

Quality and Performance Excellence

**MANAGEMENT,
ORGANIZATION,
AND STRATEGY**



JAMES R. EVANS | 8e

QUALITY AND PERFORMANCE EXCELLENCE

Management, Organization, and Strategy

QUALITY AND PERFORMANCE EXCELLENCE

Management, Organization, and Strategy

EIGHTH EDITION

James R. Evans

University of Cincinnati



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**Quality and Performance Excellence:
Management, Organization, and
Strategy, Eighth Edition**

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PREFACE

The American Society for Quality (ASQ) monitors news items reported in the press. What types of stories do we find? Food safety and toy recalls, health care, the automotive industry, and various product glitches dominate. Indeed, quality—or lack of quality—is a vital issue in everyone’s life. That’s why this book is relevant and important for today’s students and future business leaders, as well as those already in the workforce. Understanding the principles of quality and performance excellence is absolutely essential for new graduates to succeed in today’s highly competitive business world.

It is difficult for students to learn about these principles on their own, because there are so many different approaches to the topic. Although these approaches are similar, each has its own jargon and acronyms, which makes trying to penetrate the subject for the first time a difficult experience. Furthermore, most books about quality are not written with the needs and experiences of students in mind.

This book has three objectives:

- to familiarize students with the basic principles and methods associated with total quality and performance excellence;
- to show students how these principles and methods have been put into effect in a variety of organizations; and
- to illustrate the relationship between basic principles and the popular theories and models studied in management courses.

The book presents the basic principles and tools associated with quality and performance excellence and provides many illustrations and end-of-chapter cases that can be used as the basis for class discussion. Many cases focus on large and small companies in manufacturing and service industries in North and South America, Europe, and Asia–Pacific.

This book is organized so that it can be used as a supplement to textbooks for courses in management, organization theory, organizational behavior, strategic

management and/or operations. The book also can be used as a free-standing introduction to quality and performance excellence in an elective course. Students who have had the basic courses in management and organizational theory and behavior will be familiar with most of the various management theories used to place quality and performance excellence principles in perspective.

CHANGES IN THE EIGHTH EDITION

This edition has made numerous changes to maintain currency of content and the student-friendly style of past editions. Discussions of the Baldrige criteria have been updated to conform with the 2015–16 criteria, and many other minor updates have been integrated throughout. New or additional boxed examples have been added, discussion questions and new experiential exercises have been added, and several new cases have been included.

ORGANIZATION OF THE BOOK

Considerable flexibility is built into the book to meet the individual needs of instructors. After the first two chapters, all others can be sequenced in almost any order. Unlike most books on quality, this one is organized according to traditional management topics. This organization helps students to see the parallels between quality principles and management theories in areas such as organizational design and leadership. In many traditional management books, quality is often presented as new or different, which it clearly is not.

Many quality principles are based on management theories that are familiar to teachers and students. The organization of this book enables students to appreciate the ways in which quality and performance excellence really are different from those theories.

The book has four parts. Part 1, Foundations of Quality and Performance Excellence, presents the core principles of total quality and performance excellence, and begins to explain how they relate to familiar management concepts. It also positions quality thinking within general business management frameworks and strategy, and it introduces tools used in process management. Each chapter begins with a “Performance Excellence Profile,” highlighting a Malcolm Baldrige Award-winning organization whose practices have particular relevance to the material in that chapter.

Chapter 1 introduces the concepts of total quality and performance excellence and their applicability to manufacturing, services, health care, education, and not-for-profits; the evolution of quality principles; and the modern principles of total quality and its relationship with agency theory.

Chapter 2 describes three major frameworks for pursuing performance excellence in organizations: the Baldrige Framework for Performance Excellence, ISO 9000:2000, and Six Sigma, focusing on the value of these approaches in building performance excellence and evaluating their similarities and differences. The philosophies of Deming, Juran, and Crosby serve to motivate and provide a foundation for these frameworks.

Chapter 3 introduces process management and summarizes the most important tools and techniques for designing quality goods and services and for controlling

quality in manufacturing and service operations. These include topics such as quality function deployment, failure mode and effects analysis, poka-yoke, statistical thinking, and statistical process control. It also discusses the role of creativity and innovation in quality, statistical thinking, and the effective use of such tools as statistical process control.

