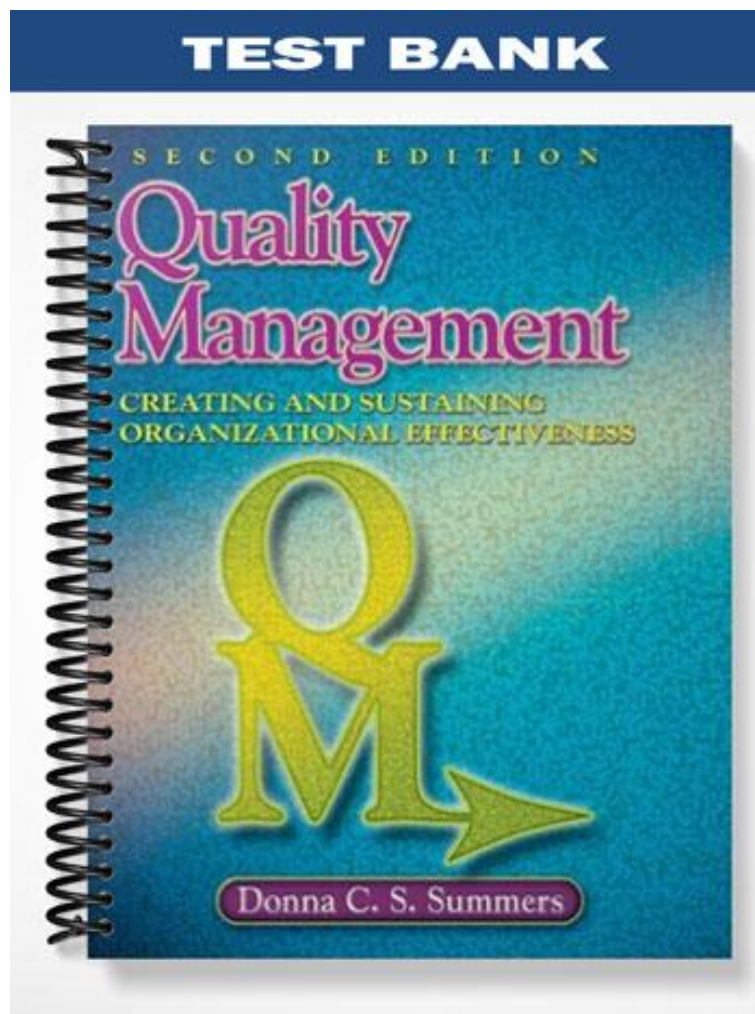


**TEST BANK**




**Online Instructor's Manual**  
*to accompany*

**Quality Management**  
**Second Edition**

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## Table of Contents

### Answers to Selected Chapter Questions

Chapter 1.....	2
Chapter 2.....	4
Chapter 3.....	7
Chapter 4.....	12
Chapter 5.....	15
Chapter 6.....	18
Chapter 7.....	22
Chapter 8.....	25
Chapter 9.....	27
Chapter 10.....	34
Chapter 11.....	37
Chapter 12.....	40
Chapter 13.....	43
Chapter 14.....	55
Chapter 15.....	62
Appendix 5.....	65

### Test Bank

Chapter 1.....	70
Chapter 2.....	72
Chapter 3.....	74
Chapter 4.....	79
Chapter 5.....	83
Chapter 6.....	88
Chapter 7.....	92
Chapter 8.....	97
Chapter 9.....	99
Chapter 10.....	102
Chapter 11.....	104
Chapter 12.....	107
Chapter 13.....	110
Chapter 14.....	115
Chapter 15.....	118

# Answers to Selected Chapter Questions

## Chapter 1 Organizational Effectiveness Questions

### 1. Why would an organization want to be effective?

An effective organization is able to produce more with its existing resources through an improved customer focus and streamlined work processes. With its increased awareness of its internal and external customers, there is a greater focus on what really needs to be accomplished in order to meet their customers' needs and expectations, therefore increasing their profitability through increased customer retention. Being able to meet customer expectations the first time and every time will enable the organization to increase its market share as new customers seek them out. Since an effective organization has focused and streamlined its work processes they will benefit from lower costs because of reduced waste and rework. One of the major savings that occurs is fewer customer complaints and warranty claims. More satisfied customers results in greater market share. Because of improved communication and teamwork, effective organizations have good management-employee relations. As problems are solved and the organization begins to run more smoothly, employee involvement and satisfaction will increase, which will lower turnover and absenteeism.

