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A Manager's Dilemma

Its bicycles are loved by customers and respected by competitors. Cannondale Corporation based in Bethel, Connecticut, is a leading maker of mountain, road racing, multisport, recreational, and specialty bicycles. Not content to stay on a gentle, smooth, and predictable path, Cannondale's managers decided to go in a new direction by introducing a new line of off-road motorcycles in the spring of 2000. Mario Galasso, vice president of product development at the company who also races bikes in his off-hours, helped design the new dirt bike.

It's hoped that the company's new motorcycle will help double sales and give a boost to the stock price that's been languishing around $5 1/2 a share, down from a high of $28 in 1998. However, to accomplish these lofty goals, the company will have to steal market share from some serious competition: Yamaha, Suzuki, Kawasaki, and Honda. Yet, there's some good news as well. Recreational off-road biking is extremely popular now. This boom is being fed by televised motocross competitions. Galasso says, "The whole thing is kind of going crazy." He hopes that the new bike his group has designed will attract wide consumer interest.

The path to the introduction of Cannondale's new motorcycle was about as unpredictable and bumpy as some of the trails that the company's customers love to traverse. Bringing a new product out is a difficult proposition for any company, and Cannondale's product development expertise, although extremely proficient in high-end bicycles, was put to the test. The whole process took a couple of years longer than expected. Galasso relished the challenge, however. He explained, "The point of riding and racing is trying to make your bike lighter, faster, trying to get an edge over a guy. You don't get into this if you don't think you can do it better."

Now that the new bike is out, how could Galasso evaluate the effectiveness of the decision? What decision criteria might he use?

What would you do?
Take a moment to familiarize yourself with the key objectives of this chapter.
Like managers everywhere, Mario Galasso needs to make good decisions at Cannondale Corporation. Making good decisions is something that every manager strives to do since the overall quality of managerial decisions has a major influence on organizational success or failure. In this chapter, we examine the concept of decision making and how managers make decisions.

The Decision-Making Process

Individuals at all levels and in all areas of organizations make decisions. That is, they make choices from two or more alternatives. For instance, top-level managers make decisions about their organization's goals, where to locate manufacturing facilities, what new markets to move into, and what products or services to offer. Middle and lower-level managers make decisions about setting weekly or monthly production schedules, handling problems that arise, allocating pay raises, and selecting or disciplining employees. But making decisions isn't something that just managers do. All organizational members make decisions that affect their jobs and the organization they work for. How do they make those decisions?

Although decision making is typically described as "choosing among alternatives," that view is too simplistic. Why? Because decision making is a comprehensive process, not just a simple act of choosing among alternatives. Even for something as straightforward as deciding where to go for lunch, you do more than just choose burgers or pizza. Granted, you may not spend a lot of time contemplating the lunch decision, but you still engage in the steps in the decision-making process. What does the decision-making process involve?

Exhibit 6.1 illustrates the decision-making process, a set of eight steps that begins with identifying a problem and decision criteria and allocating weights to those criteria; moves to developing, analyzing, and selecting an alternative that can resolve the problem; implements the alternative; and concludes with evaluating the decision's effectiveness. This process is as relevant to your personal decision about what movie to see on a Friday night as it is to a corporate action such as Cannondale's decision to start manufacturing and marketing motorcycles. The process also can be used to describe both individual and group decisions. Let's take a closer look at the process in order to understand what each step involves.
Step 1: Identifying a Problem

The decision-making process begins with the existence of a problem or, more specifically, a discrepancy between an existing and a desired state of affairs. Let's develop an example that illustrates this point and that we can use throughout our discussion of the decision-making process. To keep it simple, let's make the example something most of us can relate to: the decision to buy a new laptop computer. Take the case of Joan, a sales manager whose sales representatives need new laptops because their old ones aren't fast enough and don't have sufficient memory to handle the volume of work. Again, for simplicity's sake, assume that it's not economical to simply add memory to the old ones and that it's corporate policy that managers purchase new computers rather than lease them. Now we have a problem. There's a disparity between the sales representatives' current computers and their need to have larger, faster computers. Joan has a decision to make.

