



Chapter 2

Global E-Business and Collaboration



Essentials of Management Information Systems

Chapter 2 E-Business: How Businesses Use Information Systems

STUDENT LEARNING OBJECTIVES

- **What are the major features of a business that are important for understanding the role of information systems?**
- **How do systems serve the various levels of management in a business and how are these systems related?**



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STUDENT LEARNING OBJECTIVES

- **How do enterprise applications and intranets improve organizational performance?**
- **Why are systems for collaboration and teamwork so important and what technologies do they use?**
- **What is the role of the information system's function in a business?**



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Components of a Business

Business: formal organization that makes products or provides a service in order to make a profit

Organizing a Business: Basic Business Functions

- **Four basic business functions**
 - **Manufacturing and production**
 - **Sales and marketing**
 - **Finance and accounting**
 - **Human resources**



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Components of a Business

The Four Major Functions of a Business

Every business, regardless of its size, must perform four functions to succeed. It must produce the product or service; market and sell the product; keep track of accounting and financial transactions; and perform basic human resources tasks, such as hiring and retaining employees.



Figure 2-1



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Components of a Business

Organizing a Business: Basic Business Functions

- **Five basic business entities:**
 - **Suppliers**
 - **Customers**
 - **Employees**
 - **Invoices/payments**
 - **Products and services**



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Components of a Business

Business Processes

- **Logically related set of tasks that define how specific business tasks are performed**
 - The tasks each employee performs, in what order, and on what schedule
 - E.g., Steps in hiring an employee
- **Some processes tied to functional area**
 - Sales and marketing: identifying customers
- **Some processes are cross-functional**
 - Fulfilling customer order



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Components of a Business

The Order Fulfillment Process

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

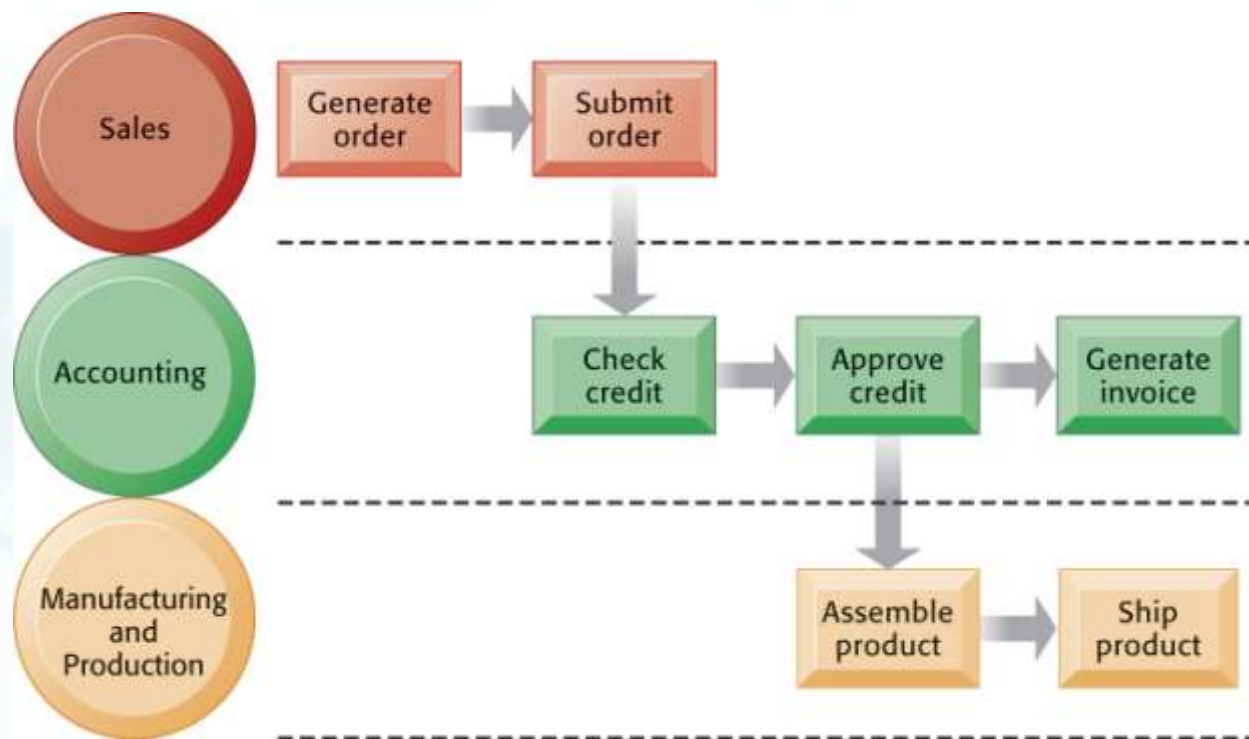


Figure 2-2



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Components of a Business

Managing a Business and Firm Hierarchies

- Firms coordinate work of employees by developing hierarchy in which authority is concentrated at top.
 - Senior management
 - Middle management
 - Operational management
 - Knowledge workers
 - Data workers
 - Production or service workers
- Each group has different needs for information.



