
SECTION 15

HUMAN RESOURCES AND QUALITY¹

W. R. Garwood
Gary L. Hallen

HUMAN RESOURCES AND CUSTOMER

- SATISFACTION 15.2
 - Purpose of this Section; Definition of Human Resources 15.2
 - Human Resources, Total Quality Management (TQM), and Business Success 15.2
 - Employee Involvement, Empowerment, and TQM 15.2
 - Human Resources and Healthy Human Relations 15.4

HEALTHY HUMAN RELATIONS: THE BUILDING BLOCKS 15.4

- Open Communications 15.4
- Trust 15.6
- Employment Stability 15.7
- Performance Appraisal and Coaching 15.8

DESIGN PRINCIPLES OF WORK AND

- ORGANIZATION 15.9
 - Design Work for Optimum Satisfaction of Employee, Organization, and Customer 15.9
 - Design a System That Promotes High Levels of Employee Involvement in All Levels in Continuous Improvement 15.10
 - Key Features of an Empowered, High-Performance Organization 15.15
 - The Role of Management in Supporting an Empowered Organization 15.18
 - The Role of the Empowered Manager versus the Traditional Management Role 15.20

- EMPLOYEE SELECTION 15.22
 - What the Employees Will Be Asked to Do 15.22

- The Selection Process 15.22
- The Transition to a Participative Work Environment 15.23

TRAINING IN A TOTAL QUALITY

- ORGANIZATION 15.23
 - Training Builds Capability 15.23
 - Training for Effectiveness 15.24
 - Measuring the Effectiveness of Training 15.24
 - Training for High-Performance Total Quality Environment 15.24

INTEGRATION OF THE COMMITTED PEOPLE WITH THE TOTAL QUALITY SYSTEM 15.25

- Building the Technical Skills 15.25
- Developing Social Skills for Better Personal Interactions 15.25
- Key Measures of Success 15.25

- POSITIVE REINFORCEMENT 15.26
 - Definition and Key Elements of Performance Management 15.26
 - Examples of Positive Reinforcement 15.27

- Intrinsic Motivation 15.27

HUMAN RESOURCES CAN BE THE MOST EFFECTIVE SUSTAINABLE COMPETITIVE ADVANTAGE 15.28

- REFERENCES 15.28

¹In the Fourth Edition, material for the section on human resources was supplied by Edward M. Baker.

HUMAN RESOURCES AND CUSTOMER SATISFACTION

Purpose of this Section: Definition of Human Resources. The purpose of this section is to present concepts, structures, methods, and tools which have helped successful organizations manage human resources effectively in directing their efforts toward the pursuit of high-quality products (including services).

“Human resources” will be used in this section to denote the collection of people and all associated networks and structures within which they work together to make a collective contribution to quality. The term includes all human relationships throughout an organization. (We should note that human resources is commonly used as a name of what was once called the “personnel department.” The term is also sometimes used to denote the focus of that department’s work. These meanings are not used in this section.)

Human resources are differentiated from hard assets—money, machinery, etc.—by several characteristics, including a warm spirit which can be a multiplier for continuous improvement as people learn to work effectively.

Human Resources, Total Quality Management (TQM), and Business Success.

There is plenty of evidence that business success and quality go hand in hand, and that TQM is a sound business strategy for achieving them both. The General Accounting Office, official auditor of operations for the United States Government, performed an evaluation of 20 companies who were high-scoring applicants for the Malcolm Baldrige National Quality Award (U.S. General Accounting Office 1991). High-scoring performance was equated with successful introduction of TQM in the respective companies. The study showed that for a substantial number of the companies under study, increased quality (on a number of dimensions) and improved financial performance were associated with the introduction of TQM.

Major TQM elements (as embodied in the criteria of the Malcolm Baldrige National Quality Award and other major state, national, and regional quality awards around the world) which relate directly to human resources, and the Baldrige points associated with them are

4.1	Human resource planning and evaluation	20 of 1000
4.2	High-performance work systems	45 of 1000
4.3	Employee education, training, and development	50 of 1000
4.4	Employee well-being and satisfaction	25 of 1000
6.3	Human resource results	35 of 1000

Every other item in the Baldrige scheme relies heavily on well-managed human resources for its achievement, most notably the items under category 7.0, Customer focus and satisfaction. Customer satisfaction depends in large part on the customer’s experience with organization contacts, service, and delivery.

Employee Involvement, Empowerment, and TQM. Total Quality Management results in primary focus on improvement efforts. Employee involvement is a part of TQM. A survey of Fortune 1000 companies revealed that 80 percent of these companies see employee involvement as part of TQM, and only 20 percent see TQM as part of their employee involvement initiatives (Lawler et al. 1995).

Employee empowerment is an advanced form of employee involvement. Empowerment is a condition in which the employee has the knowledge, skills, authority, and desire to decide and act within prescribed limits. The employee takes responsibility for the consequences of the actions and for contribution to the success of the enterprise.

In an empowered organization, employees take action to respond to the needs and opportunities they face every day regarding: customer satisfaction; safe operations; quality and value of products and services; environmental protection; business results; and continuous improvement of processes,

products, and people. The full potential of employee empowerment is realized in the empowered organization, when employees: align their goals with appropriate higher organization purpose; have the authority and opportunity to maximize their contribution; are capable of taking appropriate action; are committed to the organization's purpose; and have the means to achieve it. Thus, empowerment may be shown by the equation:

$$\text{Empowerment} = \text{alignment} \times \text{authority} \times \text{capability} \times \text{commitment}$$

Alignment. For employees to be aligned with the organization's higher purpose, they must:

- Know the needs of customers and other stakeholders
- Know, concur in, and be prepared to contribute effort to organization strategies, goals, objectives, and plans

Authority and Opportunity. For employees to have the authority and opportunity to maximize their contribution, the organization must so arrange affairs that:

- Individual authority, responsibility, and capability are consistent
- Barriers to successful exercise of authority have been removed
- The necessary tools and support are in place

The Ritz-Carlton Hotel Company authorizes every employee to spend up to \$2000 on the spot to resolve a customer problem so as to satisfy the customer. (This example of empowerment is most frequently invoked by employees working at the front desk). At Walt Disney World and other Disney operations, cast members (Disney-talk for "employees") are authorized to replace lost tickets, spilled food, and damaged souvenirs, even if the damage was caused by the guest. In the Ritz-Carlton and Disney organizations, such empowerment is seen as a direct means to satisfy a customer and to strengthen the identification of the employee with the vision, mission, and values of the company. In this sense, when employees have the authority and ability to solve direct customer problems of this sort, they acquire a sense of ownership of the organization.

Capability. Without capability, it can prove dangerous for employees to take some actions. Experiences at Eastman Chemical for example, have shown that peer feedback from fellow employees who have not been properly trained in giving feedback can be construed as harsh and not constructive. The organization objectives cannot be fulfilled if these employees do not know what actions to take or how to take them. Therefore, employees must have the capability to achieve appropriate goals. Empowered employees know how to do what needs doing, and have the skills and information to do it.

Training is a significant means of developing employee capability. At Ritz-Carlton, for example, all new employees undergo 48 hours of orientation training before they visit their workplace to begin work with customers face-to-face. After 21 days on the job, there is a 4-hour follow-up orientation, during which the first 21 days of experience are reviewed and discussed in light of the company's vision: "Ladies and gentlemen serving ladies and gentlemen."

Commitment. Commitment is a state of mind which is in evidence when the employee assumes responsibility for creating success, and takes initiative to achieve that success. For example, a Federal Express package containing house-closing documents from Florida is due in Albany, New York by Saturday at 10 a.m. for signing and return for the Monday closing. The package is misplaced at the local Federal Express office and is not located until midafternoon. The driver, called from his home to make the delivery, makes it, then, on his own initiative, waits for the document to be signed and repackaged, and carries the returned document to the Federal Express office for its return journey in time for the closing (Hoogstoel 1996).

The organization must earn the commitment of employees by continuously demonstrating that the employees are valued members of the organization, and by appropriately recognizing and rewarding them.

Human Resources and Healthy Human Relations. The immediate objective of human resource management is to achieve healthy human relations throughout the organization. Healthy human relations are relations which are open, positive, and efficient. Healthy human relations contribute to the employees' sense of ownership, to good business results, and even to what Deming (1986) called "joy in the workplace." In general, it is easier to achieve other organizational objectives in an environment of healthy human relations.

HEALTHY HUMAN RELATIONS: THE BUILDING BLOCKS

It took many organizations years to understand that a successful total quality system required a special culture within the organization to sustain continuous improvements. The literature of the 1970s and 1980s described the culture in which total quality systems flourished and the cultures where organizations were unable to sustain a successful total quality effort. Deming described these cultures in his writings, stating the lessons as the basis for his 14 points (Deming 1986). Juran wrote about the importance of diagnostic work in an open system (Juran 1989). Imai has stated that "In Total Quality Control (TQC), the first and foremost concern is with the quality of people. Instilling quality into people has always been fundamental to TQC. [An organization] able to build quality into its people is already halfway toward producing quality products." (Imai 1986) He states that workers should use their brains as well as their hands. Imai has discussed in some detail the subject of changing the corporate culture in such a way that everyone can participate positively in continuous improvements, and contribute to the competitiveness of the organization.

By putting these learnings into practice, organizations all over the world have accelerated the movement toward total quality systems. In the Malcolm Baldrige quality assessment criteria, considerable value is assigned to these cultural elements. Some cultural building blocks have been identified which support a total quality system: open communication, trust, employment stability, and performance appraisal and coaching.

Open Communications. Employees must have unobstructed access to pertinent information. At Springfield Remanufacturing Company (Stack 1992), the emphasis is on "open book management," which includes frank and systematic disclosure of company financial performance. The idea is to let everyone see the scorecard that the company is using and to let everyone contribute to the performance on that scorecard.

Communications must be clear, timely, believable, and supported by data and facts. Employees must have information that once was thought not relevant to their jobs—"there is not a need to know." This includes information about cost of product, cost of energy, time cost of money, waste levels, cost of waste, levels of customer satisfaction/dissatisfaction, cost per employee, earnings pressures, etc. In a total quality system, employees are expected to be process managers, problem solvers, and decision makers. Open communications are needed because employees need information to make the day-to-day decisions. Without the information they cannot fulfill their roles.

Members of empowered organizations need to understand clearly the organization's vision, mission, and objectives. At Mt. Edgecumbe School in Sitka, AK, the entire faculty and student body participated in fashioning the school's vision. Similarly, 600 employees in Eastman's filter products division contributed over 4500 ideas to help establish the division's mission, vision, principles, and values, which are still used many years later. As a result of their participation, employees understand these, and act as owners in helping to see that actions are taken consistent with the organization's mission and vision (Hoogstoel 1996).

