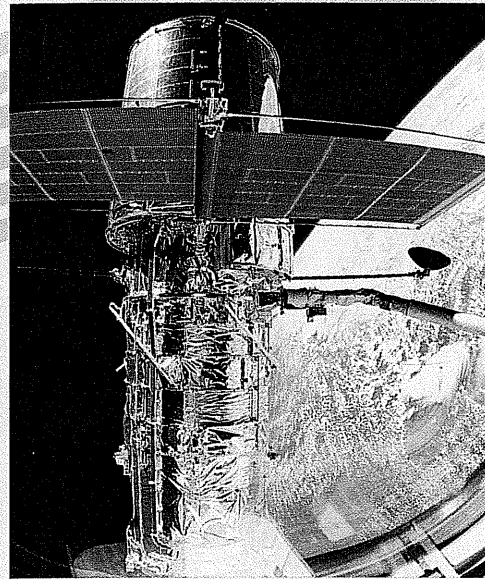


After much anticipation, when the Hubble Space Telescope was finally launched it was found to have a flaw in its primary mirror. Better controls could have prevented this problem.



The Hubble Space Telescope was planned for more than fifteen years and cost more than \$1.5 billion.¹ Yet when it was finally launched

in April 1990, the National Aeronautics and Space Administration (NASA) found that there was a flaw in the telescope's primary mirror. The 94.5-inch diameter primary mirror was too flat in the center, and so it produced blurry images. The result: Because the telescope could not focus on distant stars nearly as sharply as had been expected, it threatened as many as half of the planned experiments, and many observations might not be able to be carried out.

The sad part about the Hubble story is that, with better controls, it could have been prevented. The mirror's maker, Perkins-Elmer, used a flawed optical template to achieve the exacting specifications. An optical verification test that was used in making the mirror—a reflective null corrector—had not been set up correctly. A spacing error of 1.3 millimeters in this device—about the diameter of the tip of a ballpoint pen—caused the mirror's surface to be ground and polished in the wrong shape. But no one caught the mistake. Ironically, in contrast with many NASA projects, time pressures were not the issue. There was more than enough time to catch the telescope's flaws. Rough grinding of the mirror began in 1978, and final polishing was not finished until 1981. Then the completed telescope sat on the ground for two years after the space shuttle program was disrupted by the *Challenger* disaster, in which barely two minutes after liftoff a flame from one of the solid rocket boosters ignited the massive liquid-fuel tank in the shuttle. In a spectacular explosion, all seven of the crew were killed.

Managers at NASA who had responsibility for the Hubble project paid little attention to the details of the telescope's construction. A NASA executive who headed up a six-member investigating committee on the Hubble debacle said, "There were at least three cases where there was clear evidence that a problem had developed, and it was missed all three times."

The Hubble example illustrates what can happen when an organization has inadequate controls. Regardless of the thoroughness of the planning, an idea still may be poorly or improperly implemented without a satisfactory control system. Effective management, therefore, needs to consider the benefits of a well-designed control system.

What Is Control?

control

The process of monitoring activities to ensure they are being accomplished as planned and of correcting any significant deviations.

Control can be defined as the process of monitoring activities to ensure that they are being accomplished as planned and of correcting any significant deviations. All managers should be involved in the control function even if their units are performing as planned. Managers cannot really know whether their units are performing properly until they have evaluated what activities have been done and have compared the actual performance with the desired standard.² An effective control system ensures that activities are completed in ways that lead to the attainment of the organization's goals. The criterion that determines the effectiveness of a control system is how well it facilitates goal achievement. The more it helps managers achieve their organization's goals, the better the control system.³

The Importance of Control

Planning can be done, an organization structure can be created to efficiently facilitate the achievement of objectives, and employees can be directed and motivated. Still, there is no assurance that activities are going as planned and that the goals managers are seeking are, in fact, being attained. Control is important, therefore, because it is the final link in the functional chain of management. However, the value of the control function lies predominantly in its relation to planning and delegating activities.

In Chapter 7, we described objectives as the foundation of planning. Objectives give specific direction to managers. However, just stating objectives or having subordinates accept your objectives is no guarantee that the necessary actions have been accomplished. "The best-laid plans of mice and men oft go awry." The effective manager needs to follow up to ensure that the actions that others are supposed to take and the objectives they are supposed to achieve are, in fact, being taken and achieved.

In our discussion of interpersonal skills we noted that many managers find it difficult to delegate. A major reason given was the fear that subordinates would do something wrong for which the manager would be held responsible. Thus many managers are tempted to do things themselves and avoid delegating. This reluctance to delegate, however, can be reduced if managers develop an effective control system. Such a control system can provide information and feedback on the perfor-

mance of subordinates to whom they have delegated authority. An effective control system is therefore important because managers need to delegate authority; but because they are held ultimately responsible for the decisions that their subordinates make, managers also need a feedback mechanism.

The Control Process

control process

The process of measuring actual performance, comparing it against a standard, and taking managerial action to correct deviations or inadequate standards.

The **control process** consists of three separate and distinct steps: (1) *measuring* actual performance; (2) *comparing* actual performance against a standard; and (3) taking *managerial action* to correct deviations or inadequate standards. Before we consider each step in detail, you should be aware that the control process assumes that standards of performance *already exist*. These standards are the specific objectives against which progress can be measured. They are created in the planning function. If managers use MBO, then objectives are, by definition, tangible, verifiable, and measurable. In such instances, these objectives are the standards against which progress is measured and compared. If MBO is not practiced, then standards are the specific performance indicators that management uses. Our point is that these standards are developed in the planning function; planning must *precede* control.

Measuring

To determine what actual performance is, a manager must acquire information about it. The first step in control, then, is measuring. Let us consider *how* we measure and *what* we measure.

How We Measure Four common sources of information, frequently used by managers to measure actual performance, are personal observation, statistical reports, oral reports, and written reports. Each has particular strengths and weaknesses; however, a combination of them increases both the number of input sources and the probability of receiving reliable information.

An increasing number of managers, such as Ralph Stayer of Johnsonville Foods, are using personal observation as a means of control. Management-by-walking-around provides a richness of information often lost in formal reports.



Personal observation provides firsthand, intimate knowledge of the actual activity—information that is not filtered through others. It permits intensive coverage because minor as well as major performance activities can be observed as well as opportunities for the manager to “read between the lines.” Management-by-walking-around can pick up omissions, facial expressions, and tones of voice that may be missed by other sources. Unfortunately, in a time when quantitative information suggests objectivity, personal observation is often considered an inferior information source. It is subject to perceptual biases—what one manager sees, another might not. Personal observation also consumes a good deal of time. Finally, this method suffers from obtrusiveness. Employees might interpret a manager’s overt observation as a sign of a lack of confidence in them or of mistrust.

The current wide use of computers in organizations has made managers rely increasingly on *statistical reports* for measuring actual performance. This measuring device, however, is not limited to computer outputs. It also includes graphs, bar charts, and numerical displays of any form that managers may use for assessing performance. Although statistical data is easy to visualize and effective for showing relationships, it provides limited information about an activity. Statistics report on only a few key areas and often ignore other important factors.

Information can also be acquired through *oral reports*—that is, through conferences, meetings, one-to-one conversations, or telephone calls. The advantages and disadvantages of this method of measuring performance are similar to those of personal observation. Although the information is filtered, it is fast, allows for feedback, and permits language expression and tone of voice, as well as words themselves, to convey meaning. Historically, one of the major drawbacks of oral reports was the problem of documenting information for later references. However, our technological capabilities have progressed in the last couple of decades to the point at which oral reports can be efficiently taped and become as permanent as if they were written.

