9

STRUCTURE OF MANAGEMENT INFORMATION SYSTEM

The successful development and implementation of a management information system calls for a deep understanding of the structure of MIS and the dynamics of the enterprises. Like all other systems, MIS also has a specific structure, which describes the framework within which various subsystems are arranged to ensure the efficient functioning of the system. Even though there is no standard to explain its structure, the normal practice is to describe it in the context of operating elements, functions, etc. MIS is a complex design on the basis of which the other sub information systems operate. MIS adopts a complex and multiple approach towards its structure.

Formal and Informal Systems

MIS is the sum total of all the information processing systems in an organization, which may be either public or private. In public information system all the relevant persons in the organization can have knowledge about the system and the information is available to every one in the organization who has authority to access it, subject to security measures. Private information systems are maintained by individuals where certain pieces of information are not available to others and there is discrimination in the file accessing capacity of individuals in the organization. Public and private information systems may be either formal or informal. Formal information systems are always subject to

the rules and procedures manifested by records and other documents and are required to comply with them. Formal systems use officially prescribed data processing mechanism, and access to such a system, even for updating, is possible only through an authorized system. A formal information system can be better described as a formally organized system for providing information to various categories of users, aiming at higher efficiency in their area of responsibility to achieve the organizational objectives. Since the public formal information system has a specific structure or design, which is predetermined, it is also called formal structured system.

The informal information system provides information required for the efficient functioning of the organization, but the data processing functions is not on the basis of formally organized and rigid procedures and records. The informal public information system supplies information only to those who are connected with it. In informal systems, there are no rules or formally organized system enabling data gathering and sharing. Moreover, there is no regularity in the flow of such information. E-mail, telephone calls, notes on the bulletin, etc., are examples of public informal information system. They are also referred to as informal unstructured systems, because they have no predetermined structure or format. Private formal information systems comply with specified rules and regulations given by a private individual. The information system file maintained by a marketing manager, to provide information only to the marketing executives, is an example. Private informal information systems are based on personal contacts. Thus the information system can be represented as:

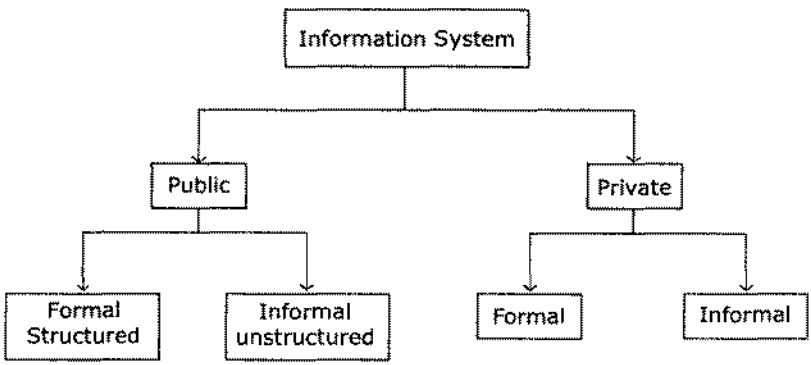

Fig. 9.1: Information System

Information Networks

The concept was developed by Forrester, who argued that enterprises are complex, multi-loop interconnected systems and decisions are taken at multiple points in the organizations, which generate additional information when implemented. Information network refers to the interconnected and interlocking network of information generated at various points in an organization, information feedback loops, etc., taken together, and describes the total system network. It helps in controlling the physical processes like erection of plants, production of goods, marketing of products, etc.

According to Forrester Information Networks in an organization can be divided into six categories such as: materials, orders, money, personnel, capital, and information. Each decision point in the organization provides information, which requires a feedback loop, which enables the organization to transform the information into action.

Modularity

Activities of various levels of management (top, middle and bottom) can be identified as strategic, tactical and operational in nature. Based on these levels and corresponding activities, the information requirements also change, but the source of information remains the same. The framework of a system can be explained with the help of modularity, which simply means factoring the system into various modules, of compact and manageable size. A module is a small set of instructions applicable for individual requirements. Sometimes, it is possible to set up common modules to meet the common requirements of certain subsystems, it helps to smoothen and ensure the early completion of projects. Modules can again be divided into minor and basic modules, to facilitate system analysis and design. Modules can be attested or updated without causing any harm to other modules. Thus, according to the modularity concept, a system is viewed as a set of logically integrated modules, which are coded and tested for their efficiency.

