Chapter 2

Global E-Business and Collaboration

Business Process

Business processes refer to the manner in which work is organized, coordinated, and focused to produce a valuable product or service. Business processes also refer to the unique ways in which organizations coordinate work, information, and knowledge, and the ways in which management chooses to coordinate work. Every business can be seen as a collection of business processes. Business processes are designed to add value for the customer and should not include unnecessary activities. The outcome of a well designed business process is increased effectiveness (value for the customer) and increased efficiency (less costs for the company). There are three types of business processes:

1. **Management Processes:** The processes that govern the operation of a system. Typical management processes include corporate governance and strategic management
2. **Operational Processes:** The processes that constitute the core business and create the primary value stream. For example, taking orders from customers, and opening an account in a bank branch.
3. **Supporting Processes:** Theses processes support the core processes. Examples include Health & Safety, accounting, recruitment, call center, technical support.

The performance of a business firm depends on how well its business processes are designed and coordinated. Many business processes are tied to a specific functional area, such as sales and marketing, while others cross many different functional areas and require coordination across departments.

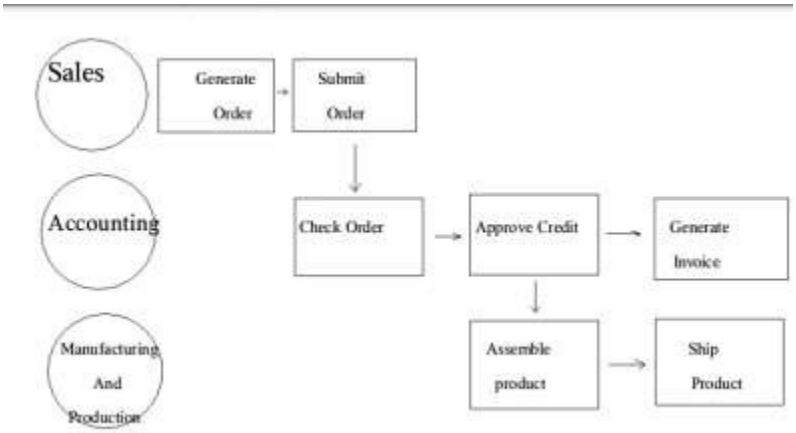


Table given below describes some typical business processes for each of the functional areas of business.

TABLE 2-1 EXAMPLES OF FUNCTIONAL BUSINESS PROCESSES

Functional Area	Business Process
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

Business Processes and Information Systems

In order to operate, business must deal with many different pieces of information, they must organize work activities that use this information to operate efficiently and enhance the overall performance of the firm. Information systems make it possible for firms to manage all their information, make better decisions and improve the execution of their business processes

How Information Technology Improves Business Processes

Information systems automate many steps in business processes that were formerly performed manually. But today, information technology actually can change the flow of information even the way the business works and drive to a new business models. Information technology enhances business processes in two main ways:

- **Increasing efficiency of existing processes:** Automating steps or processes that were manual
- **Enabling entirely new processes that are capable of transforming the businesses:** This is done by **c**hanging flow of information, or by replacing sequential steps with parallel steps, or by eliminating delays in decision making

Types of Information Systems

There are different kinds of systems according to different interests, specialists, and levels in an organization. Single system cannot provide all the information needed by an organization.

