Total quality management

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Total quality management (**TQM**) consists of organization-wide efforts to install and make permanent a climate in which an organization continuously improves its ability to deliver high-quality products and services to customers. While there is no widely agreed-upon approach, TQM efforts typically draw heavily on the previously developed tools and techniques of quality control. TQM enjoyed widespread attention during the late 1980s and early 1990s before being overshadowed by ISO 9000, Lean manufacturing, and Six Sigma.

Contents

History

In the late 1970s and early 1980s, the developed countries of North America and Western Europe suffered economically in the face of stiff competition from Japan's ability to produce high-quality goods at competitive cost. For the first time since the start of the Industrial Revolution, the United Kingdom became a net importer of finished goods. The United States undertook its own soul-searching, expressed most pointedly in the television broadcast of *If Japan Can... Why Can't We?* Firms began reexamining the techniques of quality control invented over the past 50 years and how those techniques had been so successfully employed by the Japanese. It was in the midst of this economic turmoil that TQM took root.

The exact origin of the term "total quality management" is uncertain.[1] It is almost certainly inspired by Armand V. Feigenbaum's multi-edition book *Total Quality Control* (OCLC 299383303) and Kaoru Ishikawa's *What Is Total Quality Control? The Japanese Way* (OCLC 11467749). It may have been first coined in the United Kingdom by the Department of Trade and Industry during its 1983 "National Quality Campaign".[1] Or it may have been first coined in the United States by the Naval Air Systems Command to describe its quality-improvement efforts in 1985.[1]

Development in the United States

In the spring of 1984, an arm of the United States Navy asked some of its civilian researchers to assess statistical process control and the work of several prominent quality consultants and to make recommendations as to how to apply their approaches to improve the Navy's operational effectiveness.[2] The recommendation

was to adopt the teachings of W. Edwards Deming.[2][3] The Navy branded the effort "Total Quality Management" in 1985.[2][Note 1]

From the Navy, TQM spread throughout the US Federal Government, resulting in the following:

- The creation of the Malcolm Baldrige National Quality Award in August 1987
- The creation of the Federal Quality Institute in June 1988
- The adoption of TQM by many elements of government and the armed forces, including the United States Department of Defense,[4] United States Army,[5] and United States Coast Guard[6]

The private sector followed suit, flocking to TQM principles not only as a means to recapture market share from the Japanese, but also to remain competitive when bidding for contracts from the Federal Government[7] since "total quality" requires involving suppliers, not just employees, in process improvement efforts.

Features

There is no widespread agreement as to what TQM is and what actions it requires of organizations,[8][9][10] however a review of the original United States Navy effort gives a rough understanding of what is involved in TQM.

The key concepts in the TQM effort undertaken by the Navy in the 1980s include:[11]

- "Quality is defined by customers' requirements."
- "Top management has direct responsibility for quality improvement."
- "Increased quality comes from systematic analysis and improvement of work processes."
- "Quality improvement is a continuous effort and conducted throughout the organization."

The Navy used the following tools and techniques:

- The PDCA cycle to drive issues to resolution
- *Ad hoc* cross-functional teams (similar to quality circles) responsible for addressing immediate process issues
- Standing cross-functional teams responsible for the improvement of processes over the long term
- Active management participation through steering committees
- Use of the Seven Basic Tools of Quality to analyze quality-related issues

Notable definitions

While there is no generally accepted definition of TQM, several notable organizations have attempted to define it. These include:

United States Department of Defense (1988)

> *"Total Quality Management (TQM) in the Department of Defense is a strategy for continuously improving performance at every level, and in all areas of responsibility. It combines fundamental management techniques, existing improvement efforts, and specialized technical tools under a disciplined structure focused on continuously improving all processes. Improved performance is directed at satisfying such broad goals as cost, quality, schedule, and mission need and suitability. Increasing user satisfaction is the overriding objective. The TQM effort builds on the pioneering work of Dr. W. E. Deming, Dr. J. M. Juran, and others, and benefits from both private and public sector experience with continuous process improvement."*[12]

British Standards Institution standard BS 7850-1:1992

"A management philosophy and company practices that aim to harness the human and material resources of an organization in the most effective way to achieve the objectives of the organization."[13]

International Organization for Standardization standard ISO 8402:1994

"A management approach of an organisation centred on quality, based on the participation of all its members and aiming at long term success through customer satisfaction and benefits to all members of the organisation and society."[14]

