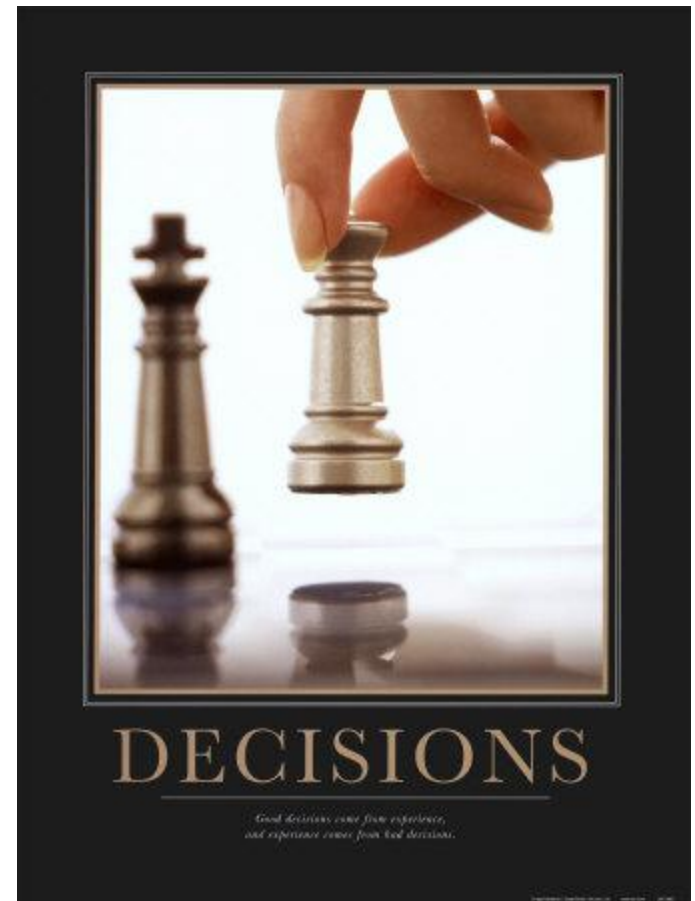


Lecture 4.

Topic 3.

Managerial Decision Making



LEARNING OUTLINE

The Decision-Making Process

- **Define decision and decision-making process.**
- **Describe the eight steps in the decision-making process.**

The Manager as Decision Maker

- **Discuss the assumptions of rational decision making.**
- **Describe the concepts of bounded rationality, satisficing, and escalation of commitment.**
- **Explain intuitive decision making.**
- **Contrast programmed and nonprogrammed decisions.**

LEARNING OUTLINE (cont'd)

The Manager as Decision Maker (cont'd)

- **Contrast the three decision-making conditions.**
- **Explain maximax, maximin, and minimax decision choice approaches.**
- **Describe the four decision making styles.**
- **Discuss the twelve decision-making biases managers may exhibit.**
- **Describe how manager can deal with the negative effects of decision errors and biases.**
- **Explain the managerial decision-making model.**

LEARNING OUTLINE (cont'd)

Decision Making for Today's World

- **Explain how managers can make effective decisions in today's world.**
- **List six characteristics of an effective decision-making process.**
- **Describe the five habits of highly reliable organizations.**