Unfortunately, this example doesn't tell us much about how managers identify problems. In the real world, most problems don't come with neon signs flashing "problem." The sales representatives' complaints about inadequate computing ability to do their jobs effectively might be a clear signal to Joan that she needs to get them new computers, but few problems are that obvious. Is a 5 percent drop in sales a problem? Or are declining sales merely a symptom of other problems, such as unsatisfactory products or poor advertising? Also, keep in mind that what one manager considers a problem might not be considered a problem by another manager. Problem identification is subjective. Furthermore, the manager who mistakenly resolves the wrong problem perfectly is likely to perform just as poorly as the manager who doesn't identify the right problem and does nothing. Problem identification isn't simple or insignificant. Before something can be characterized as a problem, managers have to be aware of the problem, be under pressure to take action, and have the resources needed to take action.

How do managers become aware of a problem? They obviously have to compare their current state of affairs against where they want to be. If they're not where they want to be or if things aren't going as they should, then a problem (or discrepancy) exists. In our computer buying example, the
problem is that the current computers aren't sufficient for the sales representatives to do their jobs efficiently and effectively.

A discrepancy without pressure to take action becomes a problem that can be postponed. To initiate the decision process, then, the problem must be such that it exerts some type of pressure on the manager to act. Pressure might come from organizational policies, deadlines, financial crises, competitor actions (think of our chapter-opening manager's dilemma), complaints from customers or subordinates, expectations from the boss, or an upcoming performance evaluation.

Finally, managers aren't likely to characterize something as a problem if they perceive that they don't have the authority, budget, information, or other resources necessary to act on it. When managers become aware of a problem and are under pressure to act but feel they have inadequate resources, they usually describe the situation as one in which unrealistic expectations are being placed on them.

**Step 2: Identifying Decision Criteria**

Once a manager has identified a problem that needs attention, the decision criteria important to resolving the problem must be identified. That is, managers must determine what's relevant in making a decision. In our computer buying example, Joan has to assess what factors are relevant to her decision. These might include criteria such as price, product model and manufacturer, standard features, optional equipment, service warranties, repair record, and service support after purchase. After careful consideration, Joan decides that price, weight, warranties, screen type, reliability, and screen size are the relevant criteria in her decision.

Whether they are explicitly stated or not, every decision maker has criteria that guide his or her decisions. Note that, in this step in the decision-making process, what isn't identified is as important as what is. If Joan doesn't consider a service warranty a decision criterion, then it will not influence her final choice of computers.

**Step 3: Allocating Weights to the Criteria**

The criteria identified in Step 2 aren't all equally important, so the decision maker must weight the items in order to give them the correct priority in the decision. How do you weight criteria? A simple approach is to give the most important criterion a weight of 10 and then assign weights to the rest against that standard. Thus, a criterion with a weight of 10 would be twice as important as one given a 5. Of course, you could use 100 or 1,000 or any number you select as the highest weight. The idea is to use your personal preferences to prioritize the criteria you identified in Step 2 by assigning a weight to each.

Exhibit 6.2 lists the criteria and weights that Joan developed for her computer replacement decision. As you can see, reliability is the most important criterion in her decision, with such factors as price and screen type having low weights.
Exhibit 6.2 Criteria and Weights for Computer Replacement Decision

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
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</tr>
<tr>
<td>Screen size</td>
<td>8</td>
</tr>
<tr>
<td>Warranty period</td>
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<td>Weight</td>
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</tr>
<tr>
<td>Price</td>
<td>4</td>
</tr>
<tr>
<td>Screen type</td>
<td>3</td>
</tr>
</tbody>
</table>

Step 4: Developing Alternatives

The fourth step requires the decision maker to list the viable alternatives that could resolve the problem. No attempt is made in this step to evaluate the alternatives, only to list them. Our sales manager, Joan, identified eight laptop models as viable choices including Acer TravelMate 734TL, Compaq Presario 1800XL186, Gateway Solo 2550LS, Hewlett-Packard Omnibook 900, Micromedia Computers Millennium 3000, NEC Direct Versa Note VX 14.1, Sony Vaio PCG-X18, and Toshiba Satellite Pro 4280.

Step 5: Analyzing Alternatives

Once the alternatives have been identified, the decision maker must critically analyze each one. Each alternative is evaluated by appraising it against the criteria established in Steps 2 and 3. From this comparison, the strengths and weaknesses of each alternative become evident. Exhibit 6.3 shows the assessed values that Joan gave each of her eight alternatives after she had talked to some computer experts and read the latest information from computer magazines.
Keep in mind that the ratings (on a 1 to 10 scale) given the eight computer models shown in Exhibit 6.3 are based on the personal assessment made by Joan. Some assessments can be done pretty objectively. For instance, the purchase price represents the best price she can get from local retailers, and performance data and weight were reported in computer magazines. However, the assessment of reliability is often a personal judgment. The point is that most decisions by managers involve judgments—the criteria chosen in Step 2, the weights given to the criteria in Step 3, and the evaluation of alternatives in Step 5. This explains why two computer buyers with the same amount of money may look at two totally different sets of alternatives or even rate the same alternatives differently.

