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Global E-business and Collaboration

LEARNING OBJECTIVES

1. **Define** and **describe** business processes
2. **Evaluate** the role played by systems serving the various levels of management
3. **Explain** how enterprise applications improve organizational performance
4. **Explain** the importance of collaboration and teamwork in business and how they are supported by technology
5. **Assess** the role of the information systems function in a business

INFORMATION SYSTEMS

❑ **Problem: Need to improve employee collaboration and knowledge sharing; outdated knowledge on intranet**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**

❑ **However, there is a need to <u>change</u> organizational culture and business processes to use information systems effectively**

INFORMATION SYSTEMS

❑In the previous chapter, we agreed that information systems make a difference in an organization's ability to innovate, execute, and in the case of business firms, grow profits

❑For instance, the case study in the book, Oracle won the America's Cup because it had learned how to apply new technology to improve the processes of designing and sailing a competitive sailboat.

INFORMATION SYSTEMS

To increase efficiency (operate efficiently),

- ❑ Firms must **collect many different pieces of information** about suppliers, customers, employees, invoices and payments, and of course their products and services

- ❑ Firms must **organize work activities or business processes**

- ❑ Then, information systems make it **possible for firms to manage all their information**, make **better decisions, and improve** the execution of their business processes

Business Processes

Business Processes: refer to the manner in which work is organized and coordinated. It include:

- ❑ **Collection** of activities, steps, or tasks, required to produce a product or service
- ❑ **These activities are supported** by flows of material, information, knowledge among the participants in business processes
- ❑ May be tied to functional area or be cross-functional
- ❑ To a large extent, **the performance of a business on how well** its business processes are designed coordinated.
- ❑ Business processes may be **assets or liabilities**

Business Processes

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

Business Processes
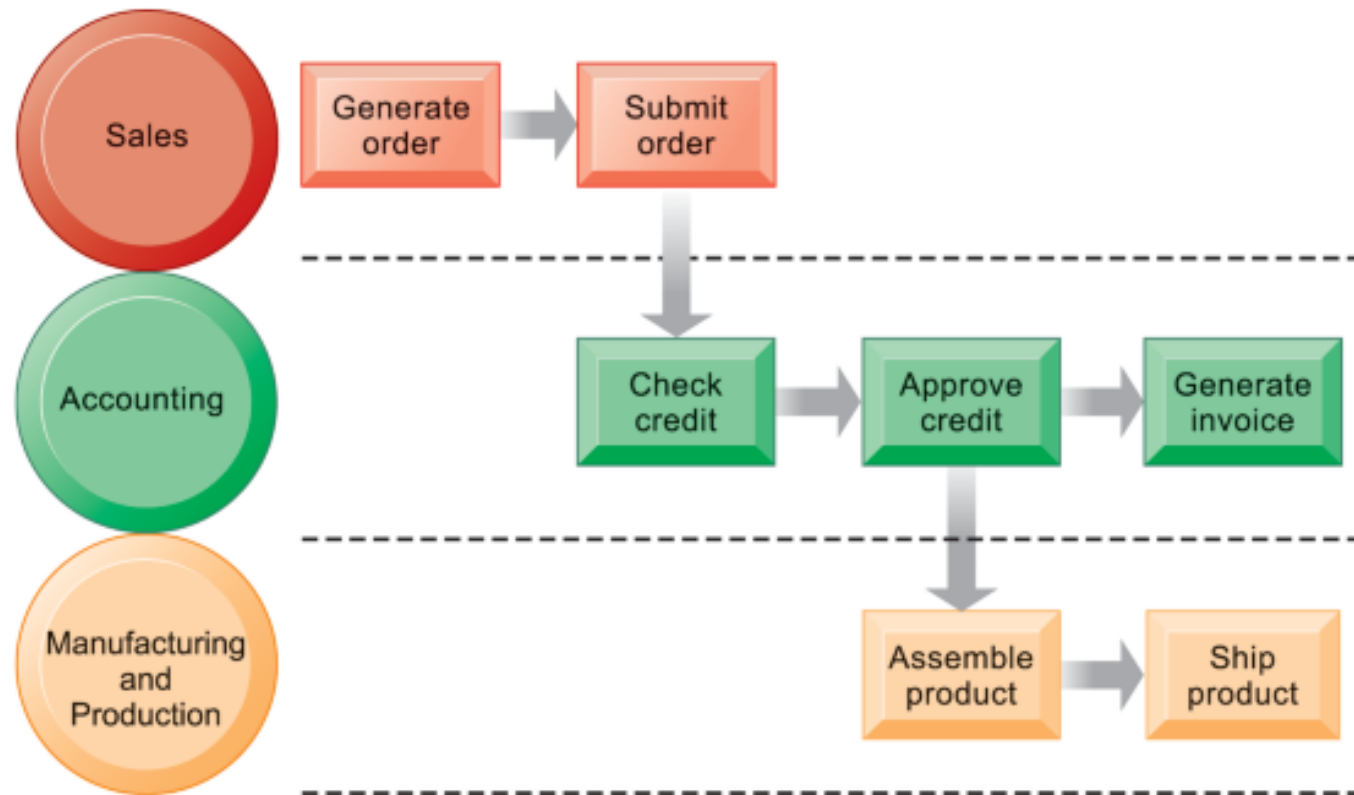
For example, fulfilling a customer order involves a complex set of steps that requires the close coordination of the sales, accounting, and manufacturing functions.

