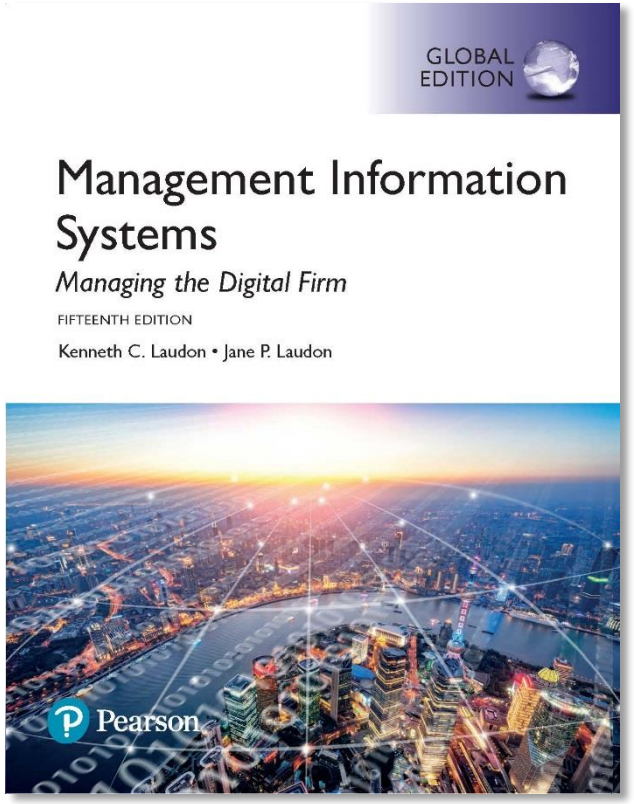
Management Information Systems: Managing the Digital Firm

Fifteenth edition



Chapter 2

Global E-business and Collaboration

Lecturer:
Alireza Rezvanian

Courtesy:
Most slides are mainly adopted from:

- Kenneth C. Laudon and Jane P. Laudon. **Management Information Systems: Managing the Digital Firm**. 15th Edition. Pearson, 2018.
- Kenneth C. Laudon and Jane P. Laudon. **Essentials of Management Information Systems**.10th Edition, Pearson, 2013.

Last update: Oct. 05, 2019

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?

Social Networking Takes Off at Kulwer

- Problem: Need to improve employee collaboration and knowledge sharing; outdated knowledge on intranet
- Solutions: New technology for collaborative knowledge sharing
- Microsoft Yammer provided enterprise-wide social networking platform for collaboration on projects and editing of shared documents
- Demonstrates IT's role in collaboration and documenting knowledge
- Illustrates the ability of information systems to positively change business culture

Enterprise Social Networking Helps ABBInnovate and Grow (1 of 2)

- Problem
  - Outdated static technology
  - Outdated knowledge
  - Geographically dispersed
  - employee collaboration
  - knowledge sharing

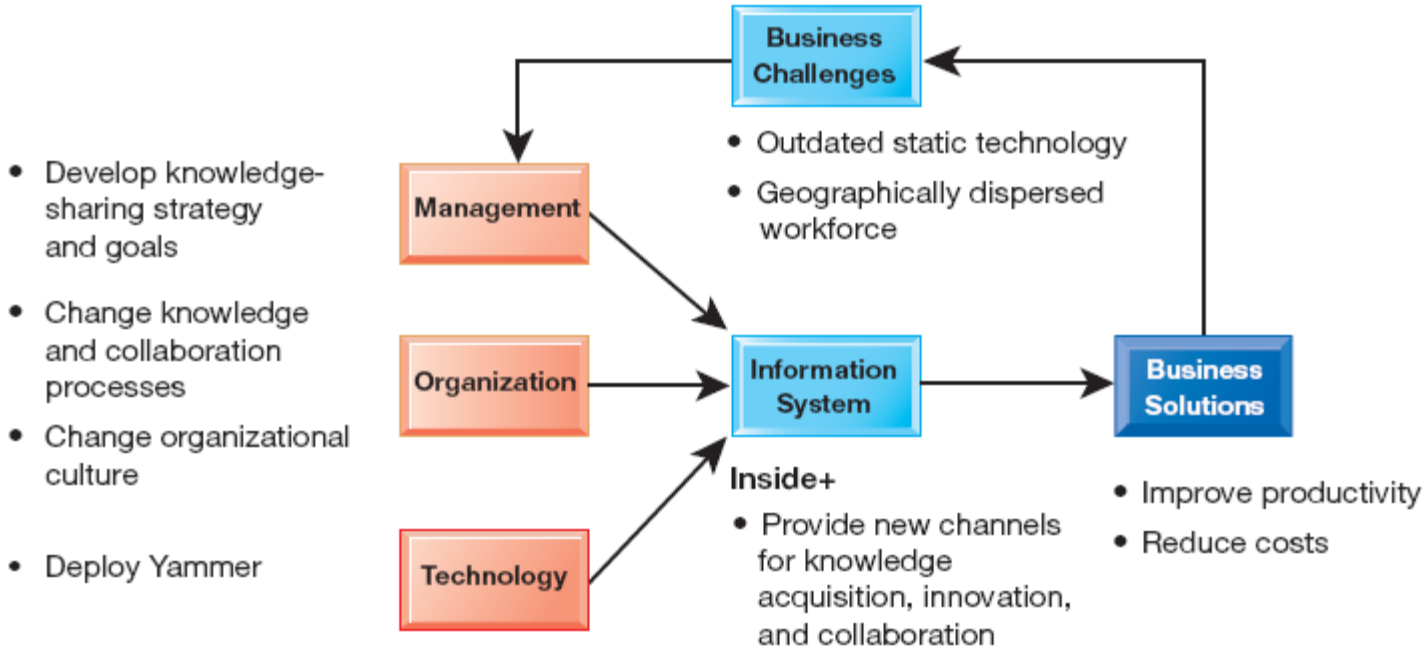
- Solutions
  - Management: develop knowledge sharing strategy and goals
  - Organization: Change knowledge and collaboration processes
  - Organization: Change organizational culture
  - Technology: New technology for collaborative knowledge sharing by Deploy Inside+, with Yammer, Office 365, and Sharepoint

