Problem Solving
and
Decision Making

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Acknowledgment

On behalf of Pathways to Higher Education Management Team in Egypt, the Project Coordinator wishes to extend his thanks and appreciation to the Ford Foundation (FF) for its full support to reform higher education, postgraduate studies and research activities in Egypt. The Management Team extend their special thanks and appreciation to Dr. Bassma Kodmani, Senior Project Officer at the Ford Foundation office in Cairo, who helped initiate this endeavor, and who spared no effort to support the Egyptian overall reform activities, particularly research and quality assurance of the higher education system. Her efforts were culminated by the endorsement to fund our proposal to establish the Egyptian Pathways to Higher Education project by the Ford Foundation Headquarters in New York.

The role of our main partner, the Future Generation Foundation (FGF), during the initial phase of implementation of the Pathways to Higher Education Project is also acknowledged. The elaborate system of training they used in offering their Basic Business Skills Acquisition (BBSA) program was inspiring in developing the advanced training program under Pathways umbrella. This partnership with an NGO reflected a truly successful model of coordination between CAPSCU and FGF, and its continuity is mandatory in support of our young graduates interested in pursuing research activities and/or finding better job opportunities.

The contribution of our partner, The National Council for Women (NCW), is appreciated. It is worth mentioning that the percentage of females graduated from Pathways programs has exceeded 50%, which is in line with FF and NCW general objectives. The second phase of the project will witness a much more forceful contribution from the NCW, particularly when implementing the program on the governorates level as proposed by CAPSCU in a second phase of the program.

We also appreciate the efforts and collaborative attitude of all colleagues from Cairo University, particularly the Faculties of Commerce, Art, Mass Communication, Law, Economics and Political Sciences, and Engineering who contributed to the success of this project.

 Finally, thanks and appreciation are also extended to every member of the Center for Advancement of Postgraduate Studies and Research in Engineering Sciences (CAPSCU), Steering Committee members, trainers, supervisors and lecturers who were carefully selected to oversee the successful implementation of this project, as well as to all those who are contributing towards the accomplishment of the project objectives.

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CU Cairo University   **NCW National Council for Women**
FF Ford Foundation   **FGF Future Generation Foundation**
CAPSCU   Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University

Publisher Introduction

The Faculty of Engineering, Cairo University is a pioneer in the field of learning and continual education and training. The Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University (CAPSCU) is one of the pillars of the scientific research centers in the Faculty of Engineering. CAPSCU was established in 1974 in cooperation with UNIDO and UNESCO organizations of the United Nations. Since 1984, CAPSCU has been operating as a self-financed independent business unit within the overall goals of Cairo University strategy to render its services toward development of society and environment.

CAPSCU provides consultation services for public and private sectors and governmental organizations. The center offers consultation on contractual basis in all engineering disciplines. The expertise of the Faculty professors who represent the pool of consultants to CAPSCU, is supported by the laboratories, computational facilities, library and internet services to assist in conducting technical studies, research and development work, industrial research, continuous education, on-the-job training, feasibility studies, assessment of technical and financial projects, etc.

Pathways to Higher Education (PHE) Project is an international grant that was contracted between Cairo University and Ford Foundation (FF). During ten years, FF plans to invest 280 million dollars to develop human resources in a number of developing countries across the world. In Egypt, the project aims at enhancing university graduates' skills. PHE project is managed by CAPSCU according to the agreement signed in September 22nd, 2002 between Cairo University and Ford Foundation, grant No. 1020 - 1920.

The partners of the project are Future Generation Foundation (FGF), National Council for Women (NCW) and Faculties of Humanities and Social Sciences at Cairo University. A steering committee that includes representatives of these organizations has been formed. Its main tasks are to steer the project, develop project policies and supervise the implementation process.

Following the steps of CAPSCU to spread science and knowledge in order to participate in society development, this training material is published to enrich the Egyptian libraries. The material composes of 20 subjects especially prepared and developed for PHE programs.

Dr. Mohammad M. Megahed
CAPSCU Director
April 2005

Foreword by the Project Management

Pathways to Higher Education, Egypt (PHE) aims at training fresh university graduates in order to enhance their research skills to upgrade their chances in winning national and international postgraduate scholarships as well as obtaining better job.

Pathways steering committee defined the basic skills needed to bridge the gap between capabilities of fresh university graduates and requirements of society and scientific research. These skills are: mental, communication, personal and social, and managerial and team work, in addition to complementary knowledge. Consequently, specialized professors were assigned to prepare and deliver training material aiming at developing the previous skills through three main training programs:
1. Enhancement of Research Skills
2. Training of Trainers
3. Development of Leadership Skills

The activities and training programs offered by the project are numerous. These activities include:
1. Developing training courses to improve graduates' skills
2. Holding general lectures for PHE trainees and the stakeholders
3. Conducting graduation projects towards the training programs

Believing in the importance of spreading science and knowledge, Pathways management team would like to introduce this edition of the training material. The material is thoroughly developed to meet the needs of trainees. There have been previous versions for these course materials; each version was evaluated by trainees, trainers and Project team. The development process of both style and content of the material is continuing while more courses are being prepared.

To further enhance the achievement of the project goals, it is planned to dedicate complete copies of PHE scientific publications to all the libraries of the Egyptian universities and project partners in order to participate in institutional capacity building. Moreover, the training materials will be available online on the PHE website, www.Pathways-Egypt.com.

In the coming phases, the partners and project management team plan to widen project scope to cover graduates of all Egyptian universities. It is also planned that underprivileged distinguished senior undergraduates will be included in the targeted trainees in order to enable their speedy participation in development of society.

Finally, we would like to thank the authors and colleagues who exerted enormous efforts and continuous work to publish this book. Special credit goes to Prof. Fouad Khalaf for playing a major role in the development phases and initiation of this project. We greatly appreciate the efforts of all members of the steering committee of the project.

Dr. Sayed Kaseb   **Dr. Mohsen Elmahdy Said**

Project Manager   **Project Coordinator**

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Chapter 1: Problem Solving

Definition of
a Problem

1.1 Definition of a Problem

A problem is any difference between an actual situation and a desired situation; this can be illustrated in Figure 1.1.
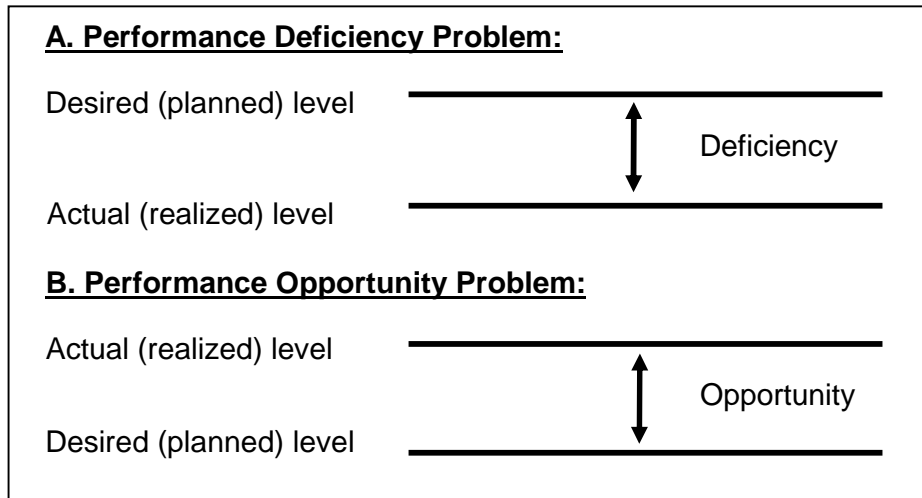
Figure 1.1: Recognizing a problem

Problem
Situations

1.2 Problem Situations

Problem situations may be one of the following:

1. A **performance deficiency**, which exists when actual performance is less than desired. For example, turnover or absenteeism suddenly increases is in the work unit

2. A **performance opportunity**, which emerges when an actual situation turns out either higher than anticipated, or offers the potential to be so, as shown in Figure 1.2.
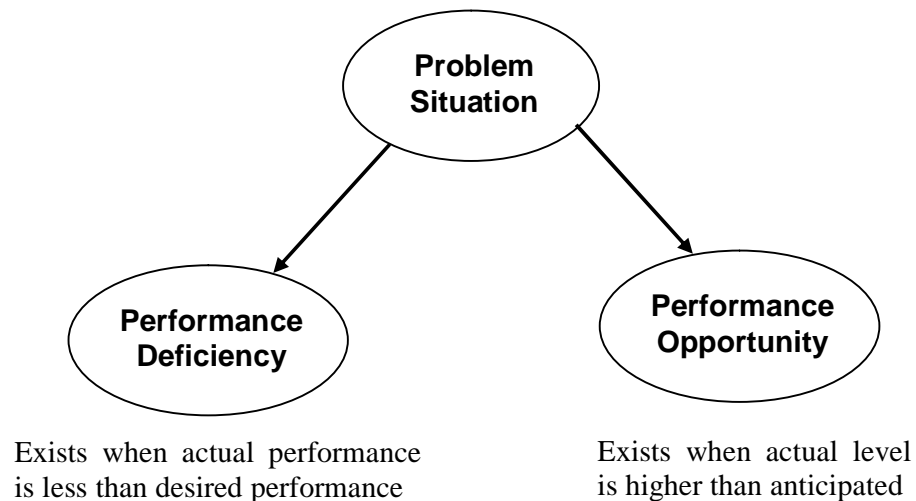
Figure 1.2: Types of problem situations

Problem
Solving

1.3 Problem Solving

The Challenge in dealing with any problem, be it a performance deficiency or an opportunity, is to proceed with effective problem solving– *the process of identifying a discrepancy between an actual and desired state of affairs and then taking action to resolve the deficiency or take advantage of the opportunity.*

The entire problem-solving process is dependent upon the right information being available to the right people at the right times.

