



## **Chapter 2**

# **Global E-business and Collaboration**



# Management Information Systems

## Chapter 2: Global E-business and Collaboration

### Learning Objectives

- What are business processes? How are they related to information systems?
- How do systems serve the different management groups in a business and how do systems that link the enterprise improve organizational performance?
- Why are systems for collaboration and social business so important and what technologies do they use?
- What is the role of the information systems function in a business?



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### Business Processes and Information Systems

- **Business processes:**
  - Flows 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

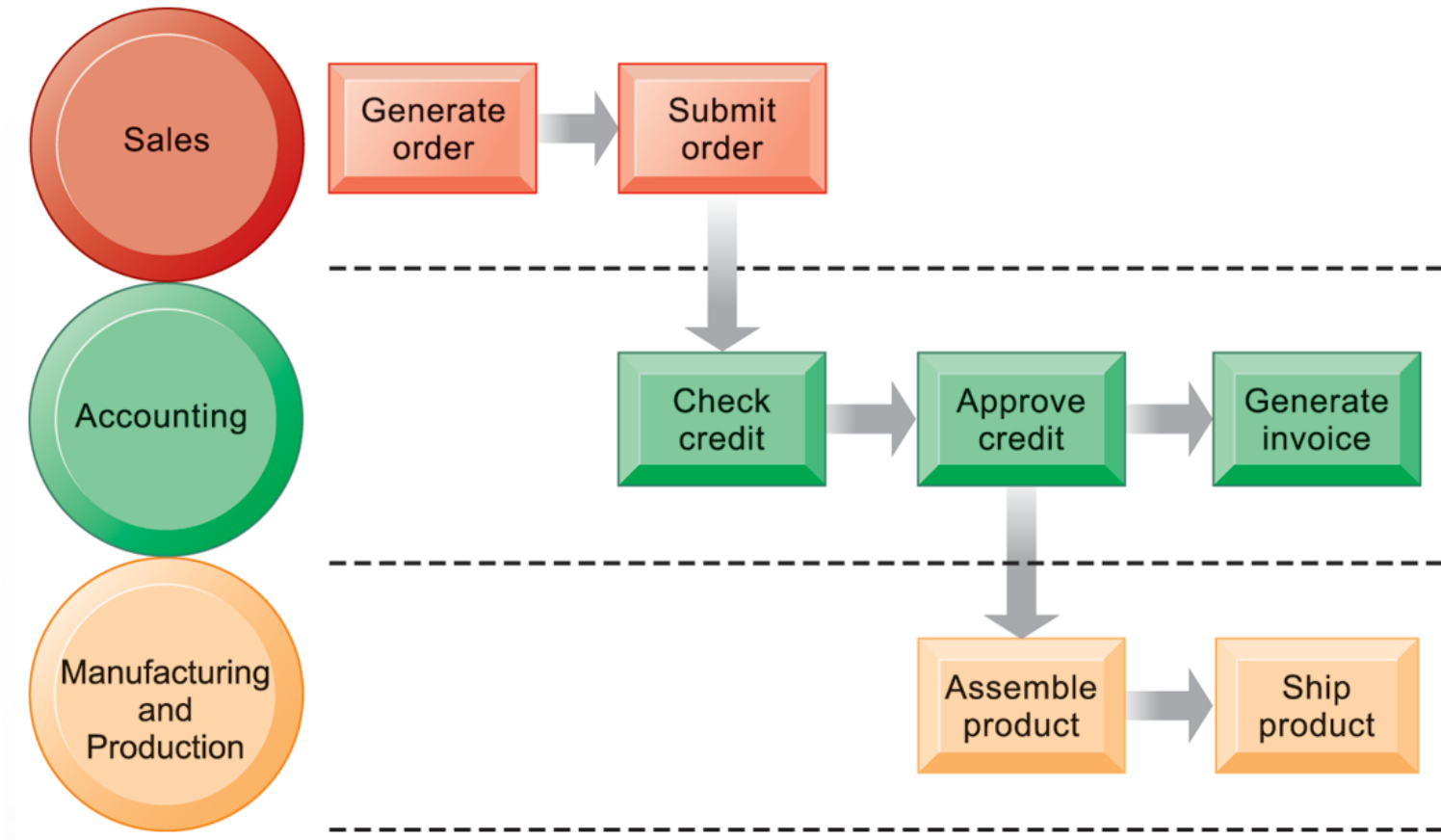
- **Examples of functional business processes**
  - **Manufacturing and production**
    - Assembling the product
  - **Sales and marketing**
    - Identifying customers
  - **Finance and accounting**
    - Creating financial statements
  - **Human resources**
    - Hiring employees