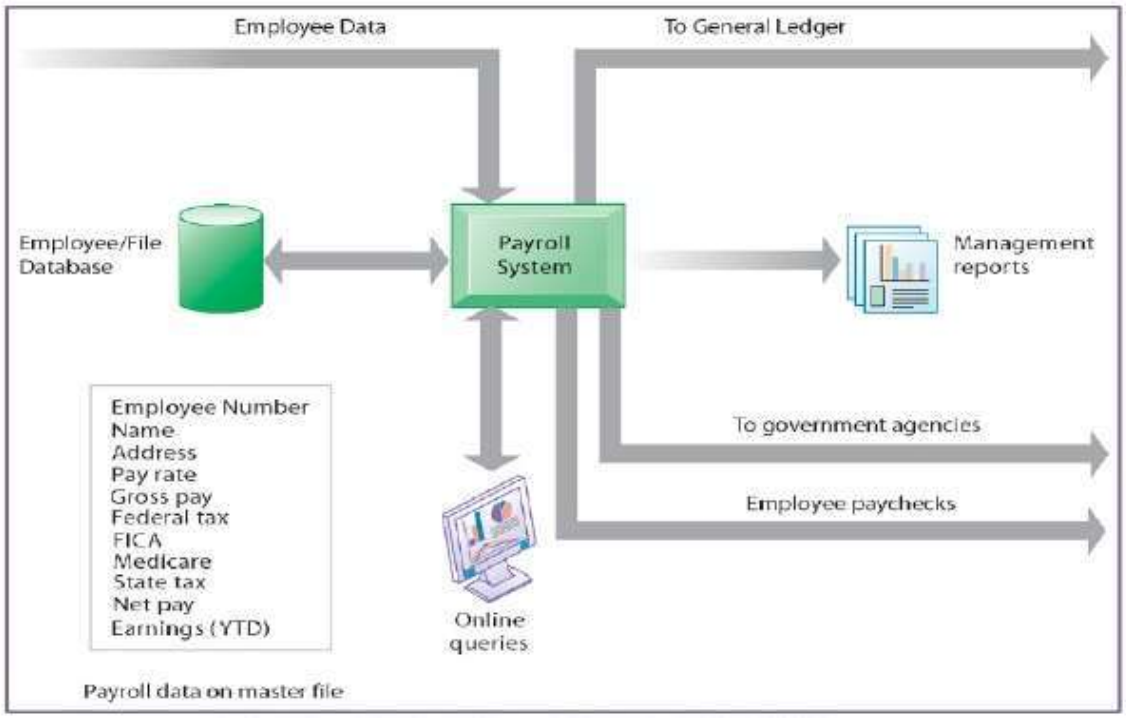
Systems for Different Management Groups

.1 The four main types of information systems that serve different management groups are: *Transaction processing systems, Management information systems, Decision support systems*, and *Executive support systems*.

Transaction Processing Systems

These are the computerized systems that perform and records the daily routine transactions necessary to conduct business. These systems serve the operational level of the organization. Some examples include sales order entry, hotel reservation systems, payroll, employee record keeping, and shipping.

Transaction processing systems are central to a business. TPS failure for a few hours can cause a firm's demise and perhaps other firms linked to it. Managers need TPS to monitor the status of internal operations and the firm's relations with external environment. TPS are also major producers of information for the other types of systems.



Online transaction processing systems (OLTPS) is an interactive data processing system that involves a direct connection between TPS programs and users. As soon as a single transaction is entered into a computer system, the program interacts immediately with the user for that transaction. It is often known as the live system where there is no time lag between data creation and its processing. A good example of this system is online ticket reservation system. Most of the OLTPS system requires the support of networks that is spread over number of organizations or branches for performing it's operations.

Unlike the OLTPS, **Batch processing** systems accumulates the transaction over a time, makes a queue of the processes depending upon the priorities and processes them periodically at the later time. Some of the TPS must follow batch processing due to business process of the organization. For example, opening an account and getting ATM card is batch processing system. In this case all requests for ATM card collected during the day time but these requests are

only processed after some hour or even if after some days. This is the reason that we need to wait some time for activating of our ATM cards.

2.Management information systems

These are the information systems at the management level of an organization and serve management-level functions like planning, controlling, and decision-making. These systems provide routine summary of reports and, in some cases, with online access to the organization's current performance and historical records to managers. Typically, these systems use internal data provided by the transaction processing systems. Normally, these systems are used for structured decision-making.

MIS usually serve managers interested in weekly, monthly, bi-monthly results—not day-to day activities. MIS generally provides answers to the routine questions that have been specified in advance and have predefined procedures for answering them.