Extent of Integration

System is a group of interrelated subsystems. Integration of these subsystems is required for the effective functioning of the system. Subsystem integration is possible

by ensuring data flows throughout the system, in such a way that data files of one subsystem are required to be accessed by the other subsystems and the information generated by the latter is accessed by another subsystem and so on. Subsystems are said to be integrated when a relationship exists among them in their functioning or when they use the same data source for obtaining or providing information to other subsystems, so that a linkage is established among them. The system integration can be divided into three categories like hierarchical, horizontal, and cross-functional. In hierarchical system integration, either the transaction level systems provide information to the managerial level or the managerial level provides information to the transactional level systems. Horizontal integration is achieved by ensuring integration within a chain of command. For example, information systems in a production department are arranges in such a way that the information in one department is transferred to another department for use as the product moves from one department to another, for various stages of production take place in various departments. Cross-functional interaction facilitates integration of information systems of various functional areas like production, personnel, and finance. Various techniques can be adopted for ensuring integration. A standard procedure can be developed to transfer data from one system to another regularly. In computer, automated responses are used in certain conditions or situations to ensure integration.

The extent of integration is a matter of degree; since tight integration is impractical and difficult to maintain. Data integration is thus achieved after considering a number of factors like cost, nature of data, benefits, etc. The best way for achieving data integration is the use of database, which facilitates improved data flows, timely decision-making, and sharing of information.

Extent of Man-machine Integration

Information systems are developed to ensure the availability of proper and timely information to the end-user. Human beings interact with the information system in a variety of ways, such as input provider, information accessory, programmer, etc. Even though the structure of MIS is silent about the on-line user-machine interaction, it is often desirable as the transaction can be completed immediately. Moreover

the popularity of communication technology compels the user to adopt on-line interactive transaction processing and decision support. In user-friendly systems, non-procedural languages help to reduce the gap between the user and computer systems and the users are provided with interfaces to interact with the systems. Thus, the contact point of the system with the end-user is referred to as an interface.

Structure of Management Information System

The structure of MIS can be described in terms of its operating elements, decision support, managerial activity, and organizational function.

1. Operating elements of MIS: The operational elements of MIS are:

(a) Physical components: The physical components of an information system include:

(i) *Hardware* – which refers to the physical computer instrument and related devices performing various functions like input, output, secondary storage, CPU and Communication.

(ii) *Software* – which refers to the instructions given to the hardware to perform various operations.

(iii) *Database* – which is the collection of logically related and centrally controlled records containing various stored data.

(iv) *Procedures* – which include the set of instructions to the users, data preparation group, operating personnel, etc.

(v) *Operating personal* – they may be computer operators system analysts, programmers, data administrators, or data preparation personnel.

(b) Processing functions: On the basis of processing functions, information system consists of the following:

(i) *Processing transactions* – transaction is an activity, which acts as the source of data. The information system functions include the recording and measurement of these transactions.

(ii) *Maintaining master files* – it involves the creation and maintenance of master files for permanent storage of data.

(iii) *Producing reports* – one of the major jobs of the information system is to generate and provide

reports to the user at various levels of management.

(iv) *Processing inquiries* – information systems provide responses to inquiries from various levels.

(v) *Process interactive support applications*– information systems provide interactive facilities to end-user and facilitate system planning, analysis, and decision-making. They enable the user to ask questions and receive immediate results.

(c) Output for users: The output provided by an information system to the end-user may take any of the following forms:

(i) *Transaction documents or screen* – examples are purchase order, payroll, sales invoice, etc.

(ii) *Preplanned reports containing regular contents.*

(iii) *Preplanned inquiry responses.*

(iv) *User-machine dialog results* – which refers to the way in which a user can interact with a system to arrive at a solution.

(v) *Ad hoc reports and enquiry responses* – which occur at regular intervals and receive data for analyses whose format cannot be preplanned.

2. Decision support: One of the major roles of managers in an organization is decision-making; and, as a tool to the managers, the purpose of information systems is to facilitate the decision making process. As a decision support tool, MIS consists of two types of decisions – structured and unstructured.