Watch video: Chapter 2 - What-is-Yammer-

Enterprise Social Networking Helps ABBInnovate and Grow (2 of 2)

- ABB uses Inside+ to provide new channels for knowledge acquisition, innovation, and collaboration
- Demonstrates IT's role in collaboration and helping organizations improve performance, remain competitive and documenting knowledge
- Illustrates the ability of IT systems to support collaboration and teamwork and positively change business culture

Video: Chapter 2 - IBM-60-Second-Social-CEMEX-Builds-a-Customized-Social-Platform



Business Processes (1 of 2)

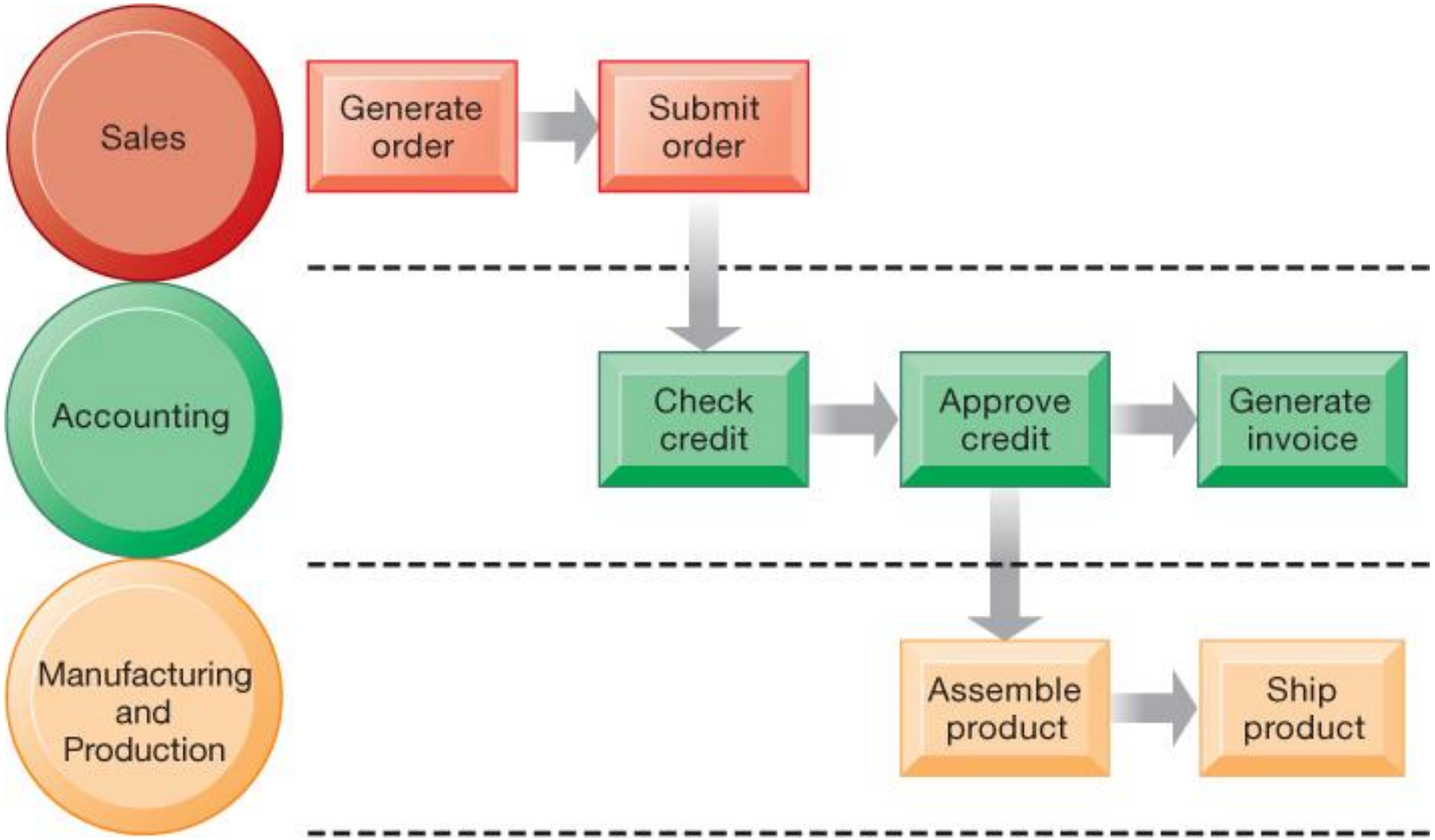
- Business processes
  - Flows of material, information, knowledge
  - Sets of activities, steps
  - May be tied to functional area or be cross-functional
- Businesses: Can be seen as collection of business processes
- Business processes may be assets (source of competitive strength if they enable the company to innovate and execute better) or liabilities (outdated ways of working that are not helping the company)

