BUSINESS INFORMATION SYSTEMS

Global E-business and Collaboration

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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?

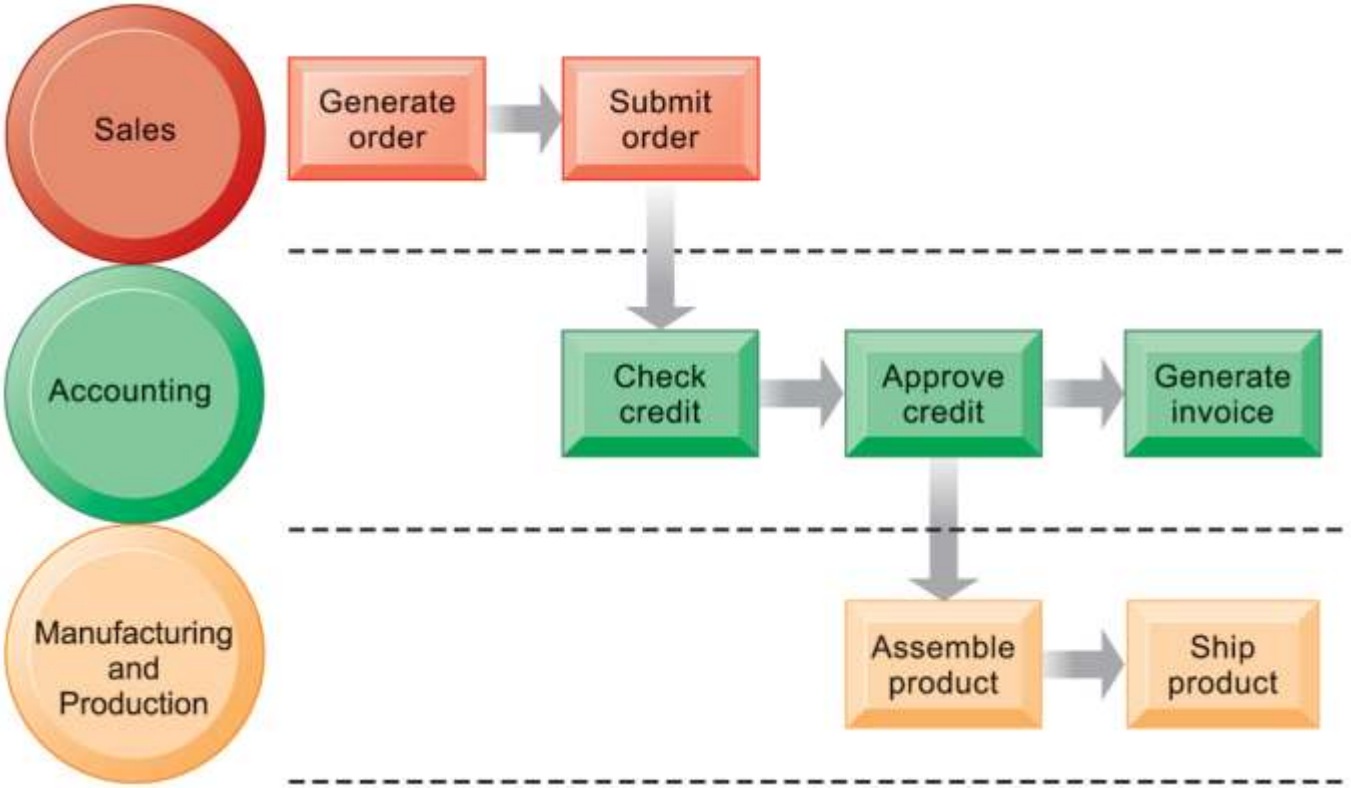
Business Processes and Information Systems

- 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

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

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.