Actual performance may also be measured by *written reports*. As with statistical reports, they are slower yet more formal than first- or secondhand oral measures. This formality also often means greater comprehensiveness and conciseness than is found in oral reports. In addition, written reports are usually easy to catalogue and reference.

Given the varied advantages and disadvantages of each of these four measurement techniques, comprehensive control efforts by managers should use all four.

What We Measure *What* we measure is probably more critical to the control process than *how* we measure. The selection of the wrong criteria can result in serious dysfunctional consequences. Besides, what we measure determines, to a great extent, what people in the organization will attempt to excel at.⁴

Some control criteria are applicable to any management situation. For instance, because all managers, by definition, direct the activities of others, criteria such as employee satisfaction or turnover and absenteeism rates can be measured. Most managers have budgets for their area of responsibility set in dollar costs. Keeping costs within budget is therefore a fairly common control measure. However, any comprehensive control system needs to recognize the diversity of activities among managers. A production manager in a manufacturing plant might use measures of the quantity of units produced per day, units produced per labor hour, scrap per unit of output, or percent of rejects returned by customers. The manager of an administrative unit in a government agency might use number of document pages typed per day, number of orders processed per hour, or average time required to process service calls. Marketing managers often use measures such as percent of market captured, average dollar value per sale, or number of customer visits per salesperson.

The performance of some activities is difficult to measure in quantifiable terms. It is more difficult, for instance, for an administrator to measure the performance of a

research chemist or an elementary school teacher than of a person who sells life insurance. But most activities can be broken down into objective segments that allow for measurement. The manager needs to determine what value a person, department, or unit contributes to the organization and then convert the contribution into standards.

Most jobs and activities can be expressed in tangible and measurable terms. When a performance indicator cannot be stated in quantifiable terms, managers should look for and use subjective measures. Certainly, subjective measures have significant limitations. Still, they are better than having no standards at all and ignoring the control function. If an activity is important, the excuse that it is difficult to measure is inadequate. In such cases, managers should use subjective performance criteria. Of course, any analysis or decisions made based on subjective criteria should recognize the limitations of the data.

Comparing

The comparing step determines the degree of variation between actual performance and the standard. Some variation in performance can be expected in all activities; it is therefore critical to determine the acceptable **range of variation**. (See Figure 19-1.) Deviations in excess of this range become significant and receive the manager's attention. In the comparison stage, managers are particularly concerned with the size and direction of the variation. An example should make this clearer.

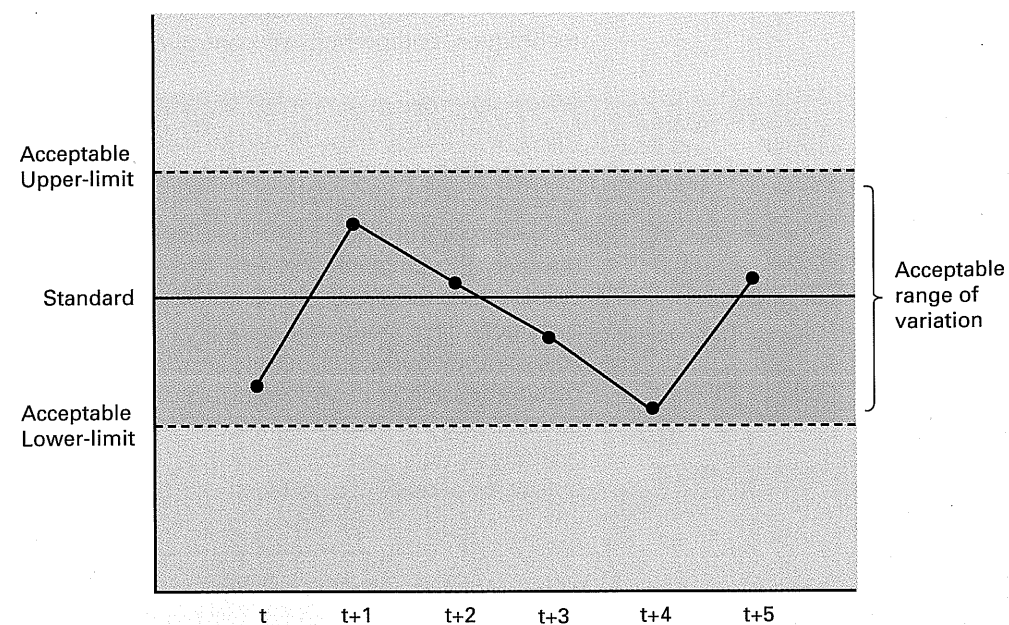
Rich Tanner is sales manager for Eastern States Distributors. The firm distributes imported beers in several states on the east coast. Rich prepares a report during the first week of each month that describes sales for the previous month, classified by brand name. Table 19-1 displays both the standard and actual sales figures (in hundreds of cases) for the month of July.

Should Rich be concerned about the July performance? Sales were a bit higher than he had originally targeted, but does that mean that there were no significant deviations? Even though overall performance was generally quite favorable, several brands might deserve the sales manager's attention. However, the number of brands that

range of variation

The acceptable parameters of variance between actual performance and the standard.

FIGURE 19-1
Defining an Acceptable Range of Variation



Eastern States Distributors uses monthly sales reports to identify problem areas. Significant deviations between actual sales and the budgeted standard will require attention from the company's sales manager.

TABLE 19-1 Eastern States Distributors' Sales Performance for July (hundreds of cases)

Brand	Standard	Actual	Over (Under)
Heineken	1,075	913	(162)
Molson	630	634	4
Beck's	800	912	112
Moosehead	620	622	2
Labatt's	540	672	132
Corona	160	140	(20)
Amstel Light	225	220	(5)
Dos Equis	80	65	(15)
Tecate	170	286	116
Total Cases	4,300	4,464	164

deserve attention depends on what Rich believes to be *significant*. How much variation should Rich allow before he takes corrective action?

The deviation on several brands is very small and undoubtedly not worthy of special attention. These include Molson, Moosehead, and Amstel Light. Are the shortages for Corona and Dos Equis brands significant? That's a judgment Rich must make. Heineken sales were 15 percent below Rich's goal. This needs attention. Rich should look for a cause. In this case, Rich attributed the loss to aggressive advertising and promotion programs by the big domestic producers, Anheuser-Busch and Miller. Because Heineken is the number one selling import, it is most vulnerable to the promotion clout of the big domestic producers. If the decline in Heineken is more than a temporary slump, Rich will need to reduce his orders with the brewery and lower his inventory stock.

An error in understating sales can be as troublesome as an overstatement. For instance, is the surprising popularity of Tecate a one-month aberration, or is this



brand increasing its market share? Our Eastern States' example illustrates that both overvariance and undervariance require managerial attention.

Taking Managerial Action

The third and final step in the control process is taking managerial action. Managers can choose among three courses of action: They can do nothing; they can correct the actual performance; or they can revise the standard. Because "doing nothing" is fairly self-explanatory, let's look more closely at the latter two.

Correct Actual Performance If the source of the variation has been deficient performance, the manager will want to take corrective action. Examples of such corrective action might include changes in strategy, structure, compensation practices, or training programs; the redesign of jobs; or the replacement of personnel.

A manager who decides to correct actual performance has to make another decision: Should he or she take immediate or basic corrective action? **Immediate corrective action** corrects problems at once and gets performance back on track. **Basic corrective action** asks how and why performance has deviated and then proceeds to correct the source of deviation. It is not unusual for managers to rationalize that they do not have the time to take basic corrective action and therefore must be content to perpetually "put out fires" with immediate corrective action. Effective managers, however, analyze deviations and, when the benefits justify it, take the time to permanently correct significant variances between standard and actual performance.