Watch video: Chapter 2-What-is-a-business-process-

Business Processes (2 of 2)

- Examples of functional business processes
  - Manufacturing and production
    - Assembling the product, Checking for quality, Producing bills of materials
  - Sales and marketing
    - Identifying customers, Making customers aware of the product, Selling the product
  - Finance and accounting
    - Paying creditors, Creating financial statements, Managing cash accounts
  - Human resources
    - Hiring employees, Evaluating employees' job performance, Enrolling employees in benefits plans

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.

How Information Technology Improves Business Processes

- Increasing efficiency of existing processes
  - Automating steps that were manual
- Enabling entirely new processes (i.e., download a song from iTunes, buy a book/e-book from Amazon, Kindle)
  - Changing flow of information
  - Replacing sequential steps with parallel steps
  - Eliminating delays in decision making
  - Supporting new business models

Watch video: Chapter 2 - How-IT-and-Business-Process-Fit-Together

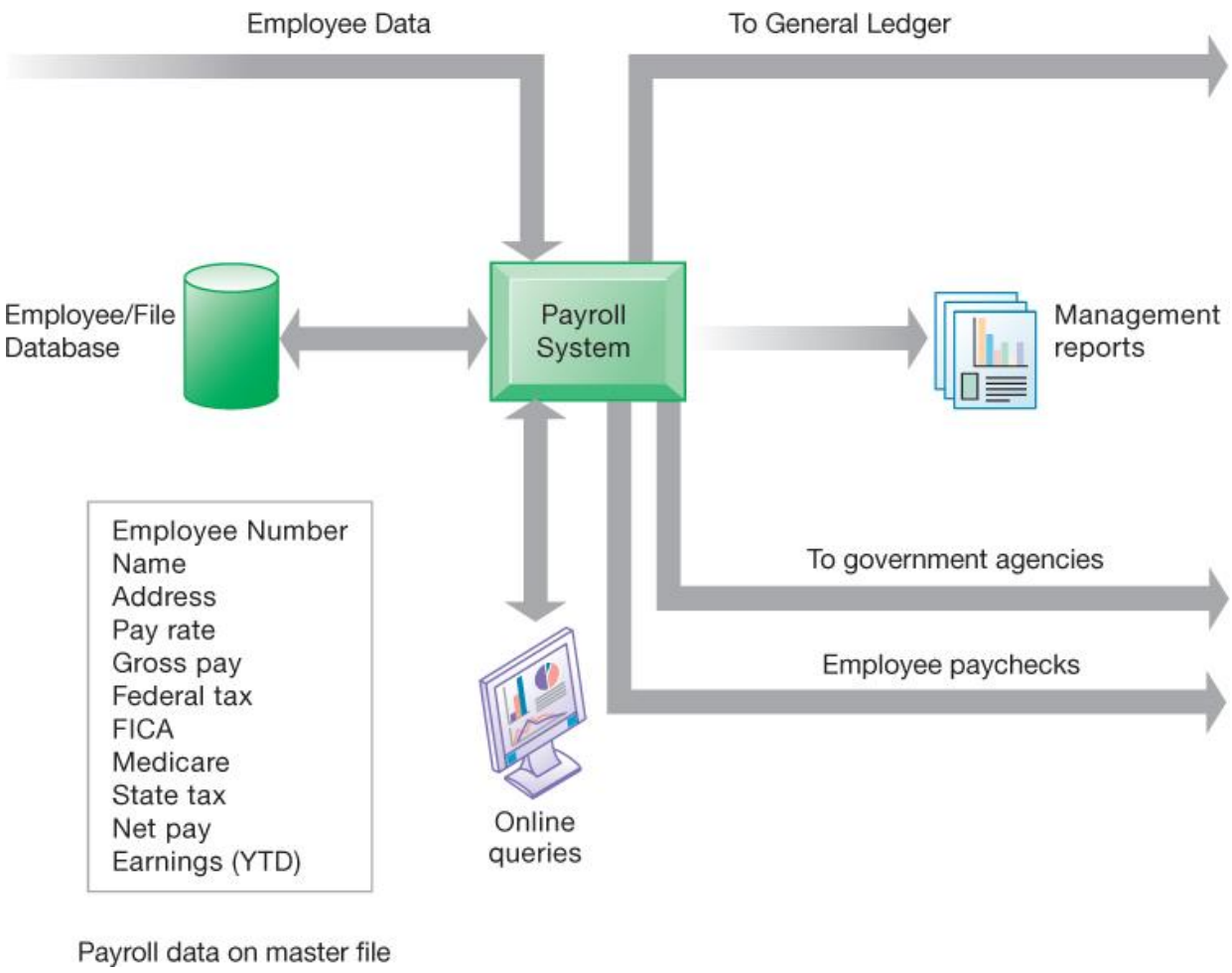
Systems for Different Management Groups (1 of 2)

- Transaction processing systems (TPS)
  - 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
  - i.e., Automation Office Systems (AOS)

- I.e., How many parts are in store? What happened to the payment of X company? Did we pay salaries?

