UNIT 9 DECISION MAKING

Objectives

After studying this Unit, you should be able to:

- Appreciate the three steps of the process through which you make any decision
- Classify the kinds of decisions you make
- Identify the varying degrees of knowledge under which you make decisions
- Recognize the assumptions of different models which either describe how decisions are made or prescribe how decisions should be made.
- Understand the necessity of identifying and evaluating a reasonable number of possible alternative courses of action for accomplishing organisation objectives
- Display familiarity with various means for generating alternative courses of action
- Decide to what extent participation of others is desirable; when and how group decision strategies should be used
- Diagnose roadblocks to effective decision making and develop some strategies to overcome them.

Structure

9.1 INTRODUCTION

You will possibly agree that decision making is a part of everyday life. The fact that you have taken up a course in management or the fact that you are

reading this Unit are both products of your decisions to do them against other alternatives which were available to you. Whether you are at a board meeting or in the playground, you are almost constantly making decisions, sometimes working on several at the same time. These may be major or minor, but some of these might have proved to be effective decisions, viz. appropriate, timely and acceptable. Some of your decisions might have been wrong, but you knew that there was something worse than a few wrong decisions and that was indecision!

Making decisions has been identified as one of the primary responsibilities of any manager. Decisions may involve allocating resources, appointing people, investing capital or introducing new products. If resources like men, money, machines, materials, time and. space were abundant, clearly any planning would be unnecessary. But, typically, resources are scarce and so there is a need for planning. Decision making is at the core of all planned activities. We can ill afford to waste scarce resources by making too many wrong decisions or by remaining indecisive for too long a time.

In this Unit, various techniques involved in decision making e.g. brainstorming, semantics, and nominal grouping are described and discussed. Then the Unit describes various methods for identification, selection of various alternatives and implementation of decisions made. Differences and similarities between individual versus group decision making are then explained, including the phenomenon of groupthink. Various barriers to effective decision making are finally enumerated.

9.2 THREE PHASES IN DECISION MAKING PROCESS

You can define decision making as the process of choosing between alternatives to achieve a goal. But if you closely look into this process of selecting among available alternatives, you will be able to identify three relatively distinct stages. Put into a time framework, you will find:

1. **The past,** in which problems developed, information accumulated, and the need for a decision was perceived;
2. **The present,** in which alternatives are found and the choice is made; and
3. **The future,** in which decisions will be carried out and evaluated.

Herbert Simon, the well-known Nobel laureate decision theorist, described the activities associated with three major stages in the following way:

1. **Intelligence Activity:** Borrowing from the military meaning of intelligence Simon describes this initial phase as an attempt to recognise and understand the nature of the problem, as well as search for the possible causes;
2. **Design Activity:** During the second phase, alternative courses of action are developed and analyzed in the light of known constraints; and

3. **Choice Activity:** The actual choice among available and assessed alternatives is made at this stage.

If you have followed the nature of activities of these three phases, you should be able to see why the quality of any decision is largely influenced by the thoroughness of the intelligence and design phases.

Henry Mintzberg and some of his colleagues (1999) have traced the phases of some decisions actually taken in organisations. They have also come up with a three-phase model as shown in Figure I.

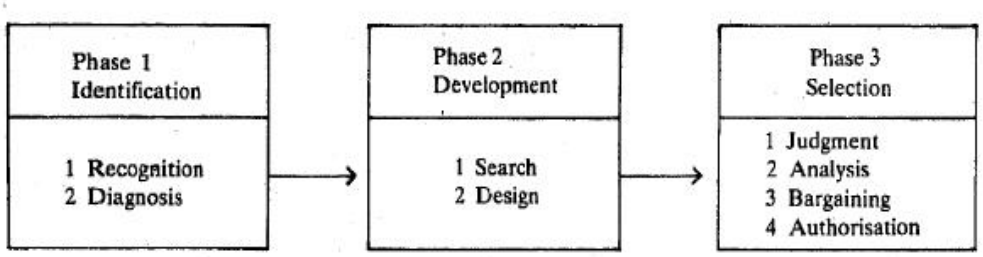

Fig. I: Mintzberg's empirically based phases of decision making in organizations

Source: Mintzberg, Raisinghani and Theoret, 1999.

1. **The identification phase,** during which **recognition** of a problem or opportunity arises and a **diagnosis** is made. It was found that severe immediate problems did not have a very systematic, extensive diagnosis but that milder problems did have.
2. **The development phase,** during which there may be a **search** for existing standard procedures, ready-made solutions or the **design** of a new, tailor-made solution. It was found that the design process was a grouping, trial and error process in which the decision-makers had only a vague idea of the ideal solution.
3. The selection phase, during which the choice of a solution is made. There are three ways of making this selection: by the **judgment** of the decision maker, on the basis of experience or intuition rather than logical analysis; by **analysis** of the alternatives on a logical, systematic basis; and by **bargaining** when the selection involves a group of decision makers. Once the decision is formally accepted, an **authorization** is made.

Note that the decision making is a dynamic process and there are many feedback loops in each of the phases. These feedback loops can be caused by problems of timing, politics, disagreement among decision-makers, inability to identify an appropriate alternative or to implement the solution or the sudden appearance of a new alternative etc. So, though on the surface, any decision-making appears to be a fairly simple three-stage process, it could actually be a highly complex dynamic process.

Activity A

Before we move on to the next topic on types of decisions that you and other managers make, let us pause to check whether we have understood the

general nature of any decision making situation. You will recall that decision making is a process by which we make a choice among various alternatives to achieve our goals. Based on this definition and earlier discussion, complete the missing entries in . Figure II of the Managerial Decision Process.

