**CHAPTER 12 Decision Making, Learning, Knowledge Management, and Information Technology**

**Learning Objectives**

Decision making results in choices that determine the way an organization operates and how it changes or transforms itself over time. Organizations must continually improve the way decisions are made so managers and employees can learn new, more effective ways to act inside the organization and respond to a changing environment.

By the end of this chapter you should be able to:

* 1. Differentiate among several models of decision making that describe how managers make decisions.
* 2. Describe the nature of organizational learning and the different levels at which learning occurs.
* 3. Explain how organizations can use knowledge management and information technology to promote organizational learning and improve the quality of their decision making.
* 4. Identify the factors, such as the operation of cognitive biases, that reduce the level of organizational learning and result in poor decision making.
* 5. Discuss some techniques that managers can use to overcome these cognitive biases and thus open the organization up to new learning.

**Organizational Decision Making**

In previous chapters, we discussed how managers design a structure and a culture that match the organization’s environment, choose a technology to convert inputs into outputs, and choose a strategy to guide the use of organizational skills and resources to create value. In making these choices, managers are making decisions; indeed, everything that goes on in an organization involves a decision of some kind. Clearly, an organization is not only a value-creation machine, it is also a decision-making machine. At every level and in every subunit, employees’ jobs involve making decisions—and the quality of decision making determines how much value they create.

[Organizational decision making](/books/9781323290941/content/id/ch12bx2) is the process of responding to a problem by searching for and selecting a solution or course of action that will create the most value for organizational stakeholders. Whether the problem is to find the best inputs, to decide on the right way to provide a service to customers, or to figure out how to deal with an aggressive competitor, in each case managers must decide what to do. To make the best choices, managers must make two kinds of decisions: programmed and nonprogrammed.

Organizational decision making

The process of responding to a problem by searching for and selecting a solution or course of action that will create value for organizational stakeholders.

[Programmed decision making](/books/9781323290941/content/id/ch12bx3) involves selecting the most effective—easy, repetitive, and routine—operating procedures to handle an organization’s ongoing value-creation activities.[1](/books/9781323290941/content/id/ch12bib1) Typically, the routines and procedures that result in the most efficient way of operating are formalized in advance in an organization’s written rules and standard operating procedures (SOPs) and are present in the values and norms of its culture.

Programmed decisions

Decisions that are repetitive and routine.

[Nonprogrammed decision making](/books/9781323290941/content/id/ch12bx4) involves managers making the most effective—creative, novel, and unstructured—decisions that allow an organization to find solutions to changing and uncertain conditions. No rules, routines, or SOPs can be developed to handle nonroutine problems in advance because they are unique or unexpected. So solutions often have to be found after new problems have arisen.[2](/books/9781323290941/content/id/ch12bib2)

Nonprogrammed decisions

Decisions that are novel and unstructured.

Nonprogrammed decision making requires much more search for information—and active cooperation between managers, functions, and divisions—to find solutions than does programmed decision making. This is because in making unprogrammed decisions it is impossible to know in advance if these decisions are the right ones—unlike with programmed decisions that are based on the results of past experience and so managers can normally continually improve on routines and procedures over time.

For example, R&D is based on nonprogrammed decision making by scientists and engineers who must continually experiment to find a solution to a problem and often fail in the attempt. Similarly, the creation of an organization’s strategy involves nonprogrammed decision making by managers who cooperate to find the best way to use an organization’s skills and resources to create value—but they never know if they have made the best decision in advance.

So, nonprogrammed decision making forces managers to rely on judgment, intuition, and creativity to solve organizational problems; they cannot rely on rules and SOPs to provide nonprogrammed solutions. Nonprogrammed decisions lead to the creation of a new set of rules and procedures and then organizational members can improve the programmed decisions they use to increase organizational effectiveness (for example, by implementing TQM or changing task and role relationships).

All organizations must have the capability to make both programmed and nonprogrammed decisions. Programmed decision making allows an organization to increase its efficiency and reduce the costs of making goods and services; it provides stability and increases predictability. Nonprogrammed decision making allows an organization to change and find new ways to adapt to and take advantage of its environment, such as the way Apple first developed the iPod, then used its new skills to develop the iPhone and then the iPad. In the next section, we examine several models of organizational decision making.

**Models of Organizational Decision Making**

In the past, organizational decision making was portrayed as a rational process in which all-knowing managers make decisions that allow organizations to adjust perfectly to the environment in which they operate.[3](/books/9781323290941/content/id/ch12bib3) Today, we recognize that decision making is an inherently uncertain process in which managers grope for solutions that may or may not lead to outcomes favorable to organizational stakeholders.

**Figure 12.1 The Rational Model of Decision Making**



This model ignores the uncertainty that typically plagues decision making.