Figure 2.2: 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.



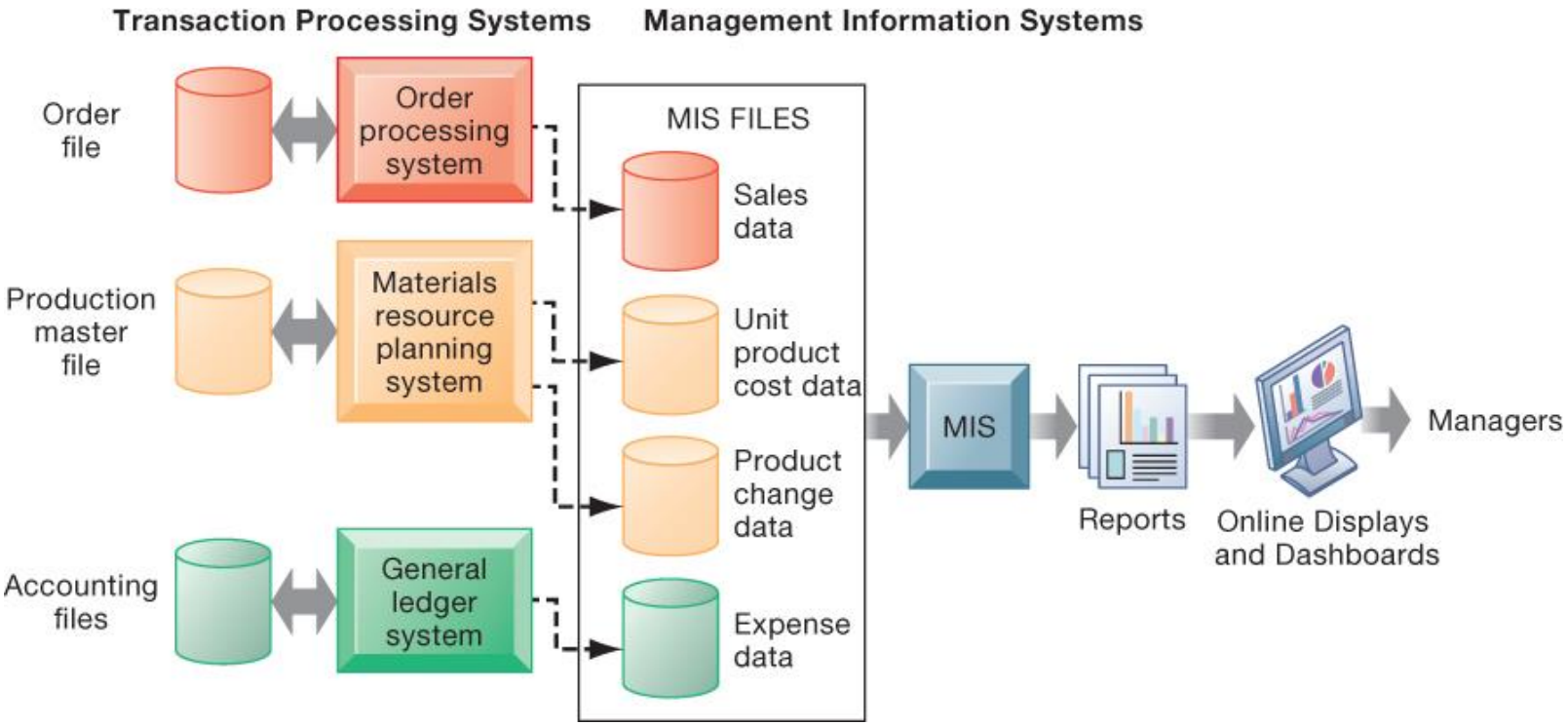
Systems for Different Management Groups (2 of 2)

- Systems for Business Intelligence (**BI**)
  - Data and software tools for organizing and analyzing data
  - Used to help managers and users make improved decisions (i.e., see these: stock, city, Iran)
- Management information systems (MIS)
- Decision support systems (DSS)
- Executive support systems (ESS)

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



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.

