

HOW DO EMPLOYEES CREATE AN EFFECTIVE ORGANIZATION?

Great products and services are generated through great employees. Effective organizations seek out and employ effective people. These employees are the ones who understand how their jobs fit into the overall scheme of providing products and services to customers. Their knowledge, skills, and efforts are invaluable to the firm because successful organizations evolve on a daily basis in lots of small ways. Every day, effective employees think about how to improve their products and services and discover better ways to do their jobs.

Effective organizations tap into the knowledge and skills of their employees to drive improvements (Figure 7.1). Employees have ideas that can be put to use enriching a customer's experience and value perception of the organization's product or service. Effective leaders recognize the power that employee interaction on a day-to-day basis has on organizational performance. They go to the source of ideas and get to know their employees on a one-on-one basis. They select and implement the employee ideas that have the greatest potential to enhance their customers' value perceptions of their products and services. For instance, one grocery store, after having installed a coffee/snack bar area, acted on an unusual suggestion from an employee. The employee had noticed that people who stopped for coffee or a bite to eat often lamented that they had forgotten to purchase an item or two. They were reluctant to return to the store, pick up the item, and then stand in line again. The employee suggested designating a runner for the coffee area who would go and get the item(s). The customer could then pay at the coffee bar register. This idea turned out to be quite profitable. It also delighted their customers. Effective organizations are careful to hire, train, interact with,

EXAMPLE 7.1 Knowledge Is Power

On July 3 of 2003, *The Wall Street Journal* ran an article entitled "On the Factory Floors, Top Workers Hide Secrets to Success." In the article the author, Timothy Aepfel, reported that businesses striving to make improvements are often unable to do so because workers recognize that knowledge is power. Seldom do these workers reveal their secrets, even to other workers, fearing that management would use these secrets to change processes, speed up production, or eliminate jobs. Many of the jobs these workers perform require precision and skill. These workers are able to perform their work faster and at a higher level of quality than others in the job. Their abilities are key because minor alterations, mistakes, or errors could make the product worthless.

As organizations strive to remain competitive, they would like to incorporate employee knowledge into their processes. By tapping into their employees' accumulated expertise and the innovations they have incorporated into their jobs, they hope to make process improvements, remove non-value-added activities, increase productivity, and enhance customer satisfaction and perceived value. Unfortunately, some employees resist becoming involved in the effort, because doing so may create a threat to one of their few sources of power—accumulated knowledge and expertise.

Source: Timothy Aepfel, "On the Factory Floors, Top Workers Hide Secrets to Success," *The Wall Street Journal*, July 3, 2003.

EFFECTIVE ORGANIZATION?

generated through great employees. Effective organizations have people. These employees are the ones who understand the scheme of providing products and services to customers. They are invaluable to the firm because successful organizations learn in small ways. Every day, effective employees think about products and services and discover better ways to do their jobs. They use the knowledge and skills of their employees to drive improvements. Employees have ideas that can be put to use enriching a customer's perception of the organization's product or service. Effective organizations have employee interaction on a day-to-day basis has on organizational success. A source of ideas and get to know their employees on a one-to-one basis to implement the employee ideas that have the greatest potential. For instance, a company called a coffee/snack bar area, acted on an unusual suggestion. An employee had noticed that people who stopped for coffee or a snack had forgotten to purchase an item or two. They were asked to pick up the item, and then stand in line again. The employee who ran the coffee area would go and get the item(s). The customer would be happy. This idea turned out to be quite profitable. It shows that effective organizations are careful to hire, train, interact with,

Forbes Journal ran an article entitled "On the Factory Floors, Success." In the article the author, Timothy Aepfel, reported that improvements are often unable to do so because workers lack power. Seldom do these workers reveal their secrets, but that management would use these secrets to change processes, or eliminate jobs. Many of the jobs these workers perform, these workers are able to perform their work faster and at less cost in the job. Their abilities are key because minor alterations can make the product worthless.

To remain competitive, they would like to incorporate employee expertise. By tapping into their employees' accumulated expertise and incorporating it into their jobs, they hope to make process improvements, add value-added activities, increase productivity, and enhance customer value. Unfortunately, some employees resist becoming involved in doing so may create a threat to one of their few sources of power and expertise.

"On the Factory Floors, Top Workers Hide Secrets to Success," *The*

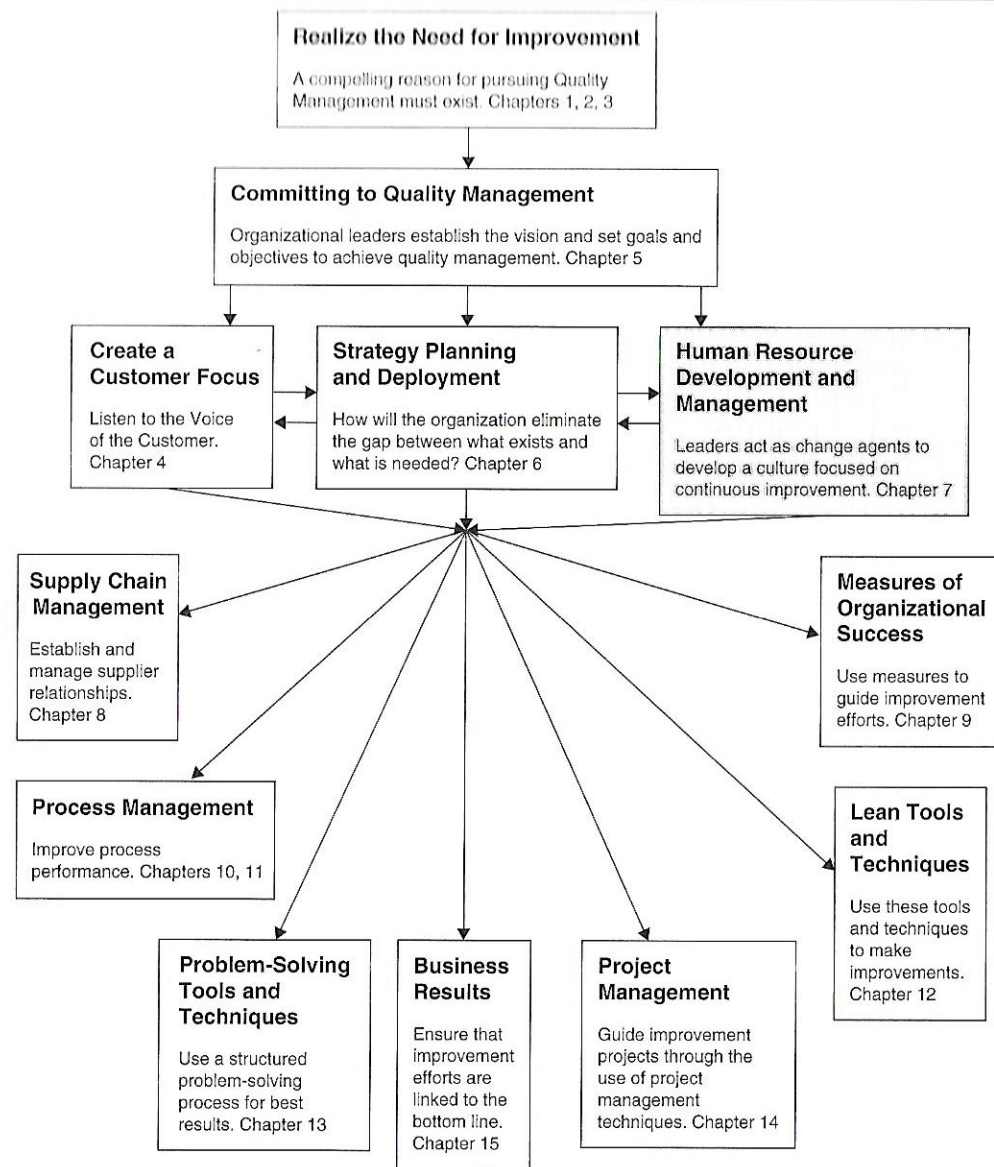


Figure 7.1 Achieving Organizational Success

support, and promote employees in a way that encourages continuous improvement. Loyal, flexible and talented employees are appreciated. As the following example shows, however, not all organizations are able to utilize their employees' expertise to improve.

If you contrast this example with the activities at Toyota, it becomes obvious that the culture and atmosphere of some organizations enable cooperation, information sharing, and communication, while others do not. How did a company like Toyota encourage its

employees to provide 20 million improvement ideas? This chapter explores what it takes to create motivated employees who want to participate.

HOW DO EFFECTIVE EMPLOYEES ENABLE AN ORGANIZATION TO CREATE VALUE FOR THEIR CUSTOMERS?

When a craftsman creates an individual product for a customer, the direct connection of the craftsman with the customer leaves little doubt about the satisfaction level of the customer. However, modern manufacturing methods and the complexities of today's wide variety of services prevent many employees from having direct contact with the ultimate end user of their organization's product or service. For this reason, employees cannot meet the needs and expectations of their ultimate customers without support from all areas of the organization. Valuable customer information must be made available to employees in a format that is useful to them. Employees must be able to see the correlation between their day-to-day activities and the value of their product or service as perceived by the ultimate customer. In order to create customer value, employees must be familiar with how meeting the quality, cost, and schedule requirements of their job impacts customer value perception, company profits, and, ultimately, their future employment. Regular communication must take place between leadership and all employees, and this communication should go well beyond the quarterly summary provided by many companies. Employees at all levels must be involved in decisions that affect their jobs. If they cannot judge how their activities impact the customer, they cannot be effective in increasing customer satisfaction and value perception.

HOW DO LEADERS IN EFFECTIVE ORGANIZATIONS MOTIVATE EMPLOYEES?

A significant component in human resources effectiveness is the quality of the leadership. How leaders interact with their people is crucial to creating an effective work environment for employees. Effective leaders realize that the better they treat their employees, the better they treat their customers. Effective leaders have a relationship with their employees. Their employees trust them because they provide clear direction and establish clear expectations and priorities. These leaders also support their people and avoid situations like those in Figure 7.2. They aren't quick to jump to conclusions or lay blame. Effective leaders seek information and then make decisions.

Employees, regardless of their type of job, come to work with certain self-perceptions and needs. Most employees desire a feeling of achievement, and most want to take pride in their work. They want a job that allows them to use their knowledge, skills, and abilities. Many prefer challenging assignments and seek responsibility. Effective leaders recognize these traits in their employees and build on them to motivate their people. Creating and maintaining non-faulty systems and clear communication are two goals to keep in mind when trying to motivate employees.

In order to create and sustain motivated employees, leaders must design non-faulty systems. People don't come to work to do a bad job. They don't get up in the morning and say, "I think I will perform badly today." Still, things go wrong, and products are produced and services provided that are unsatisfactory. Usually, faulty systems are at the root of the

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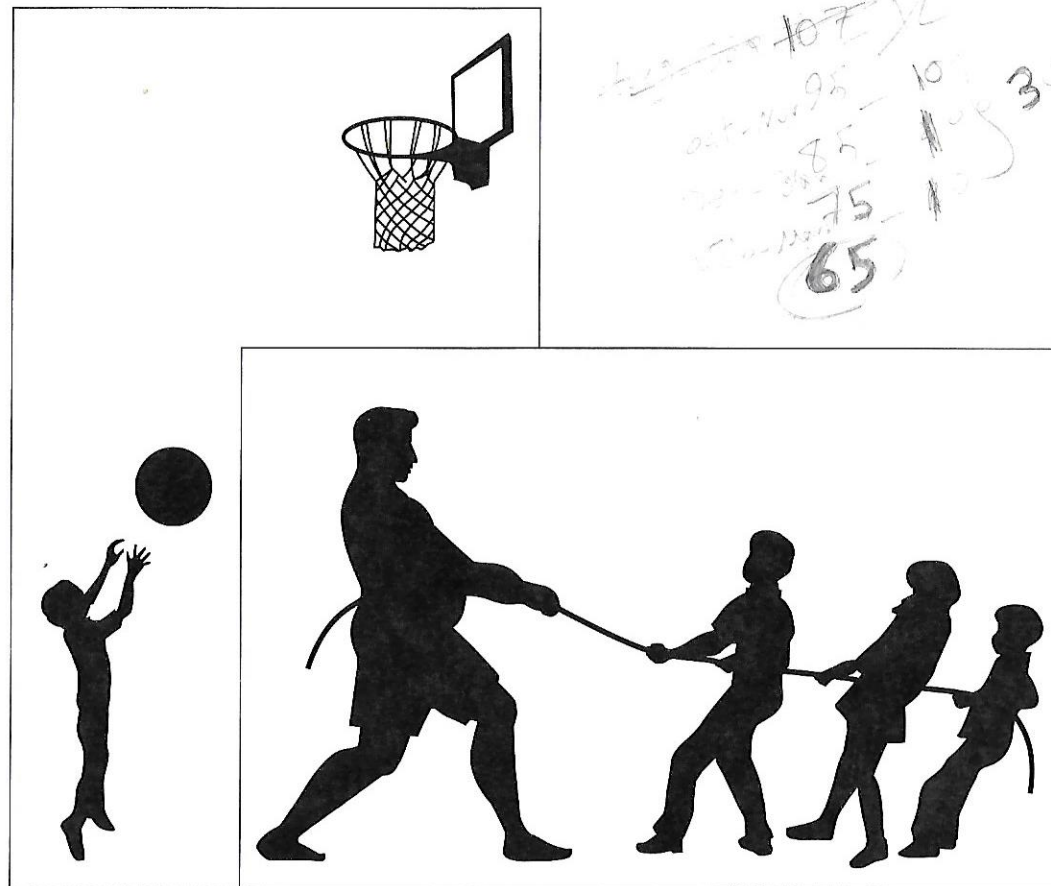


Figure 7.2 Awesome Odds

problem. As Dr. Deming showed in his red bead experiment discussed in Chapter 2, if employees must utilize faulty systems, they will not be able to help performing below expectations, even when they know the ultimate goal. Faulty systems do not allow people to have pride in their workmanship. It is leadership's responsibility to design and maintain non-faulty systems, thus allowing employees to work at their greatest level of productivity. Faulty systems are unmotivating. As one of Dr. Deming's 14 points says, *leadership must remove barriers that rob people of their right to pride of workmanship*. In performing their jobs, employees often face difficulties that can be removed only by leadership.

Communication is a vital part of motivating employees. No leader can handle conflict or negotiate successfully without being a good communicator. *Communication occurs when information is imparted either by audible, written, and/or visual (postures/actions) means.* Communication is more than just presenting information. Effective communication seeks to both exchange information and provide understanding. How people perceive information is critical. Noise in the form of personal agendas, needs, values, fears, and defenses

affects communication too. Understanding can be enhanced by communicating in the recipients' language and from their point of view. People must be able to recognize that the information affects them and that they are to act on that information. Good communication is evidenced by whether or not the message got through and got acted on. To ensure that everyone gets the same meaning from the message, good communicators ask questions to clarify the message. They paraphrase and restate what they think they heard or read. Effective communicators take the time to practice their skills and learn to express themselves well. They also listen. Practicing active listening involves taking time to listen not only for message content but also for feelings, responses, and cues sent by the other person.

Effective leaders realize that they must listen to their employees in order to determine what motivates them. Effective leaders do not rely on hunches or guesses. It is impossible to know what motivates an individual without asking him or her and then truly listening to the response. While listening, a leader learns about and comes to understand an employee's attitudes toward work, pay, benefits, supervision, appraisals, and other work-related topics. This information can be used to place employees in a work situation they find motivating.

EXAMPLE 7.2 Making the Most of a Situation

Over the years the owner of a mill that makes specialty restoration woodworking products has learned that the skills of a master carpenter are critical to attracting and retaining customers. He has also learned that he cannot expect to hire a master carpenter who is exceptionally talented, very efficient, and also very neat. He has been able to hire individuals with two of those three qualifications, but not all three.

Rather than being defeated by this quandary or proclaiming, "You just can't hire good people anymore," the owner asked himself, "What type of master carpenter is best for my business?" Through discussions with customers, he came to the realization that customers value a carpenter who can take their ideas and change them into reality in a timely manner (talent and efficiency). Since then, the owner has been hiring carpenters who meet those expectations. To achieve neatness, which is critical to the efficiency of the master carpenter as well as to the safety of shop personnel, he has also hired part-time individuals to clean up and organize the shop. A part-time person can also serve as an apprentice to the master carpenter if interested.

Rather than trying to change the worker to fit his mold, the owner focused on the elements crucial to the customer and adapted to the situation.

Employees spend a good portion of their working life trying to determine what is expected of them. Sometimes they act incorrectly because they do not understand what their leaders want. Unclear communication is usually the problem, leading to frustration of everyone involved. Effective leaders clearly communicate what is acceptable and what is unacceptable. They recognize that until an employee understands what behaviors and actions are expected of them, the leader has no basis for making corrections. Leaders also recognize that if they allow incorrect behaviors and actions, they have essentially trained employees that they consider those incorrect behaviors and actions acceptable. Effective

leaders follow through and deal with situations in a timely manner. They do mind not knowing about behaviors and actions and rewards until the change. When effective leaders follow through so constructively by following

- Give feedback directly
- Provide feedback only when necessary
- Cite specifics
- Give feedback when the employee is receptive
- Give feedback at the time of the behavior
- Give feedback in private

How Do We Know

Employees need to know what is expected of them. They need to know the company's expectations and policies. They need to know what they have received reviews of any kind. They need to know regardless of job title, and they need to know more frequently. Employees need to know 90 days. Raises and bonuses need to be given at any time. He also mentions two issues:

How have you helped employees?
How have you improved employees?

The emphasis is on what the employee has done on a timely basis. It is not just when they receive a raise. Employees need to know how they trained another employee. They need to know their own skills to move with the times. They need to know they discovered and improved a quality, safety, customer service, or skill, learning how to do it. They need to know site to increase their productivity. They need to know being a good employee. They reflect Dr. Deming's philosophy of providing a product of improvement. The manager provides opportunities for training.

Specialty restoration woodworking products are critical to attracting and retaining customers. You expect to hire a master carpenter who is very neat. He has been able to hire individuals, not all three.

By crying or proclaiming, "You just can't hire good carpenters," that type of master carpenter is best for my business, he came to the realization that customers want change and change them into reality in a timely manner. The owner has been hiring carpenters who are neat, which is critical to the efficiency of the business. As top personnel, he has also hired part-time employees. A part-time person can also serve as an employee.

To fit his mold, the owner focused on the elements of the situation.

leaders follow through and do something about incorrect behaviors and activities. They deal with situations in a timely manner knowing that people don't mind the word "no," but they do mind not knowing why. Employees can act on the basis of clear limits and expectations about behaviors and actions. Leaders can reinforce through their coaching, feedback, and rewards until the changes have been effected.

- Give feedback directly to the person involved, not through channels
- Provide feedback only about things that you know for certain
- Cite specifics
- Give feedback when the person can do something about it
- Give feedback at the appropriate time
- Give feedback in small doses

Employees need to know where they stand. Annual reviews are one way of communicating expectations and providing feedback. Prior to taking ownership, at JQOS, no one received reviews of any sort. The new owner established a system where all employees, regardless of job title, are reviewed annually based on their hire date. Reviews may occur more frequently. Employees in their first two years of employment are reviewed every 90 days. Raises and bonuses, besides the quarterly bonus based on profitability, may occur at any time. He also made it clear that the reviews and any subsequent raises would focus on two issues:

How have you improved something about yourself?

The emphasis is on what the employee is doing to help JQOS get good product out the door on a timely basis. It is the answers to these questions that determine whether an employee receives a raise. Employees are encouraged to show productivity improvements by discussing how they trained another employee on their workstation, how they were able to use their own skills to move within the plant on an as-needed basis when staffing issues arose, how they discovered and implemented a productivity improvement, or how they worked to solve a quality, safety, customer, or productivity issue. Self-improvements include learning a new skill, learning how to operate another machine or work another job, or taking training off-site to increase their job knowledge. These questions encourage workers to look beyond being a good employee, practicing safe work methods, and being at work when scheduled. They reflect Dr. Deming's 14 points to constantly and forever improve the process of providing a product or service. They also reflect Dr. Deming's desire to encourage self-improvement. The management at JQOS wants employees to succeed. They provide many opportunities for training, skills assessment, mentoring, and apprenticeship.

HOW DO LEADERS IN EFFECTIVE ORGANIZATIONS MANAGE CHANGE?