**The Rational Model**

According to the rational model, decision making is a straightforward three-stage process (see [Figure 12.1](/books/9781323290941/content/id/ch12fig1)).[4](/books/9781323290941/content/id/ch12bib4) At stage 1, managers identify problems that need to be solved. Managers of an effective organization, for example, analyze all aspects of their organization’s specific and general environments to identify conditions or problems that call for new action. To achieve a good fit between an organization and its environment, they must recognize the opportunities or threats it presents. At stage 2, managers seek to design and develop a series of alternative courses of action to solve the problems they have identified. They study ways to take advantage of the organization’s specific competences to respond to opportunities and threats. At stage 3, managers compare the likely consequences of each alternative and decide which course of action offers the best solution to the problem they identified in stage 1.

Under what “ideal” circumstances can managers be sure they have made a decision that will maximize stakeholders’ satisfaction? The ideal situation is one in which there is no uncertainty: Managers know all the courses of action open to them. They know the exact effects of all alternatives on stakeholders’ interests. They are able to use the same set of objective criteria to evaluate each alternative. And they use the same decision rules to rank each alternative and thus can make the one best or right decision—the decision that will maximize the return to organizational stakeholders.[5](/books/9781323290941/content/id/ch12bib5) Do such conditions exist? If they did, managers could always make decisions that would perfectly position their organizations in the environment to acquire new resources and make the best use of existing resources.

This ideal state is the situation assumed by the rational model of organizational decision making. The rational model ignores the ambiguity, uncertainty, and chaos that typically plague decision making. Researchers have criticized as unrealistic or simplistic three assumptions underlying the rational model: (1) the assumption that decision makers have all the information they need, (2) the assumption that decision makers have the ability to make the best decisions, and (3) the assumption that decision makers agree about what needs to be done.

**information and uncertainty**

The assumption that managers are aware of all alternative courses of action and their consequences is unrealistic. For this assumption to be valid, managers would have access to all the information necessary to make the best decision, could collect information about every possible situation the organization might encounter, and would possess accurate knowledge about how likely it is that each situation would occur.[6](/books/9781323290941/content/id/ch12bib6)

The assumption that it is possible to collect all the information needed to make the best decision is unrealistic.[7](/books/9781323290941/content/id/ch12bib7) Because the environment is inherently uncertain, every alternative course of action and its consequences cannot be known. Furthermore, even if it were possible to collect information to eliminate all uncertainty, the costs of doing so would be as great as, or greater than, any potential profit the organization could make from selecting the best alternative. Thus nothing would be gained from the information.[8](/books/9781323290941/content/id/ch12bib8)

Suppose a fast-food company thinks that some new kind of sandwich has the potential to attract large numbers of new customers. According to the rational model, to identify the right kind of sandwich, the company would do extensive market research, test different kinds of sandwiches with different groups of customers, and evaluate all alternatives. The cost of adequately testing every alternative for all possible different groups of customers would be so high, it would swallow up any profit the new sandwich would generate from increased sales. The rational model ignores the fact that organizational decision making always takes place in the midst of uncertainty, which poses both an opportunity and a threat for an organization.

**managerial abilities**

The rational model assumes that managers possess the intellectual capability not only to evaluate all the possible alternative choices but also to select the optimum solution. In reality, managers have only a limited ability to process the information required to make decisions, and most do not have the time to act as the rational model demands.[9](/books/9781323290941/content/id/ch12bib9) The intelligence required to make a decision according to the rational model would exceed a manager’s mental abilities and necessitate the employment of an enormous number of managers. The rational model ignores the high level of managerial costs.

**preferences and values**

The rational model assumes that different managers have the same preferences and values and will use the same rules to decide on the best alternative. The model also assumes that managers agree about what are the most important organizational goals. These “agreement assumptions” are unrealistic.[10](/books/9781323290941/content/id/ch12bib10) In [Chapter 4](/books/9781323290941/content/id/ch04), we discussed how managers in different functions are likely to have different subunit orientations that lead them to make decisions that favor their own interests over those of other functions, other stakeholders, or the organization as a whole.

To sum up, the rational model of decision making is unrealistic because it rests on assumptions that ignore the information and managerial problems associated with decision making. The Carnegie model and other newer models take these problems into consideration and provide a more accurate picture of how organizational decision making takes place.

**The Carnegie Model**

In an attempt to better describe the realities of the decision-making process, researchers introduced a new set of assumptions that have come to be called the Carnegie model of decision making.[11](/books/9781323290941/content/id/ch12bib11) [Table 12.1](/books/9781323290941/content/id/ch12tab1) summarizes the differences between the Carnegie and the rational models of decision making. The Carnegie model recognizes the effects of “satisficing,” bounded rationality, and organizational coalitions.

