T
Q
M

A STEP-BY-STEP GUIDE TO IMPLEMENTATION

Charles N. Weaver

TQM: A Step-by-Step Guide to Implementation

by

Charles N. Weaver, Ph.D.

TQM: A Step-by-Step Guide to Implementation

Charles N. Weaver, Ph.D.

Library of Congress Cataloging-in-Publication Data

Weaver, Charles N.
TQM: a step-by-step guide to implementation / by Charles N. Weaver.
p. cm.
Includes bibliographical references and index.
ISBN 0-87389-116-3
1. Total quality management. I. Title.
HD62.15.W42 1991
658.5—dc20 91-14304
CIP

109876543

ISBN 0-87389-116-3

Acquisitions Editor: Jeanine L. Lau
Production Editor: Mary Beth Nilles
Set in Bem by DariTon Typographers. Cover design by Wayne Dober. Printed and bound by BookCrafters.

For a free copy of the ASQC Quality Press Publications Catalog, including ASQC membership information, call 800-248-1946.

Printed in the United States of America

Printed on acid free recycled paper

ASQC
Quality Press
611 East Wisconsin Avenue
Milwaukee, Wisconsin 53202

TQM: A Step-by-Step Guide to Implementation

Preface

This book describes a method for increasing organizational effectiveness. It should be explained that the method is not *instant pudding.* Instant pudding is Dr. W. Edwards Deming's term to describe a nonexistent, but often sought after quick fix for a company's problems so it can produce quality.[7]

To understand why the method described in this book is not instant pudding, consider the following: To bring about meaningful and permanent improvements in an organization's performance, we must carry out a comprehensive educational effort which has two objectives: first, to change the organization's culture and, second, to increase its effectiveness.

An organization's culture consists of the widely shared beliefs of its personnel about what is important and how things are to be done. For instance, how an organization treats its customers or its workers is part of its culture. How an organization deals with its suppliers or determines how well it's doing is part of its culture.

An organization's effectiveness, on the other hand, is how well it accomplishes what it's in business to do, how well it accomplishes its mission. For example, Do its products work? Are they delivered to customers on time? Are repairs infrequent and reasonably priced? Is service readily available and exemplary? Do customers brag about the products?

Through the years, there has been a parade in the United States of organizational development efforts, usually called programs. Every employee who has been on the job for a period of time can name several of these programs. Such employees can half-humorously tell how each program was introduced by management with great fanfare, speeches, and promises about how much good it was going to do for the company and its employees. With time, however, management always seems to lose interest. Consequently, the current program loses its vitality and is swept off stage. Soon another program is introduced with equal fanfare and promises.

Experience shows that in the short run organizational development efforts in the United States have had some success at increasing effectiveness, but have almost always failed miserably at changing organizational culture. It is important to understand that when an organization's culture does not change, it is virtually impossible to sustain improvements in effectiveness that may have been achieved. Through lack of culture change this kind of failure can happen to the method described in this book because it, too, is an organizational development effort. Thus, although the method described herein can dramatically improve an organization's effectiveness, until its culture changes, those improvements eventually will be lost. Unless an organization's culture changes, this method will be swept off stage and remembered as just another management program.

To avoid the problem of paralysis of organizational culture, the following approach is recommended. At least several months before introducing the method described in this book, or any other organizational development effort, an organization should begin comprehensive education aimed at its culture. This education should be based on the teachings of Dr. W. Edwards Deming,[7] Dr. Joseph M. Juran,[22] and other quality philosophers. When this cultural transformation has taken place, the resulting management style is called total quality management (TQM). TQM is a participative management style which focuses on satisfying customer expectations by continually improving the way business is conducted. This definition is self-explanatory except for the first phrase, "participative management style." This means that achieving a cultural transformation requires going beyond necessary worker involvement to include continual, direct involvement by senior management.

The method described in this book is a systematic process for implementing TQM. It can be used to tailor TQM to meet the specific needs of any organization. In addition to implementing TQM, using this process establishes a management information system (MIS) which provides a set of powerful new tools for improved leadership. This MIS is developed by employees using consensus-building techniques, and is a means of comprehensively measuring organizational performance. It is called the methodology for generating efficiency and effectiveness measures (MGEEM). Although this process has many attractive features, the main purpose of MGEEM is to implement TQM. To emphasize this purpose, in this book the process is referred to as TQM/MGEEM.