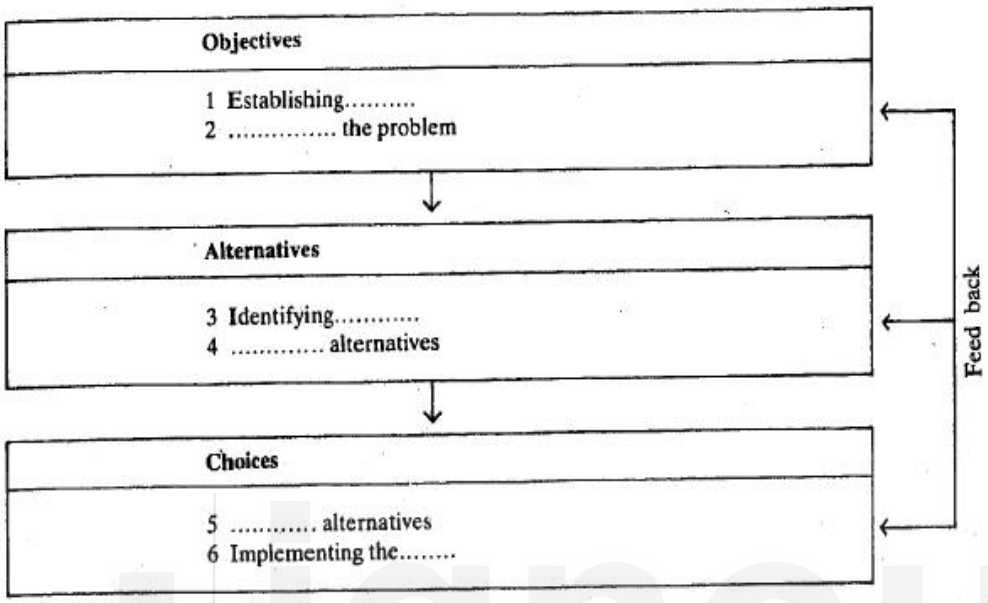

Fig. II: Managerial Decision Process

Answers:

- Objectives/ Goals
- Identifying/ Defining
- Alternatives
- Evaluating/ Assessing
- Selecting/ Choosing
- Decision/ Choice

9.3 TYPES OF MANAGERIAL DECISIONS

There are many types of decisions which you would be required to make as a manager. Three most widely recognised classifications are:

1) Personal and Organisational Decisions
2) Basic and Routine Decisions
3) Programmed and Non-programmed Decisions.

The first classification of **Personal** and **Organisational** decisions was suggested by Chester Barnard, nearly fifty years ago in his classic book: "The Functions of the Executive". In his opinion, the basic difference between the two decisions is that "personal decisions cannot ordinarily be delegated to others, whereas organisational decisions can often if not always be delegated" **(Barnard, 1939).** Thus, the manager makes organisational decisions that attempt to achieve organisational goals and personal decisions that attempt to

achieve personal goals. Note that personal decisions can affect the organisation, as in the case of a senior manager deciding to resign. However, if you analyse a decision, you may find that the distinctions between personal and organisational decisions are a matter of degree. You are, to some extent, personally involved in any organisational decision that you make and you need to resolve the conflicts that might arise between organisational and personal goals.

Another common way of classifying types of decisions is according to whether they are **basic** or **routine.** Basic decisions are those which are unique, one-time decisions involving long-range commitments of relative permanence or duration, or those involving large investments. Examples of basic decisions in a business firm include plant location, organisation structure, wage negotiations, product line, etc. In other words, most top management policy decisions can be considered as basic decisions.

Routine decisions are at the opposite extreme from basic decisions. They are the everyday, highly repetitive, management decisions which by themselves have little impact on the overall organisation. However, taken together, routine decisions play a tremendously important role in the success of an organisation. Examples of, routine' decisions are an accountant's decision on a new entry, a production supervisor's decision to appoint a new worker, and a salesperson's decision on what territory to cover. Obviously, a very large proportion (most experts estimate about 90 per cent) of the decisions made in an organisation are of the routine variety. However, the exact proportion of basic to routine types depends on the level of the organisation a which the decisions are made. For example, a first-line supervisor makes practically all the routine decisions whereas the chairperson of the board makes very few routine decisions but many basic decisions.

Simon (1999) distinguishes between **Programmed** (routine, repetitive) decisions and **Non-programmed** (unique, one-shot) decisions. While programmed decisions are typically handled through structured or bureaucratic techniques (standard operating procedures), non-programmed decisions must be made by managers using available information and their own judgement. As is often the case with managers, however, decisions are made under the pressure of time.

An important principle of organisation design that relates to managerial decision making is Gresham's Law of Planning. This law states that there is a general tendency for programmed activities to overshadow non-programmed activities. Hence, if you have a series of decisions to make, those that are more routine and repetitive will tend to be made before the ones that are unique and require considerable thought. This happens presumably because you attempt to clear your desk so that you can get down to the really serious decisions. Unfortunately, the desks very often never get cleared.

After going through the three types of classification of managerial decisions, you could see that there is no single and satisfactory way of classifying decision situations. Moreover, the foregoing classifications have ignored two important problem-related dimensions: (1) How **Complex** is the **Problem** in

terms of number of factors associated with it; and (2) how much **certainty** can be placed with the **outcome** of a decision. Based on these two dimensions, four kinds of decision modes can be identified: Mechanistic, Analytical, Judgmental, and Adaptive (See Figure Ill).

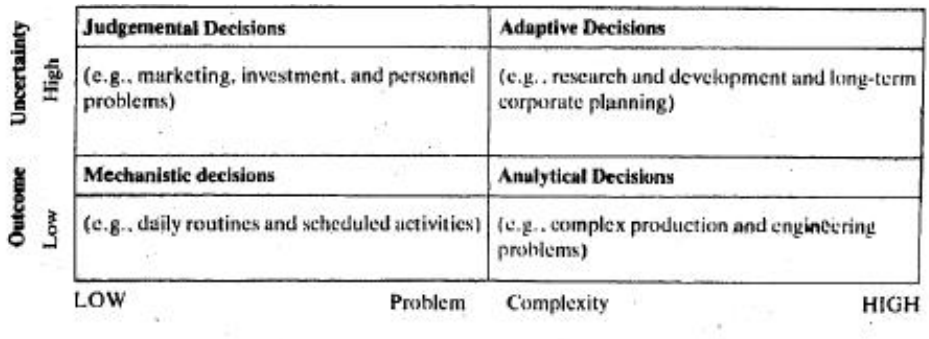

Fig. III: Types of Managerial Decisions

1. **Mechanistic Decisions:** A mechanistic decision is one that is routine and repetitive in nature. It usually occurs in a situation involving a limited number of decision variables where the outcomes of each alternative are known. For example, the manager of a bicycle shop may know from experience when and how many bicycles are to be ordered; or the decision may have been reached already, so the delivery is made routinely. Most mechanistic decision problems are solved by habitual responses, standard operating procedures, or clerical routines. In order to further simplify these mechanistic decisions, managers often develop charts, lists, matrices, decision trees, etc.

2. **Analytical Decisions:** An analytical decision involves a problem with a large number of decision variables, where the outcomes of each decision alternative can be computed. Many complex production and engineering problems are like this. They may be complex, but solutions can be found. Management science 'and operations research provide a variety of computational techniques that can be used to find optimal solutions. These techniques include linear programming, network analysis, inventory reorder model, queuing theory, statistical analysis, and so forth.

