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Total Quality Management (TQM)

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Total Quality Management (TQM) has been one of the most widespread management approaches for improving products/services and processes for achieving higher customer satisfaction and higher competitiveness of organizations during the past 25 years. The approach’s central management insight is that by adapting and implementing the principles of TQM, organizations can achieve a reduction of the cost of poor quality in terms of defects, failures, complaints, and so forth and parallel with that improve customers’ and other stakeholders’ satisfaction.

Even though quality management approaches have been recognized and utilized by industry since the 1930s, the “arrival of TQM” in the last part of the 1980s opened a new era in quality movement. However, during the first 10 years of the new millennium, the term *TQM* seems to have lost its attractiveness in the industrialized parts of the world; instead, new terms like *business excellence, organizational excellence, Six Sigma*, and *lean* seem to have taken over its position even though the contents of these new terms can be understood within the framework of TQM. Parallel with these tendencies, we can observe that “the TQM wave” is making its way into eastern European countries as well as new emerging industrial countries in Asia. In those countries, there are numerous dynamic activities for learning, dissemination, promoting, and implementing of TQM.

This entry reviews definitions, scope, and core principles of TQM. After that, the evolitional aspect is reviewed, and the entry ends with a discussion of the importance and limitation of TQM, including some TQM implementation issues.

**Fundamentals**

There are a large number of books, articles, and scientific journals covering the subject of TQM, but there are very few books and articles published before 1990 that use this...
term. The first book with the title *Total Quality Management* was published in 1989 by John Oakland, and the definition of TQM was formulated as follows:

TQM is Quality in all functional areas. . . . Total Quality Management (TQM) is an approach to improving the effectiveness and flexibility of businesses as a whole. It is essentially a way of organizing and involving the whole organization; every department, every activity, every single person at every level. For an organization to be truly effective, each part of it must work properly together, recognizing that every person and every activity affects, and in turn is affected by other. (pp. 12, 14)

When reviewing various definitions of TQM, it can be said that TQM is a management philosophy with a vision aiming at building a corporate culture (Dahlgaard, Kristensen, & Kanji, 1998) characterized by increased customer satisfaction through continuous improvements in which all employees actively participate.

To achieve the TQM vision is not a quick fix. The company’s management must, year by year, set up business and image goals, which when achieved will give a satisfactory balance between customer satisfaction and the various stakeholders’ satisfaction. Stakeholders are here defined as employees, suppliers, business partners, society, and owners.

Drawn from various definitions, the key principles of TQM can be summarized as the following eight principles:

• 1. Strong management commitment/leadership
• 2. Focus on the customers and the employees (internal customers)
• 3. Customer-driven continuous improvements
• 4. Everybody’s participation
• 5. Focus on facts (processes and measurements)
• 6. Focus on training, learning, and education
• 7. Building partnership with customers, suppliers, and society
• 8. Building a quality culture
The implication of the eight key principles is that to build a quality organization, there must be a strong leadership commitment that provides necessary training and education for employees so that they can be empowered and be involved in continuous improvement processes. When carrying out continuous improvements, the objective should be to increase customer satisfaction, and the improvement methodology should be based on countable and reliable facts rather than assumptions or anecdotes. An organization-wide approach of improving quality is only possible when there are trustworthy partnerships between suppliers, customers, and other stakeholders. Building a quality culture is assumed to be a result of practicing the first seven key principles.

Evolution

The birth of modern quality control has its origin in the time of mass production, and specifically during the 1930s, with the industrial application of statistical control charts suggested by Walter A. Shewhart from the Bell Laboratories. Shewhart’s presentation of control charts in industry and his publication of the book *Economic Control of Quality of Manufactured Product* in 1931 are generally viewed as marking the birth of modern quality control.

The Second World War provided rich opportunities for the application of control charts in various military industries, and by application of the control charts, the United States was able to produce large quantities of military supplies at a relatively low cost. During the war, thousands of quality specialists had been trained. In 1946, these specialists established the American Society for Quality Control (ASQC; now known as the American Society for Quality, ASQ).

Although quality control methods were applied in the military industries during the wartime, and quality control was established as a recognized discipline by the late 1940s, there were very few efforts to apply the methods in general. The U.S. managers generally ignored quality control methods for several decades until the Japanese products gained a good reputation for quality in the world market and gradually became dominant not only in world markets but also in the American market.
The circumstances in Japan, however, were quite different after the Second World War. All of its industries were destroyed and people lacked almost everything. Under these circumstances, the most important and urgent task for Japan was to determine how to survive. In this almost hopeless situation, the only way to survive was to produce superior industrial products, which could be accepted by and exported to foreign countries. For this purpose, the Japanese Standards Association was founded in 1945, and in the following year the Union of Japanese Scientists and Engineers (JUSE). Since then, these two organizations—JUSE and Japanese Standards Association—have played the central role in the training and promotion of various quality control principles, tools, and methods.