### 2. How would you describe or define organizational effectiveness?

Effective organizations focus on the key processes that provide the organization's customers with products or services. An organization is a compilation of a wide variety of activities. An organization needs to be looked at from all perspectives; manufacturing, marketing, information technology, research and development must work well together in an effective organization. The focus of these functions must be on the elements of the organization that make the greatest contribution to the organization's success, however that is measured. Effective organizations adhere to a customer-centered philosophy that includes paying attention to organizational, strategic, environmental, and people factors.

Effective organizations have developed an organizational philosophy utilizing a quality management system that creates a customer focus and generates customer satisfaction. Effective organizations implement organizational leadership, create strategic plans, develop and manage the organization's human element, measure organizational success, improve processes, utilize quality tools, manage projects, and track key business results.

### 3. Who is in charge of creating organizational effectiveness?

Organizational leadership is responsible for organizational effectiveness. Leadership, knowing the organization's current levels of performance, creates strategic plans for the future. Leaders in an effective organization develop a customer-oriented approach, studying how their product or service is used from the moment a customer first becomes aware of the product or service until the moment the product is disposed of or the service is complete. Leaders in effective organizations seek to optimize business processes by taking a systems approach, emphasizing the improvement of systems and processes that enable a company to provide products or services for their customer.

4. If you initiated changes to improve organizational effectiveness, how would you verify the improvement?

By asking "How do you know?" Measures of performance focused on key issues related to the customer enable an organization to judge whether or not it is meeting its goals and objectives.

5. How would you measure the relative overall organizational effectiveness of any organization?

By studying the answers to the following questions:

1. What is the mission of the organization?
2. What business is the organization really in?
3. What are the primary products or services the organization provides to their customers?
4. Who are their customers?
5. What do their customers expect and need?
6. How does the organization know what their needs and expectations are?
7. How well does the organization meet the needs and expectations of their customers?
8. How does the organization know how well it's doing? What is the proof? What are the indicators?
9. Do management's strategies and actions support the business and support the organization in meeting the customer's needs and expectations?
10. Do the employees know how the work they do specifically benefits the ultimate, external customer?
11. What improvements have been made based on the answers to these questions?
12. What is management doing to support improvement efforts?

6. What drove PLC, from Example 1.1, to make changes?

When PLC Inc. began operations three decades ago, their job shop specialized in machining large forgings into finished products. Their original manufacturing methods resulted in significant scrap and rework costs. The type of inspection scheme used by PLC Inc. was very costly because it involved not only the costs of the defective aspect of the parts, but also the labor cost of performing work on a defective part by later workstations.

By the mid-1980s, the companies they did business with began requiring statistical process control information. They realized that the prevention of defects could make a significant impact on their profit performance. By tracking the critical part dimensions, those monitoring the processes were able to identify changes that affected the quality of the product and adjust the process accordingly. They sought additional ways to reduce the variation present in the process that prevented them from producing parts as close to the nominal dimension as possible. Thus, emphasis shifted away from inspecting quality into the parts and toward making process improvements by designing and machining quality into the product.

## **Chapter 2 Organizational Philosophy Questions**

1. Why is an organizational philosophy focusing on delighting customers key to organizational success?

Customers are the reason an organization is in business. An organization is always seeking to keep the customers they have and gain new customers. In order to do this consistently, effective organizations must focus on creating successful, satisfied customers each time an interaction occurs.

3. Describe, in your own words, the two types of variation that Shewhart identified.

Controlled variation (common causes) is variation present in a process due to the very nature of the process. This type of variation can be removed from the process only by changing the process. For example, consider a person who has driven the same route to work dozens of times and determined that it takes about 20 minutes to get from home to work regardless of minor changes in weather or traffic conditions. If this is the case, then the only way the person can improve upon this time is to change the process by finding a new route.

Uncontrolled variation (special or assignable causes) comes from sources external to the process. This type of variation is not normally part of the process. It can be identified and isolated as the cause of the change in the behavior of the process. For instance, the commuter described above would experience uncontrolled variation if a major traffic accident stopped traffic or a blizzard made traveling nearly impossible.