1.4 Types of Managerial Problems

Types of
Managerial
Problems

The **problems which mangers face are usually** classified into 3 main types, as shown in Figure 1.3:
    a-Structured problems,
    b-Unstructured problems,
    c-Crisis problems
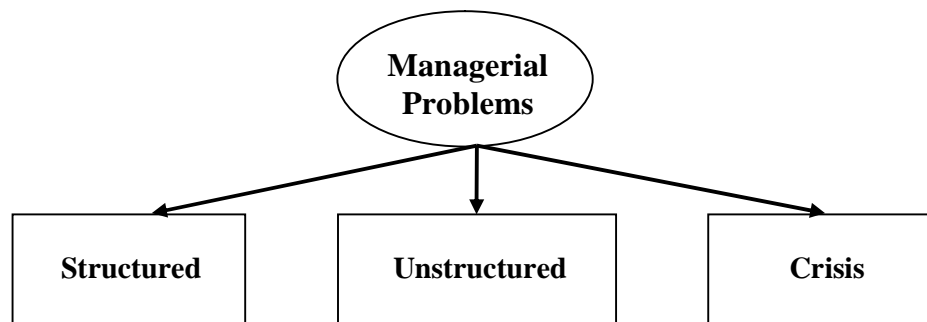
Figure 1.3: Types of managerial problems

Structured
Problems

1.4.1 Structured Problems

These are **familiar, straightforward, and clear with respect to the information needed to resolve them**. They can be expected, and managers can plan ahead and develop specific ways to deal with them, or even can take action to prevent their occurrence.

Unstructured

1.4.2 Unstructured Problems

Involve ambiguities and information deficiencies, and often occur as **new or unexpected situations**. They usually require novel solutions.

Crisis

1.4.3 Crisis Problems

A crisis problem is **an unexpected problem that can lead to a disaster if not resolved quickly and appropriately.** Managers are installing "early-warning" crisis information systems and **developing crisis management plans** to deal with them in the best possible ways.

There is a **clear relationship between the types of managerial problems and the decisions applicable to each type**; as shown in Figure 1.4.
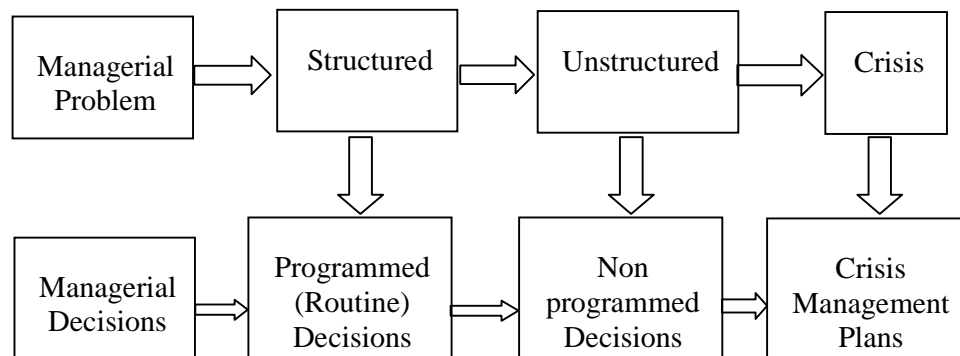
Figure 1.4: The relationship between types of managerial problems and managerial decisions

Problem
Environment

1.5 Problem Environments

Environments or conditions for problem solving in organizations are usually one of the following:
1. **Certainty**
2. **Risk**
3. **Uncertainty**

All managers make decisions under each condition, but risk **and uncertainty are common to the more complex** and unstructured problems faced by top managers, as shown in Figure 1.5.

Certain environment
Alternative courses of action
and their outcomes are known
to decision maker.

Risk environment
Decision maker views
alternatives and their outcomes
in terms of probabilities.

Problem — Alternative 1 → Outcome A
Problem — Alternative 2 → Outcome B
Problem — Alternative 3 → Outcome C

Problem — Alternative 1 — 0.7 → Outcome A
Problem — Alternative 2 — 0.5 → Outcome B
Problem — Alternative 3 — 0.2 → Outcome C

Uncertain environment
Decision maker doesn't know
all alternatives and outcomes,
even as probabilities.

Problem — Alternative 1 — 0.4 ⇢ Outcome A
Problem — Alternative 2 ⇢ Outcome B
Problem — Alternative 3

Figure 1.5: Three environments (conditions) for managerial decision making and problem solving

Certain
Environment

1.5.1 In Certain Environment, there is **sufficient information for the problem solver** to know the possible alternatives and what the results of each would be. This is an ideal condition, but few managerial problems occur in certain environments.

Risk
Environment

1.5.2 In Risk Environment, the problem solver **lacks complete information on action alternatives and their consequences**, *but has some sense of the "probabilities" associated with their occurrence.*

Uncertain
Environment

1.5.3 In Uncertain Environment, information is so poor that **managers are unable even to assign probabilities** to the likely outcomes of alternative that are known. **This is the most difficult problem environment.** Uncertainty forces managers to rely heavily on creativity in solving problems.

Chapter 2: Decision-Making

Decision Making Process

2.1 The Decision-Making Process

The following figure describes a **typical approach to decision making** and problem solving.

Step 1	Step 2	Step 3	Step 4	Step 5
Find and define the problem	Generate and evaluate alternative solutions	Select preferred solution	Implement the solution	Evaluate results

Recycle process as necessary
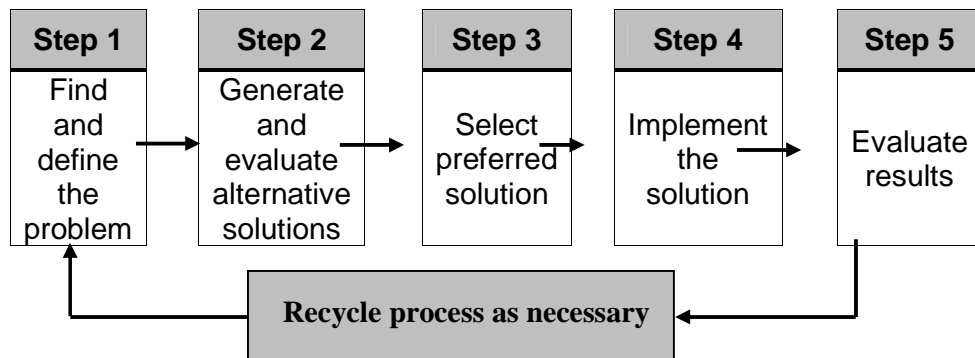
Figure 2.1: Steps in decision making and problem solving

1- Identifying and defining the problem.
2- Generating and evaluating possible solutions.
3- Choosing a preferred solution and conducting the "ethics double check"
4- Implementing the Solution.
5- Evaluating the results.

Identify and Define the Problem

2.1.1 Identify and Define the Problem

This is **a stage of information gathering, information processing, and deliberation.** *It often begins with the appearance of problem symptoms,* which signal the presence of a performance deficiency or opportunity.

The way a problem is originally defined can have a major impact on how it is eventually resolved. **Three common mistakes may occur at this step.**

Mistakes

Mistake Number 1 *is defining the problem too broadly or too narrowly.*

Mistake Number 2 is *Focusing on symptoms instead of causes.*

Mistake Number 3 is *choosing the wrong problem to deal with.* Managers should set priorities and deal with the most important ones first.

2.1.2 Generate and Evaluate Possible Solutions

Generate &

Evaluate
Possible
Solution

At this stage *more information is gathered, data are analysed, and the pros and cons of possible alternatives are identified.*

The **involvement of other persons is important in order to maximize information and build commitment.**

Errors

Common errors in this stage include **selecting a particular solution too quickly, and** *choosing an alternative that has damaging side effects.*

Typical criteria for evaluating alternatives include:
- Benefits
- Costs
- Timeliness
- Acceptability
- Ethical soundness

2.1.3 Choose Solution and Conduct the "Ethics Double Check"

Choose
Solution and
Conduct
"Ethics
Double
Check"

At this point, **a "decision" is made to select a particular course of action.** Just how this is done and by whom must be resolved in each problem situation. **In some situations,** the best alternative may be selected using a **cost-benefit criterion**; in others, additional criteria may come into play.

2.1.4 Implement the Solution

Implement
Solution

After selecting the preferred solution, **appropriate action plans must be established and implemented.** Nothing new can or will happen according to plan unless action is taken. *Managers need the ability and willingness to implement the decision.*

Difficulties

Difficulties at this stage often can trace to the lack-of-participation error, or the failure to involve those whose support is necessary.

2.1.5 Evaluate Results

Evaluate
Results
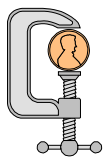
The decision making process is not complete until results **are evaluated.** *If the desired results are not achieved, the process must be renewed to allow for corrective action.* This evaluation is a form of managerial control.

In any evaluation, *both the positive and negative consequences of the chosen course of action should be examined.* Problem solving becomes a dynamic and ongoing activity within the management process.

2.2 Decision-Making Models

Decision

Making
Models

Management theory recognizes differences **between two major models** of decision making. These are:

- **The classical decision model**, and
- The **behavioural (administrative) decision model**. Figure 2.2 shows these models, in addition to judgment heuristics approaches to decision making.

Classical model	**Administrative model**
Views manager as acting with complete information in a certain environment	Views manager as having cognitive limitations and acting with incomplete information in risk and uncertain environments
- Clearly defined problem - Knowledge of all possible alternatives and their consequences - Optimizing decision – choice of the "optimum" alternative	- Problem not clearly defined - Knowledge is limited on possible alternatives and their consequences - Satisfying decision – choice of the "satisfactory" alternative

Judgmental heuristics approach
Heuristics are adopted to simplify managerial decision making
Decisions are influenced by: - Information readily available in memory – the available heuristic - Comparison with similar circumstances – the representatives heuristic - Current situation – the anchoring and adjustment heuristic

Figure 2.2: Classical administrative and judgmental heuristics approaches to decision making

2.2.1 The Classical Decision Model

Classical
Model

It views the manager as acting in a certain world. Here, the manager **faces a clearly defined problem and knows all possible alternatives and their consequences**. As a result, *he can make an optimizing decision that gives the absolute best solution*. This model is a very rational approach that assumes perfect information is available.

2.2.2 Behavioural Scientists Question: The Assumptions of the Classical Model

Behavioural

scientists question the assumptions of the classical model

They recognize the existence of cognitive limitations, or limits to our human information-processing capabilities. *They create a bounded rationality which means that decisions are rational only within the boundaries defined by the available information.* The administrative decision model assumes that people have only partial knowledge about alternatives and their consequences.

Consequently, the first alternative that appears to give a satisfactory resolution is likely to be chosen. This tendency is called sacrificing.

2.2.3 Judgmental Heuristics

Judgmental Heuristics

Faced with complex environments, limited information, and cognitive limitations, people tend to use simplifying strategies for decision making. These strategies are called **heuristics,** and their use can cause decision errors. **Awareness of judgmental heuristics,** and their potential biases can help improve decision-making capabilities.