As managers begin the work of transforming the culture of their organizations, they usually attend seminars and read the books of TQM's quality philosophers. After discussing these great teachings among themselves, managers can be expected to raise questions about how they are supposed to actually implement TQM. They want guidance on exactly what to do. They want a checklist or set of operating instructions. On the other hand, managers who have achieved knowledge about organizational development understand that the enlightenment that moves an organization toward a culture of quality, in itself, has highly positive impacts on effectiveness. In other words, accepting and practicing the teachings of the quality philosophers about TQM not only changes organizational culture, but also greatly improves effectiveness.

Unfortunately, increasing effectiveness through culture change is too slow for most managers. In most cases, they are impatient and want to increase effectiveness in the short-term. Usually they are completely justified in their impatience. Many see the writing on the wall and realize that unless effectiveness is increased in the short-term, there may not be an intermediate- or long-term. They may lose their jobs, or their businesses may go broke!

The TQM/MGEEM approach described in this book provides a systematic and comprehensive method of applying the teachings of the quality philosophers. For instance, TQM/MGEEM provides a systematic, structured process in which managers may seek to employ Dr. Deming's famous 14 points, his suggested road map for creating culture change within an organization.[7] In using TQM/MGEEM, personnel also become involved in direct, hands-on opportunities to use Dr. Juran's many contributions to the culture of quality, including his highly useful definitions of quality, customer, product, and process; his discussion of the process by which quality is managed (quality planning, control, and improvement); and his unparalleled discussion of the infrastructure required to bring about quality improvements (quality councils and project improvement teams).[22] As personnel are involved in the TQM/MGEEM process, they begin to comprehend how the teachings of Dr. Deming, Dr. Juran, and other quality philosophers of TQM have real meaning in their organizations. They begin to understand how TQM doctrine can be put into actual use.

This book is not intended to provide a complete explanation of the teachings of TQM's quality philosophers. This book's purpose is to explain how to use TQM/MGEEM, a systematic and comprehensive means of implementing these great teachings.

The reader who is unfamiliar with the works of the quality philosophers of TQM is advised to begin to learn the teachings of Deming by first reading what many consider the *Reader's Digest* version of his philosophy in a clearly written book by Mary Walton, *The Deming Management Method.*[44] Next, read *The Deming Route to Quality and Productivity* by William W. Scherkenbach,[37] and *The Deming Guide to Quality and Competitive Position* by Howard S. Gitlow and Shelly J. Gitlow.[12] With that much background, the reader should be ready for Deming's book, *Out of the Crisis,* a text worthy of many readings and much close study.[7] My favorite book by Dr. Juran is *Juran on Leadership for Quality: An Executive Handbook,*[27] but he has written many excellent books and handbooks. Selected works by other quality philosophers of TQM are listed in the References.

Returning to the original question, "Why is TQM/MGEEM not instant pudding?" The answer is that TQM/MGEEM, like many other organizational development efforts, will increase effectiveness, but eventually fall apart unless a user organization changes its culture. By itself, TQM/MGEEM is not instant pudding. Coupled, however, with the culture-changing teachings of the quality philosophers, TQM/MGEEM can greatly increase the effectiveness of any organization. TQM/MGEEM is the answer to the question so often asked after attending a seminar by one of the quality philosophers, "What do we do next?"

Acknowledgments

Much of the information contained in this book resulted from my association with the research and development (R&D) program in organizational performance measurement and enhancement at the Human Resources Directorate (HRD) of the Armstrong Laboratory. This R&D appears in HRD technical reports and is, therefore, in the public domain. Nothing contained in this book is intended or should be inferred to represent the policy of the United States Air Force or Department of Defense.

Many people contributed in a variety of ways to what I learned at HRD and I gratefully acknowledge them. They include: Dr. William E. Alley, Larry T. Looper, Dr. Herbert J. Clark, William J. Phalen, Colonel Harold G. Jensen, Dr. R. Bruce Gould, and Lieutenant Colonel David E. Brown (HRD); Dr. Michael D. Matthews (Drury College); Dr. Thomas C. Tuttle (Maryland Center for Productivity and Quality of Working Life); and Robert D. Pritchard (Texas A&M University).