To return to our example of Eastern States Distributors, Rich Tanner might take basic corrective action on the negative variance for Heineken. He might increase promotion efforts, increase the advertisement budget for this brand, or reduce future orders with the manufacturer. The action he takes will depend on his assessment of each brand's potential effectiveness.

Revise the Standard It is possible that the variance was a result of an unrealistic standard—that is, the goal may be too high or too low. In such cases it's the standard that needs corrective attention, not the performance. In our example, the sales manager might need to raise the standard for Tecate to reflect its increasing popularity. This frequently happens in sports when athletes adjust their performance goals upward during a season if they achieve their season goal early.

The more troublesome problem is the revising of a performance standard downward. If an employee or unit falls significantly short of reaching its target, the natural response is to shift the blame for the variance to the standard. For instance, students who make a low grade on a test often attack the grade cutoff points as too high. Rather than accept the fact that their performance was inadequate, students argue that the standards are unreasonable. Similarly, salespeople who fail to meet their monthly quota may attribute the failure to an unrealistic quota. It may be true that standards are too high, resulting in a significant variance and acting to demotivate those employees being assessed against it. But keep in mind that if employees or managers don't meet the standard, the first thing they are likely to attack is the standard itself. If you believe the standard is realistic, hold your ground. Explain your position, reaffirm to the employee or manager that you expect future performance to improve, and then take the necessary corrective action to turn that expectation into reality.

Summary

Figure 19-2 summarizes the control process. Standards evolve out of objectives, but because objectives are developed during planning, they are tangential to the control process. The process is essentially a continuous flow between measuring, comparing,

immediate corrective action

Correcting an activity at once in order to get performance back on track.

basic corrective action

Determining how and why performance has deviated and correcting the source of deviations.

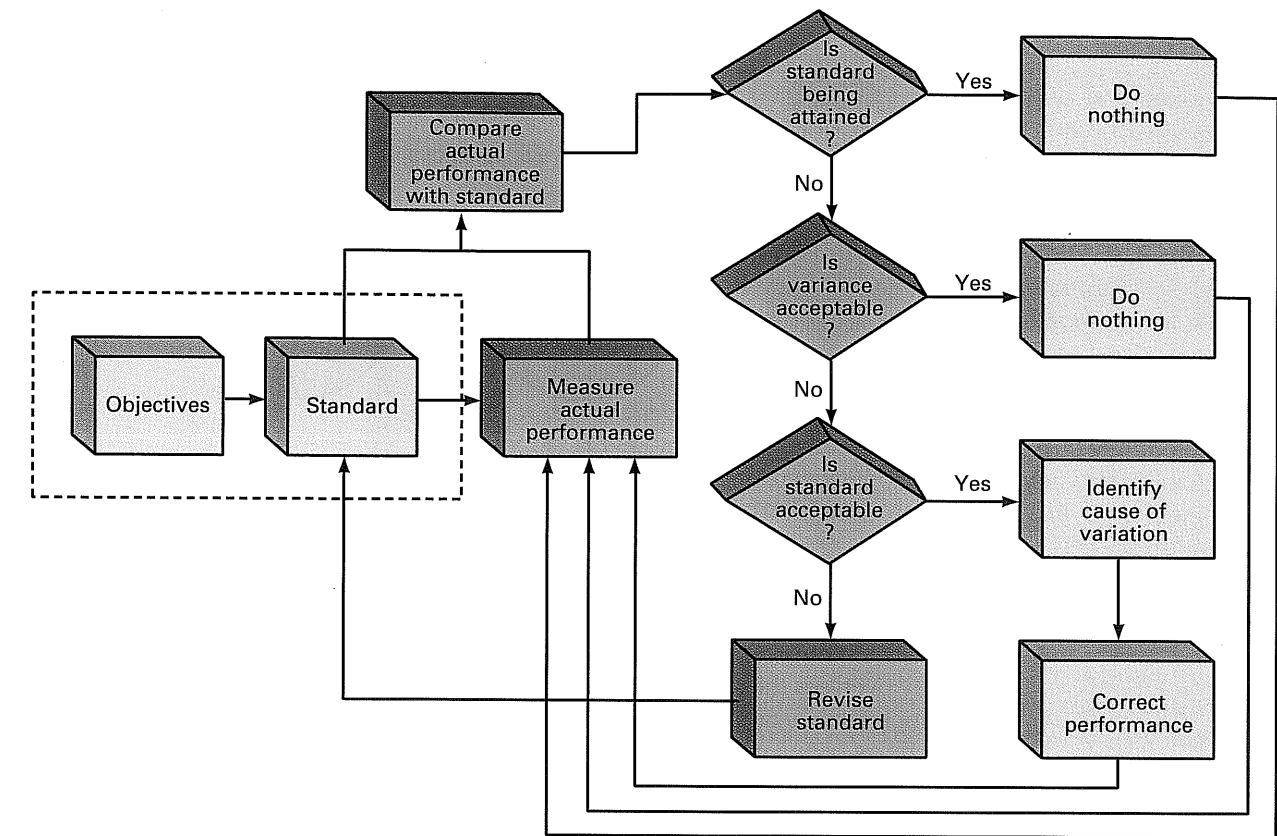


FIGURE 19-2
The Control Process

and managerial action. Depending on the results of the comparing stage, management's courses of action are to do nothing, revise the standard, or correct the performance.

Types of Control

Management can implement controls before an activity commences, while the activity is going on, or after the activity has been completed. The first type is called *feedforward control*, the second is *concurrent control*, and the last is *feedback control*. (See Figure 19-3.)

Feedforward Control

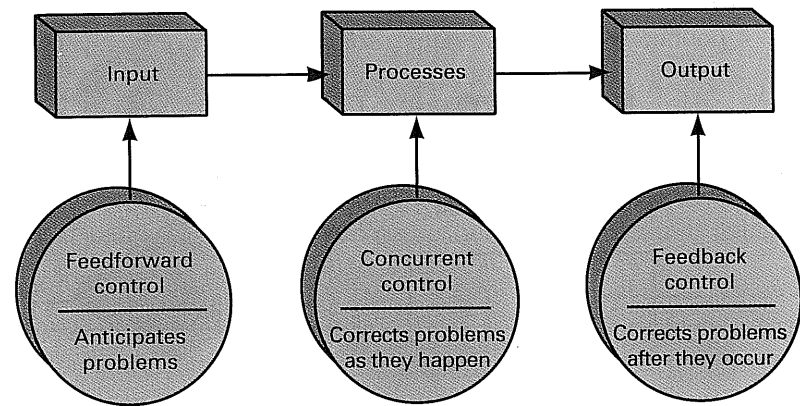
feedforward control

Control that prevents anticipated problems.

The most desirable type of control—**feedforward control**—prevents anticipated problems. It is called feedforward control because it takes place in advance of the actual activity. It is future-directed.⁵ For instance, managers at Lockheed Corp. may hire additional personnel as soon as the government announces that the firm has won a major military contract. The hiring of personnel ahead of time prevents potential delays. The key to feedforward controls, therefore, is taking managerial action before a problem occurs.

Feedforward controls are desirable because they allow management to prevent problems rather than having to cure them later. Unfortunately, these controls require timely and accurate information that is often difficult to develop. As a result, managers frequently have to use one of the other two types of control.

