Chapter 2

Global E-Business and Collaboration

Video Cases:
Case 1 How FedEx Works: Enterprise Systems
Case 2 IT and Geo-Mapping Help a Small Business Succeed

Instructional Videos:
Instructional Video 1 US Foodservice Grows Market with Oracle CRM on Demand
Instructional Video 2 Comverse One Billing and Active Customer Management
Instructional Video 3 Deliver Field Service Excellence

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 different management groups in a business?
- How do systems that link the enterprise improve organizational performance?

STUDENT LEARNING OBJECTIVES

- Why are systems for collaboration and teamwork so important and what technologies do they use?
- What is the role of the information systems function in a business?

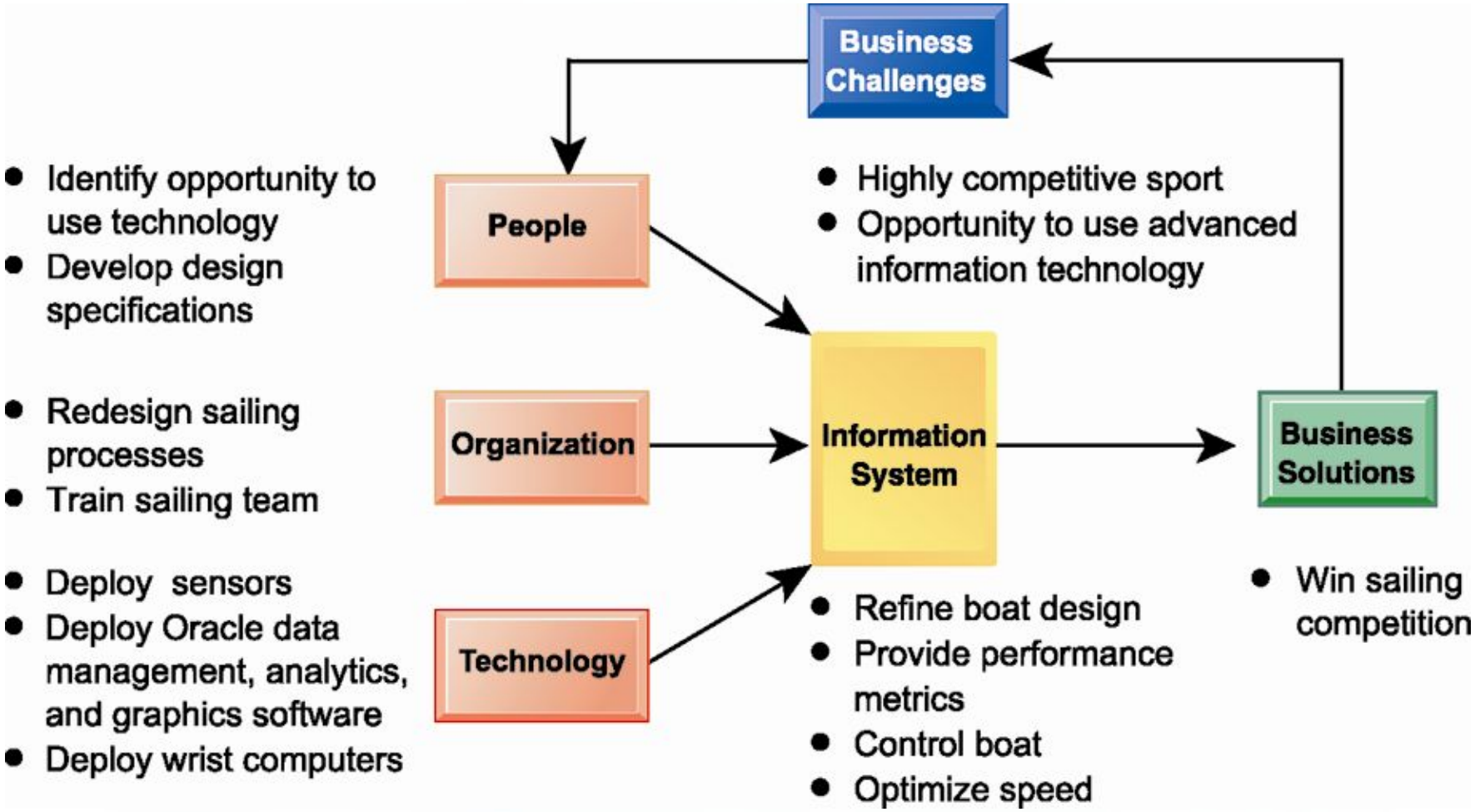
America's Cup 2010: USA Wins with Information Technology

- **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

America's Cup 2010: USA Wins with Information Technology

- 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

America's Cup 2010: USA Wins with Information Technology



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**

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

Five Basic Business Entities

- Suppliers
- Customers
- Employees
- Invoices/payments
- Products and services

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

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.