My thinking about organizational development has been influenced by conversations with many people. Among the most influential of these were Dr. W. Edwards Deming (New York University); Dr. Joseph M. Juran (Juran Institute); Dr. Stephen L. Dockstader and Dr. Chandler Shumate (Navy Personnel Research and Development Center); Dr. Laurie Broedling (Deputy Under Secretary of Defense for Total Quality Management); Dr. Norval D. Glenn (University of Texas at Austin); Dr. Stanley Dickinson (Office of the Secretary of the Air Force); Mr. Del Nelson (Sacramento Air Logistics Center); Major Don M. Reimensnider and Chief Master Sergeant Joseph F. Dymon (Air Force Management Engineering Agency); Luis Salinas (Corpus Christi Army Depot); John E. Hornbeak and Louis Garcia (Southwest Texas Methodist Hospital); D. Scott Bushnell (McCormick-Schilling Division of McCormick & Company, Inc.); Anthony Gallegos (Installations Assistance Office—West, Office of the Secretary of Defense); and Robert A. Stone (Deputy Assistant Secretary of Defense—Installations).

Most of what I know about organizational development, however, resulted from my experiences in implementing total quality management through the technology described in this book. I benefited in these experiences from contact with many knowledgeable people to whom I acknowledge my gratitude. Among them are Colonel John C. Handy and Colonel Donald Scooler (437th Military Airlift Wing); Colonel Robert B. Stephens (315th Military Airlift Wing); Colonel Arnold L. Weinman (92nd Bombardment Wing); Colonel Chuck Ferguson (Air Force Reserve); Colonel Chuck Churchill (Ft. Dietrick); Brigadier General Frank K. Martin and Colonel John A. McClanathan, Jr. (Air Force Office of Security Police);

Rear Admiral Jimmie W. Taylor, Captain Donald W. Scott, Captain Richard A. Catone, Captain W. P. Burtch, Jr., and Commander Donald B. Clark (Naval Air Training Command); Commander Frederick C. Orton (Anti-Submarine Warfare Wing, U.S. Pacific Fleet); John J. Boland and Larry Hermann (Naval Aviation Depot-Alameda); Rear Admiral Wayne E. Rickman (Training Command, U.S. Atlantic Fleet); Rear Admiral D. M. Lichtman (San Francisco Medical Command); Brigadier General (Dr.) Thomas E. Bowen and Colonel (Dr.) Edwin M. Healey (Fitzsimons Army Medical Center); Captain (Dr.) John R. Aguillar (Corpus Christi Navy Hospital); Captain Medhat Ashamalla (Roosevelt Roads Naval Hospital, Puerto Rico); Major General John E. Major, Colonel (Dr.) Osvaldo Bustos and Colonel Johnny L. Connor (U.S. Army Health Services Command); Major General Robert F. Swarts and Rose Mary Alais (Air Force Commissary Service); James C. Wallin (Material Management Directorate, San Antonio Air Logistics Center); Gus Damon (Pearl Harbor Naval Shipyard); Al Russell; Charles P. Skipton; Gary Thurber; Gary Zura; Anthony Buquor; Ralph M. Lentz; Sandra Edsall; Van "Butch" Robbins; and Ray Hicks.

In addition, word processing support was provided, in part, at St. Mary's University by Kathy Pope and a cadre of federally funded Work-Study students: Brian Moy, Angie Lyssy, David Thomas, Araceli Sifuentes, Jeanette Mora, and Gary Garcia. A colleague at St. Mary's University and the University of Texas Health Science Center to whom I express my thanks is Dr. Michele L. Trankina. The ultimate in high-quality customer support was provided by the staff of ASQC Quality Press. I am especially indebted to Jeanine L. Lau, ASQC Quality Press acquisitions editor.

Contents

CHAPTER 1

THE QUALITY CRISIS

If you're like me, you grew up believing the United States is the greatest country in the world. You like to think the United States dominates the world in everything. Although this certainly used to be true in most areas, things have changed. For instance, in many ways the United States is not the world's greatest economic power. If you don't believe it, consider some statistics.

