6 Total quality management

6.1 Total quality management (**TQM**) is the organization-wide effort to install and make permanent a climate in which it 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. As a business phenomenon, TQM enjoyed widespread attention during the late 1980s and early 1990s before being overshadowed by ISO 9000, Lean manufacturing, and Six Sigma.

6.2 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. 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". 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.

6.3 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. The recommendation was to adopt the teachings of W. Edwards Deming. The Navy branded the effort "Total Quality Management" in 1985.

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, United States Army,[1] and United States Coast Guard. The private sector followed suit, flocking to TQM 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 since "total quality" requires involving suppliers, not just employees, in process improvement efforts.

6.4 Features

There is no widespread agreement as to what TQM is and what actions it requires of organizations, 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:

- "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.

Malcolm Baldrige National Quality Award criteria

In the United States, the Bald ridge Award, created by Public Law 100-107, annually recognizes American businesses, educational institutions, and health care

organizations that run high-quality operations. Organizations are judged on criteria from seven categories: Leadership

1. Strategic planning
2. Customer focus
3. Measurement, analysis, and knowledge management
4. Workforce focus
5. Operations focus
6. Results

Example criteria are: 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.

6.5 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

6.6 Legacy

Interest in TQM as an academic subject peaked around 1993.

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