Decisions and Decision Making

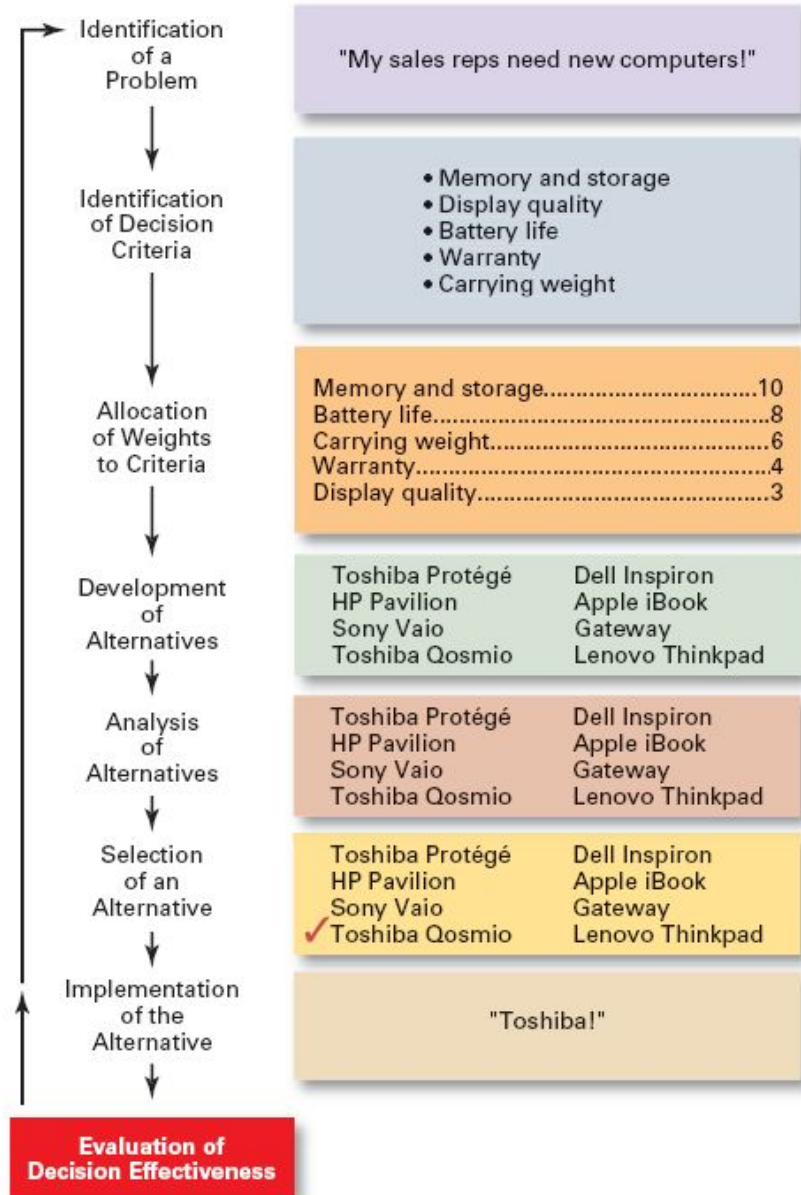
- **Decision** = choice made from available alternatives
- **Decision Making** = process of identifying problems and opportunities and resolving them

Decision Making

- The Decision-Making Process
 - Identifying a problem and decision criteria and allocating weights to the criteria.
 - Developing, analyzing, and selecting an alternative that can resolve the problem.
 - Implementing the selected alternative.
 - Evaluating the decision's effectiveness.

Exhibit 6-1

The Decision-Making Process



Step 1: Identifying the Problem

- Problem

- A discrepancy between an existing and desired state of affairs.

- Characteristics of Problems

- A problem becomes a problem when a manager becomes aware of it.

- There is pressure to solve the problem.

- The manager must have the authority, information, or resources needed to solve the problem.

Step 2: Identifying Decision Criteria

- Decision criteria are factors that are important (relevant) to resolving the problem.
 - Costs that will be incurred (investments required)
 - Risks likely to be encountered (chance of failure)
 - Outcomes that are desired (growth of the firm)

Step 3: Allocating Weights to the Criteria

- Decision criteria are not of equal importance:
 - Assigning a weight to each item places the items in the correct priority order of their importance in the decision making process.

Exhibit 6–2 Criteria and Weights for Computer Replacement Decision

Criterion Weight

Memory and Storage 10

Battery life 8

Carrying Weight 6

Warranty 4

Display Quality 3

Step 4: Developing Alternatives

- Identifying viable alternatives
 - Alternatives are listed (without evaluation) that can resolve the problem.

Step 5: Analyzing Alternatives

- Appraising each alternative's strengths and weaknesses
 - An alternative's appraisal is based on its ability to resolve the issues identified in steps 2 and 3.