(a) Structured decisions (Programmable decisions): These are well–defined, repetitive and routine decisions, having predetermined decision models or rules. It does not mean that the decisions are automated. In simple words, programmable decisions can be made within a framework, specifying the steps to be adopted, in a flow chart, decision table, or a formula. The decision model will specify the information requirements and can be used by the lower level personnel in the organization who do not possess specialized knowledge or skill. Giving purchase order, preparation of pay rolls, etc., are examples. The guidelines and rules required for taking such decisions are made available in the form of procedure manuals, which help the users to

understand them. The important features of these decisions are:

(1) These decisions can be delegated since they do not require any specialized knowledge.
(2) Programmable decisions can be automated,
(3) The cost involved is very low when compared to non-programmable decisions.

(b) Unstructured decisions (Non-programmable decisions): These decisions are occasional in nature. They have no pre-established decision models or procedures, necessitating a new solution for each unique problem. The information requirements cannot be predicted in advance, so that the retrieval may be ad hoc in nature. Moreover, due to the absence of decision rules, these decisions are subject to human judgment, and involve very high risk. Capital budget preparation, introduction of a new product in the market, etc. are examples of non-programmable decisions.

3. Management Activity (Levels of Management and Information Requirements): On the basis of managerial activities MIS consists of three activities, such as strategic planning, tactical planning and operational planning, which constitute a hierarchy.

Fig. 9.2: Hierarchy of Planning

The functions of strategic planning level include the fixation of goals, policies, general guidelines, setting up of organizational objectives, etc., which involve long-range considerations. Decisions made at this level are connected with the choice of business directions, market strategy, product mix, etc. Strategic level of management (top management) requires aggregate, not much accurate, wide, future-oriented and largely external information for decision making.

At the tactical planning level, the emphasis is on managerial control, and it is concerned with raising and utilization of resources effectively and efficiently. The activities at these levels include acquisition of resources, tactics, plant location, new product development, establishment and monitoring of budgets, etc. This level of management requires information about the targets, budgets and the actuals corresponding to the target performance, because at this stage control measures are adopted, if the actual and targets vary significantly. The causes for such variation are analyzed and a report is submitted to managers of this level for controlling activity. Management control and tactical planning level have a medium-term planning horizon. It involves activities like reusing of resources, structuring of works, acquisition and training of personnel. Tactical planning is reflected in areas like capital expenditure, budget, and three-year staffing plan.

The responsibilities of management at the operational, planning and control levels include effective and efficient use of resources, and the execution of the day-to-day activities of the organization. They relate also to short-term decisions or current decisions like pricing, production levels, stock level, etc. The pieces of information required at this level of management are well defined and restricted. But detailed, historical, highly current, accurate, frequent and largely internal information is also required at this stage for proper functioning.

Even though the three levels of management activity can be differentiated on the basis of the planning horizon, the activities and information processing for these three levels are interrelated. For instance, the inventory control at the operational level depends on accurate processing of transactions at the management control and tactical planning levels, which, in turn, depend on correct summarization of results of operations at the strategic level.

4. Organizational Functions (organizational functions and information requirements): The structure of MIS can also be explained in terms of organizational functions. These functions do not have a standard classification. The normal functions in a manufacturing organization include, purchase, production, marketing, personnel, finance and accounting. Each of these functions requires unique items of information and must have a separate

information system. MIS is developed to support the functional subsystems of the organization. With in each functional subsystem, there will be four levels of managerial activities, such as transaction processing, operational control, managerial control, and strategic planning. The various subsystems are:

Purchase Subsystem

The transactions to be processed consist of purchase requisition, purchase orders, manufacturing orders, receiving reports etc. The operational control level uses information contained in the reports, like under stock items, over stock items, vender performance, etc. Managerial control information consists of overall comparisons between planned and actual inventory levels, cost for purchased items, stock outs, inventory turnover, etc. Strategic planning involves analysis of new distribution strategies, new polices with regard to venders and making or buying decisions.

Production Subsystem

The functions of this subsystem include planning of production, facilities, scheduling of production activities, engineering of product, employment and training of production personnel, and quality control and inspection. Operational control requires detailed reports comparing actual performance with production schedule. Management control requires summary reports comparing overall planned performance with actual performance. Strategic planning includes alternative manufacturing approach or approach to automation.

Marketing Subsystem

Transactions in marketing subsystem are sales orders, promotion orders etc. The operational control of the marketing subsystem performs hiring and training of sales force, day-to-day scheduling of sales and promotion efforts, etc. The managerial level compares overall performance against the standard marketing plan. Strategic planning considers the problems of new markets and new marketing strategies. The information required at this level relates to customer analysis, competitor analysis, income projection, etc.

