

CHAPTER 4 DECISION-MAKING SKILLS

Learning Objectives

1. Explain the difference between decision making and problem solving.
2. Distinguish between programmed and nonprogrammed decisions.
3. Explain the intuitive approach to decision making.
4. Discuss two rational approaches to decision making.
5. List the different conditions under which managers make decisions.
6. Explain the role values play in making decisions.
7. Summarize the positive and negative aspects of group decision making.
8. Define creativity and innovation, and outline the basic stages in the creative process.
9. Identify several specific tools and techniques that can be used to foster creative decisions.
10. List the six stages in creative decision making.
11. Explain the role of a management information system (MIS).

Chapter Overview

Since all management functions require decisions, decision making is one of the most studied areas in management. Decision making affects all the various layers of management from the lowest level laborer to the president of the company. Decision making is not the same thing as problem solving; however, the two terms do have many characteristics in common.

There are a variety of formats (programmed, nonprogrammed, intuitive, rational, and satisficing) that the decision maker must be familiar with so that decisions can be made correctly. In addition, the environment, conditions, and timing of decisions are variables that not only affect the decision maker's choices but also must be considered to reduce the risk of making wrong decisions.

The decision environment is many times an expression of values and group relationships within the organization. Creative decisions have the greatest likelihood of succeeding if the relationships and interactions are considered and understood. Lastly, management must foster a setting or environment that is conducive to creative decision making or they will receive something less than a concentrated effort from those that must carry the decision-making burden. The ultimate accountability in the organization lies with the decision maker. One of the true arts of management is how to handle the risk, stress, and opportunity presented by this responsibility.

Lecture Outline

- I. Decision Making versus Problem Solving
 - A. To many the term decision maker means manager.
 - B. All managers must make decisions, but not all decision makers are managers.
 - C. Simon's three-stage **decision process**:
 - 1. Intelligence—searching the environment for conditions requiring a decision.
 - 2. Design—inventing, developing, and analyzing possible courses of action.
 - 3. Choice—selecting a course of action.
 - D. Simon's process shows the difference between management and nonmanagement decisions.
 - 1. Management decisions emphasize the intelligence and design stages.
 - 2. Nonmanagement decisions concentrate on the choice stage.
 - E. Decision making and problem solving, though related concepts, are not the same.
 - F. **Decision making** is choosing from among various alternatives.
 - G. **Problem solving** is determining the appropriate response(s) or actions necessary to alleviate a problem.
 - H. Problem solving necessarily involves decision making, but not all decisions involve problems.

Key Terms #1, 2, 3; Learning Objective #1; Review Question #1, 2

- II. Programmed versus Nonprogrammed Decisions
 - A. **Programmed decisions** are routine and repetitive, such as monthly product ordering; they are reached by following established procedure.
 - B. **Nonprogrammed decisions** have little or no precedent; they are basically unstructured in nature.
 - 1. Creativity is required.
 - 2. Tolerance is needed.
 - 3. These decisions are usually more difficult than programmed decisions.

Key Terms #4, 5; Learning Objective #2

- III. The Intuitive Approach to Decision Making
 - A. The **intuitive approach** is used when managers must make decisions based largely on hunches and intuition; emotions can potentially rule these decisions.



- B. Decisions made under reactions to emotion, hunches, or “gut feelings” are risky.
- C. George Odiorne identified five emotional attachments that can hurt decision makers:
 - 1. Fastening on unsubstantiated facts and sticking with them.
 - 2. Being attracted to scandalous issues and heightening their significance.
 - 3. Pressing every fact into a moral pattern.
 - 4. Overlooking everything except the immediately useful.
 - 5. Having an affinity for romantic stories and finding such information more significant than any other kind, including hard evidence.
- D. Advice to overcome these attachments:
 - 1. Become aware of biases and allow for them.
 - 2. Seek independent opinions

Key Term #6; Learning Objective #3; Review Question #3

IV. Rational Approaches to Decision Making

- A. The optimizing approach is sometimes also called the rational or scientific approach.
 - 1. The steps of the **optimizing approach**:
 - a. Recognize the need for a decision.
 - b. Establish, rank, and weigh the decision criteria.
 - c. Gather available information and data.
 - d. Identify possible alternatives.
 - e. Evaluate each alternative with respect to all criteria.
 - f. Select the best alternative.
 - 2. Limitations of the optimizing approach
 - a. Assumption of rationality (the economic man hypothesis) is not very realistic.
 - b. Limited knowledge of possible alternatives may lead to a wrong decision.
 - c. People do not have the ability, in many cases, to judge the best alternative.
 - d. There is a temptation to manipulate numbers or actually ignore information.
- B. The satisficing approach
 - 1. The **principle of bounded rationality** assumes that people have the time and cognitive ability to process only a limited amount of information.
 - 2. Based on the principle of bounded rationality, Herbert Simon proposed a decision model of the “administrative man,” which makes the following assumptions:
 - a. A person’s knowledge of alternatives and criteria is limited.
 - b. People act on the basis of a simplified, ill-structured, mental abstraction of the real world; this abstraction is influenced by personal perceptions, biases, and so forth.



- c. People do not attempt to optimize but will take the first alternative that satisfies their current level of aspiration. This is called satisficing .
- d. An individual's level of aspiration concerning a decision fluctuates upward and downward, depending on the values of the most recently identified alternatives.
3. The assumptions are based on:
 - a. **Optimizing** means selecting the best possible alternative
 - b. **Satisficing** means selecting the first alternative that meets the decision maker's minimum standard of satisfaction.
 - b. The **level of aspiration** is the level of performance that a person expects to attain, which is determined by the person's prior successes and failures.
4. The "administrative man" selects the first alternative that meets the minimum satisfaction criteria and makes no real attempt to optimize.

Key Terms #7, 8, 9, 10, 11; Learning Objective #4; Review Questions #4, 5, 6; Figure 4.1

V. The Decision Maker's Environment

- A. The decision maker's freedom and decision making style largely depend on:
 1. The organization itself—the manager's position level, the authority structure, and the organization's purpose and tradition.
 2. Organizational groups—advisory committees, labor unions, informal groups, etc.
 3. Personal traits—personality, background, and experiences.
 4. Individuals within the organization—subordinates and superiors.
- B. Variables in the general environment also affect decision making.
 1. Industry norms.
 2. Labor market.
 3. Political climate.
 4. Competition.