**satisficing**

In an attempt to explain how organizations avoid the costs of obtaining information, the Carnegie model suggests that managers engage in [satisficing](/books/9781323290941/content/id/ch12bx5), limited information searches to identify problems and alternative solutions.[12](/books/9781323290941/content/id/ch12bib12) Instead of searching for all possible solutions to a problem, as the rational model suggests, managers resort to satisficing. That is, to save time and cost, they choose a set of problem-specific criteria or measures they will use to evaluate a range of possible solutions.[13](/books/9781323290941/content/id/ch12bib13) They then work together to develop several best alternative solutions and select the one that best satisfies the criteria they have previously chosen. Thus satisficing involves a much less costly information search and puts far less of a burden on managers than does the rational model.

Satisficing

Limited information searches to identify problems and alternative solutions.

**bounded rationality**

The rational model assumes that managers possess the intellectual ability to evaluate all possible alternatives. The Carnegie model assumes that managers’ ability is restricted by [bounded rationality](/books/9781323290941/content/id/ch12bx6), meaning they only have limited capacity to process information about alternatives. But even though they only have limited information-processing capacity, managers can improve their decision making by sharpening their analytical skills.[14](/books/9781323290941/content/id/ch12bib14) Managers can also make use of technology like computers to improve their decision-making skills.[15](/books/9781323290941/content/id/ch12bib15) Thus bounded rationality in no way implies lack of ability or motivation. The Carnegie model recognizes that decision making is subjective and that decision-making quality depends on managers’ prior experience, knowledge, beliefs, and intuition.

Bounded rationality

A limited capacity to process information.

**TABLE 12.1 Differences between the Rational and the Carnegie Models of Decision Making**

|  |  |
| --- | --- |
| **Rational Model** | **Carnegie Model** |
| Information is available | Limited information is available |
| Decision making is costless | Decision making is costly (e.g., managerial costs, information costs) |
| Decision making is “value free” | Decision making is affected by the preferences and values of decision makers |
| The full range of possible alternatives is generated | A limited range of alternatives is generated |
| Solution is chosen by unanimous agreement | Solution is chosen by compromise, bargaining, and accommodation between organizational coalitions |
| Solution chosen is best for the organization | Solution chosen is satisfactory for the organization |

**organizational coalitions**

The rational model ignores the variation in managers’ preferences and values and assumes different managers will evaluate different alternatives in the same way. The Carnegie model, in contrast, explicitly recognizes that the preferences and values of managers differ and that disagreement and conflict between different managers is inevitable.[16](/books/9781323290941/content/id/ch12bib16) The Carnegie model views an organization as a coalition of different interests, in which decision making takes place by compromise, bargaining, and negotiation between managers from different functions and areas of the organization. Any solution chosen must be approved by the dominant coalition, the collection of managers or stakeholders who have the power to decide which solution is chosen and can commit resources to implement it.[17](/books/9781323290941/content/id/ch12bib17) Over time, as the interests and preferences of managers change, so the makeup of the dominant coalition changes and so does decision making. The Carnegie model recognizes that decision making is not a rational “neutral” process driven by objective decision rules, but a subjective process in which managers formulate decision rules that allow them to achieve their personal goals and interests.

To sum up, the Carnegie model recognizes that decision making takes place in an uncertain environment where information is often incomplete and ambiguous. It also recognizes that decisions are made by people who are limited by bounded rationality, who sat-isfice, and who form coalitions to pursue their own interests. The Carnegie model offers a more accurate description of how decision making takes place in an organization than does the rational model. Yet Carnegie-style decision making is rational because managers act intentionally to find the best solution to reach their desired goal, despite uncertainty and disagreement over goals. In [Organizational Insight 12.1](/books/9781323290941/content/id/ch12oi1), the response of GE to the question of whether it should continue to make its own appliances, such as washing machines, buy them from other companies—or even stay in the appliance business—illustrates decision making in accordance with the Carnegie model.

**Organizational Insight 12.1: Should GE Make or Buy Appliances?**

In the 1990s, GE faced a major decision. GE’s appliance division, maker of well-known products such as dishwashers, ranges, refrigerators, and washing machines, was experiencing declining profitability. Its technologically outdated washing machine operations contributed significantly to this loss, and GE had to evaluate two alternative courses of action: Should GE spend $70 million and make a major investment in new technology to bring the washing machine operations up to date so GE could compete into the next century, or should GE close down its own washing machine operations and buy washing machines from another manufacturer that it would sell under its own brand name?

