



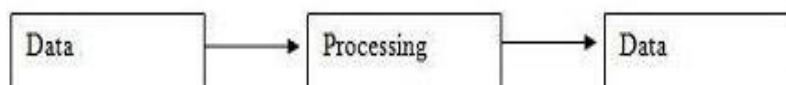
Types of Information Systems in a Business Organization

A management information system (MIS) is a computer-based system that provides the information necessary to manage an organization effectively. An MIS should be designed to enhance communication among employees, provide an objective system for recording information and support the organization's strategic goals and direction. There are four types of MIS that will be introduced in ascending order of sophistication.

Transaction Processing System

These systems are designed to handle a large volume of routine, recurring transactions. They were first introduced in the 1960s with the advent of mainframe computers. Transaction processing systems are used widely today. Banks use them to record deposits and payments into accounts. Supermarkets use them to record sales and track inventory. Most managers use these systems to deal with tasks such as payroll, customer billing and payments to suppliers.

TPS processes transaction and produces reports. It represents the automation of the fundamental, routine processing used to support business operations. It does not provide any information to the user to his/her decision-making. TPS uses data and produces data as shown in the following diagram.



Previously, TPS was known as Management Information System. Prior to computers, data processing was performed manually or with simple machines. The domain of TPS is at the lowest level of the management hierarchy of an organization.

These systems were introduced after transaction processing systems. An operations information system gathers comprehensive data, organizes it and summarizes it in a form that is useful for managers. Most of these systems access data from a transaction processing system and organize it into a form usable by managers. Managers use operations information systems to obtain sales, inventory, accounting and other performance-related information.



Decision Support System (DSS)

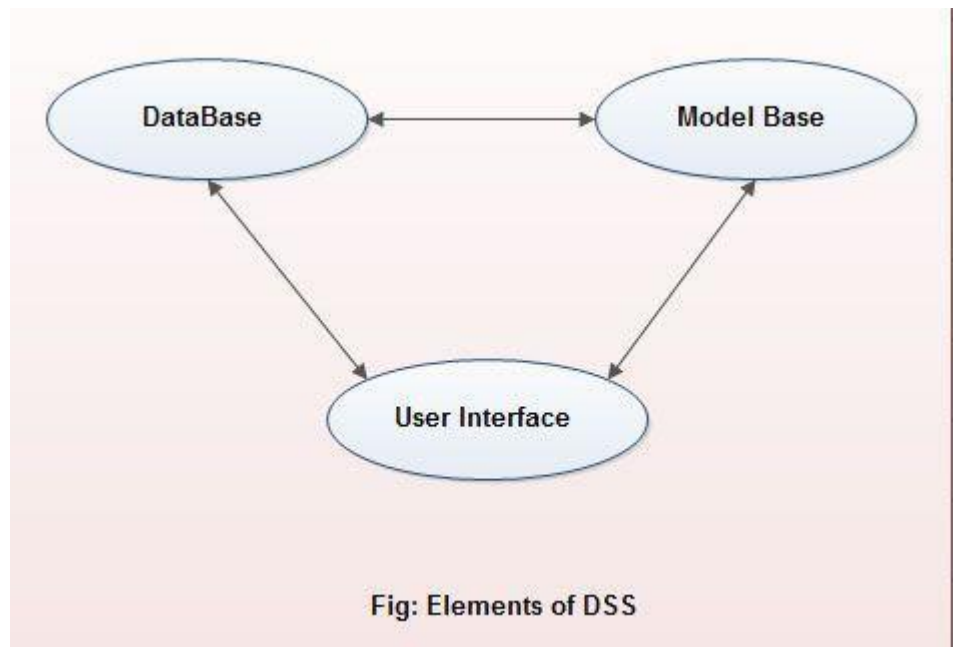
A decision support system (DSS) is an information system application that assists decision-making. DSS tends to be used in planning, analyzing alternatives, and trial and error search for solution. The elements of the decision support system include a database, model base & software. The main application areas of DSS are Production, finance and marketing.

DSS is an interactive computer system that can be used by managers without help from computer specialists. A DSS provides managers with the necessary information to make intelligent decisions. A DSS has three fundamental components:

Database management system (DBMS): Stores large amounts of data relevant to problems the DSS has been designed to tackle. Model-

based management system (MBMS): Transforms data from the DBMS into information that is useful in decision making.

Dialog generation and management system (DGMS): Provides a user-friendly interface between the system and the managers who do not have extensive computer training.



Expert Systems and Artificial Intelligence



Subject: MIS

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These systems use human knowledge captured in a computer to solve problems that ordinarily need human expertise. Mimicking human expertise and intelligence requires that the computer (1) recognize, formulate and solve a problem; (2) explain solutions and (3) learn from experience. These systems explain the logic of their advice to the user; hence, in addition to solving problems they can also serve as a teacher. They use flexible thinking processes and can accommodate new knowledge.

Office Automation Systems (OAS)

Office automation refers to the application of computers and communication technology to office functions. Office automation systems are meant to improve the productivity of managers at various levels of management of providing secretarial assistance and better communication facilities.

Office activities may be grouped under two classes, namely

- i) Activities performed by clerical personnel (clerks, secretaries, typist, etc.) and
- ii) Activities performed by the executives (managers, engineers or other professionals like economist, researches etc.)

In the first category, the following is a list of activities.

- a) Typing
- b) Mailing
- c) Scheduling of meetings and conferences,
- d) Calendar keeping, and
- e) Retrieving documents

The following is a list of activities in the second category (managerial category)

- a) Conferencing.
- b) Production of information (messages, memos, reports, etc.) and controlling performance

Business Expert Systems: These systems are one of the main types of knowledge-based information systems. These systems are based on artificial intelligence, and are advanced information systems. A business expert system is a knowledge based information system that uses its knowledge about a specific, complex application area to act as an expert. The main components of an expert system are:

- a. Knowledge Base
- b. Interface Engine
- c. User Interface