FIGURE 19-3
Types of Control



Concurrent Control

Concurrent control, as its name implies, takes place while an activity is in progress. When control is enacted while the work is being performed, management can correct problems before they become too costly.

The best-known form of concurrent control is direct supervision. When a manager directly oversees the actions of a subordinate, the manager can concurrently monitor the employee's actions and correct problems as they occur. While there is obviously some delay between the activity and the manager's corrective response, the delay is minimal. Technical equipment can be designed to include concurrent controls. Most computers, for instance, are programmed to provide operators with immediate response if an error is made. If you input the wrong command, the program's concurrent controls reject your command and may even tell you why it is wrong.

Feedback Control

The most popular type of control relies on feedback. The control takes place after the action. The control report that Rich Tanner used for assessing beer sales is an example of a **feedback control**.

The major drawback of this type of control is that, by the time the manager has the information the damage is already done. It's analogous to the proverbial closing the barn door after the horse has been stolen. But for many activities, feedback is the only viable type of control available.

We should note that feedback has two advantages over feedforward and concurrent control.⁶ First, feedback provides managers with meaningful information on how effective its planning effort was. If feedback indicates little variance between standard and actual performance, this is evidence that planning was generally on target. If the deviation is great, a manager can use this information when formulating new plans to make them more effective. Second, feedback control can enhance employee motivation. People want information on how well they have performed. Feedback control provides that information.

concurrent control

Control that occurs while an activity is in progress.

feedback control

Control imposed after an action has occurred.

People

Managers accomplish goals by working through other people. To achieve their unit goals, managers need and depend on subordinates. It is therefore important for managers to ensure that employees are performing as they are supposed to. The most explicit way managers do this is by direct supervision and performance appraisals.

On a day-to-day basis, managers oversee employees' work and correct problems as they occur. The supervisor who spots an employee taking an unnecessary risk when operating his or her machine may point out the correct way to perform the task and tell the employee to do it the correct way in the future.

Managers assess the work of their employees in a more formal way by means of systematic performance appraisals. An employee's recent performance is evaluated. If performance is positive, the employee's behavior can be reinforced with a reward such as a pay increase. If performance is below standard, managers will seek to correct it or, depending on the nature of the deviation, discipline the employee.

As Table 19-2 illustrates, management has a great many behavioral control devices at its disposal. In actual practice, managers use almost all of the options described in Table 19-2 to increase the likelihood that employees will perform as desired.

Finances

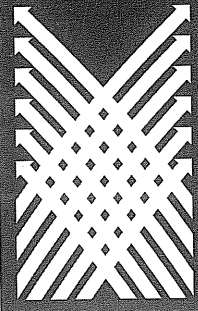
The primary purpose of every business firm is to earn a profit. In pursuit of this objective, managers seek financial controls. Managers might, for instance, carefully search quarterly income statements for excessive expenses. They might also perform several financial ratio tests to ensure that sufficient cash is available to pay ongoing expenses, that debt does not become too large and burdensome, and that assets are being productively used. These are examples of how financial controls can be used to reduce costs and make the best use of financial resources.

TABLE 19-2 Behavioral Control Devices

<i>Selection.</i> Identify and hire people whose values, attitudes, and personality fit with what management desires.
<i>Goals.</i> When employees accept specific goals, the goals then direct and limit behavior.
<i>Job design.</i> The way jobs are designed determines, to a large degree, the tasks that a person does, the pace of the work, the people with whom he or she interacts, and similar activities.
<i>Orientation.</i> New-employee orientation defines which behaviors are acceptable and which aren't.
<i>Direct supervision.</i> The physical presence of supervisors acts to constrain employee behavior and allows for rapid detection of deviant behavior.
<i>Training.</i> Formal training programs teach employees desired work practices.
<i>Mentoring.</i> Informal and formal mentoring activities by senior employees convey to junior employees "the ropes to skip and the ropes to know."
<i>Formalization.</i> Formal rules, policies, job descriptions, and other regulations define acceptable practices and constrain behavior.
<i>Performance appraisals.</i> Employees will behave in ways so as to look good on the criteria by which they will be appraised.
<i>Organizational rewards.</i> Rewards act as reinforcers to encourage desired behaviors and to extinguish undesirable ones.
<i>Organizational culture.</i> Through stories, rituals, and top-management practices, culture conveys what constitutes proper behavior.

The Focus of Control

What do managers control? Most control efforts are directed at one of five areas: people, finances, operations, information, or the performance of the overall organization.



Behavioral Control and Employees' Right to Privacy

When does management's effort to control the actions of its employees become an invasion of privacy? Consider two cases.⁷

Daniel Winn made nearly nine dollars an hour setting up machinery at Best Lock Corp. in Indiana. He was fired after he testified in a relative's legal hearing that he drank socially from time to time. Unfortunately for Mr. Winn, Best Lock forbids alcohol consumption by its employees, even after work. It should be noted that in a test of the company's no-drinking rule, a state court in Indiana determined the rule to be valid and upheld the firing decision.

Employees at General Electric's Answering Center handle telephone inquiries from customers all day long. Those conversations are taped by GE and occasionally reviewed by its management.

Are either of the above practices—firing someone for drinking off the job or listening in on telephone conversations—an invasion of privacy? These questions actually touch on two larger issues: Does management have the right to tell employees how they can or cannot spend their time off the job, and on the job, when does management overstep the bounds of decency and privacy by silently (even covertly) scrutinizing the behavior of its employees?

How does management defend such practices? In the case of Best Lock, the argument essentially is based on keeping medical costs down. In recent years, corporate insurance plan premiums have risen an average of 17 percent annually. And employees who engage in unhealthy habits—such as drinking, smoking, or overeating—file more claims. General Electric can point to U.S. government statistics estimating that six million workers are being electronically monitored on their jobs. And silent surveillance of telephone calls can be used to help employees do their jobs better. Managers can review employee performance and provide feedback that can improve the quality of the employees' work.

But once management starts regulating off-the-job behavior, where does it stop? What about employees who eat lots of greasy food? Is that grounds for disciplinary action? Similarly, when does management's need for more information about employee performance cross over the line and interfere with a worker's right to privacy? What do *you* think?

Financial controls, of course, are used not only by managers in the private sector. Managers of not-for-profit organizations have objectives, one of the most important being efficiency. Financial controls such as budgets are an important tool for controlling costs in hospitals, schools, and government agencies.

In Chapter 9, we discussed budgets as a planning tool. As we noted, they are used for both planning and control. Budgets provide managers with quantitative standards against which to measure and compare resource consumption. And by pointing out deviations between standard and actual consumption, they become control devices.

Table 19-3 summarizes some of the most popular financial ratios used in organizations. Taken from the organization's financial statements (the balance sheet and income statement), they compare two significant figures and express them as a percentage, or ratio. Because you undoubtedly have encountered these ratios in introductory accounting and finance courses, or you will in the near future, we needn't elaborate on them. We mention them, however, to remind you that managers

TABLE 19-3 Popular Financial Ratios

Objective	Ratio	Calculation	Meaning
Liquidity test	Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Tests the organization's ability to meet short-term obligations
	Acid test	$\frac{\text{Current assets less inventories}}{\text{Current liabilities}}$	Tests liquidity more accurately when inventories turn over slowly or are difficult to sell
Leverage test	Debt-to-assets	$\frac{\text{Total debt}}{\text{Total assets}}$	The higher the ratio, the more leveraged the organization
	Times-interest-earned	$\frac{\text{Profits before interest and taxes}}{\text{Total interest charges}}$	Measures how far profits can decline before the organization is unable to meet its interest expenses
Operations test	Inventory turnover	$\frac{\text{Sales}}{\text{Inventory}}$	The higher the ratio, the more efficiently inventory assets are being used
	Total asset turnover	$\frac{\text{Sales}}{\text{Total assets}}$	The fewer assets used to achieve a given level of sales, the more efficiently management is using the organization's total assets
Profitability	Profit-margin-on-sales	$\frac{\text{Net profit after taxes}}{\text{Total sales}}$	Identifies the profits that various products are generating
	Return-on-investment	$\frac{\text{Net profit after taxes}}{\text{Total assets}}$	Measures the efficiency of assets to generate profits

use such ratios as internal control devices for monitoring how efficiently the organization uses its assets, debt, inventories, and the like.