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### *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 by:**
  - **Increasing efficiency of existing processes**
    - Automating steps that were manual
  - **Enabling entirely new processes**
    - Change flow of information
    - Replace sequential steps with parallel steps
    - Eliminate delays in decision making
    - Support new business models





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### Types of Information Systems

- **Transaction processing systems**
  - **Serve operational managers and staff**
  - **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 predefined, structured goals and decision making**



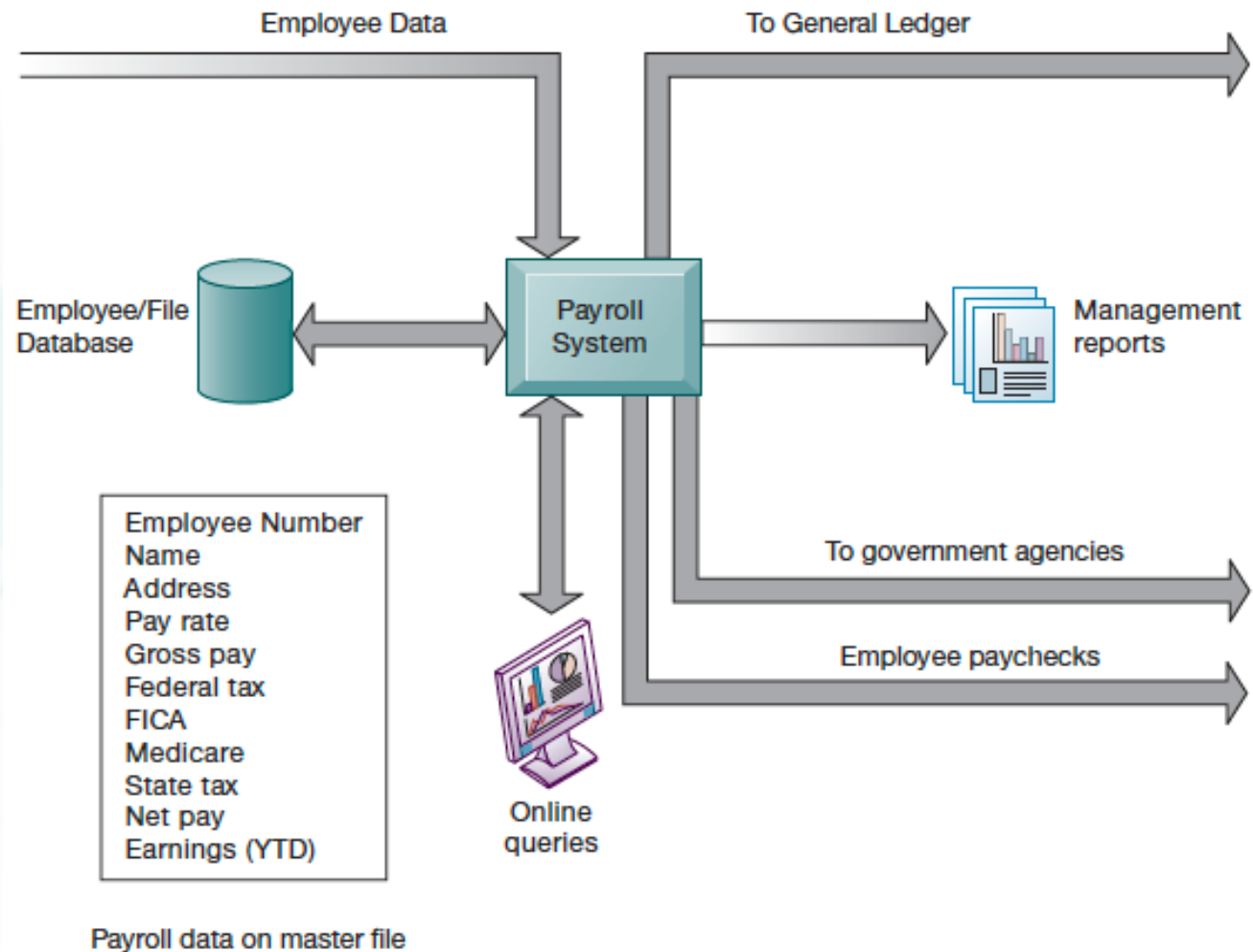
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### *A Payroll TPS*