Figure 4.2

VI. Conditions for Making Decisions

- A. **Situation of certainty**—the decision maker knows exactly what will happen and can calculate the precise outcome for each alternative.
- B. **Situation of risk**—the decision maker has some knowledge of outcomes and the probability of such outcomes.
- C. **Situation of uncertainty**—the decision maker has very little or no reliable information on which to evaluate the different possible outcomes.



1. **Maximax approach** selects the alternative whose best possible outcome is the best of all possible outcomes for all alternatives.
2. **Maximin approach** compares the worst possible outcomes for each alternative and selects the one that is least undesirable.
3. **Risk-averting approach** chooses the alternative with the least variation among its possible outcomes.

Key Terms #12, 13, 14, 15, 16, 17; Learning Objective #5; Review Question #7; Figures 4.3, 4.4; Management Illustration 4.1

VII. Timing the Decision

- A. Delay can be costly because the situation may change during the wait.
- B. A decision that is too quick may be costly because a decision may be made before all the data are analyzed.
- C. Different decisions have different time frames.

Management Illustration 4.2

VIII. The Role of Values/Ethics in Decision Making

- A. **Values** are personal or group concepts about what is desirable; values are acquired and developed.
- B. **Ethics** are a set of moral principles or values that govern behavior.
- C. Values impact the selection of performance measures, the generation of alternatives, and the development of choice criteria in the decision process.
- D. George England has identified three major categories of values:
 1. Pragmatism (success/failure).
 2. Ethical-moral conflicts (right/wrong).
 3. Affective domains (pleasure/pain).
- E. England's findings concerning values:
 1. Large individual differences.
 2. Stable value systems.
 3. Values influence decisions.
 4. Related to career success.
 5. Differ in different contexts.
 6. May be affected by cultural and social factors.

Key Term #18, 19; Learning Objective #6; Review Question #8;



IX. Participation in Decision Making

- A. Group decision making has many advantages—usually better decisions, innovative and creative solutions, avoids more mistakes.
- B. Group decision making also has some disadvantages—takes longer, may be more risky, may be more extreme.

Learning Objective #7; Review Question #9; Figures 4.5, 4.6

X. Barriers to Effective Decision Making

- A. Daniel Wheeler and Irving Janis identified four basic barriers to effective decision making.
 - 1. Complacency—danger signs or opportunity is not seen or information is ignored.
 - 2. Defensive avoidance—the importance of danger, the opportunity, or the responsibility for taking action is denied.
 - 3. Panic—frantic attempts to solve a problem rarely produce the best results.
 - 4. Deciding to decide—accepting the responsibility and challenge of decision making.

Review Question #10

XI. Making Creative Decisions

- A. The Creative Process
 - 1. **Creativity** means coming up with an idea that is new, original, useful, or satisfying.
 - 2. **Innovation** is the process of applying a new and creative idea to a product, service, or method of operation.
- B. The five-step creative process includes:
 - 1. Preparation—problem investigation and fact identification.
 - 2. Concentration—commitment to solving the problem.
 - 3. Incubation of ideas/information—accepted ways may not be the best; creativity allowed.
 - 4. Illumination—problem is connected to an acceptable solution.
 - 5. Verification—the solution is tested and the results accepted.
- C. To establish a creative environment:
 - 1. Instill trust and permit failure.
 - 2. Develop effective internal and external communication skills.
 - 3. Seek a mix of talent within the organization.
 - 4. Reward useful ideas and solutions.
 - 5. Provide a structure that has room for new ideas.



D. Tools that foster creative creativity:

1. **Brainstorming**—presenting a problem to a group and allowing group members to produce a large quantity of ideas for its solution with no criticism initially allowed.
2. The **Gordon technique**—differs from brainstorming in that no one but the group leader knows the exact nature of the real problem.
3. The **nominal group technique**—a highly structured technique for solving group tasks that minimizes personal interactions to encourage activity and reduce pressures toward conformity.
4. **Brainwriting**—a technique in which a group is presented with a problem situation and members anonymously write down ideas, then exchange papers with others who build on ideas, and pass them on until all members have participated.
5. **Synectics**—a creative problem solving technique that uses metaphorical thinking to “make the familiar strange and the strange familiar”.

E. The model (stages) for creative decision making for generating new ideas:

1. Recognition—provide a written description of the present situation.
2. Fact finding—gather and organize additional information about the current situation.
3. Problem finding—rewrite or restate the problem to encourage more creative solutions.
4. Idea finding—generate different alternatives for the decision situation.
5. Solution finding—identify the decision criteria and evaluate potential ideas.
6. Acceptance finding—determine what needs to be done to successfully implement the chosen idea or solution.

Key Terms #20, 21, 22, 23, 24, 25, 26; Learning Objectives #8, 9, 10, Review Questions #11, 12, 13; Figure 4.7; Management Illustration 4.3, 4.4

XII. Decision Making with Computers/Management Information Systems

- A. With the continuing increase in technology, computers are being used more and more to help managers make decisions.
- B. **Management Information System (MIS)** – is an information system used by managers to support the day-to-day operational and tactical decision-making needs of managers.
- C. **Data Processing** is the capture, processing and storage of data.
- D. **Transition-Processing Systems** substitute computer processing for manual recordkeeping procedures.

Key Term #27, 28, 29; Learning Objective #11; Review Question #14; Figure 4.8

Barriers to Student Understanding

1. Students will have difficulty understanding that not all decision makers are managers. Have the students give illustrations of when the two are linked and when they are not linked.
2. Students may have difficulty understanding how decision making is different from problem solving. List the criteria that are necessary for either to occur (choosing alternatives in decision-making and determining responses to a deviation from a desired or standard level of performance in problem solving). Ask the students to give examples or illustrations of each. Is it better for a manager to have good decision-making skills or be a good problem solver? Is it necessary to even distinguish between the two?
3. Students may not see the clear difference between programmed and nonprogrammed decisions. Ask them to illustrate what they perceive to be programmed and nonprogrammed decisions in their daily lives. Ask them why it would be important for managers to recognize the right decision environment before deciding on a solution format.
4. How many decisions are based on intuition? Do the students think that intuition or rational approaches are best? If the rational approach is best (as most will say), then why are so many decisions made by intuition? How can the manager handle this potentially dangerous situation?
5. What role do values play in decision making? Often this is difficult for students to understand. An easy way to describe the effect is to get them to cite common personal situations where values affect their decisions (using tobacco, alcohol, drugs, pre-marital sex, etc.). What values most impact the manager's decision-making process? What would happen to decision making if two managers, who must both interact in the decision-making process, have different values from one another?