Operations

The success of an organization depends to a large extent on its ability to produce goods and services effectively and efficiently. Operations control techniques are designed to assess how effectively and efficiently an organization's transformation processes are working.

Operations control typically encompasses monitoring production activities to ensure that they are on schedule; assessing purchasing's ability to provide the proper quantity and quality of supplies needed at the lowest cost possible; monitoring the

Sears, Roebuck chairman, Edward A. Brennan, recently took personal control of Sears' retail operations. "We must get costs under control," said Brennan. Expenses consumed 30 cents of every dollar of retail sales at Sears compared to 23 cents and 16 cents at rivals Kmart and Wal-Mart, respectively.



quality of the organization's products or services to ensure that they meet pre-established standards; and making sure that equipment is well maintained. These concerns will be elaborated upon in Chapter 21 in our discussion of operations management.

Information

Managers need information to do their job. Inaccurate, incomplete, excessive, or delayed information will seriously impede their performance. It's therefore necessary to develop a management information system that provides the right data in the right amount to the right person at the right time.

The technology for managing information has changed dramatically in recent years. Fifteen years ago, for instance, managers in large organizations relied on a centralized data-processing department to service their information needs. If they wanted a breakdown of weekly sales by regional sales territory, they requested the report from the data-processing manager. A lucky manager might get a computer printout of the sales figures early the following week. Today's managers usually have computers on their desks. They can type in their request at any time and call up the latest sales figures by territory. What used to take days to get can now be accessed in seconds.

Few areas of the manager's job have changed, and will continue to change, as rapidly as has management information systems. Technology is creating new options for managers at an unprecedented pace. Today's state-of-the-art system will almost certainly be antiquated in two or three years. The importance of management information systems and their rapid development are further discussed in Chapter 20.

Organization Performance

Evaluations of an organization's overall performance or effectiveness are made regularly by a number of constituencies. Managers, of course, are concerned with their organization's performance, but they're not the only group that evaluates organizational effectiveness. Customers and clients make effectiveness judgments when they choose to do business with one firm rather than another. Security analysts, potential investors, potential lenders, and suppliers (especially those extending credit terms) also have to make effectiveness evaluations. In government, decisions as to which departments get budget increases or cuts are essentially effectiveness determinations. Even employees and potential employees evaluate an organization's effectiveness. When you decide to accept or reject a job offer from an organization, you undoubtedly consider effectiveness factors.

The facts above support the idea that managers should be concerned with controlling in order to maintain or improve their organization's overall effectiveness. But there is no singular measure of an organization's effectiveness. Productivity, efficiency, profit, morale, quality of output, flexibility, stability, and employee absenteeism are criteria that undoubtedly have an important bearing on an organization's overall effectiveness.⁸ None, however, is synonymous with organizational effectiveness.⁹ An organization's effectiveness can be assessed by any of three basic approaches.

organizational goals approach
Appraising an organization's effectiveness according to whether it accomplishes its goals.

The Organizational Goals Approach The **organizational goals approach** states that an organization's effectiveness is appraised in terms of the accomplishment of ends rather than means.¹⁰ It is the bottom line that counts. Popular organizational goals criteria include maximizing profits, educating students efficiently, bringing the enemy to surrender, winning the basketball game, and restoring patients to good health. On the assumption that organizations are deliberately created to achieve one

or more specified goals, the organizational goals approach makes a great deal of sense.

The problem with goals in the organization was elaborated upon in Chapter 7. Do we use official goals or actual goals? Whose goals? Short-term or long-term? Because organizations have multiple goals, how should these goals be ranked in importance? These problems are not insurmountable. If managers are willing to confront the complexities inherent in the organizational goals approach, they can obtain reasonably valid information for assessing an organization's effectiveness. However, it has been argued that there is more to organizational effectiveness than identifying and measuring specific ends. When managers give their sole attention to ends, they are likely to overlook the long-term health of the organization. An alternative is the systems approach.

The Systems Approach We introduced the systems framework in Chapter 2. It was used to describe the organization as an entity that acquires inputs, engages in transformation processes, and generates outputs. Consistent with the systems perspective, it can be said that an organization should be judged on its ability to acquire inputs, process these inputs, channel the outputs, and maintain stability and balance. Outputs are the ends, whereas acquisition of inputs and processing efficiencies are means. If an organization is to survive over the long term, it must remain adaptive and healthy. The **systems approach to organizational effectiveness** focuses on those factors—means and ends—that can and do affect survival.¹¹

The relevant criteria in the systems approach include market share, stability of earnings, employee absenteeism and turnover rates, growth in research and development expenditures, level of interunit conflicts, degree of employee satisfaction, and clarity of internal communications. Notice that the systems approach emphasizes factors that are important to the long-term health and survival of the organization but may not be critical in the short term. Research and development expenditures, for instance, are an investment in the future. Management can cut costs here and immediately increase profits or reduce losses. But the effect of this action will reduce the organization's viability in later years.

The major advantage to the systems approach is that it discourages management from looking for immediate results at the expense of future successes. Another advantage of the systems approach is its applicability where goals are either very vague or defy measurement. Managers of public organizations, for instance, frequently use "ability to acquire budget increases" as a measure of effectiveness—that is, they substitute an input criterion for an output criterion.

The Strategic Constituencies Approach The third approach proposes that an effective organization satisfies the demands of those constituencies in its environment from whom it requires support for its continued existence.¹² We call this the **strategic constituencies approach**.

Most public universities consider effectiveness in terms of acquiring students but feel that they need not be concerned with potential *employers* of their graduates. Why? Because these universities' survival does not depend on whether or not their graduates get jobs. Administrators in public universities devote considerable effort to wooing state legislators. Failure to win legislators' support is sure to have adverse effects on the budget of a public university. In contrast, a private university's effectiveness is hardly affected by whether or not it has a favorable relationship with the key people in the state capital. Administrators in private universities direct their energies to lobbying for increased federally subsidized student loans and to romancing alumni, wealthy philanthropists, and foundations who might donate money to their schools. These are constituencies who significantly determine whether private universities survive.