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Components of a Business

Levels in a Firm

Business organizations are hierarchies consisting of three principal levels: senior management, middle management, and operational management. Information systems serve each of these levels. Scientists and knowledge workers often work with middle management.

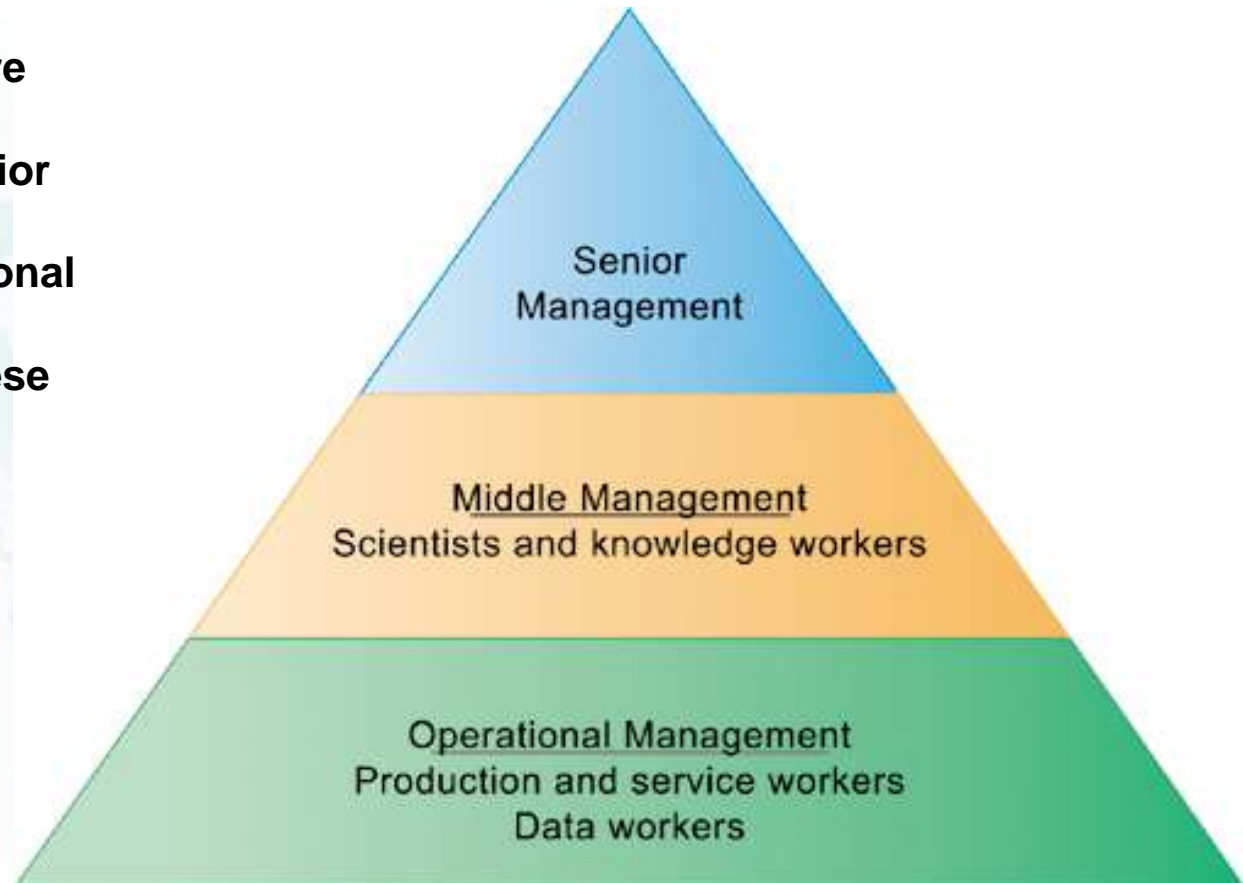


Figure 2-3



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Components of a Business

The Business Environment

- **Global environment factors**
 - **Technology and science**
 - **Economy**
 - **Politics**
 - **International change**
- **Immediate environment factors**
 - **Customers**
 - **Suppliers**
 - **Competitors**
 - **Regulations**
 - **Stockholders**



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Components of a Business

The Business Environment

To be successful, an organization must constantly monitor and respond to—or even anticipate—developments in its environment. A firm's environment includes specific groups with which the business must deal directly, such as customers, suppliers, and competitors as well as the broader general environment, including socioeconomic trends, political conditions, technological innovations, and global events.