There are 3 main types of heuristics, shown in previous Figure 2.2:
- The availability heuristic.
- The representatives heuristic.
- The anchoring & adjustment heuristic.

2.3 Decision Trees

Decision Trees

Most decisions are complicated and involve a series of steps. These steps are interdependent, i.e., **each step is influenced by the step that precedes it.**

A decision tree is a graphic decision making tool typically used to evaluate decisions containing a series of steps.

Figure 2.3 is a basic decision tree illustrating the steps of the decision made in the following example.

Example on decision tree:
A company must decide whether:
a) to build a small plant, or
b) to build a large plant to produce a new product with an expected life of 10 years.

If the choice is to build a large plant, the company could face:
1. High average demand,
2. Low average demand, or
3. High initial and then low demand.
If the small plant is built and high demand exists during an initial 2-year period, management could then choose whether to expand the plant (Decision point 2)

Whether the decision is made to expand or not to expand, management could face either:
1. High demand, or
2. Low demand.
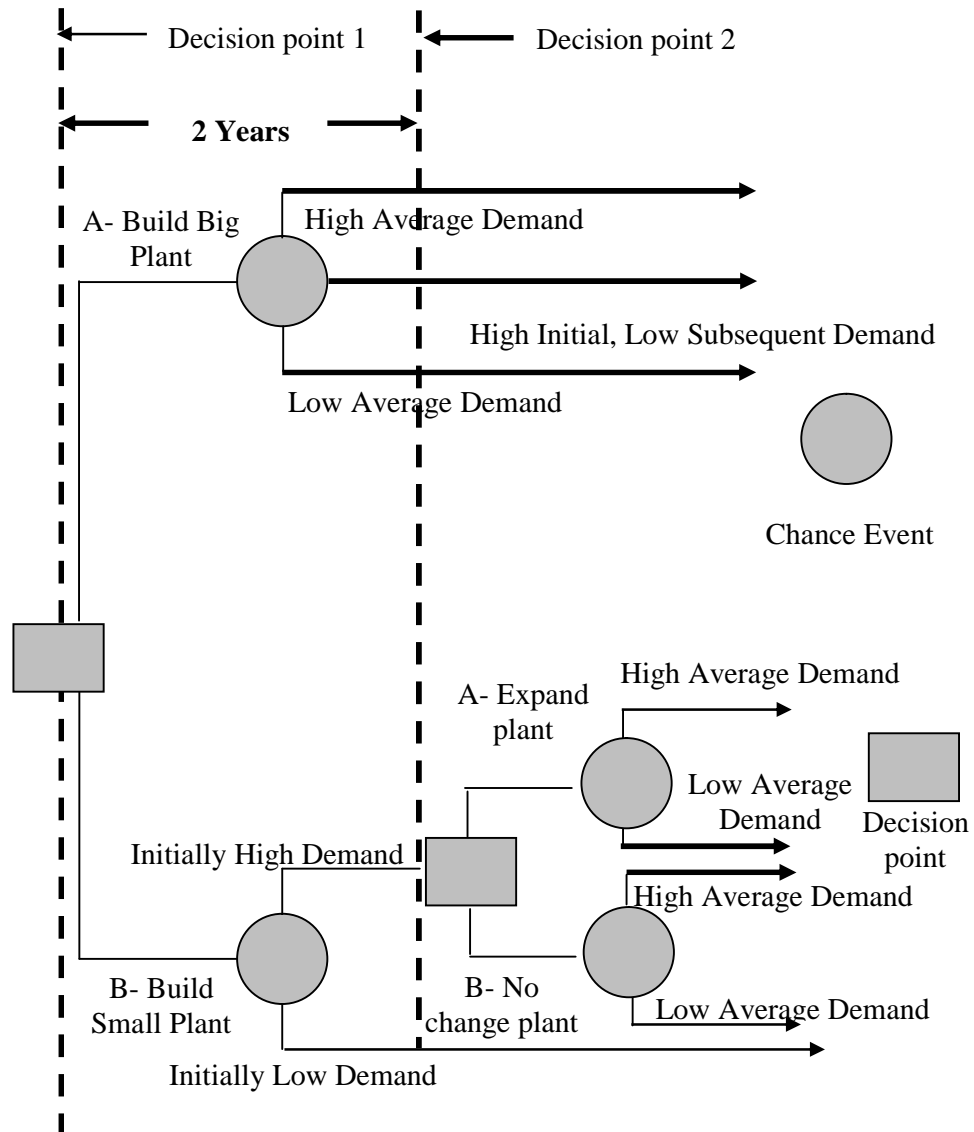
Figure 2.3: Basic decision tree

If the choice to build a small plant, demand could be:
1. initially high, or
2. Initially low.

After various possible alternatives have been outlined, the financial result of each course of action must be compared. To do so, management must:

1) **Study estimates of investments** necessary for building a large plant, for building a small plant, and for expanding a small plant.
2) **Weigh the probabilities of facing different demand levels** for various decision alternatives.
3) **Consider project income yields** for each decision alternative.
    Analysis of the expected values and net expected gain for each alternative helps management to decide on an appropriate choice.

2.4 Personal Decision Framework

Personal Decision Framework

Not all managers go about making decisions in the same way. **There are significant differences in the ways managers may approach problems** and make decisions concerning them.

These differences can be explained by **the concept of personal decision style.** This concept refers to differences among people with respect to **how they perceive problems and make decisions.** There are **4 major decision styles**:

a) Directive
b) Analytical
c) Conceptual, and
d) Behavioural.

Figure 2.4 illustrates the role of personal style in the decision making process.

Situation	**Personal Decision Style**	**Decision Choice**
• Programmed / non programmed • Classical / administrative • Decision steps	• Directive • Analytical • Conceptual • Behavioral	• Best solution to problem
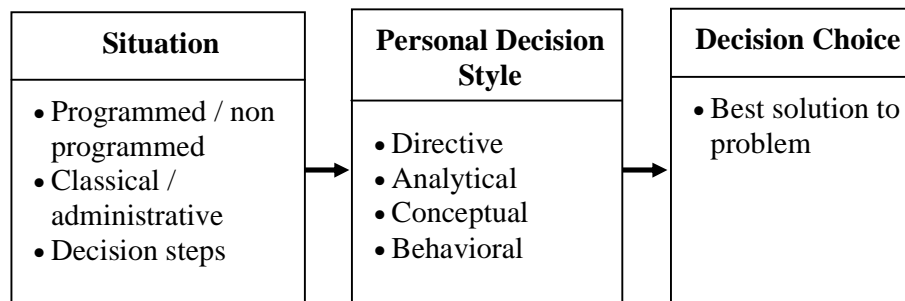
Figure 2.4: Personal decision framework

2.4.1 The Directive Style

Directive Style

It is used by people who prefer simple, clear-cut solutions. Managers who use this style often make decisions quickly because they don't like to deal with a lot of information and may consider only one or two alternatives. People who prefer this style generally are efficient and rational and prefer to rely on exiting rules or procedures.

2.4.2 In the Analytical Style

Analytical Style

On the other hand, managers like to consider complex solutions based on as much data as they can gather, they carefully consider alternatives and often base their decisions on objective, rational data. They search for the best possible decision based on the information available.

2.4.3 In the Conceptual Style

Conceptual Style

People like to consider a broad amount of information. However they are more socially oriented than those with an analytical style and like to talk to others about the problem and possible alternatives for solving it. They like to solve problems creatively.

2.4.4 The Behavioural Style

Behavioural Style

Is often adopted by managers having a deep concern for others as individuals. They like talk to people one-on-one and understand their feelings. They are usually concerned with the personal development of others and may make decisions that help others achieve their goals.

2.5 Increasing Participation in Decision Making

Increasing Participation in Decision Making

Managers do make decisions as individuals, but decision makers more often are part of a group. Indeed, major decisions rarely are made entirely by an individual. Effective decision making often depends on whether managers involve the right people in the night ways in helping them solve problems, as shown in Table 2.1.

Table 2.1: Advantages and disadvantages of participative decision making

A- Advantages	B- Disadvantages
• Broader perspective for problem definition and analysis. • More knowledge, facts, and alternative can be evaluated. • Discussion clarifies ambiguous problems and reduces uncertainty about alternatives. • Participation fosters member satisfaction and support for decision	• Time-consuming; wasted resources if used for programmed decisions. • Compromise decisions may satisfy no one. • Groupthink: Group norms may reduce dissent and opinion diversity. • No clear focus for decision responsibility

2.6 Improving Decision - Making Breadth and

Improving Decision Making Breadth and Creativity

Creativity

In today's fast-changing world, **decisions often must be made quickly** and an organization's ability to stimulate the creativity and innovativeness of its employees is becoming increasingly important. **Competitive pressures are challenging managers to create environments** that foster and support creative thinking and shaping of diverse opinions. In addition, the growing use of information technology is making it easier than ever to share information. An environment in which bosses make all decisions and hand them down to frontline workers is becoming inappropriate and inefficient.

How can managers pursue the advantages of participation and overcome some of the disadvantages?

A **Number of techniques** have been developed to help individuals and groups **make better decisions**. The two common techniques are:
a) Brainstorming and   b) Devil's advocate.

Brainstorming

a) **Brainstorming uses a face-to-face, interactive group** to spontaneously suggest ideas for problem solution. *The technique encourages members to suggest alternatives regardless of their likelihood of being implemented.* No critical comments are allowed until all suggestions have been listed. The object of brainstorming is to promote freer, more flexible thinking and to enable group members to build on one another's creativity.

Devil's advocate

b) Another technique is to **assign a devil's advocate** the role of challenging the assumptions and assertions made by the group. **The devil's advocate forces the group to rethink its approach to the problem and to avoid reaching premature consensus** or making unreasonable assumptions before proceeding with problem solutions.

Chapter 3: Case Studies

Case for
Analysis on
Group
Decision
Making

Faculty
Decision

3.1 Case for Analysis on Group Decision-Making

The Faculty Decision

XYZ slipped into his seat at the **meeting** of the faculty of the College of Business Administration of LN University. He was **10 minutes late** because he had **come** completely across campus **from another meeting** that had lasted **$1^{1/}4$ hours**. "Boy!" he thought, "**if all of these meetings** and committee assignments **keep up**, **I won't have time** to do anything else."

"The next item of importance," said the dean "is consideration of the feasibility report prepared by the assistant dean, Dr. JD, for the **establishment of our MBA program**."

"What's that?" Tom whispered to his friend Jim Lyon, who was sitting next to him.