Changing conditions in the marketplace often place pressure on organizations to modify the way they do business. Leadership must communicate to the employees the desired change and motivate individuals to make the change. Dr. Deming once said, "Nothing will happen without change. Your job as a leader is to manage the change necessary." (2)

In an organization, two types of change can occur: strategic change and individual change. Strategic changes set the direction for the entire organization. These are larger, more dramatic changes related to the organization's vision, policies, and procedures. Strategic change may require changes to the organization's infrastructure or basic culture. Change at the individual level relates to how individual employees respond and adapt to strategic change. To drive individual change, effective leaders recognize that employees need support as they replace older, established ways of doing things with new, unfamiliar methods (Figure 7.3). Employees' reactions to change relates to their span of control. They can change only things within their power to change. Leaders motivate individual change by coaching, feedback, reinforcement, rewards, and recognition.

Change at either level is a cycle that requires momentum and clear direction (Figure 7.4). Through input from their customers and insights into the marketplace, leaders determine that a need to change exists. They create a vision to guide the change. Effective leaders always change with a plan in mind, which results in the least amount of stress on their human, equipment, and material resources. They determine where they want to go and where they want those who work for them to go. To involve employees in the change, leaders clearly communicate their goals and objectives. Deploying the communication strategy alerts employees to the new goals and objectives. Measures provide the feedback necessary to ensure that the change process is working. Leaders use measures to monitor progress and provide the necessary coaching, feedback, reinforcement, rewards, and recognition to achieve the change.

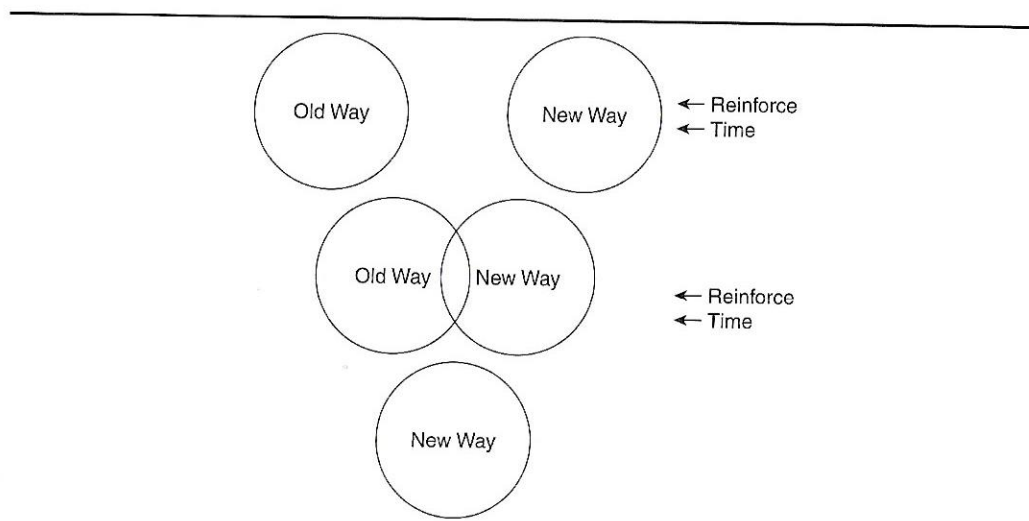


Figure 7.3 Making a Change

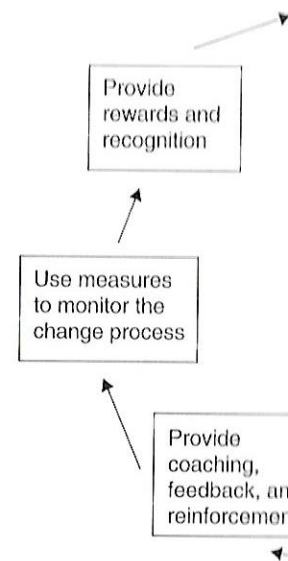


Figure 7.4 The Change Cycle

Change is rarely easy. People resist change when their environments are disruptive and they lose control of their lives. Some people are resistant to change based on an individual's frame of reference, knowledge, and behavior. Organizational change usually takes the form of a knowledge-based change. Interference or resistance can take many forms, economically. Resistance is sometimes a natural response.

Change happens when people are motivated. "Why do people come to work to do a good job?" They recognize that work can or wants to become passion. They establish reachable goals. They use success stories to illustrate how change helps break the resistance. They use success stories to illustrate how change helps break the resistance.

Leaders need to understand the change process. Leaders know that in order for change to be successful, it must be planned for. Essentially, they must have a clear vision of the change and a plan to achieve it.

MANAGE CHANGE?

pressure on organizations to modify the environment to the employees the desired change. Deming once said, "Nothing will change until the change is necessary." ² Strategic change and individual change are different. Strategic change is a change in the organization. These are larger, more fundamental changes in vision, policies, and procedures. Individual change is a change in an individual's infrastructure or basic culture. Employees respond and adapt to change. Leaders recognize that employees are doing things with new, unfamiliar methods to their span of control. They motivate individual change through recognition.

Clear vision and clear direction (Figure 7.4). In the marketplace, leaders determine that change is necessary. Effective leaders always put a lot of stress on their human, equipment, and money. They want to go and where they want to go. When they make the change, leaders clearly communicate the change. Communication strategy alerts employees to the change and provides the feedback necessary to ensure that the change is achieved or progress and provide the necessary motivation to achieve the change.

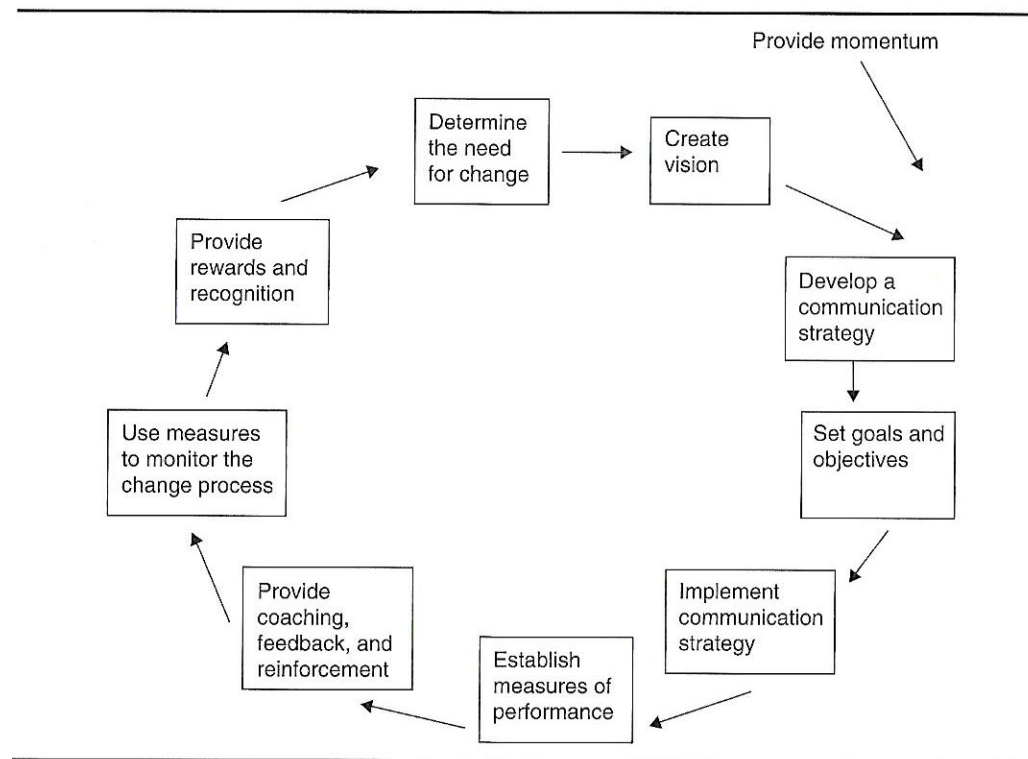


Figure 7.4 The Change Cycle

Change is rarely easy. People resist change because humans are control oriented, and when their environments are disrupted, they perceive that they have lost the ability to control their lives. Some people are more resistant to change than others. Resistance can be based on an individual's frame of reference—on his or her individual values, emotions, knowledge, and behavior. Organizational resistance goes beyond individual resistance and usually takes the form of a key respected individual who does not support change. Interference or resistance can take the form of lack of support, for instance, logistically or economically. Resistance is sometimes very visible and sometimes very subtle.

Change happens when people are motivated. Effective leaders ask, "What motivates people?" They recognize that without passion, nothing is fun. While not every employee can or wants to become passionate about their jobs, Dr. Deming tells us that everyone comes to work to do a good job. For this reason, when making changes, effective leaders establish reachable goals. Though they constantly raise the performance bar for their employees, they are careful to exploit organizational and, therefore, people successes. They use success stories to illustrate how much was accomplished in a similar situation. These stories help break the resistance based on habit and history exhibited by most people.

Leaders need to understand that resistance to change is a natural human reaction. Effective leaders know that in order for change to occur, resistance to those changes must be expected and planned for. Essentially, they manage change by managing resistance. They may take a

preventive approach, meeting resistance head-on before it starts. For instance, they may realize that resistance to a change may occur because additional knowledge or skills will be required. Managing resistance, an effective leader will provide the appropriate training and education. Or a leader may take a wait-and-see approach, planning to deal with resistance as it arises. In either case, leaders must clearly communicate the new expectations and the reasons behind the changes so that people understand why they are being asked to change. Employees are looking to leaders and asking the question, "What do you want me to do tomorrow that is different from what I am doing today?" Effective leaders provide training and time to make the change. They also structure their reward system to support the change (Figure 7.5).

Making change in any organization can be difficult, if not impossible, without the involvement and cooperation of the employees. It takes only moments to proclaim a new culture or a new method, but it takes a great deal longer to get people to act differently. Effective leaders realize that employees mold their behavior according to their interpretations of the signals

How Do We Know It's Working?

What makes JQOS's change process so successful? JQOS's new leadership recognized the need for change. They realized that they should begin by making positive changes that directly affected the employees in order to gain their trust and interest. They conducted meetings with small groups of employees to discuss their issues and concerns. After just a few meetings, it became clear that the employees in the shop did not feel that they were valued as much as the front-office employees.

To employees, improving the shop environment expressed leadership's concern for shop employees. At a later meeting, they prioritized the changes they felt necessary. After reviewing the list, JQOS leadership explained which changes would be focused on and which ones would have to wait. The list was posted in the employee break room, and as each item was completed, it received a checkmark before the next item on the list was tackled. Cleaning and painting the break room, adding a refrigerator and microwave oven, improving the restroom facilities, and increasing the lighting in the shop took top priority. As employees began to see positive changes in their work areas, they became more open-minded to other changes as well.

Many of those other changes related to production improvements. With these, they started each change process with key employees, listening carefully to their questions, concerns, and issues. For instance, new policies, product standards, and procedures resulted in a more complete and timely work order packet being sent to the floor from the front office. Once streamlined, these procedures were computerized. Another change was the installation of computer workstations on key equipment on the shop floor, enabling information to flow smoothly throughout the production process. Improving productivity was crucial to the company's survival, so saying no to the changes wasn't an option. To support the changes, JQOS leadership recognized the need to link behavior change with rewards. As the changes progressed, they spent time coaching, providing feedback, and reinforcing the new methods.

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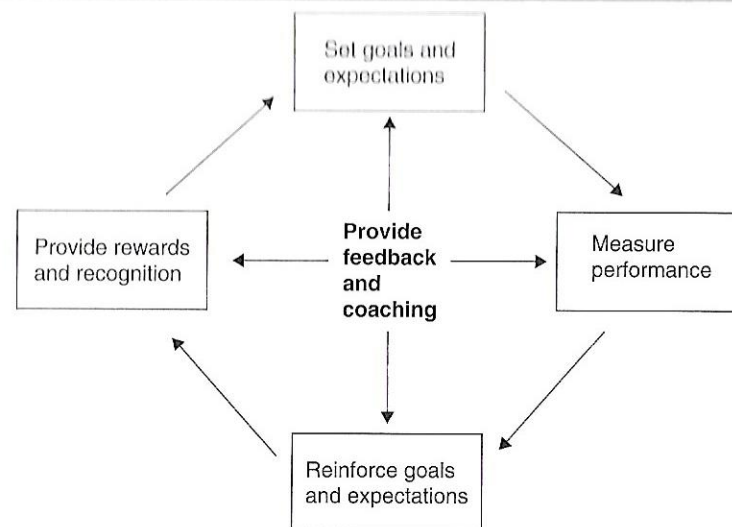


Figure 7.5 Supporting Change

leadership sends them. These signals may come as policies, requests, or edicts, or from the day-to-day actions taken by leadership. Effective leaders recognize that actions speak louder than words. Communicating through leadership actions and examples is paramount to changing behavior. Effective leaders recognize that the tools need to be in place to support the desired change. To maximize the change process, effective leaders ensure that the worker/machine/computer interface, as well as the worker-to-worker interface, is compatible with the needs, capabilities, and limitations of the worker. Further, effective leaders ensure that the reward system matches the desired expectations in order to change behavior. Alignment must exist between rewards, expectations, leadership actions, and customer needs. Both rewards and punishments must reinforce behavior expectations. Interestingly enough, many people do not know what is involved in making a change. Figure 7.6 shows a matrix for making a change, and Example 7.3 provides a model.

Desired Result	Supporting Actions	Timing	Motivation	Verification

Figure 7.6 Change Matrix

EXAMPLE 7.3 Making the Change

Effective leaders realize how difficult it is to change. They take the time to try to change something about themselves before asking someone else to change.

It is easy to tell someone else he has to change. If change is that easy, try to change one thing about yourself. Try changing. Consider exercising more, eating more healthfully, or breaking an undesirable habit. To help with the change process, consider the following points and questions:

What is the desired end result? Can you picture it? To change, a person must understand what the ultimate outcome of that change will be.

What actions will you take to make the change? To change, a person takes a series of actions which produces a result that moves the individual toward the desired outcome. This result may be seen and interpreted as either positive or negative. Based on the interpretation of the result, the person modifies his or her attitude and acts differently the next time in order to produce a more appropriate result.

What is the time frame for the change? Change takes time, yet if no timetable exists, a person is likely to say, "I'll get to that tomorrow." Effective change takes place when the person works toward the change according to a schedule.

How will you stay motivated? To change, it is necessary to stay motivated. Often, it is not easy to maintain the motivation and direction required to bring about change.

How will you know you have changed? What will your indicators be? A person needs to have some sort of feedback that enables her to understand how she is progressing toward the desired outcome. Otherwise, she may not recognize when the change is complete.

In the future, try using these questions and the matrix provided in Figure 7.6 to guide you when making a change.

WHAT MODIFICATIONS DO EFFECTIVE ORGANIZATIONS MAKE TO THEIR REWARD SYSTEM TO SUPPORT THE DESIRED CULTURE?

Too often, management leaders try to change the culture by describing the new attitudes they seek, but they fail to take the steps needed to influence the action employees take. Actions, not words, are the foundation of both a change and a culture. An effective manager makes sure that employees have the answers to the following questions:

How does the reward system reinforce behavior?

Are expectations aligned with results?

Are expectations and their alignment with organizational goals and objectives clearly communicated?

Regardless of the organization, in order to be effective, people need to know what their goals and objectives are. They need to know how to proceed toward those goals and objectives. They also need to have the appropriate tools, training, and skills to move toward those goals. During their movement toward their goals, they need to have a means of knowing how well they are

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doing, and they need to have a means for adjusting their work-in-process. All of this requires action and communication from leadership. Since customer needs and perceptions must drive the activities in an effective organization, internal employee cooperation and coordination must prevail. It is critical that corporate policies and programs reinforce the desired culture. When creating or modifying reward systems, consideration should be given to:

- Customer expectations
- Job descriptions based on identified customer expectations
- Expected results
- Performance expectations, including behavioral skills

How Do We Know It's Working?

Absences and lates directly impact the ability of an organization to meet their production demands. Schedules must be adjusted, overtime worked, replacements found, and work delayed. All of this results in higher costs, poorer deliveries, and lower productivity. Having employees ready to work when needed is crucial for organizational effectiveness. One of the many changes made at JQOS involved how absences and late arrivals were handled. Under the former management, unexcused absences and lates were tracked, but action was rarely taken. If punishment occurred at all, it was subjectively and inconsistently applied.

Before making any changes, the new owner did a thorough review of the previous two years' absences and lates. He discovered that the best worker missed just eight hours per year, while the worst worker missed 212 hours per year. These hours were compiled using just unexcused absences, where the worker never called in; late arrivals, again with no alerting phone call; and leaving early without telling anyone. This data did not include scheduled doctor's appointments, leaving during the day with supervisor's permission, or days missed when the person called at the very beginning of their shift. These numbers reflected workers who failed to show up, who failed to report in, or who left early. Over 80% of the workers missed very few hours, and just a few missed quite a lot.

Over several weeks, the owner worked with employees who volunteered to study the situation and develop an equitable absenteeism policy. Their formal recommendation included establishing a rolling 6-point system. Employees receive ½ point for each time they are late, 1 point for an absence, and 3 points when they are absent without calling in. At 3 points, they receive a verbal reminder. At 4 points, they lose their bonus and receive a written warning. At 5 points, they receive another written warning. Employees accumulating 6 points during a six-month period would be terminated. In a rolling system, as one month passes, the points gained in the oldest month drop off. This system does not include absences that are scheduled in advance or call-ins.

Following the volunteer employee committee's approval, the system was announced. The owner immediately received a long line of anxious employees waiting to see him in his office. Interestingly enough, each employee who came to see him had excellent attendance. The ones he was concerned about never said a word.

Employees tested the new system during the first year. Every once in a while, someone forfeited their bonus. The shop supervisor was careful to track this figure and encouraged workers to do the same. He administered pep talks when employees reached 3 points. Two employees have been terminated. One employee had a serious attendance problem to begin with. The other employee was a bit tougher to part with. Despite management's best efforts to help this employee get to work, he eventually accumulated 6 points. He had come close many times. Much discussion occurred when letting this employee go. Though frequently absent or late, he was a skilled machine operator. Because of his skill, most employees did not think management would follow through and terminate him. Many saw this as a true test of the system: would it be applied consistently? Though it was difficult, management understood the importance of fairly applying the system to everyone. No one doubts the system or management's intentions now. Overall, attendance has improved significantly, and shop production has increased.

Reward systems should recognize achievement. As employees enable an organization to reach its goals and objectives, the employees should be rewarded for their efforts. Since they are the direct recipients of rewards, employees should play an active role in creating or modifying a reward system. To ensure fairness, the reward system should employ a rating scale that accurately reflects actual employee performance, whether in a team or individually.

EXAMPLE 7.4 Clearly Set Expectations

Remember Example 5.3 where a visitor took a tour of a pristine plant in which the president of the manufacturing company "walked the talk"? The visitor encountered a similar situation on a different tour. This time, the plant he was touring was separated into two halves by a stout brick wall. Only two large openings existed in the wall, allowing room for forklifts and people to pass. When he went from one side of the wall to the other, it was as if two different worlds existed, as if the plant were actually two separate entities. On one side, the machining centers were dirty and disorganized. On the other side, the machining centers, aisles, and in-process storage were pristine. When investigating why the dramatic difference between the two areas existed, he was told that each area was under the responsibility of a different individual. He asked to be introduced to each of the plant managers. The plant manager of the clean and organized side of the facility was easy to find. The manager was out on the shop floor talking with operators about their processes.

Understanding that the visitor had many questions to ask, the plant manager invited him along while he went on his rounds. During their discussion, it became apparent that the plant manager established clear expectations about the cleanliness and organization level of the facility. It was clear that employees were rewarded for their efforts to maintain their equipment. They also received the appropriate training to do their jobs right. In order to support employees in their cleanliness efforts, at the end of each shift, 15 minutes were set aside to clean and tidy work areas and, more importantly, to jot down in log

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books comments about machine performance or maintenance needs. These log books were inspected each evening by a preventive maintenance team who quickly made repairs or adjustments based on the operators' comments. This plant manager focused on improving processes, removing the barriers that rob people of pride in workmanship, providing time and training to meet the expectations set, and using the reward system to reinforce behavior.

WHAT TYPES OF EDUCATION AND TRAINING DO EFFECTIVE ORGANIZATIONS PROVIDE FOR THEIR EMPLOYEES IN ORDER TO REMAIN COMPETITIVE?