Figure 2-4



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Components of a Business

The Role of Information Systems in a Business

- **Firms invest in information systems in order to:**
 - **Achieve operational excellence.**
 - **Develop new products and services.**
 - **Attain customer intimacy and service.**
 - **Improve decision making.**
 - **Promote competitive advantage.**
 - **Ensure survival.**



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Types of Business Information Systems

Systems For Different Levels of Management

- **Transaction processing systems:**
 - Keep track of basic activities and transactions of organization (e.g., sales, receipts, cash deposits, payroll, credit decisions, flow of materials in a factory).
- **Management information systems and decision-support systems:**
 - Help with monitoring, controlling, decision making, and administrative activities.
- **Executive support systems:**
 - Help address strategic issues and long-term trends, both in firm and in external environment.



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Types of Business Information Systems

- **Transaction processing systems:**
 - **Serve operational managers.**
 - **Principal purpose is to answer routine questions and to track the flow of transactions through the organization.**
 - **E.g., inventory questions, granting credit to customer**
 - **Monitor status of internal operations and firm's relationship with external environment.**
 - **Major producers of information for other systems.**
 - **Highly central to business operations and functioning.**



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Components of a Business

A Payroll TPS

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

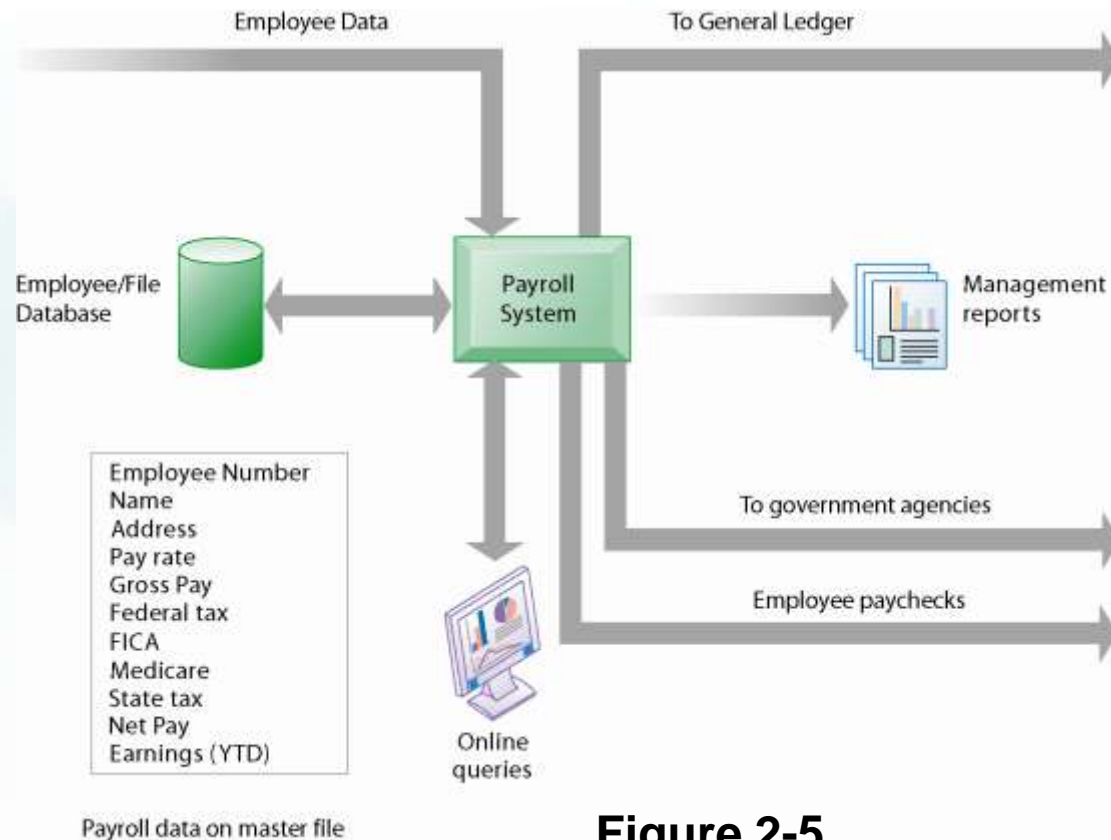


Figure 2-5



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Types of Business Information Systems

- **Management information systems:**
 - **Provide middle managers with reports on firm's performance.**
 - **To monitor firm and help predict future performance.**
 - **Summarize and report on basic operations using data from TPS.**
 - **Provide weekly, monthly, annual results, but may enable drilling down into daily or hourly data.**
 - **Typically not very flexible systems with little analytic capability.**