To evaluate each alternative, GE’s managers had to decide which one would result in the best long-term outcome. They used criteria such as manufacturing costs, quality, and product development costs to evaluate each alternative. One of the factors that GE was most concerned about was whether the unions in its Appliance Park operations would agree to flexible work arrangements that would reduce labor costs. At the same time, managers talked to companies like Maytag and Whirlpool to determine what it would cost GE to have them make a washing machine according to GE specifications.[18](/books/9781323290941/content/id/ch12bib18)

If GE could buy another manufacturer’s washing machine for less than it would pay to make its own, then it seemed to make sense to choose the less costly alternative. However, GE’s managers had to evaluate the effects of other factors. For example, if GE stopped making washing machines, it would lose a core competence in washing machine production that it would be unable to recover. Suppose the company that GE chose to make its GE machines deliberately made inferior machines that were lower in quality than the machines it produced for itself? Then GE would be at the mercy of its supplier. Or suppose the unions reneged on the contract and refused to cooperate after GE had made the investment in modernizing the washing machine plant? The situation was further complicated by appliance division managers who were lobbying for the investment because it would protect their jobs and the jobs of 15,000 workers. The division managers championed the advantages of the investment for improving the competitive advantage of the division. Corporate managers, however, had to evaluate the potential return of the investment to the entire organization.

Because of uncertainty, GE’s managers had a very difficult time evaluating the pros and cons of each alternative; they could not accurately predict the consequences of any decision they made. In the end they decided that GE should make the investment and continue to produce its own washing machines. New lines of modern washing machines were introduced throughout the 2000s. GE tripled the amount it spends on R&D to produce appliances that never break down and which “delight” its customers.[19](/books/9781323290941/content/id/ch12bib19) By the mid-2000s, GE’s appliance division was once again profitable and it was making innovative new products such as front-loading, water-saving washing machines and energy-efficient appliances.

But in 2008, GE’s top managers had to debate a new alternative because the company as a whole was now experiencing declining profitability. Analysts claimed the reason was that GE was operating in too many different industries (it has 150 different product divisions) and that it needed to sell off those divisions that had the poorest future prospects. The alternative on the table was that GE should get out of the appliance business, sell it to the highest bidder, and then invest the money to improve the competences of its other divisions.

Just as managers had debated the question of whether to make or buy washing machines, now they had to go through a new round of decision making and debate whether to keep or sell the appliance division. As before, using a set of relevant criteria, they made the choice, and in the spring of 2008, they put the division up for sale. LG, the Korean appliance maker, expressed strong interest in the appliance division, as did other global companies, but by 2009 it was clear that GE had much more to gain by investing in the division than selling it. GE announced a major new investment plan for its appliance division; in the future GE would make quality products that could equal any of its global competitors.[20](/books/9781323290941/content/id/ch12bib20) By 2011 the appliance division was churning out a new array of advanced appliances, such as its induction heat ranges and gas tankless water heaters that were earning rave reviews, so it seemed that its recent decision making was starting to pay off.[21](/books/9781323290941/content/id/ch12bib21)



**The Incrementalist Model**

In the Carnegie model, satisficing and bounded rationality curb the number and complexity of alternatives that can be selected for analysis. According to the incrementalist model of organizational decision making, when selecting a set of new alternative courses of action, managers tend to choose those that are only slightly, or incrementally, different from those used in the past, thus lessening their chances of making a mistake.[22](/books/9781323290941/content/id/ch12bib22) Often called the science of “muddling through,” the incrementalist model implies that managers rarely make major decisions that are radically different from decisions they have made before.[23](/books/9781323290941/content/id/ch12bib23) Instead, they correct or avoid mistakes through a succession of incremental changes, which eventually may lead to a completely new course of action. During the muddling-through process, organizational goals and the courses of action for achieving them may change, but they change very slowly so that corrective action can be taken if things start to go wrong.

The incrementalist model is very different from the rational model. According to the rational model, all-knowing decision makers weigh every possible alternative course of action and choose the best solution. According to the incrementalist model, managers, limited by lack of information and lack of foresight, move cautiously one step at a time to limit their chances of being wrong.

**The Unstructured Model**

The incrementalist approach works best in a relatively stable environment where managers can accurately predict movements and trends and so make the incremental decisions that will lead to higher effectiveness. In an environment that changes suddenly or abruptly, an incrementalist approach would prevent managers from changing quickly enough to meet new conditions and so cause the organization to go into decline. The unstructured model of decision making, developed by Henry Mintzberg and his colleagues, describes how decision making takes place when uncertainty is high.[24](/books/9781323290941/content/id/ch12bib24)

