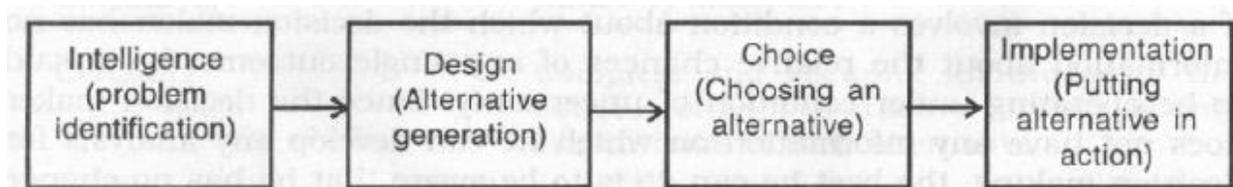


## Decision making Process

When a manager makes a decision, it is, in effect, the organization's response to a problem. As such, a decision should be thought of as a means rather than an end. Every decision is the outcome of a dynamic process which is influenced by multiple forces. However, what are the different stages of this process, there is no unanimity. Herbert Simon, an expert on decision making has proposed three phases of decision making intelligence, design, and choice. As against these phases, Rubenstein and Haberstroh have proposed five phases-recognition of problem or need for a decision, analysis and statement of alternatives, choice among the alternatives, communication and implementation of decision, and follow-up and feedback results of decision.



Various phases of decision-making process presented in Figure are more relevant for non-programmed decisions. Problems that occur infrequently are unstructured and are characterized by a great deal of uncertainty regarding the outcomes of various alternatives, require the managers to utilize the entire process. For frequently occurring structured problems, it is not necessary to consider the entire process because decision rules are developed to handle such problems and it is not necessary to develop and evaluate various alternatives each time such a problem arises.

Let us now discuss the various phases, problems involved there in, and the type of information systems required to furnish information to overcome these problems.

### **(a) Intelligence Phase :**

Intelligence phase of decision-making process involves searching the environment for conditions calling for decisions. This is related with the identification and formulation of the problem which is to be solved by the decision. A problem is the gap between present state of affairs and desired state of affairs on the subject-matter of decision.

When a problem is identified, it remains vague at the initial stage. In order to make it more clear and specific, problem formulation is required so that design and choice phases operate on the right problem. At this stage, the problem identified earlier, is defined more precisely and some complexity is reduced.

MacGrimmon and Taylor have suggested four strategies for reducing complexity and formulating a problem :

1. Determining the boundaries (clearly identifying what is included in the problem).
2. Examining changes that may have precipitated the problem.
3. Factoring the problem into smaller sub-problems.
4. Focusing on controllable elements.

For this phase of decision making, information requirement is in the form of exception reporting, that is, what kind of deviation exists between desired state of affairs and actual state of affairs. Such type of information is provided by structured information- systems that deliver a wide variety of detailed information.

### **Design Phase :**

Design phase of decision making involves generation of possible alternatives through which the problem can be solved. A problem can be solved in several ways, however, all the ways cannot be equally satisfying. Further, if there is only one way of solving a problem, no question of decision arises. Therefore, the decision maker must try to find out the various alternatives available in order to get the most satisfactory result of a decision. Identification of various alternatives not only serves the purpose of selecting the most satisfactory one, but it also avoids bottlenecks in operation as alternatives are available if a particular decision goes wrong. However, it should be borne in mind that - it may not be possible to consider all alternatives either because some of the alternatives cannot be considered for selection because of obvious limitations of the decision maker or information about all alternatives may not be available. Therefore, while generating alternatives, the concept of limiting factor should be applied. A limiting factor is one which stands in the way of accomplishing a desired objective. If these factors are identified, managers will confine their search for alternatives to those which will overcome the limiting factors. For example, if an organization has limitation in raising sizable finances, it cannot consider projects involving high

investment.

A decision maker can use several sources for identifying alternatives his own past experience, practices followed by others, and using creative techniques. Past experience. applied in most cases of decision making, takes into account the actions taken by the decision maker in the past with obvious differences between the former challenges and the present one. The successful action of the past may become an alternative for the future. This is a very simple approach but has obvious limitations because there may be so much changes in the decision context that old action becomes totally irrelevant. Copying from the experiences of others is another way of generating alternatives. Thus, alternatives used by successful decision makers can be thought of as alternatives of decision making. This is also practiced by many organizations after making suitable amendments in the light of changed decision context. Importing of technology from foreign countries with suitable changes is good example of this type of alternatives. The third method of generating alternatives is through creative process where various exercises are taken to generate entirely new ideas.

The design phase of decision making may require more intelligence so that the manager can decide if a particular alternative is suitable for solving the problem. This phase may entail more carefully specified and directed information activities which are, generally, provided by decision support systems as they operate on simple models and can be operated with limited data.

### **(c) Choice Phase :**

Choice phase of decision making involves choice of an alternative which can be put into action to solve the problem. For choosing an alternative which aims at solving the problem in the most appropriate way in a given situation, the manager must evaluate all the alternatives generated at the design stage. However, all alternatives available for decision making will not be taken for detailed evaluation because of the obvious limitations of managers in evaluating all alternatives. The energy of managers is limited and psychologically most of them prefer to work on plans that have good prospect of being carried out. In narrowing down the number of alternatives, two approaches can be followed-constraint on alternatives and grouping of alternatives of similar nature. The decision maker develops a list of limits that must be met by a satisfactory solution. He may treat these limits as constraints, that is, he may check proposed alternatives against limits, and if an alternative does not meet them, he can discard it. In the second approach, various alternatives can be grouped into classes on some specific criteria important to decision making. A representative alternative from one group may be selected for further analysis. After identifying the group that shows up the best, decision maker can concentrate on alternatives within this group. This method is very helpful in decision making regarding the location of plant. Warehouse, etc.