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Components of a Business

How MIS Obtain Their Data from TPS

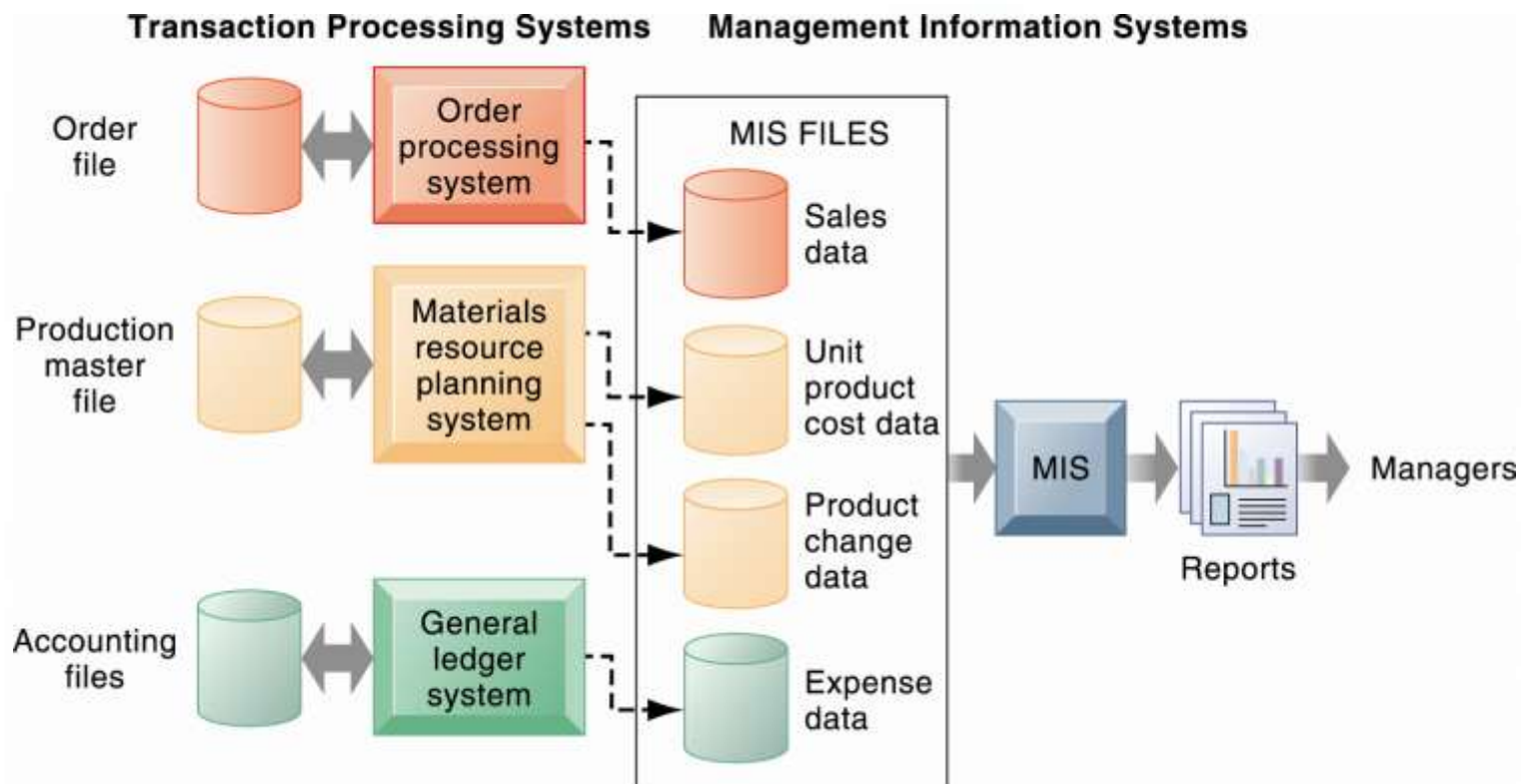


Figure 2-6



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Systems That Span the Enterprise

Sample MIS Report

Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2008

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

This report, showing summarized annual sales data, was produced by the MIS in Figure 2-9.

Figure 2-7



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Systems That Span the Enterprise

