

- 9
- For example sales managers may use their networked computers and web browsers to get instantaneous displays about the sales results of their products.
 - And to access their corporate intranet for daily sales analysts reports that evaluate sales made by each salesperson.

(b) Decision support system (DSS) →

- Gives direct computer support to managers during the decision-making process.
- For example an advertising manager may use a DSS to perform a what-if analysis as part of a decision to determine where to spend advertising dollars.
- A production manager may use a DSS to decide how much product to manufacture based on the expected sales associated with a future promotion.
- And the location and availability of the raw materials necessary to manufacture the product.

(c) Executive Information Systems (EIS) →

- Provide critical information from a wide variety of internal and external sources in easy to use displays to executives and managers.

- (10)
- For example top executives may use touchscreen terminals to instantly view text and graphics displays that highlight key areas of organizational and competitive performance.

Other classifications of Information System

(a) Expert systems -

Knowledge based systems that provide expert advice and act as expert consultants to users.

- Examples are - credit application advisor, process monitor, and diagnostic maintenance systems.

(b) Knowledge management systems -

Knowledge based systems that support the creation, organization and dissemination of business knowledge within the enterprise.

- Examples are - intranet access to best business practices, sales proposal strategies, and customer problem resolution systems.

(c) Strategic information systems -

Support operations or management processes that provide a firm with strategic products, services, and capabilities for competitive advantage.

- Example are - online stock trading, shipment tracking and e-commerce web systems.

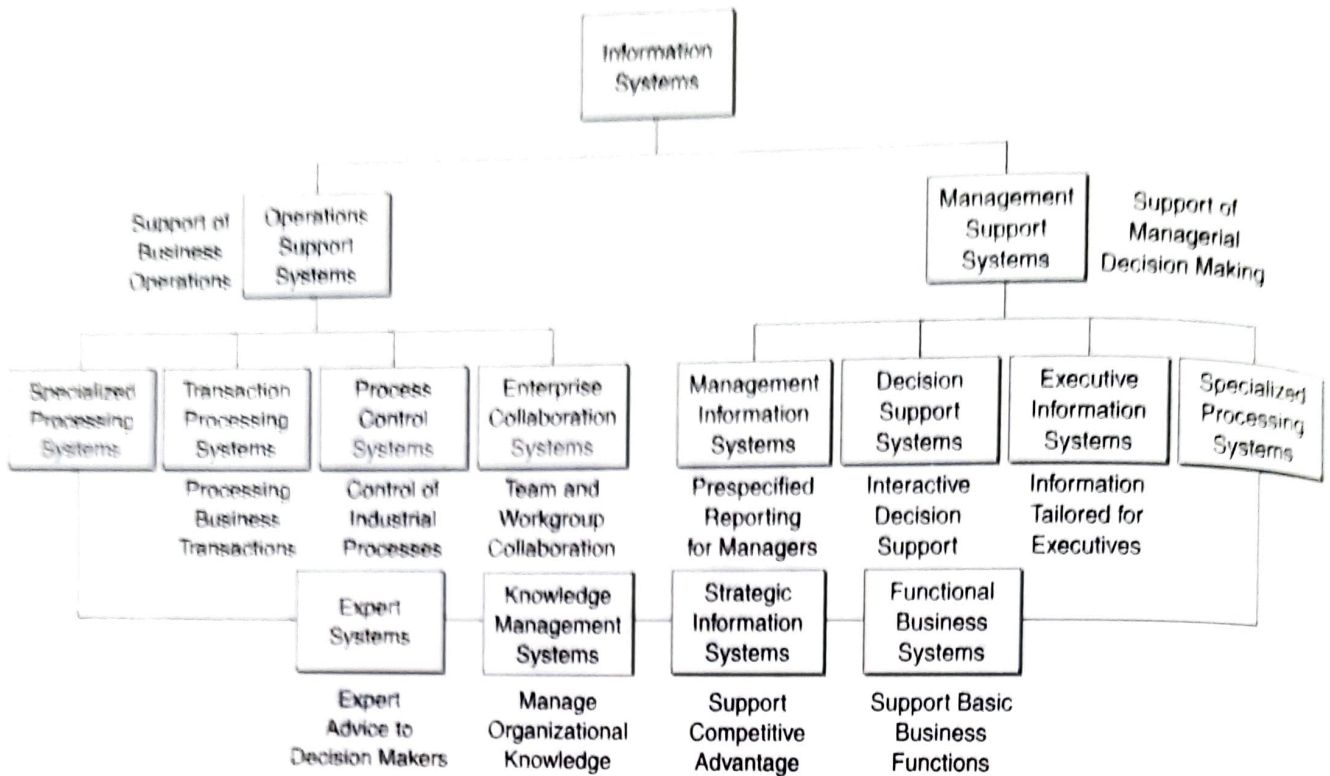


FIGURE 1.6 Operations and management classifications of information systems. Note how this conceptual overview emphasizes the main purposes of information systems that support business operations and managerial decision making.