Personnel Subsystem

This subsystem is concerned with employment requisitions, job description, training specification, personnel

data, pay rate changes, hours worked, benefits, termination notices, etc. Operational control level requires decision procedures for actions, such as hiring, training, termination, etc. Management control level requires information about cost of recruiting, composition of skills, cost of training, salary paid, wage rates, etc. Strategic planning requires information about alternative strategies for recruiting, salary, training, and benefits and about retaining personnel.

Finance and Accounting subsystem

Transactions involved in finance subsystem are processing of credit applications, sales, billing, collection payment vouchers, cheques, journal vouchers, ledgers, stock transfers and so on. Operational control requires information about daily error and exception reports, records of processing delays, records of unprocessed transactions etc. Management control requires information on budgeted and actual resources, cost of processing accounting data, error rates, and so forth. Strategic planning requires information to evolve alternative strategy to adequately finance the firm, long range tax planning policy, systems for cost accounting and budgeting, etc. Thus, the structure of MIS can be summarized as follows:

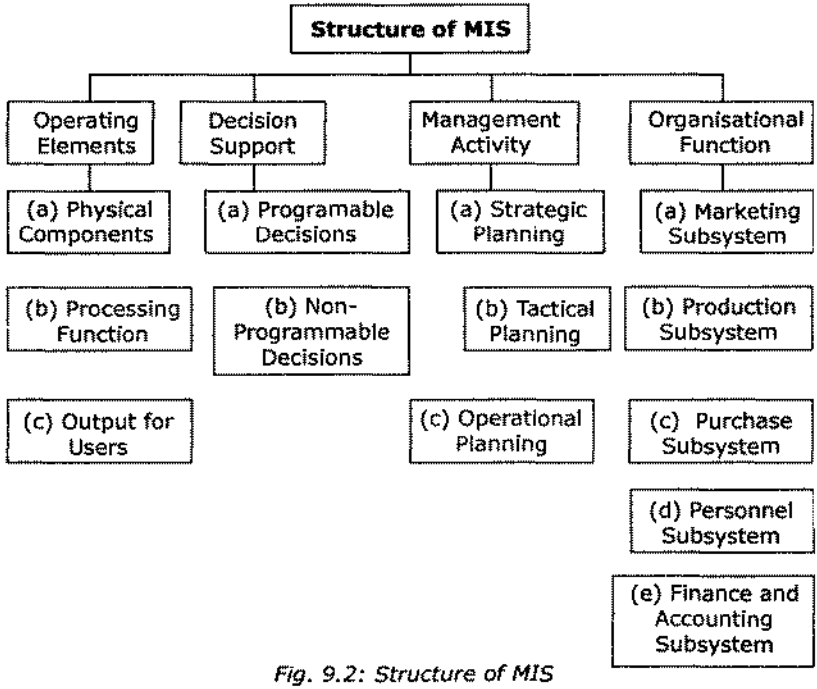

Fig. 9.2: Structure of MIS

Synthesis of MIS Structure

The structure of MIS can be described in terms of operating elements, decision support, management activity, and organizational functions. These approaches can be synthesized into a single MIS structure consisting of a physical and conceptual structure.

Physical Structure

The physical structure of an MIS consists of integrated processing activities, software, hardware facilities, etc. It is very difficult to keep all the activities, applications, programs, etc. completely separate. The integration activity provides various economies and use of common modules. Integration in physical structure can be achieved by designing various related applications as a single system, so as to simplyfy the number of interconnections and reduce the duplication of input. The physical structure is also influenced by the use of common modules for many operations.

Conceptual Structure

It is defined as the federation of functional subsystems, which is again divided into four information processing components like transaction processing, operational control, managerial control and strategic planning. Each functional subsystem must have some unique data files and they are used only by the specific functional subsystem. Certain data files are available for general use, which are arranged into a general database and managed by a DBMS. A common software also can be introduced for various subsystems. The analytical and decision models used by many applications, form the model for the information system. It can be represented as:

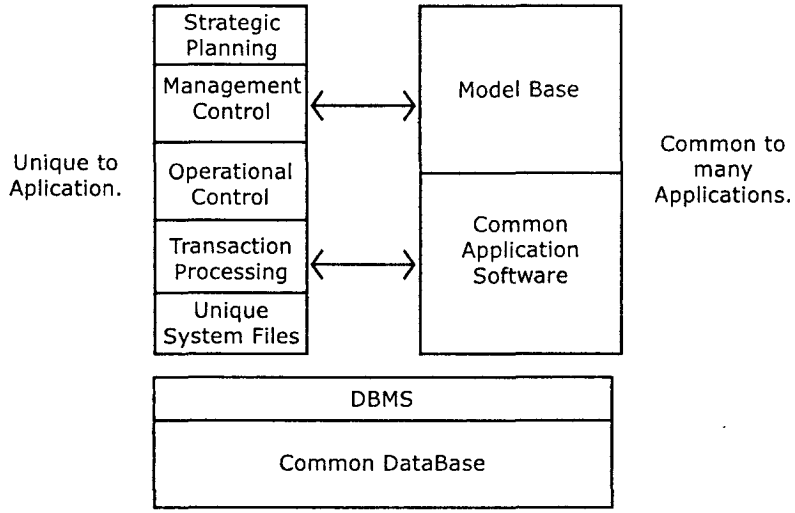

Fig. 9.1: Model for Information System

Knowledge Work

The concept of knowledge work is involved in several tasks and explained in terms of the knowledge possessed by the worker. It involves the use of information derived from the knowledge and expertise of the worker, and organizational or outside data available to the worker. Knowledge work, in simple words, refers to the work involving thinking, processing, information, formulating analyses, recommendations and procedures. The tasks of knowledge work involves schedules, plans descriptions, instructions, diagnoses, memoranda, position papers, decisions, etc., which are considered to be relative with respect to the tasks performed. In fact, no task in the world is free from knowledge work. Almost all the jobs contain at least an element of knowledge work, and the composition and amount of knowledge work involved in different tasks vary significantly. For instance, the knowledge work involved in both decision-making and filling gasoline in a car differ significantly. Knowledge work can use either verbal or written inputs and outputs. In the modern world of technological advancement, a number of knowledge works are available to the users. The different types of knowledge work are:

1. Diagnosis and problem finding,
2. Planning and decision-making,
3. Organizing and scheduling,
4. Authoring and presentation,
5. Communication,
6. System development,
7. Monitoring and control.

Technology Support for Knowledge Work

Information technology provides direct assistance and support to knowledge work. The significant factors contributing to knowledge work are personal computers and communication network, which takes together, constitute the stepping-stones of intelligent workstations (professional work stations). Intelligent-workstations are developed on the basis of the concept of integration of facilities, which are of two types, namely, functional integration and physical integration.

Functional integration is the integration of various software support functions for knowledge work as a single system. E-mail, word processing, data storage, access to data banks, etc, accomplished at the same workstation are examples of functional integration. A single interface enables the user to access software facilities, which are functionally integrated; he can also switch from one task to another and come back again. For instance a user preparing a document in word processing can check the e-mail and then go back to the original work he has engaged in.

Physical integration involves the interactions of hardware, software and communication facilities. The components of physical integration are:

1. User interface allowing the user to access several workspaces concurrently (Multi tasking),
2. Multiple Media permitting the creation and editing of documents from different media, such as text graphics, databases and voice,
3. Access to outside services allowing accessing of external data banks and information providing services,
4. Physical interconnection in which multiple products from multiple manufacturers can be used.

The important software support facilities for knowledge work are:

1. Word and text processing, which allows the user to use intelligent work stations for drafting memos, letter, documents, etc., in place of handwriting. The user can prepare a document in his own workstation, and if he wants he can transfer it to the workstation of another and order the distribution of it to a specific mailing list.
2. Storage and retrieval of data. Workstation storage facilities can be utilized to get access to internal databases, external database and information retrieval services.
3. Communication facilities, including the computer-based message systems and voice store-and-forward message systems, provide capabilities for different users in different locations to work on joint projects.
4. Decision support in intelligent work station permits final results produced from a decision support system to be incorporated into a report in the prescribed format.
5. Graphics facilitate the generation of standardized forms scheduling of applications and providing user interfaces.
6. End-user application development facilities: An intelligent workstation is a personal support facility under the direct control of the knowledge worker. It extends the power of the user to tailor a workstation to his own requirements and to provide technical support, training, etc.