Exhibit 6–3 Assessed Values of Laptop Computers Using Decision Criteria

	Memory and Storage	Battery Life	Carrying Weight	Warranty	Display Quality
Toshiba Protégé S100	10	3	10	8	5
Dell Inspiron 700m	8	7	7	8	7
HP Pavilion zd8000	8	5	7	10	10
Apple iBook	8	7	7	8	7
Sony Vaio VGN-FS790	7	8	7	8	7
Gateway NX850X	8	3	6	10	8
Toshiba QosmioG15-AV501	10	7	8	6	7
Lenovo Thinkpad R52	4	10	4	8	10

Step 6: Selecting an Alternative

- Choosing the best alternative
 - The alternative with the highest total weight is chosen.

Step 7: Implementing the Alternative

- Putting the chosen alternative into action.

Exhibit 6–4 Evaluation of Laptop Alternatives Against Weighted Criteria

	Memory and Storage	Battery Life	Carrying Weight	Warranty	Display Quality	Total
Toshiba Protégé S100	100	24	60	32	15	231
Dell Inspiron 700m	80	56	42	32	21	231
HP Pavilion zd8000	80	40	42	40	30	232
Apple iBook	80	56	42	32	21	231
Sony Vaio VGN-FS790	70	64	42	32	21	229
Gateway NX850X	80	24	36	40	24	204
Toshiba QosmioG15-AV501	100	56	48	24	21	249
Lenovo Thinkpad R52	40	80	24	32	30	206

Step 8: Evaluating the Decision's Effectiveness

- The soundness of the decision is judged by its outcomes.
 - How effectively was the problem resolved by outcomes resulting from the chosen alternatives?
 - If the problem was not resolved, what went wrong?

Exhibit 6–5 Decisions in the Management Functions

Planning

- What are the organization's long-term objectives?
- What strategies will best achieve those objectives?
- What should the organization's short-term objectives be?
- How difficult should individual goals be?

Organizing

- How many employees should I have report directly to me?
- How much centralization should there be in the organization?
- How should jobs be designed?
- When should the organization implement a different structure?

Leading

- How do I handle employees who appear to be low in motivation?
- What is the most effective leadership style in a given situation?
- How will a specific change affect worker productivity?
- When is the right time to stimulate conflict?

Controlling

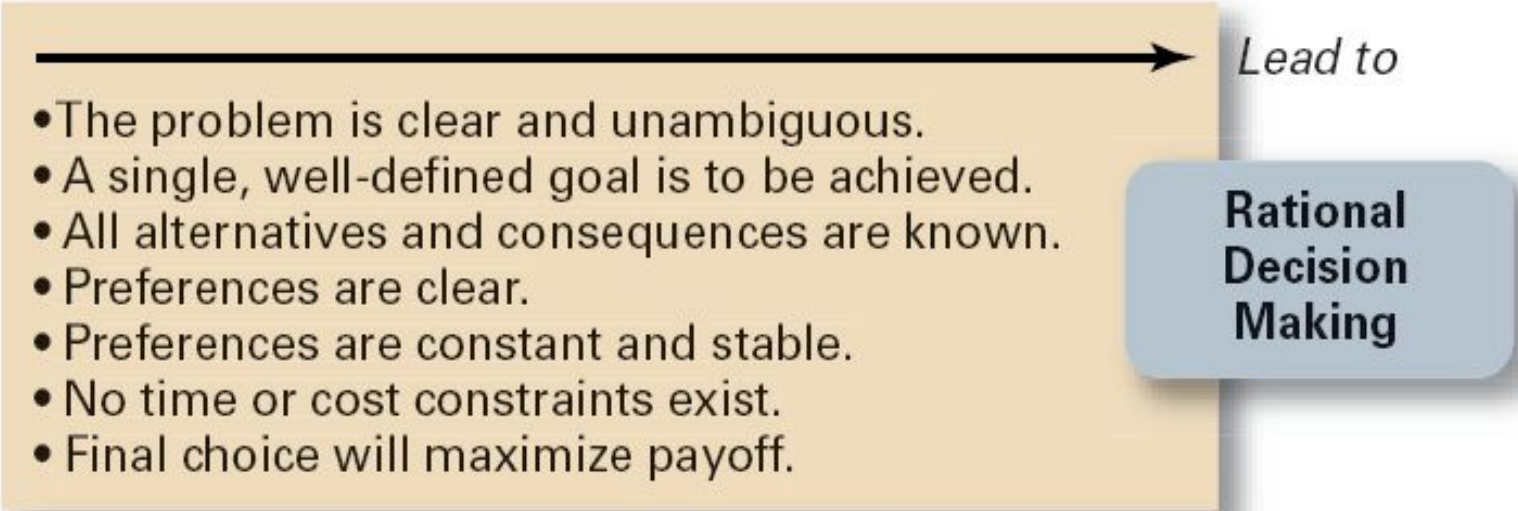
- What activities in the organization need to be controlled?
- How should those activities be controlled?
- When is a performance deviation significant?
- What type of management information system should the organization have?