"**Ah, Professor Madden," winked Lyon** as he passed the **86-page report to Tom,** 'evidently you've not bothered to read this impressive document. Other wise, you'd know."

"Heck, Jim, I've been out of town for two weeks on a research project, and I've just come from another meeting."

"**Well, Tom," chuckled Jim," the report was circulated only three days ago to,** as the dean put it, 'ensure that we have faculty input into where the college is going.' Actually, Tom, I was hoping you had read it because then you could have told me what was in it."

"**Dr. JD," said the dean, "why don't you present a summary of your excellent reports** on what I believe is an outstanding opportunity for our college, **the establishment of an MBA program in Latin America."**

"Hey, Jim," said Tom, "they've go to be kidding. We're not doing what we should be doing with the MBA we've got here on campus. **Why** on earth are we thinking about **starting another one 3,000 miles away?"**

Jim shrugged "Some friend of the dean's or Jackson's from down there must have asked them, **I guess."**

While the summary was being given, **Tom** thumbed through the report. He noted that the college was planning to offer the same program that it offered in the **United States.** "Certainly," he thought, "their students' needs are different from ours." He also noted that faculty were going to be sent from the United Sates on one to three-year appointments. **"You would think that whenever possible they would seek local instructors who were familiar with the needs of local industry,"** tom thought. He concluded in his own mind, "Actually, why are we even getting involved in this thing in the first place? We don't have the resources."

When Jackson finished the summary, the dean asked, "**Are there any questions?"**
"I wonder how many people have the time to **read** this report in **three days and think about it**," Tom thought himself.

"Absolutely, Professor Madden," the dean answered. "Dr. JD and I have spent a great deal of time on this project."

"Well, I was just thinking that …"

"Now, Professor Madden, surely you don't question the efforts of Dr. JD and me. **Had you been here when this meeting started**, you would know all about our efforts. **Besides,** it's getting late and we've got another agenda item to consider today, the safety and security of final examinations prior to their being given."

"No further questions," Tom said.

"Wonderful," said the dean. "Then I will report to the president that the faculty of the College of Business Administration unanimously **approves the Latin American MBA program**. I might add, by the way, that the president is extremely pleased with our method of shared decision making. We have made it work in this college, while other colleges are having trouble arriving at mutually agreed-upon decisions.

"**This is a great day for our college**. Today we have become a multinational university. We can all be proud."

After the meeting, as Tom headed for the parking lot, he thought, **"What a way to make an important decision.** I guess I shouldn't complain though**, I didn't even read the report. I'd better check my calendar to see what committee meetings I've got the rest of the week. If I've got any more, I'll . . .**"

Questions for Consideration

a) **Analyze this case**, and outline the factors that influenced the faculty decision in this case-either positively or negatively.

b) **Does this case indicate that shared decision making cannot be worthwhile and effective?** How could it be made effective in the College of Business Administration?

c) **Do you believe that decision making of this type may be more worthwhile and effective** in some types of organization than in others? Discuss.

3.2 Case for Managers' Orientations

· **Task Oriented.**
· **People Oriented.**

"T-P" Orientation Questionnaire Instructions

The following items describe **aspects of leadership behaviour**. Respond to each item according to the way you would most likely act if you were the leader of a work group. Circle whether you would most likely behave in the described way: always (A), frequently (F), occasionally (O), seldom (S), or never (N).

A	F	O	S	N		
A	F	O	S	N	1	Most likely act as the spokesperson of the group.
A	F	O	S	N	2	I Encourage overtime work.
A	F	O	S	N	3	Allow members complete freedom in their work.
A	F	O	S	N	4	Encourage the use of uniform procedures.
A	F	O	S	N	5	Permit the members to use their own judgment in solving problems.
A	F	O	S	N	6	Stress being ahead of competing groups.
A	F	O	S	N	7	Speak as a representative of the group.
A	F	O	S	N	8	Push members for greater effort.
A	F	O	S	N	9	Try out my ideas in the group.
A	F	O	S	N	10	Let the members do their work the way they think best.
A	F	O	S	N	11	Be working hard for a promotion.
A	F	O	S	N	12	Tolerate postponement and uncertainty.
A	F	O	S	N	13	Speak for the group if there were visitors present.
A	F	O	S	N	14	Keep the work moving at a rapid pace.
A	F	O	S	N	15	Turn the members loose on a job and let them go to it.
A	F	O	S	N	16	Settle conflicts when they occur in the group.
A	F	O	S	N	17	Get swamped by details.
A	F	O	S	N	18	Represent the group at outside meetings.
A	F	O	S	N	19	Be reluctant to allow the members any freedom of action.
A	F	O	S	N	20	Decide what should be done and how it should be done.
A	F	O	S	N	21	Push for increased performance.

A	F	O	S	N	22	Let some members have authority which I could otherwise keep.
A	F	O	S	N	23	Things would usually turn out as I had predicted.
A	F	O	S	N	24	Allow the group a high degree of initiative.
A	F	O	S	N	25	Assign group members to particular tasks.
A	F	O	S	N	26	Be willing to make changes.
A	F	O	S	N	27	Ask the members to work harder.
A	F	O	S	N	28	Trust the group members to exercise good judgment.
A	F	O	S	N	29	Schedule the work to be done.
A	F	O	S	N	30	Refuse to explain my action.
A	F	O	S	N	31	Persuade others that my ideas are to their advantage.
A	F	O	S	N	32	Permit the group to set its own pace.
A	F	O	S	N	33	Urge the group to beat its previous record.
A	F	O	S	N	34	Act without consulting the group.
A	F	O	S	N	35	Ask that group members follow standard rules and regulations.

Interpretation **Interpretation**
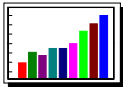
Score the instrument as follows:
(a) Write a "1" next to each of the following items if you scored them as S (seldom) or N (never). 8, 12,17,18,19,30,34,35

(b) Write a "1" next to each of the following items if you scored them as A (always) or F (frequently). 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 20,21,22,23,24,25,26,27,28,29,31,32,33

(c) **Circle the** "1" scores for the following items, and then add them up to get your TOTAL "P" SCORE = _____. 3, 5, 8, 10 ,15 ,18, 19, 22, 23, 26,28,30,32,34,35

(d) Circle the "I" scores for the following items, and then add them up to get your TOTAL "T" SCORE= -------. 1, 2, 4, 6, 7, 9, 11, 12, 13, 14, 16, 17, 20,21,23,25,27,29,31,33

(e) Record your scores on the graph in Figure 3.1 to develop an indication of your tendencies toward task-oriented leadership, people-oriented leadership, and shared leadership. Mark your T and P scores on the appropriate lines, then draw a line between these two points to determine your shared leadership score.
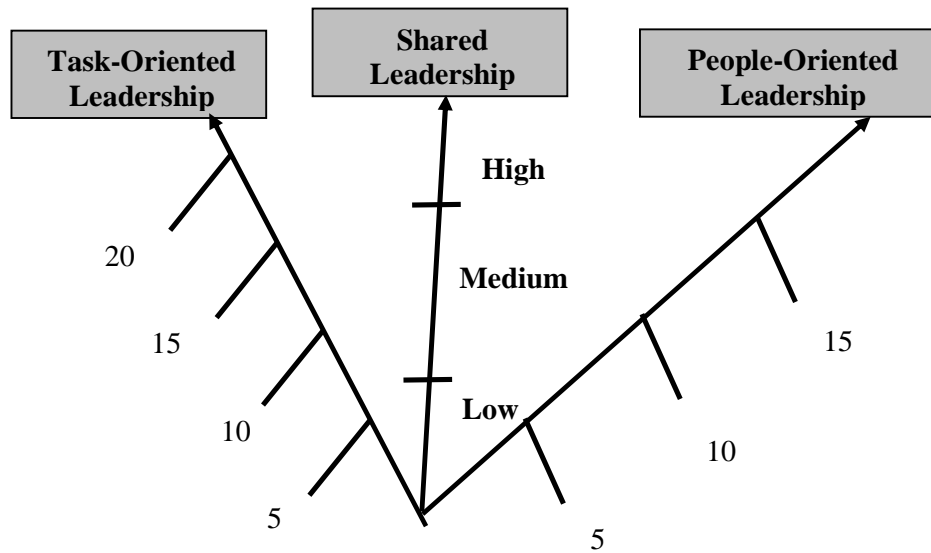
Figure 3.1: Graph of task and people oriented leadership

Workshop on Individual & Group Decision Making

STOP

Situation

3.3 Workshop on Individual & Group Decision-Making

The Situation

It is approximately 10:00 a.m. in mid-July and you have just crash landed in the WD. The light twin engine plane, containing the bodies of the pilot and the co-pilot, has completely burned. Only the air frame remains. None of the rest of you has been injured.	Flashlight (4) (battery size) Jack Knife
The pilot was unable to notify anyone of your position before the crash. However, ground sightings, taken before you crashed, indicated that you are 65 miles off the course that was filed in your VFR Flight Plan. The pilot had indicated before you crashed that you were approximately 70 miles south-southwest from a mining camp which is the nearest known habitation.	Sectional air map of the area Plastic raincoat (large size) Magnetic compass
The immediate area is quite flat and except for occasional barrel and saguaros cacti appears to be rather barren. The last weather report indicated that temperature would reach 110 ^{o}, which means that the temperature at 4 O'clock will hit 130°. You are dressed in light weight clothing-short sleeved shirts, pants, socks and street shoes. Everyone has a handkerchief. Collectively; your pockets contain $2.83 in change, $85.00 in bills, a pack of cigarettes, and a ballpoint pen.	Compress kit with gauze 45 calibre pistol (loaded) Parachute (red & white

The Problem

The Problem

Before the plan caught fire your group was able to salvage the 15 items listed on the right side of the page. Your task is to rank these items according to their importance to your survival, starting with "1" the most important, to "15" the least important. You may assume that the number of survivors is the same as the number on your team, and the team has agreed to stick together.	Bottle of salt tablets (1.000 tablets) 1 quart of water per person A book entitled Edible Animals of the Desert
Step 1: Each member of the team is to individually rank each item. Do not discuss the situation or problem until each member has finished the individual ranking. Once discussion begins, do not change your individual ranking.	A pair of sun-glasses per person 2 quarts of soft drinks
Step 2: After everyone has finished the individual ranking, rank order the 15 items <u>as a team</u>. Your team will have until ……… O'clock to complete this step.	1 top coat per person A cosmetic mirror

Results of the Ranking

Results of the Ranking

Items Salvaged	Ideal (*)ranking A	Individual ranking B	Individual grade (A-B)	Group ranking C	Group grade (A-C)
1. Flashlight. 2. Knife. 3. Air map. 4. Rain Coat. 5. Compass. 6. Compress kit 7. Pistol. 8. Parachute. 9. Salt tables. 10. Water. 11. Book. 12. Sunglasses. 13. Soft drinks. 14. Top coat. 15. Cosmetic mirror.					