Key Terms

1. Decision Process
2. Decision Making
3. Problem Solving
4. Programmed Decisions
5. Nonprogrammed Decisions
6. Intuitive Approach
7. Optimizing Approach
8. Principle of Bounded Rationality
9. Optimizing
10. Satisficing
11. Level of Aspiration
12. Situation of Certainty



13. Situation of Risk
14. Situation of Uncertainty
15. Maximax Approach
16. Maximin Approach
17. Risk-Averting Approach
18. Value
19. Ethics
20. Creativity
21. Innovation
22. Brainstorming
23. Gordon Technique
24. Nominal Group Technique (NGT)
25. Brainwriting
26. Synectics
27. Management Information Systems (MIS)
28. Data Processing
29. Transition-Processing System

Suggested Answers to Analyzing Management Skills

- What are some of the decision-making skills that are necessary for a manager like Phil Knight to be successful?

Phil Knight needs to use the three stages of manager's decision process as described by Herbert Simon to be successful. These include: **intelligence** – searching the environment for conditions requiring a decision; **design** – inventing, developing, and analyzing possible courses of actions; and, **choice** – actual selection of a course of action.

Suggested Answers to Applying Management Skills

- Suppose you are a CEO and were in charge of naming your replacement. What type of information would you need and what factors would you consider before making your decision?

Being the CEO of a company it is inevitable that you work with a lot of managers at various levels. It is also possible that you are aware of a person who would fit the bill because of various capabilities that has come to your attention. However for the purpose of making a decision, it is important to consider or make a list of all individuals who can be successors, establish reasons why these could be successors, gather information about their performance from their subordinates (as it is important that



this person can influence and work effectively with people), identify areas of concern and finally evaluate the best of the lot based on all these criteria.

Answers to Review Questions

1. What are the three stages in the decision-making process?
 - a. **Intelligence** (searching the environment for conditions requiring a decision).
 - b. **Design** (inventing, developing, and analyzing possible courses of action).
 - c. **Choice** (selecting a course of action).

2. What is the difference between decision making and problem solving?

In its narrowest sense, decision making is the process of choosing from various alternatives. Problem solving is the process of determining the appropriate response or actions necessary to alleviate a deviation from some standard or desired level of performance. From a practical perspective, almost all managerial decisions involve solving or avoiding problems, and, therefore, it is not necessary to distinguish between managerial decision making and managerial problem solving.

3. Discuss the intuitive approach to decision making.

The intuitive approach is followed when managers make decisions based on hunches and intuition. Emotions and feelings play a major role when following this approach.

4. Discuss the optimizing approach to decision making.

This approach includes the following steps:

- a. Recognize the need for a decision.
 - b. Establish, rank, and weigh criteria.
 - c. Gather available information and data.
 - d. Identify possible alternatives.
 - e. Evaluate each alternative with respect to all criteria.
 - f. Select the best alternative.
5. What criticisms can be made concerning the optimizing approach to decision making?

The assumptions underlying this completely rational approach are, in reality, not often true; limited knowledge is used in decision making; and the decision maker may ignore facts to choose a favorable alternative.



6. Discuss the satisficing approach to decision making, and explain the difference between satisficing and optimizing.
 - Satisficing is based on the principle of bounded rationality—there are definite limits to human rationality. It means that the first alternative that meets the decision maker’s current level of aspiration is the one selected.
 - Optimizing, on the other hand, means selecting the best possible alternatives after careful search and scrutiny based on rational criteria.

7. Distinguish among the decision situations of certainty, risk, and uncertainty.
 - **Certainty**—outcomes are known in advance.
 - **Risk**—some idea or some feel for the probabilities associated with the different outcomes is known.
 - **Uncertainty**—very little or no information on outcomes.

8. What are values? What relationship exists between values and managerial success?

A **value** is a conception, explicit or implicit, defining what an individual or group regards as desirable. Successful American managers prefer pragmatic, dynamic, achievement-oriented values; less successful managers prefer more static, passive values.

9. Outline some positive and negative aspects of group decision making.

Positive aspects include: (1) The sum total of the group’s knowledge is greater; (2) the group possesses a much wider range of alternatives in the decision process; (3) participation in the decision-making process increases the acceptance of the decision by group members; and (4) group members better understand the decision and the alternatives considered. Negative aspects include: (1) One individual may dominate and/or control the group; (2) social pressures to conform can inhibit group members; (3) competition can develop to such an extent that winning becomes more important than the issue itself; and (4) groups have a tendency to accept the first potentially positive solution, while giving little attention to other possible solutions.

10. List several guidelines for encouraging employee participation in making decisions.
 - a. Don’t criticize ideas.
 - b. Implement good employee ideas.
 - c. Give employees credit for ideas.
 - d. Never make employees feel stupid.

11. What are the four barriers to effective decision making?

The four barriers are complacency, defensive avoidance, panic, and deciding to decide.



- 12. Describe the five-step process for creating an environment that fosters creative decision making.
 - a. Step one is preparation.
 - b. Step two is concentration.
 - c. Step three is incubation of ideas and information.
 - d. Step four is illumination (the “Eureka connection”).
 - e. Step five is verification of the solution.

13. Describe the following aids to creativity:

- **Brainstorming**—presenting a problem to a group of people and allowing them to present ideas for its solution.
- **Gordon Technique**—similar to brainstorming but no one except the group leader knows the exact nature of the real problem.
- **Nominal Group Technique**—highly structured group technique designed to minimize personal interactions. The steps involved are listing, recording, voting, discussion, and final voting.
- **Brainwriting**—group members jot down their ideas in response to a problem situation without discussion. Anonymously, papers are exchanged with others who add their thoughts and repeat the process until all have participated.
- **Synectics**—uses metaphorical thinking to “make the familiar strange and the strange familiar”.