6. How do Dr. Deming's fourteen points interact with each other?

Deming's fourteen points describe an overall change in management and organizational philosophy. Each of the points focuses on a weakness in companies that needs to be overcome in order to improve organizational effectiveness. The points support overall systems improvement, the creation of non-faulty systems.

7. How do the steering/diagnostic arms of Dr. Juran's program work together?

In the project-by-project implementation procedure (Table 2.2), project teams are set up to investigate and solve specific problems. To guide the project teams, a steering committee exists. The steering committee serves several purposes: to ensure emphasis on the company's goals, to grant authority to diagnose and investigate problems, and to enact changes. Dr. Juran's project

teams are encouraged to use a systematic approach to problem-solving. Group members use a variety of investigative quality tools to clarify the symptoms and locate the true cause(s) of the problem. When the cause is determined, finding a solution becomes a process of proposing remedies, testing them, and instituting the remedy that most effectively solves the problem. Controlling the process once changes have been made is important to ensure that the efforts have not been wasted.

8. In your own words, describe the difference between big Q and little q. Use examples from your own experiences to back up your description.

Juran's definition of quality goes beyond the immediate product or moment of service. To Dr. Juran, quality is a concept that needs to be found in all aspects of a business. To more clearly communicate this concept, Dr. Juran contrasts big Q and little q to show the broad applicability of quality concepts. Note that big Q extends to all aspects of any organization, regardless of type.

9. People tend to make five erroneous assumptions about quality. What are two of these assumptions and how would you argue against them?

1. Quality means goodness, or luxury, or shininess or weight, which makes quality a relative term.
2. Quality is intangible and therefore not measurable. If judged in terms of "goodness," then quality is intangible; however, quality is measurable by the costs of doing things wrong.
3. There exists "an economics of quality."
4. Workers are to blame for being the cause of quality problems. Without the proper tools, equipment, raw materials, and training, workers cannot produce quality products or services. Management must ensure that the necessary items are available to allow workers to perform their jobs well.
5. Quality originates in the quality department. According to Crosby, the quality department's responsibilities revolve around educating and assisting other departments in monitoring and improving quality.

11. How are the teachings of each of the people in this chapter similar? Where do they agree?

Deming, Juran, and Crosby encourage organizations to:

- determine who their customers are
- determine the key critical success factors for meeting their customers' needs, requirements, and expectations
- establish effective processes that enable them to provide products and services that meet their customers' needs, requirements, and expectations
- focus on process measurement and improvement
- provide the management involvement and commitment required for organizational success.



12. How are the teachings of each of the people in this chapter different? Where do they disagree?

Deming, Juran, and Crosby discusses different ways of reaching the goals. Deming and Juran focus primarily on leadership efforts and management commitment and involvement. Juran has his journey from symptom to cause and Deming has his 14 points. Crosby focuses on pursuing zero defects through process improvement. Shewhart concentrated on quality improvement through reduction in variation.

Their definitions of quality are different, too. Feigenbaum's definition is more complete (see text). Deming focuses on non-faulty systems. Crosby focuses on conformance to requirements. Crosby's is the narrowest quality definition.

13. Briefly summarize the concept Dr. Taguchi is trying to get across with his loss function.

He uses his concept and diagram to point out that any deviation from the target specification results in loss. Organizations should strive to determine and then meet their customers' target requirements.

14. Describe Dr. Taguchi's loss function versus the traditional approach to quality.

The traditional approach to quality emphasizes conformance to requirements, usually stated as a specification with +/- limits. The Taguchi Loss Function points out that any deviation from the target specification results in loss.

# Test Bank

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## Potential Test Questions

Answers serve only as examples. For many questions, several answers are possible.

### Chapter 1 Organizational Effectiveness

1. What is the difference between being efficient and being effective?

Efficient: producing a result with a minimum amount of effort, expense, or waste.

Effective: producing a desired result efficiently.

Effective companies produce what their customers want when they want it with a minimum amount of effort, expense, and waste.