Making Decisions

- Rationality

- Managers make consistent, value-maximizing choices with specified constraints.
- Assumptions are that decision makers:
 - ❖ Are perfectly rational, fully objective, and logical.
 - ❖ Have carefully defined the problem and identified all viable alternatives.
 - ❖ Have a clear and specific goal
 - ❖ Will select the alternative that maximizes outcomes in the organization's interests rather than in their personal interests.

Exhibit 6–6 Assumptions of Rationality

- 
- The problem is clear and unambiguous.
 - A single, well-defined goal is to be achieved.
 - All alternatives and consequences are known.
 - Preferences are clear.
 - Preferences are constant and stable.
 - No time or cost constraints exist.
 - Final choice will maximize payoff.

Lead to

**Rational
Decision
Making**

Making Decisions (cont'd)

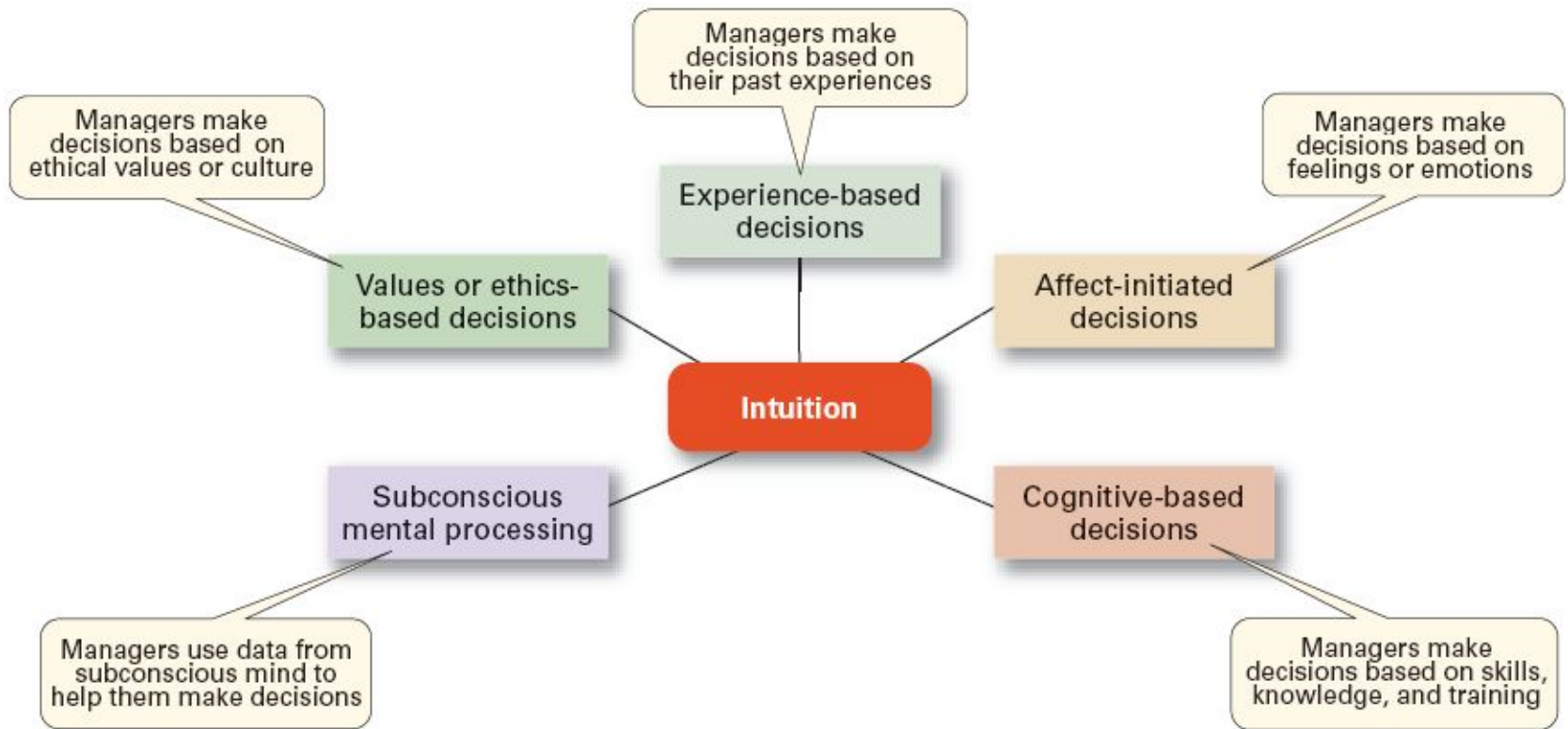
- Bounded Rationality

- Managers make decisions rationally, but are limited (bounded) by their ability to process information.
- Assumptions are that decision makers:
 - ❖ Will not seek out or have knowledge of all alternatives
 - ❖ Will **satisfice**—choose the first alternative encountered that satisfactorily solves the problem—rather than maximize the outcome of their decision by considering all alternatives and choosing the best.
 - ❖ **Satisficing**, a combination of two words into one new word ("combining *satisfy* with *suffice*"), is a decision-making strategy that attempts to meet an acceptability threshold.

The Role of Intuition

- Intuitive decision making
 - Making decisions on the basis of experience, feelings, and accumulated judgment.

Exhibit 6–7 What is Intuition?



Source: Based on L. A. Burke and M. K. Miller, "Taking the Mystery Out of Intuitive Decision Making," *Academy of Management Executive*, October 1999, pp. 91–99.

Categories of Decisions

- **Programmed Decisions**
 - Situations occurred often enough to enable decision rules to be developed and applied in the future
 - Made in response to recurring organizational problems
- **Nonprogrammed Decisions** – in response to unique, poorly defined and largely unstructured, and have important consequences to the organization



Types of Problems and Decisions

- **Structured Problems**