Having narrowed down the alternatives which require serious consideration, the decision maker will go for evaluating how each alternative may contribute towards the solution of the problem or objectives supposed to be achieved by implementing the decision. Evaluation of various alternatives dissects an alternative into various tangible and intangible factors.

Tangible factors are those which can be quantified because they are quite obvious like the cost per unit investment required, output to be received, etc. Such factors can be measured easily though their happening may not be measured with certainty; for example, demand projection at a given price in a particular alternative. As against these, intangible factors are mostly qualitative and cannot be measured in terms of quantity. Therefore, some definitions can be used for such factors. For example, in a plant location various non-economic factors like psychological problem arising out of displacement of persons from the plant site, ecological balance, etc. have to be taken into account which cannot be quantified. In evaluating an alternative, both these factors have to be taken into account.

Evaluation of various alternatives presents a clear picture as to how each of these contributes to solution of the problem. A comparison is made among likely outcomes of the various alternatives and the most appropriate one is chosen. Choice aspect of decision making is, thus, related to deciding the most acceptable alternative which fits with the organizational objectives. It may be seen that the chosen alternative should be acceptable in the light of organizational objectives, and it is not necessary that the chosen alternative is the best one.

At the choice phase of decision making, the manager requires information tools that can keep track of the consequences, costs, and opportunities by each alternative generated at the design phase. The manager requires a larger decision support system to develop more extensive data on a variety of alternatives and to use complex analytical models to account for all the consequences.

#### **(d) Implementation Phase :**

Once an alternative is chosen, it is implemented, that is, it is put into action. Truly speaking, the actual process of decision making ends with the choice of an alternative through which the objectives can be achieved. However, decision making, being a continuous and ongoing process, must ensure that the problem has been solved and the objectives have been achieved by the chosen alternative. Unless this is done, managers will never know what way their choice has contributed. Therefore, the implementation of decision may be seen as an integral aspect of decision. Once the creative and analytical aspects of decision making through which an alternative has been chosen are over the managerial priority is one of converting the decision into something effective. This is the implementation aspect of decision making. The basic difference between decision making as an analytical process and implementation is that the former requires the use of

conceptual skills since it translates the abstract ideas into reality. For example, suppose that there is a change in consumers tastes. This change is very abstract and cannot be seen unless some specific techniques and measurements are applied.

How this change can provide opportunity to the organization is mostly a conceptual exercise requiring managers to interpret what changes are taking place and what products or services will be preferred in the changed situation.

Implementation, on the other hand, relates to putting a decision into practice so that objectives of decision are achieved. This practice will provide further feedback for evaluating the soundness of the decision and if need be, a change in the decision.

Implementation of a decision requires the communication to subordinates, getting acceptance of subordinates over the matters involved in the decision, and getting their support for putting the decision into action. The decision should be effected at appropriate time and in proper way to make the implementation more effective.

The effectiveness of implementation is important because it is only effective action through which organizational objectives can be achieved. When a decision is put into action, it brings certain results. These results provide indication whether decision making and its implementation is proper. Therefore, managers should take follow-up action in the light of feedback received from the results. If there is any deviation between objectives and results this should be analyzed and factors responsible for this deviation should be located. The feedback may also help in reviewing the decision when conditions change which may require change in the decision.

At the implementation phase, managers can use structured information system that provides routine reports on the progress of a solution. This system should also indicate the difficulties that arise, resource constraints, and possible corrective actions. For this purpose. Information systems may -range from integrated management information systems to much smaller systems as well as project planning software operating on microcomputers.

Table 9.3 presents the summary of decision-making phases. Information requirement. And supporting information systems.

<i>Decision-making phase</i>	<i>Information required</i>	<i>Supporting information systems</i>
Intelligence	Exception reporting	Structured information systems
Design	Specified and directed information	Decision support systems and executive support systems
Choice	Information for evaluation	Large models of decision support systems
Implementation	Graphics and charts for monitoring	Integrated information systems, microcomputers and mainframe decision aids

## **METHODS OF DECIDING AMONG ALTERNATIVES**

There are different methods to evaluate various alternatives through which a problem can be solved. In evaluating alternatives, an attempt is made to find out the likely outcome of each alternative so that the alternative which is likely to provide maximum outcome is chosen. In evaluating the likely outcomes of various alternatives, generally, following methods are used:

1. Optimization techniques.
2. Pay-off matrices.
3. Decision tree.
4. Game theory.
5. Elimination by aspects.
6. Decisional balance sheet

DSS are an application of Herbert Simon model. In this model, there are 3 phases i.e; intelligence, design and choice. The DSS basically helps the information system in the intelligence phase where the objective is to identify the problem and then go to the design phase for solution. The choice of selection criterion varies from problem to problem.

Therefore, it is required to go through these phases again and again till a satisfactory solution is found. These systems are helpful in making a decision and also its performance evaluation.

These systems can be used to validate the decision by performing the sensitivity analysis on various parameters of the problem.

In decision making, programmed decisions, because of its rule base structure, can be computerized, as inputs, processing methodology, analysis and choice of decision making are predetermined. DSS can be built around the rule in case of programmed decision situation, while in non programmed decisions, the rules are not fixed or predetermined and requires the user to go through the decision making cycle as indicated in the Herbert Simon model, every time.