3. **Judgemental Decisions:** A judgemental decision involves a problem with a limited number of decision variables, but the outcomes of decision -alternatives are unknown. Many marketing, investment, and resource allocation problems come under this category. For example, the marketing manager may have several alternative ways of promoting a product, but he or she may not be sure of their outcomes. Good judgement is needed to increase the possibility of desired outcomes and minimise the possibility of undesired outcomes.

4. **Adaptive Decisions:** An adaptive decision involves a problem with a large number of decision variables, where outcomes are not predictable. Because of the complexity and uncertainty of such problems, decision makers are not able to agree on their nature or. on decision strategies. Such ill-structured problems usually require the contributions of many people with diverse technical backgrounds. In such a case, decision and

implementation strategies have to be frequently modified to accommodate new developments in technology and the environment.

Activity B

Refer to Figure III and subsequent discussions on four types of managerial decisions.

Answer the following questions.

1. Which types of managerial decisions correspond to "Programmed" decision?

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2. Which types of managerial decisions correspond to "Non-programmed" decision?

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3. Which types of managerial decisions correspond to "Basic" decision?

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Answers:

1. Mechanistic Decisions and Analytic Decisions.
2. Judgemental Decisions and Adaptive Decisions.
3. Judgemental Decisions, Adaptive Decisions and Analytic Decisions.

9.4 DECISION MAKING UNDER DIFFERENT STATES OF NATURE

In the previous topic on types of decisions you have seen that a decision-maker may not have complete knowledge about decision alternatives (i.e.,

High Problem, Complexity) or about the outcome of a chosen, alternative (i.e., High Outcome Uncertainty). These conditions of knowledge are often referred to as states of nature and have been labelled:

1. Decisions under Certainty.
2. Decisions under Risk
3. Decisions under Uncertainty

Figure IV depicts these three conditions on a continuum showing the relationship between knowledge and predictability of decision states.

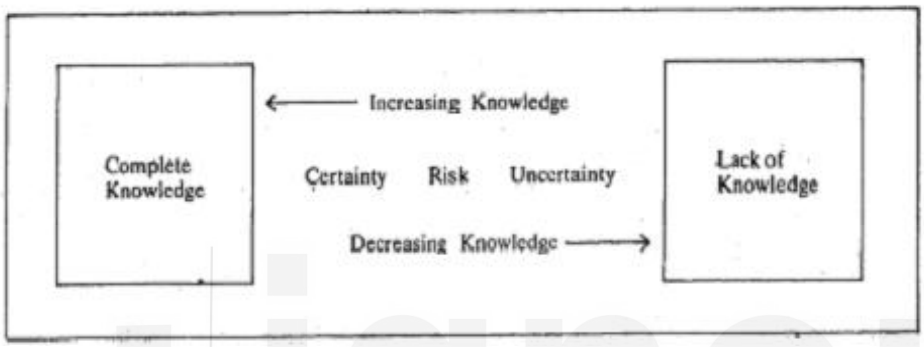


Fig. IV Decision Making Conditions Continuum

Decision making under certainty: A decision is made under conditions of certainty when a manager knows the precise outcome associated with each possible alternative or course of action. In such situations, there is perfect knowledge about alternatives and their consequences. Exact results are known in advance with complete (100 per cent) certainty. The probability of specific outcomes is assumed to be equal to one. A manager is simply faced with identifying the consequences of available alternatives and selecting the outcome with the highest benefit or payoff.

As you can probably imagine, managers rarely operate under conditions of certainty. The future is only barely known. Indeed, it is difficult to think of examples of all but the most trivial business decisions that are made under such conditions. One frequent illustration that is often cited as a decision under at least near certainty is the purchase of government bonds or certificates of deposit. For example, as per the assurance provided by Government of India, Rs. 1,000 invested in a 9-year National Savings Certificate will bring a fixed sum of Rs. 2,015 after six complete years of investment. It should still be realised, however, that the Government defaulting on its obligations is an unlikely probability, but the possibility still exists. This reinforces the point that very few decisions outcome can be considered a sure thing.

Decision making under risk: A decision is made under conditions of risk when a single action may result in more than one potential outcome, but the relative probability of each outcome is known. Decisions under conditions of risk are perhaps the most common. In such situations, alternatives are recognised, but their resulting consequences are probabilistic and doubtful. As an illustration, if you bet on number 9 for a single roll of a dice, you have

a 1/9 probability of winning in that there is only one chance in six of rolling a 9. While the alternatives are clear, the consequence is probabilistic and doubtful. Thus, a condition of risk may be said to exist. In practice, managers assess the likelihood of various outcomes occurring based on past experience, research, and other information. A quality control inspector, for example, might determine the probability of number of `rejects' per production run. Likewise, a safety engineer might determine the probability of number of accidents occurring, or a personnel manager might determine the probability of a certain turnover or absenteeism rate.

Decision making under uncertainty: A decision is made under conditions of uncertainty when a single action may result in more than one potential outcome, but the relative probability of each outcome is unknown. Decisions under. conditions of uncertainty are unquestionably the most difficult. In such situations a manager has no knowledge whatsoever on which to estimate the likely occurrence of various alternatives. Decisions under uncertainty generally occur in cases where no historical data are available from which to infer probabilities or in instances which are so novel and complex that it is impossible to make comparative judgements.

Examples of decisions under complete uncertainty are as difficult to cite as example of decisions under absolute certainty. Given even limited experience and the ability to generalise from past situations, most managers should be able to make at least some estimate of the probability of occurrence of various outcome. Nevertheless, there are undoubtedly times when managers feel they are dealing with complete uncertainty.

Selection of a new advertising programme from among several alternatives might be one such example. The number of factors to be considered and the large number of uncontrollable variables vital to the success of such a venture can be mind-boggling. On a personal level, the selection of a job from among alternatives is a career decision that incorporates a great deal of uncertainty. The number of factors to be weighed and evaluated, often without comparable standards, can be overwhelming.

Activity C

Identify six decisions that you have taken during last one year. Check which decisions were made under Certainty, under Risk and under Uncertainty.

