Management Information Systems: Managing the Digital Firm

Seventeenth Edition

Chapter 2

Global E-Business and Collaboration

Learning Objectives

2.1 What are business processes? How are they related to information systems?

2.2 How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance?

2.3 Why are systems for collaboration and social business so important, and what technologies do they use?

2.4 What is the role of the information systems function in a business?

2.5 How will MIS help my career?

Video Cases

- Case 1: IS in Action: VisionX Lighting Grows with Business One

- Case 2: Cemex: Becoming a Social Business

Enterprise Social Networking Transforms Sharp Corporation into a More Innovative Connected Organization (1 of 2)

- Problem
  - Hierarchical top-down processes
  - New competitors
  - Lack of collaboration and idea sharing
- Solutions
  - Develop knowledge-sharing strategy and goals
  - Redesign knowledge-sharing and collaboration processes
  - Change organizational culture
  - Implement Microsoft Yammer collaboration software

Enterprise Social Networking Transforms Sharp Corporation into a More Innovative Connected Organization (2 of 2)

- Use of new information systems to improve performance and remain competitive

- Demonstrates importance of teamwork and collaboration for innovation and profit growth

- Illustrates importance of organizational culture and business processes for knowledge dissemination

Business Processes (1 of 2)

- Business processes
  - Flows of material, information, knowledge
  - Logically related set of tasks that define how specific business tasks are performed
  - May be tied to functional area or be cross-functional

- Businesses: Can be seen as collection of business processes

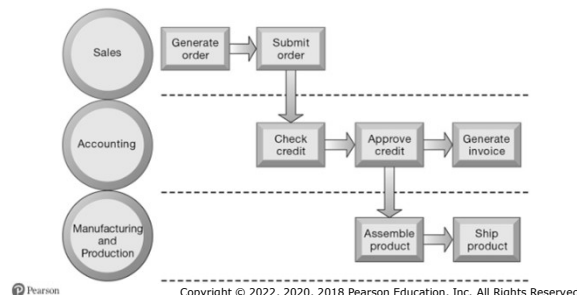- Business processes may be assets or liabilities

Business Processes (2 of 2)

- 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

Figure 2.1 The Order Fulfillment Process

How Information Technology Improves Business Processes

- Increasing efficiency of existing processes
  - Automating steps that were manual
- Enabling entirely new processes
  - Changing flow of information
  - Replacing sequential steps with parallel steps
  - Eliminating delays in decision making
 - Supporting new business models

Systems for Different Management Groups (1 of 2)

- 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

Figure 2.2 A Payroll TPS
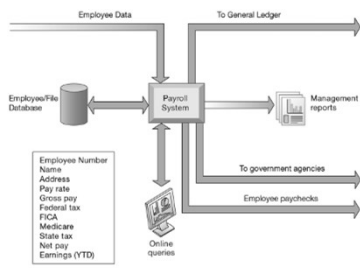
Systems for Different Management Groups (2 of 2)

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

Figure 2.3 How Management Information Systems Obtain Their Data from the Organization's TPS
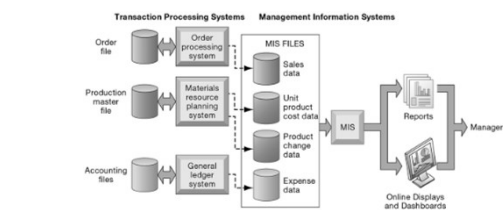
Figure 2.4 Sample MIS Report

Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2020

| 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

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 as TPS / MIS data
- Model driven DSS
  - Voyage-estimating systems
- Data driven DSS
  - Intrawest's marketing analysis systems

Figure 2.5 Voyage-Estimating Decision-Support System
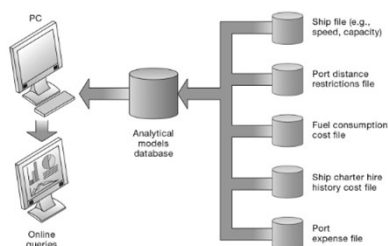
Executive Support Systems