The American Society for Quality

"A term first used to describe a management approach to quality improvement. Since then, TQM has taken on many meanings. Simply put, it is a management approach to long-term success through customer satisfaction. TQM is based on all members of an organization participating in improving processes, products, services and the culture in which they work. The methods for implementing this approach are found in the teachings of such quality leaders as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa and Joseph M. Juran."[15]

The Chartered Quality Institute

"TQM is a philosophy for managing an organisation in a way which enables it to meet stakeholder needs and expectations efficiently and effectively, without compromising ethical values."[16]

Baldrige Excellence Framework

In the United States, the Baldrige Award, created by Public Law 100-107, annually recognizes American businesses, education institutions, health care organizations, and government or nonprofit organizations that are role models for organizational performance excellence. Organizations are judged on criteria from seven categories:[17]

1. Leadership
2. Strategy
3. Customers
4. Measurement, analysis, and knowledge management
5. Workforce
6. Operations
7. Results

Example criteria are:[18]

- *How do you obtain information on your customers' satisfaction relative to their satisfaction with your competitors?*
- *How do you select, collect, align, and integrate data and information for tracking daily operations?*
- *How do you manage your workforce, its needs, and your needs to ensure continuity, prevent workforce reductions, and minimize the impact of workforce reductions, if they do become necessary?*

Joseph M. Juran believed the Baldrige Award judging criteria to be the most widely accepted description of what TQM entails.[8]:650

Standards

During the 1990s, standards bodies in Belgium, France, Germany, Turkey, and the United Kingdom attempted to standardize TQM. While many of these standards have since been explicitly withdrawn, they all are effectively superseded by ISO 9000:

- *Total Quality Management: Guide to Management Principles*, London, England: British Standards Institution, 1992, ISBN 9780580211560, OCLC 655881602, BS 7850
- Electronic Components Committee (1994), *Guide to Total Quality Management (TQM) for CECC-Approved Organizations*, Brussels, Belgium: European Committee for Electrotechnical Standardization, CECC 00 806 Issue 1
- *System zur Zukunftssicherung: Total Quality Management (TQM)*, Düsseldorf, Germany: Verein Deutscher Ingenieure, 1996, OCLC 632959402, VDI 5500
- *Total Quality and Marketing/Management Tools*, Paris, France: AFNOR, 1998, FD X50-680
- *Total Quality Management: Guide to Management Principles*, Turkish Standards Institution (TSE), 2006, TS 13133

Legacy

Interest in TQM as an academic subject peaked around 1993.[1]

The Federal Quality Institute was shuttered in September 1995 as part of the Clinton administration's efforts to streamline government.[19] The European Centre for Total Quality Management closed in August 2009, a casualty of the Great Recession.[20]

TQM as a vaguely defined quality management approach was largely supplanted by the ISO 9000 collection of standards and their formal certification processes in the 1990s. Business interest in quality improvement under the TQM name also faded as Jack Welch's success attracted attention to Six Sigma and Toyota's success attracted attention to Lean manufacturing, though the three share many of the same tools, techniques, and significant portions of the same philosophy.

TQM lives on in various national quality awards around the globe.[21]

See also

- Capability Maturity Model Integration CMMI
- Lean manufacturing
- List of national quality awards
- Malcolm Baldrige National Quality Award
- People Capability Maturity Model
- Zero Defects

Footnotes

1. The Navy rebranded its effort "Total Quality Leadership" in 1990.[2]

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2. Houston, Archester; Dockstader, Steven L. (1997), *Total Quality Leadership: A Primer* (http://www.balancedscorecard.org/portals/0/pdf/primer.pdf) (PDF), Washington, D.C.: United States Navy, pp. 10–11, OCLC 38886868 (https://www.worldcat.org/oclc/38886868), 97-02, retrieved 2013-10-19

3. McDaniel, Delora M.; Doherty, Linda M. (February 1990), *Total Quality Management Case Study in a Navy Headquarters Organization* (http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA219412), San Diego, California: Navy Personnel Research and Development Center, p. 1, OCLC 227755405 (https://www.worldcat.org/oclc/227755405), NPRDC-TN-90-10, retrieved 2013-10-20, "Effective implementation of Total Quality Management (TQM) to improve quality and productivity is based upon the philosophy and management principles of W. Edwards Deming."