The unstructured model recognizes that decision making takes place in a series of small, incremental steps that collectively have a major effect on organizational effectiveness over time. Incremental decisions are made within an overall decision-making framework consisting of three stages—identification, development, and selection—that are similar to the stages shown in [Figure 12.1](/books/9781323290941/content/id/ch12fig1). In the identification stage, managers develop routines to recognize problems and to understand what is happening to the organization. In the development stage, they search for and select alternatives to solve the problems they have defined. Solutions may be new plans or modifications of old plans, as in the muddling-through approach. Finally, in the selection stage, managers use an incremental selection process—judgment and intuition, bargaining, and to a lesser extent formal analysis (typical of the rational model)—to reach a final decision.[25](/books/9781323290941/content/id/ch12bib25)

In the unstructured model (unlike the incrementalist model), however, whenever organizations encounter roadblocks, they rethink their alternatives and go back to the drawing board. Thus decision making is not a linear, sequential process but a process that may evolve unpredictably in an unstructured way. For example, decision making may be constantly interrupted when uncertainty in the environment alters managers’ interpretations of a problem and thus casts doubt on the alternatives they have generated or the solutions they have chosen. Now, managers must generate new alternatives and solutions, for example, find new strategies to help the organization adapt to its environment.

In essence, Mintzberg’s approach emphasizes the unstructured nature of incremental decision making: Managers make decisions in a haphazard, intuitive way, and uncertainty forces them to reexamine their decisions continuously to find new ways to behave in a constantly changing environment. They strive to make the best possible decisions, but uncertainty forces them to adopt an unstructured approach to decision making. Thus the unstructured model explains why and how managers make nonprogrammed decisions, and the incrementalist model explains why and how managers can improve their programmed decision making over time.

**The Garbage-Can Model**

The view of decision making as an unstructured process is taken to its extreme in the garbage-can model of organizational decision making.[26](/books/9781323290941/content/id/ch12bib26) This model turns the decision-making process around and argues that managers are as likely to start decision making from the solution side as from the problem side. In other words, decision makers may propose solutions to problems that do not exist; they create a problem they can solve with solutions that are already available.

Garbage-can decision making arises in the following way: An organization has a set of solutions deriving from its competences and skills with which it can solve certain problems—for example, how to attract new customers, how to lower production costs, or how to innovate products quickly. Possessing these organizational competences, managers seek ways to use them and so they create problems—or decision-making opportunities—for them to solve. Suppose a company has skills in making custom-designed furniture. The head of the marketing department persuades the company president that the organization should take advantage of these skills by expanding internationally. Thus a new problem—how to manage international expansion—is created because of the existence of a solution—the ability to make superior custom-designed furniture.

While an organization’s managers must tackle new problems of their own making, at the same time they must also generate alternatives and find solutions to problems that have arisen because of shifts in the environment or strains and stresses that stem from the way it operates. To further complicate decision making, different coalitions of managers may champion different alternatives and compete for resources to implement their own chosen solutions. Thus decision making becomes like a “garbage can” in which problems, solutions, and the preferences of different managers and coalitions all mix and contend with one another for organizational attention and action. In this situation, an organization becomes an “organized anarchy” in which the decision about which alternative to select depends on which manager or coalition has the most influence or power to sway other decision makers at that moment.[27](/books/9781323290941/content/id/ch12bib27) Chance, luck, and timing also come into play in determining which alternative is selected. Often, the problem that is currently generating the most uncertainty for the organization is the one that has the best chance of being acted on, and this may change from week to week. Decision making becomes fluid, unpredictable, and even contradictory as the preferences and priorities of decision makers change.

The garbage-can approach to organizational decision making is clearly the opposite of the approach described by the rational model. Instead of benefiting from the wisdom of all-knowing managers who can generate all possible solutions and unanimously agree on the best one so decisions can be programmed over time, in reality managers are forced to make unprogrammed decisions in an unstructured, garbage-can-like way to deal with the uncertainty that surrounds them.

The way in which IDEO helps organizations to “think out of the box” is instructive in this regard, as discussed in [Organizational Insight 12.2](/books/9781323290941/content/id/ch12oi2).

**Organizational Insight 12.2: IDEO Helps Organizations to “Learn How to Learn”**

IDEO, founded in 1991 by David Kelly and Bill Moggridge, both well-known design engineers, has a mission to help organizations and their members “think out of the box.” That is, to work in ways that help them develop the skills or what IDEO calls “creative confidence” to recognize and act on new opportunities and then respond to them by creating new and improved products that better meet their needs. IDEO offers companies seminars in which their managers, engineers, marketers, and so on can learn the techniques necessary to keep their companies on the cutting edge, or as IDEO puts it, to “Enable organizations to change their cultures and build the capabilities required to sustain innovation.”[28](/books/9781323290941/content/id/ch12bib28) For example, IDEO invented the unfocused group technique in which all the side comments made by focus group members to one another are recorded to find out what was “not said” in focused group meetings. IDEO also practices “skilled brainstorming” in which it teaches teams of employees from client organizations how to conduct brainstorming sessions that promote creative solutions. Its recommendations include go for quantity (of new ideas), encourage wild ideas, and defer judgment.[29](/books/9781323290941/content/id/ch12bib29)