- 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

Enterprise Applications

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

Figure 2.6 Enterprise Application Architecture
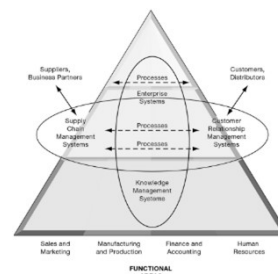
Enterprise Systems

- 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 (SCM) 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 (CRM) 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
  - Increase sales

Knowledge Management Systems (KMS)

- 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 website
- Extranets:
  - Company websites 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

Interactive Session: Organizations: The City of Mississauga Goes Digital

- Class discussion
  - Describe the problems the City of Mississauga hoped to address using digital technology.
  - What technologies did Mississauga employ for a solution? Describe each of these technologies and the role each played in a solution.
  - What management, organization, and technology issues did the City of Mississauga have to address in developing a solution?.
  - How did the technologies in this case improve operations and decision making at the City of Mississauga?

What is Collaboration?

- 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

What is Social Business?

- Social business
  - Use of social networking platforms (internal and external) to engage employees, customers, and suppliers
- Aims to deepen interactions and expedite information sharing
- "Conversations" to strengthen bonds with customers
- Requires information transparency
- Seen as way to drive operational efficiency, spur innovation, accelerate decision making

Business Benefits of Collaboration and Teamwork

- Investment in collaboration technology can return large rewards, especially in sales and marketing, research and development
- Productivity: Sharing knowledge and resolving problems
- Quality: Faster resolution of quality issues
- Innovation: More ideas for products and services
- Customer service: Complaints handled more rapidly
- Financial performance: Generated by improvements in factors above

Figure 2.7 Requirements for Collaboration
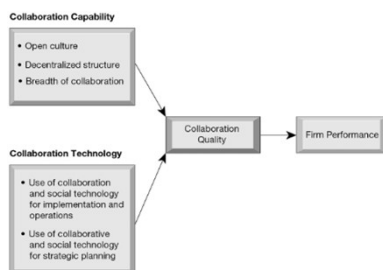
Building a Collaborative Culture and Business Processes

- "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, and systems rely on teams
  - The managers purpose is to build teams

Tools and Technologies for Collaboration and Social Business

- E-mail and instant messaging (IM)
- Wikis
- Virtual worlds
- Collaboration and social business platforms
  - Virtual meeting systems: videoconferencing, telepresence)
  - Cloud collaboration services (Google Drive, Google Docs, etc.)
  - Microsoft SharePoint and IBM Notes
  - Enterprise social networking tools

Interactive Session: Technology: Quality Videoconferencing: Something for Every Budget

- Class discussion
  - How do the videoconferencing tools described in this case promote collaboration and innovation?
  - How is videoconferencing related to the business models and business strategies of the organizations described in this case?
  - Describe the specific ways in which videoconferencing technology helped each of the organizations in this case improve their operations and decision making?
  - If you were a small or medium-sized business, what criteria would you use to determine whether to use Zoom videoconferencing?

## Checklist for Managers: Evaluating and Selecting Collaboration and Social Software Tools

- Time/space matrix
- Six steps in evaluating software tools
  - Identify your firm's collaboration challenges
  - Identify 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

Figure 2.8 The Time/Space Collaboration and Social Tool Matrix
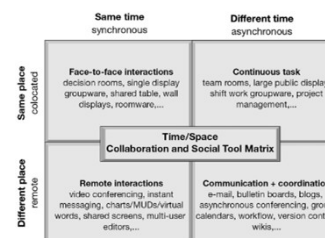
The Information Systems Department

- Often headed by chief information officer (CIO)
  - Other senior positions include chief security officer (CSO), chief knowledge officer (CKO), chief privacy officer (CPO), chief data officer (CDO)
- Programmers
- Systems analysts
- Information systems managers
- End users

Organizing the Information Systems Function

- IT governance
  - Strategies and policies for using IT in the organization
  - Decision rights
  - Accountability
  - Organization of information systems function
    - Centralized, decentralized, and so on

How Will MIS Help My Career?

- The Company: Comprehensive Supplemental Insurance USA
- Position: Sales support specialist
- Job Requirements
- Interview Questions
- Author Tips

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