Figure 2.4: Sample MIS Report

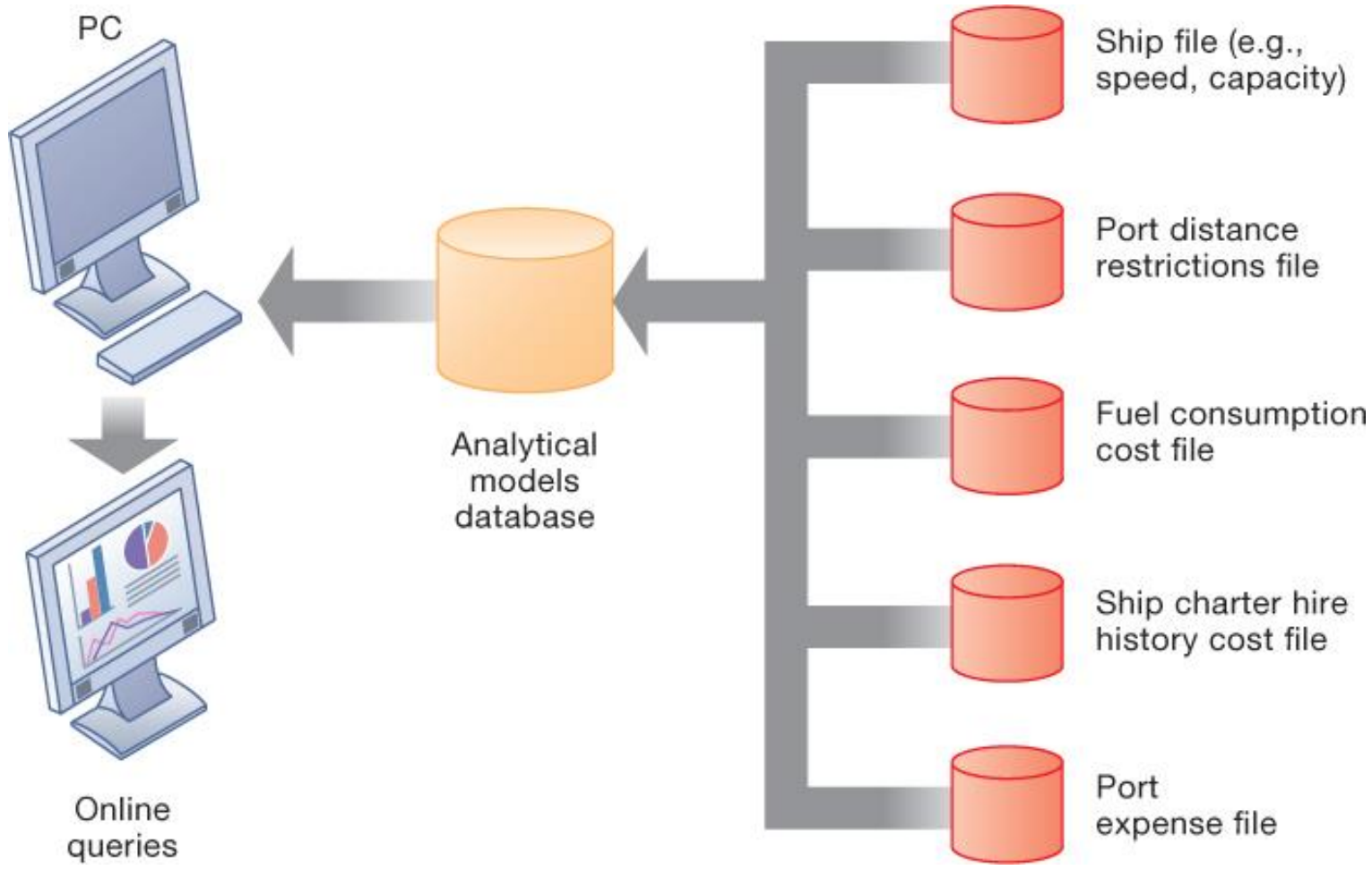
Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2017