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

- **Business intelligence**
  - Data and software tools for organizing and analyzing data
  - Used to help managers and users make improved decisions
- **Business intelligence systems**
  - Management information systems
  - Decision support systems
  - Executive support systems



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### Types of Information Systems

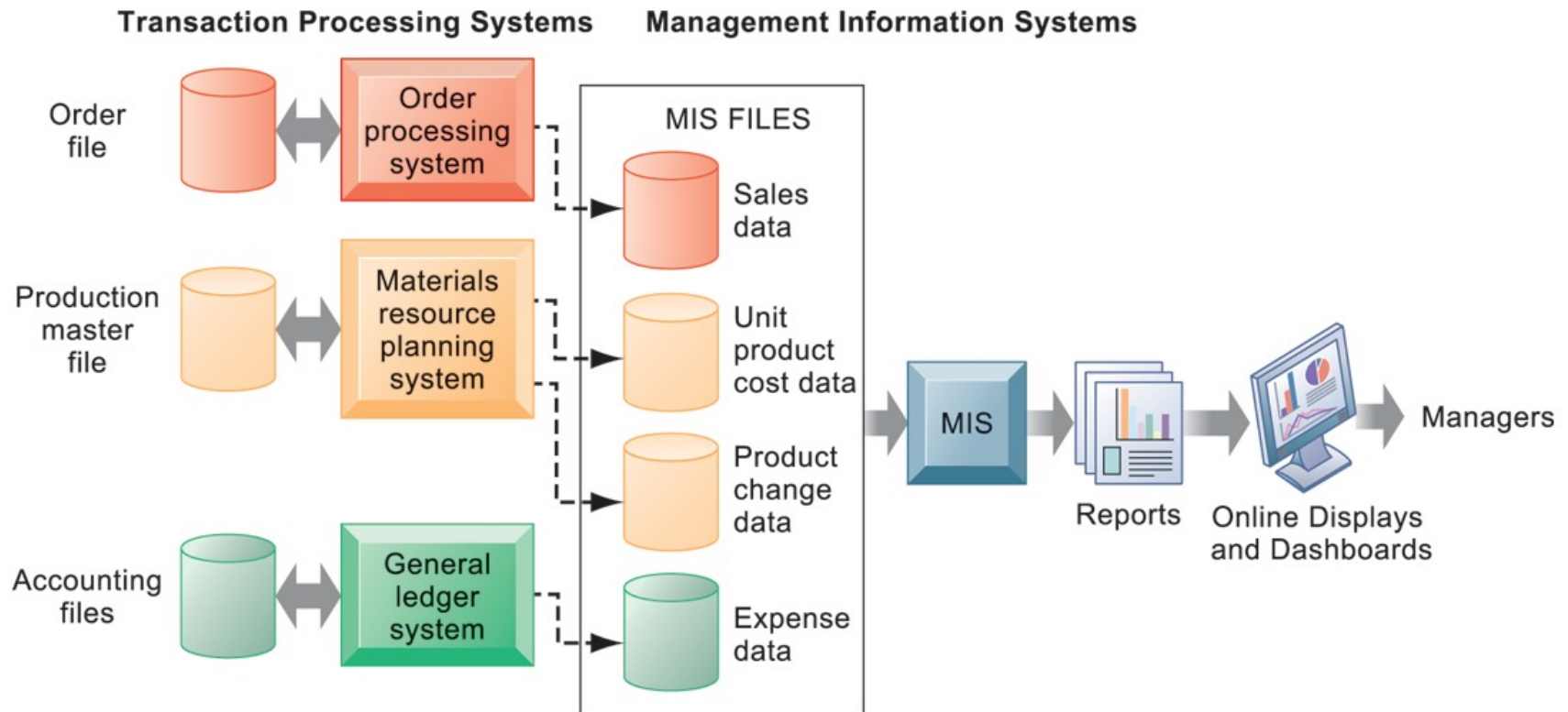
- **Management information systems**
  - **Serve middle management**
  - **Provide reports on firm's current performance, based on data from TPS**
  - **Provide answers to routine questions with predefined procedure for answering them**
  - **Typically have little analytic capability**