- Involve goals that clear.
- Are familiar (have occurred before).
- Are easily and completely defined—information about the problem is available and complete.

- **Programmed Decision**

- A repetitive decision that can be handled by a routine approach.

Types of Programmed Decisions

- **Policy**

- A general guideline for making a decision about a structured problem.

- **Procedure**

- A series of interrelated steps that a manager can use to respond (applying a policy) to a structured problem.

- **Rule**

- An explicit statement that limits what a manager or employee can or cannot do.

Policy, Procedure, and Rule Examples

- Policy

- Accept all customer-returned merchandise.

- Procedure

- Follow all steps for completing merchandise return documentation.

- Rules

- Managers must approve all refunds over \$50.00.
- No credit purchases are refunded for cash.

Problems and Decisions (cont'd)

- **Unstructured Problems**

- Problems that are new or unusual and for which information is ambiguous or incomplete.
- Problems that will require custom-made solutions.

- **Nonprogrammed Decisions**

- Decisions that are unique and nonrecurring.
- Decisions that generate unique responses.

Decisions and Decision Making

Many decisions that managers deal with every day involve at least some degree of uncertainty and require nonprogrammed decision making

- May be difficult to make
- Made amid changing factors
- Information may be unclear
- May have to deal with conflicting points of view

Exhibit 6–8 Programmed versus Nonprogrammed Decisions

Characteristics	Programmed Decisions	Nonprogrammed Decisions
Type of problem	Structured	Unstructured
Managerial level	Lower levels	Upper levels
Frequency	Repetitive, routine	New, unusual
Information	Readily available	Ambiguous or incomplete
Goals	Clear, specific	Vague
Time frame for solution	Short	Relatively long
Solution relies on	Procedures, rules, policies	Judgment and creativity

Decision-Making Conditions

- **Certainty**

- A situation in which a manager can make an accurate decision because the outcome of every alternative choice is known.

- **Risk**

- A situation in which the manager is able to estimate the likelihood (probability) of outcomes that result from the choice of particular alternatives.