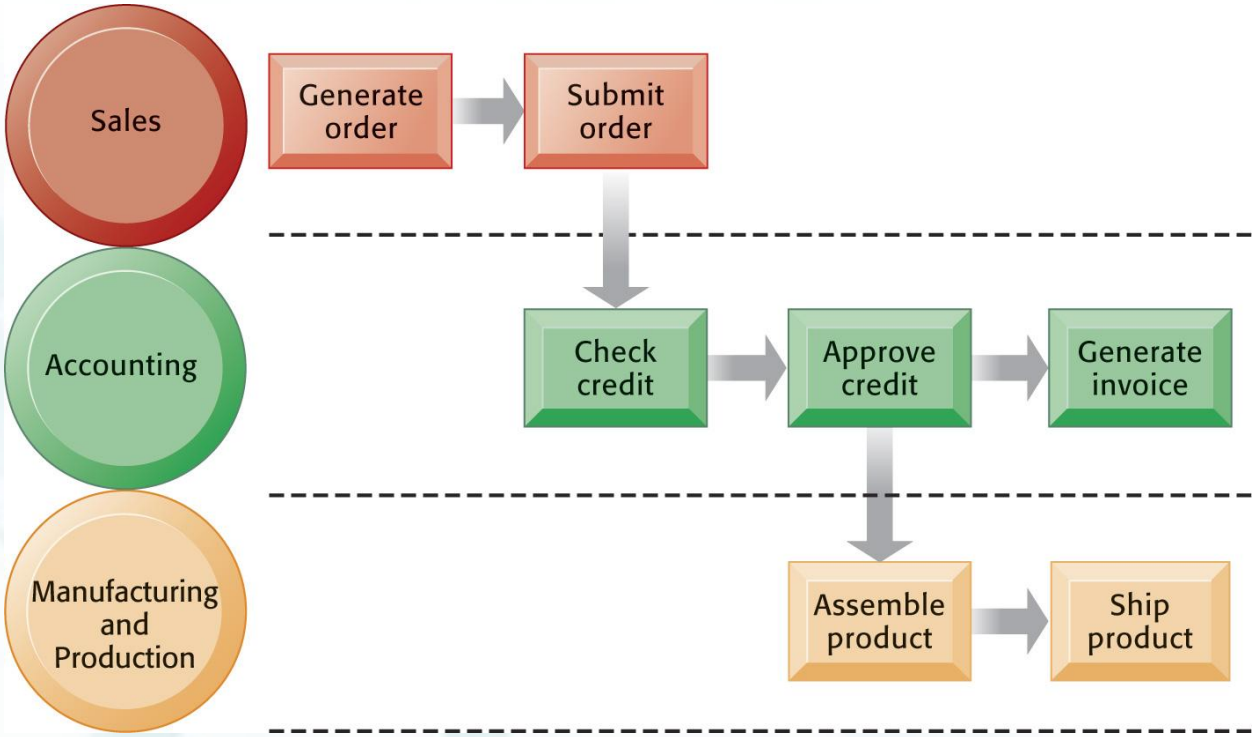


Figure 2-2

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.

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.