Chapter 4 focuses on tools for quality and process improvement, including kaizen, the Deming Cycle, Six Sigma DMAIC, lean thinking, the Seven QC Tools, benchmarking and reengineering, and creativity and innovation concepts. The chapter presents several examples of process management in action.

Part 2, Performance Excellence, Strategy, and Organization Theory, introduces the importance of quality and performance excellence from a strategic perspective, the idea of customer-supplier relationships, and the role of organizational design.

Chapter 5 addresses the role of quality and performance excellence in organizational strategy for achieving competitive advantage, the value of differentiating organizations from their competitors, and approaches for doing so. It also discusses quality-based strategic-planning processes and strategic work-design activities. An important aspect of strategic management is the use of a “balanced scorecard” of metrics and information for data-driven decisions. This topic is also addressed.

Chapter 6 discusses the importance of customers and suppliers in a high-performing organization. It presents principles of customer-supplier relationships, practices for dealing with customers and suppliers, and examples of customer-supplier relationships in action and how they relate to organization theory.

Chapter 7 focuses on designing organizations to support a focus on performance excellence. It explains how high-performing organizations must differ from traditional functional organizations, approaches to organizational design, examples of organizations that have successfully redesigned themselves with a quality focus, and comparisons with organizational design theory.

Part 3, Performance Excellence and Organizational Behavior, discusses the themes of teamwork and empowerment, and relates quality to the topics of groups and motivation.

Chapter 8 focuses on teamwork. It highlights the importance of teams in a high-performance environment and describes the various types of teams commonly found in such organizations, including Six Sigma project teams. It also discusses what teams must do to work effectively from an organizational viewpoint, presents some examples of teamwork in action, and compares quality-based team concepts to organizational behavior theories.

Chapter 9 develops the important concepts of employee engagement, empowerment, and motivation. This chapter describes the scope and benefits of employee engagement, why empowerment is important in organizations, principles for successfully introducing and sustaining engagement and empowerment, and examples of organizations that have done so successfully. Motivation is discussed in the context of organizational practices that support quality efforts. These concepts also are discussed in the context of popular organizational theories of motivation.

Part 4, Leadership and Organizational Change, deals with practices for making performance excellence a part of today’s modern organizations, focusing on leadership and the journey to performance excellence.

Chapter 10 is devoted to leadership, the roles of a quality leader, examples of leadership in action, and relationships with traditional theories of leadership.

Chapter 11 concludes the book with a discussion of organizational change and learning, organizational culture, and approaches for sustaining performance excellence initiatives for the long run. It also illustrates some examples of organizational change in action and how quality-focused change relates to organization theory.

The bibliography, available on the book's website, provides a number of references for students who wish to deepen their understanding of various aspects of these topics.

INSTRUCTOR RESOURCES

Instructors' resources can be found online at www.cengage.com/decisionciences/evans. Here you will find instructional tools, including the instructor's notes, PowerPoint slides, and the Test Bank.

Additionally, this book comes with a Cognero digital test bank. **Cengage Learning Testing Powered by Cognero®** is a flexible, online system that allows you to: import, edit, and manipulate content from the text's test bank or elsewhere, including your own favorite test questions; create multiple test versions in an instant; and deliver tests from your LMS, your classroom, or wherever you want.

Access this book's Cognero test bank through your SSO account at www.cengage.com/sso.

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I believe, like many business and academic leaders, that quality is an absolute essential not only for competitive success in business but also for meaningful work and integrity in many aspects of life. If this book helps students to contribute to the quality of their organizations' products and services and to understand the importance of quality in all their endeavors, then our efforts will have been worthwhile.

If you have any suggestions for improvement or perhaps a good story or case to contribute to the next edition, I would love to hear from you and acknowledge your contribution in the next edition. Please feel free to contact me via e-mail at James.Evans@UC.edu.

