IMPORTANCE OF INFORMATION FOR MANAGEMENT DECISIONS

MIS:

A management information system (MIS) is proficient in providing data that is essential for the effective business management of a company. It uses validated procedures to provide effective management at all standards of operations, with the most effective knowledge based on statistics from both intrinsic and extrinsic sources; so as to empower them to make favorable decisions for planning, directing, and regulating all the activities, which they are looked forward to. Judicious and fair settlements in business heavily rely on the MIS, as well as the data brought forth by it.

Thus, MIS is most useful not only in the conglomeration of business information, but also in the production of accounts and reports that are worthy of usage as applications, for effective decision-making processes. This contributes to the vitality of data and maintenance management in organizations.

Purpose

With the ever-changing transformations in circumstances and environment, modern technology's fostered recourse to management information processes is much required. Companies all over the world face a huge number of problems such as, lack of management contribution to the design and development, wretched appreciation in support from the side of management, incompatible importance to the technology structure of the company, poor financial management, and negligible attention to the inferior quality processing applications in all areas.

In this case, the MIS manifest their importance within the performance structure of organizations. They make an effective contribution to the system design by making the knowledge specialists such as system experts, controllers, and operation analysts, cognizant of managerial operations and requirements, which will contribute to the development of an even more effective MIS within the company.

Benefits

These systems facilitate data not only for the present events, but also on the past as well as future projects, both within and outside the organization. Being a planned and integrated system of accumulating pertinent information, these systems efficaciously provide valuable information to the right seekers at the right time. As a result, they have many benefits and advantages.

- MIS collaboratively provides data, as well as assists in the planning and regulation of managers in an organization.
- Information fetched by them is vitally used by companies, as an effective tool for developing new products and relationships, with their suppliers and customers. This helps to transform their intimate operations as well as the business structure.
- It formulates electronic associations to both the suppliers and the customers, which helps companies to lock-in businesses, resulting in hoisting up the switching charges.
- The quality and provision of operations improves with the help of relevant data for a profound decision-making process. Often, as a result of the increasing size and intricacy of companies and their operations, managers lose touch with the scenario of what is actually happening within the organization.
- Most importantly, MIS eases the integration of specialized operations, by outspreading awareness regarding all problems and requisites of other sections within the company, which leads to linking of all the decision points of the respective departments of the organization.

  There is a need to develop such effective systems in all companies, in order to facilitate modern management professionals with crucial marketing, economic, production, and effective data on products and services, offered by their organization.

SYSTEM APPROACH

A system is a set of inter-connected and inter-related elements directed to achieve certain goals. It views organization as an organic and open system composed of many sub-systems. As a system organization is composed of a number of sub-systems viz. production, supportive, maintenance, adaptive managerial, individuals and informal groups.

The major features of the approach to the study of management may be summed up as under:

1. A system consists of inter-related and interdependent parts.
2. The approach emphasizes the study of the various parts in their inter-relationships rather than in isolation from each other.
3. The approach brings out the complexity of a real life management problem much more sharply than any of other approaches.

4. The approach may be utilized by any of the other approaches.
5. The approach has been utilized in studying the function of complex organizations and has been utilized as the base for new kinds of organization.

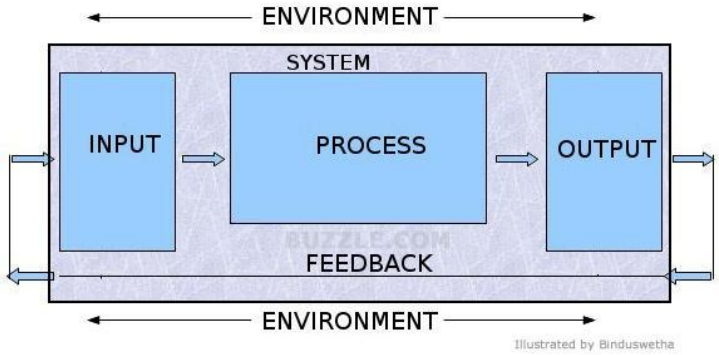
The Systems Approach has an edge over the other approaches insofar as its closeness to reality is concerned. However the problem with the approach is its utter complexity particularly when it comes to a study of large and complex organizations.

A systems approach to management views the company as several smaller parts, or systems. Each system executes its functions as a largely independent unit. In this approach, management, or leadership steers the company into the directions it wishes to go.