**Exhibit 6–9 Expected Value for Revenues from
the Addition of One Ski Lift**

Event	Expected Revenues	×	Expected Probability	=	Value of Each Alternative
Heavy snowfall	\$850,000		0.3	=	\$255,000
Normal snowfall	725,000		0.5	=	362,500
Light snowfall	350,000		0.2	=	<u>70,000</u>
	\$687,500				

Decision-Making Conditions

- **Uncertainty**

- Limited information prevents estimation of outcome probabilities for alternatives associated with the problem and may force managers to rely on intuition, hunches, and “gut feelings”.
 - ◆ **Maximax:** the optimistic manager’s choice to maximize the maximum payoff
 - ◆ **Maximin:** the pessimistic manager’s choice to maximize the minimum payoff
 - ◆ **Minimax:** the manager’s choice to minimize maximum regret.

Exhibit 6–10 Payoff Matrix

(in millions of dollars)

Visa Marketing Strategy	MasterCard's Response		
	CA ₁	CA ₂	CA ₃
S ₁	13	14	11
S ₂	9	15	18
S ₃	24	21	15
S ₄	18	14	28

Exhibit 6–11 Regret Matrix

(in millions of dollars)
Visa Marketing Strategy

MasterCard's Response

	CA ₁	CA ₂	CA ₃
S ₁	11	7	17
S ₂	15	6	10
S ₃	0	0	13
S ₄	6	7	0

Decision-Making Styles

- Dimensions of Decision-Making Styles
 - Ways of thinking
 - ❖ Rational, orderly, and consistent
 - ❖ Intuitive, creative, and unique
 - Tolerance for ambiguity
 - ❖ Low tolerance: require consistency and order
 - ❖ High tolerance: multiple thoughts simultaneously

Decision-Making Styles (cont'd)

- Types of Decision Makers

- Directive

- ❖ Use minimal information and consider few alternatives.

- Analytic

- ❖ Make careful decisions in unique situations.

- Conceptual

- ❖ Maintain a broad outlook and consider many alternatives in making decisions.

- Behavioral

- ❖ Avoid conflict by working well with others and being receptive to suggestions.