The Japanese people confronted quality issues as their challenge, and in the following few decades, they revolutionized the quality of their products and thereby became recognized as the world leader in quality. Some major contributions in the revolutionizing process can be attributed to the U.S. quality experts W. Edwards Deming and Joseph M. Juran. In recognition of Deming’s contribution to and encouragement of quality development in Japanese industries, in 1951, JUSE established the Deming Prize, which became not only the first quality prize in Japan but also the role model for several other quality prizes in the world several decades later. Juran, by giving lectures in 1954, influenced the Japanese to change the quality direction from an emphasis on the technique-oriented SQC (statistical quality control) to an emphasis on managerial aspects and a broader approach to quality control. The impact of Juran’s visit resulted in a transition of the quality control concepts from the narrow technology-based approach to an overall management philosophy.

Under these circumstances, the special Japanese model for everybody’s involvement in QCC—the so-called quality control circle—was born in 1962, which laid a foundation for companywide quality control (CWQC). During the 1960s, the CWQC approach spread to the major Japanese companies, and in 1969, it was decided officially to use the term companywide quality control.

As a consequence of the committed implementation of CWQC, the market share of Japanese products increased rapidly during the 1960s and 1970s in many industrial sectors. The United States and other relatively rich European countries did not pay serious attention to the gradual dominance of the Japanese products in world markets.
in spite of several warning signals. During the 1980s, many U.S. companies were to experience the loss of jobs and market share to Japanese competitors even in their home market of automobiles. In winning by quality rather than by any other single strategy, the Japanese were able to achieve a massive increase in market shares during the 1970s and 1980s, which gradually became a serious threat to many Western countries, including the United States. A remarkable turning point occurred in America and other Western countries when Deming, after three decades, was “rediscovered” in his home country in June 1980 by the NBC television documentary *If Japan Can, Why Can’t We?* Since then, this documentary has been widely cited as a wake-up call to U.S. managers to focus on quality and on customers’ needs as the first priority.

The 1980s became a revolutionary era for quality management in the United States and in other Western countries. An increasing number of companies adopted quality management, and parallel with that numerous publications concerning quality management were published. In this period, many theoreticians attempted to develop a holistic or synthetic theory of quality management with all the relevant theories and practical experiences taken in particular from the Japanese case. The term *total quality control*, and later *total quality management*, was often applied to these synthesizing theoretical attempts.

Another accelerating push toward the quality movement in this period was the establishment of the Malcolm Baldrige National Quality Award in 1987 in the United States, the Australian Quality Award in 1988, the birth of the EFQM (European Foundation for Quality Management) in 1988, and the birth of the European Quality Award in 1991. In the following years, most western European countries established similar national quality awards as well as countries outside Europe such as China. It is assumed that today there are more than 90 national and regional quality awards in the world.

As is seen from the evolution, the concepts used within the framework of quality evolved gradually; for instance, the word *control* was gradually replaced with *management*. We can also observe the gradual change of wordings for various quality awards. For instance during 1992–1997: The EFQM Model was termed “the European Model for TQM” or just “the European Quality Award Model.” During 1997–1999: The wordings changed significantly to “the European Model for Business Excellence.”
The change was a systematic one, which not only comprised the name of the model but also the text describing how to use the model for assessing a company’s level of business excellence or for award application purposes. This change of wording initiated in Europe by the EFQM in 1997 followed the change in the U.S. quality award model (the Malcolm Baldrige National Quality Award) a year before. This change of wordings is a strong indication that people’s understanding/paradigms in relation to the theoretical scope and application of TQM had changed significantly during the 1990s.

The evolution of TQM shows that the control of quality has moved from being a relatively narrow engineering or quality discipline that top management did not bother about too much, to a holistic management philosophy that has to be integrated in the daily management of all areas of any business.

Importance

During the past 10 to 15 years, several case studies have indicated that companies that have succeeded in investing and implementing TQM have improved their competitiveness as well as their profitability. Such case studies have, however, been regarded as weak indicators or no proof of the potential impacts of TQM because other, not shown, causal factors may have been disclosed in the case presentations and discussions. For that reason, more comprehensive studies on the financial impacts of TQM have been done in several regions of the world.

One example was a huge study in the United States where Kevin Hendricks and Vinod Singhal (1997, 2001a, 2001b) compared financial results and stock prices for more than 600 quality award–winning companies with a comparison company from the same industry over a period of 10 years. The results showed that during the implementation period (5 years before the first award was given) there were no significant differences in financial performance between the award-winning companies and the non-award-winning companies, but during the postimplementation period (5 years after the award) the award-winning companies outperformed the non-award-winning companies and the difference between the two groups of companies increased during this period. For example, it was documented that 5 years after the award, the award-winning companies had experienced an average increase in operation income of 86%, while
the non-award-winning companies had only experienced an average increase of 43%. So the award-winning companies increased 100% more than the non-award-winning companies on operating income.