The organization's vision, mission, and objectives should be clearly defined by senior management, then clearly communicated throughout the organization. Pertinent issues should also be communicated, such as what will happen to future employment if a job becomes unnecessary due to improvements. Open communications are developed as the managers take steps to achieve freedom from fear, establish data-oriented decision processes, and establish the habit of sharing business

goals and results. At Dana Corporation, the manager of each operating unit meets quarterly with all employees to review objectives and present the quarter's results against those objectives (Dana 1994). At Nissan in Smyrna, TN, the plant manager meets weekly with groups of employees at noon to talk about things that need to be communicated with employees. At Nissan, quarterly business meetings with all employees in various departments are held to review performance measures, costs, and other business targets.

Freedom from Fear. Ideas and feedback from employees are essential. These can only come when employees feel they can give their comments without exposure to blame, reprisals, or other consequences administered by a capricious management. One of the reasons Eastman Chemical abandoned its traditional performance appraisal system was that some employees expressed the fear that they might no longer be given above-average ratings if they shared their ideas with others within the evolving team environment. They feared their ideas might be ridiculed or cause others to view them as “troublemakers.” Whether well-founded or not, fear that management will view any negative comment as adverse is a powerful disincentive for employees to provide suggestions, challenge the status quo, or to offer accurate and honest feedback. This sort of fear in the organization inhibits employees from making improvement suggestions; employees fear that such suggestions will be viewed by management as criticism of managerial practices. Fear also can inhibit people from working toward improved efficiency; they may believe that such improvements will result in eliminating their jobs. Of course, fear of reprisal to an employee who makes a mistake could result in the employee covering up a mistake and, for example, shipping off-quality product to the customer.

Deming spoke of the importance of driving out fear so that everyone “could put in their best performance,” unafraid of consequences (Deming 1986). Some organizations promote a proactive approach where employees are requested to talk back to the system to question results, challenge old procedures, and to question management practices.

It has been estimated that upward of 80 percent of quality problems are caused by management action (the remainder attributable to what may fairly be called worker error). The implication is that the search for root causes of problems will, in upward of 80 percent of problems studied, lead to the management realm—the systems, procedures, policies, equipment, etc., under managerial control. For many traditional managers, this probing of problems may be too close to home. The potential embarrassment may prove too great and the departure from conditions of the past intolerable. The managers' reaction may be, consciously or not, to resist the activities of the problem-solving teams to the point of causing the teams to fear going further. Thus, it requires substantial effort and cultural change to replace this fear with open communications.

Data Orientation. Employees can best participate and work toward customer satisfaction and continuous improvement when they have knowledge of facts and data. Employees must know the facts and data regarding parameters such as costs, defect rates, and production and service capabilities, to be able to contribute to determining root causes, evaluating possible problem solutions, and making process improvements. Data orientation makes decisions objective and impersonal. Employees need easy access to these data. They also need training and coaching to help them understand the meaning of the data. To make proper interpretations and decisions, they need to understand and apply statistical concepts, such as the theory of variation.

At Eastman, every team has a set of key result measures that are endorsed by their management as being really the key measures of success. These measures are plotted, and employees have the ability to respond to the performance. Management information systems are in place so that all employees, including those in the lab and at the workstations, can access the data.

The concepts of variation, common causes, special causes, and root causes are at the very heart of total quality systems. Many organizations work hard and unsuccessfully at solving problems because they lack understanding of these concepts. Recognizing this, U.S. companies have accelerated training on statistical analysis skills and problem-solving skills. A 1993 survey indicates that training in these areas more than doubled between 1990 and 1993 within Fortune 1000 companies (Macy 1995).

Computer literacy plays a key role in these data orientations. In empowered organizations, computer literacy among employees is common. Employees' access to data and ability to analyze them are enhanced by electronic mail, immediate access to laboratory data, analytical software, and other computer-oriented communications.

Within well-developed TQM efforts, employee problem-solving teams methodically and continuously improve their processes. Their work requires asking questions of the process, gathering data, and analyzing data to answer the questions and eliminate defects. The teams require training in how to ask the questions, gather the data, and analyze them to answer the questions. Trained and otherwise empowered, such teams are able to produce quality that is the best in their industry. Whether in manufacturing industries, service industries, or government, the reliance on data is the same in all successful organizations.

At Eastman Chemical, workers have explained to Baldrige examiners and to hundreds of visitors how they routinely gather and analyze data to understand and improve their operations. There is often disbelief that ordinary people can learn to do such extraordinary things. "Ordinary people" can do this and more, but to enable such widespread and effective teamwork requires organizational change of the sort elaborated in this section.

Sharing Business Goals and Results. Discretionary effort exerted toward improvement is an example of "ownership" behavior. To truly feel and behave as owners, employees need to know the goals of the business—objectives regarding sales, costs, earnings, customer satisfaction, etc. Employees also need to know clearly how their work can contribute to the accomplishment of these goals. Furthermore, employees need to know how the organization is performing regarding these goals—they need to know the results of the business if they are to sustain their focus on these goals.

Trust. Trust is multidirectional (up, down, and sideways within the organization). Unilateral trust is too much to expect; trust must be bilateral. Management cannot expect to trust the message from subordinates unless the subordinates trust management not to punish the messenger. Here are three examples that will illustrate this.

At Frontera Grill and Topolobampo, two of Chicago's most popular restaurants, coowners Rick and Deann Groen Bayless apply the same standard to employee attendance as they apply to themselves: Absence to minister to a friend or family member in need is honored as a legitimate absence.

At Eastman Chemical, clock cards and gate guards were eliminated. Employees are trusted to arrive and depart on time, and to not carry out unauthorized company property. Eastman does occasionally audit people departing, and anyone caught stealing is terminated as not belonging in the system. Due to some problems a major customer in Minnesota was having with material from Eastman's Acid Division in Tennessee, some of Eastman's manufacturing people had to make a trip to the customer's plant. Rather than sending a group of engineers or managers to solve the problem, Eastman sent only one manager and the entire team of six operations people all via the company airplane. Eastman and the customer trusted the team to represent Eastman and solve the problem, which it did.

At the Nissan plant in Smyrna, the senior manager continually communicates both in person and through company newsletters that the importance of employees as thinking and creative persons is paramount. This is reinforced by a true trust culture in which self-supervision and good communications are the key. Instead of 10 to 12 levels of supervision, only five are needed at Smyrna. Employees in the daily assembly operations area are given a large amount of responsibility—quality and maintenance are entrusted to the technicians on the line—they are also empowered to stop the line, if necessary (Bernstein 1988).

Managerial behaviors that encourage trust include:

- Open communications
- Consistent communications—saying the same to all listeners
- Honesty—telling the truth, even when it is awkward to do so

- Fairness—maintaining the same policy for everyone, especially as regards promotion, vacation, pay scale, opportunity to contribute, and the like. At Lake Superior Paper Industries, every employee is salaried. Whether exempt or nonexempt, all share the same benefits package: paid sick days, no time clocks, no reserved parking spaces, no special lunch room, and minimized status differentials (Gilbert 1989).
- Respect for the opinion of others—listening to people to understand their needs, ideas, and concerns; being open to feedback, such as from employee attitude surveys
- Integrity—being guided by a clear, consistent set of principles; saying what will be done; doing what was promised.

Promises and agreements are demonstrated through actions. Aristotle said we are what we repeatedly do. Building trust takes lots of consistent actions over a long period of time.

Managerial behaviors that impede trust include:

- Dishonesty—telling untruths or half truths
- Fostering rumors—generating rumors; allowing rumors to persist; failing to provide information
- Isolating people—separating them physically, without adequate communication; separating them socially and psychologically by providing too little communication
- Breaking promises and agreements

Employees must respect and rely on each other. Fair treatment, honesty in relationships, and confidence in each other create trust. Trust is often referred to in Eastman Chemical as “the big T,” absolutely necessary for healthy human relations.

Employment Stability. Employment stability is a worthwhile objective in the TQM organization for many reasons. Principal among these is the protection of the organization’s considerable training investment and preservation of the carefully developed atmosphere of trust on which TQM is built. Further, as employment stability becomes more rarely available in the job market place, its promise becomes the more attractive for many job seekers. Thus, as employment stability is a worthy strategic element, it is worth examining ways to address two issues which affect the organization’s employment stability: the threat to individual jobs posed by improvement activity and cyclical employment fluctuation.

The Threat of Improving Jobs Away. As employees work continuously to improve their work processes, some jobs will become unnecessary. Assurance of employment stability is essential before employees can be expected to work wholeheartedly toward continuous improvement. Management must make it very clear to employees that employment will not be terminated by the organization if their jobs are made unnecessary due to improvements. Retraining for other jobs will be provided if necessary. Alcatel Austria reports that through retraining and skill development programs, it has managed to retain its technically skilled workers, even when changing technology renders the old skills virtually obsolete (*European Foundation for Quality Management Special Report* 1995).

Cyclical Employment Fluctuation. In many industries, the fluctuations in business activity imposed by the business cycle create a need to plan for employment stability of the permanent work force. The creation of “rings of defense” makes stable employment possible. The authors learned the term “rings of defense” during a visit to the Cummins Engine Company plant in Jamestown, NY. There, it was a recognition that employment stability was desirable and required a detailed strategy to achieve it. To cover peak activity and needs which cannot be met by the basic work force, alternative employment programs can be used to supplement the permanent work force. These alternatives include:

- Use of overtime

- Use of temporary employees
- Use of contract employees
- A coordinated plan to make this all work together

Think of the business case for providing employment stability. It is common for a company to spend thousands of dollars to train employees, then lose that training and experience when an improvement occurs which makes people redundant. Planning is needed to achieve employment stability. Achieving it is not easy. Not every company can, but it is highly desirable for successful long-term TQM.

Performance Appraisal and Coaching. Performance appraisal and coaching can be a positive part of the human relations system or it can be highly destructive. The difference is in its purpose and execution. If the purpose of performance appraisal is to coach employees to a higher level of performance, it can be very helpful. If performance appraisal is done only to rank the work force for purposes of pay and advancement, it can be destructive.

Scholtes (1987) has proposed more positive performance appraisal systems, which emphasize the coaching potential. To implement such systems requires that the managers conducting the appraisals be skilled and trained how to coach. In a system of open communication, important appraisal input also comes from peers and subordinates. These inputs are useful in coaching for improved behaviors. Peer appraisal requires that team members be trained, then coached in peer appraisal skills. Prior to the initial experience of appraising peers, the team members may find it helpful to learn something about personality dynamics within the team. Instruments such as the Myers-Briggs Type Indicator can help them. (Myers-Briggs Type Indicator is a registered trademark of Consulting Psychologists Press, Inc., Palo Alto, CA).