(*)The instructor will tell you the ideal Ranking.

Workshop on Management Decision Making Profile

3.4 Workshop on Management Decision Making Profile

To complete this profile follow three steps…

Step 1			
	Complete the profile questionnaire		
	Step 2		
		Tabulate your scores in the score summary section	
		Step 3	
			Either: **If self assessing- read the analysis and follow up the development issues** **Or:** **If assessing others- read the analysis and follow up the development issues with the individuals**

Step 1

Step 1

Notes on Answering

The Profile Questionnaire

This profile provides the individual with relevant insights about their behaviour when conducting business, in a relative and comparative form. It **not** therefore a test with 'right' or 'wrong' answers: its aim is to help you by giving relevant information about yourself to help formulate appropriate, realistic training and development plans.

Please complete the questionnaire as honestly and accurately as you can.

Read through each of the following pairs of statements and choose which one more closely represents how you would usually act. Allocate a score of '2' to that statement and give the other, which you feel is less like you a score of '0'. If you cannot choose between the two, give each a value of '1'.

The sixty different pairs of statements are not necessarily opposites, but rather different stages and approaches to decision-making.

Next to each box where you fill in your score is a letter. When you have completed all the questions add up the scores you have allocated for each letter- A, B, C, D, E and F and enter them in the sub-totals box at the bottom of the page and then in the totals boxes at the end of the questionnaire.

Work through all the questions as quickly as possible. Don't waste time searching for meanings that probably don't exist.

Example

I am more likely to:

Feel confident about my action, if I have been careful and thorough in planning events well ahead………………….	2	**E**
Feel confident if I have established reality and clarified what is really important in a problem ………………….	0	**C**

Now you are ready to complete the profile questionnaire

I am more likely to:

1. Get down to details and thoroughly examine data so as to make an accurate analysis of the problem facing me ………………….	**A**
Be able to offer several likely alternative solutions whenever faced by a complicated problem……………………	**B**
2. Accept the hard facts in a situation as the basis for my decision………………………	**C**
Maintain a determination to succeed especially when the odds appear to be against me………………	**D**
3. Feel more confident if I am able to review my work regularly stage by stage and update my plans accordingly.	**E**
Rarely put off those jobs that I don't enjoy doing, but do whatever needs to be done at that particular time………………	**F**
4. Place a high value on establishing the right facts, figures and information, before making my decision………………	**A**
Really enjoy doing those task where there is a real challenge to win……………	**D**
5. Develop new angles in problems or issues, that others have been unable to resolve………………	**B**
Enjoy 'ferreting out' facts and figures and checking their reliability before formulating plans ………………	**A**
6. Describe my style, in a demanding situation, as 'resolute, insistent and persistent' when confronted with opposition or obstacles ………………	**D**

See my style in such circumstances as – 'think fast. Act opportunely and quickly move on to the next problem' …………	**F**
7. spend considerable time clarifying and crystallising issues to be clear about where I need to concentrate my effort…………	**C**
Be the one who plans their work and works their plan', so that I am normally well prepared beforehand…………	**E**

Sub-totals: A ☐   B ☐   C ☐   D ☐   E ☐   F ☐

8. Seek out, analyse and structure data and information in order to understand exactly what problem I am up against…………..	**A**
Devote considerable time to identifying which issues are really important in situations I have to deal with ……………………	**C**
9. Be able to exploit or capitalise upon opportunities for improvement, whenever I spot them ………………………	**B**
Carefully weigh consequences and outcomes especially where there are no clear objectives or policies before committing myself to action …………	**E**
10. Rely on my determination and personal drive, in order to overcome obstacles, or resistance- when making a Decision…	**D**
Carefully think about and thoroughly plan each stage of what I need to do before I choose my course of action……	**E**
11. Clarify priorities so that I have a clear sense of both what is important and what is not so……………	**C**
Take action, essentially on a 'good feel' for getting the timing of my response just right…………….	**F**
12. Take a far-sighted approach in order to reduce the degree of unpredictability, in my decisions and their consequences……	**E**
Carefully check to ensure that I actually have obtained all the information that I really need – and that it is accurate………..	**A**
13. Convince others of the need to explore new possibilities more than in simply working to proven ways…………….	**B**
Live according to the philosophy that – winners don't quit and quitters don't win …………..	**D**
14. Make sure that I am clear about the principles, yardsticks and rules that govern what I do………………	**A**
Organise myself opportunely and efficiently, so as to respond to problems at exactly the right time…….	**F**

Sub-totals: A ☐   B ☐   C ☐   D ☐   E ☐   F ☐

15. Focus more on the issue – what do we really need, here?		**D**
Concentrate on the question – what really matters here?		**C**
16. Always have the energy at hand necessary to do what is required when it is needed…………..		**F**
Persuade others, when necessary, to question the assumptions underlying their reasons for taking decisions or actions………		**B**
17. Ensure that I take full account of the consequences of my plans and intended actions as conditions change……………..		**E**
Rely on my tenacity and strength of purpose to see problem through …………………….		**D**
18. check facts and figures very carefully, to make sure I understand and feel certain about what I am going to have to do next……………………		**A**
Feel happier where I am able to predict outcomes clearly based upon intelligent anticipation beforehand………………………..		**E**
19. Find I can usually come up with fresh solutions to old problems, when working with group…………………		**B**
Time my responses, so that I can usually respond with maximum impact to changes in circumstances or opportunities..		**F**
20. Keep abreast of emerging trends and their consequences upon the major decisions that I make…………………………		**E**
Consistently demonstrate ingenuity and resourcefulness in finding ways around constraints or 'roadblocks'………………		**B**
21. Exercise strong self-discipline and determination to pursuer my goals, when the going gets tough………………………..		**D**
Establish just what criteria or parameters are involved, when examining a difficult problem I have to deal with………………		**A**

Sub-totals: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐

22. Feel more confident about my action if I have been careful and thorough in planning events well ahead…………………..		**E**
Feel more comfortable, if I have got things clearly focused and know what my priorities are……………………...		**C**
23. Put pressure on people when needed in order to make sure things happen as I want them to…………………………		**D**
Inject high energy and enthusiasm into any project in which I become involved……………………………………….		**F**
24. Rely on considerable intuitive 'feel' for the situation and the people involved in it……………………………….		**B**
Clear my own mind and get things into Perspective in order to make a decision……………………….		**C**
25. Feel at home, when 'fire-fighting' and enjoy the excitement of pulling the chestnuts out of the fire………………….		**F**
Enjoy gathering and examining data from a range of different sources, to give me a proper understanding of a problem…….		**A**
26. Face reality and be clear in my mind about exactly what I have to do in a particular set of circumstances………………….		**C**
Work experimentally and typically try out lots of new ideas, before making my decision……………………..		**B**
27. Strip problems of unnecessary clutter and get to the core issues involved in a problem…………………………		**C**
Be quite clear about the ground rules, standards or principles, to which I am expected to work………………………		**A**
28. Quickly adjust my pace of action on basis of 'he who hesitates is lost' or when appropriate 'look before you leap'		**F**
Respond in a planned systematic way, having 'read' the situation well beforehand………………………………..		**E**

Sub-totals: A ☐   B ☐   C ☐   D ☐   E ☐   F ☐

29. Use a high level of firmness, persistence and determination to resolve long-standing problems……………….	**D**
Come up with fresh insights- or new angles – that produce solutions to long-standing problems…………………...	**B**
30. Require flexibility in pace and taming from others in responding to my need for action from them………………….	**F**
Have a clear idea of the most important needs in situations…….	**C**
31. Be concerned with answering the questions 'What? ''Where?' 'Who?' 'When?' and 'Why? ' ………………………….	**A**
Be able to persuade people to explore the difficult question – and its answers – 'What else?'……………………………….	**B**
32. Be described by those who know me well as – tough and determined, but fair'…………………………………………………	**D**
Be seen by close associates as 'clear thinking', with a good sense of direction………………………………..	**C**
33. Enjoy the immediacy of the 'here and now' and the excitement of acting at exactly the right time……………………	**F**
Find planning the 'there and then' and managing tomorrow, today, more satisfying……………………………	**E**
34. Be the one who usually suggests changing the goal posts, if a solution cannot be found to a difficult problem………………….	**B**
Be the one who has the courage of their conviction, to stick to their guns as the opposition increases………………………….	**D**
35. Establish order, system and method in whatever. I am doing, in order to operate more efficiently……………………….	**C**
Recognise clearly the core issues, of whatever problem I am involved in………………………………………..	**A**

Sub-totals: A ☐   B ☐   C ☐   D ☐   E ☐   F ☐

36. Be the one who identifies the key stages and acts accordingly to control the successful completion of major events or projects……………………………	**E**
Be the one who can usually be relied upon to introduce the creative and imaginative ideas into the group……………………..	**B**
37. Meet resistances with toughness when I am faced with	**D**

severe or unreasonable opposition to my plans……………..	F
Change time priorities or goals, in order to take full advantage of opportunities as they arise…………………………	F
38. Enjoy working to a high degree of precision and accuracy particularly where important statistical data are involved in my work………………………	A
Feel happy when I can establish order and sense from chaos, before making my decision……………………………	A
39. Value time spent identifying the scope and range of options available to me……………………………..	B
Value time spent identifying and considering changing conditions and their likely impact on my plans…………………..	E
40. Be very alert to shifts in events, or tactics, so as to respond more opportunely as and when needed………………………	F
Depend upon my personal values and conviction, to give strength to my case when in conflict with others………………..	D
41. Usually produce good ideas, quite quickly, for getting out of a real 'hole'………………………………	B
Assess what is needed and size up the key elements of a problem, in order to find the most effective solution……………	C
42. Enjoy investigation in depth, within specific areas of data and statistics, in order to extract meaningful information about objectives and decisions……………………………..	A
Enjoy re-setting or adjusting my goals, in the light of changing conditions…………………	E