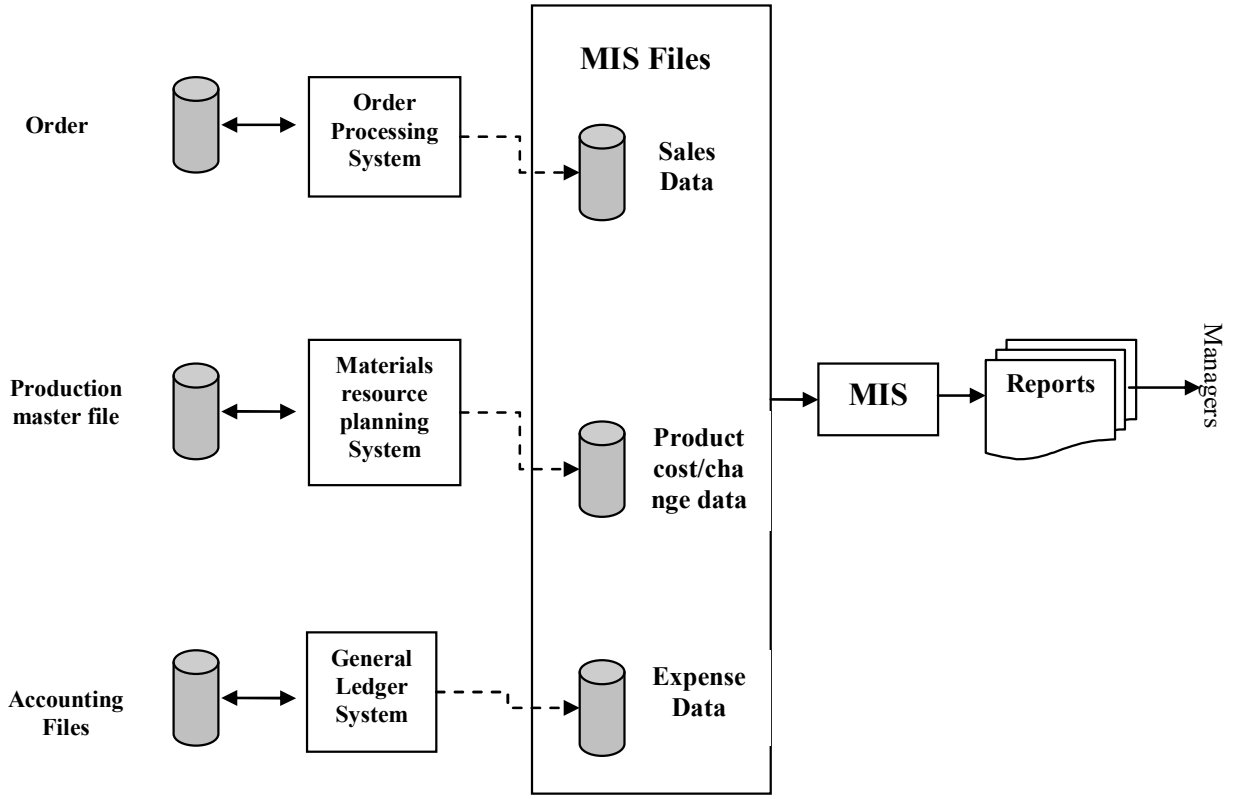


Fig: How MIS takes data from TPS

3.Decision-support systems

These systems also serve at the management level of the organization. These systems combine data and sophisticated analytical models or data analysis tools to support semi-structured and unstructured decision-making. These systems use internal information from TPS and MIS, and often information from external sources, such as current stock prices or product prices of competitors. DSS have more analytical power than other systems. DSS helps managers to make decision that are unique, fast changing and not easily specified in advance. DSS that supports and facilities the decision making process by a group is called group decision support system (GDSS). Three quantitative models often used by DSS include:

- **Sensitivity analysis** is the study of the impact that changes in one (or more) parts of the model have on other parts of the

model. Users change the value of one variable repeatedly and observe the resulting changes in other variables.

- **What-if analysis** checks the impact of a change in an assumption on the proposed solution. For example, "What will happen to the supply chain if a blizzard in Alberta reduces holding inventory from 30 percent to 10 percent?" Users repeat this analysis until they understand all the effects of various situations.
- **Goal-seeking analysis** finds the inputs necessary to achieve a goal such as a desired level of output. Instead of observing how changes in a variable affect other variables as in what-if analysis, goal-seeking analysis sets a target value (a goal) for a variable and then repeatedly changes other variables until the target value is achieved. For example, "How many customers are required to purchase a new product to increase gross profits to $5 million?"