Many organizations moving toward increased employee empowerment have found that the traditional performance appraisal system becomes an obstacle to progress. An annual employee rating that is tied to the employee's pay and selection opportunities inhibits teamwork and, therefore, continuous improvement. The individual performance of employees working in a team environment cannot be reliably determined. It is still common to conduct appraisals in empowered organizations. However, appraisals focus on employee development. Matters of selection and promotional opportunities and of pay are handled separately.

Employee Development System. In the late 1980s, Eastman Chemical replaced its traditional performance appraisal system with an "employee development system," which focuses on employee development and coaching. This process is shown in Figure 15.1. Key principles of this process include:

- Continual improvement of employees' capabilities is important to achieve a competitive advantage.
- Employees want to do a good job.
- Employees will assume a high degree of participation and responsibility for their own development. Employee participation in the development process builds understanding and commitment to personal development.
- Expectations for the current job must be known and agreed upon with the key stakeholders (customers, supervision, etc.). Individual and team responsibilities should be clearly understood.
- Opportunities for development need to be identified so that effective, focused plans can be prepared to improve performance.
- Frequent feedback, coaching, positive reinforcement, and development planning are essential to assist employees in developing their capabilities in order to improve performance.
- A formal process is necessary to facilitate effective development and coaching.
- Development and coaching should be a positive experience for the employee and supervisor.

DESIGN PRINCIPLES OF WORK AND ORGANIZATION

Design Work for Optimum Satisfaction of Employee, Organization, and Customer. Successful organizations are designed to achieve high employee commitment and organizational performance focused on satisfying, and even delighting, the customers. A proper work design allows people to take action regarding their day-to-day responsibilities for customer satisfaction and employee satisfaction.

Customer Satisfaction. Employees must know the customer’s needs. They must know whether and how these needs are met, and what improvements can be made to further delight the customer. Employees must have the opportunity to work to ensure that customer needs are satisfied and that performance in this regard is continuously improved. The team must have processes which provide this opportunity. The organization must be designed to ensure that customer needs are known, understood, and communicated, and that there is feedback on the team’s performance in meeting the customer’s needs. The organizational design should provide the employees the opportunity to work toward continuously improved performance. Improvement must not be expected to happen by accident. An example of such an organization is the Procter & Gamble plant (Buckeye Cellulose Division) located in Foley, FL. The employees at this plant work in self-regulating teams and participate in partnerships with key customers, improving their products and better satisfying customer needs (authors’ visit to Foley ca. 1988).

Employee Satisfaction. People naturally want to grow and learn. To enable this to happen, the environment should provide the employees with:

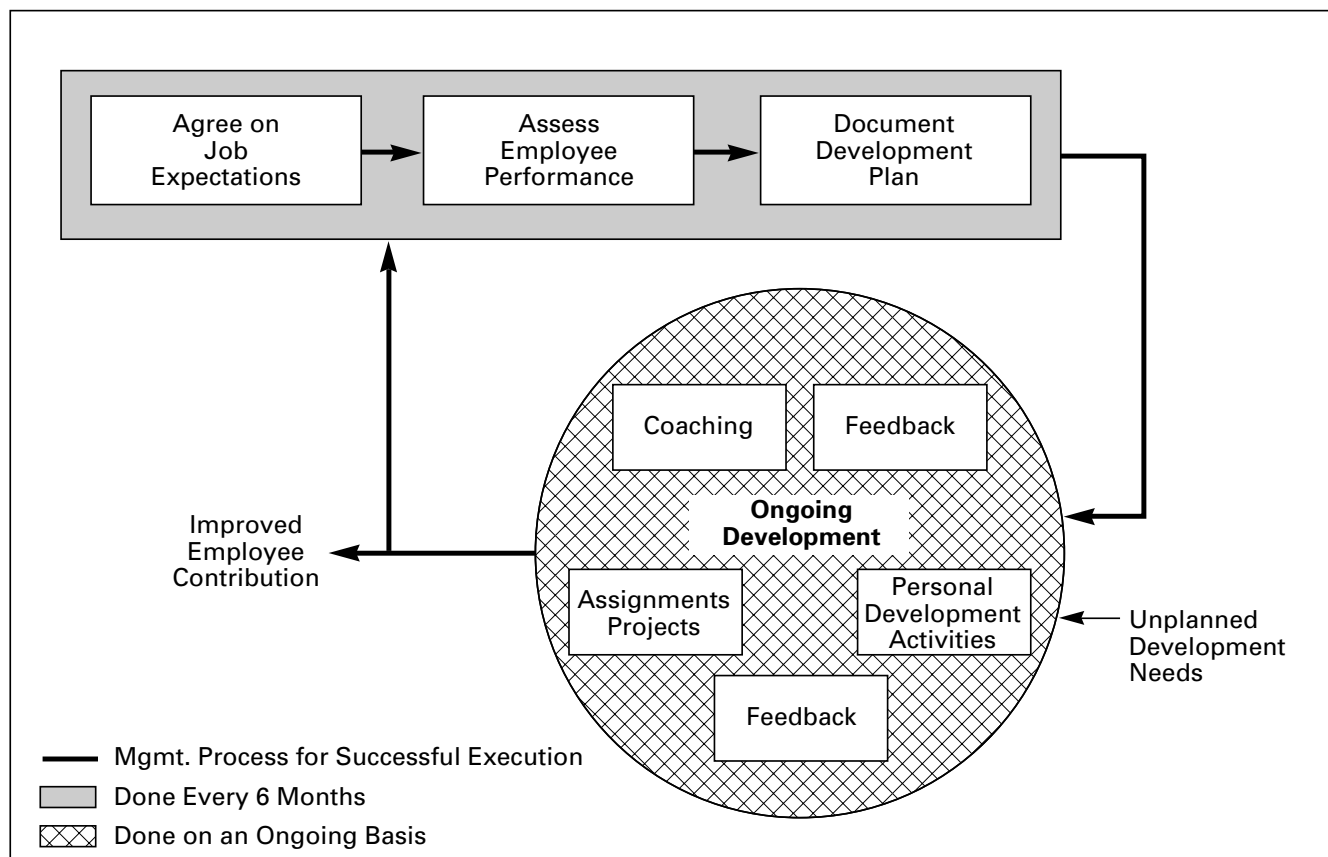


FIGURE 15.1 Eastman Chemical Company development and coaching process. (Eastman Chemical Company.)

- An understanding of the purpose of the work, strategies for accomplishing it, and the organization's expectations of them.
- Adequate pay
- Career growth opportunities
- Adequate authority for their jobs
- Sufficient training and tools
- A feeling of safety in the work environment

The organization must be designed to ensure that employee satisfaction is measured and fed back to the managers. The managers must routinely act on improvement opportunities presented by the employee satisfaction feedback.

Netas is a joint venture in Turkey between the Turkish PTT (the state telephone company) and Northern Telecom Limited of Canada. The Netas philosophy states that a satisfied work force is the key to a satisfied customer (*European Foundation for Quality Management* 1995). At Ritz-Carlton, data show that hotels with the highest employee satisfaction levels also have the highest customer satisfaction levels (Davis 1995). Honeywell and numerous other organizations also recognize the positive correlation between employee satisfaction and customer satisfaction.

In addition to customer satisfaction and employee satisfaction, the organization design must also provide for safe operations, quality and value of products and services, environmental protection, and continuous improvement of processes, products, and people.

Of course, the needs of the business must also be met. The organization must be properly designed to ensure that it meets financial and business objectives, including growth objectives. The design must also enable plants and facilities to operate in a manner that protects the environment and the health and safety of the employees and the public.

The many business objectives must be defined and communicated so they can be met. A common realistic vision is needed. Again, the organization must be designed to measure performance toward these objectives and provide feedback to the employees.

The way we get this knowledge is to measure the satisfaction of customers, employees, and the organization. Surveys can be very helpful here, as are face-to-face meetings. A balance of measures is needed.

The important point of this section is that organizations need to be designed with balance to satisfy customers, employees, and investors. Ignoring any one of the stakeholders results in an unbalanced design.

A last word on satisfaction: Miller argues that there is a healthy form of dissatisfaction, which he calls "creative dissatisfaction" (Miller 1984). It is a healthy thing for employees to be creatively dissatisfied. For example, in a TQM system, where people work together for continuous improvement, failure of the system to perform up to its best every day should cause a healthy level of dissatisfaction. The drive to make things better comes from this creative dissatisfaction with the status quo.

Design a System that Promotes High Levels of Employee Involvement at All Levels in Continuous Improvement.

Traditional American management was based on Frederick Taylor's teachings of specialization. At the turn of the twentieth century, Taylor recommended that the best way to manage manufacturing organizations was to standardize the activity of general workers into simple, repetitive tasks and then closely supervise them (Taylor 1947). Workers were "doers"; managers were "planners." In the first half of the twentieth century, this specialized system resulted in large productivity increases and a very productive economy. As the century wore on, workers became more educated, and machinery and instruments more numerous and complicated. Many organizations realized the need for more interaction among employees. The training and experience of the work force was not being used. Experience in team systems, where employees worked together, began in the latter half of the twentieth century, though team systems did not seriously catch on until the mid-1970s as pressure mounted on many organizations to improve performance. Self-directed teams began to catch on in the mid-1980s (Wellins et al. 1991).

For maximum effectiveness, the work design should require a high level of employee involvement.

Empowerment and Commitment. Workers who have been working under a directive-command management system, in which the boss gives orders and the worker carries them out, cannot be expected to adapt instantly to a highly participative, high-performance work system. There are too many new skills to learn, too many old habits to overcome. In the experience of the authors and according to reports from numerous organizations which have employed high-performance work systems, such systems must evolve. This evolution is carefully managed, step by step, to prepare team members for the many new skills and behaviors required of them. Figure 15.2 presents the steps in the evolutionary process experienced over the period of several years at Eastman Chemical. At each new step, the degree of required involvement increases, as does the degree of empowerment conferred on the worker. Many experienced managers have also reported that as involvement and empowerment increase, so, too, does employee commitment to the team, its work, and the long-term goals of the organization.

The *directive command* is the form most people learn in the military. A command is not to be questioned, but to be followed. It usually results in compliance.

The first stage of involvement is the *consultative environment*, in which the manager consults the people involved, asks their opinions, discussed their opinions, then takes unilateral action.

A more advanced state of involvement is the appointment of a *special team* or project team to work on a specific problem, such as improving the cleaning cycle on a reactor. This involvement often produces in team members pride, commitment, and a sense of ownership.

An example of special quality teams is the blitz team from St. Joseph’s Hospital in Paterson, NJ. Teams had been working for about a year as a part of the TQM effort there. Teams were all making substantial progress but senior management was impatient because TQM was moving too slowly. Recognizing the need for the organization to produce quick results in the fast-paced marketplace, the team developed the “blitz team” method (from the German word for lightning).