BUSINESS PROCESSES

In the order fulfillment,

❑ To efficiently perform all these steps requires a great deal of information.

❑ The required information must flow rapidly both within the firm from one decision maker to another; with business partners, such as delivery firms; and with the customer.

❑ Computer-based information systems make this possible.

Business Processes and Information Systems

Information technology enhances business processes by:

❑ Increasing efficiency of existing processes

➢ Automating steps that were manual

➢ e.g. checking a client's credit, or generating an invoice and shipping order

❑ Making it possible for many more people to access and share information

❑ Replace sequential steps with parallel steps

❑ Eliminate delays in decision making

❑ Support new business models

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

- Because there are different interests, specialties, and levels in an organization, there are different kinds of systems.

- A typical firm has different systems supporting the decision-making needs of each of the main management groups , i.e. operational management, middle management, and senior management

- Therefore, no single system can provide all the information an organization needs.

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Management information systems (MISs) as the study of information systems in business and management, two types:

- **Transaction Processing Systems**

- **Business Intelligence Systems**

  - Management Information Systems

  - Decision-support Systems

  - Executive Support Systems

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Transaction Processing Systems (TPS)

- **Perform and record daily routine transactions** necessary to conduct business (e.g. sales, payroll, flow of materials in a factory, shipping, number of parts in inventory, Ahmad's payment status, etc.)