	Decisions	Certainty	Risk	Uncertainty
1	.....	( )	( )	( )
2	.....	( )	( )	( )
3	.....	( )	( )	( )
4	.....	( )	( )	( )
5	.....	( )	( )	( )
6	.....	( )	( )	( )

9.5 MODELS OF DECISION MAKING PROCESS

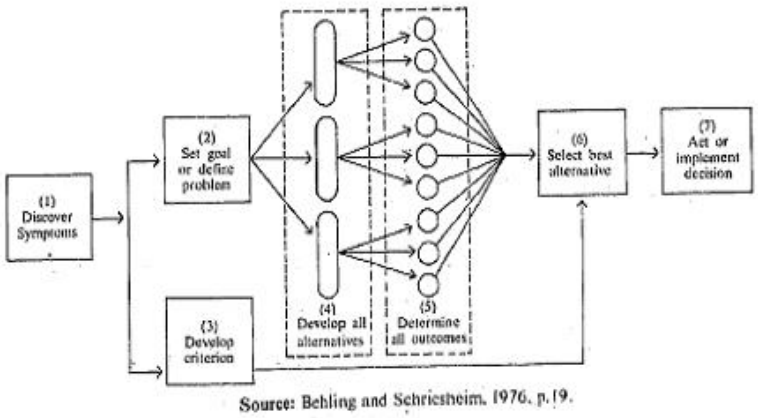
By now, you have learnt what the different phases of a decision making process are, what types of decisions you are likely to make in an organisation and under what states of nature these decisions are made. Now, you are going to examine three suggested models of the decision making process which will help you to understand how decisions are made and should be .made. These three models are: (I) the econologic model, or the economic man, (2) the bounded rationality model or the administrative man; and (3) the implicit favourite model or the gameman. You will notice that each model differs on the assumptions it makes about the person or persons making the decision.

i) Econologic Model or Economic Man Model

The econologic model represents the earliest attempt to model decision process. Briefly, this model rests on two assumptions: (1) It assumes people' are economiccally rational; and (2) that 'people attempt to maximise outcomes in an orderly and sequential process. Economic **rationality,** a basic concept in many models of decision making, exists when people attempt to maximise objectively measured advantage, such as money or units of goods produced. That is, it is assumed that people will select the decision or course of action that has the **greatest** advantage or payoff from among the many alternatives. It is also assumed that they go about this search in a planned, orderly, and logical fashion.

A basic econologic decision model is shown in Figure V. The figure suggests the following orderly steps in the decision process:

1. Discover the symptoms of the problem or difficulty ;
2. Determine the goal to be achieved or define the problem to be solved;
3. Develop a criterion against which alternative solutions can be evaluated;
4. Identify all alternative courses of action;
5. Consider the consequences of each alternatives as well as the likelihood of occurrence of each;



Source: Behling and Schriesheim, 1976, p.19.

Fig. V: An Econologic Model of Decision-making

9 Choose the best alternative by, comparing the consequences of each alternative (step 5) with the decision criterion (step 3); and 9 Act or implement the decision.

The economic man model represents a useful **prescription** of how decisions **should** be made, but it does not adequately portray how decisions are actually made. If you look closely in this prescriptive model you shall be able to recognise some of the assumptions it makes about the capabilities of human beings:

First, people have the capability to gather all necessary information for a decision, i.e., people can have **complete** information;

Second, people can mentally store this information in some stable form, i.e., they can accurately recall any information any time they like;

Third, people can manipulate all this information in a series of complex calculations design to provide expected values; and

Fourth, people can rank the consequences in a consistent fashion for the purposes of identifying the preferred alternative.

As you can possibly imagine, the human mind is simply incapable of executing such transactions at the level and magnitude required for complex decisions. To that extent, this model is unrealistic. However, due to the advent of sophisticated data storage, retrieval and processing machines, it is now possible to achieve economic rationality to some extent.

ii) **Bounded Rationality Model or Administrative Man Model**

An alternative model, one not bound by the above assumptions, has been presented by Simon. This is the bounded rationality model, also known as the administrative man model.

As the name implies, this model does not assume individual rationality in the decision,' process. Instead, it assumes that people, while they may seek the best solution, usually settle for much less because the decisions they confront typically demand greater information processing capabilities than they possess. They seek a kind of bounded (for limited) rationality in decisions.

The concept of bounded rationality attempts to describe decision processes in terms of three mechanisms:

Sequential attention to alternative solutions: People examine possible solutions to a problem sequentially. Instead of identifying all possible solutions and selecting the best (as suggested in the econologic model), the various alternatives are identified and evaluated one at a time. If the first solution fails to work it is discarded and the next solution is considered. When an acceptable (that is, `Good enough' and not necessarily the best') solution is found, the search is discontinued.

Use of heuristics: A heuristic is a rule which guides the search for alternatives into areas that have a high probability for yielding satisfactory solutions. For instance, some companies continually select

Management graduates from certain institutions because in the past such graduates have performed well for the company. According to the bounded rationality model, decision makers use heuristics to reduce large problems to manageable proportions so that decisions can be made rapidly. They look for obvious solutions or previous solutions that worked in similar situations.

Satisfying: Whereas the econologic model focuses on the decision maker as an optimiser, this model sees him or her as a satisficer. An alternative is optimal if: (1) there exists a set' of criteria that permits all alternatives to be compared; and (2) the alternative in question is preferred, by these criteria, to all other alternatives. An alternative is satisfactory if: (I) there exists a set of criteria that describes minimally satisfactory . alternatives; and (2) the alternative in question meets or exceeds all these criteria.

Based on these three assumptions about decision makers, it is possible to outline the decision process as seen from the standpoint of the bounded rationality model. As shown Figure VI, the model consists of eight steps:

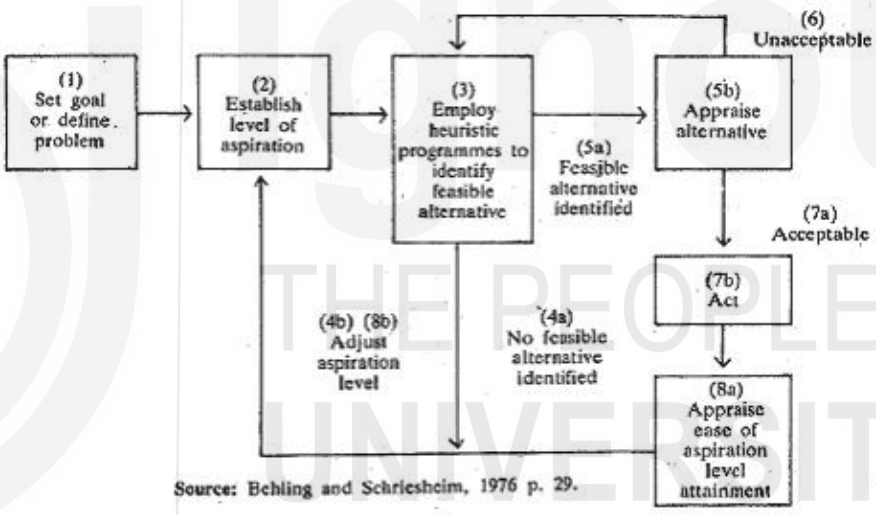


Fig. VI: A Bounded Rationality Model of Decision Making

1. Set the goal to be pursued or define the problem to be solved.
2. Establish an appropriate level of aspiration or criterion level (that is, when do you know that a solution is sufficiently positive to be acceptable even if it is not perfect'?)
3. Employ heuristics to narrow problem space to a single promising alternative.
4. If no feasible alternative is identified (a) lower the aspiration level, and (b) begin the search for a new alternative solution (repeat steps 2 and 3).
5. After identifying a feasible alternative (a), evaluate it to determine its acceptability (b).
6. If the identified alternative is unacceptable, initiate search for a new alternative solution (repeat steps 3-5).