Suppose we made a list of the 35 largest banks in the world (ranked by assets in 1989). How many of these banks would you say are United States banks? The answer is only one! That means the United States isn't even close to dominating the world of banking. Where do the largest banks come from? If you look at such a list, you'll find Japan on top with France and West Germany following. To experience firsthand the huge expansion of Japanese banking, go out to the West Coast (e.g., San Diego) and walk around downtown. As you find bank buildings try to pronounce the names on the signs.

You also may think the United States dominates the world of industry and commerce. Suppose we make another list, this time of the world's largest corporations (ranked on market value as of June 30, 1989). How many would you say are United States corporations? The answer is only three of the largest 10, only 12 of the largest 30, and only 21 of the largest 50. That's not as bad as the situation in banking, but it shows that the United States hardly dominates the world's industry and commerce. Roughly the same pattern exists for the United States among the world's largest insurers (ranked on assets in 1989). There are only four United States insurers in the largest 10, only eight in the largest 20, and only 12 in the largest 30 (*Wall Street Journal*, September 23, 1990).

Statistics also show that United States industry is slipping in a number of important markets. For instance, the United States share of the electronics market has declined from 100 percent in 1970 to less than 5 percent today. Over the same period, the United States' share in phonographs fell from 100 to 1 percent, in color televisions from 90 to 10 percent, in machine tools from 100 to 35 percent, and in VCRs from 10 to 1 percent (*Wall Street Journal*, November 14, 1988).

In *Fortune* magazine (September 24, 1990), Edmund Faltermayer cites the percentage losses from 1979 to 1989 of United States industry's share of a number of other United States markets. These losses include: computers, 28 percent; semiconductors, 23 percent; telephone equipment, 14 percent; apparel, 12 percent; industrial machinery, 12 percent; household appliances, 11 percent; tires, 9 percent; nuts, bolts, and washers, 7 percent; ball and roller bearings, 5 percent; and cement, 7 percent. Other statistics add to this gloomy picture.

Americans no longer have the highest per capita income or highest level of individual productivity in the world. Norval D. Glenn and I reported in *Public Opinion Quarterly* (1982–1983) results from nationwide public opinion surveys which show that the job satisfaction of American workers has fallen dramatically since 1955. In 1987 Japan for the first time became the world's richest nation (*Wall Street Journal*, August 22, 1989, p. A10). The evidence that the United States is slipping continues.

There is considerable debate, of course, about what is causing the United States to slip from its position as the world's number one economic power. Almost every current news magazine, newspaper, and business program on television has something to say about these causes. Pessimists comment that the United States never *was* number one. They contend that any economic glory we ever had was because we had no competition. They claim our competitors lost their economic strength in World War II. As these nations get back on their feet, it's only natural, they say, that the role of the United States will become less important. Others blame the United States government. Some of them say the government doesn't do enough for business. Others declare the government does too much. Still others say United States workers are to blame, claiming that they don't receive good educations, are overpaid, lack the proper work ethic, and, as a group, are getting too old. Still others argue that United States managers are to blame because they don't spend enough money on research and development, fail to innovate, and have out-of-date attitudes.

I take a somewhat different viewpoint about why the United States is in this mess. I agree that our loss of economic position is the result of various root causes, but I think that before we can make a serious start down the road to recovery, we must appreciate that there is an intermediate step between these root causes and our loss of economic power. The intermediate step is that we have suffered a severe decline in quality. So, various root causes have resulted in a serious decline of quality in the United States. In turn, this decline in quality has caused our loss of economic position.

Why is it important to know about this intermediate step? Because, as a country, we need to work vigorously on the root causes. There can be no question about that. For instance, we must make changes so that our government promotes rather than hinders business interests. We must introduce broad improvements in our educational system. We must spend more money on research and development in key areas.

These kinds of changes seldom take place overnight. Some of them will require years, even decades, but if we work at them we eventually will reverse the crisis. As a nation, we have always been able to meet the serious challenges that have faced us. In addition to working on the root causes, however, we must work on the intermediate step itself. We must take direct and deliberate action to turn quality around in every organization in the United States.

How this can be and is being done in many United States organizations is this text's subject. Before addressing the solution to the quality problem, however, let's clarify what is meant by declining quality.