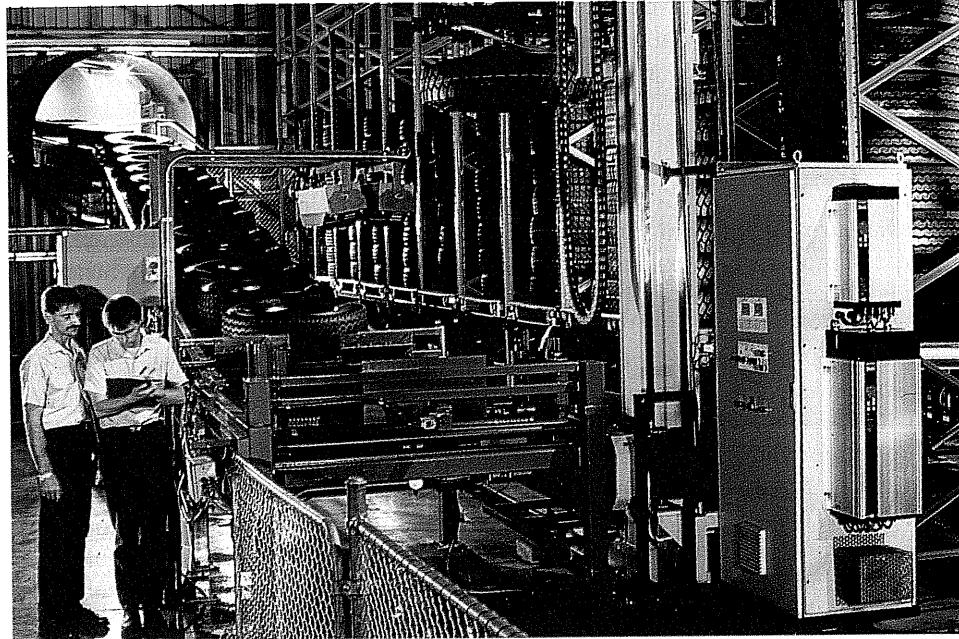
systems approach to organizational effectiveness

Appraising an organization's effectiveness in terms of both means and ends.

strategic constituencies approach

Appraising an organization's effectiveness according to how well the organization satisfies the demands of its constituencies.

Using the strategic constituencies approach, managers at Good-year Tire & Rubber would pay particular attention to the demands of suppliers of critical petroleum products used in the tire-manufacturing process; officers of the United Rubber Workers union; officials at banks where the company has sizable short-term loans; government regulatory agencies that grade tires and inspect facilities for safety violations; security analysts at major brokerage firms who specialize in the tire-and-rubber industry; regional tire jobbers and distributors; and purchasing agents responsible for the acquisition of tires at Ford, Mack Truck, Caterpillar, and other vehicle manufacturers.



The strategic constituencies approach is just as applicable to business firms as it is to universities. A corporation with a very strong cash position, for instance, need not be concerned with the effectiveness criteria that bankers use. However, assume that the company you head has \$200 million in bank loans coming due in the next quarter and that you will have to ask the consortium of banks with whom these loans were made to restructure this indebtedness because your firm can't meet this deadline. In such a situation, the criteria these bankers use to measure your organization's effectiveness will undoubtedly be the ones you will emphasize. To do otherwise would threaten your organization's survival. So the effective organization is defined as one that successfully identifies its critical constituencies—customers, government agencies, financial institutions, security analysts, labor unions, and so forth—and then satisfies their demands.

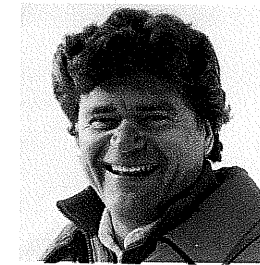
Notice the assumptions underlying the strategic constituencies approach. It assumes that an organization is faced with frequent and competing demands from a variety of interest groups. Because these interest groups are of unequal importance, effectiveness is determined by the organization's ability to identify its critical or strategic constituencies and to satisfy the demands they place upon the organization. Further, this approach assumes that managers pursue a number of goals and that the goals selected represent a response to those interest groups who control the resources necessary for the organization to survive.

While the strategic constituencies approach makes a lot of sense, it is not easy for managers to put into action. The task of separating the strategic constituencies from the larger environment is very difficult in practice. Because the environment changes rapidly, what was critical to the organization yesterday might not be so today. Even if the constituencies in the environment can be identified and are assumed to be relatively stable, what separates the "strategic" constituencies from the "almost strategic" constituencies? Regardless of the difficulty of the task, identifying and satisfying strategic constituencies can pay big dividends. By using the strategic constituencies approach, managers decrease the likelihood that they might ignore or severely upset a group whose power could significantly hinder the organization's operations. If management knows whose support is necessary to the health of the organization, it can modify its preference ordering of goals to reflect the changing power relationships with its strategic constituencies.

MANAGERS
WHO MADE A
DIFFERENCE



Preston Smith at S-K-I Ltd.



Running ski resorts is no vacation nowadays. In 1980 there were 1100 ski area operators in the United States. In 1992 there were only half that many. Industry problems have included reduced growth because of the aging of the baby boomers, rapidly escalating costs for ski lift tickets and lodging, a number of mild winters in recent years, and the management challenge of keeping tabs on employees spread over several square miles of mountainside. One person who has weathered the industry's

problems is Preston Smith, chief executive officer of S-K-I Ltd.¹³ His firm operates popular Vermont ski areas at Killington and Mt. Snow, as well as Southern California's largest ski area, at Bear Mountain.

Smith has invested heavily to develop special snow-making equipment that covers a lot more terrain than the average resort. "We've virtually eliminated our dependence on snow," says Smith. He has also devised a computerized control system that allows S-K-I's management to closely monitor operations, to quickly identify problems and just as quickly to move to correct them. For example, his control system provides him both with up-to-the-minute details of conditions on each major trail and with the ability to create snow on any specific trail by regulating the valves and pumps that control the flow of air and water to the snow-making guns.

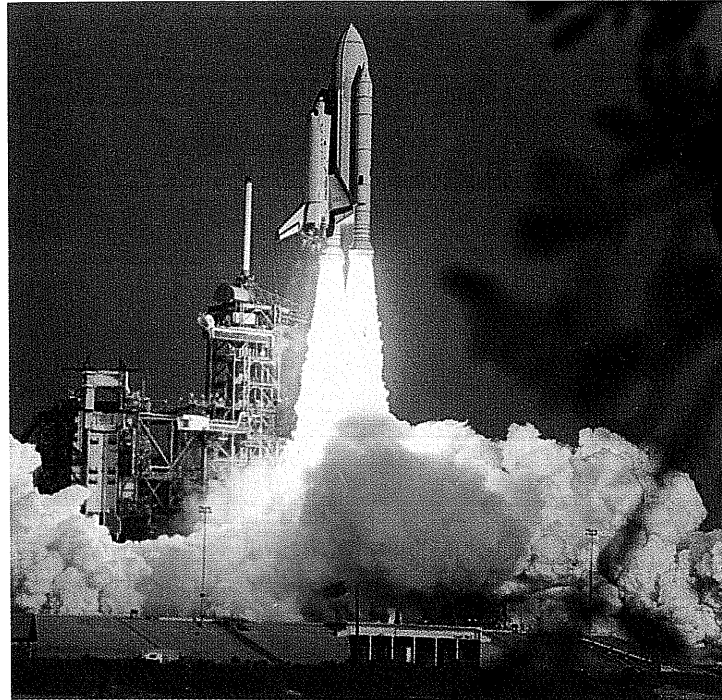
Smith's actions have paid handsome dividends. While many of his competitors lose money, he has remained profitable. In 1992, company revenues hit a record \$89 million, with earnings of \$3.7 million.

Qualities of an Effective Control System

Effective control systems tend to have certain qualities in common.¹⁴ The importance of these qualities varies with the situation, but we can generalize that the following characteristics should make a control system more effective.