Exhibit 6.3 represents only an assessment of the eight alternatives against the decision criteria. It doesn’t reflect the weighting done in Step 3. If one choice had scored 10 on every criterion, you wouldn't need to consider the weights. Similarly, if the weights were all equal, you could evaluate each alternative merely by summing up the appropriate lines in Exhibit 6.3. For instance, the Acer TravelMate 734TL would have a score of 34, and the Sony Vaio PCG-X18 would have a score of 47. However, if you multiply each alternative assessment (Exhibit 6.3) by its weight (Exhibit 6.1), you get Exhibit 6.4. The sum of these scores represents an evaluation of each alternative against both the established criteria and weights. Notice that the weighting of the criteria significantly changes the ranking of alternatives in our example.
The sixth step is the important act of choosing the best alternative from among those considered. We have determined all the pertinent criteria in the decision, weighted them, and identified and analyzed viable alternatives. Now we merely have to choose the alternative that generated the highest score in Step 5. In our computer purchase example (Exhibit 6.4), Joan would choose the Gateway Solo 2550 LS computer since it scored highest (281 points) on the basis of the criteria identified, the weights given to the criteria, and Joan's assessment of each computer's ranking on the criteria. It's the "best" alternative and the one she should choose.

**Step 7: Implementing the Alternative**

Although the choice process is completed in the previous step, the decision may still fail if it isn't implemented properly. Therefore, Step 7 is concerned with putting the decision into action.

*Implementation* involves conveying the decision to those affected by it and getting their commitment to it. As we'll discuss in Chapter 15, groups or teams can help a manager with commitment. If the people who must carry out a decision participate in the process, they're more likely to enthusiastically support the outcome than if they are just told what to do. For instance, in our decision example, if the sales representatives had participated in the purchase decision, they'd probably enthusiastically support the computer model chosen and any new training necessary. (Parts Three through Five of this book detail how decisions are implemented by effective planning, organizing, and leading.)

**Step 8: Evaluating Decision Effectiveness**

The last step in the decision-making process involves appraising the outcome of the decision to see if the problem has been resolved. Did the alternative chosen in Step 6 and implemented in Step 7 accomplish the desired result?

What would happen if, as a result of this evaluation, the problem still existed? The manager would then need to carefully assess what went wrong. Was the problem incorrectly defined? Were errors made in the evaluation of the various alternatives? Was the right alternative selected but poorly implemented? Answers to questions such as these might send the manager back to one of the earlier steps. It might even require starting the whole decision process over.

*Take a moment to apply what you've learned.*

**click here to explore now**

*video exercise*

**Take a moment to apply what you've learned.**

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The Pervasiveness of Decision Making

Everyone in an organization makes decisions, but decision making is particularly important in a manager's job. As Exhibit 6.5 shows, decision making is part of all four managerial functions. That is why managers—when they plan, organize, lead, and control—are frequently called *decision makers*. In fact, we can say that *decision making* is synonymous with *managing*.

<table>
<thead>
<tr>
<th>Planning</th>
<th>Leading</th>
</tr>
</thead>
<tbody>
<tr>
<td>● What are the organization's long-term objectives?</td>
<td>● How do I handle employees who appear to be low in motivation?</td>
</tr>
<tr>
<td>● What strategies will best achieve those objectives?</td>
<td>● What is the most effective leadership style in a given situation?</td>
</tr>
<tr>
<td>● What should the organization's short-term objectives be?</td>
<td>● How will a specific change affect worker productivity?</td>
</tr>
<tr>
<td>● How difficult should individual goals be?</td>
<td>● When is the right time to stimulate conflict?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organizing</th>
<th>Controlling</th>
</tr>
</thead>
<tbody>
<tr>
<td>● How many employees should I have report directly to me?</td>
<td>● What activities in the organization need to be controlled?</td>
</tr>
<tr>
<td>● How much centralization should there be in the organization?</td>
<td>● How should those activities be controlled?</td>
</tr>
<tr>
<td>● How should jobs be designed?</td>
<td>● When is a performance deviation significant?</td>
</tr>
<tr>
<td>● When should the organization implement a different structure?</td>
<td>● What type of management information system should the organization have?</td>
</tr>
</tbody>
</table>