Operations Support Systems

Information systems have always been needed to process data generated by, and used in, business operations. Such **operations support systems** produce a variety of information products for internal and external use; however, they do not emphasize the specific information products that can best be used by managers. Further processing by management information systems is usually required. The role of a business firm's operations support systems is to process business transactions, control industrial processes, support enterprise communications and collaborations, and update corporate databases efficiently. See Figure 1.7.

FIGURE 1.7 A summary of operations support systems with examples.

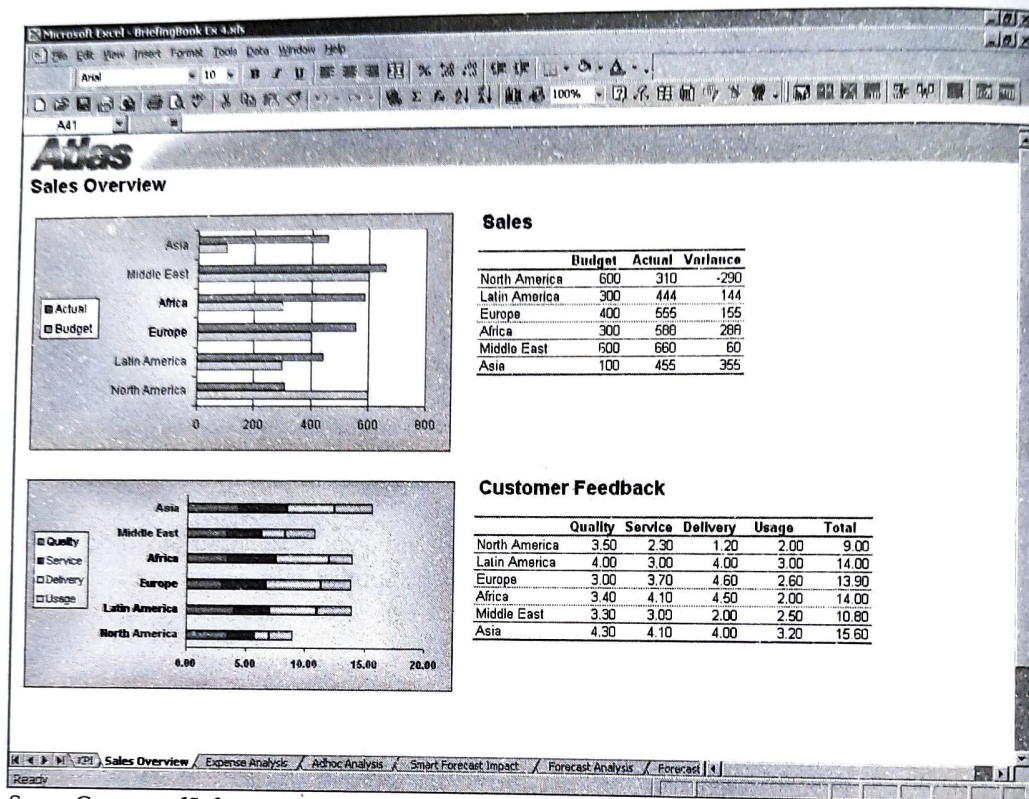
Operations Support Systems

- **Transaction processing systems.** Process data resulting from business transactions, update operational databases, and produce business documents. Examples: sales and inventory processing and accounting systems.
- **Process control systems.** Monitor and control industrial processes. Examples: petroleum refining, power generation, and steel production systems.
- **Enterprise collaboration systems.** Support team, workgroup, and enterprise communications and collaborations. Examples: e-mail, chat, and videoconferencing groupware systems.