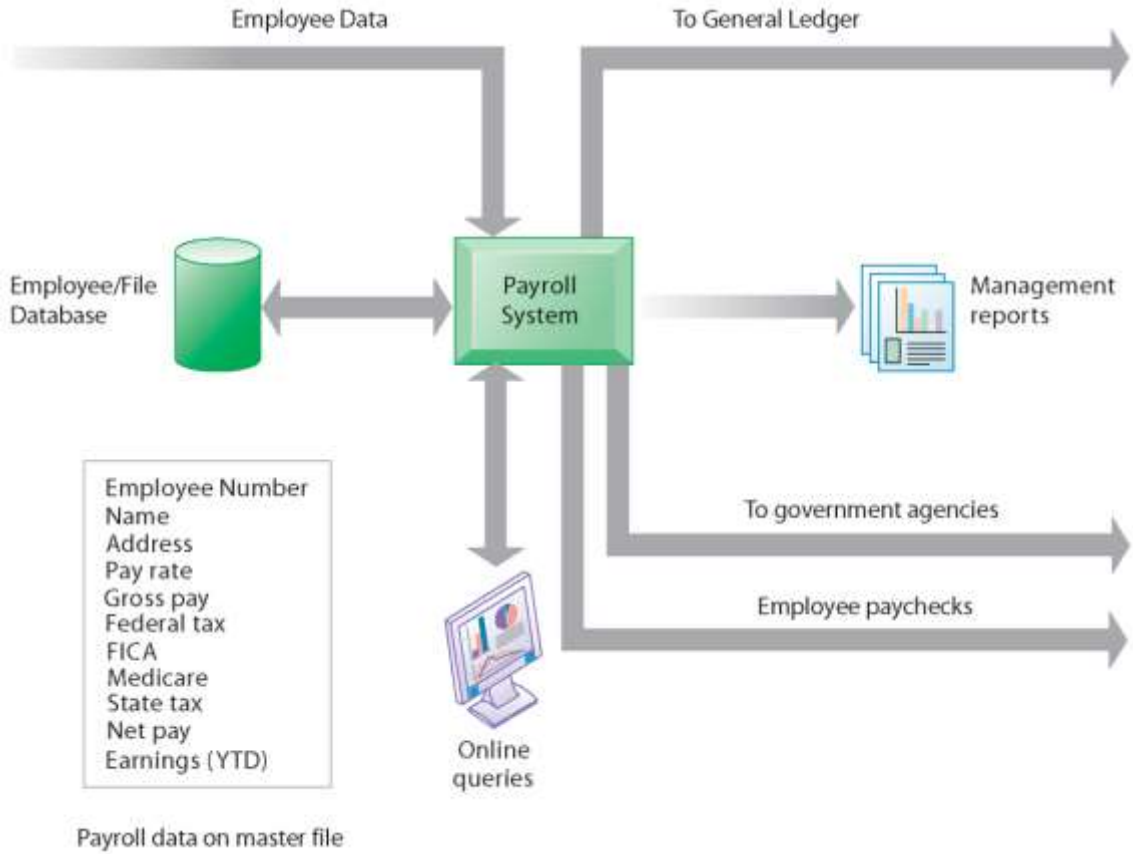
Business Processes and Information Systems

- 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

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

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.