Exhibit 6.5 Decisions in the Management Functions

The fact that almost everything a manager does involves making decisions doesn't mean that decisions are always long, complex, or clearly evident to an outside observer. Much of a manager's decision making is routine. Every day of the year you make a decision about the problem of when to eat dinner. It's no big deal. You've made the decision thousands of times before. It's a pretty simple decision and can usually be handled quickly. It's the type of decision you almost forget *is* a decision. Managers make dozens of these routine decisions every day.
Keep in mind that even though a decision seems easy to make or has been faced by a manager a number of times before, it still is a decision.
Although we've described the steps in the decision-making process, we still don't know much about the manager as a decision maker and how decisions are actually made in organizations. How can we best describe the decision-making situation and the person who makes the decisions? We look at those issues in this section. We'll start by looking at three perspectives on how decisions are made.

Making Decisions: Rationality, Bounded Rationality, and Intuition

Managerial decision making is assumed to be rational. By that we mean that managers make consistent, value-maximizing choices within specified constraints. What are the underlying assumptions of rationality, and how valid are those assumptions?

Assumptions of Rationality

A decision maker who was perfectly rational would be fully objective and logical. He or she would carefully define a problem and would have a clear and specific goal. Moreover, making decisions using rationality would consistently lead toward selecting the alternative that maximizes the likelihood of achieving that goal. Exhibit 6.6 summarizes the assumptions of rationality.

The assumptions of rationality apply to any decision. Because we're concerned with managerial decision making, however, we need to add one further assumption. Rational managerial decision making assumes that decisions are made in the best economic interests of the organization. That is, the decision maker is assumed to be maximizing the organization's interests, not his or her own interests.

How realistic are these assumptions about rationality? Managerial decision making can follow rational assumptions if the following conditions are met: The manager is faced with a simple problem in which the goals are clear and the alternatives limited, in which the time pressures are minimal and the cost of seeking out and evaluating alternatives is low, for which the organizational culture supports innovation and risk taking, and in which the outcomes are relatively concrete and measurable. But most decisions that managers face in the real world don't meet all those tests. So how are most decisions in organizations usually made? The concept of bounded rationality can help answer that question.

Bounded Rationality
Despite the limits to perfect rationality, managers are expected to follow a rational process when making decisions. Managers know that "good" decision makers are supposed to do certain things: identify problems, consider alternatives, gather information, and act decisively but prudently. Managers, thus, are expected to exhibit the correct decision-making behaviors. By doing so, managers signal to their superiors, peers, and subordinates that they are competent and that their decisions are the result of intelligent and rational deliberation. However, certain aspects of the decision-making process are not realistic with respect to how managers make decisions. Instead, managers tend to operate under assumptions of bounded rationality; that is, they behave rationally within the parameters of a simplified decision-making process that is limited (or bounded) by an individual's ability to process information. Because they can't possibly analyze all information on all alternatives, managers satisfice rather than maximize. That is, they accept solutions that are "good enough." They are being rational within the limits (bounds) of their information processing ability. Let's look at an example. Suppose that you're a finance major and upon graduation you want a job, preferably as a personal financial planner, with a minimum salary of $32,000 and within a hundred miles of your hometown. You accept a job offer as a business credit analyst—not exactly a personal financial planner but still in the finance field—at a bank 50 miles from home at a starting salary of $33,000. A more comprehensive job search would have revealed a job in personal financial planning at a trust company only 25 miles from your hometown and starting at a salary of $35,000. Because the first job offer was satisfactory (or "good enough"), you behaved in a boundedly rational manner by accepting it, although according to the assumptions of perfect rationality, you didn't maximize your decision by searching all possible alternatives and choosing the best.

Since most decisions that managers make don't fit the assumptions of perfect rationality, they instead make those decisions using a boundedly rational approach. That is, they make decisions based on alternatives that are satisfactory. However, keep in mind that their decision making also may be strongly influenced by the organization's culture, internal politics, power considerations, and by a phenomenon called escalation of commitment, which is an increased commitment to a previous decision despite evidence that it may have been wrong. For example, studies of the events leading up to the Challenger space shuttle disaster point to an escalation of commitment by decision makers to launch the shuttle on that fateful day even though the decision was questioned by certain individuals. Why would decision makers want to escalate commitment to a bad decision? Because they don't want to admit that their initial decision may have been flawed. Rather than search for new alternatives, they simply increase their commitment to the original solution.