2. You are about to interview for a full-time job with a company of your choice. How will you recognize that this company is following a TQM/continuous improvement philosophy? How do you know they are? Be sure to sight specific examples of the evidence you would look for!

Look to see if they have any of the following systems in place: Customer Focus, Six Sigma, Lean Manufacturing, Value Chain Management, Active Leadership, Focus on Business Results, Strategic Planning, Information and Knowledge Management, Quality Assurance, Organizational Philosophy focused on Quality, Project Management, Value Engineering, Efforts to Eliminate of Waste, Teams, Human Resources Management, Just-in-time operations, Quality Tools, Process Management Improvement

3. Why is an effective organization more competitive?

An effective organization is able to produce more with its existing resources through an improved customer focus and streamlined work processes. With its increased awareness of its internal and external customers, there is a greater focus on what really needs to be accomplished in order to meet their customers' needs and expectations. As the introduction to this chapter showed, an organization that increases its effectiveness will see improvements in their profitability through increased customer retention. Being able to meet customer expectations the first time and every time will enable the organization to increase its market share as new customers seek them out. Since an effective organization has focused and streamlined its work processes they will benefit from lower costs because of reduced waste and rework. One of the major savings that occurs is fewer customer complaints and warranty claims. More satisfied customers results in greater market share. Improvements will also exist internal to the organization. Because of improved communication and teamwork, effective organizations have good management-employee relations. As problems are solved and the organization begins to run more smoothly, employee involvement and satisfaction will increase, which will lower turnover and absenteeism. Benefits of creating and maintaining an effective organization are summarized in the figure in the text.

4. How would you verify that an organization is operating effectively?

Effective organizations exhibit improved profitability; increased customer retention; reduced customer complaints and warranty claims; reduced costs through less waste, rework, and so on; achieve a greater market share; increased employee involvement and satisfaction; lower employee turnover; an increased ability to attract new customers, improve their competitiveness, and customer satisfaction; improved management-employee relations; improved focus on key goals; improved internal and external communication; and improved teamwork

5. Define organizational effectiveness.

Effective companies produce what their customers want when they want it with a minimum amount of effort, expense, and waste. Effective organizations respond to their customers' expectations by focusing their company's value chain on providing quality products and services for their customers. Effective organizations work to provide greater value to their customers, finding new sources of customer delight more rapidly than their competitors. An effective organization concentrates on what is important: meeting both their internal and external customers' needs and reasonable expectations, encouraging teamwork and cooperation, tracking key indicators of performance, maintaining a long-term focus on continuous improvement, making decisions based on facts, and finding solutions, not fault. Such focus means that everyone is involved in the process of creating and maintaining an effective organization.

6. Cite an example of an effective organization you are aware of. How do you know it is more effective than its competitors?

See answers to #2, 3, 4 and 5

## Chapter 2 Organizational Philosophy

1. Based on your own experience, describe a situation where one of Deming's fourteen points is applicable and why things would have gone smoother if the participants would have utilized this particular point.

See Figure in the text

2. Deming, Juran, and Crosby all believe in striving toward world-class quality. Each gentleman has his own approach to reach such a goal. Discuss one area where Deming, Juran, and Crosby all agree. This point must be backed-up by specific aspects from each individual's quality improvement plans.

See Figure in the text. Notice the similarities and difference in their definitions of quality. Also, all three believed in management commitment being absolutely necessary. Deming and Juran both had systems for improvement, PDSA and Juran's Trilogy/Journey from Symptom to Cause (Figure 2.10 and Table 2.2). All three believed in continuous improvement, Deming (PDSA and Fourteen Points), Juran (Trilogy/Journey from Symptom to Cause (Figure 2.10 and Table 2.2), and Crosby with his quality performance standard of Zero Defects and the quality system of Prevention of Defects.

3. What does Deming's first point "create a constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business and to provide jobs" mean?

Dr. Deming's first point—*create a constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business and to provide jobs*—encourages leadership to accept the obligation to constantly improve the product or service through innovation, research, education, and continual improvement in all facets of the organization. A company is like an Olympic athlete who must constantly train, practice, learn, and improve in order to attain a gold medal. Lack of constancy of purpose is one of the deadly diseases Dr. Deming warns about in his writings. Without dedication, the performance of any task cannot reach its best.