Transaction Processing System (TPS)

This system is designed for processing day-to-day transactions taking place in an organization. It involves the use of large volume of data and helps in operational control area of the company. The system is designed to capture data relating to various transactions within the organization and is well suited to highly structured routine tasks that support operational decision-making. The output of a transaction processing system becomes the input of Management

Information System. It refers to the traditional applications of computers, like invoicing, billing, order entry, despatch, delivery, stores, accounting, etc. In all these applications, any single transaction like invoicing would need updating of multiple data sources(data bases like accounts receivable, order status etc.) A transaction can be said to be complete if all the associated databases are updated. Many transaction-processing systems also use very large databases running on large mainframes and mini computers. They also call for very large processing of data by hundreds of users using equipment distributed over dozens of locations spread over a vast geographical area. Such systems receive substantial attention from researchers and application specialists. TPS captures much of the information needed for programmed decisions.

Information Support Systems (ISS)

Information support systems are also known as Office Automation Systems, and are characterized by repetitive, short-term, input-output-oriented systems used by a number of end-user, like clerks, typists, accountants, etc. various accounting systems like payroll invoicing, billing inquiry, etc., belong to this category. Office automation systems are more tuned to generation of information rather than to the use of information. They generally form the basis of all other information systems and the information generated by an ISS forms the general database. Information support for such systems must be simple, flexible and user-friendly. The widespread usage of office Automation system in large system like Railway Reservation System is an example of user-friendliness of this type of support systems. Standardization, application probability, data and format compatibility, etc., are the problems that must be resolved in Information Support Systems. The use of standardized software for purposes like accounting is the current development in this area. The emergence of integrated software and bundled softwares like MS office, Word perfect office, etc., represents the changing profile of applications in this area. Integration with other office aids like copying phone, fax dictation equipment, TV and other types of projection equipment represents yet another development that will lead to exciting application in this area, besides DTP, Desk Top Video, Desk Top Video Conferencing, etc.

Decision Support Systems (DSS)

Decision Support System is a set of well-defined, integrated, user-friendly, computer-based tool that combines internal and external data with various decision-making models, to solve semi-structured and unstructured problems. It is a type of system, which supports the decision-making process, and should provide easy access to databases containing relevant data and information. The important types of DSS are:

1. File drawer systems allowing immediate access to data
2. Data analysis systems permitting data manipulation.
3. Analysis information systems providing access to data bases and small models.
4. Accounting models calculating the consequences of planned actions and generating estimates of income, balance sheet, etc.
5. Representational models estimating the consequences of actions on the basis of various models like simulation or risk analysis model.
6. Optimizing models providing guidelines for actions by generating optimal solutions.
7. Suggesting models computing a specific, suggested, structured and repetitive decision.

The important features of a DSS are:

1. It facilitates semi-structured and unstructured decision-making by bringing together data, models and human judgment.
2. DSS can provide decision support for several interdependent decisions.
3. It supports a wide variety of decision-making models.
4. DSS assists the decision-maker to make decisions under dynamic business conditions.
5. Lastly, it helps the decision-maker by answering ad hoc queries, like the number of machines to be operated, amount of materials to be required for a particular order, etc.

Application of a DSS

Decision problems can be divided into three categories, such as independent, interrelated and organizational. Independent problems are those problems, the solutions to which are independent of the others. The purpose of such decisions is simply to find the best solution to the specific problem. For interrelated problems, the solutions are also interrelated. The purpose of decisions in such a problem is to find out the best solution to the entire set and not just to individual problems and it requires a team effort. Organizational problems are problems, which affect the entire organization. Such problems also require a team effort.

Components of a DSS

The data required to solve a problem may come from internal or external databases. Internal data are obtained by way of TPS and MIS. External data comes from a variety of ways such as periodicals, journals, etc., and include government policy, economic indicators, inflation rates, etc. The data in a DSS are managed by DBMS, Model Management System and support tools.

Model Management System

It is the second component of a DSS, which stores and access models that managers use to make decisions. The important models are:

1. Statistical models: These are used to perform a wide range of statistical functions, such as average, standard deviation, graphical analysis, regression analysis, variance analysis, etc.

2. Financial and Accounting models: They allow the decision-maker to measure and access the financial implication of various alternatives and include analysis of profit and loss, cost-benefit analysis, investment analysis, etc. They are also used to calculate various ratios and other measures of financial health and performance.

3. Production models: These models are mostly used on the shop-floor to make production related decisions, such as the number of machine to be operated, manpower requirements, etc.