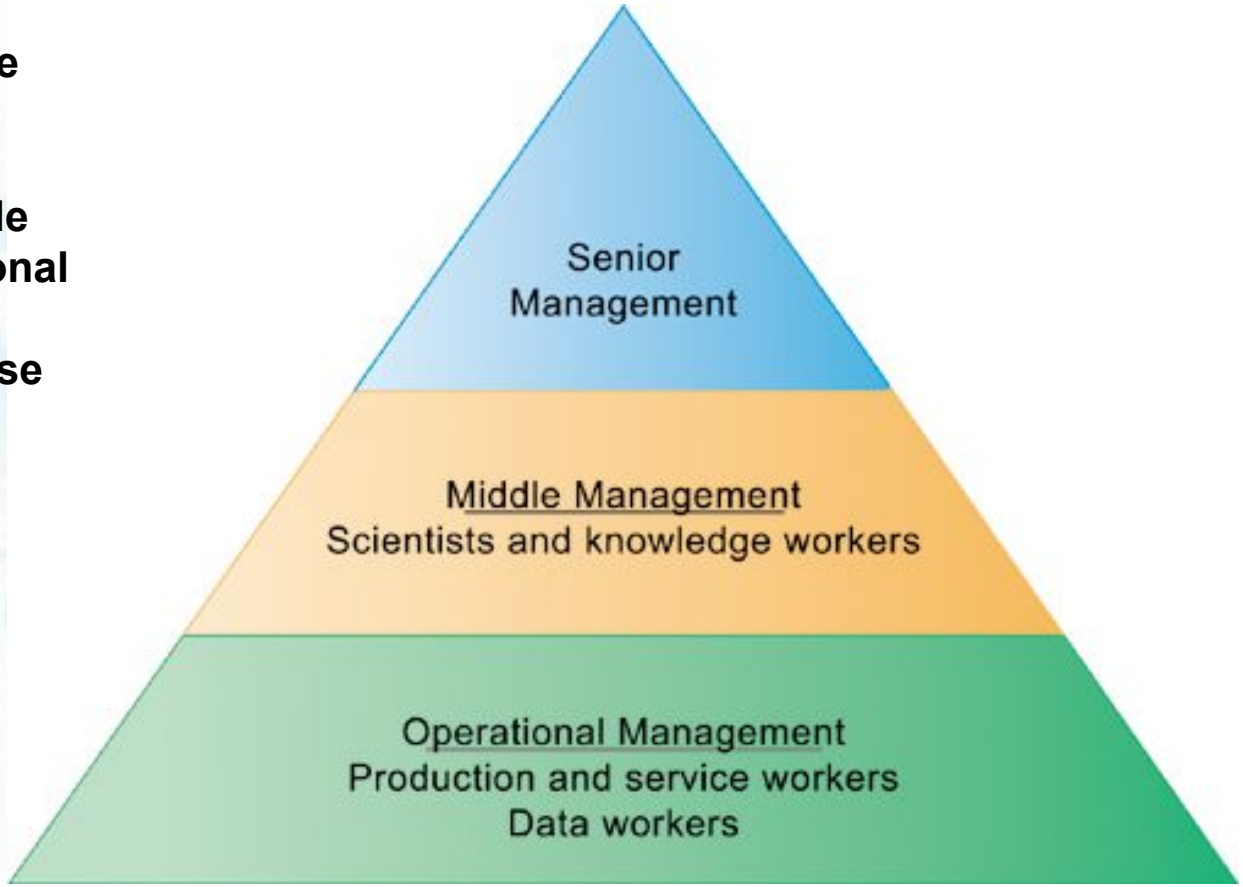


Figure 2-3

The Business Environment

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

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

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

Systems for Management Decision Making and Business Intelligence

- **Transaction processing systems (TPS)**
  - Keep track of basic activities and transactions of organization
- **Systems for business intelligence**
  - Address decision-making needs of all levels of management
    - **Management information systems (MIS)**
    - **Decision support systems (DSS)**
    - **Executive support systems (ESS)**

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

Types of Business Information Systems

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.