The blitz team approach accelerated the standard team problem-solving approach by adding the services of a dedicated facilitator. The facilitator reduced elapsed time in three areas: problem-solving focus, data processing, and group dynamics. Because the facilitator was very experienced in the problem-solving process, the team asked the facilitator to use that experience to provide more guidance and direction than is normally the style on such teams. The result was that the team was more focused on results and took fewer detours than is usual. In the interest of speed, the facilitator took responsibility for the processing of data between meetings, thus enabling reduction of the time elapsed between team meetings. Further, the facilitator managed the team dynamics more skillfully than might be expected of an amateur in training within the company.

The team went from first meeting to documented root causes in one week. Some remedies were designed and implemented within the next few weeks. The team achieved the hospital’s project

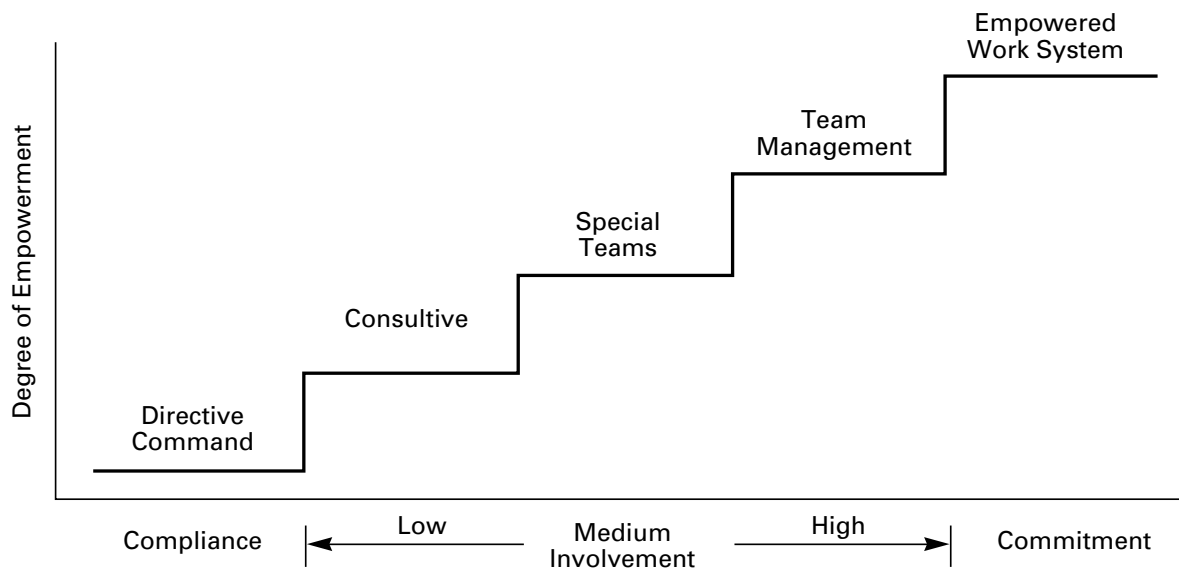


FIGURE 15.2 Relationship of commitment and empowerment. (Eastman Chemical Company.)

objectives by reducing throughput delays for emergency room (ER) patients. ER patients are treated more quickly, and worker frustrations have been reduced (Niedz 1995).

The special quality teams can focus sharply on specific problems. The success of such a team depends on assigning to the team people capable of implementing solutions quickly. In any TQM system, identifying and assigning the right people is a core part of the system design. Another part of the system design is provision for training teams in problem solving. For many teams, achieving maximum project speed requires a dedicated facilitator.

Team management is the use of teams to manage everyday business and the continuous improvement of the business. It represents an extension of the authority and responsibility of the natural team.

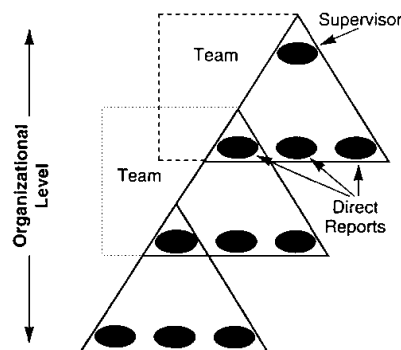


FIGURE 15.3 Interlocking team concept. (Eastman Chemical Company.)

Natural teams; interlocking team structure: An interlocking team structure creates an environment for sharing ideas and establishing common goals throughout the organization. The concept is that the teams are “natural teams,” composed of employees who naturally work together. They are part of a work group, they work within a common work process, they share common goals, and they report to the same supervisor. The team is made up of a supervisor and those reporting directly to the supervisor (Figure 15.3). The team meets regularly, perhaps weekly or biweekly, to monitor its own performance, and to identify and work on opportunities for continuously improved performance of the team. The supervisor is leader of this team and is, in turn, a member of a team of peer supervisors led by the next-higher-level supervisor.

Every employee is therefore on at least one team. For example, at Texas Instruments Europe most managers belong to at least two quality steering teams, chairing one of them (*European Foundation for Quality Management Special Report 1995*).

An example of a very successful natural team is the Refrigeration Team (15 members) at Eastman Chemical. The team managed the maintenance of refrigeration equipment at a large chemical plant. In each year of a 3-year period, the team reduced annual refrigeration maintenance costs by \$1 million. Savings came from improved processes, and in some cases developing completely different methods of maintaining and cleaning equipment. One critical activity was the annual shutdown (for maintenance) of scrubbers, which previously took a week per scrubber. As the team worked together to identify ways to perform annual scrubber maintenance more efficiently, the team eventually reduced the total time to 4 hours, which resulted in very large savings, as the production operations had been running at full capacity prior to the shutdown.

Implementing team management requires some additional design and training. The design needs to make clear who is on each natural team, when the teams will meet, whether participation is required, whether the meetings will require overtime, how the meetings will be organized, and how the team will measure its success.

Each team needs training in group dynamics, team problem solving, statistical thinking, statistical process control (SPC), and team leadership. Leadership is usually rotated every 6 to 12 months. Therefore, some training is needed to prepare people for their assignments. As teams mature, they will need training in providing feedback to each other.

Juran has predicted that the next improvements in TQM will be widespread introduction of empowered work systems including teams variously labeled as high-performance teams, self-managing teams, self-directed teams, empowered teams, natural work groups, and self-regulating teams, with self-directed work teams being the most common. A *self-regulating team* is a permanent team of employees empowered to manage themselves and their daily work. Team responsibilities may include: planning and scheduling of work, resource management, budgeting, quality control, process

improvement, performance management, and other activities related to human resources. Thus, these teams perform some activities which have been traditionally performed by supervisors. The supervisor is still involved, but now serves as a coach. Self-regulating teams manage their business.

These are not ad hoc teams. They are permanent teams, frequently organized around a work process. They see themselves as “entrepreneurial business units,” providing value-adding services, responsible for the satisfaction of their customers. For existing organizations which make the transition to empowered teams, some work system redesign is usually required.

These teams will take the organization to even higher levels of performance. Members of the empowered team support each other and the organization to achieve organizational and team goals (which, many times, they have helped establish). Peters states that the self-managing team should become the basic organizational building block (Peters 1987). Empowered work systems are designed so that the teams are empowered (having capability, authority, desire, and understanding of their purpose) and thus positioned to meet the needs of customers, business, and employees.

Empowered work team membership can make 80 to 90 percent of daily decisions regarding the team’s business. The team is responsible for its own actions and team results, and thus for the overall product and service provided. Members accept that their job is expanded to include improving the work processes of the team. They also accept more responsibility for problem solving, leadership, and team development as the team matures. Administrative tasks such as scheduling and training are coordinated by the team itself. (Good coaching is required during the maturing process.)

The team receives cross training to make team members multiskilled and provide the flexibility needed to meet changing customer needs with high quality outputs. Through the cross training to provide “multiskills,” team members can typically perform two to three different jobs. Multiskilling creates a more flexible organization, therefore a more efficient one. Associated with this is the ability to respond more readily to changing customer needs and to operate with a reduced number of people, compared to the number required in the absence of multiskilling. A survey of innovative organizations indicated new “greenfield” organizational start-ups or new plant designs usually exhibit “50 to 70 percent” better performance (profitability) than a “traditionally” designed organization and facility (Macy 1995).

Empowered, self-regulating teams monitor their progress and work on redesigning their work processes with regular redesign steps in 12- to 24-month intervals. Teams at the Procter & Gamble plant in Cape Girardeau, MO, conduct regular redesigns every 2 years to capture learnings of things that have worked and did not work in the previous work designs. These teams had been in operation for over 10 years and have done several redesigns for continual improvement. This continuous improvement keeps what works best and modifies things that do not work as well. Coaching for empowered teams is very important particularly during the first 2 to 3 years of operation.

Empowered teams distinguish themselves from traditional work groups in numerous ways. An example is the lengths to which a team goes to understand what satisfies and dissatisfies the team’s customers. In one company, one team sent several team members on visits to learn customer reactions at first hand, directly from the workers who used their product. They reported their findings to the team, using video footage made in customer operations by a team member.

Empowerment principles are applied in the engineering environment, where employees work in cross-functional teams to design a new plant or product in minimum time and with maximum effectiveness. Sometimes these teams include suppliers, customers, and the necessary company functions as well as contractors. Toyota, Ford, Honda, and General Motors are among the companies which have effectively used such teams to design new automobiles in record times. Design activity within such a team permits rapid reaction throughout the organization to design proposals, including early warning of impacts up- and downstream from the proposed change. A proposed change—a new supplier, a tightened dimensional tolerance, a new paint material—can quickly be evaluated for its effect on other operations. This aspect is often referred to as “simultaneous engineering.”

These principles are applicable at the highest levels of the company. In one company, a group of division presidents operate as a self-managed group of peer managers directing worldwide manufacturing efforts. These managers meet regularly to develop work processes and monitor measures of success. They rotate leadership. Ownership and commitment are evident here, just as in a team of operating technicians.

Other work processes being managed by such teams include writing insurance policies, making chemicals, and operating a bioclimatic zone in the San Diego Zoo. Some organizations which use empowered, self-regulating teams are AT&T Power Systems, Eastman Chemical, Harris Semiconductor, and Federal Express.