Effective organizations avoid organizational myopia. They find ways to teach their employees new skills. They expose their employees to new situations and other organizations. As previous chapters have discussed, effective organizations seek to create alignment between the needs, wants, and expectations of their customers; the organization's strategies, goals, and objectives; and the day-to-day activities of their employees (Figure 7.7). Part of creating alignment is ensuring that employees have the appropriate education and training that enables them to perform their job requirements at a level that supports the ultimate customer's needs, wants, and expectations. Part of this education and training should include information about how quality, cost, schedule, and profit expectations for their jobs affect customer satisfaction. Effective employees understand the impact that their job has on each of these concepts. They are involved in the decisions that affect their jobs. Effective organizations provide their employees with the knowledge and skills necessary to excel in their jobs, as well as regular feedback so that they can monitor their impact.

Two of Dr. Deming's 14 points—"Institute training on the job" and "Institute a vigorous program of education and self-improvement"—focus on education and training. *Training* refers to job-related skill training and is usually a combination of on-the-job training and classroom-type instruction. Effective employees are provided with the appropriate training to give them the set of skills and knowledge needed to excel in their jobs. Job-related skill training prepares workers for the daily activities involved with their job. Such training should also include information that helps employees deal with experiences they may encounter only rarely. If training does not address problems that may arise infrequently, then workers will be required to handle those situations as they arise using only their own problem-solving and decision-making skills. If these infrequent situations are unsafe in any way, an accident or injury could result. Follow-up or refresher training is also key to skill acquisition. This type of training enables employees to maintain higher skill and performance levels by refamiliarizing the employees with the best practices and eliminating poor habits.

Compared to training, education is more broad-based; it provides individuals with a broader base of knowledge that helps them look at a situation from other dimensions. The education an individual receives may not be immediately applicable to the activities he or she is currently performing.

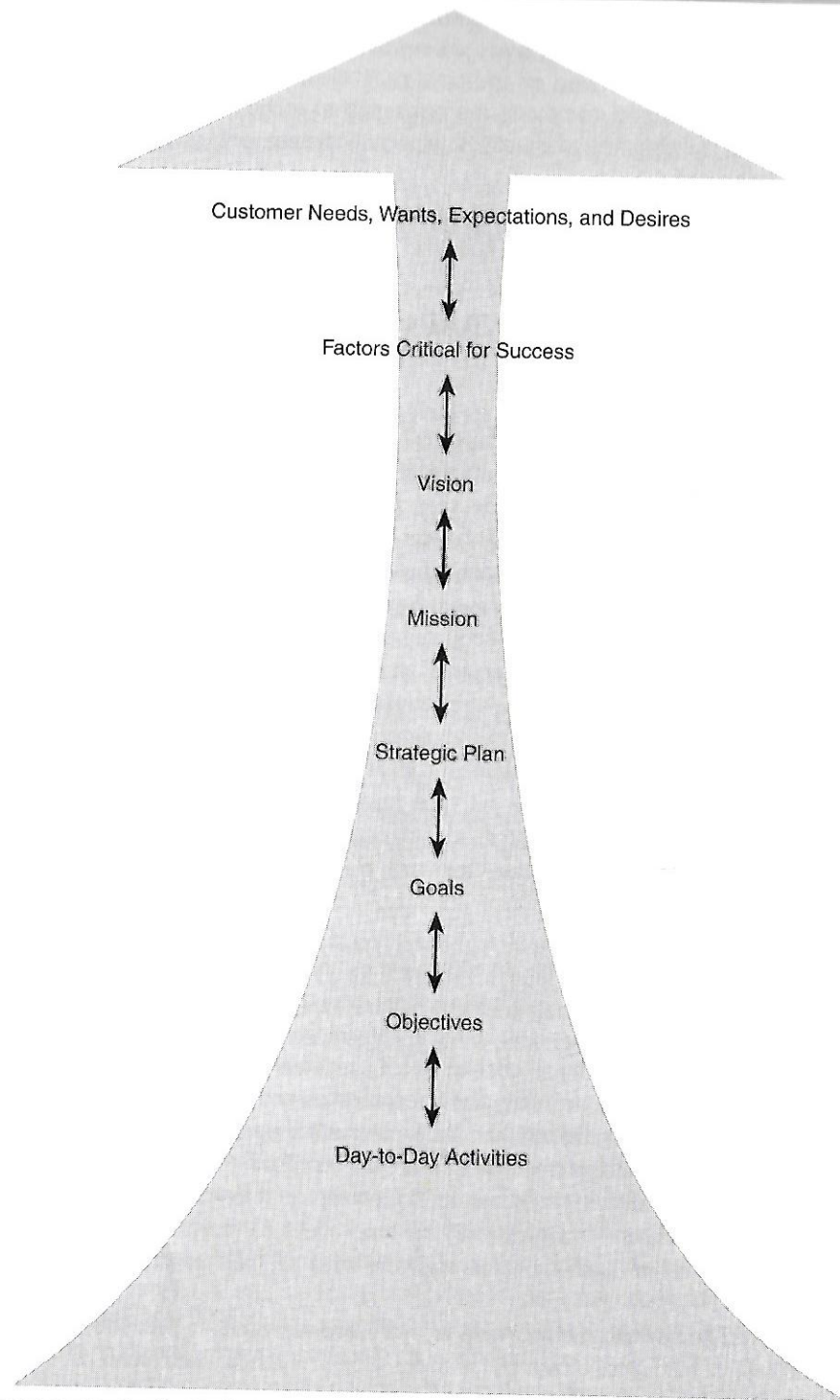


Figure 7.7 Creating Alignment

One key skill that effective organizations possess is the ability to align the organization. Effective organizations train each other to identify the causes of problems, utilize quality tools to analyze the causes, and achieve to make the improvements possible. They also introduce many quality tools for the organization.

HOW DO EFFECTIVE ORGANIZATIONS ALIGN THE ORGANIZATION?

Effective organizations build high-performing teams. They train each other to hold themselves responsible and accountable. The teams that exist, including:

- Management teams composed of people from different functional areas
- Cross-functional teams with representatives from different functional areas to design or development of complex products
- Self-directed work teams made up of people who work together in order to carry out production tasks
- Project or problem-solving teams that are formed to solve a specific problem in the appropriate functional area

Teams are often given the task of solving specific problems. Project teams consist of people who are focused on a particular process, area, or problem. General teams are formed to solve a problem as well as a few individuals from different functional areas. The team may consist of people from different functional areas. The team may be reorganized to focus on another project or problem.

Henry Ford, founder of Ford Motor Company, said:

Coming together is the beginning. Staying together is progress. Working together is success.

Effective organizations recognize that the organization is a team. Like Henry Ford, they recognize that the organization is a team. Recognizing that teams experience growth and direct team activities.

During the first stage the team forms. During the first stage the team forms. During this time the team establishes the ground rules for team performance. The team must know that are aligned with the mission and strategy. During the first stage, the team is much more focused on the selection process. The team must know the direction. Leadership must communicate how the team is performing.

One key skill that effective organizations ensure their employees have is problem solving. Effective organizations train each and every one of their employees to isolate the root causes of problems, utilize quality tools to gain improvements, and lock in the gains they achieve to make the improvements permanent. Chapter 11 covers basic problem solving and introduces many quality tools for root cause analysis.

HOW DO EFFECTIVE ORGANIZATIONS USE TEAMS?

Effective organizations build high-performance teams. These teams contain people with complementary skills who work together to achieve their goals. As team members, they hold themselves responsible and accountable for goal accomplishment. Many types of teams exist, including:

- Management teams composed of heads of departments to do strategic planning

- Cross-functional teams with representatives from a large variety of areas for the design or development of complex systems

- Self-directed work teams made up of employees grouped by complementary skills in order to carry out production processes

- Project or problem-solving teams, which are often temporary groups of individuals from the appropriate functional areas with the necessary skills to work on a specific task

Teams are often given the task of investigating, analyzing, and finding solutions to problems. Project teams consist of people who have been given a mandate to focus on a particular process, area, or problem. Generally, this team is composed of those closest to the problem as well as a few individuals from middle management who have the power to effect change. The team may consist of people from a variety of departments depending on the problem facing them. The team may even include an outside vendor or a representative from the customer base. Upon resolution of the problem, the team will be disbanded or reorganized to focus on another project.

Henry Ford, founder of Ford Motor Company, said:

Coming together is the beginning. Keeping together is progress. Working together is success.

Effective organizations recognize that teams are crucial to solving issues and problems facing the organization. Like Henry Ford, they also realize that teams do not always coalesce into highly functional entities without help. There are several stages of team development. Recognizing that teams experience growth throughout their existence helps leaders guide and direct team activities.

During the first stage the team forms. This *formation stage* is usually experienced in the first few meetings. During this time the team establishes its goals and objectives. It also determines the ground rules for team performance. For teams to work well, leadership must set clear goals that are aligned with the mission and strategic direction of the firm. When leadership sets the direction, the team is much more focused and tends not to get bogged down in the problem-selection process. The team must know the scope and boundaries within which it must work. Leadership must communicate how the team's progress and performance will be measured.

Oftentimes, following their initial formation, teams experience a rocky period during which team members work out their individual differences. This is the time that the team gets acquainted with one another's idiosyncrasies and the demands of the project. During the *stormy stage*, the goals and scope of the team may be questioned. Since a team is composed of a group of individuals who are united by a common goal, the best teamwork will occur when the individuals focus on the team's objectives rather than personal motives. While working together, team members must understand and agree on the goals of the team. They must establish and adhere to team ground rules for behavior and performance expectations. To ensure harmony in the team, all members must participate, and responsibilities and duties must be fairly distributed. Each team member must understand his or her role in the completion of the project. Knowledge of how internal or external constraints affect the project is also helpful. Team members must possess a variety of skills, including problem-solving skills, planning skills, facilitation and communication skills, and feedback and conflict management skills.

The third stage of team development occurs when the team starts to work together smoothly. It is during this *performing stage* that things get accomplished. To be successful, teams need the appropriate skills in a supportive organizational culture, and they need the authority to do the job that they have been asked to do. Leadership can do a lot to rid the team of the barriers that inhibit its performance. These barriers include inadequate release time, territorial behavior from involved functional areas, lack of training, inadequate support systems, lack of guidance or direction, and lack of recognition. Senior leadership's sincere interest in and support of the resolution of the problem is evidenced by their willingness to commit money and time for training in problem solving and facilitation. In any case, senior leadership must monitor and encourage their teams to solve problems. The teams will quickly become unmotivated if the solutions they propose are consistently turned down or ignored. Leadership support will be obvious in management's visibility, diagnostic support, recognition, and limited interference.

As the team finishes its project, the final stage—*concluding*—occurs. During this phase team members draw the project to its conclusion, verify the results, and disband the team. Several key events take place during this time. The team, having taken action, perhaps by implementing a solution to a problem, must verify that what they planned to do got done and what they did actually worked. Teams are not finished when they have proposed a plan of action. Teamwork is finished when the plans have been acted on and the results judged effective. Until then, the team cannot be disbanded.

EXAMPLE 7.5 Providing Leadership: Setting Goals and Objectives

At Perfect Choices, a mail-order catalog clothing company, the 1-800 number service had bogged down. Callers wishing to place an order were put on hold for an unconscionable amount of time. Once placed on hold, some callers merely activated their speaker phones and went about their business, picking up when the speaker phone signaled that a connection had been made. This high number of callers on hold for long periods of time was extremely costly not only in terms of toll-free charges incurred by Perfect Choices, but also in terms of business lost as disgruntled shoppers hung up.

When the team originally formed to develop a specific charter: *improve the 1-800 number* meant, the real issue surfaced. Every caller's president's tight-fisted behavior when he wanted to know how much they were costing before working further on the problem. The number of 1-800 lines could be costly.

Finally, the leader of the team was informed. At this meeting, after much hemming and hawing, the leader informed the president before the man. His response was straightforward. The existing 1-800 number was costing the company too many charges for the amount of time people were on hold. The charges for the amount of time people were on hold that the overrun charges were wasteful. The president's vice. When asked why he did not provide the team with the information, the president replied that they did not have access to it.

Given this more specific guideline, the team used problem-solving tools to determine the root cause of the problem. Key departments were not on the 1-800 number. The 1-800 number not be transferred to another number, but rather, a caller's problem by using internal lines. The answers to the caller's questions, and the use of the middleman wasted time for the team. The team checked sheets and Pareto diagrams. The team frequently called and thus should be reorganized the existing 1-800 service.

After making the appropriate changes, the team reduced the 50% more callers at 25% lower cost. The team reduced the time from 5 minutes to fewer than 3 minutes during the peak time, and less than 1 minute otherwise. The team was all much happier with the revised 1-800 service.

HOW DO INDIVIDUAL PERSONALITIES

Teams are composed of individuals. Teamwork is the combination of individual's knowledge and skill base so that the team can use these skills effectively. Less likely to be effective if the team does not assess a wide variety of personality traits. It is to acknowledge those personalities and their strengths.

As early as the 1870s, doctors recognized the importance of brain functions. As shown in Figure 7.8, the left brain is analytical and logical. Right-brain-dominant individuals are more and visually oriented. In a team meeting, a person focuses on listing or categorizing information. A person who dominates schedules, which makes them go

When the team originally formed to solve this problem, it was given the brief, not very specific charter: *improve the 1-800 number*. After several meetings discussing what this meant, the real issue surfaced. Everyone on the team was aware of the company vice president's tight-fisted behavior when it came to spending money. The team members wanted to know how much they were allowed to spend making the 1-800 number better before working further on the problem. After all, adding more operators or increasing the number of 1-800 lines could be costly solutions.

Finally, the leader of the team was brave enough to invite the vice president to a meeting. At this meeting, after much hemming and hawing, the question of budget was laid before the man. His response was straightforward. He provided figures on how much the existing 1-800 number was costing the firm in terms of base service cost plus overrun charges for the amount of time people spent on hold waiting for service. He pointed out that the overrun charges were wasteful and could be put to better use in improved service. When asked why he did not provide this information earlier, he said he did not realize they did not have access to it.

Given this more specific guideline, the team was able to use a variety of problem-solving tools to determine the root cause of the problem. Analysis revealed that several key departments were not on the 1-800 number. Since callers on the 1-800 number could not be transferred to another number, the customer service representatives tried to solve a caller's problem by using internal lines to contact the appropriate departments, find answers to the caller's questions, and then relay the information back to the caller. This use of the middleman wasted time for everyone. The team used quality tools, including check sheets and Pareto diagrams, to determine which departments were most frequently called and thus should be on the 1-800 number. With this information they reorganized the existing 1-800 service to include the appropriate departments.

After making the appropriate changes, the team found that the 1-800 number served 50% more callers at 25% lower cost. The average wait time had been reduced from 25 minutes to fewer than 3 minutes during peak loads, such as immediately after a catalog is sent, and less than 1 minute otherwise. Callers, employees, and the vice president were all much happier with the revised 1-800 number.

HOW DO INDIVIDUAL PERSONALITIES AFFECT TEAM PERFORMANCE?

Teams are composed of individuals. Team leaders and members need to recognize each individual's knowledge and skill base so that the individuals can be assigned tasks that utilize these skills effectively. Less likely to be understood is that the individuals on any team possess a wide variety of personality traits. One key to helping teams function more effectively is to acknowledge those personalities and use them to the team's advantage.

As early as the 1870s, doctors recognized the concept of left-brain functions versus right-brain functions. As shown in Figure 7.8, left-brain-dominant individuals typically are more analytical and logical. Right-brain-dominant individuals, on the other hand, are more emotionally and visually oriented. In a team meeting left-brain-dominant activity may be recognized when a person focuses on listing or categorizing activities. These individuals like to arrange and coordinate schedules, which makes them good people to have on hand when analyzing processes

Left-Brain Functions	Right-Brain Functions
Logic	Feelings
Reasoning	Visualizing
Judgment	Insight
Analytical	Intuition
Mathematical Ability	Recognizing Similarities
Lists/Categories	Recognizing Patterns
Time Management Ability	Insight
Reading	Spatial Perception
Writing	Seeing Whole Things at Once
Speaking	Synthesizing
Verbal Memory	Visual Memory

Figure 7.8 Comparison of Left Brain versus Right Brain

and determining which activities add value and which do not. They are concerned about time and money estimates. Staying on track and on target is important to these individuals.

Right-brain-dominant activities may be evidenced by individuals who want to focus on discussing new ideas. Since they possess strong caregiver traits, they are concerned about other team members' attitudes and feelings. Because they like to talk things through, they are very good at evaluating customer needs and determining why the customer may want a certain function or service. They are good at visualizing the entire system in operation, and they can recognize patterns that may indicate the most promising steps to complete a task or process.

When asked to list which elements of left-brain or right-brain functions they possess, most individuals will come up with a combination selected from both the left- and right-brain functions. Those who study human personalities have proposed a variety of different theories on the makeup of people. One popular theory is the **four-quadrant brain**. This theory, first proposed by Ned Herrmann, describes four basic thinking preferences related to personalities (Figure 7.9).

Individuals displaying analytical, type A, personalities enjoy working with data, facts, and money. Their approach to problems is very logical. They are interested in answering the question "What?" as in "What are the facts here? What are the expectations? What needs to be done?" On a team they are the individuals who encourage the use of data and factual information. They enjoy digging deep to get the facts related to a situation. They also like to analyze these facts and the data surrounding them before making a decision. They are able to present the facts in a direct, clear, brief style which makes them easy to understand and follow during a presentation. When they are working on a project, their attitude will be realistic when it comes to meeting deadlines and budgets. Because they are good with numbers, they can serve as excellent individuals to monitor and audit project money issues.

Type B individuals are the planners and organizers. They are focused on getting things done. These individuals are interested in structure, details, plans, and schedules. They are very disciplined, so they like nothing better than developing and following clear plans and schedules. The step-by-step activities needed to complete a project are clearly visible to them. These are the people who are interested in creating the plan and then working the

A Analytical <i>Wants to know "What?"</i>	Leader D <i>Wants to know "Why?"</i>
Logical	Visual
Quantitative	Conceptual
Analytical	Holistic
Critical	Imaginative
Technical	Intuitive
Factual	Innovative
Data Focused	Future Oriented
Precise	Curious
Accurate	Risk Taker
Direct/To the Point	Impetuous
Structured	Communicative
Detailed	Interpersonal
Planning	Spiritual
Disciplined	Feeling
Organized	Sensory
Sequential	Emotional
Neat	Supportive
On Time	Talkative
Reliable	Sensitive
B Planner <i>Wants to know "How?"</i>	Communicator C <i>Wants to know "Who?"</i>

Figure 7.9 Herrmann's Four-Quadrant Personalities

plan. They want to answer the question "How?" as in "How are we going to get the work done?" They are thorough in their approach to projects and problem solving. They can be counted on to be on time and reliable. Type B people are great to have on a team because they keep projects on track and on schedule.

All teams need type C individuals. These individuals possess great interpersonal skills, so they provide two significant benefits to a team. They are the peacemakers who can talk to anyone on the team and keep the team working together. Their focus is on answering the question "Who?" as in "Who are the people affected by this project, decision, or problem?" Since they are sensitive to the feelings of others, they like to talk through issues. They are very expressive and are excellent speakers. They make good teachers. Because of their strong communication and interpersonal skills, they are also the people who can help a team determine what the customer needs, wants, and requires.

Type D individuals are natural leaders. Since they have far-reaching vision and see things in context, they have an eye for the future and are very interested in innovations. They possess lots of imagination and are quite spontaneous. They like to approach situations with the freedom to explore ideas. They like to have fun during problem-solving and project efforts. These attributes combine to make them excellent team members because they are the "idea people." When difficulties arise, they are the ones with the creative and innovative approaches to solving them.

why

- Trustworthy
- Show respect to other team members
- Positive attitude
- Self-motivated
- Contributes positively
- Listens well
- Participates
- Encourages the participation of others
- Openly shares knowledge, concerns, expectations
- Accepts the results of group decisions
- On time to meetings or team activities
- Attends meetings and team activities
- Organized
- Provides creative/intelligent approaches to solutions
- High quality of work
- Accomplishes tasks on time and on schedule
- Communicates well
- Can be trusted to get the work done
- A team player
- Shows initiative
- Prepares well for activities and meetings
- Stays on track

Figure 7.10 Positive Team Behaviors

It is easy to see how a team could benefit from having all four personality types present on the team. A type D individual can set the direction for the team and provide innovative and imaginative solutions to problems. A type B person can create and execute plans supporting the vision and goals set by the type D person. The role of information gatherer and analyzer falls to the type A person. Type A people are the ones who can tell you what can actually be done given the available time, money, and talents. A type C person is critical to the team because type C people can help the other members get along and they can communicate effectively with customers.