Voyage-Estimating Decision Support System

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

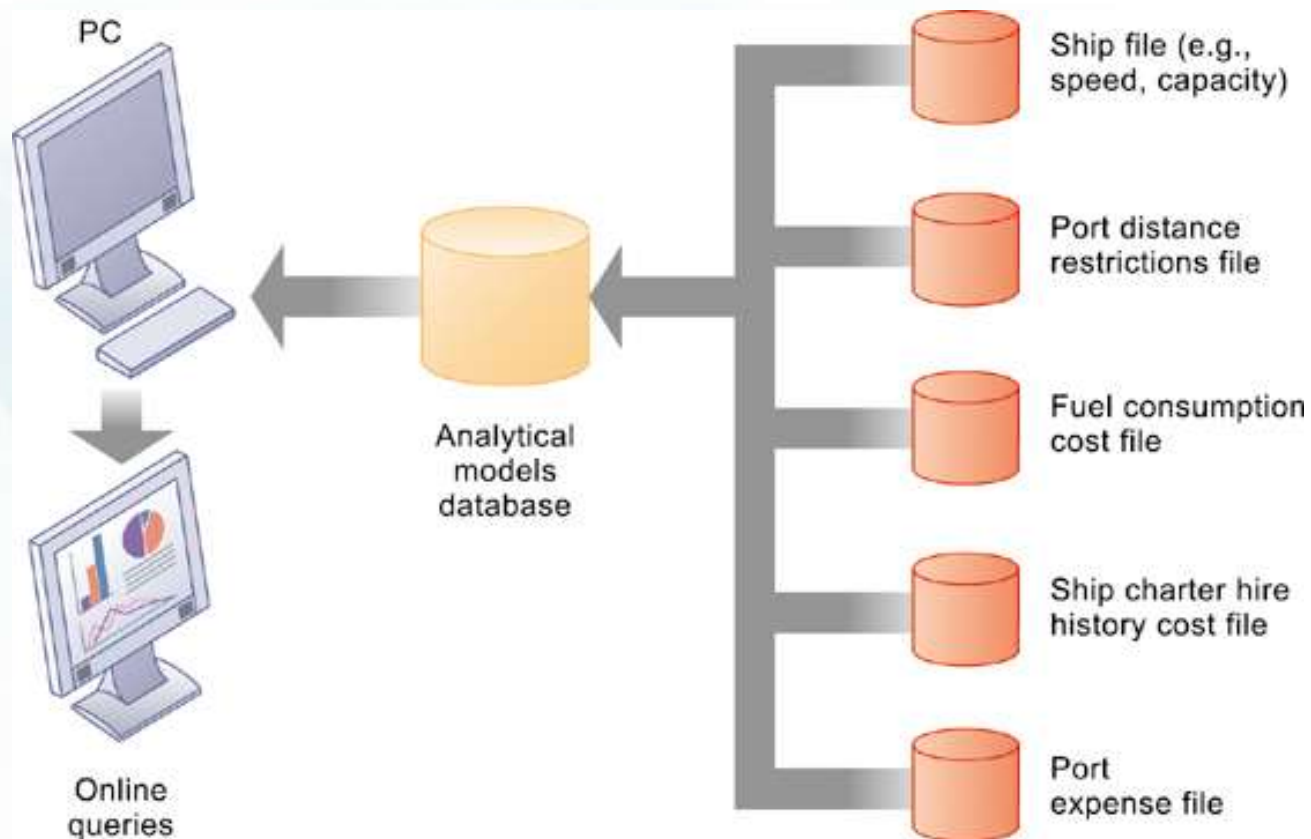


Figure 2-8



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Types of Business Information Systems

- **Executive support systems (ESS):**
 - **Serve senior managers.**
 - **Address strategic issues and long-term trends.**
 - **E.g., what products should we make in five years?**
 - **Address nonroutine decision making.**
 - **Provide generalized computing capacity that can be applied to changing array of problems.**
 - **Draw summarized information from MIS, DSS, and data from external events.**
 - **Typically use portal with Web interface to present content.**



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Systems That Span the Enterprise

Model of an Executive Support System

This system pools data from diverse internal and external sources and makes them available to executives in an easy-to-use form.