IDEO’s goal is to improve a company’s ability to innovate by helping them to learn how make better decisions, the decisions that result in blockbuster new products or ways to improve customer service and better satisfy customer needs (that IDEO believes often go unrecognized). So another method it uses to help organizations learn how to learn is to help them identify what customers really want—needs they may not even be aware of. Examples of products that IDEO designed that accomplished this include Apple’s computer mouse, the “stand up” toothpaste tube, and the original Palm handheld organizer. To identify customer needs, IDEO uses the “deep dive” method; its employees—designers, anthropologists, marketing, and engineering researchers spend days or weeks shadowing and observing people focused on a certain task or event.[30](/books/9781323290941/content/id/ch12bib30) For example, the stand up toothpaste tube was developed by asking families what they most disliked about the “toothbrushing” experience and by observing their bathrooms. One complaint was crumpled toothpaste tubes that leak their contents over the bathroom sink, creating a soggy mess. In a hospital project, IDEOs researchers worked with hospital personnel to observe the problems that occurred when one nursing shift transferred control to another shift and how these problems affected nurses and patients. By studying shift changes for several days, 24 hours a day, the researchers were able to identify previously unrecognized problems. They then developed new software that provided better information that reduced the number of mistakes about medications and treatments and better patient care when a shift change took place. As IDEO puts it, we work to “identify new ways to serve and support people by uncovering their latent needs, behaviors, and desires,” and then it works with companies to develop the new products, services, media, and even office spaces and cubicles that improve their well-being.[31](/books/9781323290941/content/id/ch12bib31) Clearly, the process of “learning to learn” using brainstorming and other methods to identify new opportunities and problems can help organizations make better decisions—the kind of decisions that result in long-term success.

In summary, decision making determines the way an organization operates. At the core of every organization is a set of decision-making rules and routines that bring stability and allow the organization to reproduce its activities, core competences, and structure over time. These routines provide the organization with a memory and provide managers with programmed solutions to problems, which in turn increase organizational effectiveness.[32](/books/9781323290941/content/id/ch12bib32) However, as we saw in [Chapter 11](/books/9781323290941/content/id/ch11), routines also can give rise to inertia. If an organization gets in a rut and managers cannot make the decisions that allow it to change and adapt to its environment, it may fail and die. To prevent this from happening, managers need to encourage organizational learning.

**The Nature of Organizational Learning**

Because decision making takes place in an uncertain environment, it is not surprising that many of the decisions that managers and organizations make are mistakes and end in failure. Other decisions, of course, allow the organization to adapt to the environment and sometimes result in outcomes that exceed managers’ wildest dreams—such as those that resulted in the Apple iPod or Research in Motion’s Blackberry cellphone. Organizations survive and prosper when managers make the right decisions—sometimes through skill and sound judgment, but sometimes through chance and good luck. If managers are to make successful decisions over time, they must put in place a system that helps organizational members improve their ability to learn new adaptive behaviors and unlearn inefficient, outdated ones.

One of the most important processes that helps managers to make better nonprogrammed decisions—decisions that allow them to adapt to, modify, and change the environment to increase an organization’s chances of survival—is organizational learning.[33](/books/9781323290941/content/id/ch12bib33) [Organizational learning](/books/9781323290941/content/id/ch12bx7) is the process through which managers seek to improve organization members’ desire and ability to understand and manage the organization and its environment so they make decisions that continuously raise organizational effectiveness.[34](/books/9781323290941/content/id/ch12bib34) Today, organizational learning is a vital process for organizations to manage because of the rapid pace of change affecting every organization.

Organizational learning

The process managers use to improve organization members’ capacity to understand and manage the organization and its environment so they can make decisions that continuously increase organizational effectiveness.

As previous chapters have discussed, managers must strive to develop new and improved core competences that can give them a competitive advantage and fight off the competitive challenge from low-cost overseas competitors. To do this, they search for every opportunity to use advanced materials technology and IT to pursue their strategies and manage their structures more effectively. Indeed, the need for managers continually to restructure and reengineer their organizations is motivated by the realization that today, only those organizations that learn new ways to operate more efficiently will survive and prosper. Consequently, managers must understand how organizational learning occurs and the factors that can promote and impede it.