7. If the identified alternative is acceptable (a) implement the solution (b).

8. Following implementation, evaluate the ease with which goal was (or was not) attained (a), and raise or lower level of aspiration accordingly on future decisions of this type.

As can be seen, this decision process is quite different from the econologic model. In it we do not seek the best solution; instead, we look for a solution that is acceptable. The search behaviour is sequential in nature(evaluating one or two solutions at a time). Finally, in contrast to the. prescriptive econologic model, it is claimed that the bounded rationality model is **descriptive;** that is it describes how decision makers actually arrive at the identification of solutions to organisational problems.

iii) Implicit Favourite Model or Gamesman Model

This model deals primarily with non-programmed decisions. You will recall that non-programmed decisions are decisions that are novel or unstructured, like seeking one's first job. Programmed decisions, in contrast, are more routine or repetitious in nature, like the procedures for admitting students to a secondary school.

The implicit favourite model developed by Soelberg (1999) emerged when he observed the job choice process of graduating business students and noted that, in many cases, the students identified implicit; favourites very early in the recruiting and choice process. However, they continued their search for additional alternatives and quickly selected the best alternative candidate, known as the confirmation candidate. Next, the students attempted to develop decision rules the demonstrated unequivocally that the implicit favourite was superior to the alternative confirmation candidate. This was done through perceptual distortion of information about the two alternatives and through weighing systems designed to highlight the positive features of the implicit favourite. Finally, after a decision rule was derived that clearly favoured the implicit favourite, the decision was announced. ironically, Soelberg noted that the implicit favourite was typically superior to the confirmation candidate on only or or two dimensions. Even so, the decision makers generally characterised their decision rules as being multi-dimensional in nature.

The process is shown in Figure VII. As noted, the entire process is designed to justify to the individual, through the guise of scientific rigour, a non-programmed decision that has already been made in intuitive fashion. By doing so, the individual becomes convinced that he or she is acting in a rational fashion and making a logical, reasoned decision on an important topic.

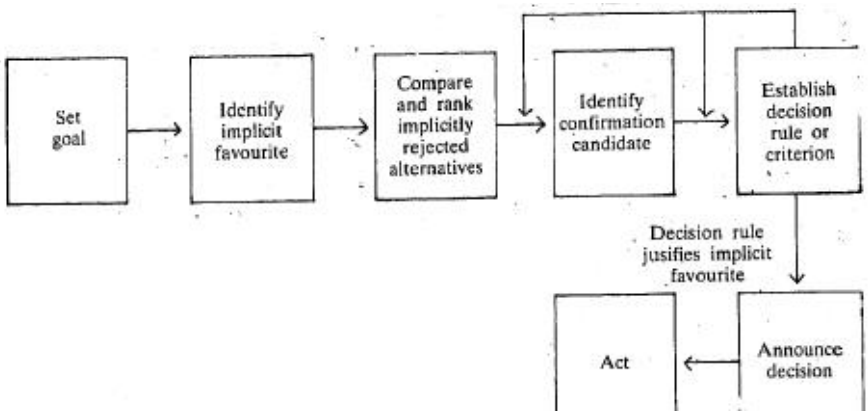


Fig. VII: An Implicit Favourite Model of Decision Making

Source: Behling and Schriesheim, 1999, p. 32.

Activity D

Read the following assumptions about the nature of human beings as decision makers. Identify which assumptions are made under which models of decision making.

	Assumptions	Economic Man	Administrative Man	Gamesman
1	In choosing between alternatives, people look for the one which is satisfactory or good enough	( )	( )	( )
2	Decisions are made after examining all possible alternatives	( )	( )	( )
3	People usually arrive at a decision in an intuitive manner much before they find logical support for the same decision	( )	( )	( )

Answers:

1. Administrative Man Model.
2. Economic Man Model.
3. Gamesman Model.

Activity E

Recall the process through which you decided to apply for joining the course in management. Which model best characterizes your decision process? Would you claim that as a rational decision? Why or why not? Prepare a short note.

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9.6 TECHNIQUES USED IN DIFFERENT STEPS OF DECISION MAKING

In the models of decision making, you must have observed that any systematic approach to decision making starts with a proper definition of the problem. You will often experience that a problem well defined is a problem half-solved because the proper definition helped you to search at relevant place for promising alternatives. You would also agree that a "fair" approach to decision-making demands that parameters (for judging alternatives which are sometimes referred to as "criteria", "level of aspiration", "decision rules", etc.) should be explicitly developed **before** the alternatives are generated and **not after.** This imperative minimises the chances of unnecessary compromise which is the hall-mark of a low-quality decision. However, once you have developed the criteria, keep them aside and forget about them at the time of generation of the alternatives. This dissociation of criteria from the alternative-generation phase will improve your chance of coming up with a reasonably sufficient number of alternatives. You will understand the importance of generating a "reasonable" number of alternatives by the simple realisation that the quality of a decision can be no better than the quality of the alternatives that you identify.

Identification of Alternatives

Generation' of a reasonable number of good alternatives is usually no problem. Occasionally, however, developing a variety of good alternatives can be a complex matter requiring creativity, thought, and study. Three means for generating alternatives are particularly well-known. These are brainstorming, synectics, and nominal grouping.

Brainstorming: Developed by Alex F. Osborn, brainstorming is the oldest and best known technique for stimulating creative thinking. It involves the use of a group whose members is presented with a problem and is asked to develop as many potential solutions as possible. Members of the group may all be employees of the same firm or outside experts in a particular field. Brainstorming is based on the premise that when people interact in a free and uninhibited atmosphere they will, generates creative ideas. That is, as one person generates an idea it serves to stimulate the thinking of others. This interchange of ideas is supposedly contagious and creates an atmosphere of free discussion and spontaneous thinking. The objective is to produce as many ideas as possible in keeping with the belief that the larger the number of ideas produced, the greater the probability of identifying an acceptable solution.