Sub-totals: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐

43. Be prepared to 'bite the bullet' and take necessary tough or unpopular decisions in order to move things along…………….	D
Be the one in the group who will come up with alternative possible ways out of a difficult situation………………………	B
44. Disregard things which seem to be unnecessary or Unrealistic……………………………………..	C
Respond rapidly, in order to take full advantage of opportunities which unexpectedly present themselves……………………	F
45. Help people quickly to find their way out of an impasse when they seem stuck for a solution…………………………..	B

Carefully probe data and investigate information to obtain the most informed basis for a solution……………………………….	**A**
46. Protect my plans by continually 'reading' the situation and being alert to changing conditions…………………………………	**E**
Firmly resist other's attempts to get me to change my mind, when I know I am right………………………………………	**D**
47. Enjoy the excitement and level of challenge, or risk, involved in sudden changes to courses of action………………	**F**
Enjoy setting the priorities for action, once I've understood what is really needed in a situation………………………………..	**C**
48. Want to seen as a person whose work is through, accurate and reliable………………………………………….	**A**
Want to be seen as a person whose approach is characterised by determination and courage……………………	**D**
49. Choose roles where I can use my ability to make sense of things and work to realistic priorities……………………………..	**C**
Choose roles where my inventiveness, ingenuity and imagination will have full scope……………………………………	**B**

Sub-totals: A ☐   B ☐   C ☐   D ☐   E ☐   F ☐

50. Be annoyed about working closely with someone who got into difficulties because they did not plan ahead……………….	**E**
Be frustrated if I worked closely with someone who did not act, and when I needed action from them………………………	**F**
51. Be angered by people who lack 'guts' and the determination to see things through……………………………	**D**
Be irritated by people who give me information inadequate for my needs and lacking in facts……………………………………….	**A**
52. Be irritated by those who will not deviate from set plans and schedules, when a different response time is required of them……………	**F**
Be frustrated by people who just refuse to consider new alternative ways of doing things……………………………	**B**
53. Be annoyed by people who are stubborn and unnecessarily unyielding, when reality suggests	**C**

compromise	
Be upset by those who constantly seem to over-simplify issues and disregard creative ides as being unrealistic………	**D**
54. Be irritated by people who continually want to find alternatives, instead of sticking to agreed methods……………	**A**
Be frustrated by people who take ages to make up their minds and refuse to commit, quickly, to implement relatively simple decisions……………………………………	**F**
55. Be frustrated by people who constantly allow others to take the initiative from them through lack of assertiveness……	**D**
Be annoyed by those who always seem to be 'fire-fighting', because they can't/won't anticipate events sensibly…………	**E**
56. Be the one others look to, to ensure that the future will be properly taken care of………………………………………..	**E**
Be the one other people look to for thoroughness and accuracy……………………………….	**A**

Sub-totals: [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ]

57. Be the person others turn to for fresh ides and new insights……………………..	**B**
Be the one others look to for action, when and where it is needed……………………………….	**F**
58. See myself as someone who is alert to significant trends and developments and who thinks about their impact well in advance……………………………..	**E**
See myself as confident, capable and clear thinking, with a good sense of reality………………………………	**C**
59. Be the one others regard as being good at anticipating events, or outcomes, accurately…………………………..	**E**
Be the person others see as someone who gets their priorities right…………………………………………………………	**C**
60. Be the one others see as someone with a good sense of timing who knows just when or when not to act………………	**F**
Be the one others see as someone who knows how to seek out, put together and use the right information, as a basis for decisions………………………………………	**A**

Sub-totals: [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ]

Step 2

Score Summary

Each letter represents an element of your management decision-making style. Transfer your scores onto the chart below by plotting the score on the axis against each appropriate letter on the x axis. Join the points together for a comparison with the dotted line shown in Figure 3.2 which is the MEAN scores for British managers and professionals.
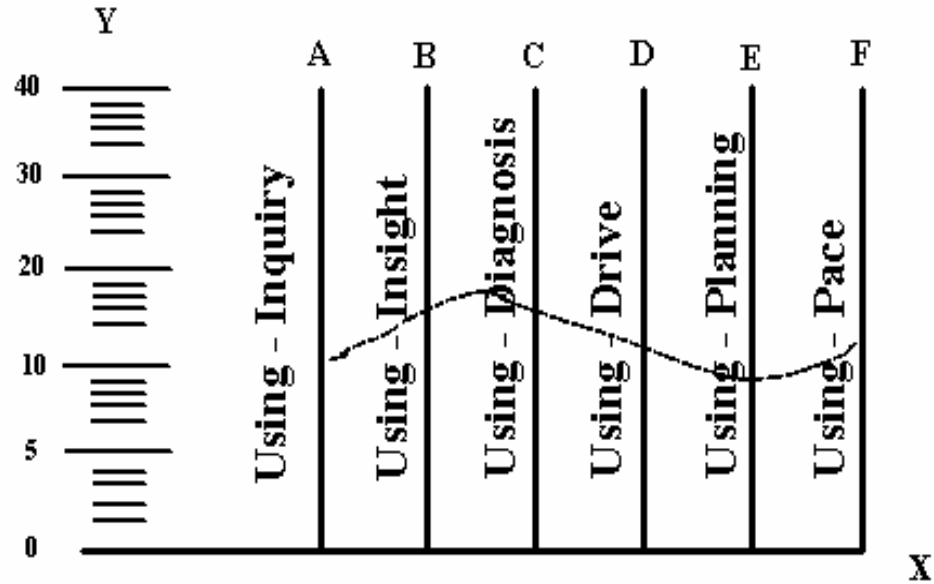
Figure 3.2: MEAN scores for British managers

Now plot your scores and calculate the percentages for your ' awareness' 'direction' and 'action' in the shaded boxes overleaf.

A. Inquiry	**Score**	The **awareness**
Seeking, analysing, examining,	**A**	stage in your
probing and classifying data.		decision-making
Defining criteria, standard or		**Add scores A and**
principles.		**B**
Concern for basic facts and		
principles.		
B. Insight	**Score**	
Intuiting, exploring possibilities.	**B**	
Generating and synthesising		
ideas.		
Feel for scope, options and		
change.		

C. Diagnosis	**Score**	The **direction**
Assessing, weighing, clarifying, estimating prioritising and simplifying.	**C**	stage in your decision-making
Concern for reality.		**Add scores C and D**
D. Drive	**Score**	
Being resolute or determined. Applying pressure, resisting, persisting or insisting. Being firm, asserting.	**D**	
Sense of purpose.		
E. Planning	**Score**	The **action** stage in
Predicting, foreseeing, anticipating, planning, progressing and following up.	**E**	your decision-making
Concern for preparation.		**Add scores E and F**
F. Pace		
Taking time, action, varying or adjusting pace, pre-empting.	**Score** **F**	
Sense of timing		

Balance of logical and emotional responses

Transfer your first set of scores from page 10 ('A', 'C' and so on) and place them in the spaces marked in the diagram opposite. Add these up to show you how much relative energy you appear to be directing toward both logical/cognitive and emotional/intuitive responses in your approach to making decisions, as shown in Figure 3.3

Logical/cognitive responses	**Emotional/intuitive responses**	
Inquiry A _____	Insight B _____	**Awareness**
Diagnosis C _____	Drive D _____	**Direction**
Planning E _____	Pace F _____	**Action**
Total logic _____	Total emotion _____	
Use of logic and Cognition	**Use of emotion and Intuition**	
'Head rules heart'	'Heart rules head'	

Figure 3.3: Balance of logical and emotional responses

Logical/Cognitive

1. *Logic and cognition* provide you with **knowledge, perspective, understanding and conclusion**, in your approach to problem analysis and decision-making. When scores are very high they may also reflect anxiety. Very low scores in logic and cognition suggest too much activity and insufficient thinking.

2. *Emotion and intuition* provide **purposefulness, courage, perception and inspiration** for making decisions. Excessive scores may indicate **miss-directed energy,** e.g. fighting unnecessary battles. Very low scores are likely to mean too little use of **hunch, assertiveness, or risk taking.**

Step 3   **Step 3**

Assessment and Analysis

Now Either

If self assessing – read the analysis and follow up the development issues.

Or

If assessing others – read the analysis and follow up the development issues with the individuals.

This analysis looks at:

·   The background to the management Decision making Profile
·   Interpreting the scores
·   The significance of the scores against factors 'A'-'F'

Background to the Management   # 3.5 Background to the Management

Decision Making Profile

The Management Decision Making Profile (MDP) focuses on the ways that directors, managers and professionals approach problem analysis and decision-making, and it is frequently used in its own right to assess individuals' preferred modes of behaving in these key executive activities.

The aim of *the Management Decision Making Profile* is to help identify your primary and backup modes of decision-making when in the role of director or manager. It seeks to identify and give recognisable definition to your motivation and behaviour. It should also show you how some of

your most important drives and behaviours combine and interact to produce your characteristic approaches to making decisions in your job. The profile provides data about the extent to which individuals and management teams or work groups are likely to:

1. **Collect** and analyse data
2. **Generate** options
3. **Explore** new ideas and approaches
4. **Clarify** and crystallise issues
5. **Set** priorities
6. **Show determination** and resolve in pursuing objectives
7. **Time the seizing** of opportunities and taking action
8. **Think ahead**, in terms of consequences and outcomes
9. **Plan for results** and review progress.

The behavioural manager constructs upon which the MDP is based have their roots in established psychological theories of cognition and emotion. The framework around which the questionnaire is built is developed from classical approaches to problem analysis and decision making-both military and industrial. The form of the instrument is a development of the results of research undertaken since 1979 by Michael Williams and partners throughout Europe, the US and the UK into:

Leadership 'style'
Executive competencies
Managerial behaviour

As with all other hawks mere Management Assessment Profile the MDP was launched after evaluative research and 'field trials' with hundred directors, managers and functional specialists. The research upon which the **MDP** draws is taken from the responses of over 5.000 directors, managers and professional specialists from twelve different countries, over a period of twelve years.

Since that initial validation, it has been used with several thousand respondents from the managerial and professional norm group in:

The UK	USA
Ireland	Canada
Western Europe	

If used in conjunction with either Myers Briggs Type Indicator and/or *The Leadership Style Profile* the instrument can provide significantly more relevant data about how people-individually and collectively:

Think	Handle conflict
Feel	Perceive the world
Solve problems	
Make decisions	

Interpreting the scores
Rarely, if ever, can behaviours be directly measured with consistent reliability, accuracy and precision. What psychometric instruments do is to *infer* measurement of preferences, tendencies and competencies.