James R. Evans

FOUNDATIONS OF QUALITY AND PERFORMANCE EXCELLENCE

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INTRODUCTION TO QUALITY AND PERFORMANCE EXCELLENCE

CHAPTER

1

Performance Excellence Profile: Poudre Valley Health System¹

Poudre Valley Health System (PVHS) is a locally owned and private not-for-profit health care organization serving residents of northern Colorado, Nebraska, and Wyoming. In two acute care hospitals and a network of other facilities, PVHS offers a full spectrum of health care services, including emergency/urgent, intensive, medical/surgical, maternal/child, oncology, and orthopedic care. Founded in 1925 as the Poudre Valley Hospital (PVH) in Fort Collins, Colorado, the hospital expanded and diversified its services and has become PVHS—a regional medical hub with a service area covering 50,000 square miles. The focus areas of PVHS services include (1) Colorado’s third largest cardiac center; (2) the only Level IIIa neonatal intensive care unit between Denver and Billings, Montana; (3) Level II and III trauma centers; and (4) a bariatric surgery Center of Excellence. The system’s mission is to remain independent, while providing innovative, comprehensive care of the highest quality, and exceeding customer expectations. Its vision is to provide world-class health care.

To meet its mission and attain its vision, senior leaders have built a culture that encourages high performance and satisfaction by engaging the workforce of 4,200 staff, 550 credentialed physicians, and 800 volunteers. Communication begins with new-employee orientation and continues with an open-door policy, a variety of paths for development, and many sharing opportunities. From design of new services to bedside care, PVHS uses interdisciplinary teams to meet patient needs. For example, a trauma resuscitation team of physicians, nurses, respiratory therapists, and radiology technologists is on call 24/7, and an interdisciplinary care team led by a trauma surgeon makes daily rounds to see trauma patients. These teams demonstrate “the best collaboration of nurses and doctors, relative to any trauma program in the United States,” according to a recent survey team by the American College of Surgeons (ACS). In 2008, the system’s overall staff voluntary turnover rate decreased to 8 percent, well below that of competitors, and reached the Healthcare Human Resources Administration’s top 10 percent performance level. The system’s overall employee satisfaction ranks

in the 97th percentile nationally, and *Modern Healthcare* magazine named PVHS as one of “America’s 100 Best Places to Work in Healthcare” in 2008.

Partnering relationships help PVHS focus on the future and turn competitors into allies. After first establishing relationships with physicians, PVHS expanded its partner base to include entities such as home health agencies, a long-term care provider, community health organizations, and a health plan administrator—a partnership that saves local employers \$5 million each year. A partnership with a community hospital in Scottsbluff, Nebraska, led to the building of a new hospital. During the planning of this facility, PVHS listened closely to its customers, which led to improved emergency room layout, private patient rooms with spectacular mountain views and windows that open, healing gardens, and installation of family amenities such as showers and kitchens.

PVHS created a performance improvement system called the Global Path to Success (GPS)—a framework by which senior managers and staff integrate key processes. Using an innovative electronic Balanced Scorecard system, users can gauge progress on key measures relative to strategic objectives. If key performance measures are blue or green, PVHS is on track to accomplish the corresponding objectives. If key measures are yellow or red, an action plan—monitored by the appropriate senior manager—is developed to remedy the situation.

PVHS drives innovation by designing and testing innovative systems and technologies to meet health care needs. For example, PVHS was among the first health systems in the nation to use a robotic-assisted surgery system in four medical specialty areas and among the first 24 health systems in the world to integrate medical imaging systems across service lines. The Meditech Information System is a secure, user-friendly electronic network that ensures the flow of accurate, real-time information across the organization. To promote optimal patient experiences, PVHS uses the GetWell Network—an in-room, interactive patient education program that allows patients to obtain information about their care team, access the Internet and e-mail, communicate complaints and compliments, and order on-demand movies.

PVHS has received external verification of progress toward achieving its vision and goal. In 2007 and 2008, PVH was recognized as the nation’s number one hospital for sustained nursing excellence by the American Nurses Association and the National Database of Nursing Quality Indicators (NDNQI). In RN hours per patient day, PVH has exceeded the NDNQI best quartile since 2005 and outperformed the American Nurses credentialing center’s “magnet” hospitals’ 90th percentile in 2008. For five consecutive years, PVH has been one of seven U.S. hospitals to be named a Thomson 100 Top Hospital (for superior outcomes, patient safety, and operational and financial performance). PVH and Medical Center of the Rockies (MCR) patient satisfaction scores surpass the national top 10 percent, according to the Centers for Medicare and Medicaid Services. In 2008, PVHS received the Peak Performance Award—Colorado’s highest award for performance excellence—making it the only organization to receive this honor twice.