"All organizations are perfectly designed to get the results they are now getting. If we want different results, we must change the way we do things."

The systems approach to management is a concept which views a company as an interconnected purposive system that consists of several business sections. The entire system can be broken into three parts namely - input, process and output.

- Input involves the raw materials, funds, technology, etc.
- The process refers to activities related to management, technology, operations, etc.
- Outputs are the products, results, etc.
- The response or feedback in a system focuses on the information and data which is utilized for executing certain operations. These inputs aid in correcting the errors found in the processes.



A SYSTEM

INFORMATION SYSTEM DEVELOPMENT

System development requires careful analysis and design before implementation. System development is a set of activities used to build an information system.

We define ISD as "a change process taken with respect to object systems in a set of environments by a development group using *tools* and an organized collection of *techniques* collectively referred to as a *method* to achieve or maintain some objectives".

ISD is understood to include development of both manual and computerized parts of an object system. An IS can therefore include both manual and computer-supported parts. By using a technique, system developers perceive, define and communicate on certain aspects of the current or desired object system.

These aspects are defined by the conceptual structure of the technique and represented by the notation. By a *tool* we generally mean a computer-based application which supports the use of a modeling technique.

As a technique, a data flow diagram identifies and names the objects like process, store and relationships like data flow & control flow; which it considers important in developing an IS. Other techniques include other sets of objects and relationships. Modeling techniques also have a notation and a representation form.

In a data flow diagram the notation for a process is a circle, and for a data flow a solid line with an arrow-head. The representation form of a data flow diagram is a graphical diagram.

A *method* can be considered as a predefined and organized collection of techniques and a set of rules which state by whom, in what order, and in what way the techniques are used to achieve or maintain some objectives.

Examples of methods include Structured Analysis and Design, and the object-oriented methods. The method knowledge of SA/SD can be discussed in terms of the techniques like data flow diagram, entity-relationship diagram and their interrelations.

In SA/SD the overall view of the object system is perceived through a hierarchical structure of the processes that the system includes. This overall topology is completed by data transformations; how data is used and produced by different processes, how it is transformed between processes, and where it is stored.

System development should follow three general guidelines like group activities, user involvement, defining standards. System development should involve representatives from each department in which the proposed system will be used.

SA/SD and other methods put forward a defined and a limited number of techniques including their conceptual structures and notations. Different methods include different types and sets of techniques. Interrelations between techniques can be defined differently even between methods which use the same techniques, and the procedures for building and analyzing models can be different. Although there is diversity among ISD methods they include similarities, e.g. they apply the same concepts and notations.

INFORMATION SYSTEM ARCHITECTURE

Information system architecture is a formal definition of the business processes and rules, systems structure, technical framework, and product technologies for a business or organizational information system.

The architecture of an information system encompasses the hardware and software used to deliver the solution to the final consumer of services. The architecture is a description of the design and contents of a computerized system.

If documented, the architecture may include information such as a detailed inventory of current hardware, software and networking capabilities; a description of long-range plans and priorities for future purchases, and a plan for upgrading and/or replacing dated equipment and software.

The architecture of an information system defines that system in terms of components and interactions among those components, from the viewpoint of specific aspects of that system, and based on specific structuring principles.

INTERPRETING INFORMATION SYSTEM ARCHITECTURE:

In order to interpret the information system architecture we need to know the following:

Syntax: It describes or represents the structure of the architecture.

Semantics: It describes the meaning of components and their interactions.

Pragmatics: It tells us about the reasons behind the structure of the architecture and meaning of the components and their interactions.

ASPECTS OF ARCHITECTURE

There are several aspects to maintain the information system architecture like

Data aspect architecture – Architecture of data managed by systems, e.g. ER diagrams.

System aspect architecture - Architecture of application software, e.g. data flow diagrams or module diagrams

Configuration aspect architecture - Architecture of hardware and low-level software like OS, DBMS. e.g. configuration diagrams.