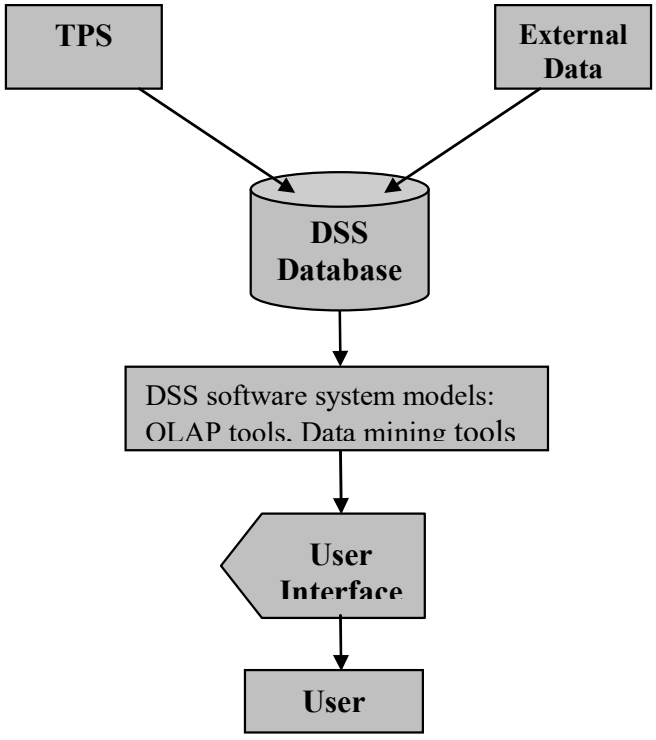
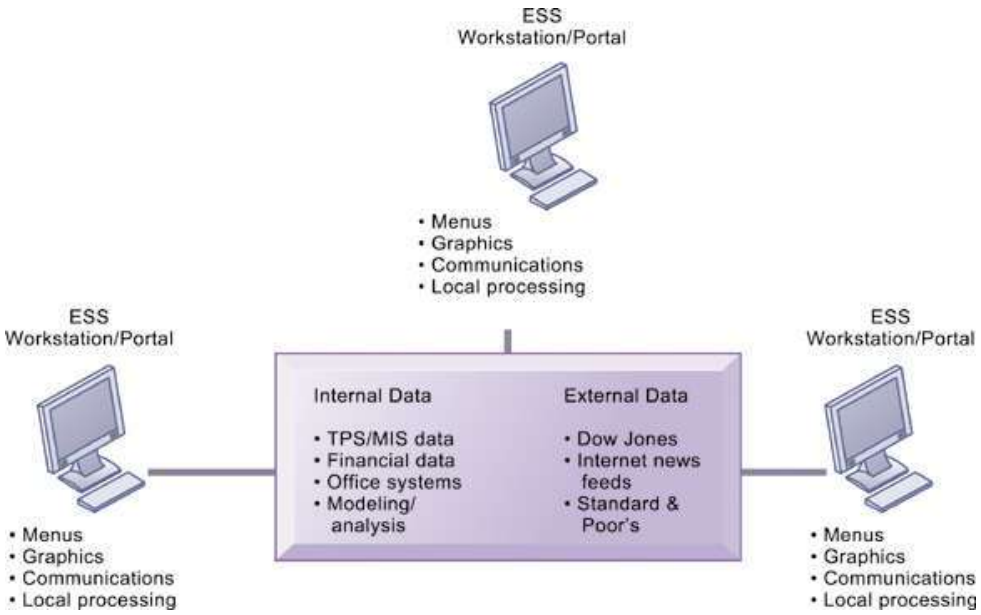


Fig: DSS and its components

4.Executive support systems

These systems serve the strategic level of the organization. These systems are designed to address unstructured decision making through advanced graphics and communication. These systems incorporate data about external events such as new tax laws or competitors, but they also draw summarized information from internal MIS and DSS.

These systems are not designed to solve a specific problem but they provide a generalized computing and telecommunication capacity that can be applied to a changing array of problems. ESS helps senior executives to monitor firm performance, spot problems, identify opportunities, and forecast trends. These systems can filter out extraneous details for high level overviews, or they can drill down to provide senior managers to detailed transaction data if required.



ESS helps senior managers to analyze, compare, and highlight trends so that they may easily monitor organizational performance or identify strategic problem and opportunities. There is less use of analytical tools (as compared to DSS) in ESS. It is not necessary for users to be an expert in computer-based information system to be

able to use them. Therefore executive system must be easy to use and the information must be easily manipulated.

Systems for Linking the Enterprise

No business can afford disjointed information systems that don't work together to produce a coherent picture of the entire organization. All the functions of a business must be integrated across traditional lines of demarcation. Islands of information can be devastating to a company if data cannot be shared throughout the company. Even worse, the islands of information can create problems if each faction of an enterprise has differing information that conflicts with other islands of information. These kinds of problems are what gave rise to **enterprise applications** that share the same data anywhere it's needed in an organization. As networks of all kinds take hold, from the Internet to intranets to extranets, Web-based enterprise applications are increasingly widespread.

Enterprise applications are the systems that can coordinate activities, decisions, and knowledge across many different functions, levels, and business units in a firm. Enterprise applications include: *enterprise systems, supply chain management systems, customer relationship management systems, and knowledge management systems.*