14. Describe the six-stage model of creative decision making.

Stage	
<ul style="list-style-type: none"> ● Recognition ● Fact Finding ● Problem Finding ● Idea Finding 	<ul style="list-style-type: none"> ● Investigate and eventually define a problem or decision situation. ● Generate possible alternatives or solutions (ideas). ● Identify criteria and evaluate ideas in Step 4. ● Work out a plan for implementing the chosen idea.
<ul style="list-style-type: none"> ● Solution Finding ● Acceptance Finding 	

15. How does a transaction-processing system differ from an MIS?

Transaction-Processing Systems substitute computer processing for manual recordkeeping procedures. Transaction-Processing requires routine and highly structured decisions. It is actually a



subset of Data Processing. Therefore, an organization can have a very effective Transaction-Processing System and not have an MIS.

Suggested Answers to Skill-Building Questions

1. Identify a significant decision recently made by a major company (you might look in *Business Week* or *The Wall Street Journal*). In the decision you identify, did the manager or managers satisfice or optimize?

Student responses will vary depending upon the decision and company they select.

2. What factors do you think affect the amount of risk a manager is willing to take when making a decision?

The amount of time with which to make a decision, past success or failure, experience, the cost of obtaining additional information, personality (some individuals are more likely to take risks than others), the consequences of failure, etc.

3. Comment on the following statement: "Groups always make better decisions than individuals acting alone."

This statement is not true. Sometimes high-performing individuals outperform groups. Not all groups work well together and seek to make good decisions. Individual group members often have conflicting goals.

4. How many creative uses can you think of for a brick? Now ask a five- to seven-year-old child the same question. How do you account for the differences? Why do you think children might be more creative than adults?

Individual responses to the first two parts of this question will vary. Children often feel more free to use their imaginations. Children may be more creative because they do not tend to be as self-critical and self-restraining as adults. Because of self-criticism or the experienced criticism of others, adults are sometimes reluctant to offer suggestions that seem creative and out of the ordinary.

5. Think of a new form of a product or service to solve something that bugs you, for example, trash can lids that won't stay shut. (Many primary-grade creativity classes do this as a learning exercise in creativity.)

Student responses will vary based on the selection of what bugs them.

6. When you go into a fast-food store and the salesperson keys your order into the cash register, how might this information be used as part of an MIS?



As part of a MIS, inventory control of your product is essential. Re-ordering would be a valid point of consideration. Finance or cash flow can be analyzed in terms of point of sale. Also, what products may be selling and what is not can be analyzed.

Skill Building Exercise 4.1

Lost at Sea

A challenging exercise in consensus reaching that is sure to draw out differences in opinion (and also a lot of fun). Some students may have experience in survival training; however, in most groups it will be found that the group score is better than the average of the individual scores and often better than all the individual scores. The instructor might try separating the students into groups but also pick 4-5 who will do the project by themselves so comparisons can be made in scores of individuals and groups.

According to the “experts”, the basic supplies needed when a person is stranded in mid ocean are articles to attract attention and articles to aid survival *until rescuers arrive*. Articles for navigation are of little importance. Even if a small life raft were capable of reaching land, it would be impossible to store enough food and water to subsist during that period of time. Therefore, of primary importance are the shaving mirror and the two-gallon can of oil-gas mixture. These items could be used for signaling air-sea rescue. Of secondary importance are items such as water and food, for example, the case of Army C rations.

A brief rationale is provided for the ranking of each item. These brief explanations obviously do not represent all of the potential uses for the specified items but, rather, the primary importance of each.

RANK:

1. **Shaving mirror**—critical for signaling air-sea rescue.
2. **Two-gallon can of oil-gas mixture**—critical for signaling—the oil-gas mixture will float on the water and could be ignited with a dollar bill and a match (obviously outside the raft).
3. **Five-gallon can of water**—necessary to replenish loss by perspiring, etc.
4. **One case of U. S. Army C rations**—provides basic food intake.
5. **Twenty square feet of opaque plastic**—utilized to collect rain water and provide shelter from the elements.
6. **Two boxes of chocolate bars**—a reserve food supply.
7. **Fishing kit**—ranked lower than the candy bars because “one bird in the hand is worth two in the bush.” There is no assurance that you will catch any fish.
8. **Fifteen feet of nylon rope**—may be used to lash equipment together to prevent it from falling overboard.
9. **Floating seat cushion**—if someone fell overboard, it could function as a life preserver.
10. **Shark repellent**—obvious.

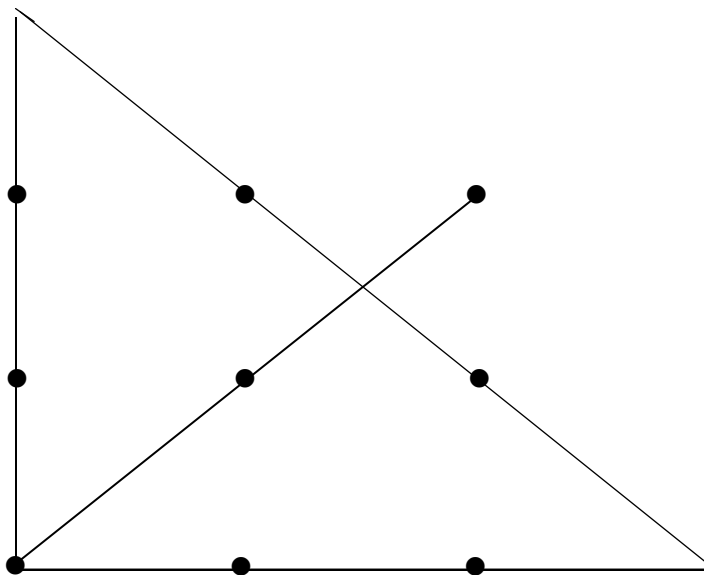
11. **One quart of 160-proof Puerto Rican rum**—contains 80 percent alcohol—enough to use as a potential antiseptic for any injuries incurred; of little value otherwise; will cause dehydration if ingested.
12. **Small transistor radio**—of little value since there is no transmitter (unfortunately, you are out of range of your favorite AM radio station).
13. **Maps of the Pacific Ocean**—worthless without additional navigational equipment; it does not really matter where you are but where the rescuers are.
14. **Mosquito netting**—there are no mosquitoes in the mid-Pacific.
15. **Sextant**—without tables and a chronometer, relatively useless.