Not every individual fits neatly into one category. Each person possesses some traits from each of the categories. It is also possible, with time, experience, and training, to develop and enhance traits from different categories. For instance, a strongly type A person can learn to be a better listener, just as a strongly type B person can learn to think outside the box and be innovative. Regardless of a person's strengths or weaknesses, team members should practice positive team behaviors (Figure 7.10).

WHAT NEEDS TO HAPPEN IN ORDER TO HAVE EFFECTIVE MEETINGS?

Sharing information with employees is critical to organizational success. The right information, delivered at the right time, can show people how to become less wasteful and more efficient. Information is often shared in meetings. Unfortunately, meetings are often seen as long, boring, and unproductive time wasters, and they can be if the meeting lacks sound leadership.

Without good leadership, a meeting can become a series of digressions on why an issue exists rather than an emphasis on how the issue will be dealt with. Unfortunately, one bad meeting usually leads to another because in a poorly run meeting, decisions are rarely made and responsibilities rarely assigned. Poorly run meetings nearly always exhibit the same problems: no specific or clearly defined objective(s) for the meeting, leaders, or participants; no meeting agenda; unprepared leaders and participants; and the wrong choice of participants.

In order to have effective meetings, care should be taken to incorporate several principles:

1. Determine the objective of the meeting.
 - Why is the meeting going to be held?
2. Determine who should participate.
 - Who can influence the fulfillment of the meeting objective?
3. Set an agenda.
 - What is the plan of action for the meeting?
4. Prepare for the meeting.
 - What is needed in order to provide answers and save time? Experts? Information? Key participants?
5. Run the meeting.
 - How will the agenda be used to keep the meeting on track?
6. Make decisions.
 - How will the issues be dealt with?
7. Assign responsibilities.
 - Who will be responsible for achieving results?
8. Following the meeting, verify that individuals have dealt with their assigned issues.

These principles enhance meeting effectiveness, whether an individual is a meeting participant or a meeting leader. Preparation for a meeting makes the meeting work for, rather than against, a participant or leader. If all participants know why a meeting is being held, they can come prepared to participate in the meeting. If the leader knows what they want to achieve during as well as after the meeting, he or she can set the agenda to guide this effort. Meetings are more successful if the participants are limited to the individuals who are directly connected to the issue. They will be the ones who will take an active interest in finding a way to fulfill the objective of the meeting. Remember, the number of people in a meeting is often directly proportional to the length of the meeting.

Having an agenda and following it are key aspects of having a successful meeting. A good agenda will state:

- The objective of the meeting
- The issues that will be discussed
- The date and beginning and ending times of the meeting
- The location
- The participants
- The preparation expected of the participant

With an agenda, it is easier to keep a meeting on track and to reach a conclusion about the issues under discussion. Meetings are successful only when they bring about results.

Following a meeting, minutes should be prepared and distributed. These minutes should include:

- The date
- The attendees
- The objective of the meeting
- The major discussion points
- The decisions reached
- The actions to be completed including when and by whom
- The time, date, and location of the next meeting if there is to be one

HOW CAN THE MALCOLM BALDRIGE NATIONAL QUALITY AWARD CRITERIA HELP AN ORGANIZATION'S HUMAN RESOURCES BECOME MORE EFFECTIVE?

Section 5 of the MBNQA criteria, Human Resource Development and Management, examines how an effective organization encourages its workforce to develop to its fullest potential. This section of the award concentrates on how the efforts of the workforce must be aligned with the organization's overall objectives. Applicants are asked to describe how their organization achieves a high level of performance through job and compensation structure and workforce practices. The criteria recognize that effective organizations have effective employees. They ask questions about employee education and training programs that build employee knowledge, skills, and capabilities. The criteria study how the work environment within an organization contributes to employee well-being and motivation.

Employee activities throughout an organization must be aligned with the goals and objectives of the organization. Ask the following questions based on the MBNQA criteria to help determine whether an organization has integrated the concepts of employee motivation and effectiveness throughout its organization:

Leadership

- Is leadership knowledgeable about employee attitudes?
- Are leaders converting policies into actions related to employees?
- Does leadership encourage communication at all levels?
- Does leadership share data openly at all levels where appropriate?
- Does leadership utilize consensus decision making?

Strategic Planning

- Has the strategic plan identified employee education and training supportive of the business objectives?
- Has the strategic plan mapped out a strategy for improving employee performance?

Customer and Market Focus

- Is the organization communicating useful customer and market information to the employees in a manner that improves employee job performance and enhances customer service?

Measurement, Analysis, and Knowledge Management

- How are employees gathering, analyzing, disseminating, and using information related to customers and key processes?
- Does the organization have communication systems in place that enhance its employees' abilities to obtain and use information?
- Do employees understand how their work efforts affect key performance measures?

Workforce Focus

- Do employee policies and reward systems support improvement activities related to key processes?
- Do employee policies and reward systems support education, training, and self-improvement?
- How does the organization engage the workforce to achieve organizational success?
- How does the organization engage the workforce to achieve personal success?
- How does the organization create a culture conducive to high performance?
- How does the organization encourage ethical business practices?
- How does the organization ensure and improve workplace health, safety, and security?
- How does the organization recruit, hire, place, train, and retain employees?
- How does the organization align day-to-day activities with core competencies and customer focus?
- Do employees receive feedback on their work? How?
- Do processes help employees learn from failure, or do they punish employees for failure?
- Does the organization place a high priority on enhancing employee capabilities?
- Does the organization vary the rewards to match rewards with contribution levels?
- Does the organization treat everyone with respect, acknowledging everyone as being equally important?

Process Management

- Have the key processes supporting a customer focus been identified and improved by enhancing employee involvement, skills, and capabilities?
- What process does the organization use to improve the work environment?
- Do the organization's policies concentrate on why problems occur rather than on who caused them?

Results

- Does the organization's skill at managing key processes include utilizing employees' skills, knowledge, and capabilities?
- Have the changes that have been made to employee policies improved business results?
- Has the organization successfully integrated employee policies, strategic planning, and customer and market information? Do the business results reflect this?

LESSONS LEARNED

Effective organizations follow good human resource practices. The involvement of leadership, through supportive actions, provides employees with the knowledge and skills they need to do their jobs and provide value for the customer. Effective organizations engage in a continuous cycle of learning and training. To support this cycle of continuous improvement, effective organizations design recognition and reward systems that motivate their employees. These rewards are aligned with customer needs, wants, and expectations as identified in the strategic plan and supported leadership actions. Effective organizations utilize teams to solve problems and enhance processes. Participants on these teams can expect their talents, skills, and personality types to be appreciated and used to their best advantage.

1. Employees play a significant role in creating value for customers.
2. Effective leaders communicate clearly and effectively.
3. Effective leaders understand how to motivate people.
4. Effective leaders know how to lead the change process.
5. Reward systems can be used to support change and organizational culture.
6. Effective organizations avoid organizational myopia by finding ways to teach their employees new skills.
7. Effective organizations use high-performance teams.
8. Effective leaders know how to run effective meetings.

Are You a Quality Management Person?

It's the little day-to-day ways that you treat people that identifies you as a quality management person. Check out the quality management person questions and find out whether or not you are a quality management person. How do you answer them on a scale of 1 to 10?

Do you treat other people with respect?

1 2 3 4 5 6 7 8 9 10

Do you treat other people fairly?

1 2 3 4 5 6 7 8 9 10

Do you actively listen to what other people are trying to communicate?

1 2 3 4 5 6 7 8 9 10

Do you admit your mistakes, determine the root cause, and learn from the experience?

1 2 3 4 5 6 7 8 9 10

Do you celebrate successes and improvements?

1 2 3 4 5 6 7 8 9 10

Do you provide positive feedback to the people you interact with on a day-to-day basis?

1 2 3 4 5 6 7 8 9 10

Are you careful about how you provide feedback to people?

1 2 3 4 5 6 7 8 9 10

Do you make changes and improvements in areas that are important to you?

1 2 3 4 5 6 7 8 9 10

Do you think about making a change but never do?

1 2 3 4 5 6 7 8 9 10

If you have had trouble making an important change, have you used a more formal change process to help?

1 2 3 4 5 6 7 8 9 10

Do you help others make changes and improvements in areas that are important to them?

1 2 3 4 5 6 7 8 9 10

Do you try to be a team player?

1 2 3 4 5 6 7 8 9 10

Do you strive to communicate clearly and effectively?

1 2 3 4 5 6 7 8 9 10

Do you recognize your personality type and use this information to help you get along better with others?

1 2 3 4 5 6 7 8 9 10

Chapter Questions

1. Find and read the article "On the Factory Floors, Top Workers Hide Secrets to Success" by Timothy Aepfel, *The Wall Street Journal*, July 3, 2003. What are your feelings about employees sharing their knowledge? How can leadership encourage this sharing?
2. Describe a situation where a leader motivated you. What did he or she do? How did you react?
3. Describe a change you were required to make. How did it go? Was the change accomplished? How? What motivated you?
4. Change one thing about yourself. Use the model provided in Example 7.3 as a guide for your change process. Recognize that making the change may take time, and set a timetable for your change.
5. Having changed something about yourself, how would you encourage someone else to make a change?
6. Describe the phases of team development.
7. For each of the phases of team development, provide an example from your own experience describing how your team got through the phase.
8. Study the left-brain/right-brain information presented in Figure 7.8. How would you describe your category? Provide examples showing how you know you fit in this category. Knowing this, how will you change your attitudes and behaviors when working on projects?
9. Study the quadrant types presented in Figure 7.9. How would you describe your personality? What type are you? Provide examples showing how you know that you fit in this category. Knowing this, how will you change your attitudes and behaviors when working on projects?
10. What is the difference between education and training? Why is it important to have both?
11. Describe a situation where you received (or did not receive) job skill training. Was it adequate? Why? Why not? What would you have done differently?
12. Describe a situation where you received (or did not receive) an educational experience. Was it adequate? Why? Why not? What would you have done differently?
13. What key items must be in place in order to have an effective meeting?
14. What is an agenda? How does it help create an effective meeting?

Section 5.0: Human Resource Focus

The Human Resource Focus section of the MBNQA criteria addresses how an organization motivates and develops employees to their fullest potential. It also examines how the organization builds and maintains a work environment that enables employees to do their jobs in a way that provides value to the customer while enabling the organization to grow.

The key goals of this section are to:

1. Examine the performance and improvement of Remodeling Designs, Inc. and Case Handyman Services in key human resources areas:
 - a. Motivation
 - b. Training
 - c. Communication
 - d. Work systems
 - e. Work environment
 - f. Employee well-being

This section of the review was created by Ryan McDonald, Brian Tobin, Joan Cordonnier, and Donna Summers.

QM Human Resource Focus Questions

5.1 WORK SYSTEMS

1. Does your company have any incentive plans that might make your employees want to work harder?
2. Do your incentive plans/reward plans encourage customer focus? How is customer focus measured?
3. How can you get in touch with everyone in the company during work hours?
4. Do new employees have a mentor to teach them the ropes? If yes, how is the mentor selected?
5. What types of motivation techniques does your company have?
6. What is done to make managers encourage "above-and-beyond" work?
7. Do customers rate employees on their work?
8. What type of training do managers need?
9. What characteristics do you look for in employees?
10. What is the process for hiring new employees?
11. How does your company take in new and diverse ideas, even when going through hard times?

5.2 EMPLOYEE LEARNING AND MOTIVATION

12. What types of education and training do your employees get?
13. How do you make sure that your employees are trained correctly?
14. How do you make sure that employees' education and training continue to develop over time? Do you have continuous training?
15. How is information used to make training better for employees?
16. How do you make sure that your employees' skills keep up with more modern technology—training or inspection?
17. Do you teach employees the proper way to do their work to reduce their risk of injury on the job? If yes, how is this training done?
18. Do you have special initial training for someone who joins the organization?
19. Do you have a program whereby someone can learn how to become a better manager or leader?
20. How do you educate your employees? Do they learn from a book, or do they learn by actually doing the work?
21. Do you obtain any information on how education and training could be better? If yes, how is this done?
22. How do you evaluate the education and training to make sure that it is effective? Do you do this by individual employee performance or by overall organizational performance?
23. Do you have a mentoring program? If yes, how does this program affect the work of the employees?
24. What types of results demonstrate that your company is benefiting from training?
25. How do you measure training with regard to customer relations? What types of jobs are directly related to dealing with customers? What type of training do employees get on customer training?
26. How do you reinforce the use of knowledge and skills on the job?

5.3 EMPLOYEE WELL-BEING AND SATISFACTION

27. How do you know that you have all the necessary tools for the job that you are going to do?
28. What types of safety precautions does your company take? How is human error taken into consideration with your safety precautions?
29. Are there target times for completing certain jobs? Are employees rewarded for being on target?
30. Do employees fill out surveys to determine whether they are motivated and satisfied at their job?
31. What key factors affect employee motivation, satisfaction, and well being? How do you measure the effectiveness of the key factors? Are they the correct factors?
32. What types of measurements do you use to assess employee satisfaction and well-being?

33. How many times are your workers late or absent?
34. Do your workers know their job role and how it affects the direction of the organization?
35. Have you encountered any problems with employees and working conditions?
36. How are employee surveys used to help your business? How are these results communicated to others?

5.0 Human Resource Focus

5.1 WORK SYSTEMS

This section examines how your organization creates work systems and employee opportunities that enable employees to reach their fullest potential.

5.1a Organization and Management of Work

Because they are actually two companies, Remodeling Designs and Case Handyman are able to stay current and react flexibly to changes in the business world. Although they are two separate entities, their work systems and employee relations are similar. The work systems at Remodeling Designs and Case Handyman are designed to enable employees and the organization to achieve high levels of performance. Remodeling Designs and Case Handyman promote cooperation, initiative, and innovation by providing their employees with the tools and training they need.

Communication is a critical part of the job. It is easy to communicate with any employee during work hours because each one has a cell phone provided by the company. This connection to others enables employees to ask questions as they arise, order parts from a store, or ask advice from peers.

5.1b Employee Performance Management System

Employees are motivated to work to their full potential by being recognized for their workmanship. One way of making sure that customers are satisfied and employees are motivated is leadership's efforts to match personalities to the job. Erich and Mike assign jobs according to the customer's personality, the size of the job, and the employees available.

Employees' efforts on the job are measured by several techniques, including the use of client feedback evaluations. These forms let the managers know what the customers liked and disliked about the work that was done. The customer is also asked to answer a few questions relating to the attitude and performance of the worker. These forms and the information they contain are relayed back to the employee during regular employee meetings.

5.1c Hiring and Career Progression

Case Handyman advertises for new employees whereas Remodeling Designs utilizes a referral system. New employees for both companies are required to take a service skills self-evaluation as well as a carpentry knowledge survey. When these assessments reveal that the

employee needs more training in a certain area, efforts are made to ensure that on-the-job training takes place. This training involves placing the new employee with an employee who is certified in that specific area. When employees become certified, they are able to do jobs on their own. This type of on-the-job training develops leadership skills among older employees.

A new employee "pitch" book is used during the hiring process. This pitch book explains the direction in which the company wants to go and the performance measures they use to evaluate their progress. It also provides succinct information about what Remodeling Designs and Case Handyman expect from their employees. Current employees participate in the hiring process, and after interviews they are asked to evaluate the potential employee for both technical and social skills. Since the company is not large, everyone must get along. Each new employee has a two-month probation period during which his skills and ability to fit into the organization are judged. The hiring process is shown in Figure 1.

Career progression is encouraged. Employees gain insight into their abilities through the customer surveys. Another measure that is used to judge performance is the Job Cost Profit sheets which show how each employee is performing on the jobs to which he or she has assigned. This evaluation takes place weekly. To improve their skills, employees are encouraged to take classes to attain Certified Lead Carpenter status. Remodeling Designs also encourages competition for awards offered by national remodeling associations.

5.2 EMPLOYEE LEARNING AND MOTIVATION

Training is crucial to Remodeling Designs and Case Handyman. Each Tuesday, training sessions, known as "Tool Box Talks," are held. During these talks, employees learn, for example, what chemicals are harmful, how to avoid accidents, and how to improve their productivity. Employees also share their knowledge, skills, and experience with each other. Employees are able to discuss issues that have arisen, including different ideas of the way to do a particular job. These meetings are excellent sources of information for all employees.

Remodeling Designs and Case Handyman encourage education and training. Much of the training that they sponsor consists of peer training and in-the-field training. Employees are encouraged to take classes related to their respective fields. The companies will pay for the classes as long as the employee receives a passing grade. For instance, a secretary took a grammar class to help with writing letters. Another employee took a class on how to use Microsoft® Project to help improve job scheduling and tracking. Each year, employees attend conventions and remodeling shows hosted by the National Association of Remodeling Industries. These education and training opportunities support the organization's overall objectives and contribute to high performance.

5.3 EMPLOYEE WELL-BEING AND SATISFACTION

Employees are motivated to reach their fullest potential by the way that they are recognized for their workmanship. Incentive plans are not part of the companies, but they do offer such perks as trips for five years of service, jackets for one year of service, and

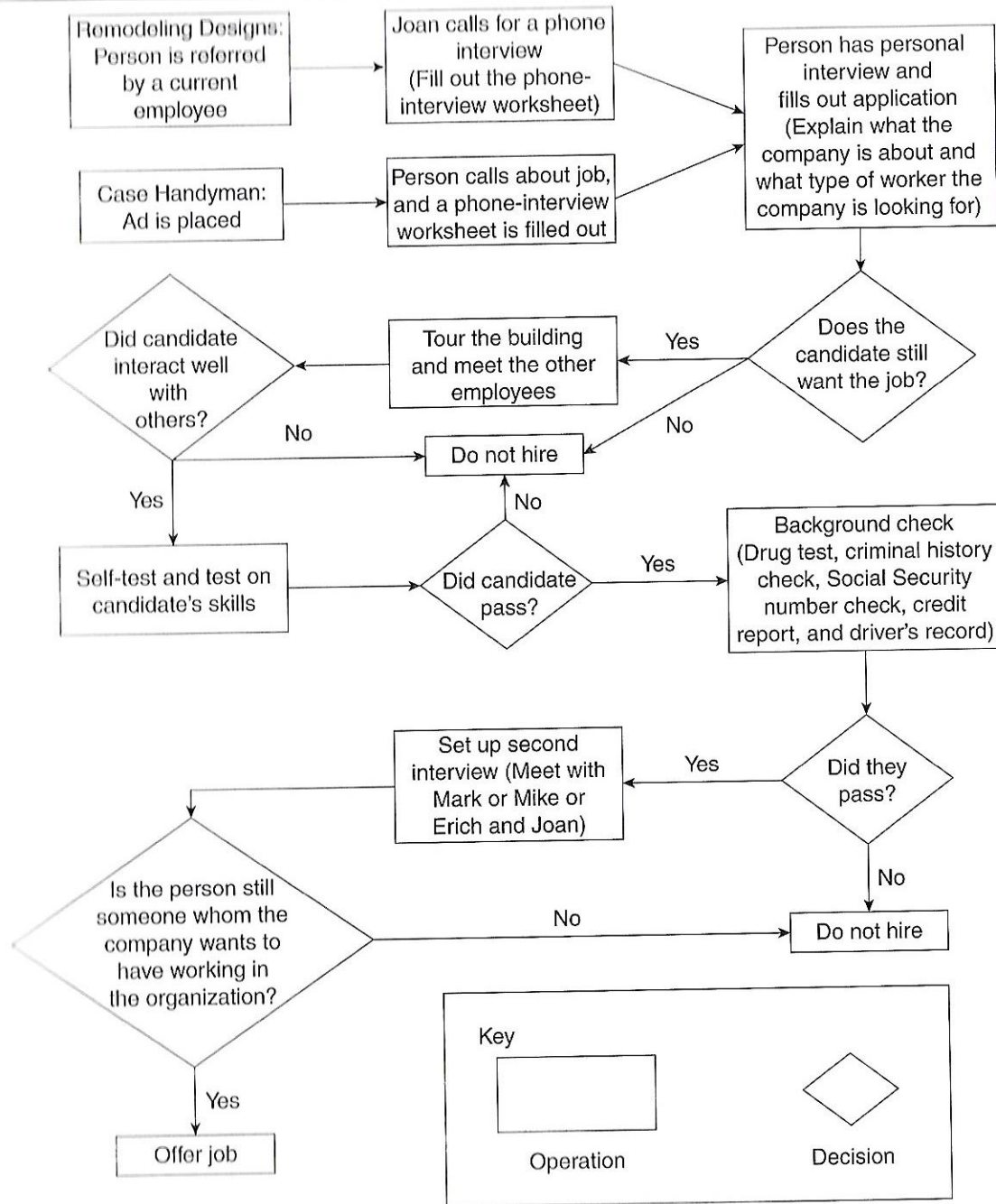


Figure 1 Hiring Process

EMPLOYEE REVIEW

NAME: _____

DATE: _____

REVIEW DATE/TIME: _____

PLEASE WRITE THE ANSWERS TO THE FOLLOWING BEFORE YOUR REVIEW.