4. Which of Deming's fourteen points do you agree with? Why?

See Figure in text

5. Which of Deming's fourteen points do you disagree with? Why?

See Figure in text

6. Crosby describes five erroneous assumptions about quality; select one and argue why it is an erroneous assumption.

Dr. Feigenbaum's definition of quality mentions the word intangible. By discussing five erroneous assumptions about quality, Crosby attempted to make quality more understandable and therefore, tangible. The first erroneous assumption, quality means goodness, or luxury, or shininess or weight, makes quality a relative term. Only when quality is defined in terms of customer requirements can quality be manageable. The second incorrect assumption about quality is that quality is intangible and therefore not measurable. If judged in terms of "goodness," then quality is intangible; however, quality is measurable by the costs of doing things wrong. More precisely, quality costs involve the cost of failures, rework, scrap, inspection, prevention, and loss of customer goodwill.

Closely related to the first two assumptions is the third, which states that there exists "an economics of quality." Here again, one errs in thinking that quality means building luxuries into a product or service; rather, quality means that it is more economical to do things right the first time. Often workers are blamed for being the cause of quality problems. This is the fourth erroneous assumption about quality. Without the proper tools, equipment, raw materials, and training, workers cannot produce quality products or services. Management must ensure that the necessary items are available to allow workers to perform their jobs well. The final erroneous assumption that Crosby discusses is that quality originates in the quality department. According to Crosby, the quality department's responsibilities revolve around educating and assisting other departments in monitoring and improving quality.

7. Use examples to describe the difference between Juran's Big Q and Little q.

See Figure in text

8. You are working for a company that manufactures bicycles. At this moment, you are attending a meeting for the purpose of setting the direction of the company for the next five years. Because of your quality management training, you would like to see that direction include an emphasis on the overall quality of the organization. Colleagues attending the meeting have asked you to explain the difference between Juran's Big Q and Little q. Please explain the difference to your colleagues in terms of a bicycle manufacturing company.

His definition of quality goes beyond the immediate product or moment of service. To Dr. Juran, quality is a concept that needs to be found in all aspects of a business; leaders must manage for quality. To more clearly communicate this concept, Dr. Juran contrasts big Q and little q to show the broad applicability of quality concepts, as shown in Figure in text. Note that big Q extends to all aspects of any organization, regardless of type.

## Chapter 3 Quality Systems

### 1. How are ISO 9000 and QS 9000 related?

Among motor vehicle manufacturers, though each purchaser developed their own requirements, strong similarities existed in quality system and documentation requirements. Redundant requirements and multiple plant visits from purchasers placed a significant burden on suppliers. Conforming to several different, yet very similar, sets of requirements meant unnecessarily expended time, effort, and money. Recognizing the overlap in requirements, the major automotive manufacturers—General Motors, Ford, and Chrysler—as well as truck manufacturers, created a task force in the early 1990s to develop a quality system that has as its foundation ISO 9000. Named “Quality System Requirements QS 9000,” this comprehensive requirement was intended to develop fundamental quality systems that provide for continuous improvement. QS 9000 eliminates redundant requirements while maintaining customer-specific, division-specific, and commodity-specific requirements. QS 9000 emphasizes defect prevention as well as the reduction of variation and waste. Internal and external suppliers of production and service parts, subassemblies, materials, components, or other items to the major motor vehicle manufacturers must conform to the requirements set forth by QS 9000.

QS 9000 has two major components: ISO 9001 and Customer Specific Requirements. Automotive Suppliers must be ISO 9001 certified. Customer specific requirements include the use of methods for Statistical Process Control (SPC), Production Part Approval Process (PPAP), Failure Modes and Effects Analysis (FMEA), Measurement Systems Analysis (MSA), Advanced Product Quality Planning and Control Planning (APQP), and Quality System Assessment (QSA).

### 2. Why would a company wish to become QS or ISO 9000 certified?

The purpose of the ISO standards is to facilitate the multinational exchange of products and services by providing a clear set of quality system requirements. Companies competing on a global basis find it necessary to adopt and adhere to these standards. The standards provide a baseline against which an organization’s quality system can be judged. This baseline has as its foundation the achievement of customer satisfaction through multidisciplinary participation in quality-improvement efforts, documentation of systems and procedures, and other basic structural elements necessary to quality systems. The generic nature of the standards allows interested companies to determine the specifics of how the standards apply to its organization. Many companies use ISO 9000 as the foundation for their continuous improvement efforts.