The basic rationale for ranking signaling devices above life-sustaining items (food and water) is that without signaling devices there is almost no chance being spotted and rescued. Most rescues occur during the first 36 hours, and one can survive without food and water during that period.

Skill-Building Exercise 4.2

Creativity Exercise

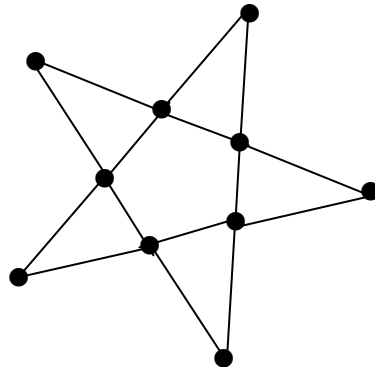
- A. Draw four straight lines connecting the dots in the following diagram without lifting your pencil off the paper. You are permitted to cross a line, but you cannot retrace any part of a line.



- B. What do these words have in common? All words have three consecutive letters that are followed by each other in the alphabet.

Canopy First
Stun Deft
Sighing Calmness

C. Place ten circles in five rows with four circles in each row.



1. Why do you think these “simple” problems were difficult for you?

These “simple” problems were difficult because of the tendency to look too deeply into a complex solution rather than seeing the obvious clearly and easily.

2. Do you think Grade school children tend to do better or worst than adults on problems such as these? Why?

Grade school children would tend to do better because they are not inclined to look so deeply since they haven’t been exposed to some of the intricate problems and solutions as adults have.

Skill-Building Exercise 4.3

Risk Aversion

Student responses here may vary. This exercise illustrates how different individuals will react and take different decisions to similar risks. The exercise will be more effective if a comparison is made among the students in class on the different solutions arrived at. The students should complete the following task by themselves before a class discussion is conducted: 1) connect the dots on the graph and compare the curves drawn by various individuals in class; 2) Do you consider yourself to be a risk taker or a risk averter?; 3) How do you think that your affinity for risk might affect your ability to be a good manager?

Suggested Answers to Case Incident Questions

Case 4.1 Getting Out of the Army*

1. What should Jay do?

He should confer with his wife and update his resume. Once he has a firm offer (or several firm offers), he can make a decision. Jay should realize, however, that the private sector will place demands and expectations on him, too. He may have a case of the “grass is always greener” syndrome at this point. This is a big step that he should carefully research.

2. What factors should Jay consider in his decision?

Likelihood of finding a job; private sector compensation; wife’s needs; exact nature of work he’d be doing; current financial position; and retirement benefits (to name a few).

3. What role would values play in Jay’s decision?

Jay’s and his wife Ellen’s values would play a central role, for they determine what is desirable and right for the two of them. When establishing priorities regarding his decision criteria, values still take precedence in the priority-setting process.

Case 4.2 Going Abroad

1. How would you select who should go abroad on extended loan?

First thing to do is organize the alternatives in a chart or something visual. Ask questions that would help decide who, if anyone, should help in the decision. Each new question should build onto of the previous one to narrow solution further.

2. What are some major factors that would influence your decision process?

Factors influencing decision process include: prior experience of all engineers on the team, willingness of the engineers being considered for the assignment, all facts related to the location of the place (climatic, cultural, economic, and political), any training that may be required; a contingency plan in case selected engineers are unwilling to take up the assignment. The final decision can be arrived at after taking into consideration all factors relating to the nature of work, location factors, and the willingness of the person who will be sent abroad on extended loan.

* Officers of the United States Merchant Marines ranked the fifteen items and provided the correct solution to the task Reproduced from The 1975 Annual Handbook for Group Facilitators, John E Jones and J. William Pfeiffer, Editors, La Jolla, California University Associates, Inc. 1975

Suggested Student Projects

1. Ask the students to relate a problem **solving** incident that they were recently involved in (or that a friend was involved in) and ask them and the class to critique the incident as to suggestions on how to better solve the problem at hand.
2. Pick five well-known universities and have the students describe how to evaluate them using the intuitive and rational (optimizing and satisficing) approaches. How did these undergraduate students make their choice to attend their present university? How would they approach the problem differently if they had it to do over again? If variables were changed (which ones), would their decision be altered? What can be learned from this for managerial purposes? Draw a decision tree that illustrates the decision-making processes.
3. Find a contemporary article that demonstrates the relationships of teams in decision making. The article can be about business, sports, or other group activities.
4. Have the students meet in a small group and list all the purposes, functions, or uses of a **brick**. Does their first perception of use (construction) bias the outcome? How do you think a six-year old would answer this question? Ask one. Are children more creative than adults? Why or why not?



Chapter 4

Decision-Making Skills

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Learning Objectives

After studying this chapter, you will be able to:

1. Explain the difference between decision making and problem solving.
2. Distinguish between programmed and non-programmed decisions.
3. Explain the intuitive approach to decision making.
4. Discuss two rational approaches to decision making.

4-2

Serving to Promote the Potential Of People & Organizations



Learning Objectives (cont'd)

After studying this chapter, you will be able to:

5. List the different conditions under which managers make decisions.
6. Explain the role values play in making decisions.
7. Summarize the positive and negative aspects of group decision making.
8. Define creativity and innovation and outline the basic stages in the creative process.

4-3

Learning Objectives (cont'd)

After studying this chapter, you will be able to:

9. Identify several specific tools and techniques used to foster creative decisions.
10. List the six stages in creative decision making.
11. Explain the role of a management information system (MIS).

4-4

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Decision Process

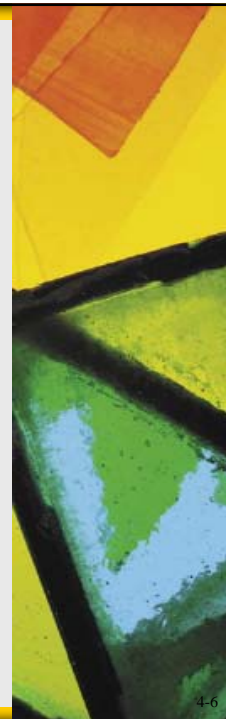
- Not all decision makers are managers, but all managers need to be good decision makers.
- Herbert Simon describes the manager's decision process in three stages:
 - Intelligence: Searching the environment for conditions requiring decisions.
 - Design: Inventing, developing and analyzing possible courses of action.
 - Choice: Actual selection of a course of action.



