

---

# UNIT 7 DECISION MAKING

## TECHNIQUES AND PROCESSES

---

### Objectives

After studying this Unit, you should be able to:

- 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

- 7.1 Introduction
- 7.2 Techniques Used in Different Steps of Decision Making
- 7.3 Individual Versus Group Decision Making
- 7.4 Overcoming Barriers to Effective Decision Making
- 7.5 Summary
- 7.6 Key Words
- 7.7 Further Readings

---

## 7.1 INTRODUCTION

---

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.

---

## 7.2 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, generate 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:

- 1 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.
- 2 'Freewheeling' is welcome. The wilder the idea the better. It is easier to 'tame down' than to 'think up' ideas.
- 3 Quantity is wanted. The greater the number of ideas, the greater the likelihood of an outstanding solution.
- 4 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 of 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 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 reworded, 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 proactive 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	<b>Saturation:</b> Investing the problem in all directions to become fully familiar with it, its setting, causes, and effects <b>Deliberation:</b> Mulling over these ideas, analysing and challenging them, viewing them from different optics.
Latent Period	Unconscious	<b>Incubation:</b> Relaxing, switching off, and turning the problem over to the unconscious mind. <b>Illumination:</b> Emerging with possible answers-dramatic, perhaps off beat, but fresh and new.
Presentation	Conscious	<b>Verification:</b> Clarifying and flushing out the idea, testing it against the criterion of appropriateness. <b>Accommodation:</b> 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.

You will know more about different OR techniques like pay-off matrix, decision trees, queuing theory, linear programming, simulation, etc. in a separate Unit which will help you in your task of evaluation of alternatives.

### **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:

- i) Creative uses of Used dry cells.
- ii) 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:

- Is the idea technically feasible?
- Is it economically feasible?
- Is it socially acceptable?

.....

.....

.....

.....

.....

.....

.....

### 7.3 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	Disadvantages
<ul style="list-style-type: none"> <li>• Groups can accumulate more knowledge and facts.</li> <li>• Groups have a broader perspective and consider more alternative solutions.</li> <li>• Individuals who participate in decisions are more satisfied with the decision and are more likely to support it.</li> <li>• Group decision processes serve an important communication function as well as a useful political function</li> </ul>	<ul style="list-style-type: none"> <li>• Groups often work more slowly than individuals.</li> <li>• Group decision involves considerable compromise which may lead to less than optimal decisions.</li> <li>• Groups are often dominated by one individual or a small clique, thereby negating many of the virtues of group procedures.</li> <li>• Over-reliance on group decision making can inhibit management's ability to act quickly and decisively when necessary.</li> </ul>

**Source:** Maier, 1967.

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 (1975) in the following way:

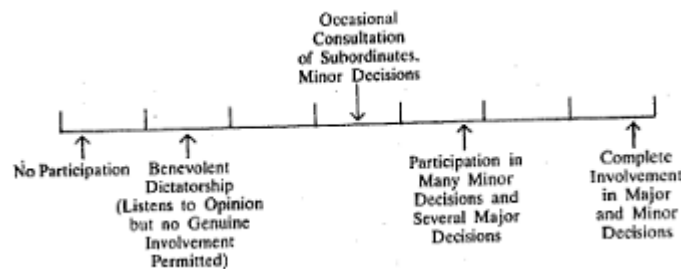
- **In establishing objectives**, groups are typically superior to individuals in that they possess greater cumulative knowledge to bring to bear on problems.
- **In identifying alternatives**, individual efforts are important to ensure that different and perhaps unique solutions are identified from 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 (1973) 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 (1971), 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 in 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.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

---

## 7.4 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 (1978) 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.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....





---

## 7.5 SUMMARY

---

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.

---

## 7.6 KEY WORDS

---

**Brainstorming:** A group process, where the members are presented with a problem and are asked to develop as many solutions as possible in a free environment.

**Operations Research:** Use of scientific methods of analysis to process complex information and arrive at decisions achieving an optimum balance of probabilities as well as identifiable facts.

**Synectics:** A method of generating alternatives by combining diverse and apparently irrelevant ideas.

---

## 7.7 FURTHER READINGS

---

Janis, I.L. and Mann, L. 1977. *Decision Making: A Psychological Analysis of Conflict, Choice and Commitment*. Free Press: New York.

Maier, N.R.F. 1967. Assets and liabilities in group problem solving: The need for an 'integrative function'. *Psychological Review*, 4, 239-249.

Mintzberg, H., Raisinghani, D., and Theoret, A., 1976. The structure of unstructured decision processes. *Administrative Science Quarterly*, June 1976, 246-275.

Simon, H.A. 1960: *The New Science of Management Decision*. Harper: New York.