**Role of Intuition**

What role does intuition play in managerial decision making? Managers regularly use their intuition and it may actually help improve their decision making. What is intuitive decision making? It's a subconscious process of making decisions on the basis of experience and accumulated judgment. Researchers studying managers' use of intuitive decision making identified five different aspects of intuition, which are described in Exhibit 6.7.
Making a decision on intuition or "gut feeling" doesn't necessarily happen independently of rational analysis; rather, the two complement each other. A manager who has had experience with a particular, or even similar, type of problem or situation often can act quickly with what appears to be limited information. Such a manager doesn't rely on a systematic and thorough analysis of the problem or identification and evaluation of alternatives but instead uses his or her experience and judgment to make a decision.

How common is intuitive decision making? One survey of managers and other organizational employees revealed that almost one-third of them emphasized "gut feeling" over cognitive problem solving and decision making.13

Types of Problems and Decisions

Managers will be faced with different types of problems and decisions as they do their jobs. Depending on the nature of the problem, the manager can use different types of decisions.

Well-Structured Problems and Programmed Decisions

Some problems are straightforward. The goal of the decision maker is clear, the problem is familiar, and information about the problem is easily defined and complete. Examples of these types of problems might include a customer's wanting to return a purchase to a retail store, a supplier's being late with an important delivery, a news team's responding to an unexpected and fast-breaking event,
or a college's handling of a student wanting to drop a class. Such situations are called well-structured problems since they are straightforward, familiar, and easily defined problems. For instance, a server in a restaurant spills a drink on a customer's coat. The manager has an upset customer and he or she needs to do something. Because drinks are frequently spilled, there's probably some standardized routine for handling the problem. For example, the manager offers to have the coat cleaned at the restaurant's expense. In handling this problem situation, the manager uses a programmed decision.

Decisions are programmed to the extent that they are repetitive and routine and to the extent that a definite approach has been worked out for handling them. Because the problem is well structured, the manager doesn't have to go to the trouble and expense of going through an involved decision process. Programmed decision making is relatively simple and tends to rely heavily on previous solutions. The "develop-the-alternatives" stage in the decision-making process either doesn't exist or is given little attention. Why? Because once the structured problem is defined, its solution is usually self-evident or at least reduced to very few alternatives that are familiar and that have proved successful in the past. In many cases, programmed decision making becomes decision making by precedent. The spilled drink on the customer's coat doesn't require the restaurant manager to identify and weight decision criteria or to develop a long list of possible solutions. Rather, the manager falls back on a systematic procedure, rule, or policy.

A procedure is a series of interrelated sequential steps that a manager can use for responding to a structured problem. The only real difficulty is in identifying the problem. Once the problem is clear, so is the procedure. For instance, a purchasing manager receives a request from the sales department for 15 Palm Pilots for use by the company's customer service representatives. The purchasing manager knows that there is a definite procedure for handling this decision. The decision-making process in this case is merely executing a simple series of sequential steps.

A rule is an explicit statement that tells a manager what he or she can or cannot do. Rules are frequently used by managers when they confront a well-structured problem because they are simple to follow and ensure consistency. For example, rules about lateness and absenteeism permit supervisors to make disciplinary decisions rapidly and with a relatively high degree of fairness.

A third guide for making programmed decisions is a policy. It provides guidelines to channel a manager's thinking in a specific direction. In contrast to a rule, a policy establishes parameters for the decision maker rather than specifically stating what should or should not be done. Policies typically contain an ambiguous term that leaves interpretation up to the decision maker. For instance, each of the following is a policy statement:

- The customer always comes first and should always be satisfied.
- We promote from within, whenever possible.
- Employee wages shall be competitive within community standards.

Notice that satisfied, whenever possible, and competitive are terms that require interpretation. The policy to pay competitive wages does not tell a company's human resources manager the exact amount he or she should pay, but it does give direction to the decision he or she makes.

Poorly Structured Problems and Nonprogrammed Decisions

As you can well imagine, not all problems that managers face are well structured and solvable by a programmed decision. Many organizational situations involve poorly structured problems, which are problems that are new or unusual and for which information is ambiguous or incomplete. For example, the selection of an architect to design a new corporate manufacturing facility in Bangkok
is an example of a poorly structured problem. So too is the problem of whether to invest in a new unproven technology or whether to shut down a money-losing division. When problems are poorly structured, managers must rely on nonprogrammed decision making in order to develop unique solutions. **Nonprogrammed decisions** are unique and nonrecurring. When a manager confronts a poorly structured problem, or one that is unique, there is no cut-and-dried solution. It requires a custom-made response through nonprogrammed decision making.