Describe your job. (Really think about what you actually do. Use back if necessary.)

What are the most difficult parts of your job?

What do you like the most about your job?

What do you like the least about your job?

What is the greatest challenge you face in completing your job?

In the past year, what is the greatest success you had in your job?

In the past year, what is the greatest failure you had in your job?

For 2004, what would you like to most improve on related to your job? This would be something that we would look at a year from now and determine if you actually improved on it.

We will talk about the following questions during your review. You do not need to write down answers. Just be prepared to talk about them.

What do you need from us in order for you to do your job more effectively?

Do you think Remodeling Designs and Case Handyman are headed in the right direction? If not, what suggestions would you make?

Are there ways you can think of that we can make better use of your talents and skills?

Figure 2 Employee Review Form

company-sponsored awards. The company also sponsors summer fun events and a Christmas party.

Remodeling Designs and Case Handyman employee benefit policies help maintain a supportive work environment. Vacation days, personal leave time, education/training funding, and family health insurance are all part of the benefits offered.

This is a family-run company that is aware of family responsibilities. Employees who need to leave to deal with family issues or obligations are not penalized. When a situation arises, as long as the employee calls in and explains why he or she is unable to work on a given day, management tries to work with the employee.

When jobs are completed, the employees review those jobs. The review contains questions such as:

- How would you describe the job?
- What aspect of the job did you like the best?
- What did you like the least?
- What would you change if you could?
- What was your best success?
- What was your worst failure?
- What do you feel you should have been paid?

If the employees are unhappy or dissatisfied with some aspect of the job or future jobs, Mike and Erich work with them and attempt to make positive changes. Figure 2 shows the Employee Review form used in an employee's yearly review.

Turnover rate is very low. Most of the employees are there for life. Only one employee left; he did so because he wanted to further his career by starting his own remodeling company. Remodeling Designs and Case Handyman have been expanding and adding employees since their beginning.

WHY MEASURE?

If you don't drive your business, you will be driven out of business.

B. C. Forbes

Very simply, what gets measured gets done. Effective organizations recognize that if they cannot measure, they cannot manage. They know that if they do not have sufficient information about a process, product, or service, they cannot control it. If a process cannot be controlled, the organization is at the mercy of chance. Dr. Deming's favorite question was, "How do you know?" Without measures of performance, this question can't be answered.

Measures are indicators of performance. Leaders of effective organizations ask themselves, "How are we doing?" every day. They understand that without measures, they don't know what they don't know. They can't act on what they don't know. They won't search for answers unless they question, and they won't question what they don't measure. Properly designed measures compare past results with current performance, enabling leaders to answer the question, "How do we know how well we are doing?" Leaders receive a wide variety of information each day. Having enough information usually isn't the problem. Having *useful* information is. Mark Twain once said, "Data is like garbage. You had better know what you are going to do with it before you collect it." As discussed in Chapter 6, effective strategic plans contain performance measures chosen for their ability to quantify information about the critical success factors. Information concerning these critical success factors enables leaders to make better, more informed decisions. Leaders use measures of performance to ensure alignment among their organization's mission, strategy, values, and behavior. Measures of performance enable effective organizations to define the meaning of success numerically. As Lord Kelvin, the British physicist, stated in 1891, "When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind: it may be the beginning of knowledge, but you have scarcely in your thoughts, advanced to the stage of science."

To remain competitive, effective organizations must manage their employees, processes, scheduling, production cycle times, supplier partnerships, shipping, and service contracts far better than their competition. Effective performance measurement systems are used to understand, align, and improve performance at all levels and in all parts of the organization (Figure 9.1). As the nursing homes did in the introduction to this chapter, in order to know how they are doing in key areas that affect their customers' value perceptions, organizations must select and then track indicators of their performance efforts.

WHAT ARE GOOD MEASURES OF PERFORMANCE?

In any organization, employees recognize the importance of working on activities valued by leadership. Leaders use measures of performance to communicate what activities are important. Good measures of performance are designed based on what is valued by the organization and its customers. Well-designed measures encompass the priorities and

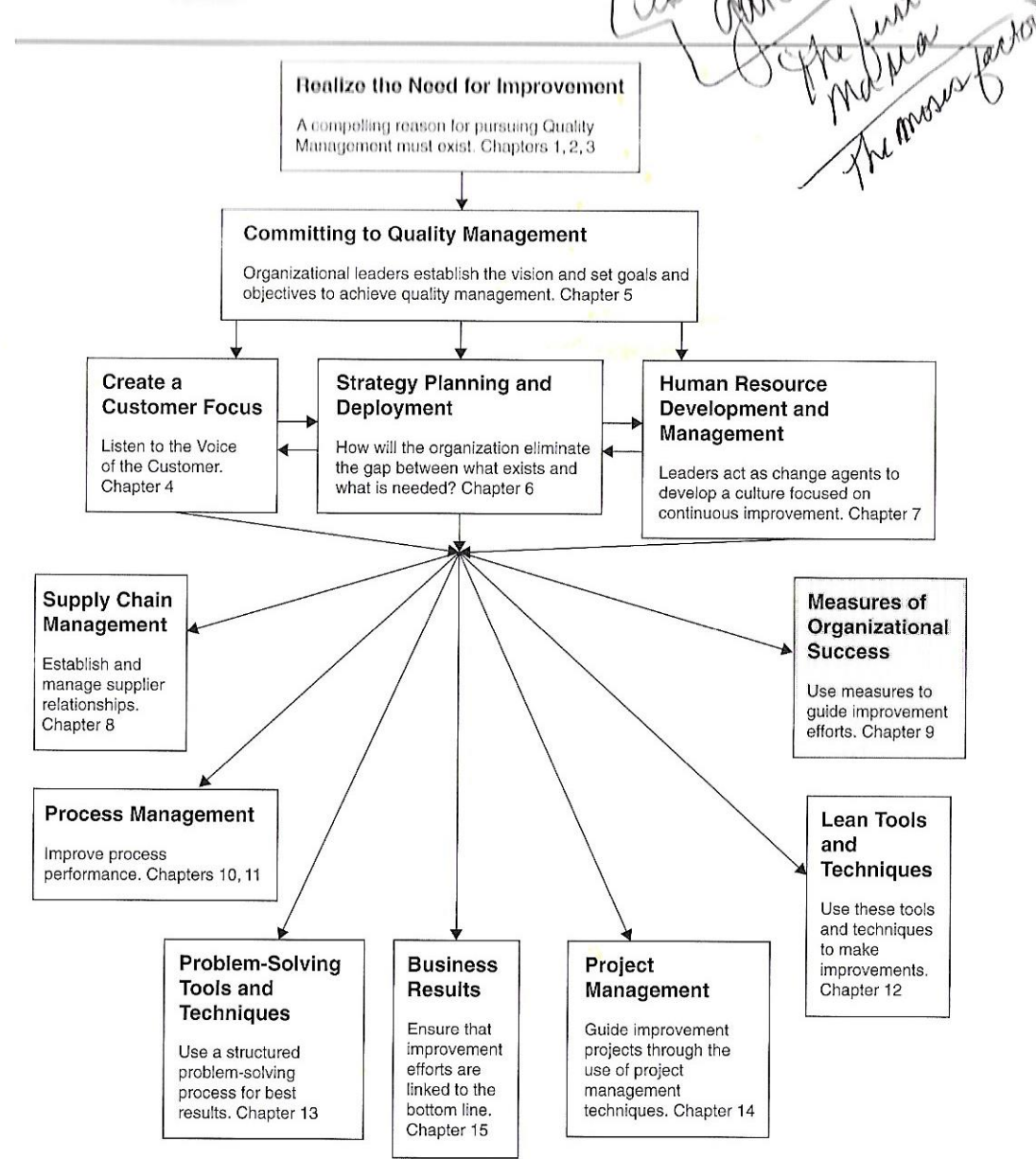


Figure 9.1 Achieving Organizational Success

values of both. Essentially, performance measures enable an organization to answer the following questions:

- How well is something performing its intended purpose?
- Is the organization able to measure the impact of the changes being made?
- How does the organization know that it has allocated its assets correctly?

Process's - to get the job done - to manufacture

Result -
KNOU

Result -

Schedule/Delivery Performance
Throughput
Quality
Downtime
Idle Time
Expediting Costs
Inventory Levels
Work-in-Process Levels
Safety, Environment, Cleanliness, Order
Use of Space
Frequency of Material Movement

Figure 9.2 Process Measures

TEST
Well-constructed measures are aligned with strategic goals of the organization as well as with their customers' priorities. Willingness to use performance measures increases when the measures are relevant to the organization operationally and, where applicable, to the individual personally. Usability is also a function of understandability. Measures that are clearly written and focused are more powerful than ones that are oblique or lengthy.

Customer needs, wants, requirements, and expectations must translate into measures of performance. Effective organizations ask themselves the question, "Have we identified, selected, and measured factors that reflect what the customers want?" Critical to the success of any organization is the ability to determine what their customers want and to find the best way to get it to them. Well-designed measures align strategic objectives with the priorities of the customer. These indicators measure what is of value to the customer. Measures should also provide information about undesired customer outcomes that must be avoided, or eliminated, or at least minimized. Measures should also define the product, service, or process characteristics valued by the organization's customers.

Measures of performance can be found in two categories: processes and results. Processes exist to get work done. They are the activities that must take place in order to produce a product or provide a service. Since processes are how organizations do their work, process measures monitor operational activities, or how the work is done (Figure 9.2).

Results relate to both organizations and their customers. To an organization, results are the objectives the organization wants to achieve. From a customer point of view, results represent what they hope to obtain by doing business with the organization, whether it be a product or a service. Performance measures related to organizational results focus on strategic intent (Figure 9.3). Performance measures related to customer results concentrate on the

Market Share
Repeat/Retained Customers
Product Line Growth
Name Recognition
Customers/Employees Ratio
Pretax Profit

Figure 9.3 Organizational Results Performance Measures Focused on Strategic Intent

What they want to achieve

Scrap
Rework
Downtime
Repair Costs
Warranty Claims
Complaints
Liability Costs

Figure 9.4 Customer Results Performance Measures Related to Product or Service Attributes

attributes of products and services (Figure 9.4). Products and services are created by the organization and purchased by customers. Products can be tangible manufactured items or information products such as reports, invoices, designs, or courses. Services received by customers are even more varied. Organizations may provide anything from information to dental work to entertainment products such as movies, games, or amusement park rides.

Measures need to be integrated and utilized throughout the entire organization. Traditionally, organizations have focused their attention on measures related to the financial aspects of doing business, such as revenues, profits, and earnings. Effective organizations realize that the outcomes, processes, products, and services of their business must be measured. Figure 9.5 provides some traditional as well as broader measures.

Traditional Measures

Revenues
Profits
Growth
Earnings
Return on Investment (ROI)
Sales Revenue
Total Expenses
Number of Customers
Number of Repeat Buyers
Payroll as a Percent of Sales
Number of Customers per Employee
Number of Customer Complaints
Complaint Resolution Rating
Schedule Achievement

Overall Organization Measures

Employee Satisfaction, Growth, and Development
Customer Survey Results
Number of Completed Improvement Projects
Cost of Poor Quality (COPQ) Reduction
Vendor Quality Rating
Return on Process Improvement Investment
Safety, Environment, Cleanliness, Order
Condition and Maintenance of Equipment/Tools

*downtime is
changing the
calibrating*

*all of those times when you pay a retail into Bentonville
Monthly sales. they know how
many people are working -
staff cannot exceed 5.6% of
sales.*

Figure 9.5 Traditional and Broader Performance Measures

The Balanced Scorecard method, introduced by Robert Kaplan and David Norton, goes beyond financial measures and integrates measures from four areas. These measures focus on key business processes and are aligned into a few manageable indicators of performance so that management is able to quickly assess the short- and long-term health of the organization. The Balanced Scorecard combines and categorizes process and results measures into four areas: Customer Focus, Internal Processes, Learning and Growth, and Financial Analysis. Taken as a whole, the Balanced Scorecard lets leaders see how changes and improvements affect all areas of their business. This decreases the chance of suboptimization of results.

When designing measures related to Customer Focus, an organization emphasizes connecting with the customer, determining what the customer is interested in achieving, and using that information to translate the mission and strategy statements into specific market- and customer-based objectives. In other words, these measures ask, "How do customers see us? What must the organization deliver to its customers to achieve high degrees of satisfaction, retention, acquisition, and, eventually, market share? What is the organization going to do for its customers that will make them want to buy from the organization time and time again?" They identify and monitor the level of value propositions the organization delivers to targeted customers and market segments. *Value propositions are the product or service attributes that meet customer needs, wants, and expectations.* They are indicators that customers are satisfied. These measures are in three categories:

1. Product or service attributes related to functionality, price, and quality
2. Customer relationship attributes such as delivery, response time, convenient access, responsiveness, and long-term commitment
3. Image and reputation attributes which are more intangible factors that attract a customer

Internal Processes measures study the effectiveness and efficiency of the processes performed by the organization in order to fulfill customer requirements. They answer the question, "What must our organization excel at?" When designing these measures, effective organizations identify the internal processes that are most critical for achieving customer and shareholder objectives. Once these key processes have been identified, measures are developed that concentrate on monitoring the improvement efforts in the areas of quality, response time, and cost. This information is used to determine whether the current processes serve the customer effectively, whether these processes are the best, and whether they are operating at their best.

Learning and Growth measures monitor the individual and group innovation and learning within an organization. These measures focus on the ability of the organization to enhance the capability of their people, systems, and organizational processes. They answer the question, "How can our organization continue to improve and enhance customer value?" Recognizing that this is a long-term effort, organizations emphasize the development of employee capabilities; the development of information system capabilities; and employee motivation, retention, productivity, and satisfaction. These measures judge whether the organization's employees have sufficient information and the right equipment to do their jobs well. They are also interested in whether employees are involved in the

*Company must
be best*

*Coming up =
growing org. & getting
more people.*

decisions affecting them and how much recognition and support employees receive. They can be used to evaluate employee skills and competencies and compare this information with what employees will need in the future. In addition, these measures can be used to monitor the morale and climate within the organization.

Financial Analysis measures are perhaps the measures with which people are the most familiar. These measures track an organization's performance in the financial arena. They are focused on monitoring financial performance. They answer the question, "How do we appear to our stakeholders?" Examples of financial measures include revenue levels, cost levels, productivity, asset utilization, and investment risk. Examples of each of the four types of measures are provided in Figure 9.6. In the following "How Do We Know It's Working?" feature, examples of how measures relate to goals are shown in Figure 9.7.

Financial Measures

- Sales Revenues
- Total Expenses
- Pretax Profit
- Return on Investment

Customer Measures

- Number of Customers
- Number of Repeat Buyers
- Customer Survey Results
- Number of Customer Complaints
- Complaint Resolution Rating
- Name Recognition
- Price Differentials
- On-Time Delivery
- Response Time

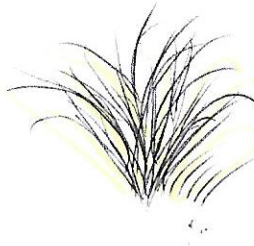
Internal Measures

- Payroll as a Percent of Sales — *Walmart*
- Number of Customers per Employee
- Cost of Poor Quality
- Employee Survey Results
- Throughput Yield
- Quality Level
- Product/Service Cost
- Productivity
- Employee Morale

Learning and Growth Measures

- Number of Teams
- Number of Completed Projects
- Number and Percentage of Employees Involved
- Number and Percentage of Employees Involved in Educational Opportunities

repeat customers



*quality does
cost money.*

Figure 9.6 Measures of Performance

Customer Perspective

Goal: Reduced Lead Time

Measure: Lead time

Goal: Customer Partnership

Measure: Number of orders from same customer

Measure: Number of repeat orders

Goal: Increased Sales

Measure: Number of new customers

Measure: Number of orders/week

Goal: Improve Quality

Measure: First-pass quality

Learning and Growth Perspective

Goal: Improved Employee Flexibility and Agility

Measure: Number of employees cross-trained and proficient at at least one other position

Goal: Improved Use of Technology

Measure: Number of employees trained and proficient at using Job Boss software

Goal: Increased Safety

Measure: Number of employees attending safety training

Measure: Number of incidents and accidents

Internal Processes

Goal: Improved Use of Technology

Measure: Number of orders completed using Job Boss software

Measure: Number of employees using Job Boss software

Measure: Number of machines linked to Job Boss software

Goal: Reduced Order Processing Time

Measure: Order processing time

Financial Perspective

Goal: Prosper

Measure: Quarterly financial performance

Measure: Quarterly sales performance

Measure: Profit

Measure: Accounts receivable: Number of days outstanding

Measure: Sales per employee

Figure 9.7 JQOS Balanced Scorecard

How Do We Know It's Working?

JQOS leadership develops measures of performance to support the goals and objectives that they laid out in their strategic plan. Their measures relate to all aspects of their business: customers, employees, and finances. Figure 9.7 provides a brief summary of several of their goals and measures. Using these measures, they are able to respond to questions like:

How do customers view JQOS?

What must JQOS excel at as an organization?

How can JQOS's people continue to improve and enhance customer value, both internally and externally?

How does JQOS appear to our investors?

Improvements and changes cost money. JQOS's investors have raised concerns over the money being spent, but management response is to show how the cost of not

running parts, not making quality parts, and not meeting customer expectations far outweighs wise improvements to the business. As effective leaders, they watch their cash flow. Positive cash flow means that the organization has money to grow on. They won't need to borrow for growth, and they have enough to meet their debt obligations. Several of their measures support this, including cash flow and inventory. Cash flow comes from what an organization sells. It represents money coming in. Once the product is complete, they ensure that customers are paying on a timely basis. A high value in the accounts receivable column isn't always good. Effective organizations can collect on these accounts. They don't have long-past-due accounts.

Since inventory that sits around unused ties up money, effective leaders find improvements to increase inventory turnover. This means increasing the flow of product through the plant. It also means that material and component purchasing is timed carefully with customer orders. In service-related activities, careful management of human resources and the supplies or information they need is important. Having who you need and what you need in order to service customers means that customers are served more quickly. Serving more customers quickly means that more customers can be served.

Their measures of performance support investment in the organization too. Sales have risen from \$4 million to \$8 million a year. The number of new, long-term customers has risen from 30 to 36. The number of orders handled weekly by the plant has risen from 30 to 60 per week. Lead time has fallen from four to six weeks to nearly two weeks. First pass quality has increased from 80% to 87%. Profit has risen from 2% to 8%, a figure that includes money spent on improvements. The number of employees has risen from 26 to 38, primarily due to adding a second shift to handle the increase in customer orders. Even with the additional employees, the ratio between the JQOS's sales and the number of people they employ is strong, \$4 million/26 to \$8 million/38. By making improvements to their billing and account receivable processes, despite the significant increase in sales, the dollar amount of outstanding receivables has not increased.

Measures are not without their pitfalls. The number of measures used by an organization must be reasonable to be effective. Measures must focus on what is important to the organization, not simply on what is easy to measure. It is critical to determine what needs to be measured and why it needs to be measured before designing a measure of performance. Measures for measurement's sake must be avoided. Too many measures or unfocused measures lead to hesitation in the users. Often, it is difficult to establish meaningful measures to act upon. For instance, if the measure is stated as "Improve contact with customers," there is little room for defining what is actually being measured or for determining the effectiveness of activities designed to enhance contact with the customers. Measures need to be specific and quantitative to be effective. For example, "Visit five customer accounts per month" or "Decrease scrap on Line 2 by 5% in six months" is significantly more specific, more easily acted upon, and more measurable compared to the generic statements "Improve

contact" or "Reduce waste." It is also critical to ensure that the correct things are being measured. Sometimes the choice is made to measure the easy actions rather than the important actions, leading to measures that are merely counts of actions rather than indicators of business opportunities. In other cases, measures may be too abstract, and although they may sound good on paper, they cannot be achieved because few people understand what the measures mean. One key question to ask is, "If only one item, parameter, type of result, and so on, could be measured in order to assess the performance of the organization at a given level, what would it be?"