What Is Declining Quality?

When I make a speech, I like to start it with a joke, but when I make a speech about quality in the United States, I have a tough time finding a joke to use. The awful truth is that quality in the United States is no joking matter. Quality is no joke to the person who has twice had to replace the American-made engine in an American-made truck, to the customer who takes a number and waits and waits and waits, to the manager of a repair shop whose workers sit idle on an important job waiting for spare parts ordered weeks ago, or to the restaurant customer who asks a waiter for the correct time and is told, "Sorry, this is not my table!"

The fact is that in the United States quality is in a state of crisis. I believe that lack of quality is among the most serious problems the United States has ever faced. Years from now, historians will say that the fall of the United States from the role of economic world leader was not because of war, economics, drugs, or moral decay. It was because of a decline in quality.

Declining quality in the United States means two things. First, it means many of our products don't work as well as those produced by offshore competitors. In a recent speech on quality, I pointed to the inferiority of United States products by asking anyone in the audience who owned a foreign-made automobile to stand up. Of course, in response to this question, almost everyone stood up. These people realize that when they buy foreign-made products they may cause American workers to lose jobs. As much as they dislike the idea of United States workers losing their jobs, they are simply unwilling to tolerate the inconvenience and high repair bills of many American products which don't work well. Thus, the aforementioned markets and many others once dominated by United States firms have fallen into the hands of offshore competitors.

Declining quality in the United States has a second meaning. Not only do United States products fail to work well, but customers who want to buy these products often are not treated well, either. For these customers quality is a double-whammy. First, they are buffeted by delays, errors, abuses, and insults. Then, after they finally get their hands on the product, it doesn't work. Like everyone in the United States, I am forced to tolerate delays, abuses, errors, and insults to obtain needed goods and services. I could relate numerous horror stories about the many companies with which I deal: the cable television company, airlines, my previous insurance agency, automobile dealers who repair my car, the telephone company, the savings and loan association which holds my mortgage, my bank, the local hospital, the neighborhood veterinarian, pest exterminators, restaurants, taxis, movie theaters, and even the local ice cream parlor. To demonstrate the downtrodden state of the American customer, consider a few true incidents.

Several years ago I applied for a teaching job at a university out on the West Coast. At the time of the job interview, I entered the dean's outer office where his secretary was working at her desk. After seeming to ignore my presence for several minutes, she looked up. With a strong sense of impatience, she snapped, "What do you want?" Already uneasy about the impending interview, her harsh remark almost sent me rushing out the door to safety. In a meek voice I responded that I was there for a scheduled job interview with the dean. Upon hearing this, she smiled broadly and said, "Oh, I'm so sorry. I thought you were a student!"

She mistook me for the enemy, an accursed student. When she realized I was actually a prospective university employee, an insider, not one of "them," her attitude changed.

This secretary is typical of many university faculty and staff members who believe that "The university would be a great place to work if it weren't for the students!" These students—these outsiders, these *enemies*—are really the customers. It is through service to them that universities meet a principal part of their mission: education. It is through universities' providing education that their secretaries have jobs.

Strange as it seems, this attitude is common among the employees of many other organizations throughout the United States whose main job is to provide products and services to customers. They believe that "This would be a great place to work if we didn't have to bother with the customers."

When I was at the grocery store early one morning, I got in the quick checkout lane. There were six other shoppers and their carts ahead of me, but the lanes next to this lane were closed. In full view of the waiting line of customers were three uniformed grocery employees, including a manager. Rather than opening another checkout lane, they made us wait while they chatted! The line moved slowly, and I finally reached the checker. At that point, the checkout procedure required that I lift the groceries out of my shopping cart and place them on a conveyor. The conveyor moved the groceries down to the checker where they were rung up, sacked, and purchased. Once my groceries were sacked, I was asked, "Do you need any help with these?" This question implied that I was expected to carry my groceries out to my car. Not only was I asked to wait needlessly at the checkout counter while the three poorly trained employees chatted, I was expected to do work (put my groceries on the conveyor and get them out to my car) that was once provided as a service.