4-5

Decision Making and Problem Solving

- Decision making
 - The process of choosing from among various alternatives.
- Problem
 - Any deviation from some standard or desired level of performance.
- Problem solving
 - Determination of the appropriate responses or actions necessary to alleviate a problem.



4-6

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Programmed Versus Non-programmed Decisions

- Programmed decisions
 - Decisions that are reached by following an established or systematic procedure.
 - Routine, repetitive decisions fall under this category.
- Non-programmed decisions
 - Decisions that have little or no precedent.
 - Relatively unstructured.
 - Generally require a creative approach by the decision maker.
- Non-programmed decisions are more difficult to make than programmed decisions.

4-7

Intuitive Decision Making

- Emotional attachments that can hurt decision makers:
 - Fastening on unsubstantiated facts and sticking with them.
 - Being attracted to scandalous issues and heightening their significance.
 - Pressing every fact into a moral pattern.
 - Overlooking everything except what is immediately useful.
 - Having an affinity for romantic stories and finding such information more significant than other hard evidence.
- Suggestions to overcome emotional attachments include:
 - Becoming aware of biases and allowing for them.
 - Seeking independent opinions.

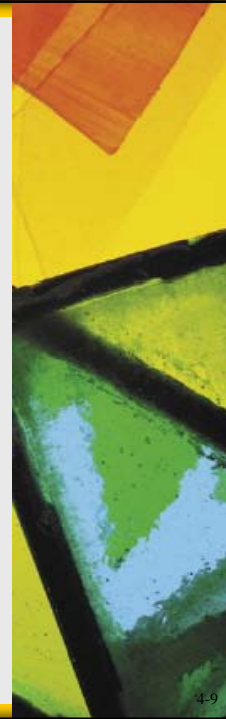
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Rational Approaches to Decision Making

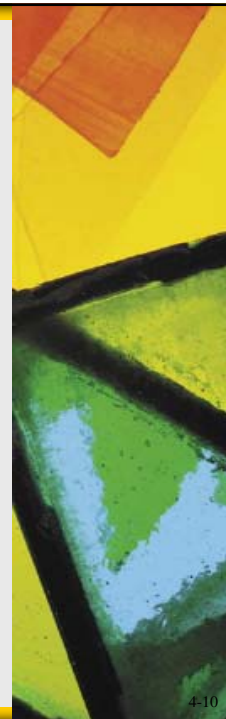
- Rational approaches to decision making attempt to evaluate factual information through the use of some type of deductive reasoning.
- Two types of rational approaches are:
 - The optimizing approach.
 - The Satisficing Approach.



4-9

The Optimizing Approach: Steps

- Also called rational or scientific approach, is based on the concept of the “economic man.”
 - Recognize the need for a decision.
 - Establish, rank, and weigh the decision criteria.
 - Gather available information and data.
 - Identify possible alternatives.
 - Evaluate each alternative with respect to all criteria.
 - Select the best alternative.



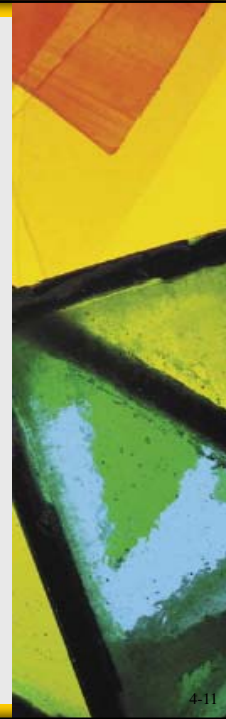
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The Optimizing Approach: Limitations

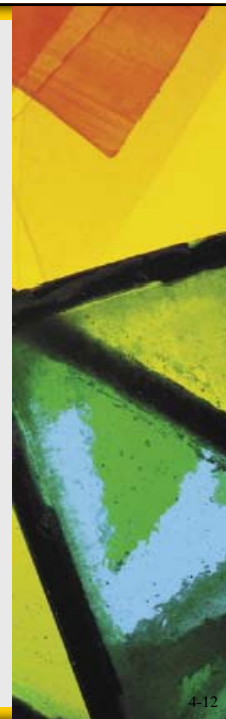
- People have clearly defined criteria, and the relative weights they assign to these criteria are stable.
- People have knowledge of all relevant alternatives.
- People have the ability to evaluate each alternative with respect to all the criteria and arrive at an overall rating for each alternative.
- People have the self-discipline to choose the alternative that rates the highest (they will not manipulate the system).



4-11

The Satisficing Approach: Assumptions

- Principle of bounded rationality: proposes the decision model of the “administrative man.”
 - A person’s knowledge of alternatives and criteria is limited.
 - People act on the basis of a simplified abstraction (influenced by personal perceptions and biases) of the real world.
 - People do not attempt to optimize but will take the first alternative that satisfies their current level of aspiration (satisficing).
 - Individual aspirations concerning a decision fluctuate upward and downward depending on the value of the most recently identified alternatives.



4-12

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Rational Approaches to Decision Making

- **Optimizing**
 - Selecting the best possible alternative.
- **Satisficing**
 - Selecting the first alternative that meets the decision maker's minimum standard of satisfaction.
- **Level of aspiration**
 - Refers to the level of performance a person expects to attain and it is impacted by the person's prior successes and failures.

4-13

The Satisficing Approach

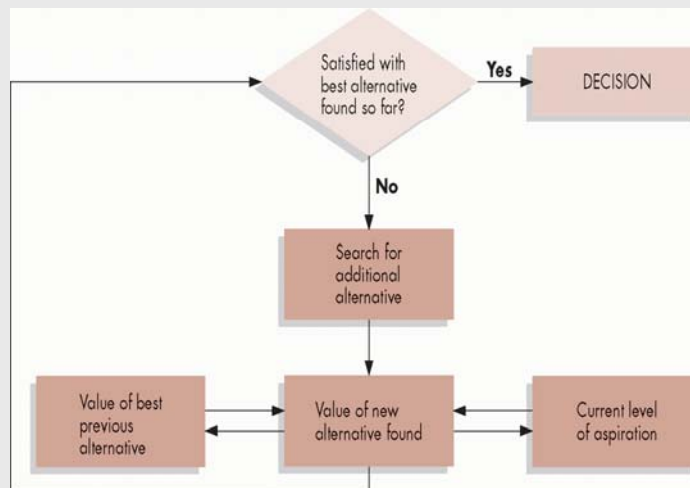


Figure 4.1

Source: Adapted from James G. March and Herbert A. Simon, *Organizations* (New York: John Wiley & Sons, 1958), p. 49.