Behaviors. Numerous positive behaviors may be observed among the members of empowered teams and are ascribed to the environment created by the team. Observations of such teams at Eastman Chemical have shown that members often:

- Focus on satisfying the purpose of the organization (satisfying the customer and achieving financial objectives) rather than merely trying to satisfy the supervisor. Team members talk about customer and business needs and the team's performance toward meeting those needs. Team members question management when reasons for objectives are not clear—members want to know the why as well as the what. Members are not afraid to question or offer suggestions to others (such as management) because the workers truly have the interests of the business and customers as top priorities.
- Behave more as owners of the organization. More discretionary effort is observed. An example comes from the fibers production area of Eastman Chemical. An operator who needed a wrench simply stopped by the hardware store on his way home and purchased one, and would not even let the company reimburse him for it; this was his special contribution to the work effort. Often, employees do tasks which are not in the job description. Team members eagerly monitor performance indicators because doing so helps them relate their actions to the success of the team and the business. Experienced people coach new employees by proactively sharing their ideas and suggestions to ensure that everyone on the team is pulling together 100 percent to achieve maximum team performance. Often discipline problems within the team—such as a member arriving late, being unnecessarily absent, or slacking on the job—are handled proactively by team members without outside supervision ever getting involved. Shift employees willingly come in earlier than necessary to ensure smooth exchange of knowledge regarding shift needs. Behaviors of this sort are evidence that team members feel responsible for the success of the organization, and prefer to take responsibility rather than abdicating that responsibility to the boss. In short, these behaviors are evidence of commitment to the organization's objectives.
- Are more entrepreneurial and innovative. If team members see a problem, they are observed to seek energetically to solve it. If they think of a better way of doing something, they are observed soliciting input from those around them to ensure the idea is workable and to spread the ownership for the idea (which will result in improved commitment of others for the idea). They freely seek to implement their ideas, and are willing to try new techniques which may yield improvements. Members are often observed constructively building on ideas from each other in search of solutions to problems.
- Communicate well within the team as well as outside the team. Open communications are key in all of the above examples.

Leadership Style. Members of empowered teams share leadership responsibilities, sometimes willingly and sometimes reluctantly. Decision making is more collaborative, with consensus the objective. Teams work toward win-win agreements. Teamwork is encouraged. Emphasis is more on problem solution and prevention, rather than on blame. During the authors' visit to Procter & Gamble's plant in Foley, FL, the host employee commented that a few years before he would not have believed he would ever be capable of conducting this tour. His new leadership roles had given him confidence to relate to customers and other outsiders.

Citizenship. Honesty, fairness, trust, and respect for others are more readily evident. In mature teams, members are concerned about each other's growth in the job—i.e., members reaching their full potential. Members more willingly share their experiences and coach each other, as their goal is focused on the team success, rather than on their personal success. Members more readily recognize

and encourage each other's (and the team's) successes. Teams at Eastman Chemical drew up citizenship documents with their ideas about how to show respect and responsibility.

Reasons for High Commitment. As previously stated, empowered team members have the authority, capability, desire, and understand the organization's direction. At Eastman, we believe that this makes members feel and behave as owners, and makes them more willing to accept greater responsibility. They also have greater knowledge, which further enhances their motivation and willingness to accept responsibility.

Means of Achieving High Performance. We have observed that as employees accept more responsibility, have more motivation, and greater knowledge, they freely participate more toward the interests of the business. They begin to truly act like owners, displaying greater discretionary effort and initiative.

As previously stated, empowered team members have authority, capability, and desire and understand the organization's direction. Consequently, members feel and behave as owners, and are willing to accept greater responsibility. They also have greater knowledge, which further enhances their motivation and willingness to accept responsibility. An empowered organization is contrasted to a traditional organization in Figure 15.4.

Key Features of an Empowered, High-Performance Organization. An outstanding example of an organization which exemplifies these characteristics is SOL, a Finnish building cleaning company.

Creating an Environment. Liisa Joronen, head of SOL, believes that an organization must give its employees every opportunity to perform at its best. To achieve such a state, she has taken steps

Element	Traditional organization	Empowered organization
Guidance	Follow rules/procedures	Actions based on principles
Employee focuses on	Satisfying the supervisor	Satisfying the customer, and achieving the business objectives
Operator flexibility	One skill	Multiple skills
Participation	Limited	High Involvement
Empowerment	Follows instructions, asks permission	Takes initiative; a can-do attitude; discretionary effort
Employee viewed as	A pair of hands to do defined task	Human resource, with head, heart, hands, and spirit
Leadership for work processes	Managers only	Shared by managers and operators
Management communication style	Paternalistic	Adult to adult
Responsibility for continuous improvement	Management	Shared by managers, staff, and operators
Work unit defined by	Function (such as manufacturing or sales)	The work process, which may be cross-functional
Administrative decisions are made by	Management	Shared responsibility of team members and management (if self-directed team, the team may be responsible solely for certain administrative decisions)
Quality control is the responsibility of	Laboratory	Team capability for process control

FIGURE 15.4 Traditional versus empowered organization. (Eastman Chemical Company.)

to create an environment that gives SOL workers whatever they need to get the job done. This includes:

- Complete freedom to work when, where, and how an employee chooses, so long as customer needs are met. Workers are given cellular phones, voice mail, e-mail, laptop computers, and home computers as needed, resulting in much easier access to people than traditional setups allow.
- The absence of organization charts, job titles, and status symbols, including secretaries and company cars (Joronen often rides her bicycle to meetings with external customers). Each office worker has an area of primary responsibility, with the understanding that he or she will also contribute in other areas as vacations or other conditions warrant.
- An open-book policy on company performance. Each month, employees receive updated information on financial figures, absenteeism, turnover, and the like, right down to individual performance among the staff.
- A clean desk policy, which eliminates territorial office claims. Employees use whatever work space is available. When the work is done, the employee clears the area of his/her materials so that others may use it (Juran Institute 1996).

Over the past 20 years, enough progress has been made with various empowered organizations that we can now observe some key features of successful efforts. These have come from experiences of various consultants, visits by the authors to other companies, and published books and articles. These key features can help us learn how to design new organizations or redesign old ones to be more effective. The emphasis is on key features rather than a prescription of how each is to operate in detail. This list is not exhaustive but is a helpful checklist, useful for a variety of organizations.

Focus on External Customers. The focus is on the external customers, their needs, and the products or services that satisfy those needs.

- The organization has the structure and job designs in place to reduce variation in process and product.
- The organizational layers are few.
- There is a focus on the business and customers.
- Boundaries are set to reduce variances at the source.
- Networks are strong.
- Communications are free-flowing and unobstructed.
- Employees understand who the critical customers are, what their needs are, and how to meet the customer needs with their own actions. Thus, all actions are based on satisfying the customer. The employees (operator, technicians, plant manager, etc.) understand that they work for the customer, rather than for the plant manager.
- Supplier and customer input are used for managing the business.

Guidance Is by Principles

- There is a common vision, which is shared with and understood by all in the organization.
- All actions and decisions are based on a stated philosophy, which refers to the organization's mission, values, and principles.

Dana Corporation provides a good example. In the early 1970s, Dana eliminated company-wide procedures, replacing them with a one-page statement of philosophies and policies. Dana states "We do not believe in company-wide procedures. If an organization requires procedures, it is the responsibility of the appropriate management to create them" (Dana Corporation 1994).

There Is a Relentless Pursuit of Continuous Improvement and Innovation. Robert Galvin, former CEO of Motorola and Chairman of the Executive Committee, has said that the most

important quality lesson he learned in his years at Motorola was that “perfection is attainable” (Galvin 1996). He did much to lead Motorola on the path to perfection, through continuous improvement and innovation.

The Baldrige Award is itself an example of continuous improvement:

- The organization and its supporting systems encourage all employees to improve products, processes, teams, and themselves.
- Continuous learning is part of the job.
- Stretch improvement goals are established. Examples include Motorola’s “six sigma” and Xerox’s “10x improvement goals.
- Informed risk taking is encouraged.
- A systematic means exists for periodic organization renewal.
- Coaching and development systems are in place for all teams and individuals.

Management can encourage improvement by giving appropriate recognition, such as by special awards and celebrations for achieving incremental performance goals, for reaching new records, etc.

Shared Leadership: There Are New Roles for Both Operators and Managers. Supervisors in empowered, high-performing organizations find themselves in new roles, which include coaching and developing teams and individuals, clarifying business expectations and responsibilities, managing the interface between teams and their environment, allocating resources among teams, and ensuring that continuous improvements are occurring. All of this represents a span of responsibility greatly increased beyond that of the traditional supervisor.

Managers make provision for everyone’s input to decisions affecting the larger organization, and for participative planning processes at the functional level.

Another perspective on leadership comes from Netas, and may be the harbinger of an emerging principle of management in empowered organizations. Managers at Netas believe that leaders can come from anywhere in the organization, that the organization has in it many leaders, and that a leader creates leaders. To foster leadership, top managers need to be visibly involved. Top managers at Netas contribute to leader development by leading teams, chairing all customer and distributor conferences, and attending presentations of continuous improvement teams (*European Foundation for Quality Management Special Report 1995*).

At Eastman Chemical, a manager (call him John) was a team manager in charge of 15 mechanics in a single area. As his empowerment grew, John soon became responsible for two teams, then three teams. John later went from the plant in Tennessee to the plants in England and Spain to teach other team managers how to coach their people.

Operators also find themselves in new jobs, such as scheduling work, hosting suppliers, visiting customers, working on cross-functional process teams, and leading the search for root causes.

The Team Concept Emerges. The emerging team concept includes the following features:

- Work force empowerment
- Control of variances at the source
- Sharing of leadership and responsibilities by supervisor and team
- Agreed-on, well defined behavioral norms for individuals and team
- Constructive peer feedback for team and individual development
- Performance measures which enable the team to monitor its performance and take actions when needed
- Team responsibility for finished products or services
- Team participation in the process of hiring new team members

Empowered organizations have many support systems in common which enable them to function well. These include:

- Reward and recognition of desired skills and behaviors
- Business and accounting information to support decision making at the point of action
- Systems to obtain, maintain, and develop qualified personnel
- Leadership to enable teams to achieve their mission

The Role of Management in Supporting an Empowered Organization. In empowered organizations, managers create an environment to make people great, rather than control them. Successful managers are said to “champion” employees and make them feel good about their jobs, their company, and themselves. Marvin Runyon, when head of the Nissan plant in Smyrna, TN, stressed that “management’s job is to provide an environment in which people can do their work” (Bernstein 1988).

The role of management includes the following:

Create a vision of the business, and share it widely. The Baldrige Award Category 1 states (and numerous leaders agree) that all employees must have a shared vision of the organization as an empowered, high-performance organization, which satisfies its customers, is efficient and effective, and works toward continuous improvement. Management’s job is to create, share, and maintain this vision. Deming reminded us of the need for constancy of purpose in achieving the long-term objectives for the organization.

Set the organizational objectives and strategies, and share them.

Structure and align the organization to achieve the strategies. Create a role for everyone in the business.