Exhibit 6–12 Decision-Making Matrix

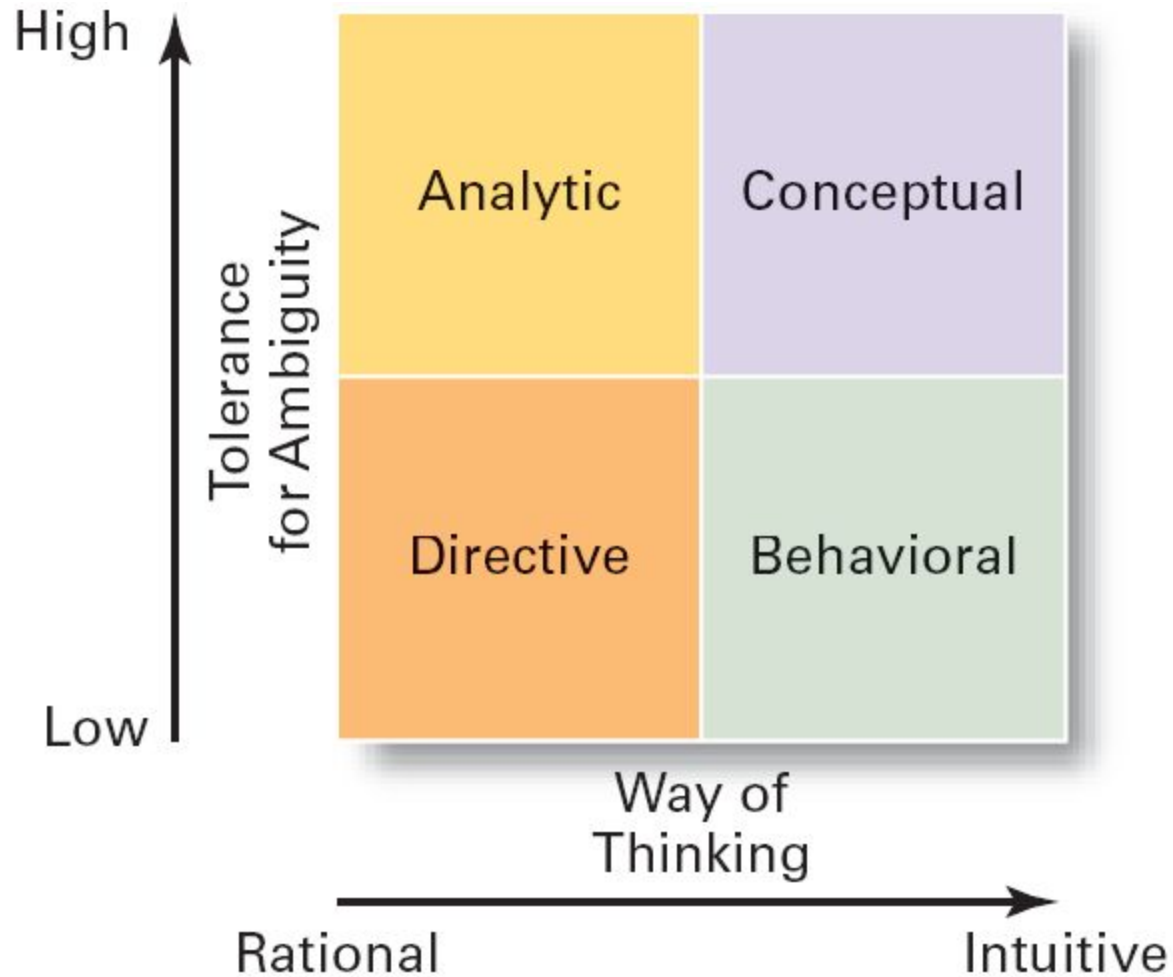


Exhibit 6–13 Common Decision-Making Errors and Biases



Managerial Decision Making

Decision-Making Biases and Errors

- **Heuristics**

- Using “rules of thumb” to simplify decision making.

- **Overconfidence Bias**

- Holding unrealistically positive views of one’s self and one’s performance.

- **Immediate Gratification Bias**

- Choosing alternatives that offer immediate rewards and that to avoid immediate costs.

Decision-Making Biases and Errors (cont'd)

- **Anchoring Effect**
 - Fixating on initial information and ignoring subsequent information.
- **Selective Perception Bias**
 - Selecting organizing and interpreting events based on the decision maker's biased perceptions.
- **Confirmation Bias**
 - Seeking out information that reaffirms past choices and discounting contradictory information.

Decision-Making Biases and Errors (cont'd)

- **Framing Bias**
 - Selecting and highlighting certain aspects of a situation while ignoring other aspects.
- **Availability Bias**
 - Losing decision-making objectivity by focusing on the most recent events.
- **Representation Bias**
 - Drawing analogies and seeing identical situations when none exist.
- **Randomness Bias**
 - Creating unfounded meaning out of random events.

Decision-Making Biases and Errors (cont'd)

- **Sunk Costs Errors**

- Forgetting that current actions cannot influence past events and relate only to future consequences.

