MBA : Sem-4

Computer Application And Management Information System

MB 402

UNIT V – Management Information System (MIS)

✉: bobbyban29@gmail.com

✆: 95 76 71 28 45

Shamit Sarkhel, Guest Faculty

Department of Applied Economics & Commerce

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Concept of Management Information System (Continued) & Decision Making System

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Overall Role of MIS

- MIS is the *"Heart"* of any organization. It plays a vital role in management, administration and operations of the organisation. It :-
  - Fulfills the **information needs** of the organization by ensures mining (validation) of data collected from various sources and smooth passege of the same, further to all the units/destination, wherever required.
  - Facitates top level management in **evolving the business plans** and their implementations.
  - Helps in **decision making** through a variety of systems such as query systems, analysis modeling systems and Decision Support Systems.
  - Provides **operational data** for planning, scheduling and controlling the tasks related to achieving the goal.

Impacts of MIS

- Since MIS plays a very important role in the organisation, it creates an **impact on** the organisation's **functions, performance and productivity**.
- With a good MIS support, the management of marketing, finance, production and personnel becomes more sufficient.
- The tracking and monitoring of the functional targets become easy. The functional managers are informed about the progress, achievements and shortfalls in the activity and targets. Important information provided by the system indicates the probable trends in the various aspects of business.

Impacts of MIS (Contd…)

- This helps in forecasting and long term perspective planning. The managers attention is brought to a situation which is exceptional in nature, inducing him to take action or a decision in the matter, **thereby helping in tuning the performance**.
- A disciplined information reporting system creates a structured database and a knowledge base for all the people in the organisation. The information is available in such a form that it can be used straight away or by blending and analysis, saving the manager, some valuable time **thereby enhancing the productivity**.

Decision, Business Decision & Decision Making

- A decision is **the choice** out of several options made by the decision maker to achieve some objective in a given situation.
- The word "decision" is derived from the Latin word *decido*, meaning *to cut off*. The concept of decision, therefore, is settlement, a fixed intention bringing to a conclusive result. It is a judgment and a resolution.
- **Business decisions** are those, which are made in the process of conducting business, to achieve its objectives in a given environment.
- **Decision making process** involves drawing conclusion with **due regard to the rationality of the situation**.

Decision, Business Decision & Decision Making

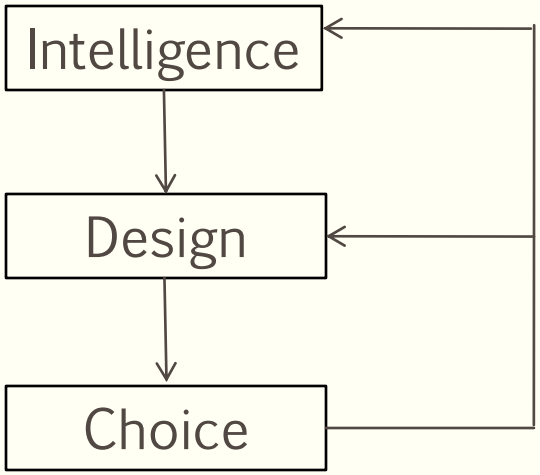
The decision making process is a complex process in the higher hierarchy of management. The complexity is the result of many factors, such as the inter-relationship among the experts or decision makers, a job responsibility, a question of feasibility, the codes of morals and ethics, and a probable impact on business.

The major characteristics of the business decision making are:

- **Sequential** in nature.
- **Complex** due to risks involved.
- **Influenced** by personal values.
- Made in **specific business environment**.
- **Related to** some other decision or situation.

Herbert Simon's Model of Decision Making Process

- The core of decision making process is described by the model proposed by Herbert Simon. He describes the model in three phases as shown in the figure below :



The process, involves backtracking to earlier stages. For example, some data is gathered, an attempt is made to define the problem. Subsequently, more data may have gathered. Then a second attempt is made to define the problem and so on.

In the intelligence stage, there is problem recognition or recognition of an opportunity that must be exploited. In this stage, data is first gathered and then analyzed by mathematical models to produce more data.

In design stage, the decision maker tries to understand the problem and generate solutions for feasibility.

In the third stage choice is made and implemented.

Herbert Simon's Model of Decision Making Process

- **Intelliqence Phase** : The intelligence phase of decision making process involves monitoring the organisation, its environment for problems and opportunities, identifying any problems or opportunities, and gathering data that have some bearing, on what to do about the problems or opportunities.
- Many decision environments, call for systems that regularly monitor groups of data, in order to quickly identify shifts, trends that signal a problem or opportunity.
- Identifying a problem or opportunity is the next step in the decision making process. Successful problem identification often involves having a good sense of differentiating problems from symptoms.

Herbert Simon's Model of Decision Making Process

- **Design Phase :** This phase refers to formulating a problem or an opportunity, developing solutions to solve the problem, exploit the opportunity and testing solutions for feasibility.
- Formulation involves rigorously defining a problem or an opportunity. This might involve modeling the problem mathematically or alternatively, drawing various graphical models and sub models of the underlying system.
- Developing alternatives requires creativity and involves listing a number of possible solutions and then testing them.

Herbert Simon's Model of Decision Making Process

- **Choice Phase :** The choice of an action depends on a variety of factors like external environment, the organisation, time and the decision maker.
- To many decision makers, good choices ultimately fall into one of categories:
- perfect ones (those decisions that could not have possibly turned better), referred to as optimizing .
- highly pleasing ones (those decisions that might not have a perfect, but nonetheless results in something that achieves a high aspiration level) referred to as satisfying.
- those that represent merely a marginal improvement over what is currently in effect referred to as muddling with a purpose.

Type of Decision

1. **Programmed decisions:** The decisions in which a problem is solved by a predefined procedure or algorithm. These decisions are repetitive and routine in nature and are capable of being modelled mathematically in their entirety. Therefore, these decisions are structured decisions. The examples of such decisions are :
   - preparation of pay in accordance with the laid out regulations
   - inventory ordering.

   To arrive at the programmed decisions, a solution manual to problems is prepared to help the users. Some characteristics of such decisions are :
   - These decisions can be delegated
   - The cost of solving a problem is low compared to non-programmed rules
   - Such decisions can be made with the help of the computer system.

Type of Decision

2. **Non programmed decisions:** These decisions are unstructured, occasional, of high consequence, complex and involve major commitments. There is no predefined program or set decision rules or algorithm available to solve these problems automatically. The examples of such decisions are :
   - advertising budget
   - new product decisions
   - acquisition of capital projects

   Some characteristics of such decisions are:
   - These decisions are novel and difficult to structure in logical mathematical terms
   - These decisions cannot be delegated, and are based on management direction, thinking and deliberations
   - Computers cannot be used directly for such decisions.

Type of Decision

3. **Semi programmed decisions :**
   In these types of decision, at least one but not more than two of the previous types can be handled by a well defined preset procedure.

   An example of such a decision is the intelligence phase (of Herbert Simon Model), which is well structured, having diverse kinds of variance analysis. Here a comparison with a budget is undertaken in a well defined way to indicate the need for a decision.

   Subsequent stages of design and choice are, however, not handled by any set procedure.