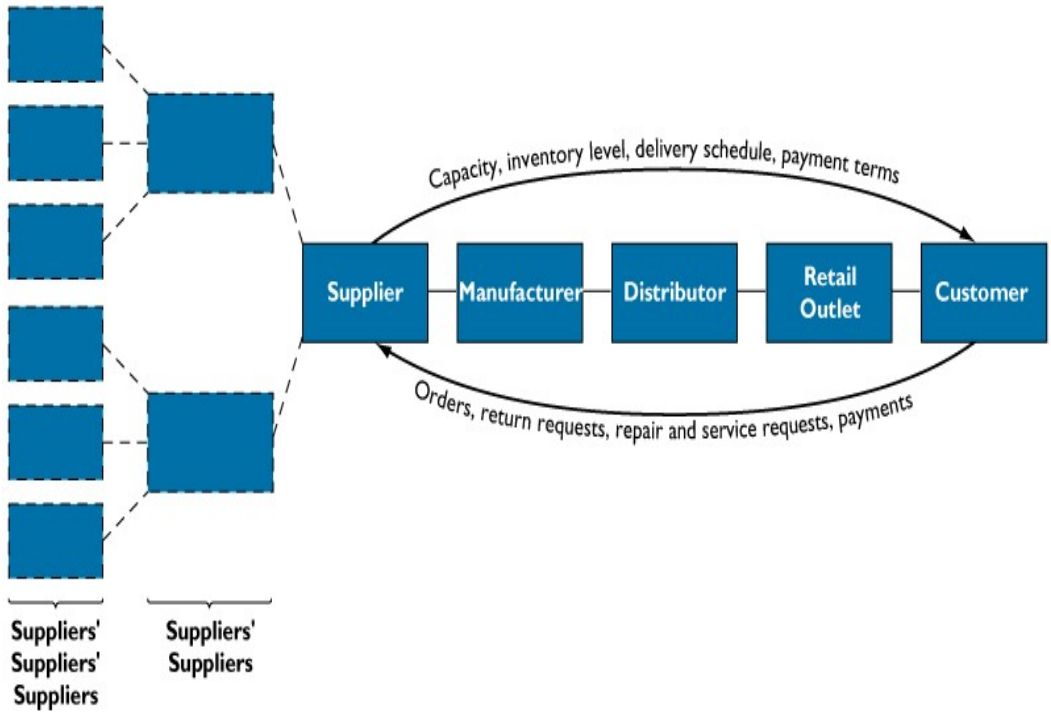
- **Enterprise systems**

These systems are also known as *enterprise resource planning (ERP)* systems and are used to bridge the communication gap between all departments and all users of information within a company. If the production department enters information about its processes, the data are available to accounting, sales, and human resources. If sales and marketing is planning a new advertising campaign, anyone anywhere within the organization will have access to that

information. Enterprise systems truly allow a company to use information as a vital resource and enhance the bottom line.

- **Supply Chain Management:**

Supply chain management is the close linkage and coordination of activities in buying, making, and moving a product. It integrates supplier, manufacturer, distributor, and customer logistics processes to reduce time, redundant effort, and inventory cost. The ***supply chain*** is a network of organizations and business processes for procuring materials, transforming raw materials into intermediate and finished products, and distributing the finished products to customers. It links suppliers, manufacturing plants, distribution centers, conveyances, retail outlets, people and information through processes such as procurement, inventory control, distribution, and delivery to supply goods and services from source through consumption. Supply chain also includes ***reverse logistics*** in which returned items flow in the reverse direction from buyer back to the seller.



Information systems make supply chain management more efficient by helping companies coordinate, schedule, and control procurement, production, inventory management, and delivery of products and services. Supply chain management systems can be built using intranets, extranets, or special supply chain management software. Information systems for supply chain management can help participants in the supply chain in the following activities:

- → Decide when and what to produce, store, and move
- → Rapidly communicate orders
- → Track the status of orders
- → Check inventory availability and monitor inventory levels
- → Reduce inventory, transportation, and warehousing costs
- → Track shipments
- → Plan production based on actual customer demand
- → Rapidly communicate changes in product design

Inaccurate or untimely information in the supply chain causes inefficiencies such as parts shortages, underutilized plant capacity,

excessive finished goods inventory, or runaway transportation costs. One recurring problem in supply chain management is the ***bullwhip effect***, in which information about the demand for a product gets distorted as it passes from one entity to next across the supply chain.

Supply chain management uses systems for *supply chain planning (SCP)* and *supply chain execution (SCE)*. ***Supply chain planning systems*** enable the firm to generate demand forecasts for a product and to develop sourcing and manufacturing plans for that product. ***Supply chain execution systems*** manage the flow of products through distribution centers and warehouses to ensure that products are delivered to the right locations in the most efficient manner.

- **Customer Relationship Management systems**

Customer relationship management (CRM) is a term that refers to practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle, with the goal of improving business relationships with customers, assisting in customer retention and driving sales growth. An information system that maintains data about customers and all their interactions with the organization is called *Customer Relation Management (CRM) System*.

A major benefit of using CRM systems is to develop better relations with existing customers, which can lead to increased sales. By better anticipating the needs of the customers businesses can predict further purchases based on past historic trends. It also allows a cross-selling of other products by highlighting and suggesting alternatives and enhancements. By implementing a CRM system it can also lead to a better marketing of products by using a target market and a more personal approach. Ultimately this could lead to enhanced customer satisfaction and retention. Ensuring a good reputation in the market allows for the company to continuously grow.

- **Knowledge Management Systems**

Knowledge management (KM) is the process of capturing, developing, sharing, and effectively using organizational knowledge. Knowledge management efforts typically focus on organizational objectives such as improved performance, competitive advantage, innovation, the sharing of lessons learned, integration and continuous improvement of the organization.