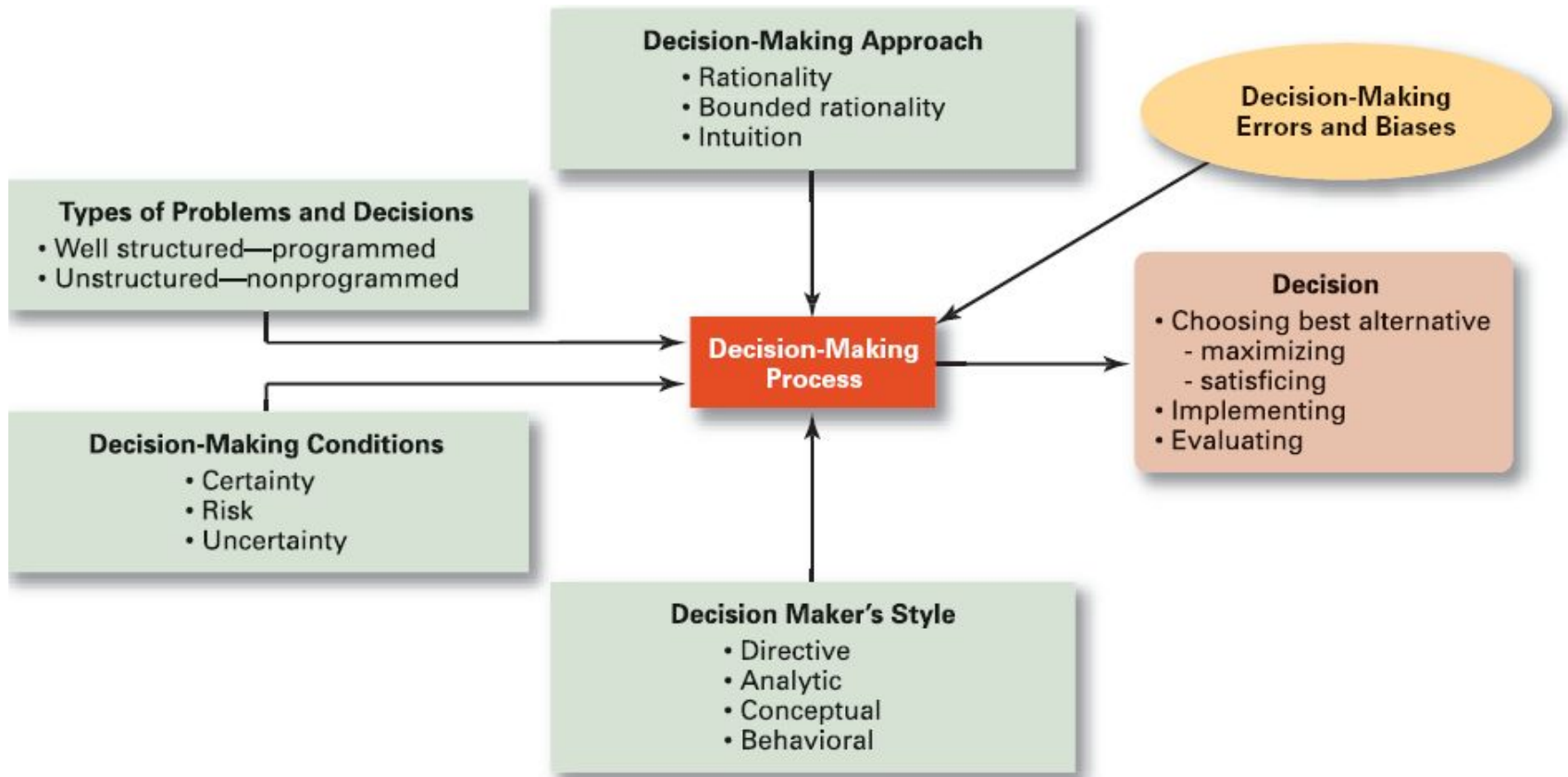
- **Self-Serving Bias**

- Taking quick credit for successes and blaming outside factors for failures.

- **Hindsight Bias**

- Mistakenly believing that an event could have been predicted once the actual outcome is known (after-the-fact).

Exhibit 6–14 Overview of Managerial Decision Making



Decision Making for Today's World

- Guidelines for making effective decisions:
 - Understand cultural differences.
 - Know when it's time to call it quits.
 - Use an effective decision-making process.
- Habits of highly reliable organizations (HROs)
 - Are not tricked by their success.
 - Defer to the experts on the front line.
 - Let unexpected circumstances provide the solution.
 - Embrace complexity.
 - Anticipate, but also anticipate their limits.

Characteristics of an Effective Decision-Making Process

- It focuses on what is important.
- It is logical and consistent.
- It acknowledges both subjective and objective thinking and blends analytical with intuitive thinking.
- It requires only as much information and analysis as is necessary to resolve a particular dilemma.
- It encourages and guides the gathering of relevant information and informed opinion.
- It is straightforward, reliable, easy to use, and flexible.

Terms to Know

- decision
- decision-making process
- problem
- decision criteria
- rational decision making
- bounded rationality
- satisficing
- intuitive decision making
- structured problems
- programmed decision
- procedure
- rule
- policy
- unstructured problems
- nonprogrammed decisions
- certainty
- risk
- uncertainty
- directive style
- analytic style
- conceptual style
- behavioral style
- heuristics