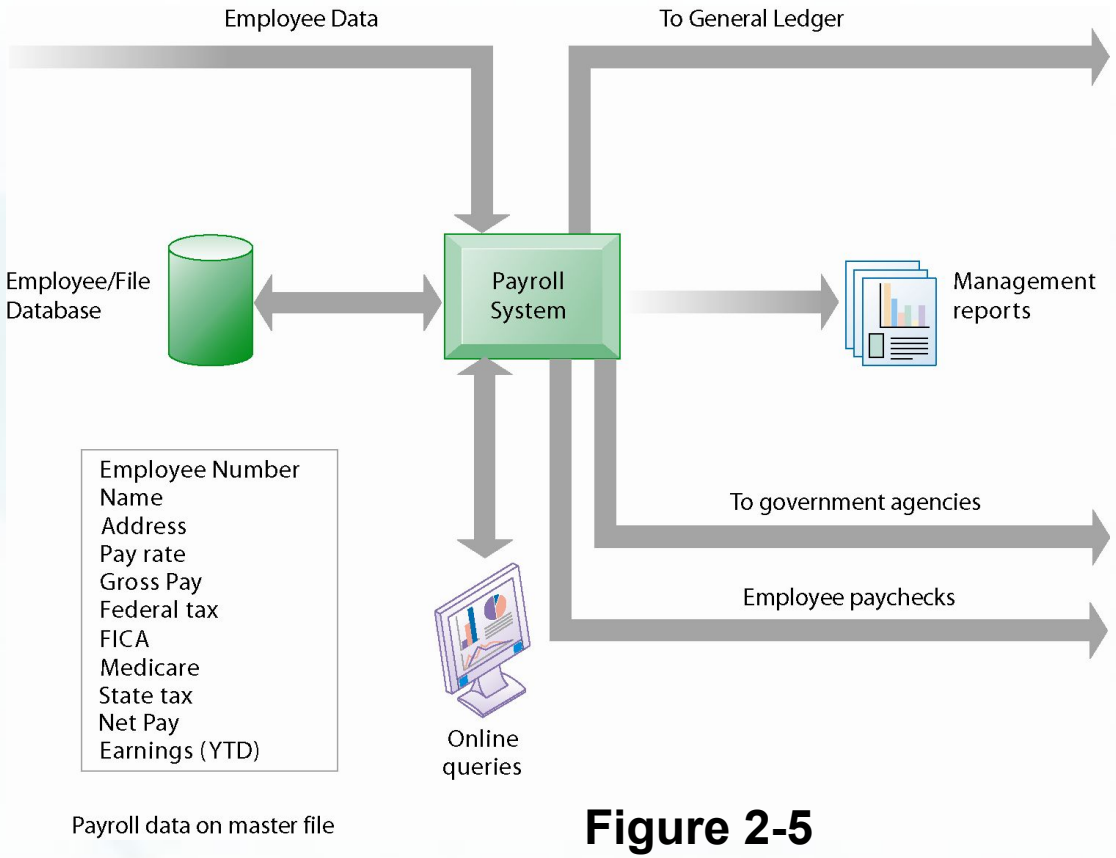


Figure 2-5

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**

Types of Business Information Systems

How MIS Obtain Their Data from TPS

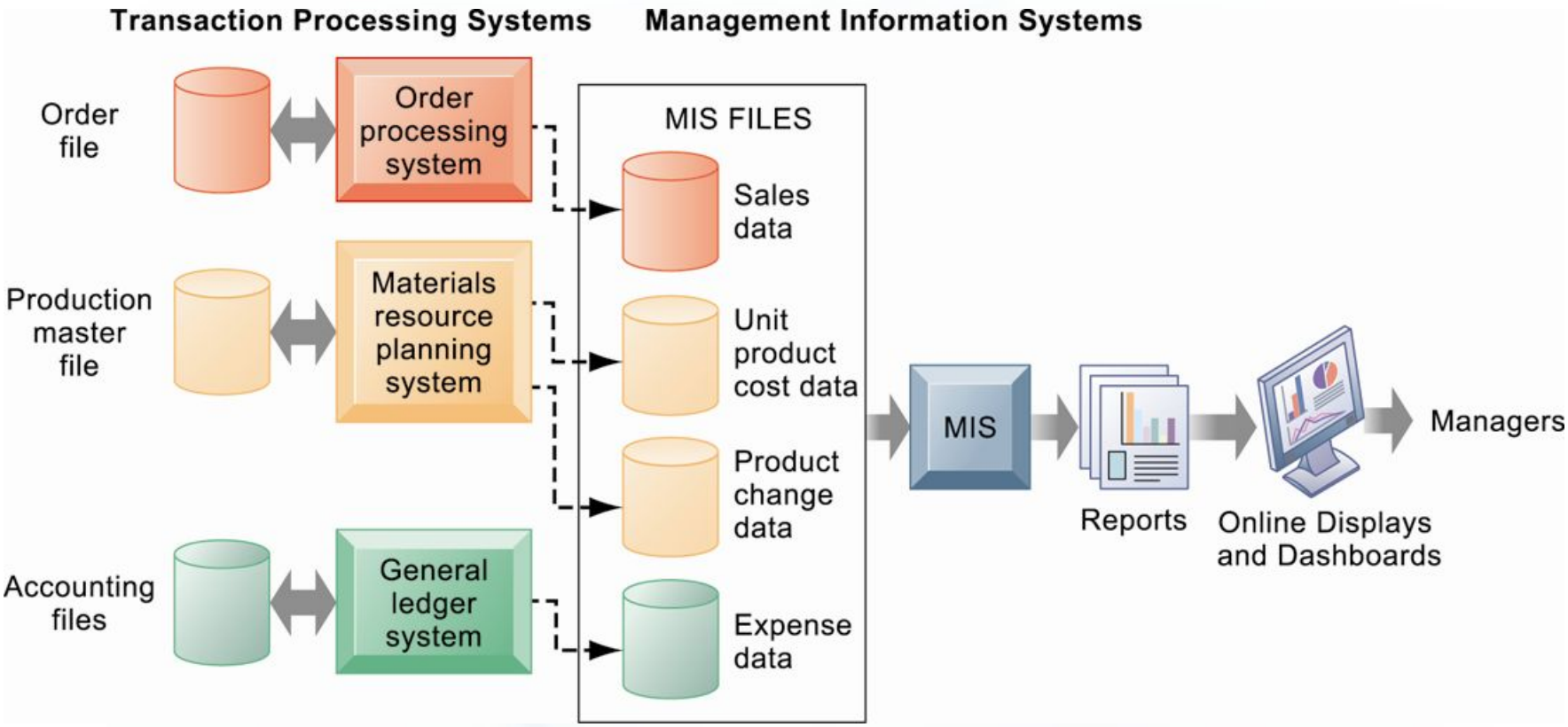


Figure 2-6

Types of Business Information Systems

Sample MIS Report

This report, showing summarized annual sales data, was produced by the MIS in Figure 2-6.

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

Figure 2-7

Interactive Session: Technology
Can Airlines Solve Their Baggage Handling?

- **Read the Interactive Session and then discuss the following questions:**
  - **What types of transactions do baggage handling systems handle?**
  - **What are the people, organization, and technology components of baggage handling systems?**
  - **What is the problem these baggage handling systems are trying to solve? What is the business impact of this problem? Are today's handling systems a solution?**
  - **What kinds of management reports are generated from these systems?**

Types of Business Information Systems

- **Decision support systems (DSS):**
  - **Serve middle managers**
  - **Support nonroutine decision making**
    - E.g., 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

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.