Knowledge Management System (KM System) refers to a (generally IT based) system for managing knowledge in organizations for supporting creation, capture, storage and dissemination of information. *Knowledge management systems (KMS)* collect all relevant knowledge and experience in the firm and make it available wherever and whenever it is needed to support business processes. The idea of a KM system is to enable employees to have ready access to the organization's documented base of facts, sources of information, and solutions. For example an engineer could know the metallurgical composition of an alloy that reduces sound in gear systems. Sharing this information organization wide can lead to more effective engine design and it could also lead to ideas for new or improved equipment.

Systems for Collaboration and Team Work Social Business

Globalization now allows companies to work around the clock, around the world. It's not unusual for major corporations to shift work from one time zone to another, one country to another. Somehow, the people in all the geographically-separated locations have to be able to easily communicate and share information with each other. Working in teams is now becoming the de facto practice in the business world.

What Is Collaboration?

Let's first determine exactly what the term ***collaboration*** means working with others to achieve shared and explicit goals. All members that involve in collaborative work environment focus on a particular task or mission. Collaboration and teamwork has grown in popularity over the last few years because new technology has made it much easier for people to communicate and share information, files, and documents. Collaboration and teamwork are central to the success of many businesses. Here are six reasons why businesses promote collaboration and teamwork:

- **Changing nature of work**—traditionally work was organized into silos. Now, most new jobs require interaction among employees, suppliers, and customers.
- **Growth of professional work**—most professional jobs require close coordination and sharing information and opinions with other professionals.
- **Changing organization of the firm**—traditionally organizations used a managerial hierarchy. Now, many firms have been "flattened" and expertise and decision-making powers are pushed down to groups and teams.
- **Changing scope of the firm**—globalization has created organizations that are disbursed to many geographically separated locations that require close coordination.
- **Emphasis on innovation**—innovation comes more from teams and groups than from a single individual. Collaborative practices and technologies increase the likely success of innovation.
- **Changing culture of work and business**—diverse teams tend to produce better outputs and do it faster than individuals.

Collaboration among employees, suppliers, and customers is becoming an important tool in increasing a company's competitive advantage. Social networking platforms like Facebook, Twitter, and Pinterest help improve a company's **social business** to establish and improve interactions with groups inside and outside the organization. Information sharing, innovation, and decision-making are enhanced through these technologies.

Business Benefits of Collaboration

Nearly all writers agree that collaboration is now more required within and between firms than was true in the past (for reasons outlined above).Some of the benefits of collaboration are discussed below:

- **Productivity**: People working together can complete a complex task faster than the same number of people working in isolation from one another; there will be fewer errors.
- **Quality**: People who work collaboratively can communicate errors, and take corrective actions faster, when they work together than if they worked in isolation.
- **Innovation:** People working collaboratively in groups can come up with more innovative ideas for products, services, and administration than the same number working in isolation from one another.
- **Customer Service:** People working together in teams can solve customer complaints and issues faster and more effectively than if they were working in isolation from one another.
- **Financial performance (profitability, sales, and sales growth):** As a result of all of the above, collaborative firms have superior financial performance