Brainstorming is governed by four important rules:

- Criticism is prohibited Judgement of ideas must be withheld until all ideas have been generated. It is believed that criticism inhibits the free flow of ideas and group creativity.

1) Freewheeling' is welcome. The wilder the idea the better. It is easier to 'tame down' than to 'think up' ideas.
2) Quantity is wanted. The greater the number of ideas, the greater the likelihood of an outstanding solution.
3) Combination and improvement are sought. In addition to contributing ideas of their own, group members suggest how ideas of others can be improved, or how two or more ideas can be combined into still another idea.

Brainstorming sessions usually involve six to eight participants and run from thirty minutes to an hour. A one-hour session is likely to produce anywhere from 50 to 150 ideas. Typically, most ideas will be impractical, but, a few will merit serious consideration. Brainstorming has given encouraging results in the field of advertising, in all branches of the Armed Forces, and in various Central, State, and local agencies.

Brainstorming, however, is not without limitations. It is usually most effective when a problem is simple and specific. In addition, brainstorming sessions are time-consuming and, therefore, can be costly. Finally, brainstorming often produces superficial solutions. This latter limitation, of course, can be overcome by selecting group members who are familiar with at least one aspect of the problem being considered.

Synectics: Developed by William J.J. Gordon, synectics is a more recent and formalised creativity technique for the generation of alternative solutions. The term synectics is derived from a Greek word meaning "the fitting together of diverse elements." The basic intent of synectics is to stimulate novel and even bizarre alternatives through the joining together of distinct and apparently irrelevant ideas.

Members of a synectics group are typically selected to represent a variety of backgrounds and training. An experienced group leader plays a vital role in this approach. The leader states a problem for the group to consider. The group reacts by stating the problem as they understand it. Only after the nature of the problem is thoroughly reviewed and analysed does the group proceed to offer potential solutions. It is the task of the leader to structure the problem and lead the ensuing discussion in such a manner as to force group members to deviate from their traditional ways of thinking. Various methods are employed to "invoke the preconscious mind". These may include role-playing, the use of analogies, paradoxes, metaphors, and other thought-provoking exercises. The intended purpose is to induce fantasies and novel ideas that will modify existing thought patterns in order to stimulate creative alternatives. It is from this complex set of interactions that a final solution hopefully emerges. A technical expert is ordinarily present to assist the group in evaluating the feasibility of their ideas. Thus, in contrast to brainstorming where the judgement of ideas is-withheld until all ideas have been generated, judicial evaluations of members' suggestions do take place from time to time.

In general, available evidence suggests that synectics has been less widely

used than brainstorming. While it suffers from some limitations as brainstorming (it can be time-consuming and costly), its sophisticated manner makes it much more appropriate for complex and technical problems.

Nominal Grouping: Developed by Andre Dellbecq and Andrew-Van de Ven, nominal grouping differs from both brainstorming and synectics in two important ways. Nominal grouping does not rely on free association of ideas, and it purposely attempts to **reduce** verbal interaction. From this latter characteristic a nominal group derives its name; it is a group "in name only".

Nominal grouping has been found to be particularly effective in situations requiring a high degree off innovation and idea generation. It generally follows a highly structured procedure involving the following stages:

Stage 1: Seven to ten individuals 'with different backgrounds and training are brought together and familiarised with a selected problem such as, "What alternatives are available for achieving a set of of ,objectives?"

Stage 2: Each group member is asked to prepare a list of ideas in response to the identified problem, working silently and alone.

Stage 3: After a period of ten to fifteen minutes, group members share their ideas, one at a time, in a round-robin manner. A group facilitator records the ideas on a blackboard or flip chart for all to see. The round-robin process continues until all ideas are presented and recorded.

Stage 4: A period of structured interaction follows in which group members openly discuss and evaluate each recorded idea. At this point ideas may be rewarded, combined, deleted, or added.

Stage 5: Each group member votes by privately ranking the presented ideas in order of their perceived importance. Following a brief discussion of the vote, a final secret ballot is conducted. The group's preference is the arithmetical outcome of the individual votes. This concludes the meeting.

Nominal grouping has been used successfully in a wide variety of organisations. Its principal benefit is that it minimises the inhibiting effects of group interaction in the initial generation of alternative solutions. In this sense, the search process is pro-active rather than reactive. That is, group members must generate their own original ideas rather than "hitch-hike" on the ideas of others. Additionally, the use of a round-robin recording procedure allows risk-inclined group members to state risky solutions early, making it easier for less secure participants to engage in similar disclosure. Nominal grouping, however, also has limitations. Like brainstorming and synectics, it can be time-consuming and, therefore, costly.

Creative Thinking: There are many ways of searching for information and alternatives in problem solving. Effective managers use all of their capacities-analytic and creative, conscious and subconscious-and seek both individual and group involvement in this stage of decision making process.

As you have seen, the basic requirement at the stage of identification of alternatives is to become more creative. Creativity involves novel

combination of ideas which must have theoretical or social value or make an emotional impact on other people, Like the decision' making process itself, the creative process also has three stages as shown in the following exhibit:

STAGES IN THE CREATIVE PROCESS

Stage	Type	Behaviours
Preparation	Conscious	**Saturation:** Investing the problem in all directions to become fully familiar with it, its setting, causes, and effects **Deliberation:** Mulling over these ideas, analysing and challenging them, viewing them from different optics.
Latent Period	Unconscious	**Incubation:** Relaxing, switching off, and turning the problem over to the unconscious mind. **Illumination:** Emerging with possible answers-dramatic, perhaps off beat, but fresh and new.
Presentation	Conscious	**Verification:** Clarifying and flushing out the idea, testing it against the criterion of appropriateness. **Accommodation:** Trying the solution out on other people and other problems.

Evaluation of Alternatives

Evaluation of various identified possible courses of action constitutes the second step of decision-making. Having identified a `reasonable' number of alternatives as a manager you should now be in a position to judge the different courses of action which have been isolated. Each alternative must be evaluated in terms of its strengths and weaknesses, benefits and costs, advantages and disadvantages in achieving organisational goals. Since there are usually both positive and negative aspects of every alternative, most evaluations involve a balancing or trade-off of anticipated consequences. Needless to say, such assessments should be as objective as possible.