**Integration**

Exhibit 6.8 describes the relationship among the types of problems, the types of decisions, and organizational level. Because lower-level managers confront familiar and repetitive problems (well structured), they mostly rely on programmed decisions such as procedures, rules, and organizational policies. The problems confronting managers usually become more poorly structured as they move up the organizational hierarchy. Why? Because lower-level managers handle the routine decisions themselves and turn over to upper-level managers the decisions they find unusual or difficult. Similarly, higher-level managers turn over routine decisions to their subordinates so they can deal with more difficult issues.

| Exhibit 6.8 | Types of Problems, Types of Decisions, and Level in the Organization |

Keep in mind, however, that few managerial decisions in the real world are either fully programmed or nonprogrammed. These are extremes, and most decisions fall somewhere in between. Few programmed decisions are designed to eliminate individual judgment completely. At the other extreme, even a unique situation requiring a nonprogrammed decision can be helped by programmed routines. It's best to think of decisions as *mainly* programmed or *mainly* nonprogrammed rather than as completely one or the other.

A final thought on this topic is that organizational efficiency is facilitated by the use of programmed decision making, which may explain its wide popularity. Whenever possible, management decisions are likely to be programmed. Obviously, using programmed decisions isn't too realistic at the top level of the organization because most of the problems that top managers confront are
nonrecurring. But there are strong economic incentives for top managers to create standard operating procedures (SOPs), rules, and policies to guide other managers as they make decisions.

Programmed decisions minimize the need for managers to exercise discretion. This is important because discretion can cost money. The more nonprogrammed decision making a manager is required to do, the greater the judgment needed. Because sound judgment isn't all that common, it costs more to acquire the services of managers who possess it. Some organizations try to economize by hiring less skilled or experienced managers but then don't develop programmed decision guides for them to follow. This, too, can be costly! Take, for example, a small women's clothing store chain whose owner, because he chooses to pay low salaries, hires store managers with little experience and limited ability to make good judgments. This practice, by itself, might not be a problem. The trouble is that the owner doesn't provide either training or explicit rules and procedures to guide his store managers' decisions. Each handles problems a little bit differently. The result is continuous complaints by customers about things such as promotional discounts, processing credit sales, and the handling of returns.

One of the more challenging tasks facing managers as they make decisions—programmed or nonprogrammed—is analyzing decision alternatives (Step 5 in the decision-making process). In the next section, we'll look at analyzing alternatives under different conditions.

**Decision-Making Conditions**

There are three conditions that managers may face as they make decisions: certainty, risk, and uncertainty. What are the characteristics of each of these decision-making conditions?

**Certainty**

The ideal situation for making decisions is one of certainty, that is, a situation in which a manager can make accurate decisions because the outcome of every alternative is known. For example, when North Dakota's state treasurer is deciding in which bank to deposit excess state funds, he knows exactly how much interest is being offered by each bank and will be earned on the funds. He is certain about the outcomes of each alternative. As you might expect, this condition isn't characteristic of most managerial decision situations. It's more idealistic than realistic.

**Risk**

A far more common situation is one of risk, those conditions in which the decision maker is able to estimate the likelihood of certain alternatives or outcomes. The ability to assign probabilities to outcomes may be the result of personal experiences or secondary information. Under the conditions of risk, managers have historical data that allow them to assign probabilities to different
alternatives. Let's work through an example.

Suppose that you manage a ski resort in the Colorado Rockies. You're thinking about adding another lift to your current facility. Obviously, your decision will be significantly influenced by the additional revenue that the new lift would generate, and additional revenue will depend on snowfall. The decision is made somewhat clearer because you have reasonably reliable past weather data on snowfall levels in your area. The data show that during the past 10 years, you had three years of heavy snowfall, five years of normal snowfall, and two years of light snow. Can you use this information to help you make your decision about adding the new lift? If you have good information on the amount of revenues generated during each level of snow, the answer is yes.