**Types of Organizational Learning**

James March has proposed that two principal types of organizational learning strategies can be pursued: exploration and exploitation.[35](/books/9781323290941/content/id/ch12bib35) [Exploration](/books/9781323290941/content/id/ch12bx8) involves organizational members searching for and experimenting with new kinds or forms of organizational activities and procedures to increase effectiveness. Learning that involves exploration might involve finding new ways to manage the environment—such as experimenting with the use of strategic alliances and network organizations—or inventing new kinds of organizational structures for managing organizational resources—such as product team structures and cross-functional teams.

Exploration

Organizational members’ search for and experimentation with new kinds or forms of organizational activities and procedures.

[Exploitation](/books/9781323290941/content/id/ch12bx9) involves organizational members learning ways to refine and improve existing organizational activities and procedures to increase effectiveness. Learning that involves exploitation might involve implementing a total quality management program to promote the continuous refinement of existing operating procedures, or developing an improved set of rules to perform specific kinds of functional activities more effectively. Exploration is therefore a more radical learning strategy than exploitation, although both must be used together to increase organizational effectiveness.[36](/books/9781323290941/content/id/ch12bib36)

Exploitation

Organizational members’ learning of ways to refine and improve existing organizational activities and procedures.

A [learning organization](/books/9781323290941/content/id/ch12bx10) is an organization that purposefully designs and constructs its structure, culture, and strategy so as to enhance and maximize the potential for organizational learning (explorative and exploitative) to take place.[37](/books/9781323290941/content/id/ch12bib37) How do managers create a learning organization, one capable of allowing its members to appreciate and respond quickly to changes taking place around it? By increasing the ability of employees, at every level in the organization, to question and analyze the way an organization currently performs its activities and to experiment with new ways to change them to increase effectiveness.

Learning organization

An organization that purposefully designs and constructs its structure, culture, and strategy so as to enhance and maximize the potential for organizational learning to take place.

**Levels of Organizational Learning**

To create a learning organization, managers need to encourage learning at four levels: individual, group, organizational, and interorganizational[38](/books/9781323290941/content/id/ch12bib38) ([Figure 12.2](/books/9781323290941/content/id/ch12fig2)). Some principles for creating a work setting at each level that encourages learning have been developed by Peter Senge and are discussed next.[39](/books/9781323290941/content/id/ch12bib39)

**individual**

At the individual level, managers need to do all they can to facilitate the learning of new skills, rules, norms, and values so individuals can increase their own personal abilities and, in doing so, help build an organization’s core competences. Senge has argued that for organizational learning to occur, each of its members needs to develop a sense of personal mastery, by which he means that organizations should empower all employees and allow them to experiment and create and explore what they want. Google, for example, allows its employees to spend 30% of their time on projects of their own choosing to free them to “think out of the box.”[40](/books/9781323290941/content/id/ch12bib40) The goal is to give employees the opportunity to develop an intense appreciation for their work that will translate into new distinctive competence for the organization, as it has for Google where employees suggested new applications such as Google Gadgets.

**Figure 12.2 Levels of Organizational Learning**



To create a learning organization, managers must use systems thinking and recognize the effects of one level of learning on another.

To help them achieve personal mastery, and to give employees a deeper understanding of what is involved in performing a particular activity, organizations need to encourage employees to develop and use complex mental models that challenge them to find new or better ways of performing a task. To give an analogy, a person might mow the lawn once a week and treat this as a chore that has to be done. However, suppose the person decides to study how the grass grows and to experiment with cutting the grass to different heights and using different fertilizers and watering patterns. Through this study, he or she notices that cutting the grass to a certain height and using specific combinations of fertilizer and water promote thicker growth and fewer weeds, resulting in a better-looking lawn that needs less mowing. What has been a chore may become a hobby, and the personal mastery achieved from the new way of looking at the task may become a source of deep personal satisfaction. This is the message behind Senge’s first principle for developing a learning organization: Organizations must encourage each individual member to develop a similar commitment and attachment to their job so they will develop a taste for experimenting and risk taking.[41](/books/9781323290941/content/id/ch12bib41)

A learning organization can encourage employees to form complex mental models and develop a sense of personal mastery by providing them with the opportunity to assume more responsibility for their decisions. This can be done in a variety of different ways. Employees might be cross-trained so they can perform many different tasks, and the knowledge that they gain may give them new insight into how to improve work procedures. Or perhaps a work procedure that was performed by several different workers can be redesigned or reengineered so only one worker, aided by advanced IT, is needed to perform the procedure. Again, the result may be an increase in the level of organizational learning as the worker finds new ways to get the job done. Recall that one of the aims of reengineering is fundamentally to rethink basic business processes. Reengineering is about promoting organizational learning.