From this information it is normally quite possible to **establish the range of a person's behavioural comfort and competence,** outside of which he/she is likely to be less effective, or behave in ways inappropriate to the demands of a particular role, function or task.

It is important to remember, at this stage, that psychometric data is neither absolute, nor definitive. It is, essentially, relative and indicative. That is, relative to norms and indicative of areas of behaviour which it would seem important to explore and examine further, in the light of job and/or role requirements.

The descriptions accompanying **the management decision making profile** should provide respondents (and their sponsors) with clear picture of the key strengths, preferences and areas for development, in the individual, in all six areas of decision making activity.

The instrument thus should provide an informed basis for dialogue and discussion about development needs and the actions necessary to help individuals – and their organisations – to capitalise upon and further develop strengths, and what to do about weaknesses in problem analysis and decision making.

In addition to the obvious help it can provide in individual development, **the management decision making profile** can be used, with effect, as a team building tool since it can generate much useful feedback and discussion, as aid to work group profiling. Here both analyses of collective strengths, as well as areas for development at team – and also cross-functional level – can be of major use in developing more effective team and inter-departmental working.

The significance of the scores against factors 'A' through 'F'

A. Inquiry is about :	C. Diagnosis is about:
Concern for accuracy	Self confronting
Fact finding	Clarifying situations/problems
Defining standards	Crystallising issues
Defining principals	Establishing important priorities
Defining criteria	
Attention to detail	Weighing up information
Probing data/information	Accepting hard facts
Analysing	Facing realities
Classifying	Simplifying issues
Categorising	'What is the main thing here?'
'What is it …..?	What's really important here?'

B. Insight is about:	**D. Driving is about:**
Concern to establish scope, range and potential Scanning problems/situations Getting facts into perspective Looking for alternatives or options Looking ahead Bringing up new angles or short cuts Questioning assumptions 'What else….?' What does it have to be like this?'	Building resolve Applying pressure Resisting pressure Persisting Persevering Getting to grips Having strong purpose Maintaining purpose 'What do we need?' 'Who, or what, is going to cause the problem
E. Planning is about:	**F. Pace is about:**
Foreseeing consequences and outcomes Sensing trends and patterns Setting goals and objectives Seeing the action steps ahead Updating as conditions change-proactive adaptability 'Live' action plans i.e. planning ahead Measuring progress Sensing time scales e.g. short, medium long 'Where out comes do we want?' 'How do we ensure our goals are met?' How do we best follow up?'	Flexibility, immediate adaptability Moment of decision Adjusting time priorities On the spot programming Seizing opportunities Making progress Moving on Speeding up or slowing dawn 'What is next..?' 'When?' Selection election of the right momenet, i.e. . seizure of the 'moment of opportunity'

Essentially it is an impassive instrument using forced choice as the basis to its scoring. The instrument seeks to measure behaviour along six separate, but related, dimensions of problem analysis and decision making. These are grouped in related pairs, broadly representing 'left brain' and 'right brain' behaviours for each of the three basic stages of managerial problem solving, i.e.:

Stage	'Left brain' activity	'Right brain' Activity
1. Awareness (situational analysis) Concerns Information available Scope	**Inquiry** - searching - examining - probing - analysing - defining - categorising	**Insight** - intuiting - exploring situations - generating ideas - synthesising - scanning - creating options
2. Direction (mission/task analysis) Problems and obstacles Priorities and objectives Strengths and weaknesses	**Inquiry** - assessing - weighing - clarifying - crystallising - simplifying - prioritising	**Drive** - insisting - persisting - resisting - being determined - being resolute - building purpose
3. Action (execution and commitment) Opportunities Threats Consequences and outcomes	**Planning** - Foreseeing - Predicting - Anticipating - Preparing - Over viewing - Monitoring - Following up	**Pace of response** - Sense of timing - Recognising the right conditions - Taking opportune action - Adapting responses - Being flexible - Varying speed of reaction/response

The three groups of '**left brain'** activities – inquiry diagnosis and planning – are essentially, cognitive, logical mental behaviours aimed variously identifying facts, detail, what is important in problems or situations, and what necessary proactive steps need to be taken in sequence, to ensure that objectives are met that unintended consequences are avoided, where possible.

The three groups of '**right brain'** behaviours are less 'disciplined', premeditated and structured and are, respectively, more a matter of intuitive 'feel', perception, resolution, spontaneity and adaptability.

The basic structure of the instrument follows the long-established and well proven **situation mission-execution** model developed in the armed forces as a basis for teaching decision making at both operational and strategic level. Although the worlds of military business leaders differ enormously, in many respects, the intellectual and emotional processes involved in decision making and problem resolution remain the same in the both – and, indeed, in many other-working environments.

As with all psychometric instruments, the data and feedback generated is usually more meaningful and in context when seen in *conjunction with:*

Observed behaviour in a variety of situations
Track record and job/role performance
The accumulated feedback obtained from other relevant psychometric profiles.

Exercises on
a Diagnostic
Survey for
Creative
Solving

3.6 Exercises on a Diagnostic Survey for Creative Problem Solving

· **The survey**
· **The scoring key & interpretation of results**

Surveys

Diagnostic Surveys for Creative Problem Solving

1

Problem Solving, Creativity, and Innovation
Step 1: Before you read the material in this chapter, respond to the following statements by writing a number from the rating scale that follows in the left-hand column (Reassessment). Your answers should reflect your attitudes and behavior as they are now, not as you would like them to be. Be honest. This instrument is designed to help you discover your level of competency in problem solving and creativity so you can tailor your learning to specific needs. When you have complete the survey, use the coring key in Appendix 1 to identify the skill areas discussed chapter that are most important for you to master.

2

Step 2: After you have completed the reading and the exercises in this chapter and, ideally, as many as you can of the skill Application assignments at the end of this chapter, cover up your first set of answers. Then respond to the same statements again, this time in the right-hand column (Post assessment). When you have completed the survey, use the scoring key in the Appendix to measure your progress. If your score remains low in specific skill areas, use the behavioral guidelines at the end of the skill learning section to guide your further practice.

Rating Scale

Rating Scale
1. strongly disagree
2. disagree
3. slightly disagree
4. slightly agree
5. agree
6. strongly agree

Assessment

| | |
| | |

Pre-	**Post-**	When I encounter a routine problem:
-------	--------	**1.** I state clearly and explicitly what the problem is. I avoid trying to solve it until I have defined it.
-------	--------	**2.** I always generate more than one alternative solution to the problem, instead of identifying only one obvious solution.
-------	--------	**3.** I keep in mind both long-term and short-term consequences as I evaluate various alternative solutions.
-------	--------	**4.** I gather as much information as I can about what the problem is before trying to solve it.
-------	--------	**5.** I keep steps in the problem-solving process distinct; that is, I define the problem before proposing alternative solutions, and I generate alternatives before selecting a single solution.

When faced with an ambiguous or difficult problem that does not have easy solution:

-------	-------	**6.** I try out several definitions of the problem. I don't limit myself to just one way to define it.
-------	-------	**7.** I try to be flexible in the way I approach the problem by trying out several different alternative methods rather than relying on the same approach every time.
-------	-------	**8.** I try to find underlying patterns among elements in the problem so that I can uncover underlying dimensions or principles that help me understand the problem.
-------	-------	**9.** I try to unfreeze my thinking by asking lots questions about the nature of the problem before considering ways to solve it.
-------	-------	**10.** I try to think about the problem from both the left (logical) side of my brain and the right (intuitive) side of my brain.
-------	-------	**11.** To help me understand the problem and generate alternative solutions, I use analogies and metaphors that help me identify what else this problem is like.
-------	-------	**12.** I sometimes reverse my initial definition of the problem to consider whether or not the exact opposite is also true.
-------	-------	**13.** I do not evaluate the merits of an alternative solution to the problem before I have generated a list of alternatives. That is, I avoid selecting one solution until I have developed several possible solutions.
-------	-------	**14.** I often break down the problem into smaller components and analyze each one separately.

------- ------- **15.** I have some specific techniques that I use to help develop creative and innovative solutions to problems.

When trying to foster more creativity and innovation among those with whom I work:

------- ------- **16.** I help arrange opportunities for individuals to work on their ides outside the constraints of their normal job assignments.

------- ------- **17.** I make sure there are divergent points of view represented or expressed in every complex problem-solving situation.

------- ------- **18.** I sometimes make outrageous suggestions to stimulate people to find new ways of approaching problems.

------- ------- **19.** I try to acquire information from individuals outside the problem-solving group who will be effected by the decision, mainly to determine their preferences and expectations.

------- ------- **20.** I sometimes involve outsiders (e.g., customers or recognized experts) in problem-solving discussions.

------- ------- **21.** I try to provide recognition not only to those who come up with creative ideas (the idea champions) but also to those who support others' ideas (supporters) and who provide resources to implement them (orchestrates).

------- ------- **22.** I encourage informed rule breaking in pursuit of creative solutions.

Scoring Key		*ASSESSMENT*	
SKILL AREA	*ITEMS*	*PRE-*	*POST-*
Rational Problem Solving	1,2,3,4,5	_____	_____
Creative Problem Solving	6,7,8,9,10,11,12,13,14,15	_____	_____
Fostering Innovation	16,17,18,19,20,21,22	_____	_____
		Total	_____
	Score		

Comparison Data

Comparison Data

Compare your scores to three comparison standers: (1) Compare your scores against the maximum possible (132). (2) Compare your scores with the scores of other students in your class. (3) Compare your scores to a norm group consisting of 500 business school students. In comparison to the norm group, if you scored

105 or above	You are in the top quartile.
94-104	You are in the second quartile.
83-93	You are in the third quartile.
82 or below	You are in the bottom quartile.

Exercise on
How Creative
Are You?

3.7 Exercise on How Creative Are You?

· **The exercise**
· **The scoring key & interpretation of results**

How Creative Are You? (Revised)

How creative are you? The following test helps you determine if you have the personality traits, attitudes, values, motivations, and interests that characterize creativity. It is based on several years' study of attributes possessed by men and women in a variety of fields and occupations who think and act creatively.

For each statement, write in the appropriate letter:

A. Agree
B. Undecided or don't know
C. Disagree

Be as frank as possible. Try not to second-guess how a creative person might respond. Turn to Appendix (1) to find the answer key and an interpretation of your scores.