- **Serve operational managers** and staff by monitoring the status of internal operations
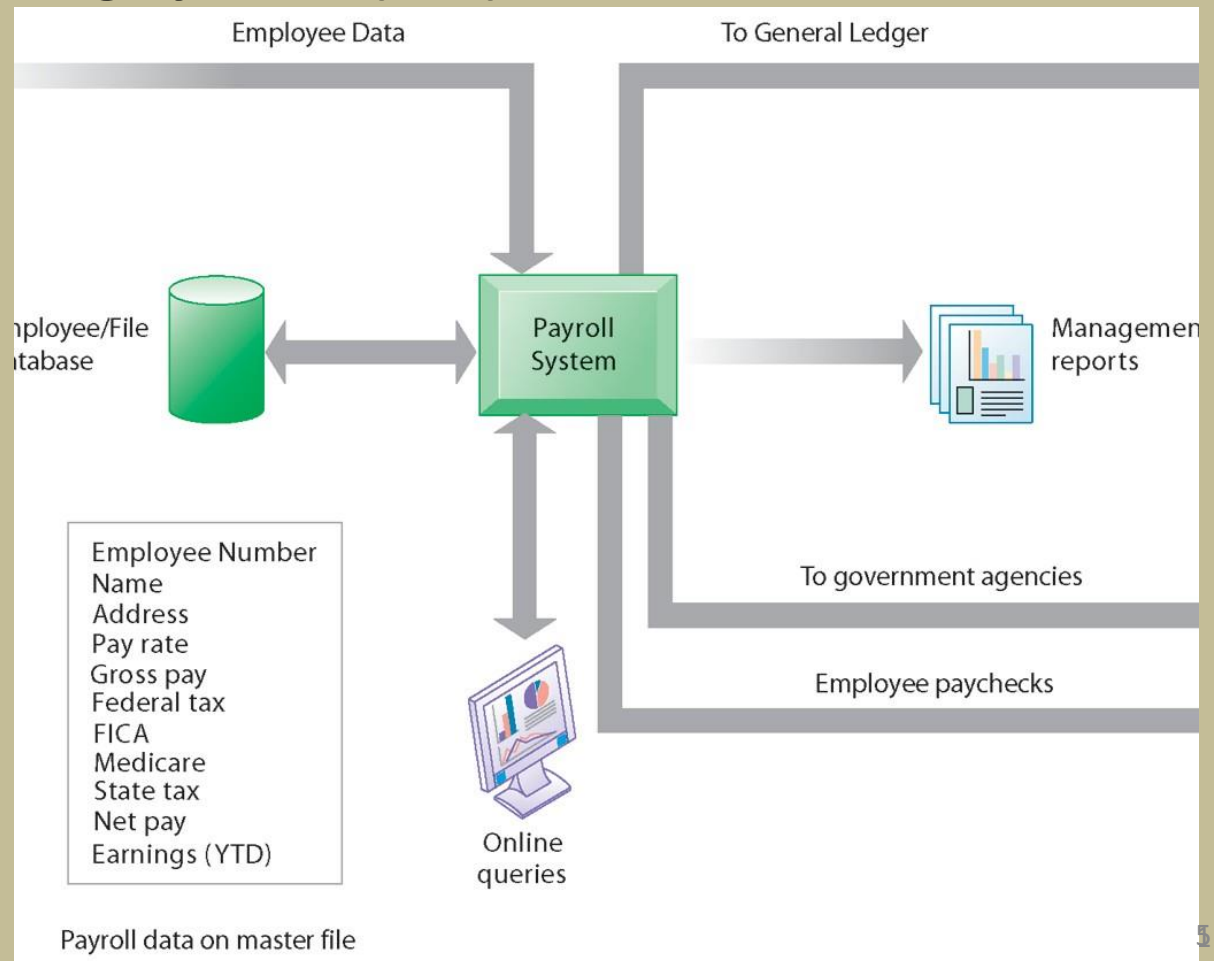
SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Transaction Processing Systems (TPS)

- **Major producer of information for other systems**, (e.g. the payroll system, along with other accounting TPS, supplies data to the company's general ledger system, which is responsible for maintaining records of the firm's income and expenses and for producing reports such as income statements and balance sheets. It also supplies employee payment history data for insurance, pension, etc.)

- **Structured goals and decision making based on a predefined criteria** (e.g. assigning a credit to a customer follows a predefined criteria)

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Transaction Processing Systems (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.

Employee Data

To General Ledger

Employee/File Database

Payroll System

Management reports

Employee Number
Name
Address
Pay rate
Gross pay
Federal tax
FICA
Medicare
State tax
Net pay
Earnings (YTD)

To government agencies

Employee paychecks

Online queries

Payroll data on master file

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Business intelligence
- Software 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