You can calculate expected value, the conditional return from each possible outcome, by multiplying expected revenues by snowfall probabilities. The result is the average revenue you can expect over time if the given probabilities hold. As Exhibit 6.9 shows, the expected revenue from adding a new ski lift is $687,500. Of course, whether that justifies a decision to build or not depends on the costs involved in generating that revenue—such as the cost of building the lift, the additional annual operational expenses for another lift, the interest rate for borrowing money, and so forth.

<table>
<thead>
<tr>
<th>Event</th>
<th>Revenues Expected</th>
<th>Probability</th>
<th>Expected Value of Each Alternative</th>
</tr>
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<tbody>
<tr>
<td>Heavy snowfall</td>
<td>$850,000</td>
<td>0.3</td>
<td>$255,000</td>
</tr>
<tr>
<td>Normal snowfall</td>
<td>725,000</td>
<td>0.5</td>
<td>362,500</td>
</tr>
<tr>
<td>Light snowfall</td>
<td>350,000</td>
<td>0.2</td>
<td>70,000</td>
</tr>
</tbody>
</table>

Exhibit 6.9 Expected Value for Revenues from the Addition of One Ski Lift

Uncertainty

What happens if you have a decision to make when you're not certain about the outcomes and can't even make reasonable probability estimates? We call such a condition uncertainty. Managers do face decision-making situations of uncertainty. Under conditions of uncertainty, the choice of alternative is influenced by the limited amount of information available to the decision maker.

Another factor that influences choices under conditions of uncertainty is the psychological orientation of the decision maker. The optimistic manager will follow a maximax choice (maximizing the maximum possible payoff), the pessimist will follow a minimin choice (maximizing the minimum possible payoff), and the manager who desires to minimize his maximum "regret" will opt for a minimax choice. Let's look at these different choice approaches using an example.

Consider the case of a marketing manager at Visa International. She has determined four possible strategies (S₁, S₂, S₃, and S₄) for promoting the Visa card throughout the southeastern United States. The marketing manager also knows that major competitor MasterCard has three competitive actions (CA₁, CA₂, CA₃) its using to promote its card in the same region. In this case, we'll assume that the Visa executive has no previous knowledge that would allow her to place probabilities on the success of any of the four strategies. With these facts, the Visa manager formulates the matrix shown in Exhibit 6.10 to show the various Visa strategies and the resulting profit to Visa depending on the competitive action used by MasterCard.
In this example, if our Visa manager is an optimist, she'll choose S₄ because that could produce the largest possible gain: $28 million. Note that this choice maximizes the maximum possible gain (maximax choice).

If our manager is a pessimist, she'll assume that only the worst can occur. The worst outcome for each strategy is as follows: S₁ = $11 million; S₂ = $9 million; S₃ = $15 million; S₄ = $14 million. These are the most pessimistic outcomes from each strategy. Following the maximin choice, she would maximize the minimum payoff; in other words, she'd select S₃ ($15 million is the largest of the minimum payoffs).

In the third approach, managers recognize that once a decision is made, it will not necessarily result in the most profitable payoff. There may be a regret of profits forgone (given up)—regret referring to the amount of money that could have been made had a different strategy been used. Managers calculate regret by subtracting all possible payoffs in each category from the maximum possible payoff for each given event, in this case for each competitive action. For our Visa manager, the highest payoff, given that MasterCard engages in CA₁, CA₂, or CA₃, is $24 million, $21 million, or $28 million, respectively (the highest number in each column). Subtracting the payoffs in Exhibit 6.10 from those figures produces the results shown in Exhibit 6.11.

The maximum regrets are S₁ = $17 million; S₂ = $15 million; S₃ = $13 million; and S₄ = $7 million. The minimax choice minimizes the maximum regret, so our Visa manager would choose S₄. By making this choice, she'll never have a regret of profits forgone of more than $7 million. This result contrasts, for example, with a regret of $15 million had she chosen S₂ and MasterCard...
had taken CA₁.

Although managers will try to quantify a decision when possible by using payoff and regret matrices, uncertainty often forces them to rely more on intuition, creativity, hunches, and “gut feeling.” Regardless of the decision situation, each manager has his or her own style of making decisions.

**Decision-Making Styles**

Suppose that you were a new manager at Cannondale Corporation or at the local YMCA. How would you approach decision making? One perspective on decision-making styles proposes that people differ along two dimensions in the way they approach decision making.¹⁴ The first is an individual’s *way of thinking*. Some of us tend to be rational and logical in the way we think or process information. A rational type looks at information in order and makes sure that it’s logical and consistent before making a decision. Others of us tend to be creative and intuitive. Intuitive types don’t have to process information in a certain order but are comfortable looking at it as a whole.