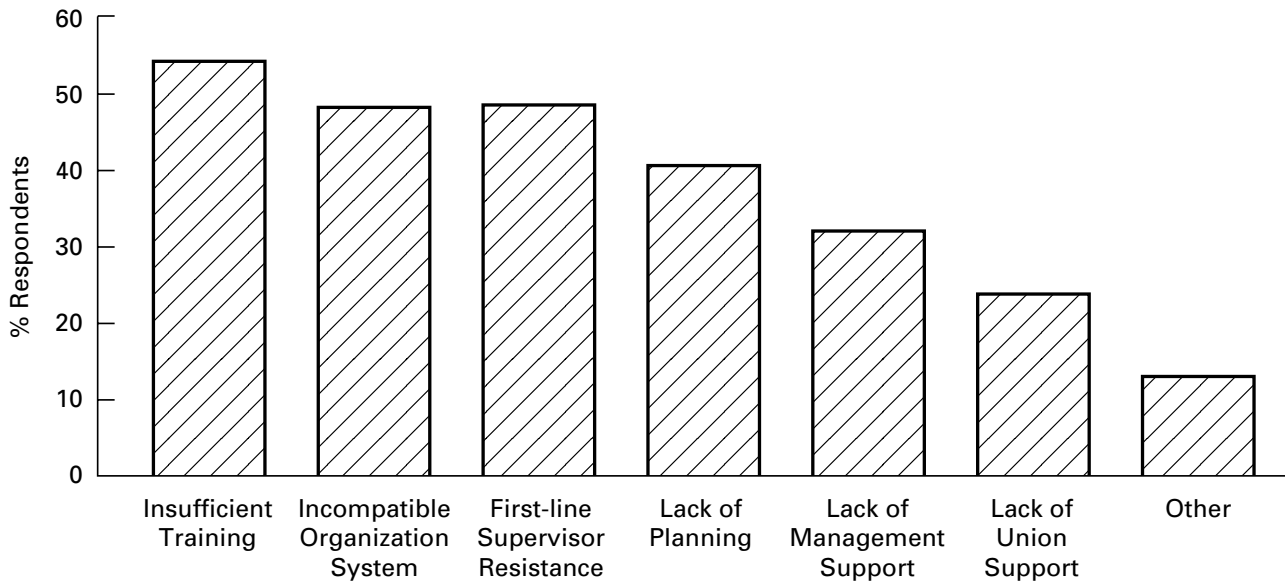
Allocate resources (including efforts such as research and education).

Communicate business information.

Listen for the needs of the organization. Encouraging open, two-way communication which is essential for employees to contribute fully toward the organization’s objectives is another management task. At the Dupont plant in Asturias, Spain, managers visit team meetings, and encourage team leaders.

Create the environment for sharing ideas and forming common goals throughout the organization.

- Create interlocking team structures.
- Identify and eliminate barriers to teamwork. Symbols which differentiate employee groups can be powerful barriers to teamwork. Such symbols include dress codes, car parking privileges, special dining rooms, clock cards, and special vacation policies, to name several. At the DuPont plant in Asturias, Spain, much attention has been devoted to eliminating symbols. Every employee has a business card, no matter what the job level is, but no titles or other indications are given to differentiate job level. Office furnishings are identical for each person with an office. Every employee dresses consistently, with no differentiation. The traditional performance rating system can also be a barrier to teamwork. Eastman Chemical has eliminated its traditional performance appraisal system, which had focused on annual ratings for employees, and replaced it with a system focusing on employee growth and development. The new system is designed to foster cooperation rather than competition among employees. Any disparities in benefits from one group to another can create a barrier to teamwork. Such disparities should be identified and removed. Employee suggestion systems which emphasize individual reward for suggestions create conflicting incentives for team members. Self-interest may drive a team member to reserve valuable suggestions for the channel which provides the greatest reward. Such conflicting incentives create insurmountable barriers to team success and must be addressed before launching team efforts. Figure 15.5 indicates major barriers to team empowerment, as reported in a survey of U.S. companies.



Barriers To Empowered Teams.
Survey of American Industry

FIGURE 15.5 Barriers to empowered teams. (*Industry Week.*)

- **Emphasize and support training.** When there is sufficient staffing, employees can receive needed training without requiring the team to work overtime. Some operations have designed their work system to include an extra crew, to provide work coverage while some personnel fulfill training needs.
- **Pay for skills and knowledge.** The pay system is carefully designed to recognize and encourage multiskilling. As employees learn additional skills and knowledge, they earn more pay. Compensation for team members may comprise up to four elements: base pay for the job; pay for individual performance, skill, and knowledge; pay based on the performance of the team; and pay based on the organization's overall performance. In the context of empowered teams, the simplest pay system is to pay a base level, and then achieve motivation through intrinsic factors of the job design and sharing gains in productivity.
- **Assure job stability.** When improved performance will render certain jobs unnecessary, employees may resist fully contributing in continuous improvement efforts. With its transition to empowered, self-regulating teams, Eastman eliminated over 50 first-line supervisory jobs. However, no one was laid off; former supervisors were eventually absorbed into other jobs within the company, often with the help of retraining. Many excess supervisors became team facilitators and coaches. During the transition, some excess supervisors became part of a "redeployment pool," assigned special projects, even for a few years, while waiting for appropriate job opportunities to open up, often through attrition. Most of these redeployed supervisors later admitted that life got better for them as a result of their new opportunities.

Reinforce positive behaviors. A critical role of management is to reward and reinforce behaviors and results which help achieve the overall goals set for the organization. This reinforcement reminds employees that these behaviors and results are truly important. Without this reinforcement, employees may come to believe that their actions and accomplishments are not really important since they resulted in no positive personal consequence. They may then wonder if something else has become more important, which leads to reduced focus on the organization's objectives.

The Role of the Empowered Manager versus the Traditional Management Role.

At Eastman Chemical, the supervisor responsible for the high-pressure cleaning team is recognized by his team members as being very effective at giving appropriate positive reinforcement, using employees to conduct job training, and encouraging innovative techniques. The team has achieved numerous internal quality awards. Team members have recognized the supervisor with their own award as “outstanding supervisor.”

In another area of Eastman Chemical, a manager began to learn about empowerment. His interest in the subject led him to read over 300 articles and books on the subject. Eventually, he began teaching others about empowerment principles.

In the empowering, high-performing work system, managers exercise leadership in different ways from managers in traditional hierarchical organizations. Instead of making decisions for subordinates, managers prefer to empower people to make their own decisions. Instead of making job assignments themselves, managers teach others to make job assignments. Instead of closely monitoring and judging job performance, they coach employees to monitor and continuously improve their own job performance. And rather than managing day-to-day job needs, managers enable teams to manage those needs themselves.

Figure 15.6 is a summary of the shifting role of the supervisor.

Coaching is vital to empowerment, teamwork, and the development of employees. For those readers who are faced with the need to coach—and that includes virtually all who have a responsibility for supervision at any level—and who find themselves in unfamiliar territory, the following inventory of tasks, skills, and behaviors may serve as a useful checklist.

Effective coaching involves five elements: (1) leadership, (2) communication, (3) team development, (4) boundary management, (5) personal management.

Leadership. Leadership involves four tasks:

- Clarify the vision. This requires much communication, understanding goals and objectives of the organization, ensuring that clear expectations for the team and individuals are set, and ensuring focus and constancy.
- Provide balance between intervention and freedom.
- Challenge and develop team leadership.
- Lead by example.

From	To
Directing	Empowering (giving authority, information, coaching, etc.)
Assigning	Teaching
Appraising	Coaching
Managing	Enabling
Minimal span of responsibility (5–10 people)	Broad span of responsibility (15–50 people)
Work vertically	Work horizontally
Capitalize on existing skills	Improve skills
Data reporting	Improvement of people and processes
Sell management’s ideas	Sell team’s ideas
Focus on doing things right	Focus on doing the right things
Task-oriented	Improvement, development-oriented
Concern with method	Concern with outcomes

FIGURE 15.6 Shifting supervisory role. (*Eastman Chemical Company.*)

Communication. Roles and responsibilities for good communication include:

- Clarify principles found in vision, mission, and values.
- Clarify the goals and objectives of the larger organization.
- Communicate clear expectations and consequences.
- Transfer personal skills and knowledge to team members effectively.
- Listen to team members to understand their personal goals and interests.
- Provide encouragement and promote winning attitude.
- Give and receive sincere, specific, and timely feedback on current performance of individuals, team, and self.
- Facilitate flow of needed information.

Team Development. This involves people and technology. The coach's roles and responsibilities regarding people include:

- Guide the team to maturity.
- Encourage and assist others in developing empowering habits.
- Promote continuous learning.
- Provide counsel.

The coach's roles and responsibilities regarding technology include:

- Increase the team's capability to understand manufacturing and service processes and to handle daily work assignments.
- Provide direction by focusing on process standardization.
- Stabilize and control processes.
- Ensure continuous improvement.

Boundary Management. The coach's roles and responsibilities here include:

- Ensure that the team receives the information and resources needed to manage its operations.
- Help the team understand the scope and limits of its decision-making responsibilities.
- Help the team learn how to make its assigned decisions: Identify the information needed, from whom to get it, what to consider, whom to consult, and how to communicate decisions within and outside of the team.

In doing these things, the coach helps the team learn to manage its own boundaries, and thus to be more effective.

Personal Management. The coach here commits the time and energy to:

- Learn continuously
- Seek meaning and pleasure in the work
- Understand the new coaching role for managers
- Develop the technical skills necessary to manage the team
- Develop the people necessary to coach the team

EMPLOYEE SELECTION

Achieving an empowered, high-performance organization requires capable and motivated employees. Lake Superior Paper Industries states that its hiring process is the foundation for its success (Gilbert 1989). The employees should have the skills, education, intelligence, and dedication to participate fully toward the organization's goals. As Ritz-Carlton points out, employees must be selected, not simply hired. The selection process is critical, to ensure the right match of people and assignments.

What the Employees Will Be Asked to Do. An empowered, high-performance organization is organized around the relentless pursuit of continuous improvement. It operates in an environment of multiskilled teams and shared leadership. To operate effectively in this environment, employees must learn to think and communicate, become proficient at group problem solving and team leadership. To do their part toward integration of customer and supplier, they will need a good customer-based education. From that base, substantial training is required. Prospective employees must have the potential to become exceptional in these dimensions.

The Selection Process. In 1992, Eastman set about staffing a plant then under construction. The company interviewed 4000 people to fill 72 operations jobs. Prospective employees went through a nine-step process, which included three interviews and trial team activities to evaluate skill at problem solving and interfacing with others. On the whole, the work force hired was well-educated. Forty percent had a four-year college degree; 35 percent had managerial experience. After being hired, and before start-up of the operations, they received a year of training to enhance their technical and team-interaction skills. At IMPRO96, a team reported there had been no employee turnover in 4 years from this plant. World-class quality and productivity results were reported for their products.

A recently constructed DuPont plant in Spain used a five-phase selection process: (1) initial screening (a 2-year technical school diploma was the minimum requirement); (2) testing; (3) two interviews to identify ability and will; (4) interactive sessions, using team simulations; and (5) the offering process, including discussion of the benefits package, 10 elements of the work system, pay process, and other conditions of employment. Hiring is performed by a team that demonstrates the empowered work culture that DuPont is trying to create. New employees are involved in the subsequent hiring process.