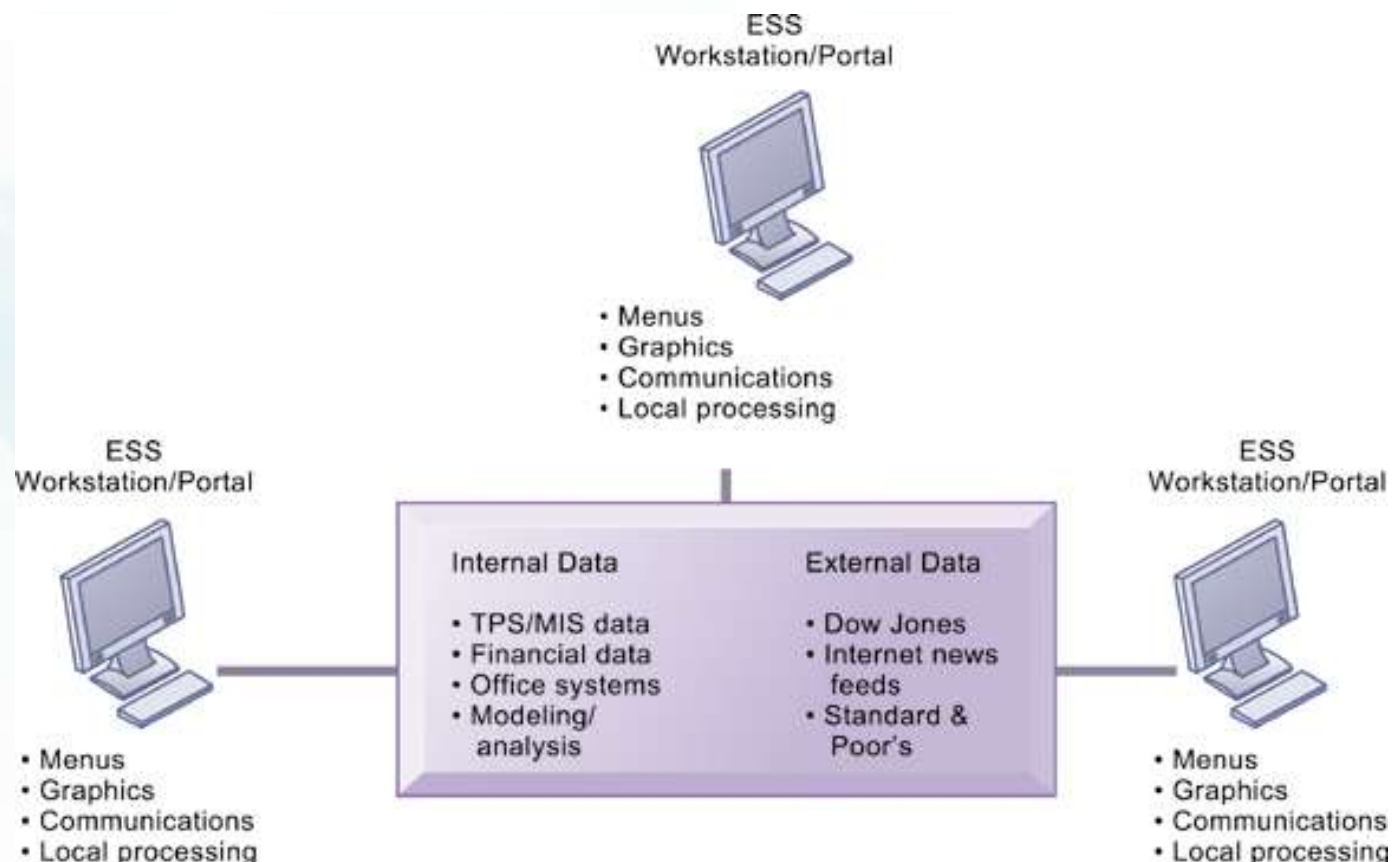


Figure 2-9



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Types of Business Information Systems

Interactive Session: Management El-Alamein for Printing and Packaging Goes Digital

- **Read the Interactive Session and then discuss the following questions:**
 - **What systems are described here? What valuable information do they provide?**
 - **What are the risks facing El-Alamein in implementing the ERP system? How do you evaluate the actions taken from their side to mitigate those risk factors?**
 - **What value did the IT/IS investments add to El-Alamein?**



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Types of Business Information Systems

Systems That Span the Enterprise

- **Enterprise applications**
 - **Systems that span functional areas, focus on executing business processes across the firm, and include all levels of management.**
 - Enterprise systems
 - Supply chain management systems
 - Customer relationship management systems
 - Knowledge management systems



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Systems That Span the Enterprise

