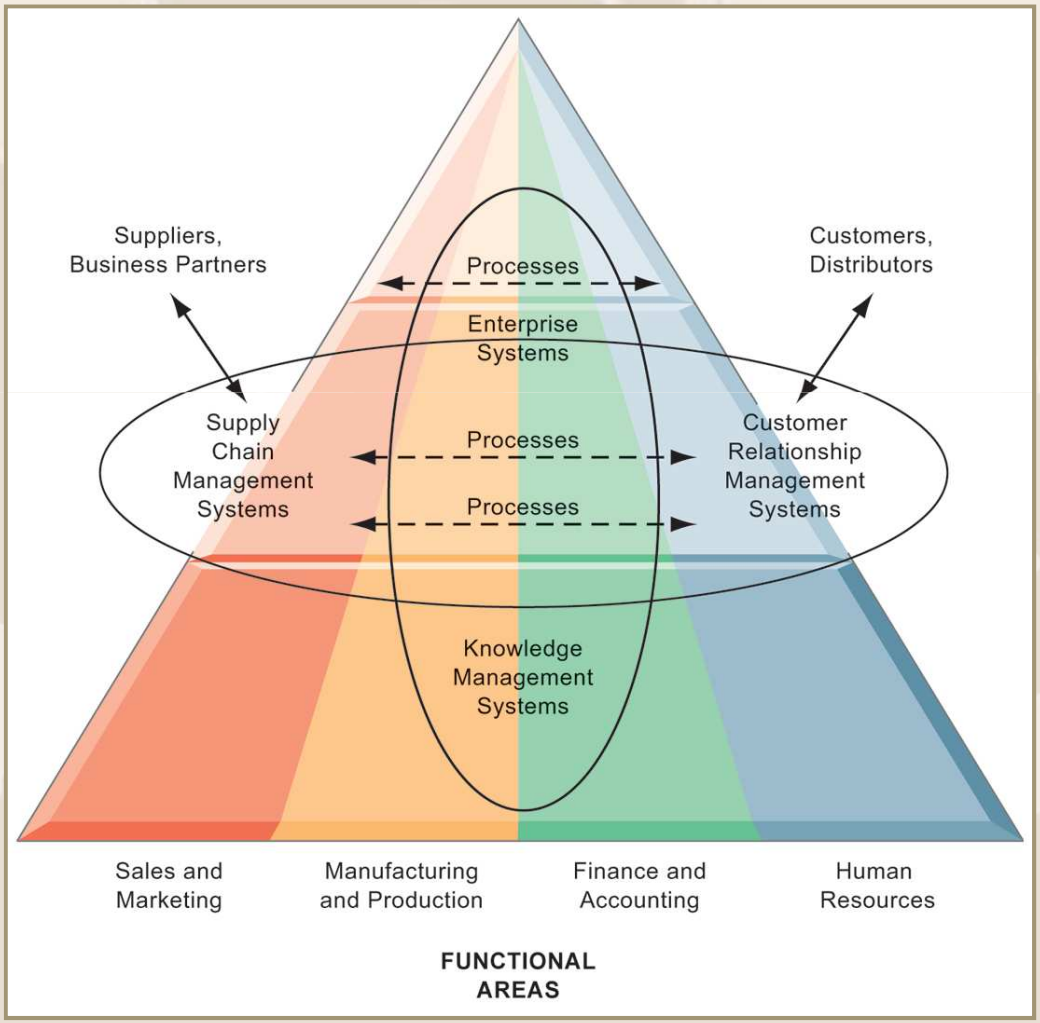
Types of Information Systems

Enterprise Application Architecture

Enterprise applications automate processes that span multiple business functions and organizational levels and may extend outside the organization.

FIGURE 2-6



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Types of Information Systems

- **Enterprise systems**
  - **Collects data from different firm functions and stores data in single central data repository**
  - **Resolves problem of fragmented, redundant data sets and systems**
  - **Enable:**
    - Coordination of daily activities
    - Efficient response to customer orders (production, inventory)
    - Provide valuable information for improving management decision making

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Types of Information Systems

- **Supply chain management (SCM) systems**
  - **Manage firm's relationships with suppliers**
  - **Share information about**
    - Orders, production, inventory levels, delivery of products and services
  - **Goal:**
    - Right amount of products to destination with least amount of time and lowest cost

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Types of Information Systems

- Customer relationship management systems:
  - Provide information to coordinate all of the business processes that deal with customers in sales, marketing, and service to optimize revenue, customer satisfaction, and customer retention
  - Integrate firm's customer-related processes and consolidate customer information from multiple communication channels

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Types of Information Systems

- **Knowledge management systems (KMS)**
  - **Support processes for acquiring, creating, storing, distributing, applying, integrating knowledge**
    - How to create, produce, distribute products and services
  - **Collect internal knowledge and experience within firm and make it available to employees**
  - **Link to external sources of knowledge**

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Types of Information Systems