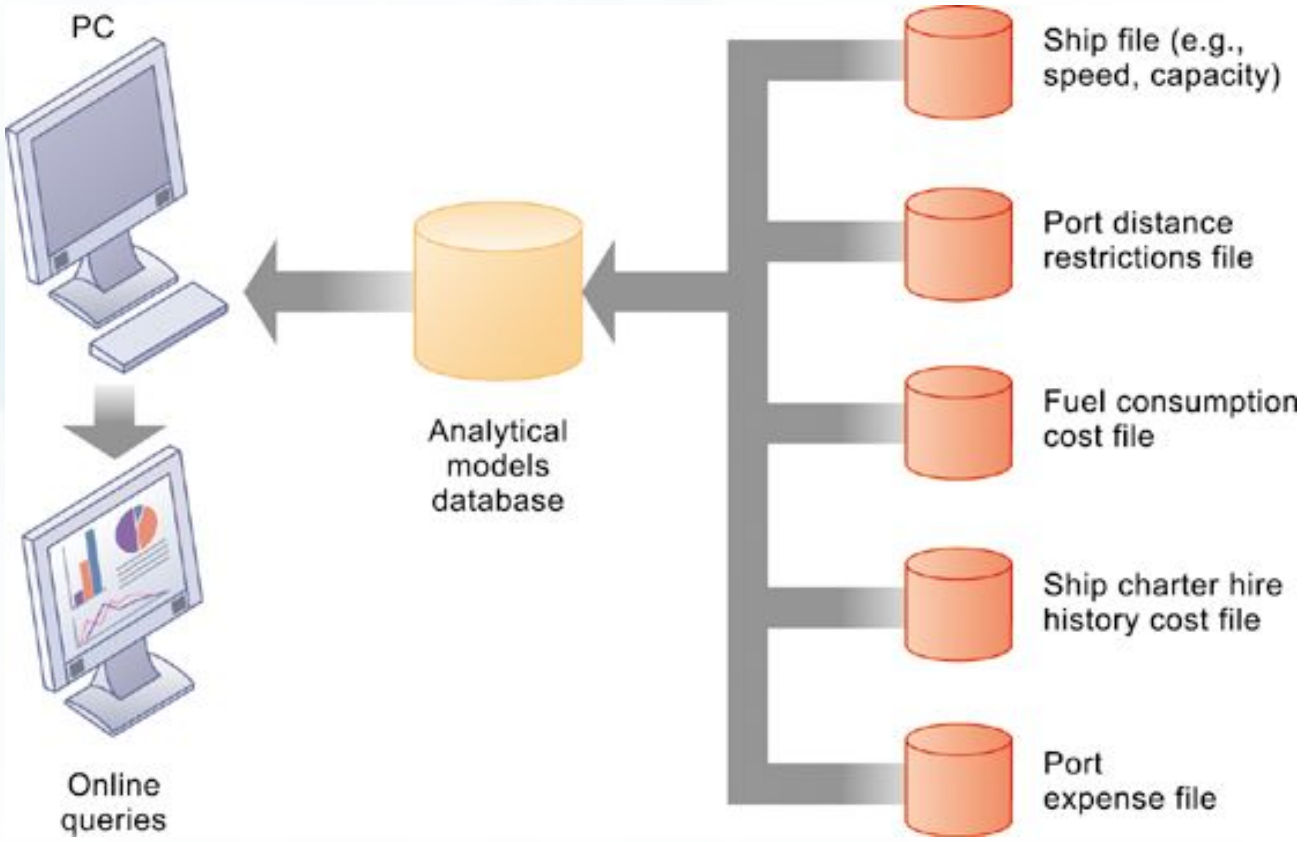


Figure 2-8

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, or digital dashboard, to present content

Types of Business Information Systems

Digital Dashboard

A digital dashboard delivers comprehensive and accurate information for decision making often using a single screen. The graphical overview of key performance indicators helps managers quickly spot areas that need attention.

Interactive Session: Organizations
Piloting Valero with Real-Time Management

- **Read the Interactive Session and then discuss the following questions:**
  - **What people, organization, and technology issues had to be addressed when developing Valero's dashboard?**
  - **What measurements of performance do dashboards display? What management decisions would benefit from Valero's dashboard?**
  - **What kinds of information systems are required for Valero to operate its refining dashboard?**
  - **How effective are Valero's dashboards in helping management?**
  - **Should Valero develop a dashboard to measure the factors in its environment which it doesn't control?**

Systems for Linking the Enterprise

- Enterprise applications
  - Systems that span functional areas, focus on executing business processes across the firm, and include all levels of management
  - Four major types
    1. Enterprise systems
    2. Supply chain management systems
    3. Customer relationship management systems
    4. Knowledge management systems