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

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

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS
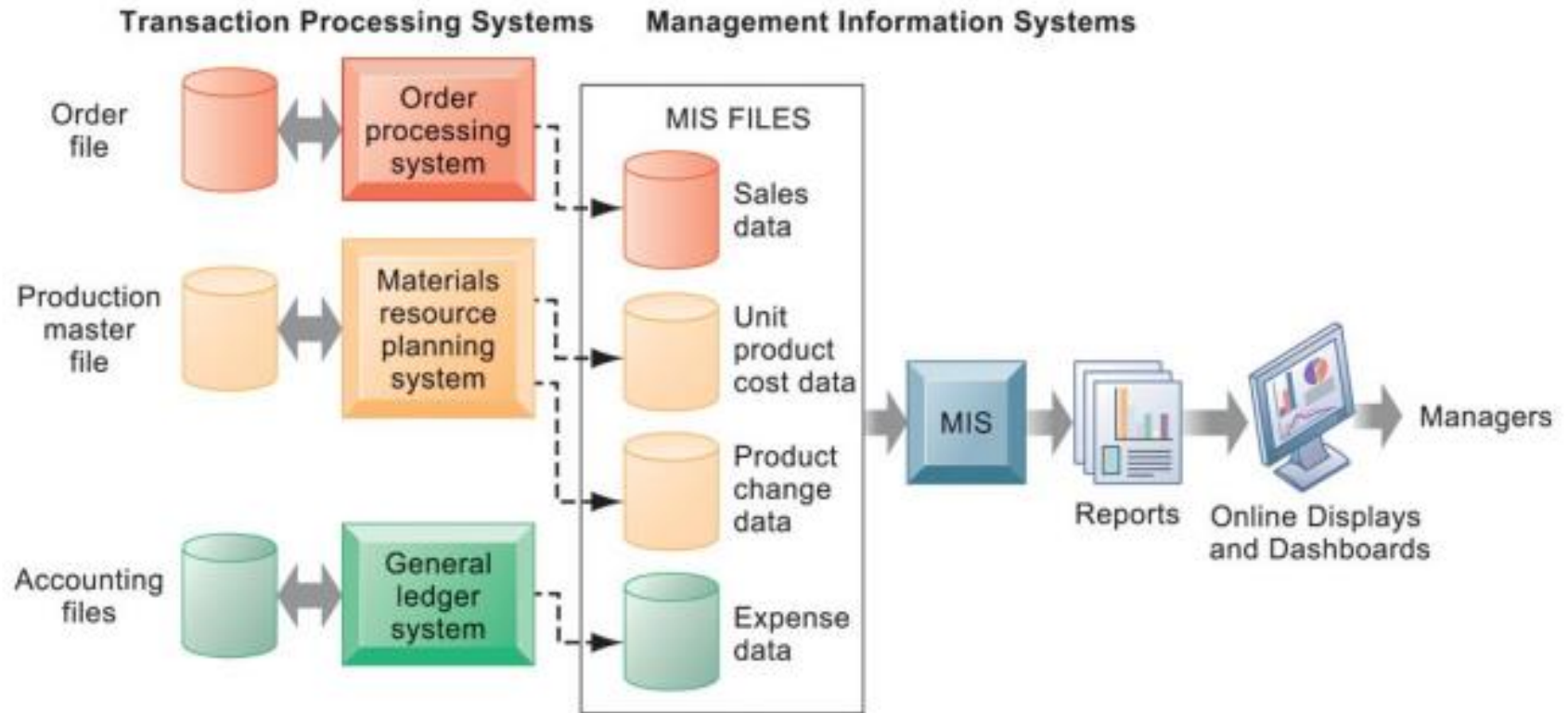
In the system illustrated by this diagram, three TPS supply summarized transaction data to the MIS reporting system at the end of the time period. Managers gain access to the organizational data through the MIS, which provides them with the appropriate reports.

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2013

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

SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

Decision Support System (DSS)

- **Serve** middle management

- Support **non-routine** decision making

  > Example: What is the impact on production schedule if December sales doubled, shipment is delayed, etc?

- Although DSS **use internal information from TPS and MIS**, they often **bring in information from external sources**, such as current stock prices or product prices of competitors, logistical issues such as checkpoints, political situation, etc.

- They focus on problems that are **unique**

Systems for Different Management Groups

Decision Support System (DSS)

- These systems **use a variety of models** to analyze the data and are designed so that users can work with them directly

- Model driven DSS

    e.g. Voyage-estimating systems

- Data driven DSS

   e.g. Intrawest's marketing analysis systems

Systems for Different Management Groups

Decision Support System (DSS)

American metals company that exists primarily to carry bulk cargoes of coal, oil, and finished products. The firm owns some vessels, charters others, and bids for shipping contracts in the open market to carry general cargo. A voyage-estimating system calculates financial and technical voyage details. Financial calculations include ship/time costs (fuel, labor, capital), freight rates for various types of cargo, and port expenses. Technical details include a myriad of factors, such as ship cargo capacity, speed, port distances, fuel and water consumption, and loading patterns (location of cargo for different ports).