--------	**1.** I always work with a great deal of certainty that I am following the correct procedure for solving a particular problem.
--------	**2.** It would be a waste of time for me to ask questions if I had no hope of obtaining answers.
--------	**3.** I concentrate harder on whatever interests me than do most people.
--------	**4.** I feel that a logical, step-by-step method is best for solving problems.
--------	**5.** In groups, I occasionally voice opinions that seem to turn some people off.
--------	**6.** I spend a great deal of time thinking about what others think of me.
--------	**7.** It is more important for me to do what I believe to be right than to try to win the approval of others.
--------	**8.** People who seem uncertain about things lose my respect.
--------	**9.** More than other people, I need to have things interesting and exciting.
--------	**10.** I know how to keep my inner impulses in check.

--------	**11.** I am able to stick with difficult problems over extended periods of time.
--------	**12.** On occasion, I get overly enthusiastic.
--------	**13.** I often get my best ideas when doing nothing particular.
--------	**14.** I rely on intuitive hunches and feeling of "rightness" or "wrongness" when moving toward the solution of a problem.
--------	**15.** When problem solving, I work faster when analyzing the problem and slower when synthesizing the information I have gathered.
--------	**16.** I sometimes get a kick out of breaking the rules and doing things I am not supposed to do
--------	**17.** I like hobbies that involve collecting things.
--------	**18.** Daydreaming has provided the impetus for many of my more important projects.
--------	**19.** I like people who are objective and rational.
--------	**20.** If I had to choose from two occupations other than the one I now have, I would rather be a physician than an explorer.
--------	**21.** I can get along more easily with people if they belong to about the same social and business class as myself.
--------	**22.** I have a high degree of aesthetic sensitivity.
--------	**23.** I am driven to achieve high status and power in life.
--------	**24.** I like people who are sure of their conclusions.
--------	**25.** Inspiration has nothing to do with the successful solution of problems.
--------	**26.** When I am in an argument, my greatest pleasure would be for person who disagrees with me to become a friend, even at the price of sacrificing my point of view.
--------	**27.** I am much more interested in coming up with new ideas than in trying to sell them to others.
--------	**28.** I would enjoy spending an entire day alone, just "chewing the mental cud."
--------	**29.** I tend to avoid situations in which I might feel inferior.
--------	**30.** In evaluating information, the source in more important to me than the content.
--------	**31.** I resent things being uncertain and unpredictable.
--------	**32.** I like people who follow the rule "business before pleasure."
--------	**33.** Self-respect is much more important than the respect of others.
--------	**34.** I feel that people who strive for perfection are unwise.
--------	**35.** I prefer to work with others in a team effort rather than solo.
--------	**36.** I like work in which I must influence others.
--------	**37.** Many problems that I encounter in life cannot be resolved in terms of right or wrong solutions.
--------	**38.** It is important for me to have a place for everything and everything in its place.

--------	**39.** Writers who use strange and unusual words merely want to show off.
--------	**40.** Below is a list of terms that describe people. Choose 10 words that best characterize you.

Energetic	ersuasive	Observant
fashionable	Self-confident	Persevering
Original	Cautious	Habit-bound
resourceful	Egotistical	Independent
Stern	Predictable	Formal
Informal	Dedicated	Forward-looking
Factual	Open-minded	Tactful
Inhibited	Enthusiastic	Innovative
Poised	Acquisitive	Practical
Alert	Curious	Organized
Unemotional	Clear-thinking	Understanding
Dynamic	Self-demanding	Polished
Courageous	Efficient	Helpful
Perceptive	quick	Good-natured
Thorough	Impulsive	Determined
Realistic	Modest	Involved
Absent-minded	Flexible	Sociable
Well-liked	Rstless	Retiring

How Creative Are You?

Scoring Key

Circle and add up the values assigned to each item. The values are as follows:

	A AGREE	B UNDECIDED OR DON'T KNOW	C DISAGREE		A AGREE	B UNDECIDED OR DON'T KNOW	C DISAGREE
1.	0	1	2	10.	1	0	3
2.	0	1	2	11.	4	1	0
3.	4	1	0	12.	3	0	-1
4.	-2	0	3	13.	2	1	0
5.	2	1	0	14.	4	0	-2
6.	-1	0	3	15.	-1	0	2
7.	3	0	-1	16.	2	1	0
8.	0	1	2	17.	0	1	2
9.	3	0	-1	18.	3	0	-1

	A AGREE	B UNDECIDED OR DON'T KNOW	C DISAGREE		A AGREE	B UNDECIDED OR DON'T KNOW	C DISAGREE
19.	0	1	2	30	-2	0	3
20.	0	1	2	31	0	1	2
21.	0	1	2	32	0	1	2
22.	3	0	-1	33	3	0	-1
23.	0	1	2	34	-1	0	2
24.	-1	0	2	35	0	1	2
25.	0	1	3	36	1	2	3
26.	-1	0	2	37	2	1	0
27.	2	1	0	38	0	1	2
28.	2	0	-1	39	-1	0	2
29.	0	1	2				

The following have values of 2:

energetic	dynamic	perceptive	Dedicated
Resourceful	Flexible	Innovative	Courageous
Original	Observant	Self-demanding	Curious
Enthusiastic	Independent	Persevering	Involved

The following have values of 1:

self-confident	Determined	Informal	Forward-looking
Thorough	Restless	Alert	Open-minded

The rest have values of 0

Total Score

Comparison Data

95-116	Exceptionally creative
65-94	Very creative
40-64	Above average
20-39	Average
10-19	Below average
Below 10	Noncreative

Exercise on
Innovative
Attitude
Scale

3.8 Exercises on Innovative Attitude Scale

· **The Exercise**
· **The Scoring key**

Innovative Attitude Scale
Indicate the extent to which each of the following statements is true of either your actual behavior or your intentions at work; describe the way you are or the way you intend to be on the job. Use the scale for your responses.

Rating Scale
5 Almost always true
4 Often true
3 Not applicable
2 Seldom true
1 Almost never true

--------	**1.** I openly discuss with my supervisor how to get ahead.
--------	**2.** I try new ideas and approaches to problems.
--------	**3.** I take things or situations apart to find out how they work.
--------	**4.** I welcome uncertainly and unusual circumstances related to my tasks.
--------	**5.** I negotiate my salary openly with my supervisor.
--------	**6.** I can be counted on to find a new used for exiting methods or equipment.
--------	**7.** Among my colleagues and coworkers, I will be the first or nearly the first to try out a new idea or method.
--------	**8.** I take the opportunity to translate communications from other departments for my work group.
--------	**9.** I demonstrate originality.
--------	**10.** I will work on a problem that has caused others great difficulty.
--------	**11.** I provide critical input toward a new solution.
--------	**12.** I provide written evaluations of proposed ideas.
--------	**13.** I develop contacts with experts outside my firm.
--------	**14.** I use personal contacts to maneuver into choice work assignments.
--------	**15.** I make time to pursue my own pet ideas or projects.
--------	**16.** I set aside resources for the pursuit of a risky project.
--------	**17.** I tolerate people who depart from organizational routine.
--------	**18.** I speak out in staff meetings.
--------	**19.** I work in teams to try to solve complex problems.
--------	**20**. If my co-workers are asked, they will say I am a wit.

Scoring

SCORING: To score the "innovative Scale," turn to Appendix 1 to find the answer key and an interpretation of your score.

Innovative Attitude Scale

Scoring Key

Add up the numbers associated with your responses to the 20 items. When you have done so, compare that score to the following norm group (consisting of graduate and undergraduate business school students, all of whom were employed full time).

Percentile indicates the percent of the people who are expected to score below you.

Score	Percentile
39	5
53	16
62	33
71	50
80	68
89	68
97	95

Glossary

Glossary

- **A certain environment:** offers complete information on possible action alternatives and their consequences.

- **The classical decision model:** describes how managers ideally make decisions using complete information.

- **A code of ethics:** is a written document that states values and ethical standards intended to guide the behavior of employees.

- **A competitive advantage:** is a special edge that allows an organization to deal with market and environment forces better than its competitors.

- **Continuous improvement** involves always searching for new ways to improve operations quality and performance.

- **Cost- benefit analysis** involves comparing the costs and benefits of each potential course of action.

- **Creativity** is ingenuity and imagination that result in a novel solution to a problem.

- **A crisis problem** is an unexpected problem that can lead to disaster if not resolved quickly and appropriately.

- **A decision** is a choice among alternative courses of action for dealing with a problem.

- **Decision making** involves the identification of a problem and the choice of preferred problem – solving alternative.

- **A group decision** is a decision mode with the full participation of all group members.

- **Heuristics** are strategies for simplifying decision making.

- **An individual decision** is made when a manager chooses a preferred course of action without consulting others.

- **A non programmed decision** is a unique and specifically tailored to a problem at hand.

- **A problem** is a difference between an actual situation and a desired situation.

- **A problem solving** is the process of identifying a discrepancy between an actual and desired state of affairs and then taking action to resolve it.

- **A risk environment** is a problem environment in which information is lacking, but some sense of the probabilities associated with action alternatives and their consequences exists.

- **Satisfying** involves choosing the first satisfactory alternative that comes to your attention.

- **A structured problem** is familiar, straight forward, and clear in its information requirements.

- **An uncertain environment** is a problem environment in which information is so poor that it is difficult even to assign probabilities to the likely outcomes of know alternatives.

- **An unstructured problem** involves ambiguities and information deficiencies.

- **Vision** is a term used to describe a clear sense of the future.

Pathways to Higher Education Project

Pathways Mission

Training fresh university graduates in order to enhance their research skills to upgrade their chances in winning national and international postgraduate scholarships as well as obtaining better job.

Partners

- CAPSCU, Cairo University
- Ford Foundation, USA
- Future Generation Foundation, FGF
- National Council for Women, NCW
- Cairo University Faculties of Commerce, Arts, Mass Communication, Law, Economics & Political Science, and Engineering

Training Programs

- Enhancement of Research Skills
- Training of Trainers
- Development of Leadership Skills

Publications of Training Programs

1- Planning and Controlling
2- Systems and Creative Thinking
3- Research Methods and Writing Research Proposals
4- Statistical Data Analysis
5- Teams and Work Groups
6- Risk Assessment and Risk Management
7- Argumentation: Techniques of Measurement and Development
8- Communication Skills
9- Negotiation Skills
10- Analytical Thinking
11- Problem Solving and Decision Making
12- Stress Management
13- Accounting for Management and Decision Making
14- Basics of Managerial Economics
15- Economic Feasibility Studies
16- Health, Safety and Environment
17- Wellness Guidelines: Healthful Life
18- Basic Arabic Language Skills for Scientific Writing
19- General Lectures Directory
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