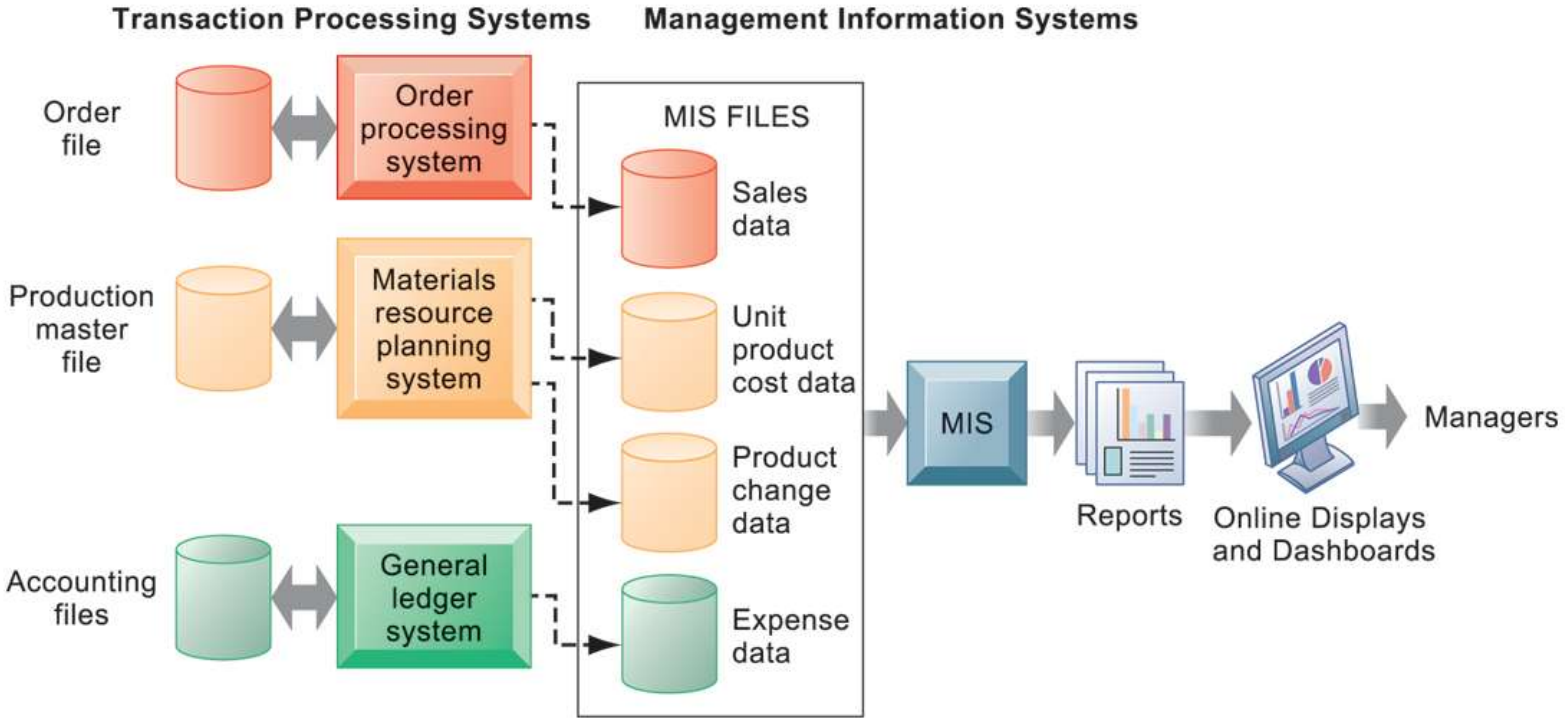
Types of Information Systems

- 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

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

How MIS Obtain Their Data from the TPS



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.

Sample MIS Report

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

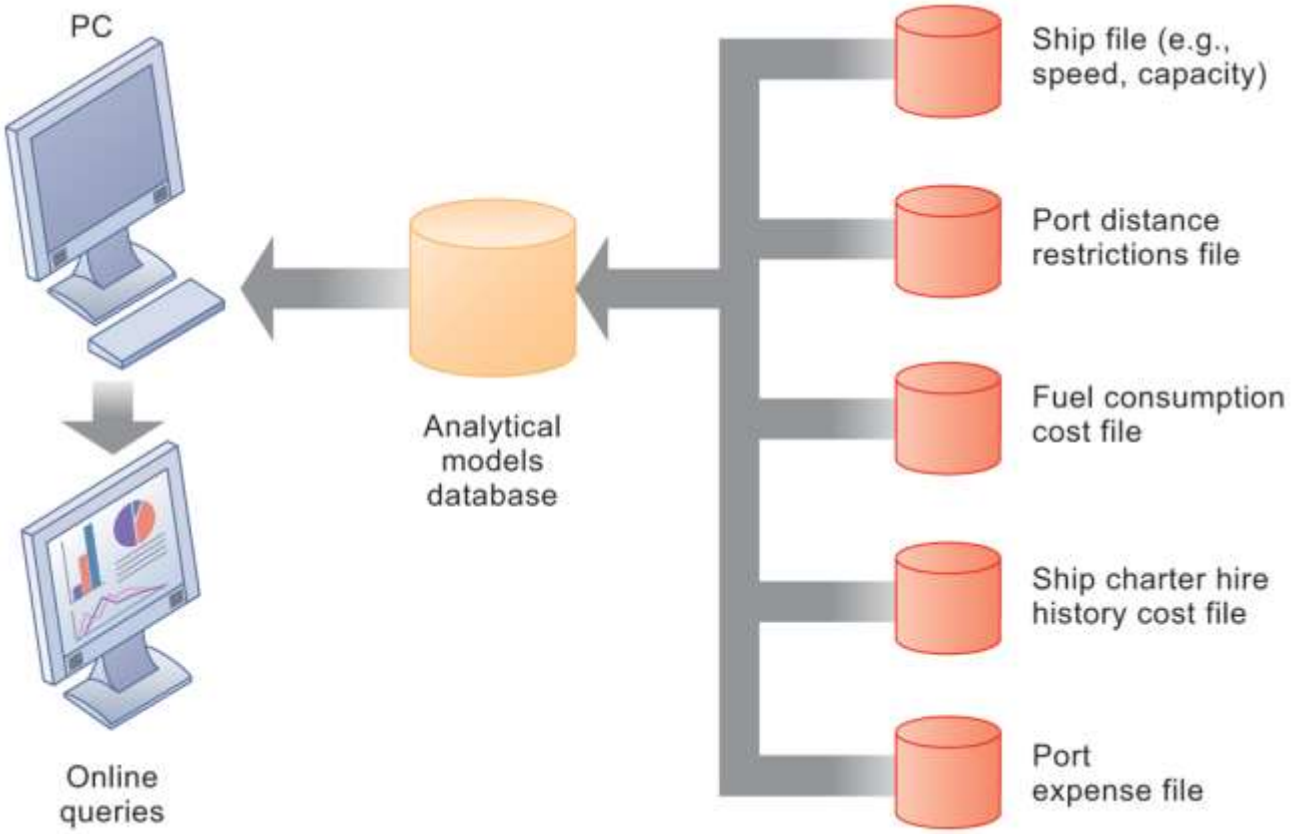
PRODUCT CODE	PRODUCT DESCRIPTION	SALES REGION	ACTUAL SALES	PLANNED	ACTUAL versus PLANNED
4469	Carpet Cleaner	Northeast	4,066,700	4,800,000	0.85
		South	3,778,112	3,750,000	1.01
		Midwest	4,867,001	4,600,000	1.06
		West	4,003,440	4,400,000	0.91
	TOTAL		16,715,253	17,550,000	0.95
5674	Room Freshener	Northeast	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