Systems for Different Management Groups

Decision Support Systems (DSS): Voyage-estimating systems
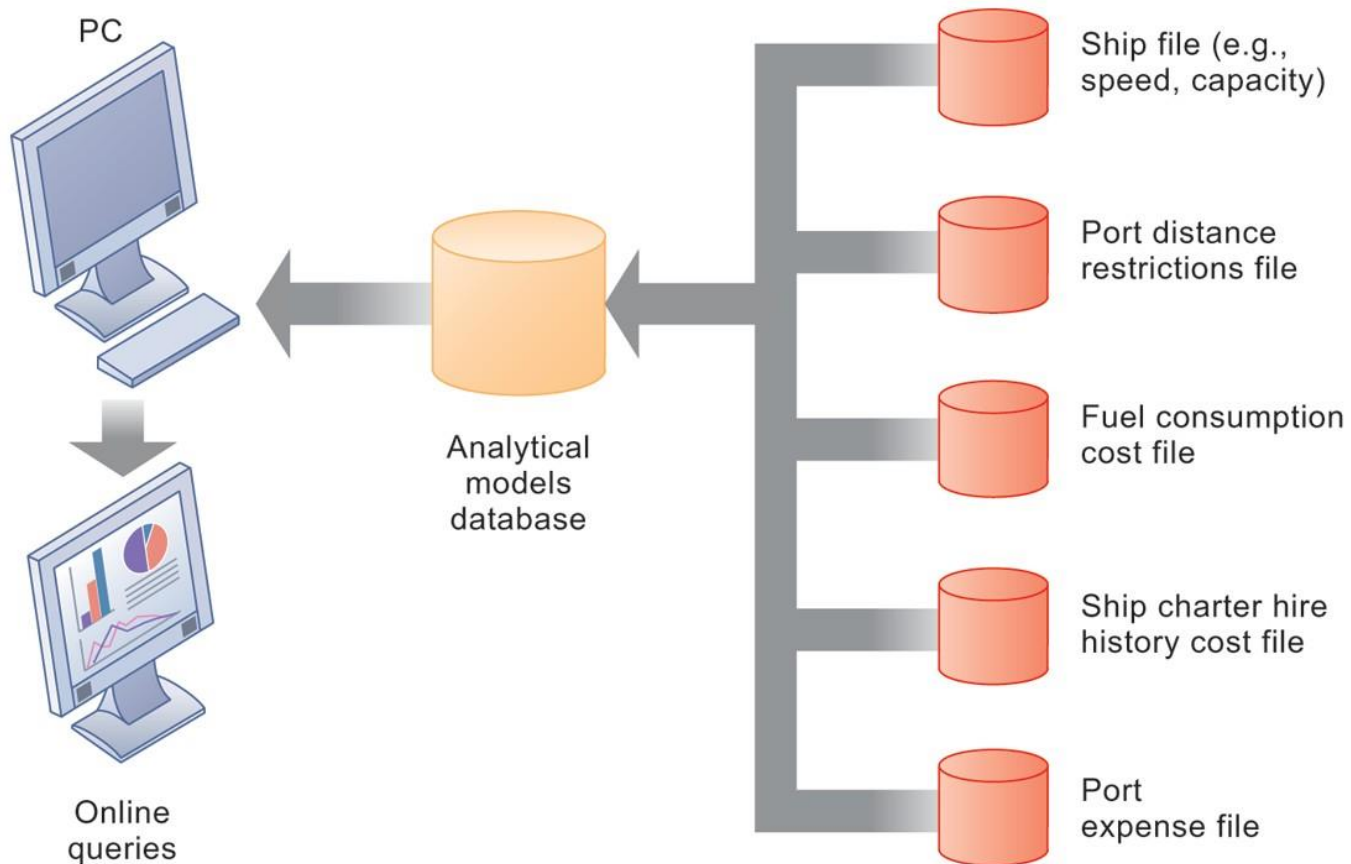
This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.

Systems for Different Management Groups

Executive Support Systems (ESS)

- **Support** senior management

- **Address** non-routine decisions

    Requiring judgment, evaluation, and insight

- **Incorporate** data about external events (e.g. or competitors) as well as **summarized** information from internal MIS and DSS

- ESS **present** graphs and data from many sources through an interface that is easy for senior managers to use.

- Answer Questions: What will employment levels be in five years? What are the long-term industry cost trends? What products should we be making in five years?

ENTERPRISE APPLICATIONS

The challenge is to make all these systems work together

Solution: is to implement **enterprise** **applications**, which are systems that span functional areas, focus on executing business processes across the business firm, and include all levels of management.

Enterprise applications are used to ensure that TPS, MIS, DSS, and ESS work together smoothly. Enterprise applications are used to manage the information used in the systems discussed previously

ENTERPRISE APPLICATIONS

Four major applications:

- **Enterprise systems**
- **Supply chain management systems**
- **Customer relationship management Systems**
- **Knowledge management systems**

Each of these enterprise applications integrates a related set of functions and business processes to enhance the performance of the organization as a whole.