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### *How MIS 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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### *Sample MIS Report*

Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2015

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 nonroutine decision making**
    - Example: What is the impact on production schedule if December sales doubled?
  - **May use external information as well TPS / MIS data**
  - **Model driven DSS**
    - Voyage-estimating systems
  - **Data driven DSS**
    - Intrawest's marketing analysis systems (Intrawest: large ski resort company)

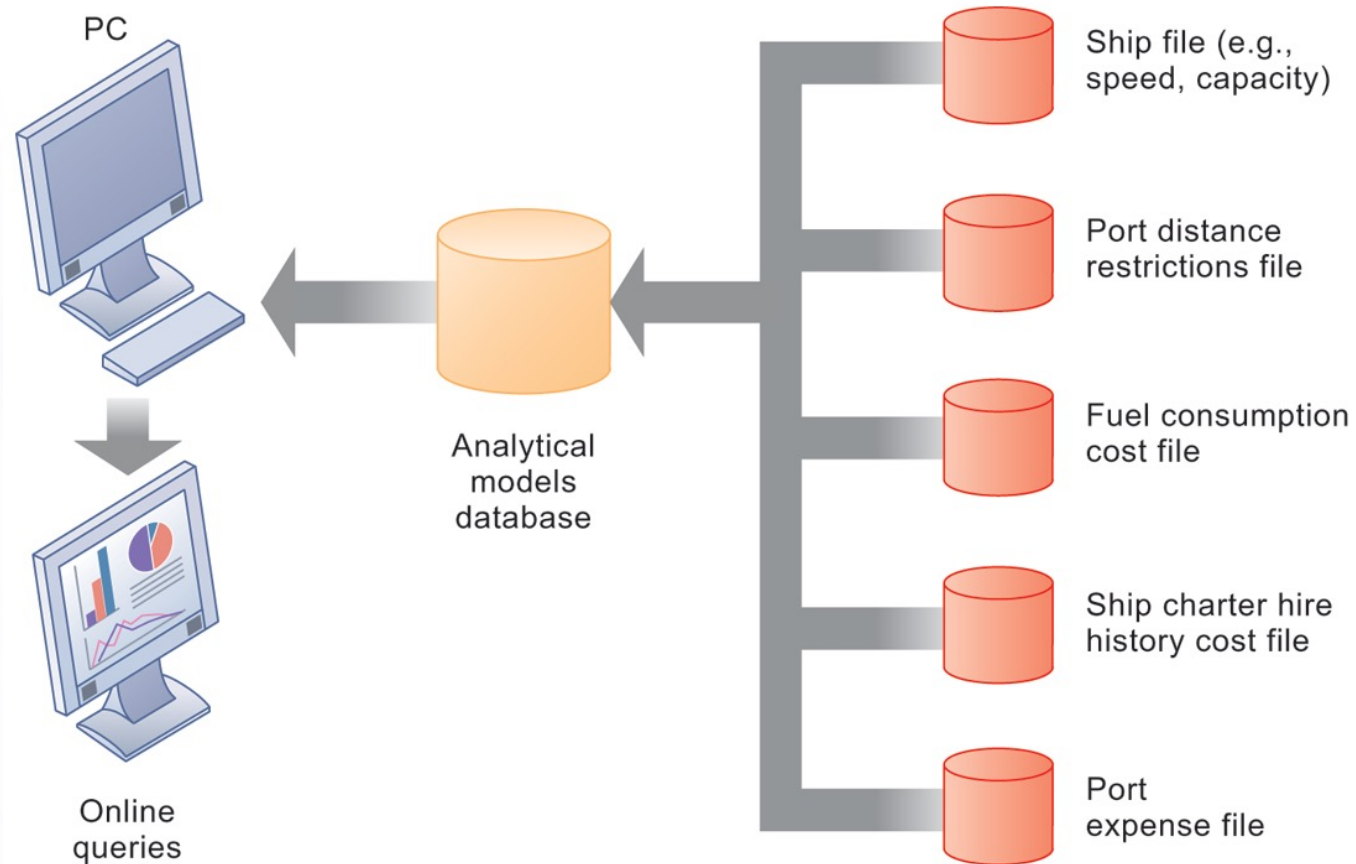




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### *Voyage-Estimating Decision Support System*



**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

- **Executive support systems**
  - Support senior management
  - Address nonroutine 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**

- **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



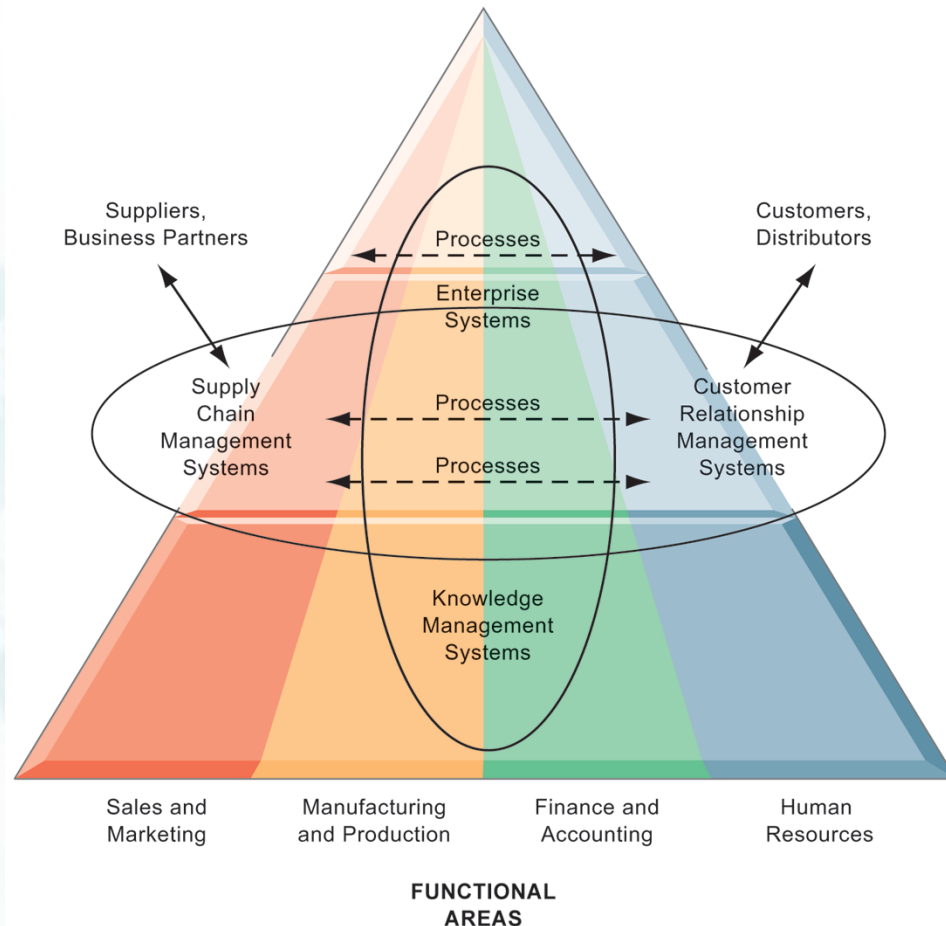
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### *Enterprise Application Architecture*