This report, showing summarized annual sales data, was produced by the MIS

Types of Information Systems

- Decision support systems
  - Serve middle management
  - Support non-routine 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

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.

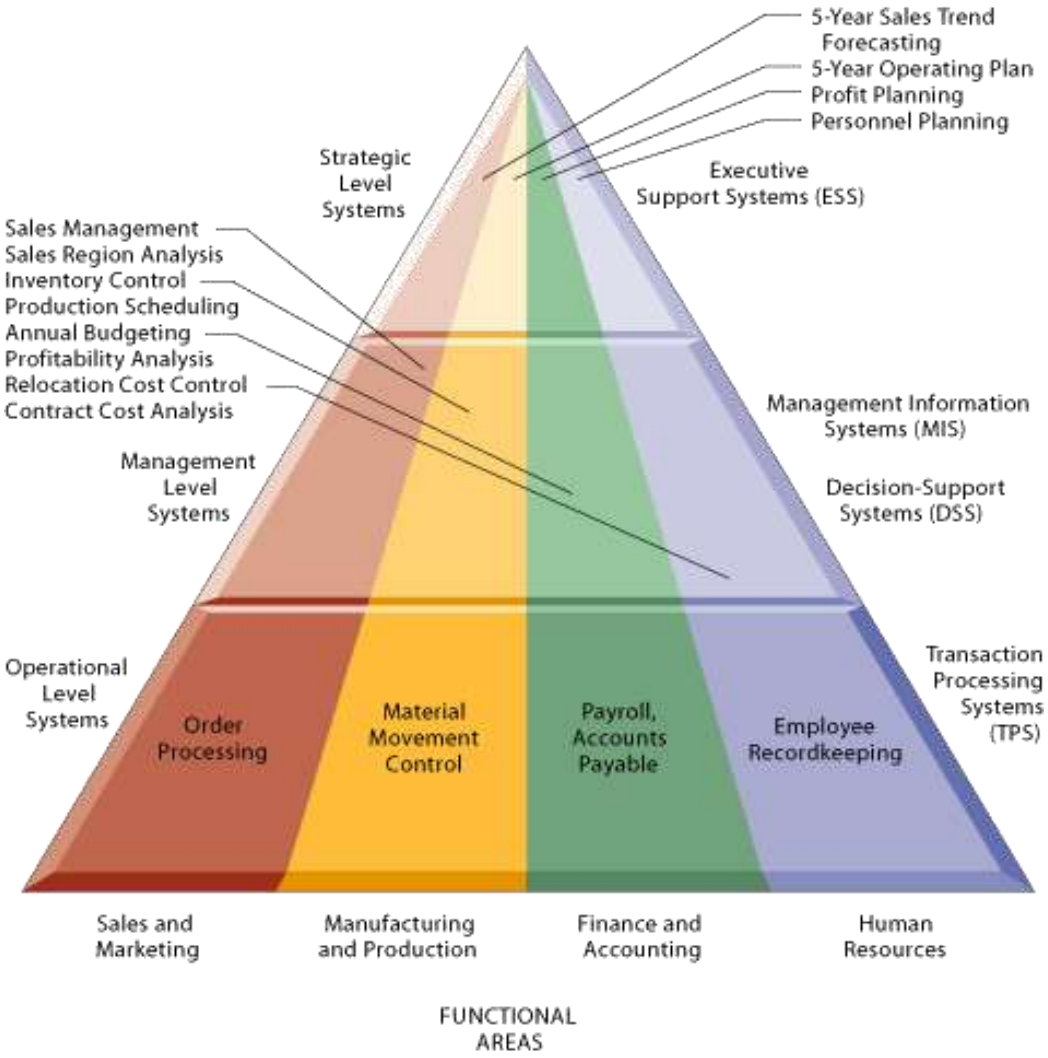
Types of Information Systems

- 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

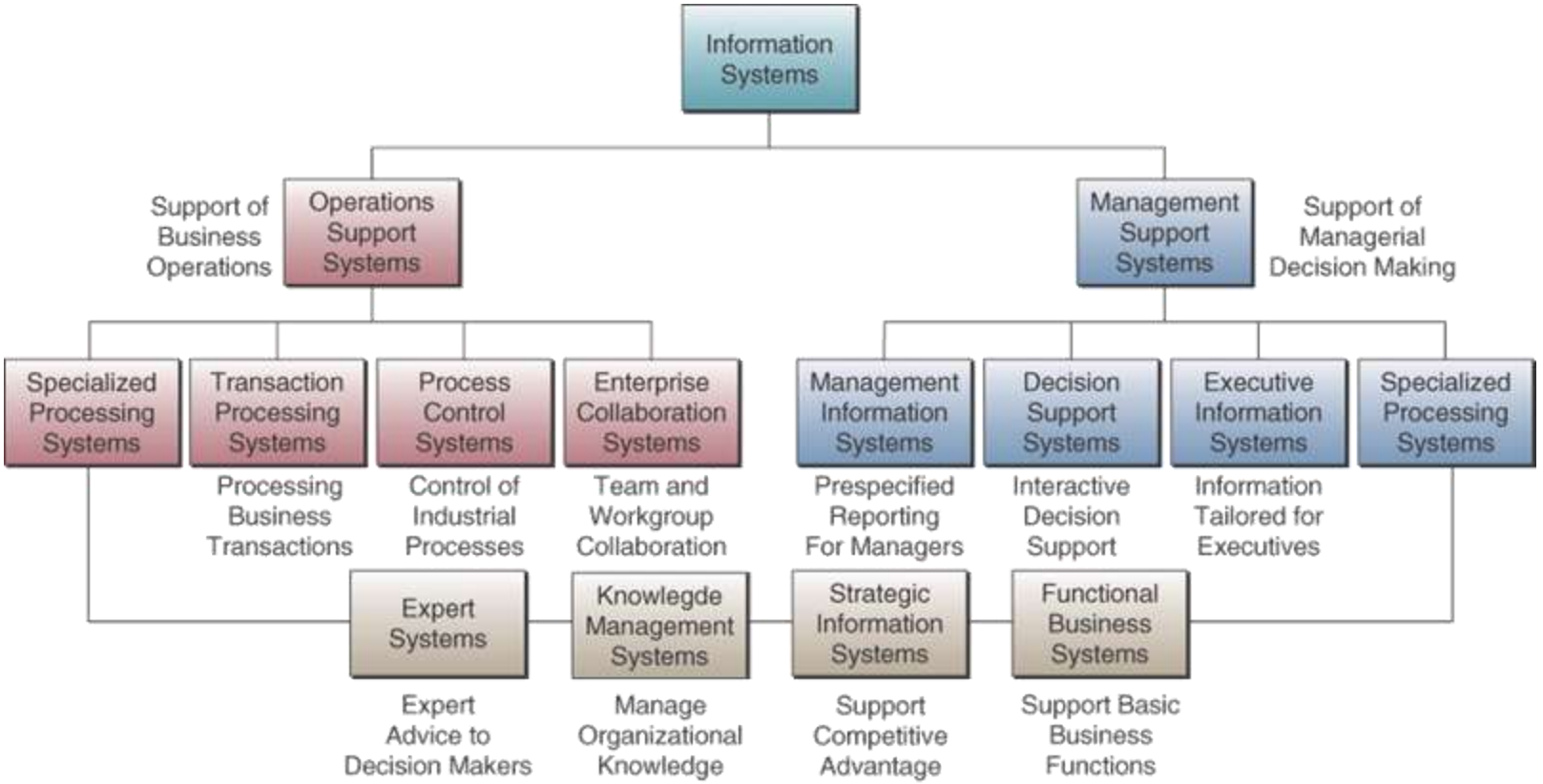
Types of Information Systems

- Executive support systems

Types of Information Systems