EXAMPLE 9.1 Indicators or Measures of Performance

Leaders of PM Printing and Design created their strategic plan in Example 6.4. Using the plan, they hope to communicate to their employees the importance of creating and maintaining a customer-focused process orientation as they improve the way they do business. Their indicators or measures of performance have been taken from their strategic plan and organized into the four categories discussed in this chapter.

Customer Measures

Results measures:	Overall customer satisfaction
	Market share
	Number of customers
	Number of repeat customers
	Number of new customers
Process measures:	Changes in customer requirements versus changes in processes to serve customers
	Improvements to processes critical to serving customers

Financial Measures

Results measures:	Cost per printed unit (impression)
	Profitability
	Return on investment (ROI)
Process measures:	Cost avoidance (performing work in-house versus contracting work)

Internal Measures

Results measures:	Improvements in hours paid versus hours billed
Process measures:	Improvements in job turnaround time (cycle time reduction/removal of non-value-added activities)
	Improvements in billing lag time (cycle time reduction/removal of non-value-added activities)
	Improvements in first-time-through quality (reduction in rework/scrap)

Learning and Growth Measures

Results measures:	Improvements in employee retention
Process measures:	Progress toward cross-training goals for critical processes as identified by customers

When developing measures, consider the following:

- What does the organization need to know?
- What is currently being measured?
- How does what the organization needs to know compare with what it is currently measuring?
- How is this information being captured?
- Is the information currently being captured useful?
- Is the information currently being captured being used?
- What old measures can be deleted?
- What new measures are appropriate?
- Do the identified, selected, and measured factors reflect what the customers need, require, and expect?
- Are these measurements being captured over time?
- Can these selected factors be acted upon within the organization?
- Can the impact of the changes made be measured?
- Have the organization's assets been allocated correctly?

Measures must be defined in objective terms. The best measures are easy to express as a numerical value. Key measures focus on the organization's desired outcomes, undesired outcomes that the organization wants to avoid or eliminate, and the desired product, service, or process attributes or characteristics. Valuable measures show progress toward the milestones of strategic goals and objectives. These types of measures will receive more attention than those that do not. Decision makers must find a performance measure valuable. Measures are useful and effective when those using them can identify how the measures enable them to make better decisions in relation to their day-to-day activities. All measures must be evaluated to determine their usefulness.

EXAMPLE 9.2 Measures of Patient Care

Consider the process of admitting a patient to the hospital. Patients are focused, rightfully so, on their health issues. Upon admission, they are faced with the need to complete insurance paperwork, get preliminary testing, provide medical history, receive a room assignment, and schedule necessary procedures. Consider the total cycle time of this process. It can seem overwhelming.

Hospitals use many measures to help them determine where process improvement is needed. These measures may include the length of time for a nurse to respond to a

patient call button, the accuracy of diagnosis, billing errors, and patient pain and comfort. Sometimes people focus on only the tough measures, such as pain and comfort, and use that as an excuse to ignore other measures.

In response to customer complaints about substandard treatment, hospitals are taking steps to measure patient satisfaction and make improvements based on the measures. To create care that is more patient centered, hospitals need to understand patient experiences by looking at processes from the patients' point of view. Measuring patient-centered care is more complex than the traditional measures of performance that hospitals have used in the past, requiring a new set of performance measures. The new measures of performance focus on more subjective patient issues, such as how patients feel about the way they are treated and how the kindness and courtesy of the staff affected their experience. Previously, most of the measures focused on safety and quality standards, such as how many infections were contracted during patient hospital stays, or the number of heart-bypass surgeries or C-sections a hospital performs in a year. Although there is a

Financial Measures

Total Expenses

Return on Investment (ROI)

Customer Measures

Number of Patients Treated

Patient Survey Results

Number of Patient/Customer Complaints

Complaint Resolution Rating

Kindness Rating

Staff Courtesy Rating

Patient Information Availability

Patient Comfort Rating

Patient Pain Relief

Patient Readmittance Rate

Internal Measures

Medicine-Dispensing Error Rate

Number of Patients per Employee

Length of Stay

Quality Level

Safety Rating

Number of Surgeries

Infection Rates

Learning and Growth Measures

Number of Teams

Number of Completed Projects

Number and Percentage of Employees Involved

Number and Percentage of Employees Involved in Educational Opportunities

Figure 9.8 Measures of Performance for a Hospital

tendency to view the "soft stuff" as unimportant, more and more hospitals are developing measures of performance that focus on the patient. These measures of performance that focus on patient care may include how well informed of their condition and treatment patients felt they were, patients' physical comfort and pain relief, the emotional support patients received, the respect they received for their preferences and expressed needs, and how well hospitals prepared them for caring for themselves at home. Hospitals use this information to improve the level of care they offer their patients. Some examples of measures of performance are given in Figure 9.8.

HOW ARE MEASURES OF PERFORMANCE UTILIZED IN AN EFFECTIVE ORGANIZATION?

Information is instrumental to guiding an effective organization. Leaders of effective organizations analyze information provided by performance measures to assess and understand their organization's overall performance. This information enables leaders to make appropriate decisions about the actions they must take to ensure organizational success. Performance measures can be used to align day-to-day activities with the strategic plan and improve organizational performance at all levels and in all parts of the organization (Figure 9.9).

The quality management system and Six Sigma programs used by effective organizations emphasize good management of information and knowledge. Through the use of performance measures, leaders use the systems and programs to select projects ensuring that all decisions are tied to business results. The measures used by these systems and programs seek to optimize overall business results by balancing cost, quality, features, and availability of products and their production. The measurement phase of any problem-solving process should require a complete evaluation of key process variables through the use of measures. This enables those working on projects to understand how the measures work together within a complex system to produce good products in a timely manner, at the best cost, and in a way that meets the needs of the customer and the company.

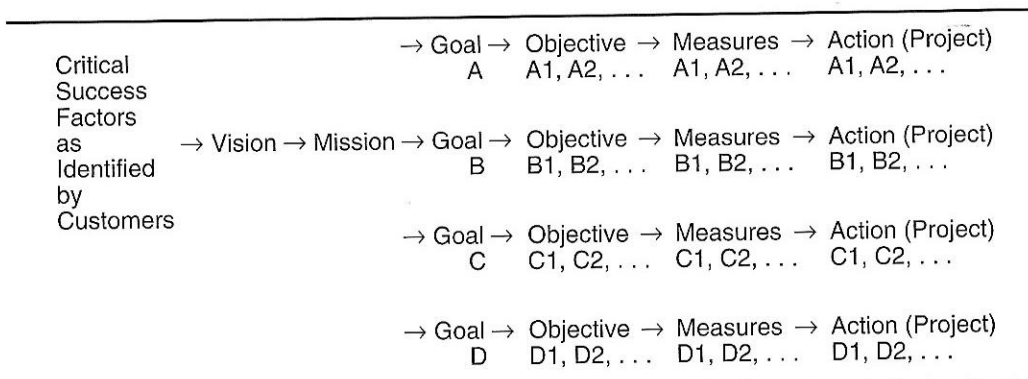


Figure 9.9 Measures and Their Relationship to Strategic Planning

EXAMPLE 9.3 Hospitals Reduce Emergency Room Wait Time

When a medical emergency occurs, the last thing a person wants to do is wait in an emergency room to be seen. On average it takes 49 minutes for a doctor to see a patient in a U.S. emergency room, according to studies by VHA Inc., an alliance of community hospitals who track such information. Hospitals are responding to patients' desire to be seen quickly by listening to the customer, acting on the information they gather, and making significant changes to the way they do business. Because of these efforts, short waits in the emergency room may become the norm rather than the exception. As reported in *The Wall Street Journal*, July 3, 2002, one hospital, Oakwood Hospital and Medical Center in Dearborn, Michigan, went so far as to promise that anybody taken to the emergency department would be seen by a doctor within 30 minutes—or he would get a written apology and two free movie passes.

To reduce emergency room wait times, hospitals may seek to improve patient check-in procedures, billing, record keeping, and laboratory processes; they may also upgrade their technical staff. Measures of performance guide improvement efforts by enabling hospitals to track indicators such as patient wait time before being seen; causes for delay, such as incomplete paperwork or doctor unavailability; and the amount of time a physician spends with patients. These measures also serve as a guideline for the hospital, pointing out where improvements need to be made and how effective their changes have been. These measures will also tell a hospital whether it can actually offer the guarantee. Some hospitals are redesigning their emergency departments along a dual-track system to speed up their handling of lesser problems. Acute-care beds are set aside for the real emergencies, and an adjacent "fast track" section is designed to treat lesser emergencies and to get patients treated and released quickly. This type of arrangement has been shown to reduce the length of stay in the emergency unit by as much as half. Since Oakwood implemented the 30-minute guarantee, at all four of Oakwood Healthcare System's hospitals, patient satisfaction levels have soared. The performance measures revealed that only 0.9% of the 191,000 emergency room patients (about 1,700 people) were eligible for free tickets. By studying their performance measures, Oakwood was able to determine that the average wait is now 17 minutes between patient arrival and a physician's examination. Who knows—with further process improvements, maybe they will start offering a 15-minute guarantee.

WHAT ARE THE GOALS OF A MEASUREMENT SYSTEM?

One of the chief goals of a measurement system is to provide leaders with a multidimensional and qualitative view of their organization. A measurement system is a critical element in the strategic planning process because it allows an organization to measure progress toward goals and objectives. Performance measures are decision tools that enable leaders to link their strategy with day-to-day operations. Effective organizations measure the performance of areas that the organization values the most. Measurement systems allow effective organizations to:

- Determine that a gap exists between desired and actual performance
- Determine the root cause of the gap

- Determine the necessary corrective action to eliminate the root cause of the gap
- Determine whether the corrective actions eliminated the root cause and closed the gap between the actual and desired performance

Gap analysis—the study of the difference between actual and planned progress—allows effective organizations to learn where their efforts should be focused concerning their strategic plans. Gap analysis is a critical component of a measurement system because it drives organizational change. For instance, suppose an organization's strategic plan focused on five activities: health and safety, quality, cost reduction, throughput, and environmental issues. Then in order to know whether progress was being made toward these goals, measures such those in Figure 9.10 must be in place. Effective organizations utilize measures to change the way they do business. Measures of performance that reinforce the strategic plan enable these organizations to guide the direction their business is taking.

Health and Safety

Goal: Reduce reportable and lost-time incident rate by 33%

Measure: Lost-time incident rate

Goal: 100% employee compliance in audit of ear and eye protection

Measure: Count of employees without ear and eye protection during random monthly inspection

Quality

Goal: Reduce PPM by 50% from last year's level

Measure: PPM defect rate

Goal: Complete PDSA problem-solving training for all members of engineering department in four weeks

Measure: Number of people who have completed training per week

Cost

Goal: Reduce waste from last year's level by 33%

Measure: Scrap rate

Measure: Rework rate

Throughput Objectives

Goal: Up-time objective for Line 1—improve 10% from actual performance level of 70% to 80% by year-end

Measure: Up-time performance level for Line 1

Environment

Goal: Reduce PPM exhaust rate by 33% by year-end

Measure: PPM exhaust rate

Figure 9.10 Measures of Performance

EXAMPLE 9.4 Measures and Six Sigma: Justifying a Project

Queensville Manufacturing Corporation creates specialty packaging for automotive industry suppliers. The project team has been working to improve a particularly tough packaging problem involving transporting finished transmissions to the original equipment manufacturer (OEM). Company management has told the team that several key projects, including theirs, are competing for funding. In order to improve the chances of their project being selected, the team developed strong metrics to show how investment in their project will result in significant cost savings and improved customer satisfaction through increased quality. After brainstorming about this project, the team developed the following list of objectives and metrics for their project:

By retrofitting Packaging Machine A with a computer guidance system the following will improve:

Capacity:

KPOV: Downtime reduction from 23% to 9% daily
(downtime cannot be completely eliminated due to product changeovers)

KPIV: Resource consumption reduction
20% less usage of raw materials such as cardboard and shrink-wrap due to an improved packaging arrangement allowing five transmissions per package instead of four previously achieved

Customer Satisfaction:

KPOV: Improved delivery performance
Improved packaging arrangement integrates better with customer production lines saving 35% of customer production time

KPIV: Reduced space required for in-process inventory
Improved packaging arrangement allowing five transmissions per package instead of four previously achieved saving 10% of original factory floor space usage

KPOV: Reduced defect levels due to damage from shipping
Improved packaging arrangement provides better protection during shipment saving 80% of damage costs

Revenue:

KPIV: Reduced costs
\$600,000 by the third quarter of the following fiscal year given a project completion date of the fourth quarter of this fiscal year

KPOV: Reduced lost opportunity cost
Increased customer satisfaction will result in an increased number of future orders

This project was selected as a focus for Six Sigma improvement because it could be justified by the impact it would have on overall organization performance.

WHAT ROLE DOES THE COST OF QUALITY INFORMATION PLAY IN AN EFFECTIVE ORGANIZATION?

What drives a company to improve? Increased customer satisfaction? Greater market share? Enhanced profitability? Companies seek to improve the way that they do business for many reasons, and one of the most important is the cost of quality. Quality costs are the costs that would disappear if every activity were performed without defects every time. } rest

Products featuring what the customer wants at a competitive price will result in increased market share and therefore higher revenue for a company. But this is only part of the equation. Companies whose products and processes are free of defects enjoy the benefits of faster cycle times, lower warranty costs, and reduced scrap and rework costs. These lead to lower total cost for the product or service, which leads to more competitive pricing, which results in higher revenue for the company. Companies that manage their processes improve the bottom line on their income statements.

EXAMPLE 9.5 Costs of Quality

Over an 11-year period, airlines have been trying to reduce the number of lost bags (Figure 9.11). As of the year 2001, the average number of lost bags per 1,000 passengers was 3.79. In other words, 99.62% of passengers and their luggage arrive at the same airport at the same time. Why would an airline company be interested in improving operations from 99.62%? Why isn't this good enough? What are the costs of quality in this situation?

In the case of lost luggage, the types of quality costs are numerous. For instance, if a passenger is reunited with her luggage after it arrives on the next flight, the costs of quality include passenger inconvenience, loss of customer goodwill, and perhaps the cost of a gesture of goodwill on the part of the airline in the form of vouchers for meals or flight ticket upgrades.

As the scenario becomes more complex, a wider array of quality costs exists. For example, if an airline must reunite 100 bags per day with their owners at a hub airport such as Atlanta or New York, the costs can be enormous. The expenses associated with having airline employees track, locate, and reroute lost bags might be as high as 40 person-hours per day at \$20/hour for a cost of \$800/day. Once located, the luggage must be delivered to the owners, necessitating baggage handling and delivery charges. If a delivery service were to charge \$1 per mile for the round-trip, in larger cities the average cost of delivering that bag to a customer might be \$50. One hundred deliveries per day at \$50 per delivery equals \$5,000. Just these two costs total \$5,800/day, or \$2,117,000 per year! This doesn't include the cost of reimbursing customers for incidental expenses while they wait for their bags, the costs of handling extra paperwork to settle lost baggage claims, loss of customer goodwill, and negative publicity. Add to this figure the costs associated with bags that are truly lost (\$1,250 per bag for domestic flights and \$9.07 per pound of checked luggage for international travelers), and the total climbs even higher. In addition, these figures are merely the estimated costs at a single airport for a single airline!

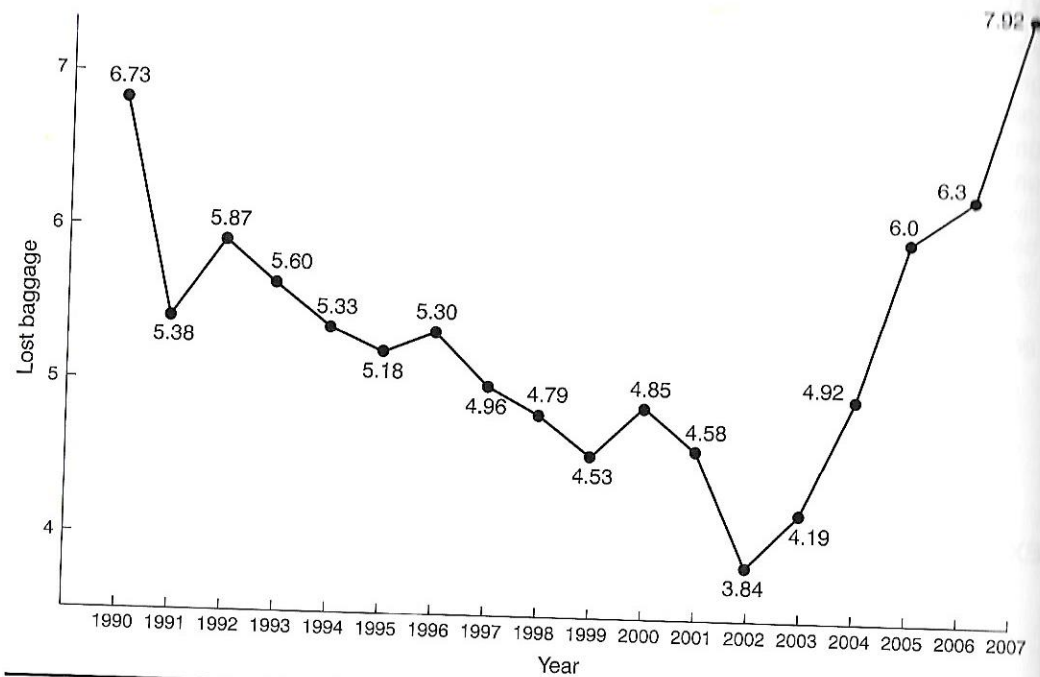


Figure 9.11 Mishandled Luggage (per 1,000 Passengers)

Source: K. Choquetter, "Claim Increase for Lost Baggage Still Up in the Air," *USA Today*, March 17, 1998, and <http://airconsumer.ost.dot.gov/>.

Consider the more intangible effects of being a victim of lost luggage. If customers view airline baggage-handling systems as a black hole where bags get sucked in only to resurface sometime later, somewhere else, if at all, then consumers will be hesitant to check bags. If the ever-increasing amount of carry-on luggage people board the plane with is any indication, fears of lost luggage do exist. Carry-on baggage presents its own problems, from dramatically slowing the process of loading and unloading of the plane, to shifting in-flight and falling on an unsuspecting passenger when the overhead bins are opened during (or after) the flight, to blocking exits from the airplane in an emergency. These costs, such as fees for delayed departure from the gate or liability costs, can be quantified and calculated into a company's performance and profit picture. Is it any wonder that airlines have been working throughout the past decade to reduce the number of lost bags?

Two factions often find themselves at odds with one another when discussing quality. There are those who believe that no "economics of quality" exists, that it is never economical to ignore quality. There are others who feel that it is uneconomical to have 100% perfect quality all the time. Cries of "Good enough is not good enough" will be heard from some, while others

will say that achieving perfect quality will bankrupt a company. Should decisions about the level of quality of a product or service be weighed against other factors such as meeting schedules and cost? To answer this question, an informed manager needs to understand the concepts surrounding the costs of quality. Investigating the costs associated with quality provides managers with an effective method to judge the economics and viability of a quality improvement system. Quality costs serve as a baseline and a benchmark for selecting improvement projects.

HOW ARE QUALITY COSTS DEFINED?

Cost of quality, poor-quality cost, and cost of poor quality are all terms used to describe the costs associated with providing a quality product or service. A quality cost is considered to be any cost that a company incurs to ensure that the quality of the product or service is perfect. Quality costs are the portion of the operating costs brought about by providing a product or service that does not conform to performance standards. Quality costs are also costs associated with the prevention of poor quality.

The most commonly listed costs of quality include scrap, rework, and warranty costs. As Figure 9.12 shows, these easily identified quality costs are merely the tip of the iceberg. Quality costs can be measured and tracked and then used to guide improvement efforts.