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

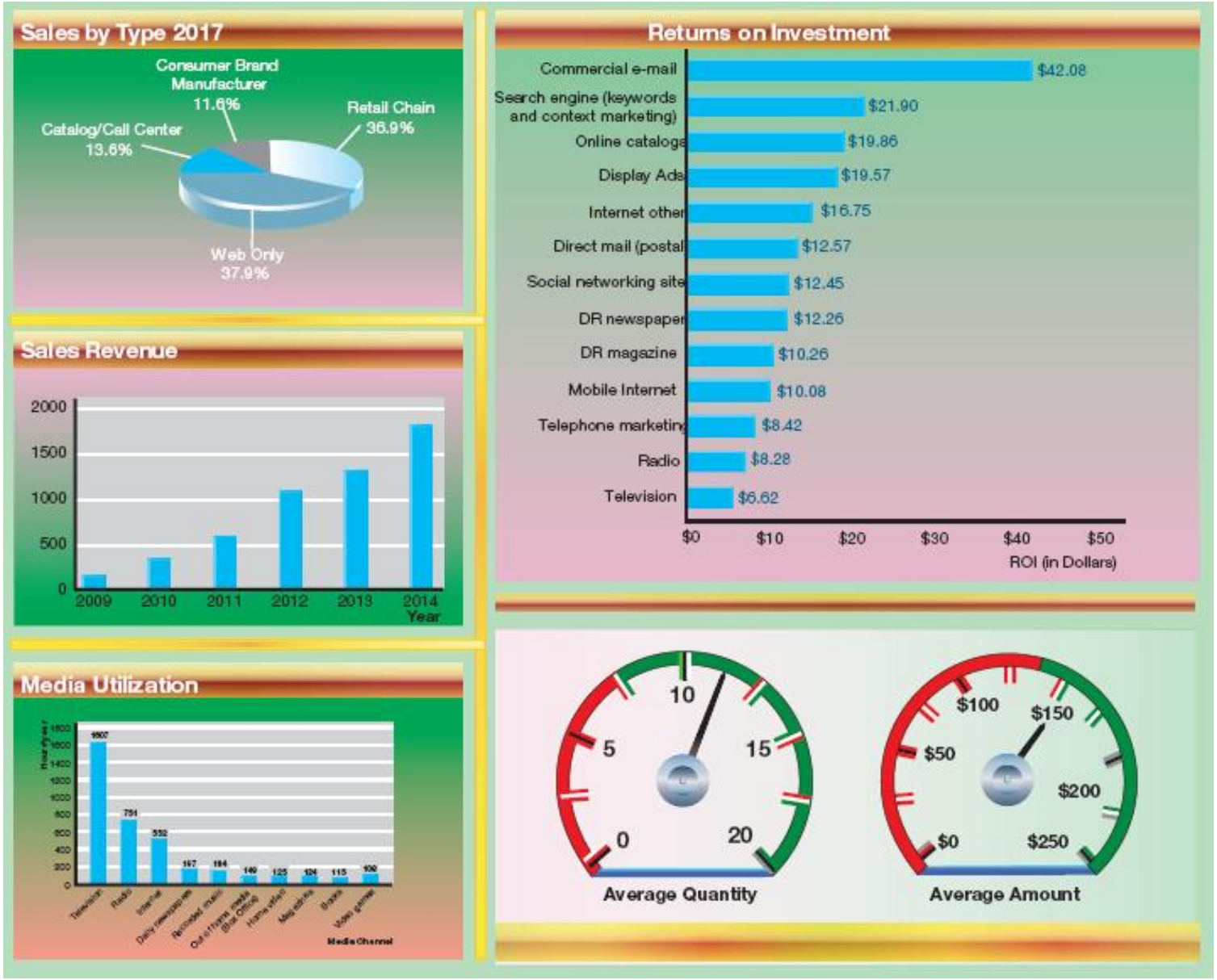
- Serve middle management
- Support non-routine decision making
  - Example: What is the impact on production schedule if December sales doubled?
- May use external information (i.e. stock market, prices of competitors) as well TPS / MIS data
- Model driven DSS (ready formulas and equations)
  - Voyage-estimating systems
- Data driven DSS (extracting useful information from massive quantities of data, large DB's)
  - Intrawest's marketing analysis systems

Figure 2.5: Voyage-Estimating Decision-Support System



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
  - Example: employment level in 5 years?
  - Example: Cost trend for 5 years?
  - Example: What products we should have in 5 years



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

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
- SCM is one type of Inter-organizational systems as they automate the flow of information across organizational boundaries

Watch video: Chapter 2 - Walmart-Supply-Chain
Watch video: Chapter 2- how-big-is-walmart-p1

Customer Relationship Management (CRM) 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

Watch video: Chapter 2 - Oracle-Marketing-Cloud-and-Oracle-CRM-On-Demand

Knowledge Management Systems (KMS)

- Support processes for capturing and applying knowledge and expertise
  - How to create, produce, and deliver products and services
- Collect internal knowledge and experience within firm and make it available to employees
- Link to external sources of knowledge

Interactive session: Technology
Vail ski resorts goes high-tech for high touch

- Class discussion
  - List and describe the types of systems described in this case study.
  - How do these systems improve the operation of the business?
  - How do these systems support decision making? Identify three different decisions that can be supported by these systems.
  - Why is improving the guest experience so important at Vail Mountain Resort?

Interactive Session: Organizations: New Systems Help Plan International Manage Its Human Resources