4. Marketing models: Such models include product pricing models, store allocation, advertising strategy, product design models, etc.

5. Human resource models: They help the managers to make decisions involving company personnel, job-related issues, etc. Such models include HR, Planning, model assessment of training needs, projecting future personnel needs, labour negotiations, etc.

Support Tools

This is the third component of a decision support system. It involves graphical analysis, error correction mechanism, user interfaces, etc. Interfaces are an important support tool because middle and top managers have neither the time nor the inclination to learn difficult and complicated procedures; in order to run a system. The better the interface, the greater the chances that the users will accept the system.

Functions of a DSS

The DSS has five major functions facilitating managerial decision-making. They are:

1. Model building: The function helps the managers to identify and develop decision-making models, by considering input variables and their interrelationships, model assumptions and constraints. A model builder uses a structured framework to identify all the variables in the forecasting of the model, to analyse the relationship among these variables, to identify the assumptions, if any and to identify constraints. The system then integrates all this information into a decision-making model, which can be updated and modified whenever necessary.

2. What–if analysis: It involves the process of assessing the impact of changes in model variation of these. For example, how much is the profit if 10 per cent increase in raw materials cost and 5 per cent reduction in sales effected?

3. Goal seeking: It allows the decision-maker to identify the course of action to be undertaken to achieve a specific goal. The system addresses the question: what should be the value of the input variables if a certain goal is to be achieved.

4. Risk analysis: It helps to calculate the risk associated with various alternatives with the help of probabilities and various other statistical techniques. If the decision-maker prefers high risk, then the recommendations of the system are likely to be high risk- oriented.

5. Graphical analysis: It is a display of data in an easy-to-understand format, using graphs, charts, tables and figures. It helps managers to quickly digest large volume of data and visualize the impact of various courses of action.

Evaluation of Information Systems

The importance of information system can be emphasized by the fact that much of the decision making activity is based on information systems. Any successful information system should consider the information needs of managers at various levels. Information systems can be explained in terms of operating elements, decision support, management activity, and organizational functions. The physical components of an information system are hardware, software, database, procedures, and personnel. The processing requirements include process transactions, process inquiries, maintenance of master files, providing reports, and processing interactive support applications. The output provides the users with monitoring and action information. The information requirements of an organization vary with changes in the level of management. Even though the terms 'computer system' and 'information system' are used synonymously, the concept of information system is very wide, whereas the computer system provides only the technological component of the information system.

Conclusion

MIS system may be formal or informal, public or private, and conceptual or physical. Anthony classified the three levels of management into strategic, tactical and operational. To be successful, MIS must consider this classification of management. In fact, there is a school of thought which argues that data processing serves the need of operational management, that MIS serves the tactical management, and that strategic level of management cannot be supported by information systems at all. Computers have fundamentally changed MIS from an abstract concept to a concrete system providing competitive advantage. The modern information system primarily aims at organizing the corporate data resource in an effective manner, for flexible, corporate, and wide access, and at gaining from competitive advantage accruing from the effective use of such information system.

Exercise

Short Answer Questions

1. What do you mean by information networks?
2. Distinguish between formal and informal information systems.
3. What is modularity in information system?
4. Describe the operating demerits of MIS.
5. Explain the structure of MIS on the basis of decision support.
6. Explain the information requirements of managers at different levels of organization.
7. Discuss the structure of MIS on the basis of managerial activity.
8. Describe the information requirements of managers on the basis of organizational function.
9. Explain structure of MIS on the basis of organizational functions.
10. Discuss the physical structure of MIS.
11. What is meant by the conceptual structure of MIS?
12. Explain the concept and meaning of knowledge work.
13. Describe the technology support and its significance in knowledge work.
14. What are the important software support facilities for knowledge work?
15. Define transaction Processing System (TPS).
16. Explain Information Support System (ISS).
17. What is a Decision Support System (DSS).
18. Described the characteristics of a DSS.
19. Discuss the application of a DSS?
20. What are the components of a DSS?
21. Briefly explain the functions of a DSS.
22. What do you mean by model building?

Essay Questions

1. Describe the structure of an MIS.
2. Explain the concept of knowledge work and brings out its significance.
3. Explain various support systems in MIS and their applications.
4. What is a DSS? Explain in detail its applications components and functions.
5. Explain the concept of integration in information system and bring out its need and significance.