Transaction processing systems are important examples of operations support systems that record and process the data resulting from business transactions. They process transactions in two basic ways. In *batch processing*, transactions data are accumulated over a period of time and processed periodically. In *real-time* (or *online*) processing, data are processed immediately after a transaction occurs. For example, point-of-sale (POS) systems at many retail stores use electronic links to regional computer centers for immediate (real-time) or nightly (batch) processing. Figure 1.8 is an example of software that automates accounting transaction processing.

Process control systems monitor and control physical processes. For example, a petroleum refinery uses electronic sensors linked to computers to monitor chemical processes continually and make instant (real-time) adjustments that control the refinery process. **Enterprise collaboration**

DSS to perform a what-if analysis as part of the decision to determine how to spend advertising dollars. A production manager may use a DSS to decide how much product to manufacture, based on the expected sales associated with a future product. **Executive information systems (EIS)** provide critical information from a wide variety of internal and external sources in easy-to-use displays to executives and managers. For example, top executives may use touch-screen terminals to view instantly text and graphics displays that highlight key areas of organizational and competitive performance. Figure 1.10 is an example of an MIS report display.



Source: Courtesy of Infor.

FIGURE 1.10 Management information systems provide information to business professionals in a variety of easy-to-use formats.

Other Classifications of Information Systems

Several other categories of information systems can support either operations or management applications. For example, **expert systems** can provide expert advice for operational chores like equipment diagnostics or managerial decisions such as loan portfolio management. **Knowledge management systems** are knowledge-based information systems that support the creation, organization, and dissemination of business knowledge to employees and managers throughout a company. Information systems that focus on operational and managerial applications in support of basic business functions such as accounting or marketing are known as **functional business systems**. Finally, **strategic information systems** apply information technology to a firm's products, services, or business processes to help it gain a strategic advantage over its competitors. See Figure 1.11.

It is also important to realize that business applications of information systems in the real world are typically integrated combinations of the several types of information systems just mentioned. That is because conceptual classifications of information systems are designed to emphasize the many different roles of information systems. In practice, these roles are combined into integrated or **cross-functional informational systems** that provide a variety of functions. Thus, most information systems are designed to produce information and support decision making for various levels of management and business functions, as well as perform record-keeping and transaction-processing chores. Whenever you analyze an information system, you probably see that it provides information for a variety of managerial levels and business functions.

FIGURE 1.11 A summary of other categories of information systems with examples.

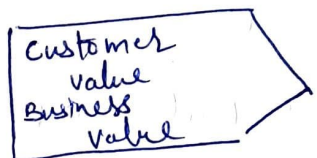
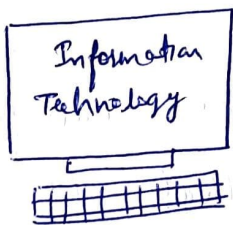
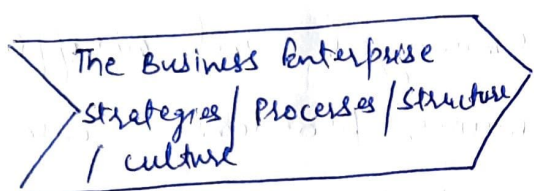
Other Categories of Information Systems

- **Expert systems.** Knowledge-based systems that provide expert advice and act as expert consultants to users. Examples: credit application advisor, process monitor, and diagnostic maintenance systems.
- **Knowledge management systems.** Knowledge-based systems that support the creation, organization, and dissemination of business knowledge within the enterprise. Examples: intranet access to best business practices, sales proposal strategies, and customer problem resolution systems.
- **Strategic information systems.** Support operations or management processes that provide a firm with strategic products, services, and capabilities for competitive advantage. Examples: online stock trading, shipment tracking, and e-commerce web systems.
- **Functional business systems.** Support a variety of operational and managerial applications of the basic business functions of a company. Examples: information systems that support applications in accounting, finance, marketing, operations management, and human resource management.

(d) Functional business systems

- support a variety of operational and managerial applications of the basic business functions of a company.
- Examples are - information systems that support applications in accounting, finance, marketing, operations management and human resource management.

Managerial challenges of Information Technology



Business / IT Challenges

- speed and flexibility requirements of product development, manufacturing, and delivery cycles
- Reengineering and cross-functional integration of business processes using internet technologies
- Integration of ebusiness and e-comm. into the organizations strategies processes, structure, and culture

Business / IT Developments

- Use of Internet, intranets, extranets, and the web site as the primary IT infrastructure.
- Diffusion of web Tech. to internetwork employees, customers and suppliers
- Global networked computing, collaboration and decision support systems.