Types of Business Information Systems

Enterprise Application Architecture

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

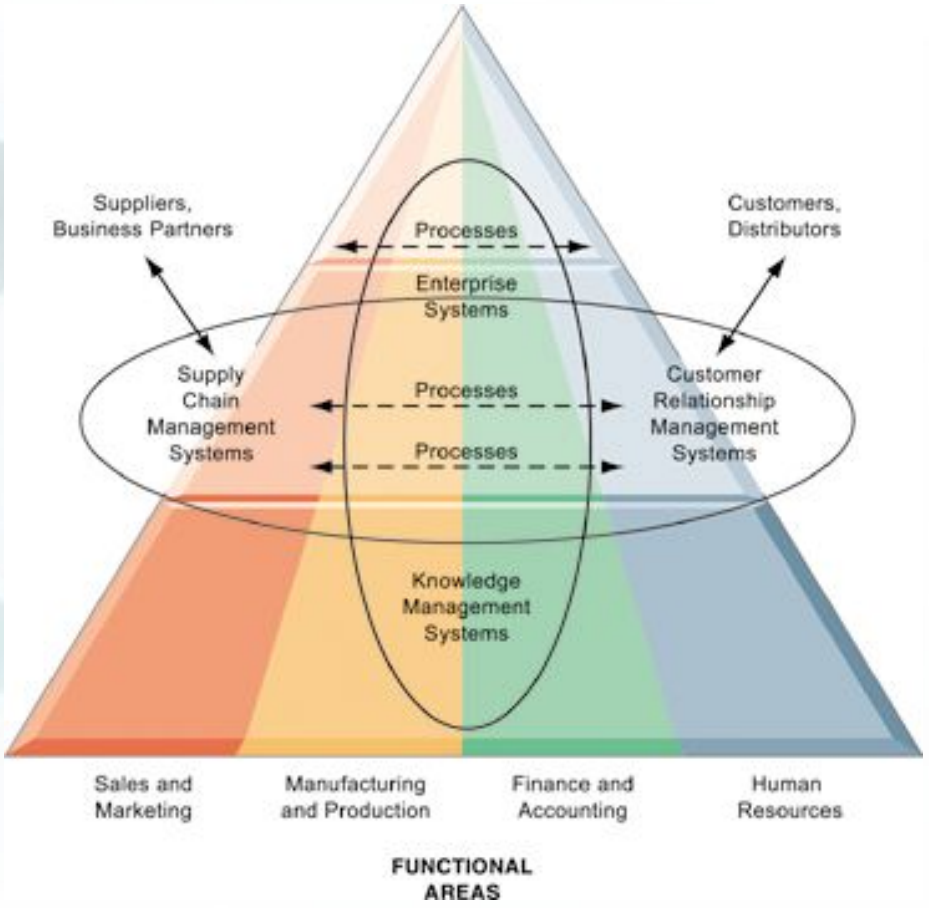


Figure 2-9

Enterprise Systems

- Also called enterprise resource planning (ERP) 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 to assemble overall view of operations

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

Customer Relationship Management Systems

- Help manage relationship with customers
- Coordinate business processes that deal with customers in sales, marketing, and customer service
- Goals:
  - Optimize revenue
  - Improve customer satisfaction
  - Increase customer retention
  - Identify and retain most profitable customers

Knowledge Management Systems

- Manage processes for capturing and applying knowledge and expertise
- Collect relevant knowledge and make it available wherever needed in the enterprise to improve business processes and management decisions
- Link firm to external sources of knowledge

Intranets and Extranets

- Technology platforms that increase integration and expedite the flow of information
  - Intranets:
    - Internal networks based on Internet standards
    - Often are private access area in company's Web site
  - Extranets:
    - Company Web sites accessible only to authorized vendors and suppliers
    - Facilitate collaboration

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

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 and business

Business Benefits of Collaboration and Teamwork

- Recent surveys find that investment in collaboration technology can return large rewards, especially in:
  - Sales and marketing
  - Research and development
- Older, "command and control," hierarchical management allowed little horizontal communication
- Today, businesses rely more on teams at all levels