Manipulating the customer into doing more of what previously was a service is a deliberate strategy of many United States merchants to increase their revenue. Profits rise as a result of lower labor costs when customers do the work that their employees once provided as service. Lower labor costs, with the same or continually increasing prices above the inflation rate means greater profitability. The merchants argue that they pass these savings on to their customers in the form of lower prices, but how can customers know if prices really are lower? Only a few conscientious shoppers continually compare prices, and all they usually find is that all prices are rising.

A short time ago I signed a contract to have carpet installed in a vacant rental house. I made it clear to the salesperson that I would pay for the carpet only after inspecting the job and that I expected to be billed through the mail. On the agreed day and hour of installation, I drove to the rental house to unlock the door for the installers. I waited an hour, but they never showed up.

In a telephone conversation the following day, a scheduler explained that installers have no control over when they arrive to install carpet. It depends on how long their previous jobs take. I was irritated by their thoughtlessness and waste of my time.

To prevent this from recurring I agreed to leave the door key in the mailbox. This could have led to the theft of the stove, refrigerator, and other appliances which I provide to renters, but I had no other choice; I had signed a contract for carpet and could not spare the time to wait for the installers. Finally, installation was completed.

About ten o'clock that evening, a company representative telephoned me at home to ask if he could come to my home to pick up a check for the balance due. I angrily told him it was too late in the day for such a call and that it had been agreed that I would not pay until after inspection of the work and, then, only when the bill was received through the mail.

My inspection of the work the next day revealed that carpet had not been laid in two closets as agreed. A call to the company got the crew back the following day, but they laid carpet in only one of the two closets. Another call resulted in the crew returning a third time to complete the job. Of course, each of these times I had to leave the door key in the mailbox exposing my appliances to theft.

Another problem detected in the final inspection was that the new carpet was thicker than the old carpet. Consequently the doors would not open and close easily. After four attempts, I finally reached the manager who said that it was not their policy to do carpentry work. He took no responsibility for his salesman's not informing me that carpets are of different thicknesses. To plane one quarter inch from the bottoms of nine doors cost me the time of locating a carpenter and an additional $90.

Customers in the United States are constantly buffeted by a never-ending series of delays, errors, abuses, and insults. When was the last time you tried to do business with an American company only to have an employee tell you to take a number and wait? How many times have you wanted to do business with a United States company on the telephone only to be placed on hold for five minutes by a "customer representative?" You wanted to buy. You were willing to spend your money, but they were too busy. How many times has your flight's takeoff been delayed 30 minutes while you and 150 other people sat in a crowded airplane?

My favorite example of the deterioration of customer service follows. Think about the comments that are exchanged between salesclerks and customers after transactions. Years ago, salesclerks said "Thank you" and customers said "You're welcome," but now it's the other way around. Customers somehow feel pressure to express appreciation for the privilege of buying the goods or services in question. Nowadays, customers say "Thank you" (seemingly for taking their money). Clerks, on the other hand, have the attitude that:

> I have done you a favor by waiting on you. I took my valuable time away from smoking a cigarette or talking to another clerk to do you a favor. But, it's ok, you said thanks. And, anyway, the next time you come in this store, you'll have to wait on yourself because the owner is instituting self-service!

If you still don't believe that customers in the United States are buffeted by delays, errors, abuses, and insults, I would say that you've become accustomed to the problems. To better appreciate the problem, do something for me. The next time you do your shopping and errands, carry a 3x5-inch index card and pencil. Briefly note on the card each delay, error, abuse, and insult you suffer. Remember, *you* have the money and the merchants want your money. As a customer, you should be treated like a king or queen. Your needs should be anticipated and met. You should be treated with respect. Shopping should be a joy. You should not experience long delays. You should not have to accept products that don't work. My experience is that one 3x5-inch index card won't be enough. Perhaps you should take a notebook instead!

Besides abuse of ultimate consumers, the ones who buy groceries and carpeting and say "Thank you," there are other customers who also are constantly mistreated in the United States. These customers are important and should also be served in a respectful, timely, and quality manner. These customers are *internal* customers — people who work in the various divisions, departments, and work centers of American companies. In other words, within the same company, departments are customers of each other. The contracting department is a customer of the engineering department, finance is a customer of computer services, sales is a customer of audiovisual, etc. The unfortunate fact is that many internal customers are seldom recognized as customers, much less well-treated.