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 data
  - Enable:
    - Coordination of daily activities
    - Efficient response to customer orders (production, inventory)
    - Help managers make decisions about daily operations and longer-term planning



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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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### Walmart's Retail Link Supply Chain

- Walmart's Retail Link System, one of the largest B2B supply-chain-systems in the world

### Questions

- Where does Walmart's supply chain start? What triggers Walmart's Retail Link system to ship goods to local Walmart Stores?
- Why does Walmart encourages its vendors to learn how to use Retail Link?





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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
    - Sales
    - Marketing
    - Customer service
  - Helps firms identify, attract, and retain most profitable customers



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### Types of Information Systems

- **Knowledge management systems (KMS)**
  - **Support processes for capturing and applying knowledge and expertise**
    - How to create, produce, deliver 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

- **Also used to 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 Social Business

- **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 Social Business

- **Social business**

- Use of social networking platforms, internal and external
- Engage employees, customers, and suppliers
- Goal is to deepen interactions and expedite information sharing
- “Conversations”
- Requires information transparency
  - Driving the exchange of information without intervention from executives or others





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### Social Business

SOCIAL BUSINESS APPLICATION	DESCRIPTION
Social networks	Connect through personal and business profiles
Crowdsourcing	Harness collective knowledge to generate new ideas and solutions
Shared workspaces	Coordinate projects and tasks; co-create content
Blogs and wikis	Publish and rapidly access knowledge; discuss opinions and experiences
Social commerce	Share opinions about purchasing or purchase on social platforms
File sharing	Upload, share, and comment on photos, videos, audio, text documents
Social marketing	Use social media to interact with customers; derive customer insights
Communities	Discuss topics in open forums; share expertise



- **Business benefits of collaboration and teamwork**
  - Investments in collaboration technology can bring organization improvements, returning high ROI (Return On Investment)
  - **Benefits:**
    - Productivity
    - Quality
    - Innovation
    - Customer service
    - Financial performance
      - Profitability, sales, sales growth



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BENEFIT	RATIONALE
Productivity	People interacting and working together can capture expert knowledge and solve problems more rapidly than the same number of people working in isolation from one another. There will be fewer errors.
Quality	People working collaboratively can communicate errors, and corrective actions faster than if they work in isolation. Collaborative and take social technologies help reduce time delays in design and production.
Innovation	People working collaboratively can come up with more innovative ideas for products, services, and administration than the same number working in isolation from one another. Advantages to diversity and the “wisdom of crowds.”
Customer service	People working together using collaboration and social tools can solve customer complaints and issues faster and more effectively than if they were working in isolation from one another.
Financial performance (profitability, sales, and sales growth)	As a result of all of the above, collaborative firms have superior sales, sales growth, and financial performance.



- **Building a collaborative culture and business processes**
  - **“Command and control” organizations**
    - No value placed on teamwork or lower-level participation in decisions, vertically communication
  - **Collaborative business culture**
    - Senior managers rely on teams of employees.
    - Policies, products, designs, processes, and systems rely on teams.
    - The managers purpose is to build teams.
    - Teams are rewarded for their performance



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### *Requirements for Collaboration*

Successful collaboration requires an appropriate organizational structure and culture, along with appropriate collaboration technology.

#### Collaboration Capability

- Open culture
- Decentralized structure
- Breadth of collaboration

#### Collaboration Technology

- Use of collaboration technology for implementation and operations
- Use of collaborative technology for strategic planning

Collaboration Quality

Firm Performance

**FIGURE 2-7**





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### Systems for Collaboration and Social Business

- **Tools for collaboration and teamwork**
  - E-mail and instant messaging
  - Wikis
  - Virtual worlds
  - **Collaboration and social business platforms**
    - Virtual meeting systems (telepresence)
    - Cloud collaboration services (Google Tools, cyberlockers)
    - Microsoft SharePoint
    - IBM Notes
    - Enterprise social networking tools