Systems for Collaboration and Teamwork

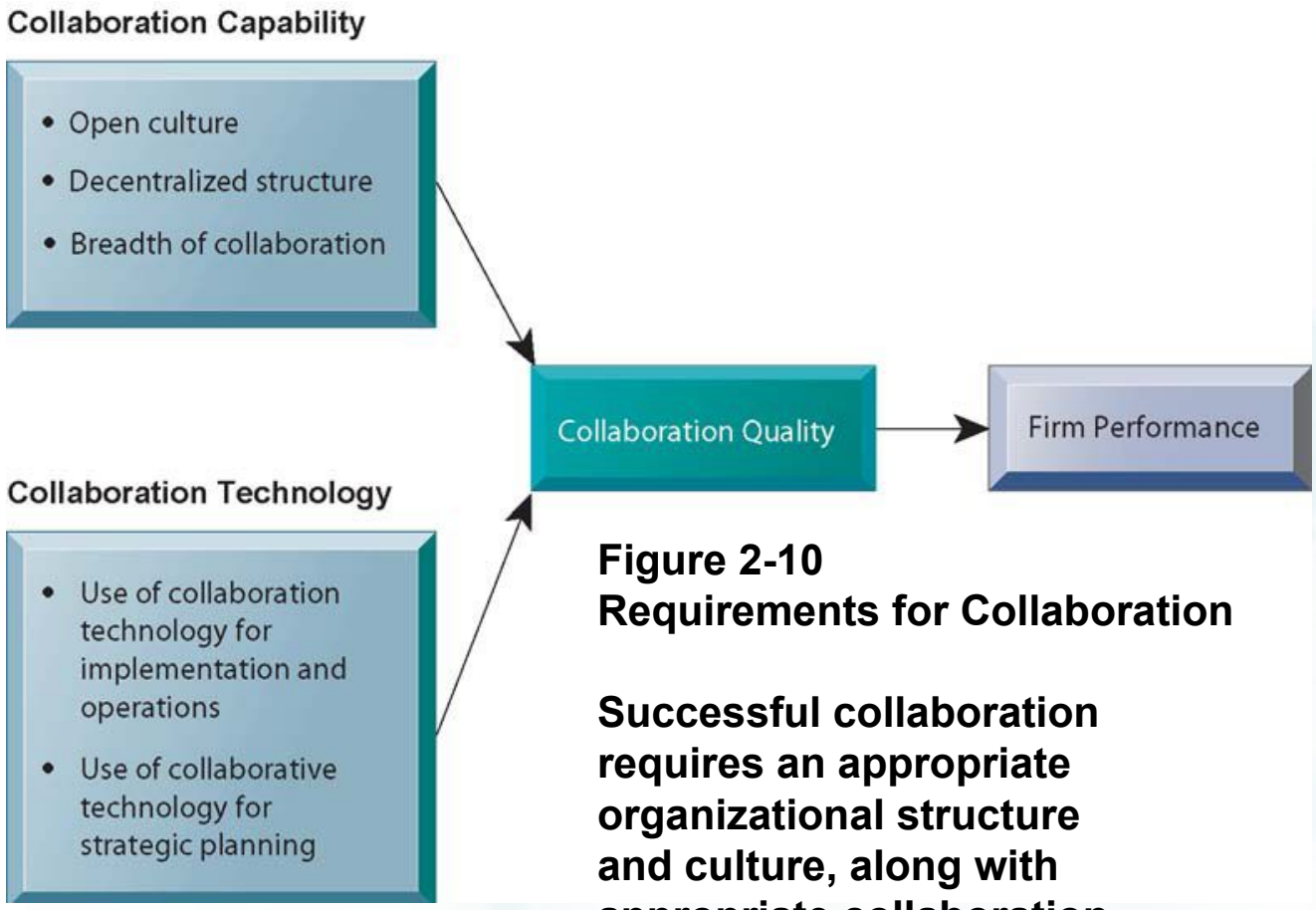


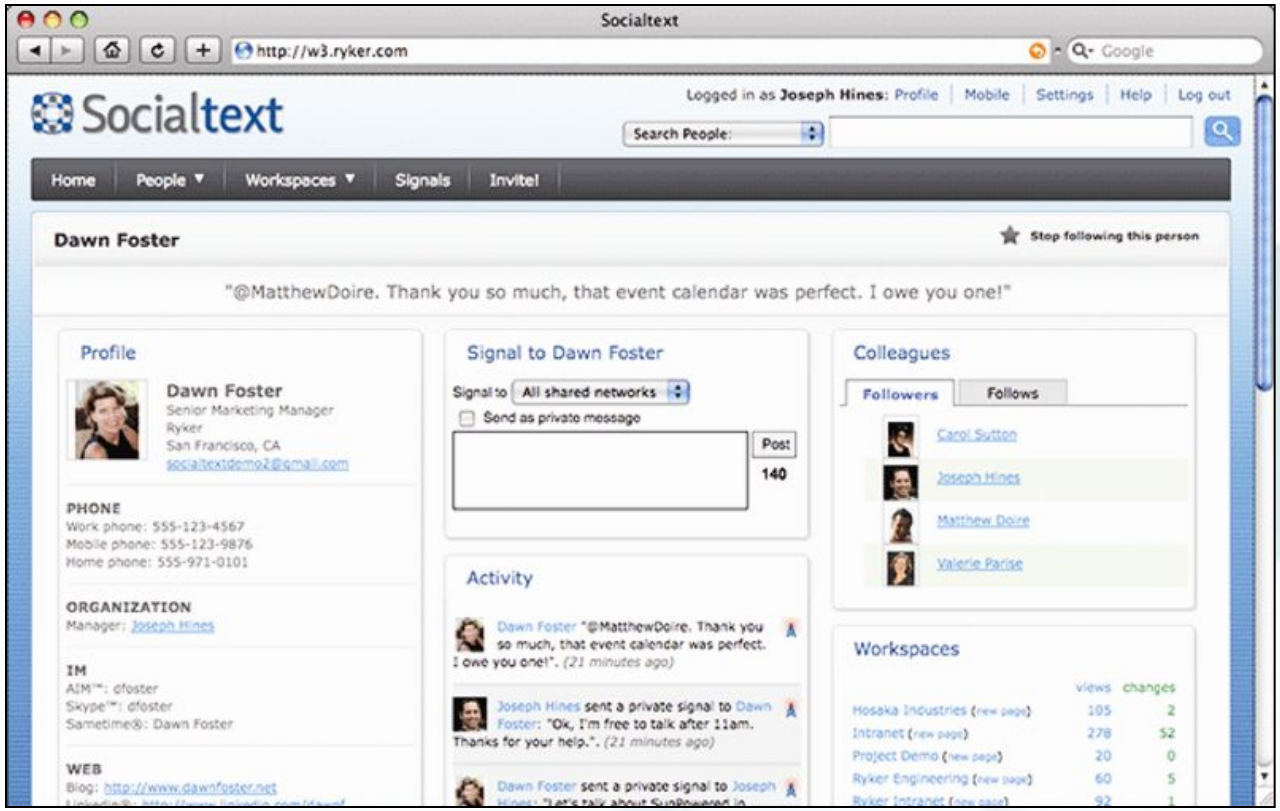
Figure 2-10
Requirements for Collaboration