In addition, the system's financial and market results validate its management approaches: In 2006, the average PVHS charge was \$2,000 lower than that of its main competitor and \$7,000 lower than the Denver metropolitan rate; and at 62.3 percent, market share in the system's primary service area is 42 percent higher than that of the closest competitor.

What does it take to create an excellent organization such as PVHS? The preceding profile provides some clues: a culture focused on quality, high performance, and meeting the needs of customers and stakeholders; a planning system that supports organizational goals, provides direction for improvement, and leads to innovation and “best practices”; and a commitment to supporting, developing, and engaging the workforce. In a nutshell, these represent the central themes of this book and apply to *all* organizations, whether they be health care, manufacturing, service, education, or government agencies.

In this chapter, we will introduce you to the basic principles of quality and performance excellence. Specifically, we will:

- explain the concepts of quality and performance excellence;
- provide reasons why attention to these concepts should be a part of every organization's culture and management systems;
- provide a brief history of the “quality revolution”;
- describe quality in manufacturing, service, health care, education, and government organizations;
- explain the fundamental principles and practices of quality and performance excellence; and
- discuss relationships of quality with organizational models in management theory.

QUALITY AND PERFORMANCE EXCELLENCE

People define quality in many ways. In fact, the American Society for Quality (ASQ) *Quality Improvement Glossary* defines quality as “a subjective term for which each person has his or her own definition.”² Some think of quality as superiority or excellence of a product or service, others view it as a lack of manufacturing or service defects, still others think of quality as related to product features or price. A research study by the ASQ identified the most common definitions of quality used by respondents' organizations. The top 10 were:

1. Efficiently providing products and services that meet or exceed customer expectations
2. Adding customer value
3. Continuously measuring the improvement of processes and services for customers
4. Acting as promised and reporting failures
5. Doing the right thing at the right time in the right way with the right people
6. Ensuring customers come back and products do not

7. Providing the best value to customers by improving everyday activities and processes
8. Beyond delivering what the customer wants, anticipating what the customer will want when he or she knows the possibilities
9. Delivering customer value across the organization through best-in-class products, services, and support
10. Meeting and exceeding the expectations of clients, employees, and relevant constituencies in the community.³

Today, most managers agree that the main reason to pursue quality is to satisfy customers. The American National Standards Institute (ANSI) and the American Society for Quality (ASQ) define quality as “the totality of features and characteristics of a product or service that bears on its ability to satisfy given needs.” The view of quality as the satisfaction of customer needs is often called *fitness for use*. In highly competitive markets, merely satisfying customer needs will not achieve success. To beat the competition, organizations often must *exceed* customer expectations. Thus, one of the most popular definitions of quality is *meeting or exceeding customer expectations*. Deer Valley Resort is one example of an organization dedicated to exceeding customer expectations (see box “Quality on the Slopes”).

Customer-driven quality is fundamental to high-performing organizations. The president and CEO of Fujitsu Network Transmission Systems, a U.S. subsidiary of Fujitsu, Ltd., stated, “Our customers are intelligent; they expect us to continuously evolve to meet their ever-changing needs. They can’t afford to have a thousand mediocre suppliers in today’s competitive environment. They want a few exceptional ones.”

QUALITY ON THE SLOPES⁴

Deer Valley Resort in Park City, Utah, is viewed by many as the Ritz-Carlton of ski resorts, providing exceptional services and a superior ski vacation experience. The resort offers curbside ski valet service to take equipment from vehicles, parking lot attendants to ensure efficient parking, and a shuttle to transport guests from the lot to Snow Park Lodge. Guests walk to the slopes on heated pavers that prevent the pavement from freezing and assist in snow removal. The central gathering area by the base lifts is wide and level, allowing plenty of room to put on equipment and easy access to the lifts. At the end of the day, guests can store their skis without charge at each lodge. The resort limits the number of skiers on the mountain to reduce lines and congestion, and offers complimentary mountain tours for