1. *Accuracy.* A control system that generates inaccurate information can result in management failing to take action when it should or responding to a problem that doesn't exist. An accurate control system is reliable and produces valid data.
2. *Timeliness.* Controls should call management's attention to variations in time to prevent serious infringement on a unit's performance. The best information has little value if it is dated. Therefore, an effective control system must provide timely information.
3. *Economy.* A control system must be economically reasonable to operate. Any system of control has to justify the benefits that it gives in relation to the costs it incurs. To minimize costs, management should try to impose the least amount of control that is necessary to produce the desired results.
4. *Flexibility.* Effective controls must be flexible enough to adjust to adverse change or to take advantage of new opportunities. Few organizations face environments

Every item that goes on board the NASA Space Shuttle has to be of the highest quality within the tightest of tolerances. The importance of this activity and the enormous costs inherent in failure justify the imposition of extensive controls by both NASA and its subcontractors.



so stable that there is no need for flexibility. Even highly mechanistic structures require controls that can be adjusted as times and conditions change.

5. *Understandability.* Controls that cannot be understood have no value. It is sometimes necessary, therefore, to substitute less complex controls for sophisticated devices. A control system that is difficult to understand can cause unnecessary mistakes, frustrate employees, and eventually be ignored.
6. *Reasonable criteria.* Control standards must be reasonable and attainable. If they are too high or unreasonable, they no longer motivate. Because most employees don't want to risk being labeled incompetent by accusing superiors of asking too much, employees may resort to unethical or illegal shortcuts. Controls should, therefore, enforce standards that challenge and stretch people to reach higher performance levels without being demotivating or encouraging deception.
7. *Strategic placement.* Management can't control everything that goes on in an organization. Even if it could, the benefits couldn't justify the costs. As a result, managers should place controls on those factors that are strategic to the organization's performance. Controls should cover the critical activities, operations, and events within the organization. That is, they should focus on places where variations from standard are most likely to occur or where a variation would do the greatest harm. In a department where labor costs are \$20,000 a month and postage costs are \$50 a month, a 5 percent overrun in the former is more critical than a 20 percent overrun in the latter. Hence we should establish controls for labor and a critical dollar allocation, whereas postage expenses would not appear to be critical.
8. *Emphasis on the exception.* Because managers can't control all activities, they should place their strategic control devices where those devices can call attention only to the exceptions. An exception system ensures that a manager is not overwhelmed by information on variations from standard. For instance, if management policy gives supervisors the authority to give annual raises up to \$200 a month, approve individual expenses up to \$500, and make capital expenditures

up to \$5,000, then only deviations above these amounts require approval from higher levels of management. These checkpoints become controls that are part of the authority constraints and free higher levels of management from reviewing routine expenditures.

9. *Multiple criteria.* Managers and employees alike will seek to "look good" on the criteria that are controlled. If management controls by using a single measure such as unit profit, effort will be focused only on looking good on this standard. Multiple measures of performance decrease this narrow focus.

Multiple criteria have a dual positive effect. Because they are more difficult to manipulate than a single measure, they can discourage efforts to merely look good. Additionally, because performance can rarely be objectively evaluated from a single indicator, multiple criteria make possible more accurate assessments of performance.
10. *Corrective action.* An effective control system not only indicates when a significant deviation from standard occurs, but also suggests what action should be taken to correct the deviation. That is, it ought to both point out the problem and specify the solution. This is frequently accomplished by establishing *if-then guidelines*; for instance, *if* unit revenues drop more than 5 percent, *then* unit costs should be reduced by a similar amount.

The Dysfunctional Side of Controls

Larry Boff called the Dallas Fire Department's emergency number to get immediate help for his stepmother, who was having trouble breathing.¹⁵ The nurse/dispatcher, Billie Myrick, spent fifteen minutes arguing with Mr. Boff because he wouldn't bring his stepmother to the phone. He told Ms. Myrick that his stepmother was in the bedroom and couldn't speak. Myrick insisted that she was required to talk to the person in question so she could determine if the situation was a true emergency. Boff insisted that his stepmother was unable to speak on the phone and pleaded with Ms. Myrick to send an ambulance. Myrick continually responded that she could not send an ambulance until she spoke to Boff's stepmother. After getting nowhere for fifteen minutes, Boff hung up the phone. His stepmother was dead.

Three managers at a big General Motors truck plant in Flint, Michigan, installed a secret control box in a supervisor's office to override the control panel that governed the speed of the assembly line.¹⁶ The device allowed the managers to speed up the assembly line—a serious violation of GM's contract with the United Auto Workers. When caught, the managers explained that, while they knew that what they had done was wrong, the pressure from higher-ups to meet unrealistic production goals was so great that they felt the secret control panel was the only way they could meet their targets. As described by one manager, senior GM executives would say, "I don't care *how* you do it—just *do* it."

Did you ever notice that the people who work in the college registrar's office often don't seem to care much about the problems of students? They become so fixated on ensuring that every rule is followed that they lose sight of the fact that their job is to *serve* students, not *hassle* them!

These examples illustrate what can happen when controls are inflexible or control standards are unreasonable. People lose sight of the organization's overall goals.¹⁷ Instead of the organization running the controls, sometimes the controls run the organization.

Because any control system has imperfections, problems occur when individuals or organizational units attempt to look good exclusively in terms of the control



Adjusting Controls for National Differences

Methods of controlling people and operations can be quite different in foreign countries. For the multinational corporation, managers of foreign operations tend to be less closely controlled by the head office, if for no other reason than that distance precludes direct controls. The head office of a multinational must rely on extensive formal reports to maintain control. But collecting data that are comparable between countries introduces problems for multinationals. A company's factory in Mexico might produce the same products as its factory in the United States. The Mexican factory, however, might be much more labor intensive than its counterpart in the United States (to take advantage of low labor costs in Mexico). If headquarters' executives were to control costs by, for example, calculating labor costs per unit or output per worker, the figures would not be comparable. Therefore distance creates a tendency to formalize controls, and technological differences often make control data uncomparable.

Technology's impact on control is most evident in comparing technologically advanced nations with more primitive countries. Organizations in technologically advanced nations such as the United States, Japan, Canada, Great Britain, Germany, and Australia use indirect control devices—particularly computer-related reports and analyses—in addition to standardized rules and direct supervision to ensure that activities are going as planned. In Tanzania, Zambia, Lebanon, and other less advanced countries, direct supervision and highly centralized decision making are the basic means of control.

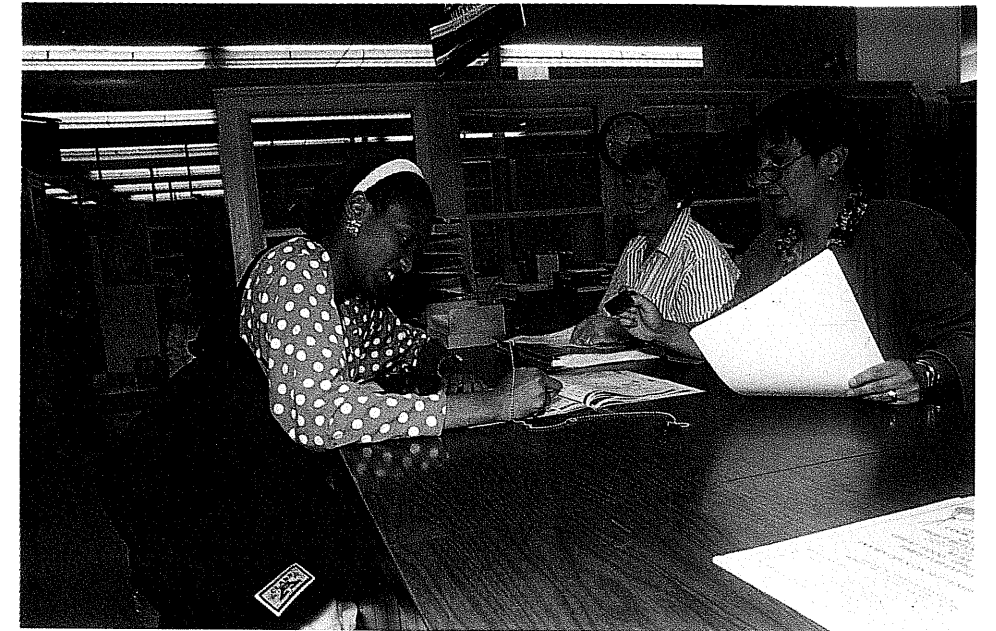
Constraints on managerial corrective action may also affect managers in foreign countries. For example, laws in some countries do not allow management the options of closing plants, laying off personnel, taking money out of the country, or bringing in a new management team from outside the country.

devices. The result is dysfunctional in terms of the organization's goals. More often than not, this dysfunctionality is caused by incomplete measures of performance. If the control system evaluates only the quantity of output, people will ignore quality. Similarly, if the system measures activities rather than results, people will spend their time attempting to look good on the activity measures.