The high cost of certification is counterbalanced by the benefits an organization will receive by using the requirements as a guide to improve their processes. Quality becomes more consistent, and the percentage of “done right the first time” jobs increases. Enhanced procedures, upgraded record-keeping, and the removal of redundant operations also dramatically improve an organization’s effectiveness. ISO 9000 standards facilitate international trade.

### 3. Achieving ISO 9000 certification is not easy. Describe one difficulty a company may encounter.

Obtaining ISO 9001 certification is a time-consuming and costly process. Depending on the current state of an organization's quality system, preparation for certification may take several thousand employee-hours and cost thousands of dollars. Costs depend on the company size, the strength of the organization's existing quality system, and the number of plants within the company requesting certification. As with any major process improvement, the opportunity to fail exists. Attempts to incorporate ISO 9000 into the way a company does business may be hindered by a variety of forces, including insufficient management involvement in the process, inadequate resources, lack of an implementation plan, or lack of understanding about ISO 9000 and its benefits. This last force, a lack of understanding about ISO 9000, is particularly crucial. ISO 9001 requires significant documentation. The additional burden of paperwork, without an understanding of how this newfound information can be used in decision-making and organizational improvement, leads to problems. It is important to realize that standardized procedures and organized information go a long way toward preventing errors that lead to poor quality products and services. Organizations that are unaware of how to access the power that procedures and information provide may miss out on improvement opportunities. It is up to leadership to encourage the use of this information, thus gaining the maximum benefits from ISO 9000.

#### 4. Why would a company be interested in creating a quality system within its organization?

In order to best fulfill customer needs, requirements, and expectations, effective organizations create and utilize quality systems. *Within a quality management system the necessary ingredients exist to enable the organization's employees to identify, design, develop, produce, deliver, and support products or services that the customer wants.* Effective quality management systems are dynamic, able to adapt and change to meet the needs, requirements, and expectations of its customers. Effective organizations use standards such as ISO 9000 and QS 9000, programs like Six Sigma, and awards like the Malcolm Baldrige National Quality Award to provide guidance for establishing their quality management system's structure, maintaining records, and using quality techniques to improve processes and systems.

#### 5. Describe the Six Sigma philosophy.

Essentially, Six Sigma is about results; enhancing profitability through improved quality and efficiency. Improvement projects are chosen based on their ability to contribute to the bottom line on a company's income statement by being connected to the strategic objectives and goals of the corporation. Projects that do not directly tie to customer issues or financial results are often difficult to sell to management. When choosing a Six Sigma project or any improvement project, care should be taken to avoid poorly defined objectives or metrics. Key business metrics include revenue dollars, labor rates, fixed and variable unit costs, gross margin rates, operating margin rates, inventory costs, general and administrative expenses, cash flow, warranty costs, product liability costs, and cost avoidance. Six Sigma projects are easy to identify, since the Six Sigma methodology seeks to reduce the variability present in processes, project teams seek out sources of waste, such as overtime and warranty claims, investigate production backlogs or areas



in need of more capacity, and focus on customer and environmental issues. With high volume products even small improvements can produce significant impact on the financial statement.

6. Discuss two reasons why an organization would want to strive toward Six Sigma performance.

Six Sigma programs lead to improved profitability; increased customer retention; reduced customer complaints and warranty claims; reduced costs through less waste, rework, and so on; achieve a greater market share; increased employee involvement and satisfaction; lower employee turnover; an increased ability to attract new customers, improve their competitiveness, and customer satisfaction; improved management-employee relations; improved focus on key goals; improved internal and external communication; and improved teamwork

7. Describe the Malcolm Baldrige National Quality Award.

The Malcolm Baldrige National Quality Award (MBNQA) was established in 1987 by the United States Congress. Similar to Japan's Deming Prize, it sets a national standard for quality excellence. The award is open to companies in three areas: Business, Education, and Health Care. It is managed by the American Society for Quality ([www.asq.org](http://www.asq.org)). Every year, this rigorous award attracts several dozen applicants in each category. A group of qualified examiners compares and contrasts each application with the criteria for up to 300 hours. Only a very select few reach the site-visit stage of the award process. By the completion of the on-site visits, a company may have been examined for as many as 1000 hours. Since 1988, 44 organizations have received the United States's highest award for organizational effectiveness.