Business / IT Goals

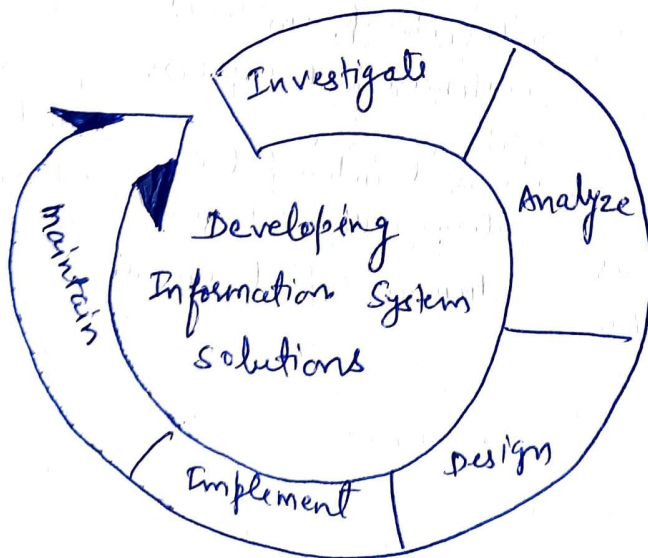
- Give customers what they want, when and how they want it, at the lowest cost
- Coordination of manufacturing and business processes with suppliers and customers
- Marketing channel partnerships with suppliers and distributors.

Success and Failure with IT

(12)

- The success of an information system should not be measured only by its efficiency in terms of minimizing costs, time and the use of information resources.
- Success should also be measured by the effectiveness of information technology in supporting an organization's business strategies, enabling its business process, enhancing its organizational structures and cultures, and increasing the customer and business value of the enterprise.
- But IT and IS can be mismanaged and misapplied in such a way that IS performance problems create both technological and business failure.

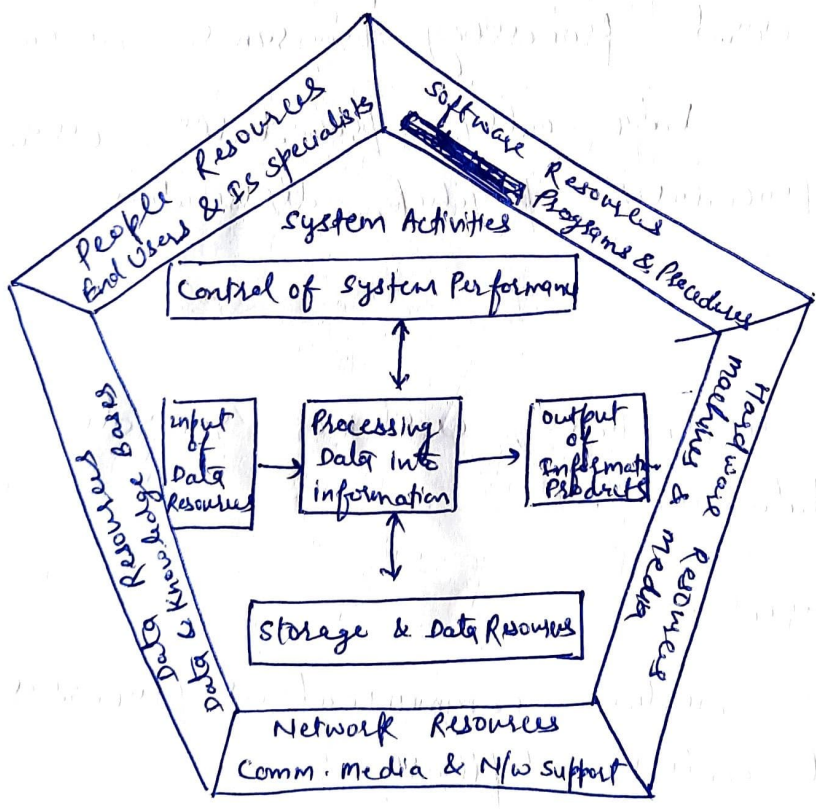
Developing IS Solutions



In the development process, end users and information specialists design information system applications based on an analysis of the business requirements of an organization.

- other activities include investigating the economic or technical feasibility of a proposed application, acquiring and learning how to use the software required to implement the new system.
- And making improvements to maintain the business value of a system.

Components of an Information System



Information System Model