Enterprise Application Architecture

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

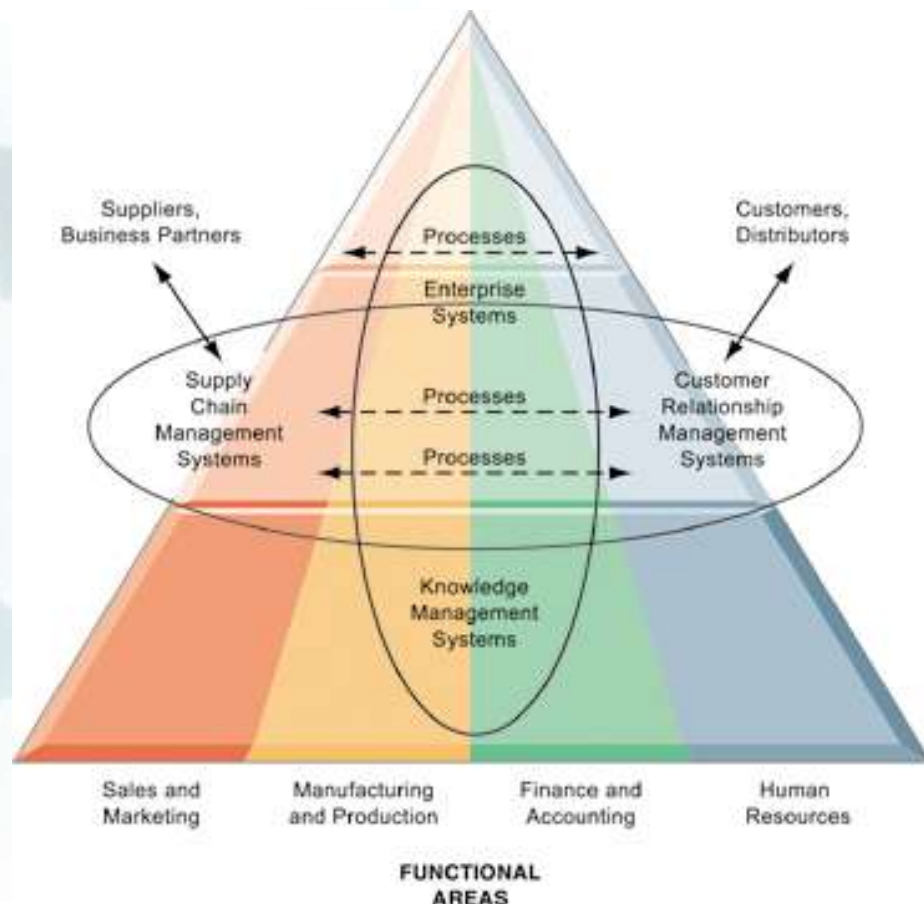


Figure 2-14



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Systems That Span the Enterprise

Enterprise Systems

- **Integrate data from key business processes into single system.**
- **Speed communication of information throughout firm.**
- **Enable greater flexibility in responding to customer requests, greater accuracy in order fulfillment.**
- **Enable managers of large firms to assemble overall view of operations.**
- **Alcoa used ERP to eliminate redundancies and inefficiencies in its disparate systems.**



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Systems That Span the Enterprise

Supply Chain Management Systems

- **Manage relationships with suppliers, purchasing firms, distributors, and logistics companies.**
- **Manage shared information about orders, production, inventory levels, and so on.**
 - **Goal is to move correct amount of product from source to point of consumption as quickly as possible and at lowest cost**
- **Type of interorganizational system:**
 - **Automating flow of information across organizational boundaries**



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Systems That Span the Enterprise

Customer Relationship Management Systems

- Help manage relationship with customers.
- Coordinate business processes that deal with customers to optimize revenue and customer satisfaction, and increase sales.
- Combine sales, marketing, and service record data from multiple communication channels to provide unified view of customer, eliminate duplicate efforts.
- E.g., Saab CRM applications to achieve 360 degree view of customers resulted in greater follow-up rate on sales leads and increased customer satisfaction.



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Systems That Span the Enterprise

Knowledge Management Systems

- **Intangible knowledge assets**
 - Knowledge about producing and delivering products
 - Source of value and advantage for firms
- **Knowledge management systems:**
 - Help capture, storage, distribute, and apply knowledge so that it can be leveraged for strategic benefit.
 - Include systems for:
 - Managing and distributing documents, graphics, other digital knowledge objects
 - Creating knowledge directories of employees with specialized expertise
 - Distributing knowledge



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Systems That Span the Enterprise

Intranets and Extranets

- **Technology platforms that increase integration and expedite the flow of information**
 - **Intranets:**
 - Internal networks based on Internet standards
 - Typically utilize a portal
 - **Extranets:**
 - Intranets extended for authorized use outside the company for partners, customers
 - Facilitate collaboration



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Systems That Span the Enterprise

E-Business, E-Commerce, and E-Government

- **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

What Is Collaboration?

- **Growing Importance of Collaboration:**
 - **Changing nature of work**
 - **Growth of professional work**
 - **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

- **Large business firms: “command and control” organizations in which upper management created the strategy and middle management carried out their orders.**
 - **Today, businesses rely on collaborative culture.**
 - **Teams of employees responsible for creating and building**



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Systems for Collaboration and Teamwork

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 2-11
Requirements for Collaboration

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



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Components of a Business

Interactive Session: Technology

Virtual Meetings: Smart Management

- **Read the Interactive Session and then discuss the following questions:**

Will Web conferencing make business travel extinct?

What is the distinction between videoconferencing and telepresence?

What are the ways in which videoconferencing provides value to a business? Would you consider it smart management?

If you were in charge of a small business, would you choose to implement videoconferencing? What factors would you consider in your decision?



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Systems for Collaboration and Teamwork

Tools and Technologies for Collaboration and Teamwork

- **E-mail and instant messaging (IM)**
- **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

Onehub enables teams to create online workspaces called Hubs to share information, documents, and files from one central location. Tiny widget programs are available for customizing these workspaces by adding capabilities for uploading and moving files, displaying contacts and task lists, and embedding videos.