both expert and intermediate skiers. Everyone is committed to ensuring that each guest has a wonderful experience, from “mountain hosts” stationed at the top of the lifts to answer questions and provide directions, to the friendly workers at the cafeterias and restaurants, whose food is consistently rated number one by ski enthusiast magazines. “Our goal is to make each guest feel like a winner,” stated the vice president and general manager. “We go the extra mile on the mountain, in our ski school, and throughout our food-service operation because we want our guests to know they come first.” It is no wonder why the resort is consistently rated one of the best in reader surveys of skiing enthusiast magazines (and the author’s favorite place to ski!).

Quality, however, should not be focused solely on the goods or services that an organization produces or provides. It should also be embedded in the management practices of the organization; in other words, quality should be an underlying value in how an organization is managed. If good management practices are designed and executed, then good results should follow. This leads to the concept of **performance excellence**—a term that refers to an integrated approach to organizational performance management that results in delivery of ever-improving value to customers and stakeholders, contributing to organizational success; improvement of overall organizational effectiveness and capabilities; and learning for the organization and for people in the workforce. Performance excellence is a characteristic of today’s most outstanding organizations and is a requisite for providing high-quality goods and services. All organizations—large and small, manufacturing and service, profit and not-for-profit—can benefit from incorporating these principles into their organizations.

THE IMPORTANCE OF QUALITY IN ORGANIZATIONS

Quality was THE buzzword among businesses—particularly manufacturing—during the 1980s and into the 1990s. Today, we generally do not hear much about quality except when things go wrong. Media releases abound with stories of medical errors that result in death, software glitches that cause products to fail, quality problems in the food supply chain, and many others. General Motors’ faulty ignition switches, which made front-page news a few years ago, resulted in at least a dozen deaths and a massive recall. Although many organizations don’t talk about quality very much, these examples show that quality remains a critical issue, not only in manufacturing, but in health-care, services, and indeed, in every organization.⁵

H. James Harrington, one of the leading quality management consultants in the world and a columnist for *Quality Digest* magazine, observed that many companies today are more interested in cost reduction and efficiency than improving quality, and calls for a return to the “basics.” He advocates that firms need to create better goods and services by finding and eliminating sources of defects, and spend more effort measuring customer satisfaction as a way of assessing progress and driving further improvement. More importantly, he believes that quality must be driven down to the personal level, so that every worker can make a serious commitment to work hard and do their best every day, and take pride in their accomplishments. The attitude of “It’s good enough” is simply not good enough in today’s world.⁶

Consumers today are intelligent enough to recognize quality—or the lack thereof—in the products and organizations they deal with (see box “Quality Is Everyone’s Concern”). The organization that fails to heed its customers is in for a rude awakening, or, at worst, a quick demise. This is why an understanding of quality is still vital to every employee in every organization. Joseph Juran, one of the most respected leaders of quality in the twentieth century, suggested that the past century would be defined by historians as the century of productivity. He also stated that the twenty-first century should be designated the century of quality. “We’ve made dependence on the quality of our technology a part of life.”⁷ The economic welfare and survival of businesses and nations depends on the quality of

the goods and services they produce, which depend fundamentally on the quality of the workforce and management practices that define their organization.

Stories of successful organizations generally end up in publications dedicated to quality professionals, which basically “preach to the choir.” Here are just a few highlights of the results achieved by companies that have embraced quality and performance excellence as basic business principles but that have never made the pages of mass media.⁸