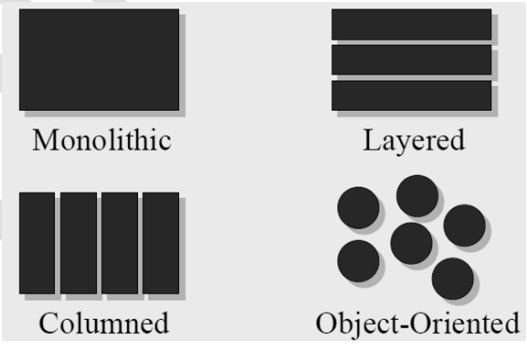
Communication aspect architecture - Architecture of communication infrastructure like networks, communication software e.g. topology diagrams

Organization aspect architecture - Architecture of organization structure and processes related to administration and maintenance of systems, using e.g. organigrams and procedure handbooks

Type of IS architectures

Based on structuring principles:

- Monolithic / Layered / Columned / OO

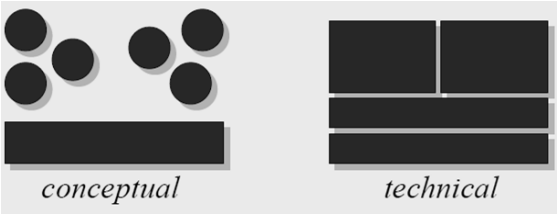


- Single-Level versus Multi-Level

Based on purpose:

- Conceptual versus Technical

Conceptual architecture: Describes structure of conceptual design of system.



Technical architecture: Describes structure of implementation of system.

- Application versus General System

  Application: Describes architecture for specific application and context

  General system: Describes architecture for general application and context

- Reference versus Concrete

  Concrete: Describes architecture of a specific system to be directly applied

  Reference: Describes blue-print of abstract system to be "concretized" before application

QUANTITATIVE TECHNIQUES

In the business world, and in fact, in practically every aspect of daily living, quantitative techniques are used to assist in decision making. In order to work effectively in a modern business organization, whether the organization is a private commercial company, a government agency, a state industry or whatever, managers must be able to use quantitative techniques in a confident and reliable manner.

Accountants make decisions based on the information relating to the financial state of organization. Economists make decision based on the information relating to the economic framework in which the organization operates. Marketing staff make decisions based on customer response to product and design.

Personnel managers make decisions based on the information relating to the levels of employment in the organization, and so on. Such information is increasingly quantitative and it is apparent that managers need a working knowledge of the procedures and techniques appropriate for analyzing and evaluating such information.

Such analysis and certainly the business evaluation cannot be delegated to the specialist statistician or mathematician, who, adept though they might be at sophisticated numerical

analysis will frequently have little overall understanding of the business relevance of such analysis.

The quantitative methods have a number of attributes, such as: they employ measurable data to reach comparable and useful results, assume alternative plans for achieving objectives, plan data, concerning observations collection, configuration and elaboration by statistical and econometric stochastic methods, check data reliability, choose appropriate sampling method, use carefully the estimates of the parameters for forecasting and planning purposes, etc. since they derive from ex-post data concerning past.

In an increasingly complex business environment managers have to grapple with a problems and issues which range from the relatively trivial to the strategic. In such an environment the quantitative techniques have an important role.

MANAGEMENT INFORMATION SYSTEMS INTERFACING

In any underground storage project there will be interfaces that involve physical interference, equipment incompatibility, or schedule inconsistencies.

Interface Management is defined as a system that manages and controls the flow of information between the various systems involved in an underground storage project (both internal and external interfaces).

Internal Interfaces are defined as those interfaces between parties within the project management team, as well as interfaces from a vendor that only require the input from the project management team.

External Interfaces are defined as those interfaces between two (or more) of the project contractors (distinct entities responsible for some work scope on the project). The purpose of the Interface Management System is to provide a structured communication process to control the exchange of information between the systems.

The primary goal of the Interface Management System through tracking these interfaces to closure is to ensure that design, engineering, procurement, fabrication and construction are performed with a minimum risk of subsequent changes or design flaws related to interface issues.

The objectives of the Interface Management System are to:

- Provide a framework for the identification and definition of all interfaces.

- Provide a system that eliminates gaps and overlaps in work scope packages between various systems.
- Provide a system that tracks the progress of the resolution of interfaces.
- Provide a means for assessing the impact on the project if an interface information requirement is not received in a timely fashion.
- Provide a system whereby issues can be identified and resolved in an orderly and time efficient manner to minimize impact on the project.
- Provide a framework for defining engineering requirements at an interface.
- Highlight critical areas and potential conflicts.
- Schedule and update interface activities.