Evaluation of the relative merits of various alternatives may be performed by a single manager or by a group. An evaluation may be completely intuitive or it may be scientific, using analytical tools and procedures associated with what is known as operations research (OR). More than likely, it will employ a combination of both approaches. Whatever the basis of evaluation, the more systematic the assessment, the more likely it is that the resulting judgements will be accurate and complete.

Selection of an Alternative

Once appropriate alternatives have been identified and evaluated, you must select the one alternative with the greatest perceived probability of meeting organisational objectives. Of course, it is entirely possible that the decision maker may be made to go back and identify other alternatives if none are judged to be acceptable.

Theoretically, if the identification and evaluation of alternatives has been properly handled, making a choice should be an easy matter, The most desirable alternative will be obvious. In practice, however, selection of a course of action is often the result of a compromise. Enterprise objectives are multiple. As a consequence, choice of an alternative must be made in light of multiple and often conflicting objectives. Indeed, the quality of a decision may often have to be balanced against its acceptability. Resource constraints and political considerations are examples of confounding factors which must be carefully weighed. At this point, sound judgement and experience play important roles.

Implementation of Decision

Once a plan (course of action) has been selected, appropriate actions must be taken to assure that it is implemented. Implementation is crucial to success of an enterprise. Indeed, it is considered by some to be the key to effective planning. The best plans in the world are absolutely worthless if they cannot be implemented. The activities necessary to put plans into operation must be skillfully initiated. In this respect, no plan is better than the actions taken to make it a reality.

With selection of a course of action, you must make detailed provisions for its execution. You must communicate the chosen course of action, gather support for it, and assign resources to see that it is carried out. Development of a sound means of implementation is every bit as important as the decision as to which course of action to pursue. All too often, even the best plans fail as a result of being improperly implemented.

Activity A

Imagine that you are working in a consulting firm specialising in producing creative ideas to solve various problems. Current projects involve the following problems:

1. Creative uses of Used dry cells.
2. Within ten years, all the plants in the world are going to die due to a non-removable chemical in the polluted soil of the world.

Collect four of your friends to form a group of five.

Spend 30 minutes to "brainstorm" ideas for identifying different alternatives to the problems.

After recording the ideas, judge how many are realistic. Evaluate them on the following criteria:

i. Is the idea technically feasible?

ii. Is it economically feasible?

iii. Is it socially acceptable?

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9.7 INDIVIDUAL VERSUS GROUP DECISION MAKING

You are perhaps aware that in recent times most of the decisions in any large organisation are usually taken by a group of people (e.g., Board of Directors, Committees, Task-force, etc.) rather than by a single individual manager, however, brilliant, bright or powerful the manager may be. Perhaps from your own experience, you are also aware of some of the obvious advantages and disadvantages of group decision making like the one given below:

Advantages and Disadvantages of group decision making

Advantages

- Groups can accumulate more knowledge and facts.
- Groups have a broader perspective and consider more alternative solutions.
- Individuals who participate in decisions are more satisfied with the decision and are more likely to support it.
- Group decision processes serve an important communication function as well as a useful political function

Disadvantages

- Groups often work more slowly than individuals.
- Group decision involves considerable compromise which may lead to less than optimal decisions.
- Groups are often dominated by one individual or a small clique, thereby negating many of the virtues of group procedures.
- Over-reliance on group decision making can inhibit management's ability to act quickly and decisively when necessary.

Source: Maier, 1999.

Looking at this kind of a balance-sheet on group decision making, you may well ask whether, on the whole, groups are superior to individuals as far as the decision making effectiveness is concerned. It is not possible to give a categorical answer without reference to the nature of the people, the nature of the group and the context in which the group is making a decision. However, what we know about the impact of the groups in decision making process has

been summarised by Harrison (1995) in the following way:

- **In establishing objectives,** groups are typically superior to individuals in that they possess greater cumulative knowledge to bring to bear on problems.
- **In identifying alternatives,** individual efforts are important to ensure that different and perhaps unique solutions are identified from various functional areas that later can be considered by the group.
- **In evaluating alternatives,** group judgement is often superior to individual judgement because it brings into play a wider range of viewpoints.
- **In choosing an alternative,** involving group members often leads to greater acceptance of the final outcome.
- **In implementing the choice,** individual responsibility is generally superior to group responsibility, Regardless of whether decisions are made individually or collectively, individuals perform better in carrying out the decision than groups do.

As you can well see, groups do have some edge over individuals in certain stages of the decision making process. For this reason, you have to `decide' to what extent you should involve others (particularly, your subordinates in the work group) to participate in decisions affecting their jobs. In fact, you have to take a position on the continuum of degrees of participation in decision making (See Figure I).

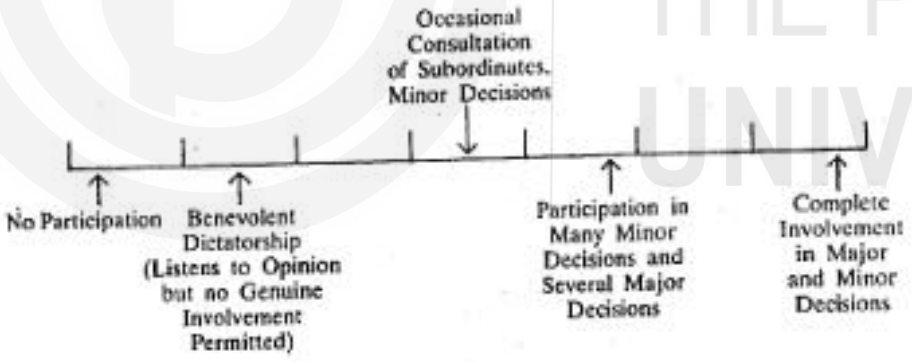

Figure I: Continuum of Degrees of Participation in Decision Making

Based on a series of studies on managerial decisions making behaviour, Vroom and Yetton (1993) found evidence in support of the following propositions:

- Managers tend to be **more** participative when the quality of the decision is important.
- Managers tend to be **more** participative when subordinate acceptance of the decision is critical for its effective implementation.
- Managers tend to be **more** participative when they trust their subordinates to focus on organisational rather than personal goals and

when conflict among subordinates is minimal.

- Managers tend to be **less** participative when they have all the necessary information to make a high quality decision.
- Managers tend to be **less** participative when the immediate problem is well structured or where there is a common solution that has been applied in similar situations in the past.
- Managers tend to be **less** participative when time is limited and immediate action is required.