- **Alternative tools that increase integration and expedite the flow of information**
  - **Intranets:**
    - Internal company Web sites accessible only by employees
  - **Extranets:**
    - Company Web sites accessible externally only to vendors and suppliers
    - Often used to coordinate supply chain

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Types of Information Systems

- **E-business**
  - Use of digital technology and Internet to drive major business processes
- **E-commerce**
  - Subset of e-business
  - Buying and selling goods and services through Internet
- **E-government:**
  - Using Internet technology to deliver information and services to citizens, employees, and businesses

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Systems for Collaboration and Teamwork

- **Collaboration:**
  - Short-lived or long-term
  - Informal or formal (teams)
- **Growing importance of collaboration:**
  - Changing nature of work
  - Growth of professional work – "interaction jobs"
  - Changing organization of the firm
  - Changing scope of the firm
  - Emphasis on innovation
  - Changing culture of work

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Systems for Collaboration and Teamwork

- **Business benefits of collaboration and teamwork**
  - **Investments in collaboration technology can produce organizational improvements returning high ROI**
  - **Benefits:**
    - Productivity
    - Quality
    - Innovation
    - Customer service
    - Financial performance
      - Profitability, sales, sales growth

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Systems for Collaboration and Teamwork

Requirements for Collaboration

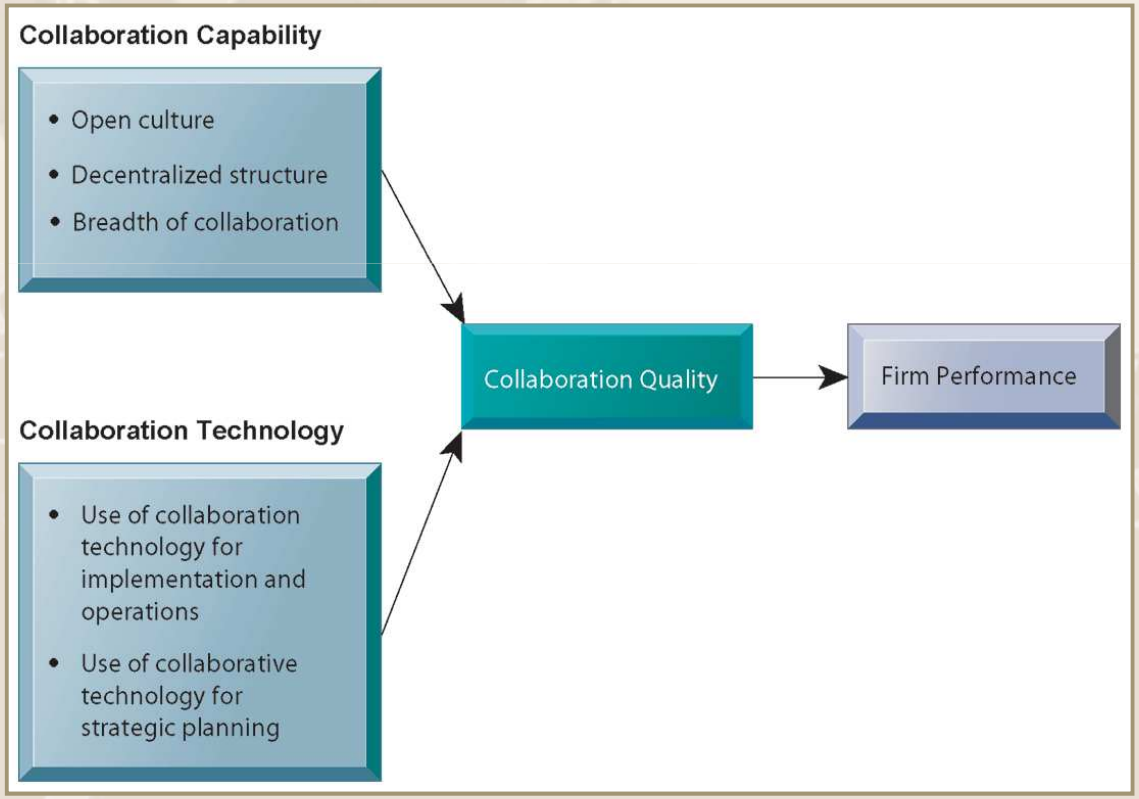

FIGURE 2-7 Successful collaboration requires an appropriate organizational structure and culture, along with appropriate collaboration technology.