Some important selection criteria are

- Good teamwork skills
- Demonstrated initiative
- Good oral communication skills
- Clear judgment and ability to solve problems
- Ability to learn quickly
- Ability to plan, organize, and manage work
- Appropriate level of professional/technical knowledge
- Good individual leadership and influencing skills
- Adaptability to changing conditions

As regards most of these criteria, candidates can be assessed by observing their behavior, especially collaborative interactions with peers during related work situations (for candidates who are presently employed), or during interviews and appropriately designed team problem-solving exercises. At Lake Superior Paper Industries, a candidate goes through a group interview of seven peers to determine whether the candidate will be a good "fit" with the team system. "The team members put a little stress on the interviewee. During the interview, the candidate is asked what makes a person mad or what makes a person upset. We probably turn away some superior craftsmen because they wouldn't fit. If any team members casts a negative note, then the candidate will not be hired. However, the team member must have defensible, legitimate reasons for saying no." (Gilbert 1989)

In the selection of candidates for certain specialized work, specialized selection criteria may be applied, such as orientation to providing customer service and ability to persuade and sell. Each criterion identified requires a corresponding practical and reliable means of candidate assessment.

The Transition to a Participative Work Environment. For the most part, the above paragraphs address start-up operations. In existing operations, making the transition to an empowered work environment requires that existing employees receive different training from that given employees in a start-up operation. In addition to imparting technical and team skills, the training must aim at overcoming worker resistance to the change. Some employees will not take well to the participative work environment and may even refuse to accept it. In this case, the organization may need to start with employees who volunteer to participate. Those desiring not to participate initially may be able to “sit on the sidelines” for a while, in traditional roles, performing less participative jobs, while observing the participative work environment. Many people in this situation eventually decide to participate, persuaded by the success of the teams, and encouraged by the additional training provided.

TRAINING IN A TOTAL QUALITY ORGANIZATION

One of the largest barriers to successful empowered teams is insufficient training. An attribute that successful organizations have in common is commitment to extensive training of employees. A survey of innovative organizations shows that for a new (“green field”) high-performance facility or a business start-up, training and retraining in the first 3 years, including on-the-job training, classroom training, and visits to customers and suppliers, occupies 20 to 25 percent of total available employee time per year. After this initial period, the training decreases to a constant 12 percent of employee time thereafter. By comparison, the number for the average Fortune 1000 company is 3.5 percent (Macy 1995).

Training Builds Capability. At Motorola, the education strategy is part of the corporate strategy. Employees receive an average of 40 hours’ training per year. Training curricula are in place to achieve corporate objectives. For example, to reduce manufacturing cycle time, elements include:

- Group technology/material flow
- Leveling production schedules
- Pull production systems
- Improve the production system
- Workplace organization
- Total productive maintenance
- Changeover time reduction

For Motorola’s design of experiments (DOE) tools, a 17-day course is followed, which has evolved from lecture-oriented to project-oriented, work-oriented mode. Participants take home computer software to facilitate selection and application of the tools (Wiggenhorn 1987).

To empower workers successfully requires desire (on their part), authority (defined and conferred by management), and worker capability to achieve the results expected.

Multiskilled workers increase the organization’s flexibility and facilitate teamwork. A multi-skilled work force is a key feature of the desired organization and a key objective of the training activity.

The training process for developing multiple skills includes such steps as:

- Identify the skills needed
- Establish training technique

- Develop an assessment system
- Provide ongoing feedback and coaching
- Provide for rewards which encourage multiple skill development

Training for Effectiveness. Imai (1986) states the Japanese axiom: Quality control starts with training and ends in training. In major Japanese companies, training is conducted regularly for top management, middle management, and workers.

Important training issues to be addressed are: pace, amount, and affordability. At Saturn, everyone is required to devote 5 percent of his or her time each year for training. Those who do so receive a 5 percent pay bonus (Garwood 1988). Wainwright Industries invests the equivalent of 7 percent of its payroll in training—7 times national average in the U.S. (Garwood 1994). At Motorola, the training budget exceeds 10 percent of payroll.

At Motorola, the training may begin at the top of the organization. To ensure effectiveness of course on creativity, upper management receives training first. Then middle management is trained; and only after middle management is trained are the lower levels trained .

Measuring the Effectiveness of Training. A training budget amounting to 5 to 10 percent of payroll is a large investment. Managers will quite naturally demand that the training be effective. To verify effectiveness requires measurement, testing, and assessment. Long experience with apprenticeship programs has proved that results of skills training can be reliably assessed using tests and hands-on demonstrations. In a multiskilled, high-performance system, skills are often required to be certified by a training team before an employee is allowed to work alone using that skill. Certification will include verbal testing and demonstration of the skill in the work area. In hazardous environments, where safety is a major concern, the certification process is very important.

Training for High-Performance Total Quality Environment. There is evidence that the growing acceptance of TQM principles includes growth in related training of employees. Figure 15.7 presents the results of a survey of the training practices of approximately 300 companies over the period from 1985 to 1993. This figure reports the percentage of companies surveyed for which 60 percent or more of employees received training in the skill reported within the 3 years prior to the survey. The skills are frequently identified as being necessary for effective employee involvement and total quality management. Three of these skills are in the category of interpersonal and group skills. This is unsurprising, as so many employee-involvement and TQM processes involve meetings, interpersonal interactions, group problem solving, and influencing others. Also critical is knowledge in two technical areas: statistical analysis and business understanding. They are central to organizational improvement and TQM efforts (Lawler et al. 1995).

Training should focus on developing technical skills and social skills. Technical skills are the job-related skills to do the technical tasks of the job. Social skills are the skills of personal interaction and administration which, together, enable team members to work collaboratively to manage their business. Some of the team skills are communication skills, group dynamics, conflict management, holding efficient meetings, and decision making. They also include such technical skills as computer application, problem solving, and statistical analysis. The administrative skills include hiring, making work assignments, planning for vacation and relief, scheduling, and planning for training.

Cross training allows employees to understand and, when necessary, to perform the jobs of other team members. This provides each employee with a more complete understanding of the overall organization and how the various pieces of the organization fit together. With knowledge of the big picture, employees are more able to act like owners and take responsibility for customer delight and continuous improvement. Work is more interesting. This knowledge allows employees to address questions and issues more effectively and efficiently. Notable examples of extensive cross training are provided by the San Diego Zoo and Walt Disney World.

Types of training	1987 (N = 323)	1990 (N = 313)	1993 (N = 279)
Group decision-making/ problem-solving skills	5	6	16
Leadership skills	4	3	8
Skills in understanding the business (accounting, finance, etc.)	4	2	5
Quality/statistical analysis skills	6	9	22
Team-building skills	5	8	17
Job-skills training	N/A	35	48
Cross training	N/A	N/A	13

FIGURE 15.7 Percentage indicating that more than 60 percent of employees had training in past 3 years. (From Lawler et al. 1995.)

INTEGRATION OF THE COMMITTED PEOPLE WITH THE TOTAL QUALITY SYSTEM

The whole must be more than simply the sum of the parts. With a successful sports team, individual players alone do not make the team successful, no matter how capable the players may be individually. Similarly with a high-performance car—the individual components must be carefully matched and integrated into a properly designed system to achieve the intended results. It is not enough to have a good transmission, engine, wheels, etc.; these must be integrated into a smoothly operating system to make a world-class car. So, in a high-performance organization, the employees, structure, tasks, information, decision making, and rewards must be carefully integrated into a total system. Employees in high-performing organizations receive extensive training in both the technical skills and social skills. A balance between these skills must exist.

Building the Technical Skills. The technical system is concerned with the production and service requirements of the work process. The system includes such elements as process operations, equipment, methods, instrumentation, procedures, knowledge, tools, and techniques, and provides for multiskilled operators.

Developing Social Skills for Better Personal Interactions. To meet the needs of the people who are working within the process, the social system takes into account numerous factors, including individual attitudes and beliefs, employee-employer relationships, relationships between groups and among group members, human learning and growth, group norms, issues of power and politics, and personal motivation.

Communication skills, especially the listening skill, are among the most important social skills. A collaborative rather than competitive relationship with team members is important. These skills include how to conduct effective team meetings, how to resolve conflict, and how to make decisions.

Key Measures of Success. Netas has 77 continuous improvement teams involving 310 employees. They are trained in value engineering, design of experiments, and SPC tools. They have reduced the number of defects per thousand units from 105 in 1989 to about 10 within 5 years (*European Foundation for Quality Management Special Report 1995*). This type of result is possible when the organization uses key measures of success to focus on results.

What to Measure and How to Measure It. Measures of success should meet the following criteria:

- Team action significantly influences the key measure. Trends and changes in the data are traceable to the team's behaviors.
- The measures are important to the customer and the team. The team should be proud to tell its customers what it is measuring.
- The data which support the measure are simple to capture, analyze, and understand. Indexes which combine various measures into a single number are often too complicated to understand and not useful to the team. The team loses sight of how it influences a composite measure.
- The data are timely. The measure gives the team adequate warning of impending trouble.
- There are ample data to make the measure statistically significant.

Some commonly encountered measures which satisfy these criteria are percent of on-time deliveries, number of consecutive days worked without a lost-time injury, percent of customer survey ratings giving us a superior score, and percent of errorfree production batches.

At Federal Express, one of the primary measures is "percent of packages delivered by 10:00 a.m." with the goal of approximately 99.9 percent. Every employee has influence upon the achievement of this and has access to this data (Garwood ca. 1990).

At Eastman Chemical, customer loyalty and value, as well as over 20 specific related attributes, are measured by surveying over 2000 customers worldwide each year. Results are posted on company bulletin boards for all to see. Customer-complaint response time is another important measure, the goal being to acknowledge customer complaints within 24 hours. Performance has improved from an initial level in the 20 percent range to performance which is now over 90 percent. The improvement is due to numerous process improvements such as the assignment of advocates who are fitted with beepers and portable phones for faster communication.

Some Results Commonly Achieved

- Improved quality and operations (fewer defects and errors; increased production output per employee)
- Cost reduction (reduced operating and maintenance costs)
- Increased employee satisfaction (positive self-esteem, career path known)

POSITIVE REINFORCEMENT

As previously discussed in this section, and shown in the empowerment model (see Figure 15.1), empowerment requires four key elements: employees must know the purpose of the organization, and have the capability, the authority, and the desire to act. This part of the section addresses the desire of employees to act as owners of the organization. Positive reinforcement is essential toward creating this desire.