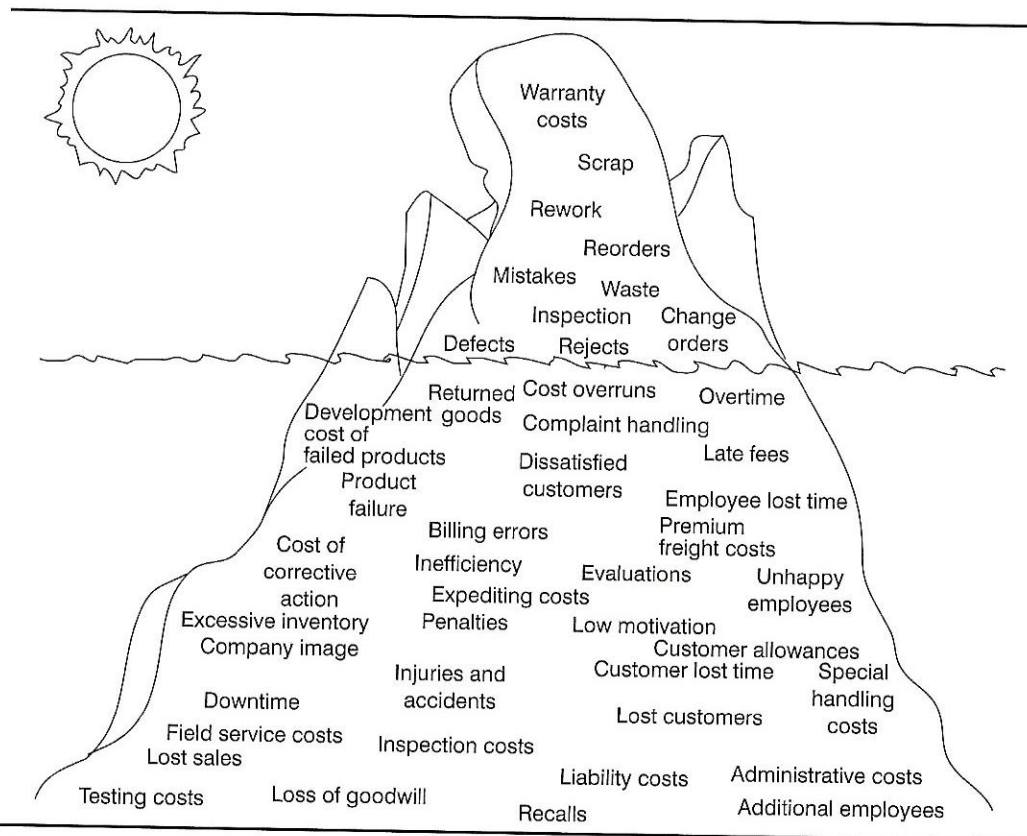


Figure 9.12 The Iceberg of Quality Costs

- Rewriting an insurance policy to match customer expectations
- Redesigning a faulty component that never worked right
- Reworking a shock absorber after it was completely manufactured
- Retesting a computer chip that was tested incorrectly
- Rebuilding a tool that was not built to specifications
- Repurchasing because of nonconforming materials
- Responding to a customer's complaint
- Refiguring a customer's bill when an error was found
- Replacing a shirt the dry cleaner lost
- Returning a meal to the kitchen because the meat was overcooked
- Retrieving lost baggage
- Replacing or repairing damaged or lost goods
- Correcting billing errors
- Expediting late shipments by purchasing a more expensive means of transportation
- Providing on-site assistance to customers experiencing problems in the field
- Providing credits and allowances

Figure 9.13 Examples of Quality Costs

Quality costs can originate anywhere within a company. No single department has exclusive rights to making mistakes that might affect the quality of a product or service. Even departments far removed from the day-to-day operations of a firm can affect the quality of a product or service. For example, a receptionist, often the first person with whom a customer has contact, can affect a customer's perceptions of the firm. The cleaning people provide an atmosphere conducive to work. Anytime a process is performed incorrectly, quality costs are incurred. Salespeople must clearly define the customer's needs as well as the capabilities of the company. Figure 9.13 provides a few more examples of quality costs. Every department within a company should identify, collect, and monitor quality costs that are within its control.

Quality, in both the service and the manufacturing industries, is a significant factor in enabling a company to maintain and increase its customer base. Measuring and tracking key customer success indicators begins with the prevention of poor quality. As a faulty product or service finds its way to the customer, the costs associated with the error increase. Preventing the nonconformity before it is manufactured or prepared to serve the customer is the least costly approach to providing a quality product or service. Potential problems should be identified and dealt with during the design and planning stage. Effort is required to solve an error at this phase of product development, but in most cases the changes can be made before costly investments in equipment or customer service are made.

If nonconformity of a product or service is located during the manufacturing cycle, or behind the scenes at a service industry, then the nonconformity can be corrected internally. The cost is greater here than at the design phase because the product or service is in some stage of completion. Product may need to be scrapped or, at a minimum, reworked to meet the customers' quality expectations.

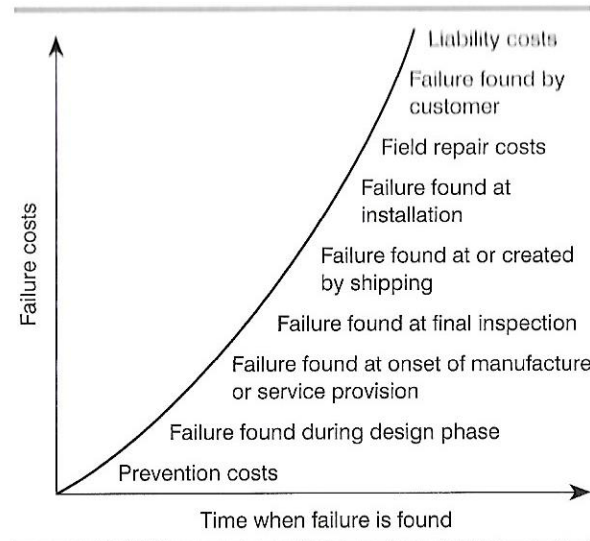


Figure 9.14 Increases in Quality Costs as Faulty Product Reaches Consumer

If a nonconforming product or service reaches the customer, the company that is providing it incurs the greatest costs. Customers who locate this nonconformity will experience a variety of feelings, the least of which will be dissatisfaction. Even if the customers are later satisfied by being provided with a new product, a repaired existing product, or a repetition of the service, the damage has already been done to the company's reputation. Disgruntled customers rarely fail to tell others about their experience. Mistakes that reach the customer result in the loss of goodwill between the present customer, future customers, and the provider. Failure cost increases as a function of the failure's detection point in the process (Figure 9.14). Mistakes, scrap, and rework are measures of performance that most organizations use to indicate where improvement is needed.

EXAMPLE 9.6 Human Error or Poor Design?

Repainting a room is a time-consuming if not costly task. Paints come in a wide variety of colors, types, and finishes. Consistently mixing paints to specific formulas allows for uniformity even when multiple individual gallons of paint are purchased. To ensure true colors, careful research by paint developers often results in different tint bases needed for different colors.

Recently, a home owner purchased four gallons of a custom-mixed, off-white paint in order to paint their front room and entry hall. During the painting process, the paint developed noticeable variations: large areas looked more gray than white. This was odd since the previous color on the wall was the same off-white and the four new gallons were all mixed and purchased at the same time. A very close inspection of the fine print on the label of one of the new cans of paint revealed that the tint base used for that can was different for the other three cans. Two types of tint base were available for this paint, one

for whites and one for colors. The clerk at the paint store had inadvertently mixed an incorrect can.

The costs of quality associated with this situation are many: the customer's time to return to the paint store for another can of paint, the time to repaint the walls, the store's time to mix another can of paint, the cost of refunding the money on the first can of paint, record keeping for inventory and billing, and so on. This situation was further compounded when the original store discovered it did not have any cans of the correct tint base available. They had to send an employee to a store 30 minutes away to retrieve additional inventory.

At first glance, these costs of quality should be placed under "operator error." Doing so would result in follow-up training for the operator who inadvertently mixed the wrong tint base. Chastised, the operator would pledge not to make such a mistake in the future. However, follow-up of this sort may fall short of preventing other errors of the same kind at other stores by other employees. Why?

Assigning operator error to these costs of quality fails to uncover the root cause of the problem. Remember, it took "a very close inspection of the fine print on the label" to discover the paint tint-base type. At first, second, and even third glance, the labels of the two tint-base types appear identical. Both labels are the same color, red with gold lettering. Boldly displayed on both labels, the company logo, the name of the paint, and the luster level of the paint (flat, semi, or glossy) are identical in color, font, font size, and word choice. Only a single word in white in 10-point font size in a phrase at the bottom of the label is different. It took careful inspection, following the painting error, to determine the difference. On a busy day, it's easy to see that the single tiny word might be overlooked by an overworked clerk. The design of the label abounds in human factors or ergonomics errors. The key to eliminating the costs of quality in this situation is to redesign the label to make reading it error proof. This would be the only way to avoid these costs of quality in the future, regardless of the store, the employee, or the customer request.

WHAT TYPES OF QUALITY COSTS EXIST?

The costs associated with prevention of nonconformities, with appraisal of products or services as they are being produced or provided, and with product failure can be defined. Less well defined but equally important are intangible costs, those that involve a company's image. With an understanding of these four types of costs, a manager can make decisions concerning the implementation of improvement projects. Using quality costs, a manager can determine the usefulness of investing in a process, changing a standard operating procedure, or revising a product or service design.

Prevention Costs

Prevention costs are costs that occur when a company is performing activities designed to prevent poor quality in products or services. Prevention costs are often seen as front-end costs designed to ensure that the product or service is created to meet customer requirements. Examples of such costs are design reviews, education and training, supplier selection and capability

reviews, and process improvement projects. Prevention activities must be reviewed to determine whether they truly bring about improvement in the most cost-effective manner.

Prevention efforts try to determine the root causes of problems and eliminate them at the source to avoid recurrences. Preventing poor quality keeps companies from incurring the cost of doing it over again. Essentially, if they had done it right the first time, they would not have to repeat their efforts. The initial investment in improving processes is more than compensated by the resulting cost savings.

Appraisal Costs

Appraisal costs are costs associated with measuring, evaluating, or auditing products or services to ensure that they conform to specifications or requirements. Appraisal costs are the costs of evaluating the product or service during the production of the product or the providing of the service to determine if, in its unfinished or finished state, it is capable of meeting the requirements set by the customer. Appraisal activities are necessary in an environment where product, process, or service problems are found. Appraisal costs can be associated with raw materials inspection, work-in-process (activities-in-process for the service industries) evaluation, or finished product reviews. Examples of appraisal costs include incoming inspection, work-in-process inspection, final inspection or testing, material reviews, and calibration of measuring or testing equipment. When the quality of the product or service reaches high levels, then appraisal costs can be reduced.

Failure Costs

Failure costs occur when a completed product or service does not conform to customer requirements. Two types exist: internal and external. **Internal failure costs** are costs associated with product nonconformities or service failures found before the product is shipped or the service is provided to the customer. Internal failure costs are the costs of correcting the situation. The failure costs may take the form of scrap, rework, remaking, reinspection, or retesting. **External failure costs** are costs that occur when a nonconforming product or service reaches the customer. External failure costs include the costs associated with customer returns and complaints, warranty claims, product recalls, or product liability claims. Since external failure costs have the greatest impact on the corporate pocketbook, they must be reduced to zero. Because they are highly visible, external costs often receive the most attention. Unfortunately, internal failure costs may be seen as necessary evils in the process of providing good-quality products or services to the consumer. Nothing could be more false. Doing the work twice, through rework or scrap, is not a successful strategy for operating in today's economic environment.

Intangible Costs

How a customer views a company and its performance will have a definite impact on the company's long-term profitability. *Intangible costs—hidden costs associated with providing a nonconforming product or service to a customer—involve the company's image.* Because they are difficult to identify and quantify, intangible costs of poor quality are often omitted from

quality cost determinations. However, these costs must be neither overlooked nor disregarded. Is it possible to quantify the cost of missing an important deadline? What will be the impact of quality problems or schedule delays on the company's image? Intangible costs of quality can be three or four times as great as the tangible costs of quality. Even if these costs can only be named, with no quantifiable value placed on them, it is important that decision makers be aware of their existence.

The four types of quality costs are interrelated. In summary, *total quality costs are considered to be the sum of prevention costs, appraisal costs, failure costs, and intangible costs.* Figure 9.15 shows some of the quality costs from Figure 9.12 in their respective categories. The costs associated with poor quality are tangible and measurable. Poor quality costs an organization and its customers time and money. Poor quality affects the success of any business. Costs of quality come from a wide variety of sources. Some are the result of basic

Prevention Costs	Failure Costs
Quality planning	<i>Internal:</i>
Quality program administration	Rework
Supplier-rating program administration	Scrap
Customer requirements/expectations market research	Repair
Product design/development reviews	Material-failure reviews
Quality education programs	Design changes to meet customer expectations
Equipment and preventive maintenance	Corrective actions
	Making up lost time
	Rewriting a proposal
	Stocking extra parts
	Engineering change notices
	<i>External:</i>
	Returned goods
	Corrective actions
	Warranty costs
	Customer complaints
	Liability costs
	Penalties
	Replacement parts
	Investigating complaints
	Intangible Costs
	Customer dissatisfaction
	Company image
	Lost sales
	Loss of customer goodwill
	Customer time loss
	Offsetting customer dissatisfaction

Figure 9.15 Categories of Quality Costs

organizational capabilities or the lack of them. These can be remedied only by improving the skills and tools of the people involved so that they can improve business processes. Variation is another source of quality costs. Poor industrial processes that are not capable of producing products or providing services to customers show high levels of scrap, rework, and field failures. Sometimes this is due to a lack of engineering design, and sometimes customer requirements have not been clearly transmitted throughout the organization. In the service part of an organization, business process variations lead to poor financial performance. Process improvements are necessary to streamline service processes and eliminate errors. Poor product engineering or process design results in quality costs. Within these systems there are non-value-added activities, poorly documented processes, and inadequate procedures. Process management and improvement (Chapter 11) is crucial to eliminating these sources of quality costs. Supplier capabilities play a role in quality costs. The lack of quality suppliers can lead to late deliveries, poor-quality components and parts, and poor service. Effective organizations identify and address the quality costs that plague their organization.

Investments made to prevent poor quality will reduce internal and external failure costs. Consistently high quality reduces the need for many appraisal activities. Suppliers with strong quality systems in place can reduce incoming inspection costs. High appraisal costs combined with high internal failure costs signal that poor-quality products or services are being provided. Efforts made to reduce external failure costs will involve changes to efforts being made to prevent poor quality. Internal failure costs are a portion of the total production costs, just as external failure costs reduce overall profitability. When dealing with quality costs, companies need to ensure that appraisal costs are well spent. Companies with a strong appraisal system need to balance two points of view and consider the trade-off: Is the company spending too much on appraisal for its given level of quality performance, or is the company risking excessive failure costs by underfunding an appraisal program? In all three areas—prevention, appraisal, and failure costs—the activities undertaken must be evaluated to ensure that the efforts are gaining improvement in a cost-effective manner. Figure 9.16 reveals that as quality

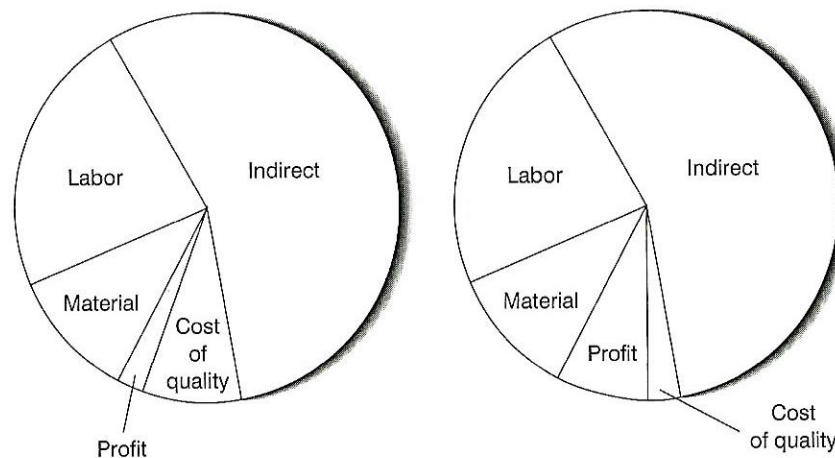


Figure 9.16 Cost of Quality versus Profit

costs are reduced or, in the case of prevention quality costs, invested wisely, overall company profits will increase. The savings associated with doing it right the first time show up in the company's bottom line.

EXAMPLE 9.7 Uncovering Quality Costs

A sheet metal stamping firm recently bid \$75,000 as the price of providing an order of aluminum trays. After stamping a large number of these trays, the company investigated their costs and determined that if production continued, the cost of providing the order would be \$130,000! This was nearly double what they had bid.

They immediately set out to figure out what was causing such a dramatic increase in their costs. They investigated their product design and found it to be satisfactory. Prevention costs associated with product design and development were negligible. The customer had not returned any of the completed trays. There were no customer complaints and therefore no corrective-action costs. Their investigation showed that external failure costs were zero. Appraisal costs were normal for a product of this type. Incoming material and in-process inspection costs were similar to the amount projected. The product had not required any testing upon completion.

It was only when they investigated the internal failure costs that the problem became apparent. At first, they felt that internal failure costs were also negligible since there was almost no scrap. It wasn't until a bright individual observed the operators feeding the trays through the stamping operation twice that they were able to locate the problem. When questioned, operators told the investigators that they knew that due to inappropriate die force, the product was not stamped to the correct depth on the first pass. Since the operators knew that the trays would not pass inspection, they decided among themselves to rework the product immediately, before sending it to inspection. The near doubling of the manufacturing costs turned out to be the internal failure costs associated with reworking the product.

Essentially, the company incurred a cost of quality equal to the standard labor and processing costs of the operation. To meet specifications, a significant number of trays were being handled and processed twice. Only by preventing the need for double processing can the costs of quality be reduced.

This type of internal failure cost actually began as a prevention cost. If the manufacturer had investigated the capability of the stamping operation more closely, they would have determined that maintenance work was necessary to improve the machine's performance and therefore improve product quality.

WHAT DOES A FORMAL QUALITY COST MEASUREMENT SYSTEM LOOK LIKE?

In the struggle to meet the three conflicting goals of achieving high quality, low cost, and timely delivery, identifying and then quantifying quality costs helps to ensure that quality does not suffer. When quality costs are discussed as a vague entity, the importance of their relation to cost and delivery is unclear. By quantifying quality costs, all individuals producing a product or providing a service understand what it will cost if quality suffers. True cost reduction occurs when the root causes of nonconformities are recognized and eliminated.

A quality cost measurement system should be designed to keep track of the different types of quality costs. The ability to define and quantify quality costs enables organizations to manage quality more effectively. Once quantified, these costs can be used to determine which projects will allow for the greatest return on investment and which projects have been most effective at improving processes, lowering failure rates, and reducing appraisal costs. A quality cost measurement system should use quality costs as a tool to help justify improvement projects.

Quantifying quality costs will help organizations zero in on which problems, if solved, will provide the greatest return on investment. A quality cost measurement system should try to capture and then reduce significant quality costs. Effective cost reduction occurs when the processes providing products or services and the related support processes are managed correctly. Measures are key to ensuring that the processes are performing to the best of their capability. After all, what is measured can be managed. Once the cost of quality data has been measured and tabulated, the data can be used both to select quality improvement projects and to identify the most costly aspects of a specific problem. Failure costs are prevalent in all aspects of providing goods and services, from design and development to production and distribution. Support processes, such as marketing and human resources, can also be the source of quality costs. When justifying improvement projects, look for rework, waste, returns, scrap, complaints, repairs, expediting, adjustments, refunds, penalties, wait times, and excess inventory. Cost improvement efforts should focus on locating the largest cost contributors. Try not to be tempted to spend time chasing insignificant, incremental measures of quality costs. Use a Pareto analysis to identify the projects with the greatest return on investment, and tackle those first.

Those establishing a quality cost measurement system need to keep in mind that the success of such a system is based on using quality cost information to guide improvement. Each cost has a root cause that can be first identified and then prevented in the future. Remember that preventing problems in the first place is always cheaper. Those implementing a quality cost measurement system need to establish a basic method of identifying correctable problems, correcting the problems, and achieving a new level of performance.

HOW ARE QUALITY COSTS UTILIZED FOR DECISION MAKING?

All initiatives undertaken by an organization must contribute to its financial success. Quality costs can be used as justification for actions taken to improve the product or service. Typically, investments in new equipment, materials, or facilities require the project sponsor to determine which projects will provide the greatest return on investment. These calculations traditionally include information on labor savings, on production time savings, and on the ability to produce a greater variety of products with better quality. The "better quality" aspect of these calculations can be quantified by investigating the costs of quality, particularly the failure costs. It is important to determine the costs of in-process and incoming material inspection, sorting, repair, and scrap, as well as the intangible costs associated with having a nonconforming product or service reach the customer. Making a decision with more complete quality information, such as product appraisal costs, can help determine the true profitability of a product or service.