Another example was a study in Europe by Louise Boulter, Tony Bendell, and Jens J. Dahlgaard (2013), where 120 companies that had won the European Quality/Excellence Award or the national equivalence were compared with 120 non-award-winning companies from the same country and the same industry as the award-winning companies. The research study design was the same as the U.S. study, meaning that financial results and stock prices were compared during a period of 10 years for each pair of award-winning and non-award-winning companies. The result patterns resembled and hence supported the U.S. results (2013 study).

As in the U.S. study, the results showed that during the implementation period (5 years before the first award was given), there were no significant differences in financial performance between the award-winning companies and the non-award-winning companies, but during the postimplementation period (5 years after the award), the award-winning companies outperformed the non-award-winning companies, and also the difference between the two groups of companies increased during this period. For example, it was documented that 5 years after the award the award-winning companies increased 77% more on revenues than the non-award-winning companies.

**Criticism of TQM**

Parallel with TQM’s appeal as being one of the most significant managerial approaches, TQM has also been subject to various criticisms, especially during the last part of the 1990s.

First, the reliability of TQM as a successful managerial tool has been criticized by organizations that have tried to implement the principles and didn’t get the expected results. Organizations have been disappointed with the implementation of TQM, because TQM could not deliver what they expected. Data and information concerning alleged TQM failure rates and description of particular cases gave rise to a new debate of whether the companies that experienced failure really adopted TQM or not.
Second, regarding a critical aspect of TQM concerning its position as a general management theory, it has been criticized that there is no consensus on terminology and definitions. TQM has also been criticized on the grounds that its main tenets are not all unique to TQM but are also part of other organizational change initiatives or generally accepted “good management practices.” Linkages between TQM and other management theories were lacking, organizational contingencies were not recognized, and organizational informal aspects such as power and politics were either completely forgotten or viewed as having little importance.

### Implementation of TQM

Much of the critique of TQM is related to the high failure rate when private as well as public companies are trying to implement TQM. On the surface, it may seem surprising that failure rates of more than 70% have been reported in various research studies about the success of TQM. However, there may be several causes for such high failure rates. One simple cause may be that the companies’ management team has not understood that implementing TQM is not “a quick fix” but is about the transformation of the company culture, a transformation where employees gradually through education and training are empowered and motivated to take over the responsibility for the continuous improvement process within their work areas. This transformation is also about the management team’s new role to build up a new organizational infrastructure, where improvement teams are supported to initiate bottom-up initiatives balanced with the strategic directions decided by management’s strategic plans for improvements. The latter has also been called strategic quality management, which is a natural part of the company’s yearly strategic planning process. To delegate the responsibilities for TQM implementation to an expert group—for example, the quality department—will often lead to such high failure rates as reported in literature.

Another cause for high failure rates in TQM implementation may be related to the criticism mentioned above that “organizational contingencies [p. 812] were not recognized, organizational informal aspects such as power and politics are either completely forgotten or viewed as having little importance.” This critique may especially be important if companies are trying to adopt so-called best TQM practices instead of adapting such best practices to the context, which may be quite different from the
contexts where the “best TQM practices” worked. This issue seems not to have been raised by many of the Western quality gurus who have influenced the quality evolution, although it was raised early in the 1950s in Japan by “the brain” behind “just-in-time,” the Toyota Production System and Lean Production chief engineer Taiichi Ohno. After his first study visit in 1950 to the world’s at that time most efficient automobile assembly factory, Ohno declared that mass production as at Ford could never work in Japan. Without this skepticism to adopt best methods, we may not have seen and experienced Lean Production, and Toyota would not have grown to be one of the top three automakers in the world.

Another example of adaption instead of adoption is also from the early quality evolution in Japan, where Professor Ishikawa, in the beginning of the 1960s, suggested the so-called quality control circles (QCCs) be promoted and implemented in Japanese companies. Promoting QCC was quite another way of involving people in quality improvements compared with the best practices from the United States where people involvement was based on control (the principles and methods of scientific management) instead of empowerment through study, and learning through practice. The Japanese success with QCC became heavily studied in the 1970s and 1980s, and many Western companies experienced failures when they tried to copy (adopt) the Japanese way of implementing QCCs because they did not understand that adaption to the national and company context is a necessity for success.

These learning points as well as many others say clearly that TQM should never be copied from companies that have had success with the TQM implementation. Successful companies’ TQM systems should only be studied for inspiration, and then, each company should build up its own TQM system based on the basic principles or generalized values characterizing TQM.

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See also Cross-Functional Management; Customer Satisfaction Management in the Public Sector; Deming Prize; EFQM Excellence Model; Kaizen; Quality Circles and Autonomous Teams; Quality Culture; Quality Function Deployment (QFD); Quality Management System; Six Sigma, Framework and Methodology; Strategic Quality Management
Further Readings


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