The other dimension describes an individual’s *tolerance for ambiguity*. Again, some of us have a low tolerance for ambiguity. These types must have consistency and order in the way they structure information so that ambiguity is minimized. On the other hand, some of us can tolerate high levels of ambiguity and are able to process many thoughts at the same time. When we diagram these two dimensions, four decision-making styles are evident: directive, analytic, conceptual, and behavioral (see Exhibit 6.12). Let’s look more closely at each style.

### Exhibit 6.12 Decision-Making Styles

<table>
<thead>
<tr>
<th>Directive style</th>
<th>Analytic style</th>
<th>Conceptual style</th>
<th>Behavioral style</th>
</tr>
</thead>
<tbody>
<tr>
<td>People using the directive style have low tolerance for ambiguity and are</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

rational in their way of thinking. They're efficient and logical. Directive types make fast decisions and focus on the short run. Their efficiency and speed in making decisions often result in their making decisions with minimal information and assessing few alternatives.

- **Analytic style.** Decision makers with an *analytic style* have much greater tolerance for ambiguity than do directive types. They want more information before making a decision and consider more alternatives than a directive-style decision maker does. Analytic decision makers are best characterized as careful decision makers with the ability to adapt or cope with unique situations.

- **Conceptual style.** Individuals with a *conceptual style* tend to be very broad in their outlook and will look at many alternatives. They focus on the long run and are very good at finding creative solutions to problems.

- **Behavioral style.** Decision makers with a *behavioral style* work well with others. They're concerned about the achievements of subordinates and are receptive to suggestions from others. They often use meetings to communicate, although they try to avoid conflict. Acceptance by others is important to this decision-making style.

Although these four decision-making styles are distinct, most managers have characteristics of more than one style. It's probably more realistic to think of a manager's dominant style and his or her alternate styles. Although some managers will rely almost exclusively on their dominant style, others are more flexible and can shift their style depending on the situation.

Managers should also recognize that their employees may use different decision-making styles. Some employees may take their time carefully weighing alternatives and considering riskier options (analytic style) whereas other employees may be more concerned about getting suggestions from others before making decisions (behavioral style). This doesn't make one approach better than the other. It just means that their decision-making styles are different.

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**Summing Up Managerial Decision Making**

How can we best sum up managerial decision making? Exhibit 6.13 provides a concise overview. Because it's in their best interests, managers *want* to make good decisions—that is, choose the "best" alternative, implement it, and determine whether or not it takes care of the situation that called for a decision in the first place. Their decision-making process is affected by four factors including the decision-making approach being followed, the decision-making conditions, the type of problem being dealt with, and the decision-maker's own style of decision making. Each of these factors plays a role in determining how a manager makes a decision. So whether that decision involves addressing an employee's habitual tardiness, resolving a problem with product quality, or determining whether to enter a new market (as in our chapter-opening case), remember that it has
been shaped by a number of factors.
You had a chance to voice your opinion about Mario Galasso dilemma at the beginning of this chapter. Now listen as two managers share their views.

Mario Galasso wants to know if adding a new off-road motorcycle product line was a good business decision. I would start by evaluating the:

- Product's cost to develop and possible return
- Resources that the new product is taking away from currently profitable products

There are a couple of important decision criteria Galasso might use to evaluate the effectiveness of the decision to produce the new bike. First, Galasso should look to see what goals were established when the bike decision was being considered. Those goals should be part of the criteria to evaluate the decision's effectiveness.
Then I would establish specific decision effectiveness criteria by developing a five-year marketing plan for the new motorcycle that would include revenue goals, market share goals, inventory goals, and brand awareness levels. Finally, I would develop an integrated marketing/advertising plan for all the new products in a targeted market.

If goals aren't reached after five years, I would consider selling the product line to competitors, discontinuing the product, or updating the motorcycle with consumer input. Although introducing a new product isn't easy, an established plan will help Mario decide if the motorcycle was a good business decision.

Then Galasso could get firsthand feedback by sponsoring racers. Put them on the bike to see if they like how it handles. Galasso not only could get feedback on the bike from individuals who have ridden some of their top competitors' bikes, but it would also get Cannondale's name out into the biking circuit.

Next, Galasso could also get feedback from the numbers—how is the motorcycle industry doing as a whole? Has Cannondale's market share increased? If so, is it due to the introduction of the new bike? How is customer response to the product?