To avoid being reprimanded by managers because of the control system, people can engage in behaviors that are designed solely to influence the information system's data output during a given control period. Rather than actually performing well, employees can manipulate measures to give the appearance that they are performing well. Evidence indicates that the manipulation of control data is not a random phenomenon. It depends on the importance of an activity. Organizationally important activities are more likely to make a difference in a person's rewards; therefore, there is a greater incentive to look good on these particular measures.¹⁸ When rewards are at stake, individuals tend to manipulate data to appear in a favorable light by, for instance, distorting actual figures, emphasizing successes, and suppressing evidence of failures. On the other hand, only random errors occur when the distribution of rewards is unaffected.¹⁹

Our conclusion is that controls have both an up side and a down side. Failure to design flexibility into a controls system can create problems more severe than those the controls were implemented to prevent.

When personnel in a college registrar's office become more concerned with every rule and procedure being followed rigidly, regardless of the possible negative consequences on a student's enrollment or personal life, the control imposed by the rules and procedures can become dysfunctional.



Summary

This summary is organized by the chapter-opening learning objectives found on page 569.

1. Control is the process of monitoring activities to ensure that they are being accomplished as planned and of correcting any significant deviations.
2. Control is important because it monitors whether objectives are being accomplished as planned and delegated authority is being abused.
3. In the control process, management must first have standards of performance from the objectives it formed in the planning stage. Management must then measure actual performance and compare that performance to the standards. If a variance exists between standards and performance, management must either adjust performance, adjust the standards, or do nothing, according to the situation.
4. There are three types of control: Feedforward control is future-directed and prevents anticipated problems. Concurrent control takes place while an activity is in progress. Feedback control takes place after the activity.
5. Most control efforts are directed at one of these areas: people, finances, operations, information, or total organization performance.
6. The goals approach assesses effectiveness in terms of the accomplishment of ends. If the organization achieves its goals, it is effective. The systems approach assesses both means and ends. The systems approach is more comprehensive and takes a longer-term perspective than the goals approach.
7. The strategic constituencies approach requires the organization to satisfy the demands of those constituencies in the environment from whom the organization requires support for its continued existence. Management must identify its strategic constituencies, determine their effectiveness criteria, and then ensure that the organization satisfies these criteria.
8. An effective control system is accurate, timely, economical, flexible, and understandable. It uses reasonable criteria, has strategic placement, emphasizes the exception, uses multiple criteria, and suggests corrective action.
9. Controls can be dysfunctional when they redirect behavior away from an organi-

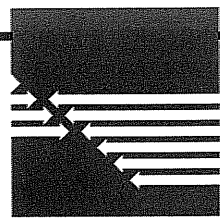
zation's goals. This can occur as a result of inflexibility or unreasonable standards. Additionally, when rewards are at stake, individuals are more likely to manipulate data so that their performance will be perceived positively.

Review Questions

1. What is the role of control in management?
2. How are planning and control linked?
3. Why is *what* is measured in the control process probably more critical to the control process than *how* it is measured?
4. Name four methods managers can use to acquire information about actual performance.
5. Contrast *immediate* and *basic* corrective action.
6. What are the advantages and disadvantages of feedback control?
7. What behavioral control devices does management have at its disposal?
8. What is the importance of financial controls?
9. How can management determine whether or not the organization is effective?
10. What can management do to reduce the dysfunctionality of controls?

Discussion Questions

1. In what ways might the functional area in which a manager works (for example, production, sales, or accounting) affect the emphasis he or she divides between people, finances, operations, and information controls?
2. Describe how you might design a performance evaluation system that would minimize the dysfunctional aspects of this behavioral control device.
3. In Chapter 13 we discussed the white-water-rapids view of change. Do you think it's possible to establish and maintain effective standards and controls in this type of atmosphere? Explain.
4. Do you think MBO and TQM programs facilitate the control process? Explain your answer.
5. Using the strategic constituencies approach, what criteria would you expect the following organizations to emphasize:
 - a. A local grocery store chain
 - b. Mobil Oil
 - c. The New York Public Library
 - d. The U.S. Department of Defense



SELF-ASSESSMENT EXERCISE

How Willing Are You to Give Up Control?

Instructions: You can get a good idea of whether you are willing to give up enough control to be effective in delegating by responding to the following items. If you have limited work experience, base your answers on what you know about

yourself and your personal beliefs. Indicate the extent to which you agree or disagree by circling the number following each statement.

	Strongly Agree					Strongly Disagree				
1. I'd delegate more, but the jobs I delegate never seem to get done the way I want them to be done.	5	4	3	2	1					
2. I don't feel I have the time to delegate properly.	5	4	3	2	1					
3. I carefully check on subordinates' work without letting them know I'm doing it, so I can correct their mistakes if necessary before they cause too many problems.						5	4	3	2	1
4. I delegate the whole job—giving the opportunity for the subordinate to complete it without any of my involvement. Then I review the result.	5	4	3	2	1					
5. When I have given clear instructions and the task isn't done right, I get upset.	5	4	3	2	1					
6. I feel the staff lacks the commitment that I have. So any task I delegate won't get done as well as I'd do it.	5	4	3	2	1					
7. I'd delegate more, but I feel I can do the task better than the person I might delegate it to.	5	4	3	2	1					
8. I'd delegate more, but if the individual I delegate the task to does an incompetent job, I'll be severely criticized.	5	4	3	2	1					
9. If I were to delegate a task, my job wouldn't be nearly as much fun.	5	4	3	2	1					
10. When I delegate a task, I often find that the outcome is such that I end up doing the task over again myself.	5	4	3	2	1					
11. I have not really found that delegation saves any time.	5	4	3	2	1					
12. I delegate a task clearly and concisely, explaining exactly how it should be accomplished.	5	4	3	2	1					
13. I can't delegate as much as I'd like to because my subordinates lack the necessary experience.	5	4	3	2	1					
14. I feel that when I delegate I lose control.	5	4	3	2	1					
15. I would delegate more but I'm pretty much a perfectionist.	5	4	3	2	1					
16. I work longer hours than I should.	5	4	3	2	1					
17. I can give subordinates the routine tasks, but I feel I must do nonroutine tasks myself.	5	4	3	2	1					
18. My own boss expects me to keep very close to all details of my job.	5	4	3	2	1					

Turn to page SK-7 for scoring directions and key.

Source: Adapted from Theodore J. Klein, "How to Improve Delegation Habits," *Management Review*, May 1982, p. 59. With permission. © 1982 American Management Association, New York. All rights reserved.