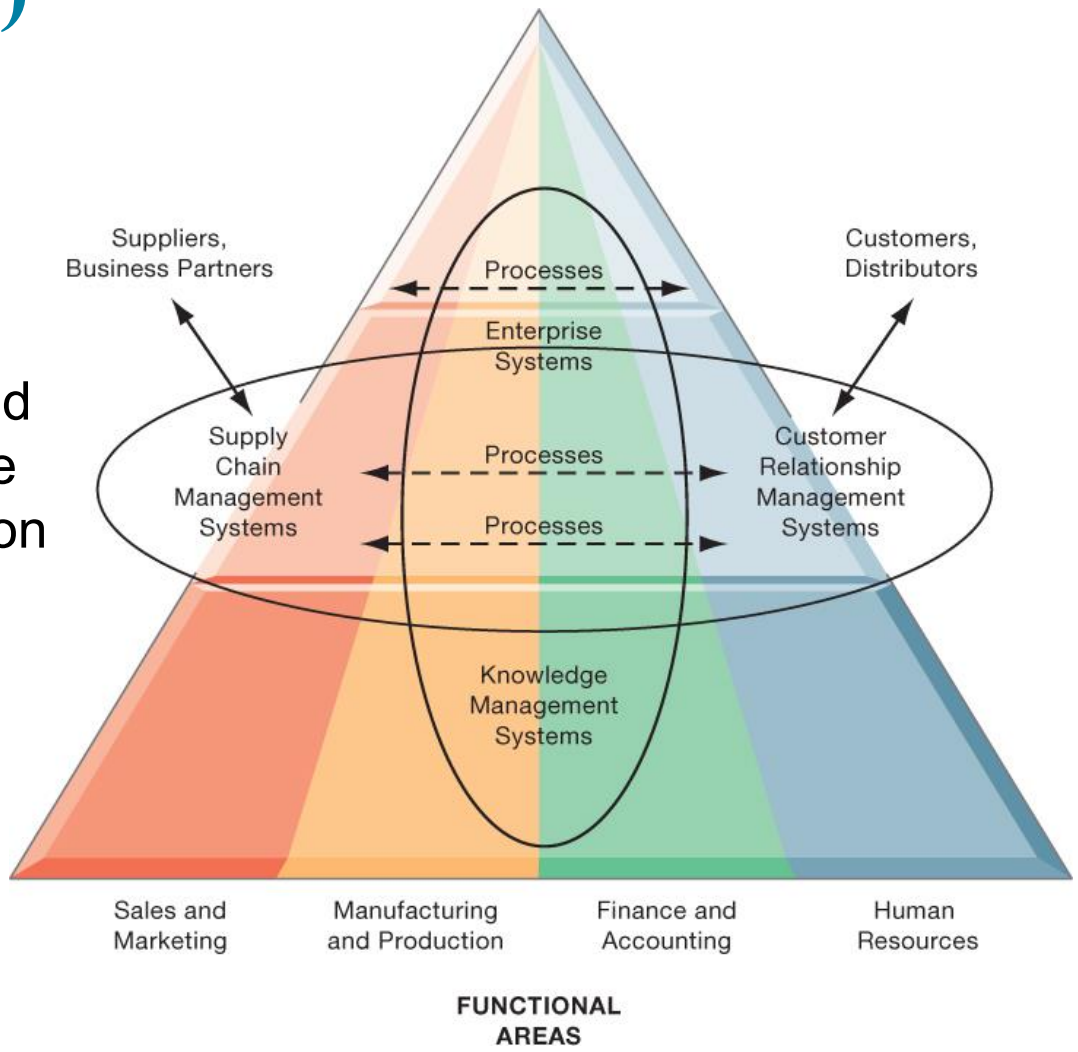
- Class discussion
  - Describe the problem faced by Plan International. What management, organization, and technology factors contributed to this problem?
  - Describe the system solution to this problem. Describe the types of systems used for the solution.
  - Why is human resources so important at Plan International?
  - How did these systems improve operational efficiency?
  - How did these systems improve decision making? Give examples of two decisions improved by Plan's new systems.

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 (SCM)
  - Customer relationship management systems (CRM)
  - Knowledge management systems (KMS)
- Enterprise applications are used to ensure that TPS, MIS, DSS, and ESS work together smoothly.

Figure 2.6: Enterprise Application Architecture (ERP)

May extend outside the organization



All levels of management

Enterprise systems are very large and diverse databases

pull information from many parts of the firm

enable processes across the firm at different organizational levels, as well as with suppliers and customers

automate cross-functional business processes

supply accurate information to aid decision making

Enterprise Systems

- Its called as well Enterprise Resource Planning Systems (ERP)
- Collect data from different firm functions and store data in single central data repository (large database environment within which these applications reside and operate)
- Resolve problems of fragmented data
- Enable:
  - Coordination of daily activities
  - Efficient response to customer orders (production, inventory)
  - Decision making by managers about daily operations and longer-term planning

Intranets and Extranets

- Also used to increase integration and expedite the flow of information
- Intranets
  - Internal company websites accessible only by employees
- Extranets
  - Company websites accessible externally only to vendors and suppliers
  - Often used to coordinate supply chain

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?

- Collaboration
  - Short lived or long term (depend on the nature of the task)
  - Informal or formal (teams)
- Growing importance of collaboration
  - Changing nature of work (requiring more cooperation and coordination)
  - Growth of professional work—"interaction jobs"
  - Changing organization of the firm (flatter, team work now)
  - Changing scope of the firm (single to multiple branches)
  - Emphasis on innovation (Bill Gates and Steve Jobs…+ teams)
  - Changing culture of work ("good" employee these days is the ability to work with others, and collaborate effectively)
  - Sharing ideas, consultation among experts
  - Connect and communicate –companies have branches around the globe

Watch video: Chapter 2- Glasscubes - Overview - YouTube

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"
- Requires information transparency
  - Driving the exchange of information without intervention from executives or others

Watch video: Chapter 2- Glasscubes - Team collaboration - YouTube

Business Benefits of Collaboration and Social Business

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

Figure 2.7: Requirements for Collaboration

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

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
  - All work as one team
  - Reward system for the team
- Simply having collaborative technology will not result in collaboration if it isn't seen as part of the business and rewarded (management is not willing to take it seriously)

Tools and Technologies for Collaboration and Social Business

- E-mail and instant messaging (IM)
- Blogs & Wikis (Publish and rapidly access knowledge)
- Communities (Discuss topics in open forums; share expertise)
- Virtual worlds (i.e. online meetings, interviews, guest speakers, events and training)
- File sharing (Upload, share, and comment on photos, videos, audio, text documents)
- Collaboration and social business platforms
  - Virtual meeting systems (telepresence, Skype, Apple FaceTime)
  - Cloud collaboration services (Google Drive, Google Docs, etc.)
  - Microsoft SharePoint and IBM Notes
  - Enterprise social networking tools (specialized social tools such as Salesforce Chatter, Microsoft Yammer, Jive, IBM Connections).