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

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

The Information Systems Function in Business



Socialtext's enterprise social networking products including microblogging, blogs, wikis, profiles, and social spreadsheets enable employees to share vital information and work together in real time. Built on a flexible Web-oriented architecture, Socialtext integrates with virtually any traditional system of record, such as CRM and ERP, enabling companies to discuss, collaborate, and take action on key business processes.

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 co-located.

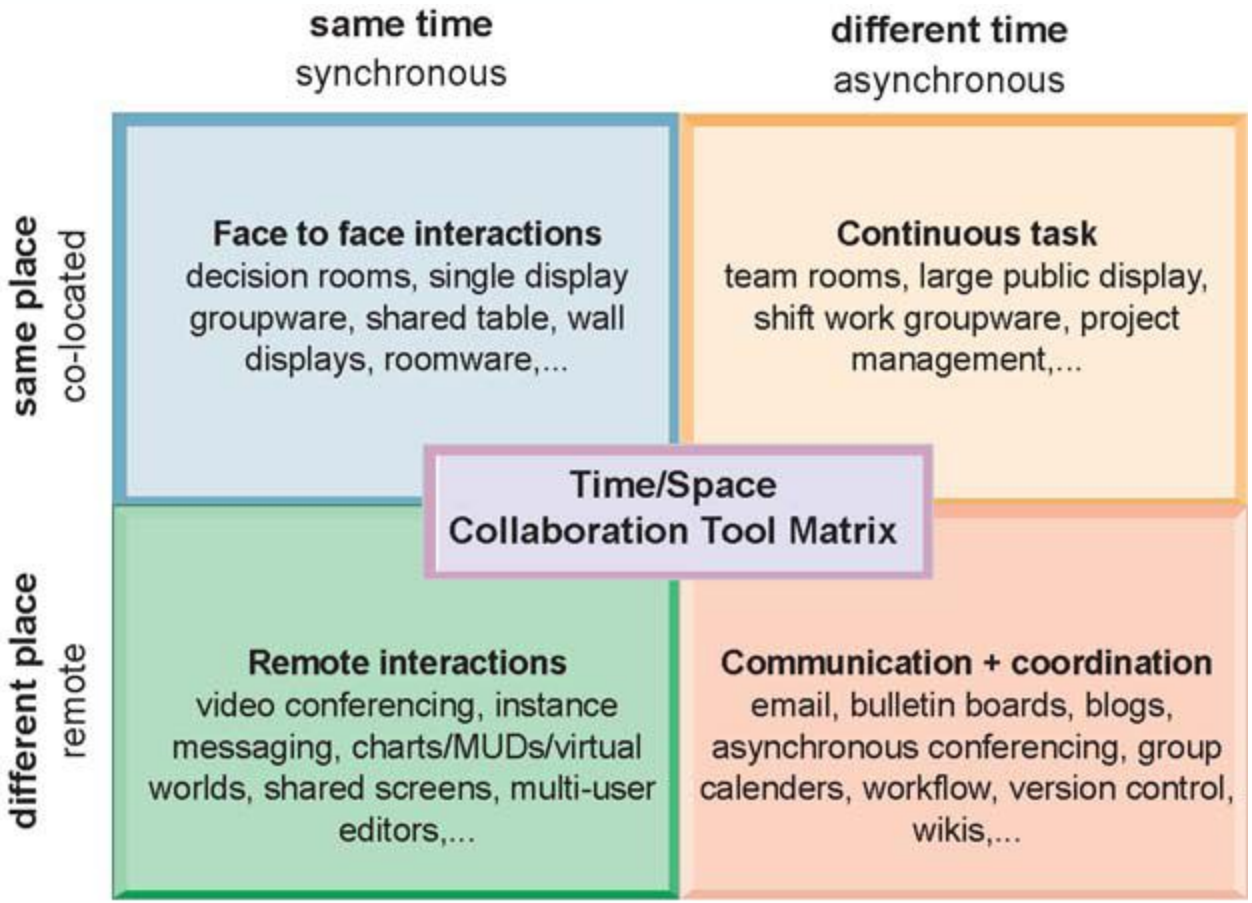


Figure 2-11

Evaluating and Selecting Collaboration 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. Select candidate tools and evaluate vendors.

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, CPO, CSO, CKO
- End users

Information Systems Services

- Computing services
- 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