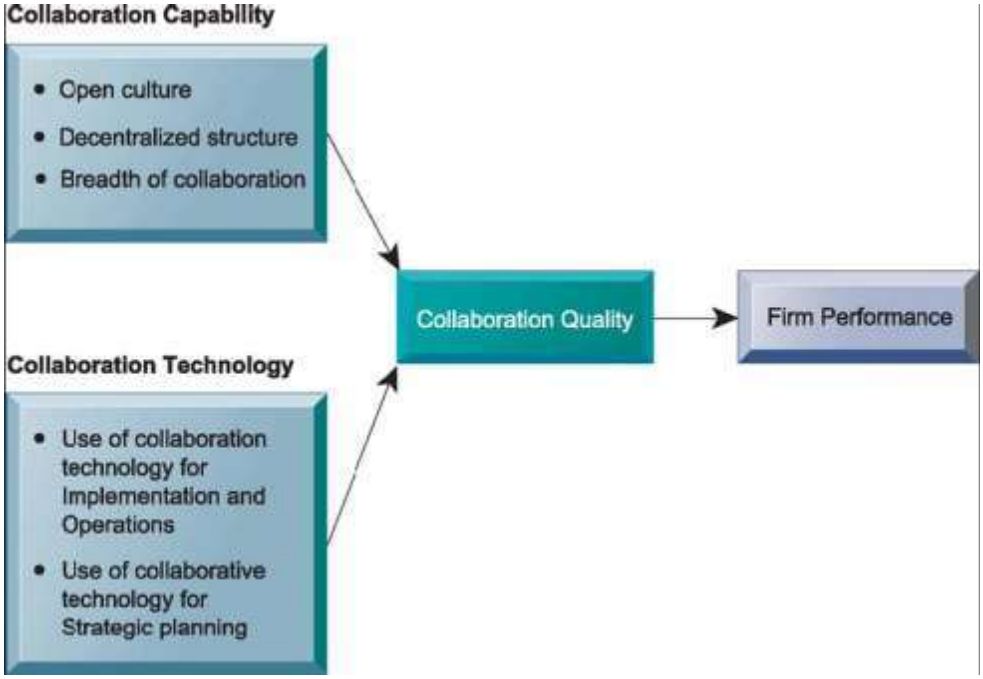


Figure: Requirements for Collaboration

Tools and Technologies for Collaboration and Social Business

Many new systems for interacting with other employees, managers, vendors, and customers have been developed. You probably use some of them without realizing how essential they've become in creating an environment that supports a collaborative culture.

- **E-mail and instant messaging:** billions of messages flow everyday between employees, managers, suppliers, and customers.
- **Social networking:** more than just a way to socialize among friends, these tools give corporations another way for users to share ideas and collaborate with each other. According to its Forrester Research survey of 1,217 business decision makers worldwide late last year, 95% use social networks to some extent.
- **Wikis**: Wikis are a type of Web site that makes it easy for users to contribute and edit text content and graphics without any knowledge of Web page development or programming

techniques. The most well-known wiki is Wikipedia. It relies on volunteers, makes no money, and accepts no advertising. Wikis are ideal tools for storing and sharing company knowledge and insights.

- **Virtual worlds:** able to house online meetings, training sessions, and lounges, this type of tool is gaining popularity as a way to meet, interact, and exchange ideas.
- **Virtual Meeting Systems:** With a virtual meeting system you can hold strategy sessions once or twice a week instead. You would feel like all of your teammates are physically located in the same place if you use **telepresence** technology. You can share ideas and documents in real-time. Best of all, you don't have all the travel hassles and you can sleep in your own bed.
- **Google Apps and Google sites:** One of the most widely used "free" online services for collaboration is Google Apps/Google Sites. Google Sites allows users to quickly create online, group-editable Web sites. Google Sites users can design and populate Web sites in minutes and, without any advanced technical skills, post a variety of files including calendars, text, spreadsheets, and videos for private, group, or public viewing and editing. Google Apps works with Google Sites and includes the typical desktop productivity office software tools (word processing, spreadsheets, presentation, contact management, messaging, and mail).
- **Microsoft SharePoint:** SharePoint is a browser-based collaboration and document management platform, combined with a powerful search engine that is installed on corporate servers. SharePoint has a Web-based interface and close integration with everyday tools such as Microsoft Office desktop software products. SharePoint software makes it possible for employees to share their Office documents and collaborate on projects using Office documents as the foundation.

- **Lotus Notes:** A third Internet-based collaboration environment your team could use is IBM's Lotus Notes. It provides all the basic collaboration tools as Google Apps/Google Sites and SharePoint do but with a few added features.

The Information Systems Function in Business

Many people focus on the job losses caused by technological advances and changes. On the other hand, many new jobs have been created because of technology. **Information systems departments,** previously a tiny group of people usually assigned to the financial group, have moved into the mainstream of most companies.

The Information Systems Department

Programmers have taken on more important positions within organizations. They must understand not only the technical side of computing, but they must also know business processes so they can adapt the technology to the needs of their company. **Systems analysts** serve as the bridge between the techies and the nontechies. Heading this group of people are the **information systems managers.** Their importance to businesses has grown as the emphasis on technology's role within organizations has grown.

Just as most organizations have a Chief Financial Officer, the position of **Chief Information Officer** has been created to handle the myriad of problems and opportunities businesses face in today's technologically driven environment. Very large corporations appoint a **Chief Security Officer** who's responsible for enforcing the firm's information security policy and training users and information systems technologists about security. The CSO keeps other executives and managers aware of security threats and maintains security tools and policies.

Chief Privacy Officer protects an organization's data from misuse and abuse and makes sure the company complies with data privacy laws. Another new position that of **Chief Knowledge Officer,** has been created in larger corporations to deal with effectively using knowledge management systems.

Organizing the Information Systems Function

Deciding how to organize the Information Systems function within a business is not as easy as deciding how to organize other functional areas. After all, sales and marketing has a much different mission than production and manufacturing. Information Systems on the other hand has similar tasks regardless of the functional area it is supporting. Sales and marketing needs access to data the same as production and manufacturing.