**group**

At the group level, managers need to encourage learning by promoting the use of various kinds of groups—such as self-managed or cross-functional teams—so that employees can share or pool their skills and abilities to solve problems. Groups provide a setting for synergy to develop-—the idea that the whole is much more than the sum of its parts—which can enhance performance. In terms of Thompson’s model of task interdependence discussed in [Chapter 9](/books/9781323290941/content/id/ch09), for example, the move from a pooled, to a sequential, to a reciprocal form of task interdependence increases the potential for synergy and group-level learning to develop because there is more opportunity for group members to interact and learn from one another over time. “Group routines” and “shared pools of collective meaning” that enhance group effectiveness may develop from such group interactions.[42](/books/9781323290941/content/id/ch12bib42) Senge refers to this kind of learning as team learning and argues that team learning is even more important than individual learning in promoting organizational learning because most important decisions are made in subunits such as groups, functions, and divisions.

The ability of teams to bring about organizational learning was unmistakable when Toyota revolutionized the work process in the former GM factory discussed in [Organizational Insight 6.1](/books/9781323290941/content/id/ch06oi1). Large performance gains were achieved in the factory when Toyota’s managers created work teams and empowered team members to take over the responsibility for measuring, monitoring, and controlling their own behavior to find ways continuously to increase performance. The power of teams to bring about organizational learning is also revealed in another of Toyota’s attempts to increase effectiveness.

Experimenting with ways to increase technical efficiency, Toyota decided to produce cars in fully roboticized factories embodying the latest, most advanced manufacturing technology. As a result, when it built a new manufacturing plant in Kyoto, Toyota’s engineers focused on perfecting the plant’s materials technology, and workers became simply an “appendage to the machines.” Within a few years it became clear to Toyota’s managers that the new technology had not resulted in the large performance gains they had expected. Why? According to Toyota, the new factories had eliminated the opportunity for team learning; workers were neither asked nor expected to contribute their ideas for improving operating efficiency. Computers are only as good as the people who program them, and programmers were not the ones working on the production line. Toyota has since junked its fully roboticized factories, and in its new factories it makes sure that people in teams can contribute their knowledge and skills to increase effectiveness. Yet

**Summary**

The problems that many established companies encounter are a warning about the need to encourage organizational learning so organizations have the ability to continuously adapt to and modify their environments. Strategy and structure are the tools that an organization uses to fashion its future; the decisions about strategy and structure that an organization makes now will determine its fate years from now. Too often, managers view strategy and structure as unchangeable and not as factors to be experimented with and altered to move the organization forward. When strategy and structure are viewed as something to be protected at all costs, they can become a source of organizational inertia that may bring an organization to its knees. Managers need to understand how an organization’s current strategy and structure can constrain organizational learning, and they need to prevent the emergence of cognitive biases that reduce learning and distort the decision-making process. [Chapter 12](/books/9781323290941/content/id/ch12) has made the following main points:

* 1. Organizational decision making is the process of responding to a problem by searching for and selecting a solution or course of action that will create value for organizational stakeholders.
* 2. Managers make two basic types of decisions: programmed and nonprogrammed. Programmed decisions provide an organization with stability and increase efficiency. Nonprogrammed decisions allow an organization to adapt to changes in its environment and find solutions to new problems.
* 3. The rational model of decision making outlines how decision making takes place when there is no uncertainty. It ignores the effects of information costs and managerial costs.
* 4. Newer models of decision making recognize the effects of uncertainty, information, bounded rationality, satisficing, and bargaining by coalitions on the decision-making process. The Carnegie, incrementalist, unstructured, and garbage-can models provide a more realistic picture of how organizational decision making takes place.
* 5. Organizational learning is the process through which managers seek to improve organization members’ desire and ability to understand and manage the organization and its environment so they can make decisions that continuously raise organizational effectiveness. There are two main kinds of learning—explorative and exploitative—and both are necessary to raise the quality of decision making.
* 6. The routines and procedures that an organization uses to make programmed decisions can cause organizational inertia. When programmed decision making drives out nonprogrammed decision making, the level of organizational learning drops. To encourage organizational learning, managers can act at the individual, group, organizational, and interorganizational levels.
* 7. Information technology and knowledge management systems can be developed to improve decision making and enhance organizational learning. The two main approaches to knowledge management are codification and personalization.
* 8. Cognitive structures (sets of interrelated beliefs, preferences, expectations, and values) affect the way managers interpret the problems facing an organization and shape the way they make decisions.
* 9. Cognitive biases may distort the way managers process information and make decisions. Common cognitive biases include cognitive dissonance, the illusion of control, frequency and representativeness, projection and ego-defensiveness, and escalation of commitment.
* 10. An organization can counter the effect of cognitive biases and raise the level of learning and decision making in several ways. It can implement strategies for organizational learning, use game theory, increase the breadth and diversity of the top-management team, use devil’s advocacy and dialectical inquiry to evaluate proposed solutions, and develop a collateral organizational structure.