E-business, E-commerce, and E-government

Systems and technologies we have just described are transforming firms' relationships with customers, employees, and suppliers into digital relationships using networks and the Internet. Businesses are now enabled by or based upon digital networks, i.e. e-businesses.

- **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:**
    Governments use internet technology to deliver information and services to citizens, employees, and businesses

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
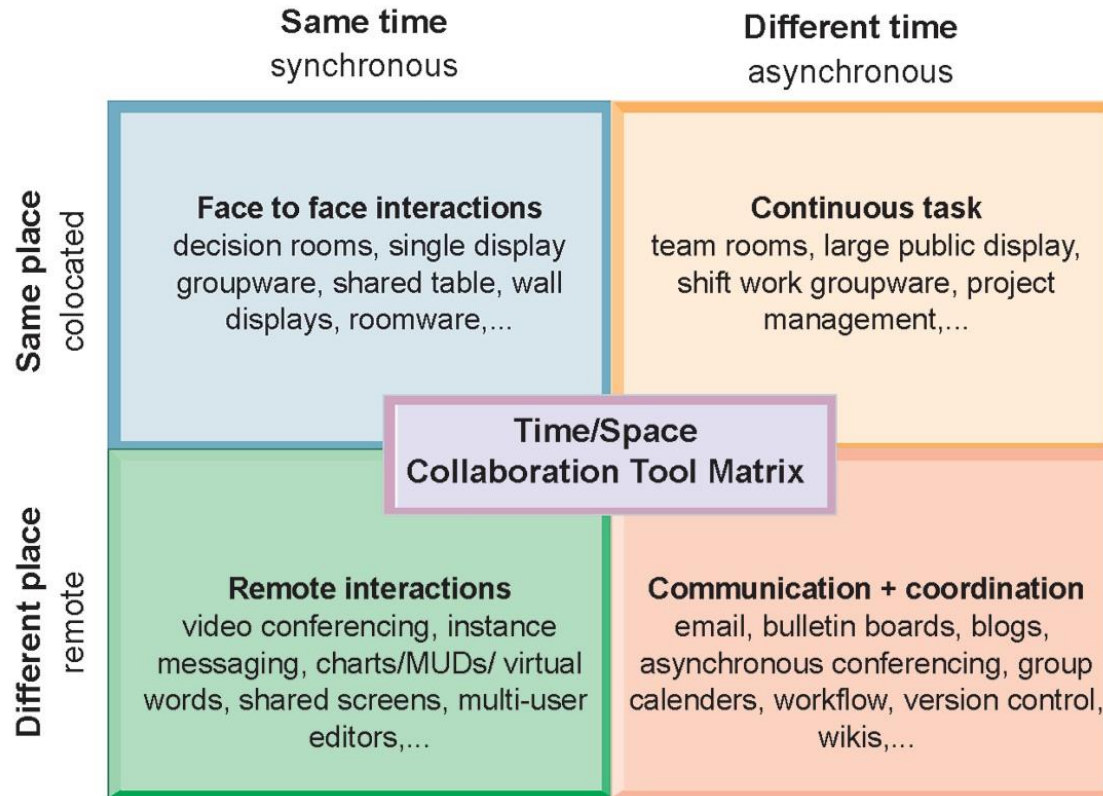 - Profitability, sales, sales growth

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

- Two dimensions of collaboration technologies

  - Space (or location)—remote or co-located
  - Time—synchronous or asynchronous

- Six steps in evaluating 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. Evaluate product vendors.

Time/Space Collaboration Tool Matrix

	Same time — synchronous	Different time — asynchronous
Same place colocated	**Face to face interactions** decision rooms, single display groupware, shared table, wall displays, roomware,...	**Continuous task** team rooms, large public display, shift work groupware, project management,...
Different place remote	**Remote interactions** video conferencing, instance messaging, charts/MUDs/ virtual words, shared screens, multi-user editors,...	**Communication + coordination** email, bulletin boards, blogs, asynchronous conferencing, group calenders, workflow, version control, wikis,...

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 Department

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 privacy officer (CPO)

- Programmers

- Systems analysts

- Information systems managers

The Information Systems Department

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

Source:

Laudon, Kenneth C. and Laudon, Jane P. 2014. *Management Information Systems: Managing the Digital Firm*. 13th Edition. Upper Saddle River: Prentice Hall.