The award sets standards to be used as baselines and benchmarks for total quality management in seven areas. The seven categories are leadership, strategic planning, customer and market focus, measurement, analysis and knowledge management, workforce focus, process management, and results. The following descriptions are paraphrased from the Malcolm Baldrige National Quality Award criteria.

**1.0 Leadership** The criteria in Section 1.0 are used to examine senior-level management's commitment to and involvement in process improvement. Company leaders are expected to develop and sustain a customer focus supported by visible actions and values on their part. This section also examines how the organization addresses its responsibilities to the public and exhibits good citizenship. Subcategories include senior leadership direction, organizational performance review, responsibilities to the public, and support of key communities.

**2.0 Strategic Planning** To score well in this category, a company needs to have sound strategic objectives and action plans. The examiners also investigate how the company's strategic objectives and action plans are deployed and progress measured. They study the organization's strategy development process, strategic objectives, and action plan development and deployment efforts.

**3.0 Customer and Market Focus** The third category of the Baldrige Award criteria deals with the company's relationship with their customers. This category focuses on a company's

knowledge of customer requirements, expectations, and preferences, as well as marketplace competitiveness. Reviewers also determine if the company has put this knowledge to work in the improvement of their products, processes, systems, and services. Successful efforts in this category lead to improved customer acquisition, satisfaction, and retention. This category clarifies a company's commitment to their customers, an organization's customer and market knowledge, customer relationships, and customer satisfaction determination.

**4.0 Measurement, Analysis, and Knowledge Management** The award recognizes that information is only useful when it is put to work to identify areas for improvement. This category investigates a company's use of information and performance measurement systems to encourage excellence. Performance information must be used to improve operational competitiveness. Performance measurement, performance analysis, data availability, hardware and software quality, competitive comparisons, and benchmarking are encouraged.

**5.0 Workforce Focus** Within the workforce focus section, reviewers for the Baldrige Award are interested in a company's plans and actions that enable their workforce to perform to its fullest potential in alignment with the company's overall strategic objectives. Employee involvement, education, training, and recognition are considered in this category. A company's work environment receives careful scrutiny in an effort to determine how the company has built and maintains a work environment conducive to performance excellence, as well as personal and organizational growth. Also investigated are work systems, employee education, training and development, work environment, and employee support and satisfaction.

**6.0 Process Management** Within this category, the company is judged on its process management abilities. Companies must provide details on their key business processes related to customers, products and service delivery, design, production/delivery, business management, and support processes.

**7.0 Results** Ultimately, the purpose of being in business is to stay in business. This category examines a company's performance and improvement in several key business areas, including customer satisfaction, product and service performance, financial and marketplace performance, workforce, and operational performance. Benchmarking is encouraged to see how the company compares with its competitors. Investigators study customer results, product and service results, financial and market results, workforce results, operational results, and public responsibility and citizenship results.

The award criteria are updated yearly. Recipients of the award are from a variety of industries, including telecommunications, banking, automotive, hospitality industry, education, hospitals, building products, and manufacturing.

8. Discuss two reasons why an organization would be interested in benchmarking against the Malcolm Baldrige National Quality Award.

The award sets standards to be used as baselines and benchmarks for total quality management in seven areas. The seven categories are leadership, strategic planning, customer and market focus, measurement, analysis and knowledge management, workforce focus, process management, and

results. Knowing their performance in these seven areas can help an organization understand where their strengths and weaknesses lie. With this information, they can improve their competitiveness in the market.

Companies following the guidelines set out in the MBNQAC can improve their overall business performance. It is interesting to note that the Baldrige award winners, when their stock performance is reviewed, out-perform the stocks in the Standard and Poor's 500 Index by a ratio of about 3 to 1. For more information about the Baldrige stock study, visit the following website: [www.nist.gov/public\\_affairs/factsheet/stockstudy.htm](http://www.nist.gov/public_affairs/factsheet/stockstudy.htm).