Larger companies and organizations develop an **IT governance** that helps decide the best way to organize the IT department for the benefit of all. Some of the issues to be decided upon are:

- Strategy and policies for using IT
- Accountability toward the organization's strategies and objectives
- How much centralization will take place within the IT function
- Does the organization receive a positive return on its IT investments?

Systems For Functional Areas

The typical information systems that support each of major business functions are: sales and marketing systems, manufacturing and production systems, finance and accounting systems, and human resources systems. These systems serve at every organizational level.

Sales and Marketing Systems

Sales and marketing function is responsible for selling the organization's products or services. **Marketing** is concerned with identifying the customers for the firm's products or services, determining what they need or want, planning and developing products and services to meet their needs, and advertising and promoting these products and services. **Sales** is concerned with contacting customers, selling the products and services, taking orders, and following up on sales. **Sales and marketing information systems** support sales and marketing activities.

These information systems are arranged by organizational level. At strategic level, these systems monitor trends affecting new products and sales opportunities, support planning for new products and services, and monitor the performance of competitors. At the management level, these systems support market research, advertising and promotional campaigns, and pricing decisions; they also analyze sales performance and the performance of the sales staff. At the knowledge level, these systems support market analysis activities. At the operational level, these systems assist in locating and contacting prospective customers, tracking sales, processing orders, and providing customer service support.

Examples of Sales and Marketing Information Systems

System	Description	Organizational Level
Order processing	Enter, process, and track orders	Operational
Pricing analysis	Determine prices for products and services	Management
Sales trend forecasting	Prepare 5-year sales forecasts	Strategic

Manufacturing and Production Systems:

The manufacturing and production function is responsible for producing firm's goods and services. Manufacturing and production is concerned with the planning, development, and maintenance of

production facilities; the establishment of production goals; the acquisition, storage, and availability of production materials; and scheduling of equipment, facilities, materials, and labor required to fashion finished products. **Manufacturing and production information systems** support manufacturing and production activities.

Examples of Manufacturing and Production Information Systems

System	Description	Organizational Level
Machine control	Control the actions of machines and equipment	Operational
Production planning	Decide when and how many products should be produced	Management
Facilities location	Decide where to locate new production facilities	Strategic

These information systems are also arranged by organizational level. At the strategic level, these systems deal with the firm's long term manufacturing goals, such as where to locate new plants or whether to invest in new manufacturing technology. At the management level, these systems analyze and monitor manufacturing and production costs and resources. At knowledge level, these systems deal with creating and distributing design knowledge or expertise to drive the production process. At the operational level, these systems deal with the status of production tasks.

Finance and Accounting Systems

The **financial** function is responsible for managing the firm's financial assets, such as cash, stocks, bonds, and other investments in order to maximize the return on these financial assets. It also manages the capitalization of the firm (finding new financial assets in stocks, bonds, or other forms of debt). The finance function must also obtain a considerable amount of information from sources external to the firm in order to determine whether the firm is getting the best return on investments.

The **account** function is responsible for maintaining and managing the firm's financial records (such as receipts, disbursement, depreciation, payroll) to account for the flow of funds in the firm. **Finance and accounting information systems** support finance and accounting activities.

Examples of Finance and Accounting Information Systems

System	Description	Organizational Level
Accounts receivable	Tracks money owed the firm	Operational
Budgeting	Prepares short-term budgets	Management
Profit planning	Plans long-term profits	Strategic

These information systems are also arranged by organizational level. At the strategic level, these systems establish long-term investment goals for the firm and provide long-range forecasts of the firm's financial performance. At the management level, these systems help managers oversee and control the firm's financial resources. At the knowledge level, these systems support finance and accounting by providing analytical tools and workstations for designing the right mix of investments to maximize returns for the firm. At the operational level, these systems track the flow of funds in the firm through transactions.

Human Resources Systems:

The human resource function is responsible for attracting, developing, and maintaining the firm's work force. This function support activities such as identifying potential employees, maintaining complete record on existing employees, and creating programs to develop employees' talent and skills. **Human resources information systems** support these activities.

Examples of Human Resources Information Systems

System	Description	Organizational Level
Training and development	Tracks employee training, skills, and performance appraisals	Operational
Compensation analysis	Monitors the range and distribution of employee wages, salaries, and benefits	Management
Human resources planning	Plans the long-term labor force needs of the organization	Strategic

These information systems are also arranged by organizational level. At the strategic level, these systems identify the manpower requirements (skills, educational level, types of position, number of positions, and cost) for meeting the firm's long-term business plans. At the management level, these systems help managers monitor and analyze the recruitment, allocation, and compensation of employees. At the knowledge level, these systems support analysis activities related to job design, training, and the modeling of employee career paths and reporting relationships. At the operational level, these systems track the recruitment and placement of the firm's employees.