Definition and Key Elements of Performance Management. Performance management focuses on achieving the desired motivation and behaviors. Daniels (1982) defines performance management as "a systematic, data-oriented approach to managing people at work that relies on positive reinforcement as the major way to maximize performance. The approach is based on the work of B. F. Skinner, whose studies revealed that behavior is a function of its consequences. As applied by numerous organizations, performance management follows five steps:

Pinpoint the Desired Results. Measurement and goals are vital here. Ensure that everyone understands these. The pinpointed behavior should be measurable, controllable by the performer, and valuable to the performer and the customer.

Evaluate Need for Elements. Evaluate whether desired performance can be achieved purely by motivation, or whether some additional empowerment elements (such as information, skill training, tools and equipment, authority, or knowing the purpose) is needed. Provide for them as needed.

Identify Reinforcers. Reinforcement of desired behavior tells people that the behavior is important. When you quit reinforcing the behavior, people think it is no longer important. Though typically provided by supervision, reinforcement may also come from peers, the work group, self (intrinsic motivation), or subordinates. Good reinforcement should be positive, specific to the desired behavior, sincere, and provided immediately after the performance. Positive consequences should be a part of the job environment that encourages high performance.

Reinforcement should be planned. The refrigeration team at Eastman saved over \$1 million a year, for 3 years in a row; in anticipation of this, the team planned its reinforcement which included an annual team dinner with spouses.

Measure and Communicate Performance. Baseline historical performance should be known. Achievable stretch goals should be established which are clear and understandable. Successful teams usually find it better first to set an achievable goal rather than one large goal. Then when they reach that goal, they reset the goal, and so forth, as performance continues to improve over time. People can usually do more than expected, and thus the bar should continuously be raised whenever the earlier goals have been achieved. Performance should be visibly communicated by using scoreboards and graphs.

Deliver. The reinforcement should be delivered when earned by the performer. Successful performances are frequently associated with lots of positive consequences along the way. This is true in sports, the arts, child rearing, and the business world. A key concept of positive reinforcement is to “catch people doing something right” (Blanchard and Johnson 1981). Consequences which have the strongest influence on behaviors are those which are positive, immediate, and certain. Such positive consequences enhance the desire to improve continuously.

Examples of Positive Reinforcement. Successful teams celebrate their success. The sports world is filled with examples of how positive reinforcement drives continuous improvement: A football player who scores is immediately congratulated by fellow players; a baseball player who hits a home run is congratulated by fellow base runners who await him at home plate; coaches and parents cheer encouragingly for youngsters playing basketball in the youth leagues.

An athlete works hard to outdo past performances continually: winning streaks, consecutive games played, consecutive games in which the player gets a hit (in baseball), number of aces scored (in tennis), lowest golf score, or consecutive games in which the player scores (soccer).

Successful teams in work organizations also reach for new goals, and frequently celebrate their success when they achieve one. At Eastman Chemical, positive reinforcement is a common theme for team meetings. For example, an agenda item might be: “What tasks have we done well?” Celebrations of milestones or goal achievements are common and may be accompanied by tangible or intangible rewards (such as T shirts). Refreshments and mementos are often part of team celebrations. At Tennessee Eastman refreshments are served for over 20,000 people each month as part of team celebrations. An important part of team celebrations is the comments from management and team members to reinforce the behaviors and results achieved. Celebratory lunches and dinners are also popular. Additionally, hundreds of President’s Awards have been issued at Tennessee Eastman for team performance, with plaques proudly displayed throughout the plant site.

Intrinsic Motivation. A survey of companies that use TQM (Lawler et al. 1995) shows that people are motivated by success in making improvements and satisfying customers. In organizations where there is a very positive perception of TQM effectiveness, worker satisfaction is also positive. These natural rewards can be very powerful. These intrinsic motivators are things that make the job more interesting or stimulating, that build competence and pride, that promote self-control, and that result in a sense of purpose and achievement for the employee. For example, the Refrigeration Team

that made such gains in reducing the cost of maintaining refrigeration equipment exhibited the drive and accomplishment that grow from intrinsic motivation.

HUMAN RESOURCES CAN BE THE MOST EFFECTIVE SUSTAINABLE COMPETITIVE ADVANTAGE

Lester Thurow (1992) states in his book *Head to Head*: “The skills of the workforce are going to be the key competitive weapon in the twenty-first century. Brainpower will create new technologies, but skilled labor will be the arms and legs that allow one to employ—to be the low-cost masters of—the new product and process technologies that are being generated.”

From discussion with many managers from the United States, Japan, Latin America, and Europe, we conclude that all have some consensus around the notion that Total Quality Management and business success depend upon long-term positive contribution from the people in their work systems. Those organizations that get the highest performance from employees who can work together effectively with the technology of their systems are projected to be long-term maximizers.

This is not easy to implement. If it were easy, every good company would be working to make itself a high-performing organization. The list of characteristics below might explain why successful implementation does not always occur. High-performance organizations require:

- Paradigm shifts
- New cultures
- Long-term vision
- Relinquishing management control
- Investment in training
- Careful selection of employees
- Effective communications

Competitive advantages are never easy to get and are sometimes hard to keep. The advantage of a high-performing work force is difficult to build but capable of sustaining a long-term advantage.

REFERENCES

- Bernstein, Paul (1988). “The Trust Culture.” *SAM Advanced Management Journal*, pp. 4–8.
- Blanchard, Kenneth, and Johnson, Spencer (1981). *The One Minute Manager*. William Morrow, New York.
- Dana Corporation (1994). *The Philosophies and Policies of Dana*, Toledo OH.
- Daniels, Aubrey C, and Rosen, Theodore A. (1982). *Performance Management: Improving Quality and Productivity Through Positive Reinforcement*. Performance Management Publications, Atlanta.
- Davis, Susan Musselman (1995). “Communicating the Quality Message at the Ritz-Carlton.” *IMPRO95 Conference Proceedings*, Juran Institute, Inc., Wilton, CT.
- Deming, W. Edwards (1986). *Out of the Crisis*. MIT Press, Cambridge, MA.
- European Foundation for Quality Management Special Report* (1995). European Quality Publications, Ltd. London, pp. 39, 42–46, 54–56.
- Galvin, Robert (1996). Remarks made at satellite telecast, *J. M. Juran on Quality: Yesterday, Today, and Tomorrow*. October 10, 1996, produced by International Institute for Learning, Inc., and presented by PBS Business Channel, New York
- Garwood, William (1988). Recollections of a visit to the Saturn automobile plant in Spring Hill, TN.
- Garwood, William (ca. 1990). Recollections of a visit to Federal Express operations facility in Memphis, TN.
- Garwood, William (1994). Recollections of remarks by the president of Wainwright Industries at the presentation ceremony for the Missouri Quality Awards.

- Gilbert, Gaye E. (1989). *Framework for Success: Sociotechnical Systems at Lake Superior Paper Industries*. Case Study of the American Productivity & Quality Center, Houston, TX, July.
- Hoogstoel, Robert E. (1996). Personal recollection related to the authors.
- Imai, Masaaki (1986). *Kaizen: The Key to Japan's Competitive Success*. Random House Business Division, New York. 1986.
- Juran, Joseph M. (1989). *Juran on Leadership for Quality: An Executive Handbook*. The Free Press, New York.
- Juran Institute (1996) "Maximizing Employee Assets." *Quality Minute*, vol. 3, no. 9. Center for Video Education, White Plains, NY.
- Lawler, Edward E., III, Mohrmann, Susan Albers, Ledford, Gerald E. Jr. (1995). *Creating High Performance Organizations: Practices and Results of Employee Involvement and Total Quality Management in Fortune 1000 Companies*. Jossey-Bass Publishers, San Francisco, pp. 13–14, 51–58, 76.
- Macy, Barry A. (1995). *Survey of Innovative Organizations: New Organizational Start-Up/New Plant Design Characteristics and Site Selection Criteria*. The Texas Center for Productivity and Quality of Work Life, College of Business Administration, Texas Tech University, Lubbock, TX, December 5.
- Miller, Lawrence M. (1984). *American Spirit*. William Morrow, New York.
- Myers, Isabel, Briggs, Katharine (1987). Consulting Psychologists Press, Inc., Palo Alto, Cal.
- Niedz, Barbara A. (1995) "The Blitz Team" *IMPRO95 Conference Proceedings*, Juran Institute, Inc., Wilton, CT.
- Peters, Tom (1987). *Thriving on Chaos: Handbook for a Management Revolution*. Random House, New York.
- Scholtes, Peter R. (1987). *A New View of Performance Appraisal*. Joiner Associates, Inc., Madison, WI.
- Stuck, Jack (1992). *The Great Game of Business*. Springfield Remanufacturing Company, Springfield, MO.
- Taylor, Frederick W. (1947). *The Principles of Scientific Management*. Harper and Row, New York.
- Thurow, Lester (1992). *Head to Head: The Coming Economic Battle Among Japan, Europe, and America*. William Morrow, New York, pp. 51–52.
- U.S. Department of Commerce, *Malcolm Baldrige National Quality Award Criteria*. Technology Administration, National Institute of Standards and Technology, Gaithersburg, MD.
- U.S. General Accounting Office (1991). "Management Practices: U.S. Companies Improve Performance Through Quality Efforts." NSIAD-91-190, May.
- Wellins, Richard S., Byham, William C., Wilson, Jeanne M. (1991). *Empowered Teams: Creating Self-Directed Work Groups That Improve Quality, Productivity, and Participation*. Jossey-Bass Publishers, San Francisco.
- Wiggenhorn, William (1987). Remarks to visitors at Motorola University, November 12, 1987, as recorded by Robert Hoogstoel and shared with the authors.

Other suggested resources:

- Ankarlo, Loren, and Callaway, Jennifer (1994). *Implementing Self-Directed Work Teams*. CareerTrack Publications, Boulder, CO.
- Graham, Pauline (1995). *Mary Parker Follett: Prophet of Management*. Harvard Business School Press, Boston, p. 127.
- Greenleaf, Robert (1977). *Servant Leadership: A Journey Into the Nature of Legitimate Power and Greatness*. Paulist Press, Mahwah, NJ.
- Juran, Joseph M. (1988). *Quality Control Handbook*, 4th ed., sec. 15. McGraw-Hill, New York.
- Ketchum, Lyman D., and Trist, Eric (1992). *All Teams are Not Created Equal: How Employee Empowerment Really Works*. Sage Publications, Newbury Park, CA.
- Kinder, Mickey (1994). *Motivating People in Today's Workplace*. CareerTrack Publications, Boulder, CO.
- Nadkarni, R. A. (1995). "A Not-So-Secret Recipe for Successful TQM." *Quality Progress*, November, pp. 91–96.
- Quality Progress* (1995). July, p. 18.
- Senge, Peter M. (1990). "The Leader's New Work: Building Learning Organizations." *Sloan Management Review*. MIT Sloan School of Management, Fall, pp. 6–101.
- Wellins, Richard S., Byham, William C., Dixon, George R. (1994). *Inside Teams*, Jossey-Bass Publishers, San Francisco.