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
- Shared workspaces
  - Coordinate projects and tasks; co-create content
- Crowdsourcing
  - Harness collective knowledge to generate new ideas and solutions
- Social commerce
  - Share opinions about purchasing or purchase on social platforms
- Social marketing
  - Use social media to interact with customers; derive customer insights

Watch video: Chapter 2 - CEMEX-Becoming-a-social-business-with-IBM-software

Interactive Session: Technology: Collaborating the GlasscubesWay

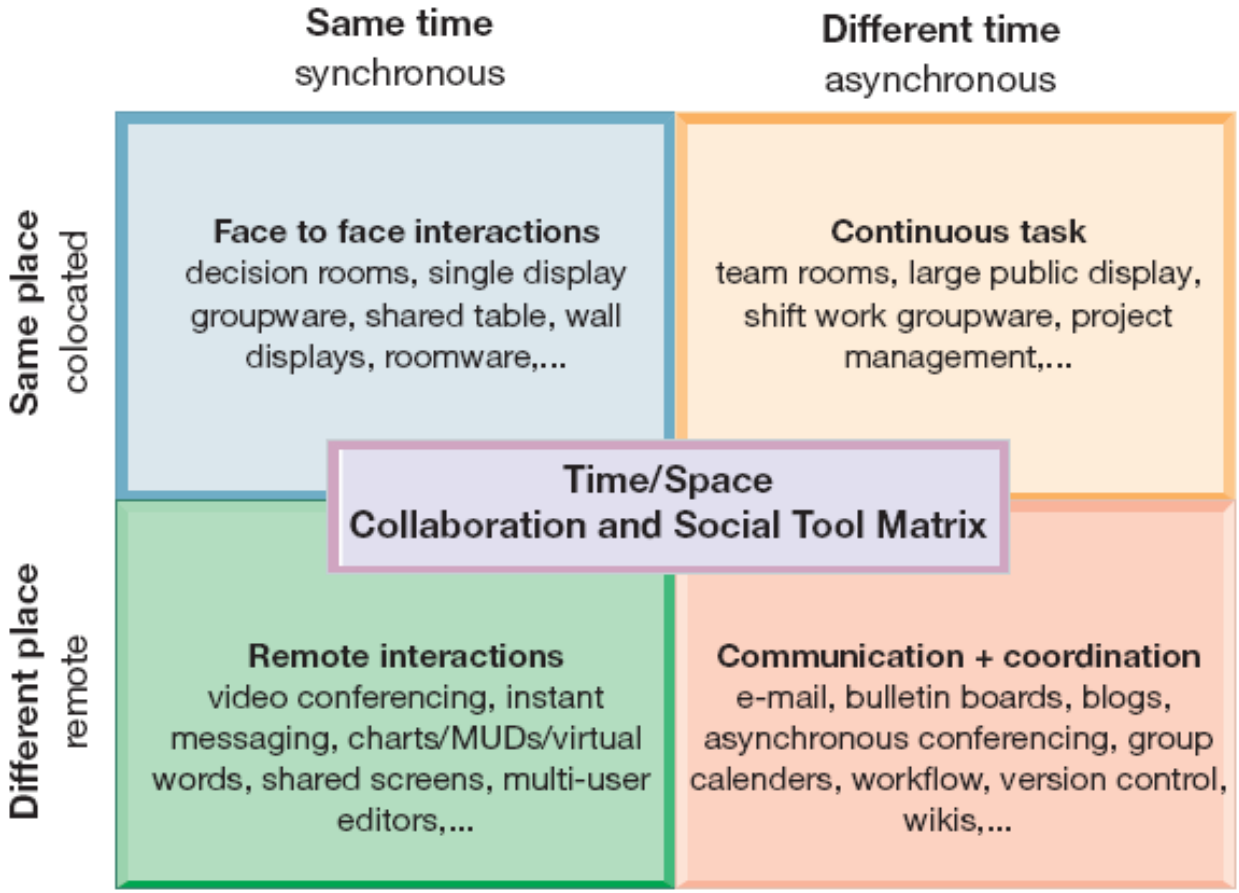
- Class discussion
  - Discuss the features of Glasscubesas a collaboration software.
  - Why did the NSHCS require a tool for collaboration? Was Glasscubesas feasible option?
  - Name some other areas where such software can be useful. Discuss at least one such area

  - Video: Chapter 2- Glasscubes - Overview – YouTube
  - Video: Chapter 2- Glasscubes - Team collaboration - YouTube

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

- Two dimensions of collaboration technologies
  - Space (or location)—remote or co-located
  - Time—synchronous or asynchronous
  - Time/space matrix (plan, design and implement based on this matrix).
- Six steps in evaluating software tools
  - Identify your firm's collaboration challenges (key problem: time/location)
  - 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



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.

Pearson

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
  - 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

References

- **Chapter 2 -** Kenneth C. Laudon and Jane P. Laudon. Management Information Systems: Managing the Digital Firm. 15th Edition. Pearson, 2018.
- **Chapter 2 -** Kenneth C. Laudon and Jane P. Laudon. Essentials of Management Information Systems.10th Edition, Pearson, 2013.