4. United States Department of Defense (1989), *Total Quality Management: A Guide for Implementation*, Springfield, Virginia: National Technical Information Service, OCLC 21238720 (https://www.worldcat.org/oclc/21238720), DoD 5000.51-G

5. *Total Army Quality Management* (http://www.apd.army.mil/jw2/xmldemo/r5_1/cover.asp), Washington, D.C.: United States Army, 1992-06-12, Army Regulation 5–1, retrieved 2013-10-19

6. Nelson, Robert T. (1991-01-10), *COAST GUARD TOTAL QUALITY MANAGEMENT (TQM) GENERIC ORGANIZATION* (http://www.uscg.mil/directives/ci/5000-5999/CI_5224_7.pdf) (PDF), Washington, D.C.: United States Coast Guard, COMDTINST 5224.7, retrieved 2013-10-19

7. Creech, Bill (1994), *The Five Pillars of TQM: How to Make Total Quality Management Work for You*, New York: Truman Talley Books/Dutton, p. 153, ISBN 9780525937258, OCLC 28508067 (https://www.worldcat.org/oclc/28508067), "...the DOD took steps to extend its reach to the thousands of vendors who sell to the department... Thus was born the DOD's TQM outreach program to all its vendors, large and small. And the TQM banners went up all over America."

8. Juran, Joseph M. (1995), *A History of Managing for Quality: The Evolution, Trends, and Future Directions of Managing for Quality* (http://www.qualitydigest.com/dec/juran-2.html), Milwaukee, Wisconsin: ASQC Quality Press, p. 596, ISBN 9780873893411, OCLC 32394752 (https://www.worldcat.org/oclc/32394752), retrieved 2013-10-20

9. Holmes, Ken (1992), *Total Quality Management*, Leatherhead, United Kingdom: Pira International, Ltd., p. 10, ISBN 9781858020112, OCLC 27644834 (https://www.worldcat.org/oclc/27644834), "Ask ten people what TQM is and you will hear ten different answers. There is no specification or standard for it, or certification programme to proclaim that you have it. What we understand by TQM probably depends on which of the thought leaders, (often referred to as 'gurus') we have come across."

10. Creech, Bill (1994), *The Five Pillars of TQM: How to Make Total Quality Management Work for You*, New York: Truman Talley Books/Dutton, p. 4, ISBN 9780525937258, OCLC 28508067 (https://www.worldcat.org/oclc/28508067), "In fact, the term TQM has become so widely used that it has become the number one buzzphrase to describe a new type of quality-oriented management. Thus, the name TQM now covers a very broad tent encompassing all sorts of management practices. In my management advisory activities I run into scores of these different programs all parading under the same name. Few are alike, and those varied programs have a wide variety of features—a mixture of the old and the new—with, in more cases than not, very little of the new. ... However, I have forewarned you there are almost as many different TQM programs as there are companies that have started them because that creates confusion about what to do in your own case."

11. Houston, Archester (December 1988), *A Total Quality Management Process Improvement Model* (http://www.dtic.mil/dtic/tr/fulltext/u2/a202154.pdf) (PDF), San Diego, California: Navy Personnel Research and Development Center, pp. vii–viii, OCLC 21243646 (https://www.worldcat.org/oclc/21243646), AD-A202 154, retrieved 2013-10-20

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15. "Quality Glossary - T" (http://asq.org/glossary/t.html). *asq.org.* Milwaukee, Wisconsin: American Society for Quality. Retrieved 2013-10-19.
16. "Factsheet: Total quality management (TQM)" (http://www.thecqi.org/Knowledge-Hub/Resources/Factsheets/Total-quality-management/). *www.thecqi.org.* London, England: The Chartered Quality Institute. Retrieved 2013-10-19.
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18. *2011–2012 Criteria for Performance Excellence* (https://www.nist.gov/baldrige/publications/upload/2011_2012_Business_Nonprofit_Criteria.pdf) (PDF), Gaithersburg, Maryland: National Institute of Standards and Technology, 2011-01-12, retrieved 2010-10-20
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Further reading

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External links

- Example Baldrige Award criteria
- The American Society for Quality resource page on TQM
- The Chartered Quality Institute resource page on TQM
- The Economist resource page on TQM