Types of Information Systems



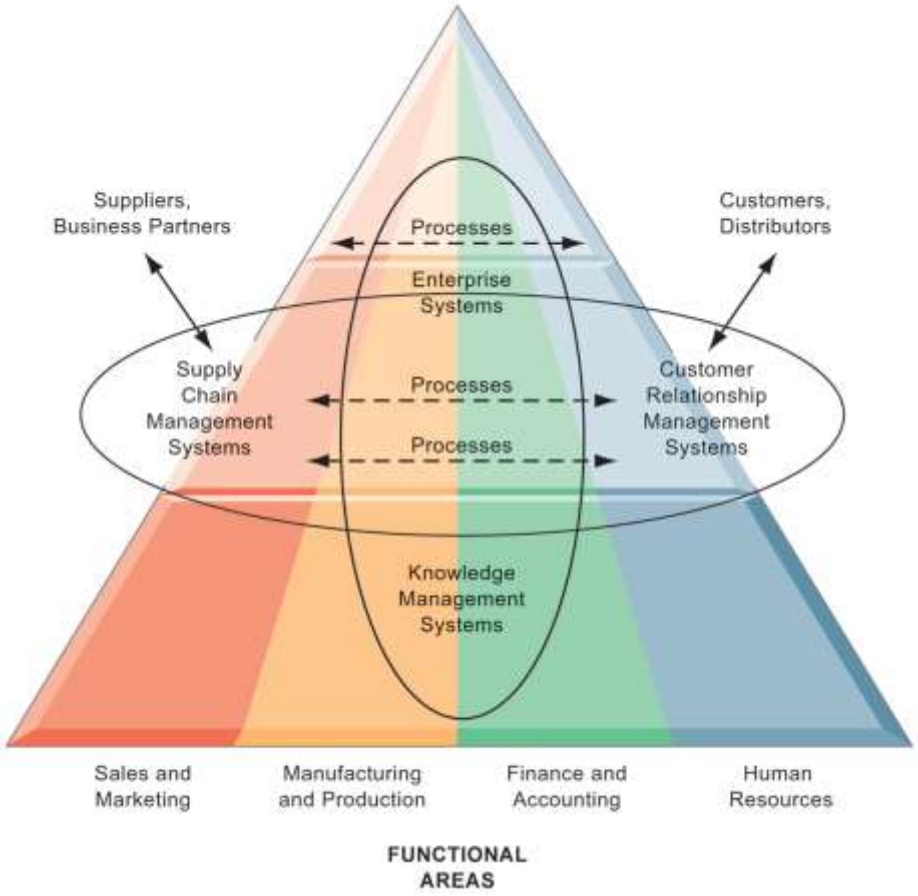
Problems with Functional ISs

- **Data are duplicated** because each functional application has its own database:
  - islands of automation or information silos
- **Business processes disjointed** because supporting applications separated:
  - difficult for activities to reconcile data, and increases chances of errors
- Lack of integrated enterprise information
- Inefficiency
- Increased costs due to duplicated data, disjointed systems, limited information and inefficiencies
- Information availability