1. Elevations Credit Union (ECU) has been named “Best Financial Institution” by readers of the *Boulder Daily Camera* for 15 of the past 16 years, and repeatedly as “Best Bank,” “Best Mortgage Company,” or “Best Customer Service” by readers of the *Colorado Daily*, *Boulder Weekly*, *Longmont Times-Call*, and *Loveland Reporter-Herald*.
2. Business satisfaction with the city of Coral Springs, Florida, rose from 76 percent to 97 percent over a four-year period. *Money* magazine named Coral Springs as one of the Best Places to Live. The city was named as one of the 100 best communities for young people by America’s Promise Alliance for multiple years.
3. Supplier on-time delivery at Lockheed Martin Missiles and Fire Control has been essentially 100 percent since 2006, and overall supplier quality has been nearly 100 percent since 2007. Time reductions as a result of process and performance improvement programs have occurred in all lines of its businesses, yielding an estimated savings of \$225 million annually.
4. The overall Net Promoter (NP) scores (a loyalty metric defined by the level of repeat sales and referrals) for MEDRAD, a manufacturer of medical imaging devices, were consistently 60 percent or higher compared to the 50 percent or higher marks for other organizations nationwide. MEDRAD’s global customer satisfaction ratings using the NP system steadily increased from 50 percent to 63 percent, surpassing the best-in-class benchmark of 50 percent.
5. AtlantiCare, a nonprofit health system in southeastern New Jersey, saw its system revenues grow from \$280 million to \$651 million over an eight-year period, reflecting an 11 percent compound annual growth rate, compared to a state average of 5.6 percent. During this time period, AtlantiCare’s medical center volume increased from about 34,000 to over 56,000 discharges—also more than twice the state average.

QUALITY IS EVERYONE’S CONCERN

Consumers have paid attention to quality in their purchasing decisions for some time. In a letter to the editor of *Business Week* (July 9 & 16, 2007, p. 16), a reader wrote: “Americans have switched from Detroit Big Three vehicles to Honda and Toyota vehicles not for visual design features but for durability, reliability, good fuel consumption, and low full cost of operation.

Detroit needs to offer five-passenger, 35-mile-per-gallon vehicles with 100,000 mile bumper-to-bumper warranties over 10 years of ownership to cause satisfied Honda and Toyota buyers to switch.” Today, consumers don’t just write letters; they post blogs, reviews, and opinions on websites and social media for all to see.

RESEARCH VALIDATES TQ PRACTICES⁹

Kevin Hendricks and Vinod Singhal published one of the most celebrated studies based on objective data and rigorous statistical analysis in 1997, showing that when implemented effectively, total quality management approaches improve financial performance. Using a sample of about 600 publicly traded companies that received quality awards and recognition, the researchers tracked the percent change in operating income and a variety of measures that might affect operating income: percent change in sales, total assets, number of employees, return on sales, and return on assets. These results were compared to a set of control firms that were similar in size to the award recipients and in the same industry. The analysis revealed significant

differences between the sample and the control group. Specifically, the growth in operating income averaged 91 percent versus 43 percent for the control group. Award recipients also experienced a 69 percent jump in sales (compared to 32 percent for the control group), a 79 percent increase in total assets (compared to 37 percent), a 23 percent increase in the number of employees (compared to 7 percent), an 8 percent improvement in return on sales (compared to 0 percent), and a 9 percent improvement in return on assets (compared to 6 percent). Small companies actually outperformed large companies, and over a five-year period, the portfolio of award recipients beat the S&P 500 index by 34 percent.

6. The Pewaukee School District (PSD) is the smallest K-12 educational system in Waukesha County, Wisconsin. Despite having one of the most rigorous public school graduation requirements (28 credits) in the state, PSD achieved a 97.4 percent graduation rate in 2012–2013 and had a higher graduation rate from 2008 through 2012 than other county, state, and nearby high-performing districts. PSD's economically disadvantaged students surpassed the performance of similar students in the county, state, and nearby high-performing schools on the Wisconsin Knowledge and Concept Examinations (WKCE) reading proficiency tests by achieving 45.5 percent proficiency compared to scores below 33 percent.

Many more examples like these can be cited, and considerable empirical evidence exists that firms implementing effective quality and performance excellence approaches improve their business results on measures of income, sales growth, cost control, and growth in employment and total assets (see box “Research Validates TQ Practices”). Nevertheless, scores of companies have either failed to take the first step in a performance excellence journey, or have let initial successes fade away because of lack of commitment and sustainability.

A BRIEF HISTORY

To understand the importance of quality in business today, we need to review some history. The birth of modern quality assurance methods actually began in the twelfth century B.C. in China during the Zhou Dynasty. Specific governmental departments were created and given responsibility for:

- production, inventory, and product distribution of raw material (what we now call supply chain management)