Costs of Quality

Prevention

Process planning
Process control
Training

Appraisal

Inspection
Auditing

Internal Failures

Scrap
Rework
Overtime

External Failures

Cost to customer
Complaint adjustments
Returned material
Costs to do it over again

Intangible Costs

Reputation

Figure 9.17 JQOS Costs of Quality

Once quality costs have been identified, those reviewing the project can determine whether the money for the project is being well spent to contribute to the growth of the company. Identifying and then quantifying quality costs has a twofold benefit: Cost savings are identified, and quality is improved. By improving the quality performance of a company, the company also improves its quality costs.

With any quality measurement or improvement system, the information and improvements realized need to be applied to any future activities. Dr. Deming's Plan-Do-Study-Act cycle plays a significant role. Once an organization has planned and implemented improvements, it must act upon the improvements to ensure that future activities maintain the new level of performance and the decreased level of quality costs. Identifying quality costs allows management to judge improvement investments and profit contributions. A quality program is only as valuable as its ability to contribute to customer satisfaction and, ultimately, to company profits.

How Do We Know It's Working?

The leaders at JQOS recognize the importance of tracking costs of quality. They have measures of performance related to the five types of quality costs: prevention, appraisal, internal failure, external failure, and intangible costs (Figure 9.17). They use this quality cost information for decision making. As with their other measures, as they study process performance, they make changes and improvements that align with their strategic plans.

For instance, they have made significant changes in how shafts are packaged and shipped, significantly reducing the damage caused by poor handling after the shafts leave

the plant. This decision came about after the owner visited a very good customer. During a courtesy tour of the plant, they visited shipping. There on the table, to his horror, lay a broken box of very expensive shafts. The box could hardly be called a box any more, consisting of mangled cardboard held together by bands of steel. The shafts, their protective wrapping sleeves missing or torn, were covered in nicks, scratches, and dents caused by the bands of steel rubbing against their unprotected surfaces.

With his heart in his throat, the owner profusely apologized to the plant manager. The manager responded that they had never had trouble before. The total cost of the lack of quality in this one incident: \$15,000. This included money for the scrapped parts, original shipping and reshipping costs, money spent to process the parts through the plant the first time and then to do it over again, money spent to rearrange production in the plant and work overtime to create replacement shafts, and money spent to make repeat customer visits to show support and check on future shipments.

A root cause investigation into the situation revealed several problems. A new and incompletely trained shipping clerk had been left on his own despite specific instructions that he was to ship no parts on his own. This new clerk had not wrapped the protective sleeves around the parts before putting them in the box and banding it. The second critical error occurred when the shipping company contracted to ship the parts subcontracted the job to a less qualified shipper. This shipper significantly damaged the box in shipment and then placed the metal bands around the parts to hold them together until they got to the customer's plant.

The changes made to the process included enhanced training procedures and a sign-off form from the supervisor for shipments prepared by any new clerk until that clerk completed their training. Also, a new type of protective sleeve is now being used. Shipments of shafts over a certain size now are packaged completely differently, allowing more support for the heavy weight of the shafts. A different shipper has been contracted and provided with specific shipping instructions. In the year since this event occurred, no shafts have been damaged in shipping. Rather than react to this incident as a single occurrence, cost-of-quality information was used to guide a permanent improvement.

HOW DO THE MALCOLM BALDRIGE NATIONAL QUALITY AWARD CRITERIA SUPPORT MEASUREMENT, ANALYSIS, AND KNOWLEDGE MANAGEMENT FOR EFFECTIVE ORGANIZATIONS?

The Malcolm Baldrige National Quality Award (MBNQA) criteria encourage organizations to take a careful look at their knowledge management systems, particularly the measures of performance used as indicators of process improvement. In Section 4.0, Measurement, Analysis, and Knowledge Management, organizations are asked to describe how their performance measurement system operates. They are asked to provide details about how their organization gathers, analyzes, and uses performance data and information. Organizations

must provide information about their performance measurement system, including how it is used to effectively understand, align, and improve performance at all levels and in all parts of the organization. They are asked to describe how their organization analyzes performance data and information to assess and understand overall organizational performance.

Knowledge management and information analysis are crucial for creating and maintaining an effective organization with an unwavering focus on the customer. Gathering and analyzing information are not limited to one area of the organization. When evaluating how effective an organization's knowledge management and information analysis system is, ask these questions based on the MBNQA criteria:

Leadership

- How does leadership analyze and use information?
- What information are leaders analyzing and using?
- Are leaders converting information into appropriate policies and actions?

Strategic Planning

- How does the strategic plan analyze and use information?
- How does the strategic plan react to new information?

Customer and Market Focus

- Is the organization gathering useful customer and market information?
- How is this information gathered and disseminated?
- Is useful customer and market information communicated to employees in a manner that improves their job performance and enhances customer service?

Measurement, Analysis, and Knowledge Management

- How does the organization measure, analyze, and improve performance?
- How does the organization select, collect, analyze, align, integrate, and use information in day-to-day operations?
- What comparative data is used? Why was it chosen?
- When and how are organizational performance and capabilities reviewed?
- How are review findings integrated into operations?
- How do employees access needed information?
- How is information kept reliable, secure, and accessible?
- How are information accuracy, integrity, reliability, timeliness, security, and confidentiality kept?
- How are emergencies dealt with?
- How are employees gathering, analyzing, disseminating, and using information related to key processes?
- Does the organization have communication systems in place that enhance the employees' ability to obtain, analyze, and use information?

Workforce Focus

- Do employee policies and reward systems support the use and analysis of information related to key processes during day-to-day activities?
- Do employee policies and reward systems support the use and analysis of information during continuous improvement activities?

Process Management

- Have key processes supporting the analysis and use of information been identified and/or improved?
- Is the organization gathering appropriate information concerning key processes?
- Is the information gathered being used to support appropriate improvement efforts?

Results

- Do the business results associated with key processes reflect the judicious analysis and use of information?
- Is the successful integration of customer and market information into the strategic plan shown by the business results?

LESSONS LEARNED

Metrics are powerful tools. Metrics help effective organizations see the difference between desires, perceptions, intuitive guessing, and reality. Fact-based decision making is sound decision making. Dr. Shewhart showed that metrics can be used to determine whether a process is stable and predictable. He proved that metrics show how much variation is present in a process. Because they help people understand processes, metrics help identify problems that might have been overlooked. Metrics validate what is important and what is not. They also validate whether our processes are performing to expectations. Metrics are the link between process inputs and process outputs. By establishing a baseline, they help us evaluate the current situation and communicate the changes necessary. Metrics show whether the gains that were made have been retained. Metrics don't leave room for excuses. They show process performance at its best and at its worst.

Effective organizations have learned that it is essential to measure performance in all areas of the company. Performance measures allow for appropriate accountability and provide important information about organizational performance in all areas of the organization, including finance, operations, and support services. Measures enable effective organizations to complete their goals and objectives as established in their strategic plan. Cost-of-quality studies can reveal areas where organizational improvement is needed.

Measures are indicators of performance.

1. Good measures of performance tell how well something is performing its intended purpose.
2. Good measures enable organizations to determine the impact of changes.

3. Good measures tell leaders whether assets have been correctly allocated.
4. The Balanced Scorecard approach emphasizes the importance of having financial, customer, internal processes, and learning and growth.
5. Gap analysis is the study of the difference between what was planned and what actually occurred.
6. Costs of quality are the costs associated with providing a product or service.
7. Five types of quality costs exist: prevention, appraisal, internal failure, external failure, and intangible costs.
8. Quality costs should be utilized for decision making.

Are You a Quality Management Person?

Measures of performance and costs of quality can play a role in your day-to-day activities. Check out these questions and find out whether you are a quality management person. How do you answer them on a scale of 1 to 10?

Can you identify measures of performance for your key day-to-day processes?

1 2 3 4 5 6 7 8 9 10

Do you regularly measure whether you are meeting your personal goals and objectives?

1 2 3 4 5 6 7 8 9 10

Do you regularly measure whether you are meeting your work-related goals and objectives?

1 2 3 4 5 6 7 8 9 10

Do you measure the impact of changes that you have made in your life?

1 2 3 4 5 6 7 8 9 10

Do you think about balancing your scorecard? (What measures would be on your scorecard?)

1 2 3 4 5 6 7 8 9 10

Do you perform a gap analysis to determine the gap between what you had planned and what you actually accomplished?

1 2 3 4 5 6 7 8 9 10

Have you identified any prevention costs associated with the activities you perform?

1 2 3 4 5 6 7 8 9 10

Have you identified any appraisal costs associated with your activities?

1 2 3 4 5 6 7 8 9 10

Have you identified any internal failure costs associated with your activities?

1 2 3 4 5 6 7 8 9 10

Have you identified any external failure costs associated with your activities?

1 2 3 4 5 6 7 8 9 10

Have you identified any intangible costs associated with your activities?

1 2 3 4 5 6 7 8 9 10

Do you consider your identified costs of quality when making decisions or changes?

1 2 3 4 5 6 7 8 9 10

Chapter Questions

1. What did B. C. Forbes mean when he said, "If you don't drive your business, you will be driven out of business"?
2. How do effective organizations use performance measures?
3. What is the difference between process and results measures?
4. Why is an effective performance measurement system necessary?
5. What performance measures does the organization you work for use?
6. How does your organization use performance measures?
7. Create a set of measures, based on the Balanced Scorecard and Example 9.1, for a fast-food restaurant.
8. Create a set of measures, based on the Balanced Scorecard and Example 9.1, for a movie theater.
9. What is a prevention cost? How can it be recognized? Describe where prevention costs can be found.
10. What is an appraisal cost? How can it be recognized? Describe where appraisal costs can be found.

11. What are the two types of failure costs? How can they be recognized? Describe where these costs can be found.
12. Describe the relationship among prevention costs, appraisal costs, and failure costs. Where should a company's efforts be focused? Why?
13. How are quality costs used for decision making?
14. What should a quality cost system emphasize?
15. What are the benefits of having, finding, or determining quality costs?

SECTION 4.0: MEASUREMENT, ANALYSIS, AND KNOWLEDGE MANAGEMENT

The Measurement, Analysis, Knowledge section of the MBNQA criteria addresses an organization's information management and performance measurement systems. It also examines how an organization analyzes and utilizes performance data and information.

The key goals of this section are to:

1. Examine the key aspects of the information management and performance measurement systems of Remodeling Designs, Inc. and Case Handyman Services.
2. Examine how Remodeling Designs/Case Handyman analyze performance data and information.

This section was created by Jen Meyer, Molly Schuetz, Erich Eggers, Joan Cordonnier, Mike Cordonnier, and Donna Summers.



Information and Analysis Questions

1. What methods do you use to gather performance data and information? Are the methods the same for both Case Handyman and Remodeling Designs?
2. How large a role does the actual data gathered play in your overall organization? Where exactly in your organization is the data used?
3. Who in your company collect/compile data? What information is important to them? What do they need to know about your company? What do they need to know about your customers? What do they need to know about your competitors?
4. Give examples in which your companies use the data collected to make management (leadership) decisions.
5. How do your companies ensure that the data gathered is helping you work toward your mission statement?
6. How does the analysis of your information help to ensure customer satisfaction?
7. How do your companies use the results found to show where you are now and to project where you will be in the future?
8. How do your companies gather data for monitoring daily operations?
9. How do your companies communicate important data and information between and among:
 - a. employees?
 - b. suppliers?
 - c. customers?

10. How do your companies use your data to track trends of problems within the company?
11. How do your companies ensure that the data/information gathered is accurate?
12. How do you make sure that the data collected is kept up to date and responded to in a timely manner?
13. Do your companies use benchmarking to compare themselves against other companies' data?
14. How do your companies gather, analyze, disseminate, and use information related to your key processes?
15. Has the information that you gathered, analyzed, disseminated, and encouraged enabled your companies to improve their performance as exhibited by the bottom line?

4.0 Measurement, Analysis, and Knowledge Management

The Measurement, Analysis, Knowledge Management category examines the information management and performance measurement systems of Remodeling Designs/Case Handyman, including how these organizations analyze performance data and information.

4.1 MEASUREMENT AND ANALYSIS OF ORGANIZATIONAL PERFORMANCE

This section describes how Remodeling Designs/Case Handyman provide effective performance management systems for measuring, analyzing, aligning, and improving performance at all levels and in all parts of the companies.

4.1a Performance Measurement

Remodeling Designs' and Case Handyman's first essential employee performance measurement tool is the Employee Review worksheet (see Figure 2 in the Chapter 7 Case Study). Annually, each employee is given this review sheet to complete. The employees use this review sheet to constructively rate themselves and identify improvements needed for the following year. They then discuss the review with either Mike or Erich in a performance review meeting. This worksheet changes yearly based upon what information the managers need that year to maintain happy employees and to complete jobs successfully.

The second performance measurement tool is the Valued Client Feedback survey. This survey provides Remodeling Designs feedback from the customer on completed jobs. The original format, based on another company's template, simply had the customer circle Yes/No and did not allow customers to truly rate the company's performance. After reviewing their company's needs, Remodeling Designs developed a new survey in order to track data that was important to them. The new survey allows customers to rate the company's performance on a scale from 1 = Strongly Disagree to 5 = Strongly Agree. The new format targets and supports the mission statement.

The Daily Log records the daily progression of a remodeling job. This log contains details such as weather conditions, temperature, inspections, labor on-site (subcontractors

and company employees), daily safety inspections, calls made, communications with customers, and a detailed listing of jobs performed. The log is essential to the company's alignment and communication processes. It allows Remodeling Designs and Case Handyman to track the amount of time needed for different phases of a project and helps them project costs for future projects.

Both companies use benchmarking to make improvements. Attending the multicompny national meeting Remodeler's Executive Roundtable (RER) allows Remodeling Designs to benchmark itself against other remodeling companies. This meeting has brought many successful changes to Remodeling Designs, for example, revision of the customer contract, increase in salaries, increase in the price of services, and the idea of incentive trips for employees. Another key item from RER is the "Percent-of-Completion" accounting system, a standard program used in the construction industry. This program shows the profit/loss ratio and allows Remodeling Designs to see a clearer picture of where they stand as an organization. Attendance at the RER meeting allows them to improve their performance as exhibited by the bottom line. Case Handyman is part of a 30-company franchise in which they benchmark against one another.

4.1b Performance Analysis

Remodeling Designs and Case Handyman use data to make management decisions in order to move their companies forward and be competitive in the market. Examples of how management uses this data are reallocation of manpower, preparation of financial data/budget, and advertisement/marketing. In addition, when Remodeling Designs and Case Handyman receive a lead, they conduct an extensive interview of what the customer's needs are, and they use this information to make managerial decisions on whether to accept or reject a job.

Remodeling Designs and Case Handyman are lacking in the area of data tracking. The items they do track are gross profit and referral/repeat business leads. The items they would like to track are the approval rating with customers (discussed in Section 4.1a) and the warranty costs. Case Handyman tracks performance data and collects data through a database. Remodeling Designs uses verbal communication and finds it difficult to track numbers. Thus, both companies collect pertinent information which they could track but do not. Time and manpower are also an issue. By tracking information, the companies could make valuable changes to increase the bottom line.

The second area for improvement is tracking trends of problems within Remodeling Designs. The Case Handyman office has a white board on which employees write problems. Remodeling Designs does not have an internal system for tracking problems. Externally, Remodeling Designs uses warranty to track problems after the fact. The warranty form is completed and submitted to the section in the binder.

4.2 INFORMATION AND KNOWLEDGE MANAGEMENT

This section describes how Remodeling Designs and Case Handyman ensure the quality and availability of needed data and information for employees, suppliers, and customers.

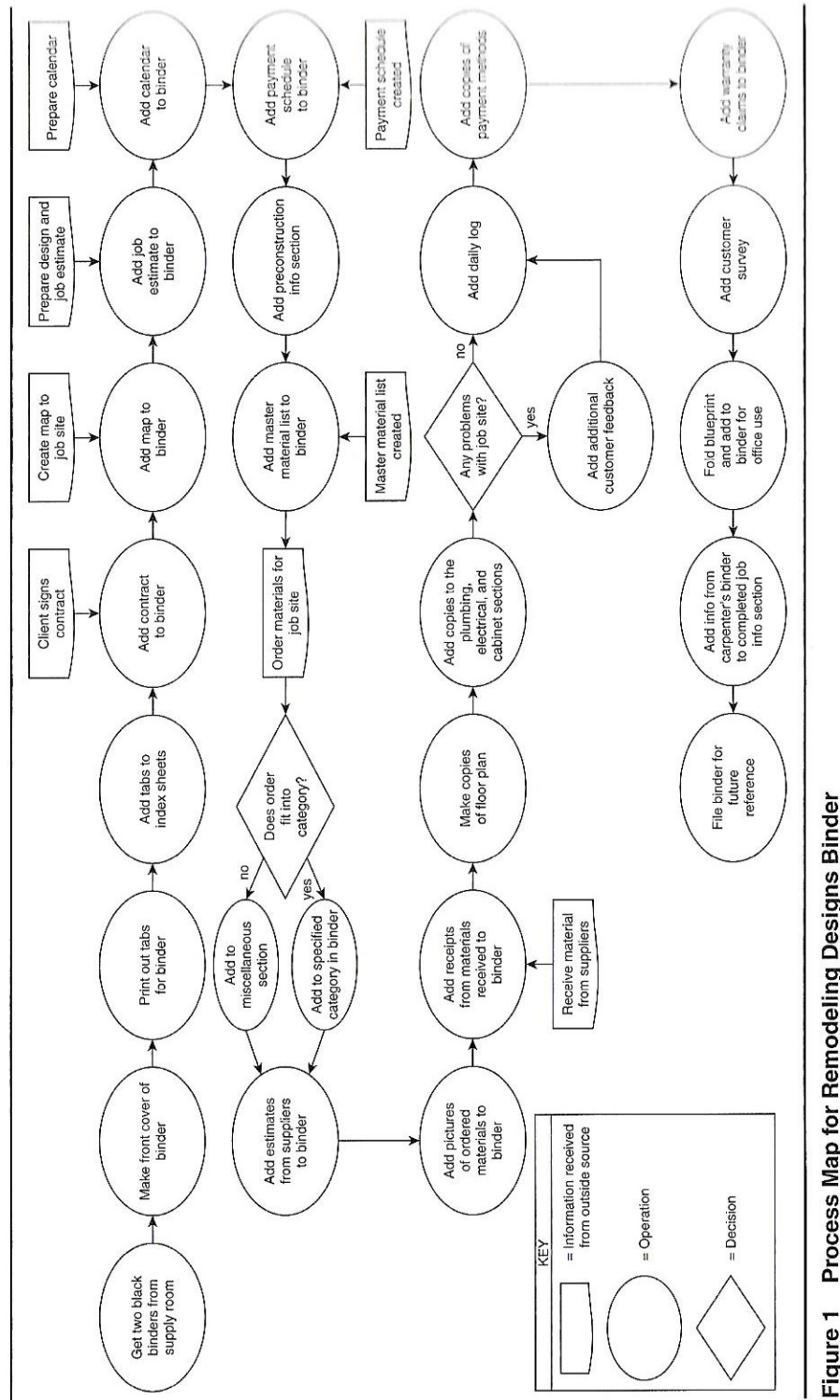


Figure 1 Process Map for Remodeling Designs Binder

4.2a Data Availability

Remodeling Designs and Case Handyman retain information about a job and its organization in a binder. The process of compiling the binder is an ongoing task throughout a job (Figure 1). From the moment that Remodeling Designs accept the job until the job is completed, this binder stores all information that the company might need. After the job has been completed, the binder is stored and is readily available for later referral. The company begins the process map by starting a binder for every job accepted and making the appropriate cover and tabs. Then they use the map to explore how all of the information is added to the binder, including the contract map to the job site, job estimate, calendar of events, payment schedule and copies of payment methods, estimates from suppliers, master list of materials, copies of the design, daily log, warranty claims, and customer survey. As mentioned above, the map ends with the binder being put into storage for future reference in case the customer needs an item repaired or wants to have another remodeling job completed.

The weekly meetings help employees exchange positive and negative aspects of jobs. Employees discuss issues such as job progression and problems at the site, and they forecast task completion for the following week. This exchange of information helps employees to communicate and to be in alignment with one another.

4.2b Hardware and Software Quality

In general, Remodeling Designs and Case Handyman use word processing, database, and presentation software to complete daily tasks. They also use Microsoft Project[®] to show a timeline of individual jobs. These jobs are tracked in areas such as what job has been completed, what needs to be completed, and which employee performs which key tasks. Remodeling Designs and Case Handyman also use the Percent-of-Completion accounting system to show their profit/loss ratio and to provide a clearer picture of where the company stands financially.