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

Enterprise Application Architecture



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

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

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

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

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

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

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

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

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

Systems for Collaboration and Social Business

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

Systems for Collaboration and Social Business

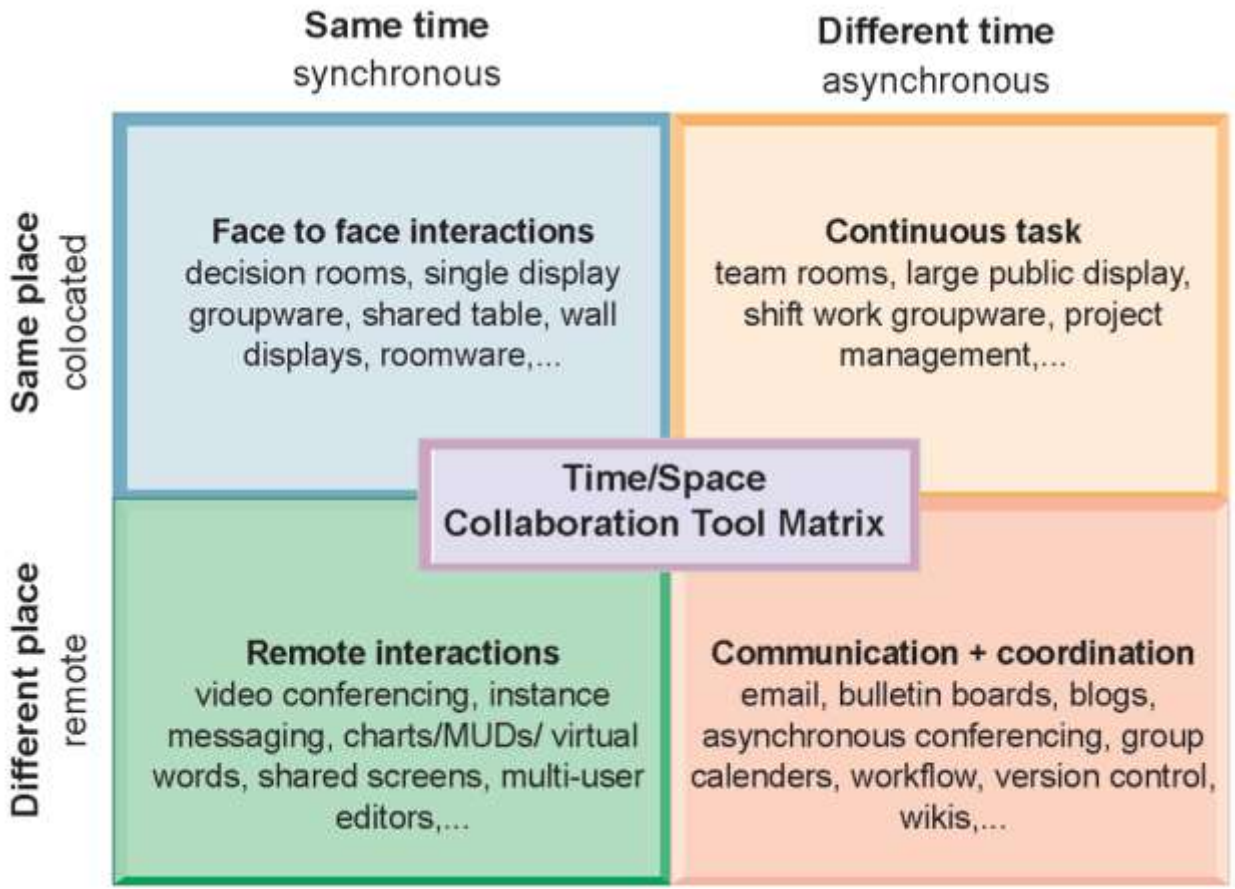
- Tools for collaboration and teamwork
  - E-mail and instant messaging
  - Wikis
  - Virtual worlds
  - Collaboration and social business platforms
    - Virtual meeting systems (telepresence)
    - Cloud collaboration services (Google Tools, cyberlockers)
    - Microsoft SharePoint
    - IBM Notes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

Systems for Collaboration and Social Business

- Enterprise social networking software capabilities
  - Profiles
  - Content sharing
  - Feeds and notifications
  - Groups and team workspaces
  - Tagging and social bookmarking
  - Permissions and privacy
  - *Socialcast (Vmware), Tibbr (Tibco), Yammer (Microsoft)*

- Two dimensions of collaboration technologies
  - Space (or location)—remote or co-located
  - Time—synchronous or asynchronous

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 or whether these interactions are remote or co-located.

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

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

Q&A