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Environmental Factors Influencing Decision Making

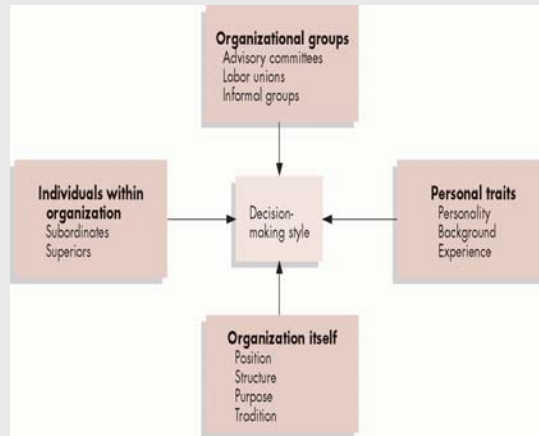


Figure 4.2

4-15

Conditions for Making Decisions

- **Situation of Certainty**
 - The decision maker can calculate the precise outcome for each alternative.
 - Decisions based on certainty are seldom made.
- **Situation of Risk**
 - Reasonably accurate probabilities based on historical data and past experiences often can be calculated.
 - Under such conditions, the decision maker can use expected value analysis to reach a decision.

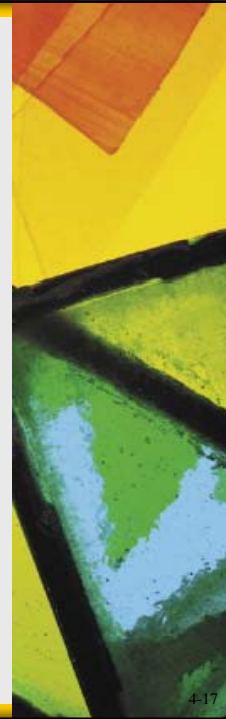
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Conditions for Making Decisions

- Situation of uncertainty
 - Situation that occurs when a decision maker has very little or no reliable information on which to evaluate the different possible outcomes.
- Approaches for dealing with uncertainty
 - Maximax approach
 - Selecting the alternative whose best possible outcome is the best of all possible outcomes for all alternatives; sometimes called the *optimistic* or *gambling approach* to decision making.
 - Maximin approach
 - Comparing the worst possible outcomes for each alternative and selecting the one that is least undesirable; sometimes called the *pessimistic approach* to decision making.

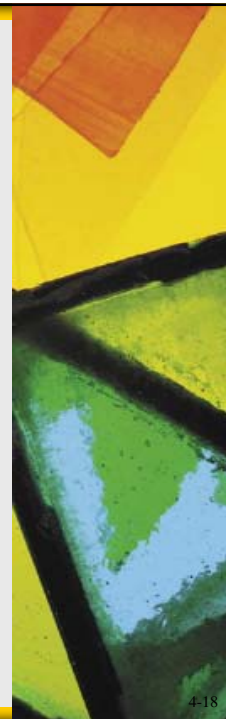


4-17

Situation of Uncertainty

Approach	How It Works	Related to the Umbrella Example
Optimistic or gambling approach (maximax)	Choose the alternative whose best possible outcome is the best of all possible outcomes for all alternatives.	Do not take umbrella
Pessimistic approach (maximin)	Compare the worst possible outcomes of each of the alternatives, and select the alternative whose worst possible outcome is least undesirable.	Take umbrella
Risk-averting approach	Choose the alternative that has the least variation among its possible alternatives.	Take umbrella

Figure 4.4



4-18

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Timing the Decision

- The need for a decision must be recognized to time the decision well.
- Some ways managers react:
 - The manager that quickly decides runs the risk of making bad decisions.
 - The manager that listens to problems and promises to act might also not make a decision when required.
 - The manager who never seems to have enough information, frets and worries over even the simplest decisions.
 - The manager who refers everything to the supervisors.

4-19

Role of Values/Ethics in Decision Making

- Value is a conception, explicit or implicit, defining what an individual or group regards as desirable. It has an impact on:
 - Selection of performance measures
 - Alternatives
 - Choice criteria in the decision process
- Ethics are a set of moral principles or values that govern behavior.

4-20

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George England's Major Categories of Values

- Pragmatic mode
- Ethical/moral mode
- Affect, or feeling, mode
- Suggests that an individual has an evaluative framework that is guided primarily by success–failure considerations.
- Implies an evaluative framework consisting of ethical considerations influencing behavior toward actions and decisions that are judged to be right and away from those judged to be wrong.
- Suggests an evaluative framework that is guided by hedonism: One behaves in ways that increase pleasure and decrease pain.

4-21

Positive and Negative Aspects of Group Decision Making

Positive Aspects

1. The sum total of the group's knowledge is greater.
2. The group possesses a much wider range of alternatives in the decision process.
3. Participation in the decision-making process increases the acceptance of the decision by group members.
4. Group members better understand the decision and the alternatives considered.

Negative Aspects

1. One individual may dominate or control the group.
2. Social pressures to conform can inhibit group members.
3. Competition can develop to such an extent that winning becomes more important than the issue itself.
4. Groups have a tendency to accept the first potentially positive solution while giving little attention to other possible solutions.

Figure 4.5

4-22

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Guidelines for Encouraging Employee Participation in Making Decisions

1. Don't criticize ideas.
2. Implement good employee ideas.
3. Give employees credit for ideas.
4. Never make employees feel stupid.

Figure 4.6

4-23

Barriers to Effective Decision Making

- Daniel Wheeler and Irving Janis identify four basic barriers to effective decision making:
 - Complacency
 - Defensive avoidance
 - Panic
 - Deciding to decide

4-24

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Making Creative Decisions

- Several techniques can be used to foster creative decision-making within an organization.
 - Creativity
 - Coming up with an idea that is new, original, useful, or satisfying to its creator or to someone else.
 - Innovation
 - Process of applying a new and creative idea to a product, service, or method of operation.