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Systems for Collaboration and Teamwork

Evaluating and Selecting Collaboration Software Tools

- **What are your firm's collaboration challenges?**
- **What kinds of solutions are available?**
- **Analyze available products' cost and benefits.**
- **Evaluate security risks.**
- **Consult users for implementation and training issues.**
- **Evaluate product vendors.**



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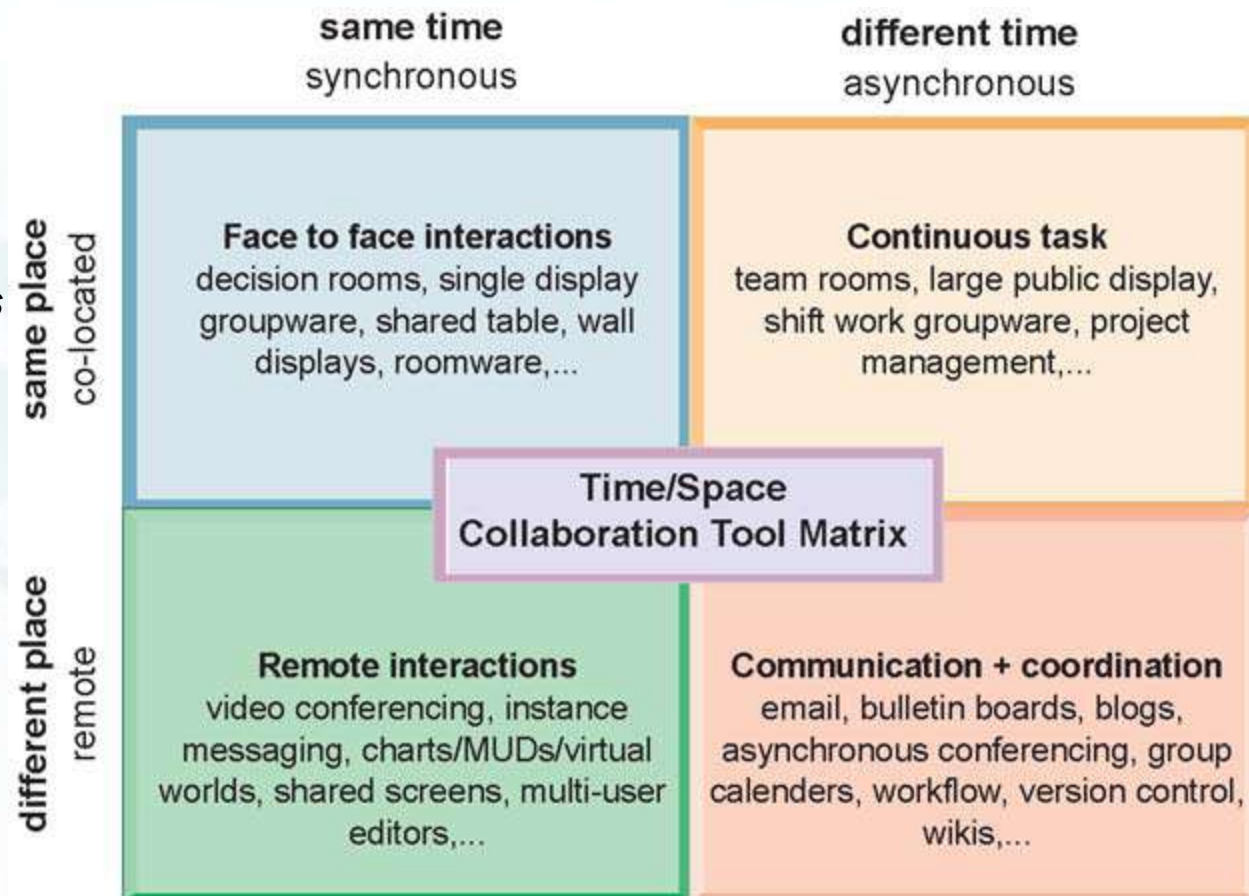
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Systems for Collaboration and Teamwork

The Time/Space Collaboration Tool Matrix

Collaboration technologies can be classified in terms of whether they support interactions at the same or different time or place, and whether these interactions are remote or colocated.

Figure 2-12





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The Information System's Function in Business

The Information Systems Department

- **Programmers**
- **Systems analysts**
 - Principle liaisons to rest of firm
- **Information systems managers**
 - Leaders of teams of programmers and analysts, project managers, physical facility managers, telecommunications managers, database specialists, managers of computer operations, and data entry staff
- **Senior managers: CIO, CSO, CKO**
- **End users**
- **External specialists**



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The Information System's Function in Business

Information Systems Services

- **Services provided by the information systems department include:**
 - Computing and telecommunications services
 - Data management services
 - Application software services
 - Physical facilities management services
 - IT management services
 - IT standards services
 - IT educational services
 - IT research and development services