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Systems for Collaboration and Teamwork

- **Building a collaborative culture and business processes**
  - **"Command and control" organizations**
    - No value placed on teamwork or lower-level participation in decisions
  - **Collaborative business culture**
    - Senior managers rely on teams of employees
    - Policies, products, designs, processes, systems rely on teams
    - Managers purpose is to build teams

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Systems for Collaboration and Teamwork

- **Technology for collaboration and teamwork**
  - **15 categories of collaborative software tools**

Email and instant messaging
Collaborative writing
Collaborative reviewing
Event scheduling
File sharing
Screen sharing
Audio conferencing
Video conferencing
White boarding
Web presenting
Work scheduling
Document sharing /wikis
Mind mapping
Large audience Webinars
Co-browsing

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Systems for Collaboration and Teamwork

- **Technology for collaboration and teamwork (cont.)**
  - **Social Networking**
  - **Wikis**
  - **Virtual Worlds**
  - **Internet-Based Collaboration Environments**
    - Virtual meeting systems (telepresence)
    - Google Apps/Google sites
    - Microsoft SharePoint
    - Lotus Notes

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Systems for Collaboration and Teamwork

VIRTUAL MEETINGS: SMART MANAGEMENT

Read the Interactive Session and discuss the following questions

- **What are the advantages of using videoconferencing technologies? What are the disadvantages?**
- **What is telepresence and what sorts of companies are best suited to use it as a communications tool?**
- **What kinds of companies could benefit from using videoconferencing? Are there any companies that might not derive any benefits from this technology?**

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Systems for Collaboration and Teamwork

- **Two dimensions of collaboration technologies**
  - Space (or location) – remote or colocated
  - Time – synchronous or asynchronous
- **Six steps in evaluating software tools**
  1. What are your firm's collaboration challenges?
  2. What kinds of solutions are available?
  3. Analyze available products' cost and benefits
  4. Evaluate security risks
  5. Consult users for implementation and training issues
  6. Evaluate product vendors

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Systems for Collaboration and Teamwork

The Time/Space Collaboration Tool Matrix

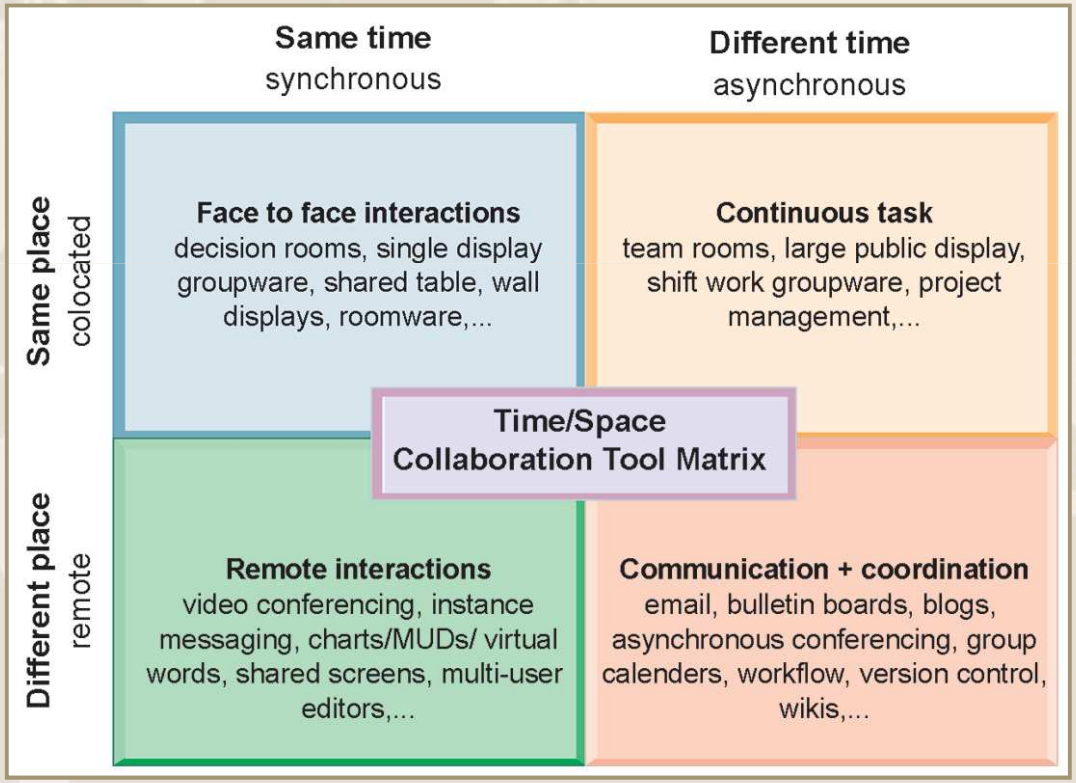

FIGURE 2-8 Collaboration technologies can be classified in terms of whether they support interactions at the same or different time or place whether these interactions are remote or co-located.

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The Information Systems Function in Business

- **Information systems department:**
  - **Formal organizational unit responsible for information technology services**
  - **Often headed by chief information officer (CIO)**
    - Other senior positions include chief security officer (CSO), chief knowledge officer (CKO), chief privacy officer (CPO)
  - **Programmers**
  - **Systems analysts**
  - **Information systems managers**

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The Information Systems Function in Business

- End users
  - Representatives of other departments for whom applications are developed
  - Increasing role in system design, development
- IT Governance:
  - Strategies and policies for using IT in the organization
  - Decision rights
  - Accountability
  - Organization of information systems function
    - Centralized, decentralized, etc.

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