4-25

The Creative Process

1. Preparation – Investigate to fully understand the problem and all relevant issues pertaining to the problem.
2. Concentration – Commit to solving the problem in a timely manner.
3. Incubation of ideas and information – Allow creative sparks to catch fire.
4. Illumination/ Eureka connection – Connect the problem with an acceptable solution.
5. Verification – Test the solution and accept the results.

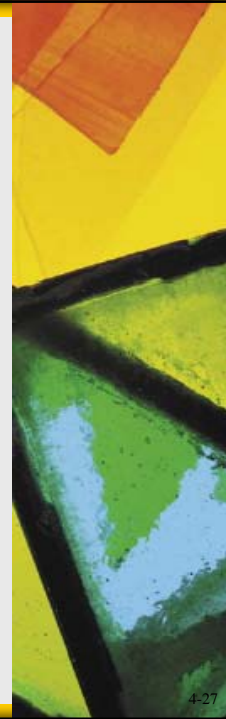
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Establishing a Creative Environment

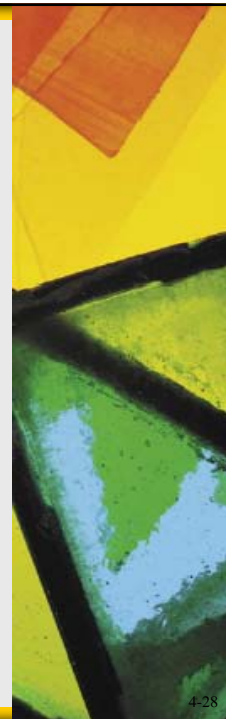
- Instill trust – eliminate the fear of failure of an idea.
- Develop effective internal and external communication.
- Seek a mix of talent within the organization.
- Reward useful ideas and solutions.
- Allow for flexibility in the organization's structure.



4-27

Brainstorming

- Four basic rules for the first phase:
 - No criticism of ideas is allowed.
 - No praise of ideas is allowed.
 - No questions or discussion of ideas is allowed.
 - Combinations of and improvements on ideas that have been previously presented are encouraged.



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Brainstorming (cont'd)

- Second phase:
 - Merits of each idea are reviewed; often leading to additional alternatives.
 - Alternatives with little merit are eliminated.
- Third phase:
 - One of the alternatives is selected, frequently through group consensus.

4-29

Gordon Technique

- Only the group leader knows the exact nature of the real problem under consideration.
- Key words used would direct a discussion and suggestions.
- Followers of the Gordon Technique maintain that this technique generates better-quality ideas.

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Nominal Group Technique

- Highly structured technique for solving group tasks; minimizes personal interactions to encourage activity and reduce pressures toward conformity.
 - Listing
 - Recording
 - Voting
 - Discussion
 - Final voting

4-31

Brainwriting

- Technique in which a group is presented with a problem situation and members anonymously write down ideas, then exchange papers with others, who build on the ideas and pass them on until all members have participated.

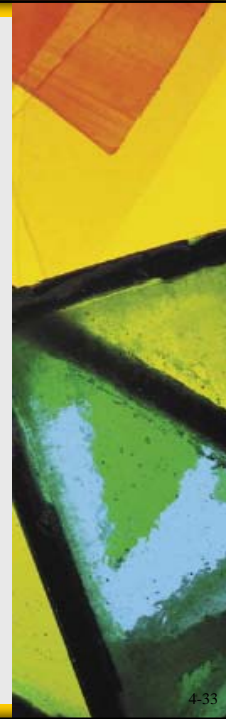
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Synectics

- Problem solving technique that uses metaphorical thinking to “make the familiar strange and the strange familiar.”
 - Personal analogies: place yourself in the role of the object.
 - Direct analogies: make direct comparisons.
 - Symbolic analogies: look at the problem in terms of symbols.
 - Fantasy analogies: imagine the most perfect solution.



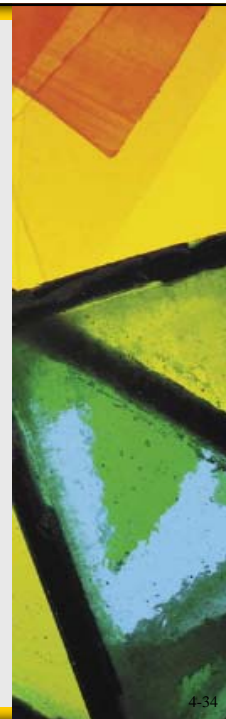
4-33

Model for Creative Decision Making

Stage	Activity
1 Recognition	} To investigate and eventually define a problem or decision situation.
2 Fact finding	
3 Problem finding	
4 Idea finding	} To generate possible alternatives or solutions (ideas).
5 Solution finding	
6 Acceptance finding	} To work out a plan for implementing a chosen idea.

Figure 4.7

Source: Bruce Meyers, unpublished paper, Western Illinois University, 1987.



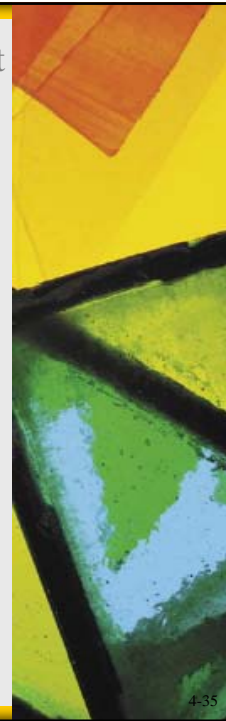
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Decision Making With Computers/Management Information Systems

- A management information system (MIS) is an information system used by managers to support the day-to-day operational and tactical decision making needs of managers.
- Data processing is the capture, processing, and storage of data.
- Transaction-processing systems substitute computer processing for manual recordkeeping procedures.



4-35

Decision Making With Computers/Management Information Systems

- Uses data captured and stored as a result of transaction processing.
- Reports data and information rather than details of transaction processing.
- Assists managers in monitoring situations, evaluating conditions, and determining what actions need to be taken.
- Supports recurring decisions.
- Provides information in prespecified report formats, either in print or on-screen.

Figure 4.8

Source: From *Information Technology in Business*, 2nd edition, by J. A. Senn. Copyright © 1998 by Pearson Education, Inc. Reprinted by permission of Pearson Education, Inc., Upper Saddle River, NJ.



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