- **Checklist for managers:  
Enterprise social networking software capabilities**
  - Profiles
  - Content sharing
  - Feeds and notifications
  - Groups and team workspaces
  - Tagging and social bookmarking
  - Permissions and privacy



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### Systems for Collaboration and Social Business

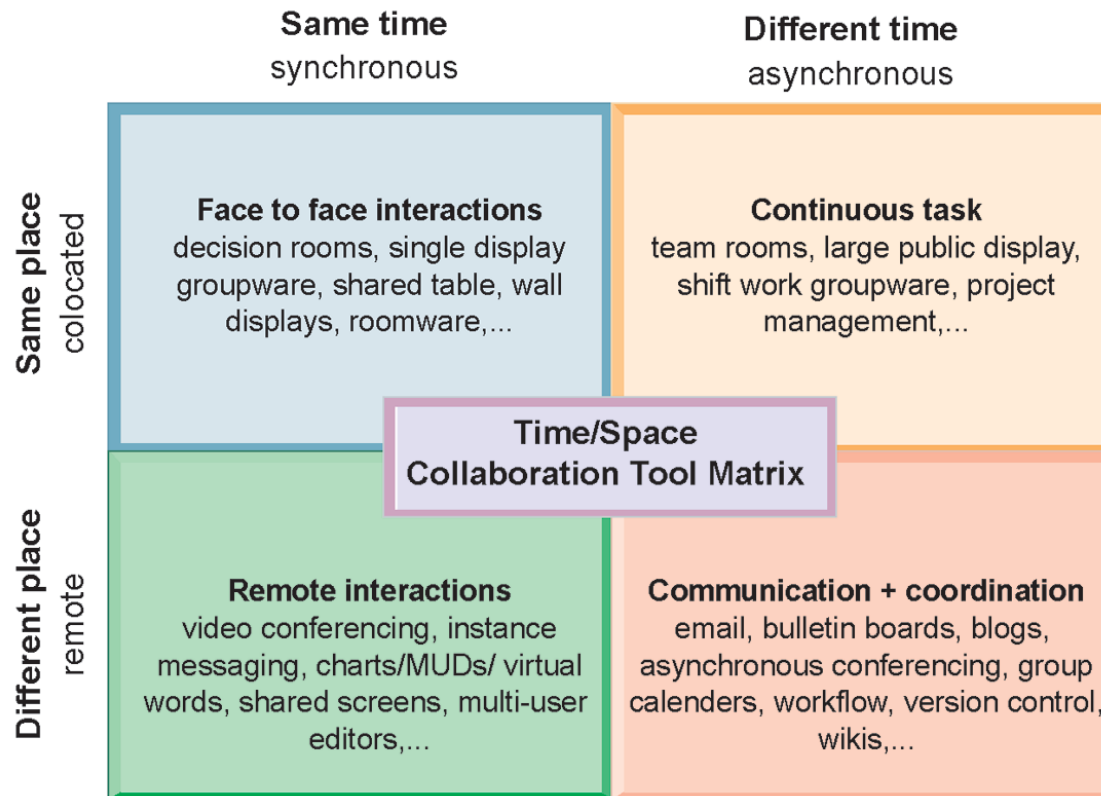
- **Two dimensions of collaboration technologies**
  - Space (or location)—remote or co-located
  - Time—synchronous or asynchronous
- **Six steps in evaluating software tools**
  1. What are your firm's collaboration challenges?
  2. What kinds of solutions are available?
  3. Analyze available products'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



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### *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 or whether these interactions are remote or co-located.



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### *Interactive Session: Management*

#### **IS SOCIAL BUSINESS WORKING OUT?**

*Read the Interactive Session and discuss the following questions*

- Identify the management, organization, and technology factors responsible for impeding adoption of internal corporate social networks.
- Compare the experiences for implementing internal social networks of the two organizations. Why was one more successful than the other? What role did management play in this process?
- Should all companies implement internal enterprise social networks? Why or why not?



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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, and so on