At this juncture, it will be useful for you to be aware of two phenomena which have been observed in group decision making situations. Technically these two phenomena, which are sometimes experienced in a group decision situation, are referred to as `Risky shift phenomenon' and `Groupthink'.

1. Risky Shift Phenomenon

Contrary to the popular belief that groups are usually more conservative than individuals there is abundant evidence to support the proposition that groups make riskier decisions than individuals do. There are four possible reasons. **First,** risk takers are persuasive in getting more cautious companions to shift their position. **Second,** as members of a group familiarise themselves with the issues and arguments they seem to feel more confident about taking risks. **Third,** the responsibility for decision making can be diffused across members of the group. **Fourth,** there is the suggestion that in our culture people do not like to appear cautious in a public context.

2. Groupthink

Closely related to the risky-shift, but more serious, is the phenomenon known as `groupthink'. This phenomenon, first discussed by Janis (1991), refers to a mode of thinking in a group in which the seeking of concurrence among members becomes so dominant that it over-rides any realistic appraisal of alternative course of action. The concept emerged from Janis' studies of high level policy decisions by government and business leaders. By analysing the decision process leading up to each action, Janis found numerous indications pointing to the development of group norms that improved morale at the expense of critical thinking. One of the most common norms was the tendency to remain loyal to the group by continuing to adhere to policies and decisions to which the group was already committed, even when the decisions proved to be an error.

Outcomes of groupthink: Groupthink can have several deleterious consequences on the quality of decision making. 'First, groups often limit their search for possible solutions to problems to one or two alternatives and avoid a comprehensive analysis of all possible alternatives. **Second,** groups often fail to re-examine their chosen course of action after new information or events suggest a change in course. **Third,** group members spend very little time considering whether there are any non-obvious advantages to alternative courses of action compared to the chosen course of action. **Fourth,** groups

often make little or no attempt to seek out the advice of experts either inside or outside their own organisation. Fifth, members show positive interest in facts that support their preferred decision alternative and either ignore or show negative interest in facts that fail to support it. **Finally,** groups often ignore any consideration of possible roadblocks to their chosen decision and, as a result, fail to develop contingency plans for potential setbacks.

Activity B

If you are currently a member of a recognised decision making group in your organisation, what is the purpose or decision on which you are now working? What specific steps could be taken by individuals to improve the process if improvement is needed? List your ideas.

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9.8 OVERCOMING BARRIERS TO EFFECTIVE DECISION MAKING

You have just examined different outcomes of a faulty group decision process under the phenomenon called groupthink. In fact, these "faults" are not exclusive to group decisions only. You will appreciate that in the early stages of any decision process, there is' the likelihood that a variety of perceptual biases may interfere with problem analysis or the identification of possible solutions. Elbing (1998) has identified several roadblocks that can impede managerial effectiveness in arriving at the most suitable decision:

- The tendency to evaluate before one investigates. Early evaluation precludes inquiry into a fuller understanding of the situation.
- The tendency to equate new and old experiences. This often causes managers to look for what is similar rather than what is unique in a new problem.
- The tendency to use available solutions, rather than consider new or innovative ones.
- The tendency to deal with problems at face value, rather than ask questions that might illuminate reasons behind the more obvious aspects of the problem.
- The tendency to direct decisions toward a single goal. Most problems involve multiple goals that must be handled simultaneously.
- The tendency to confuse symptoms and problems.
- The tendency to overlook unsolvable problems and instead concentrate on simpler concerns.

- The tendency to respond automatically or to act before thinking.

Problems like these often cause managers to act in haste before the facts are known and often before the actual underlying problem is recognised or understood. Knowledge of these roadblocks will assist you in your attempts to analyse problem situations and make reasoned decisions.

In case you are a member or leader of any decision making group, you would like to overcome the emergence of a groupthink mentality in groups and organisations. Taking your cue from Janis you can now formulate several strategies to overcome the barriers:

- Group leaders can encourage each member to be a critical evaluator of various proposals.
- When groups are given a problem to solve, leaders can refrain from stating their own position and instead encourage open enquiry and impartial probing of a wide range of alternatives.
- The organisation can give the same problem to two different independent groups and compare the resulting solutions.
- Before the group reaches a final decision, members can be required to take a respite at intervals and seek advice from other wings of the organisation before returning to make a decision.
- Outside experts can be invited to group meetings and encouraged to challenge the views of group members.
- At every group meeting, one member could be appointed as a devil's advocate to challenge the testimony of those advocating the majority position:
- When considering the feasibility and effectiveness of various alternatives, divide the group into two sections for independent discussions and compare results.
- After deciding on a preliminary consensus on the first choice for a course of action, schedule a second meeting during which members of the group express their residual doubts and rethink the entire issue prior to finalising the decision and initiating action.

In other words, if groups are aware of the problems of groupthink, several specific and relatively simple steps can be taken to minimise the likelihood of falling victim to this problem. As you already know, recognising the problem represents half the battle in the effort to make more effective decisions in organisational settings.

Activity C

Does the group to which you belong ever engage in a discussion of the process it is going through? Do you think such a discussion would be helpful in leading to improvements in the group's effectiveness? How would you suggest that such discussions be initiated and conducted? Prepare a note.

9.9 SUMMARY

In this Unit, you have made yourself familiar with the three phases of any decision making situation. You have seen that these phases deal with identification, evaluation and selection of alternatives to a problem. It is possible to follow a logical process of taking decisions, as the Economic Man Model suggests, particularly when your problem is routine, mechanistic and programmed or when you are taking decisions under conditions of certainty or risk.

Many analytical techniques under Management Science are available to help you take decisions. But when your problems are of the non-programmed variety, it is not sufficient to be alert and analytical. You have to use your creative thinking in identifying viable alternatives, judgement and discretion in evaluating and making a choice. We have also brought the issue of group decision to your attention as you often make decisions as a member of a group. You have observed certain inherent advantages of group decision situations. At the same time, we have drawn your attention to some phenomena like risky-shift or groupthink which might emerge in the group process and affect the quality of your decisions. Since you have also reckoned the usual barriers to effective decision making and have noted some strategies to overcome them, we are sure this Unit will sharpen your skills of decision making as a manager.

9.10 SELF-ASSESSMENT QUESTION

Go back to the four learning objectives listed at the beginning of the Unit. Check for yourself, without referring to the main text, whether you have achieved each of these objectives. After a self-assessment, in case you feel you have not attained an objective satisfactorily, refer to the main text. Proceed to the next Unit only when you feel you have attained all the learning objectives of this Unit.

9.11 REFERENCES/ FURTHER READINGS

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