

Depiction of Total Quality Management during a Span of 2003-2013

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ABSTRACT

The tenacity of this article is to craft a depiction of one decade's quality movement. The progression of the depiction, aims to ease in establishing the existing standing of total quality management (TQM) and endorse in accepting and influencing its imminent course. In this effort, potential circulated articles during that period under the question of TQM have been collected. The collected data further analyzed and reflected in order to show the delineations, elements and methods that have been cited by various scholars, professionals, academics, etc. The outcomes display the basic to build a renowned philosophy in terms of employee's empowerment, ownership, leadership, cultural change, continuous improvements, etc., based on facts and focus on the customer satisfaction have been increasing more during the last decade.

Key words: Delineations, elements, literature review, total quality management

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1. INTRODUCTION

Quality has emerged as the single most critical factor needed for the survival and growth of an organization [1]. Quality is widely recognized as one of the most important disciplines, strategies or competitive priority for an organizational development. In this era of global competition, a company needs to apply quality methodologies in the form of strategic quality management; quality systems; quality assurance (QA); quality control (QC), etc. In other words, the organization has to implement the concept of total quality management which provides the approach to realize the manufacturing strategy leading to fulfillment of corporate strategy. The principles and contents of TQM philosophy would increase a firm's commitment to quality and if they are applied correctly enhances the firm's competitive position. This is because the TQM principles support the business practices of cost reduction, enhanced productivity, and improved quality of the outputs, i.e., it helps to support and fulfill the concept of excellence in manufacturing. The majority of successful manufacturing companies have embraced TQM and realized its invaluable contribution. Hence, the importance of TQM as an effective pillar for achieving manufacturing excellence status cannot be denied [2].

TQM excellence is a fundamental criterion or element for achieving manufacturing excellence and universally accepted as one of the most understood change management programmer. It is one of the strategies for confronting the global competitive challenge facing both manufacturing and service industries [3].

The development of TQM is the ways back to the Inspection, Quality Control, Quality Assurance and total quality control, which later become the total quality management and is revealed in the Figure 1. Each subsequent phase has extended

the scope of the TQM concept. Most modern applications of the quality concept have emerged gradually, and not through dramatic breakthroughs [4]. Based on the "quality eras" a number of different approaches to defining quality have emerged over the years. Whereas, quality defined by Juran is 'fitness for use or purpose' which basically translates to the ability of a given product or service to meet the purpose for which it was produced and delivered. Feigenbaum defined quality as 'total composite of product and service characteristics of marketing, engineering, manufacture, and maintenance through which the product and service in use will meet the expectation by the customer'. ISO 8402 defined quality as 'the totality of features and characteristics of a product and service that bear upon its ability to satisfy stated or implied needs'.

The core values of TQM, integrating all the interacting components in an organization, are applicable to any size of organization — large or small, any type of organization — manufacturing or service, private or public [5].

2. LITERATURE REVIEW

Numerous accessible papers are reviewed over total quality management and related matters for the duration of 2003-

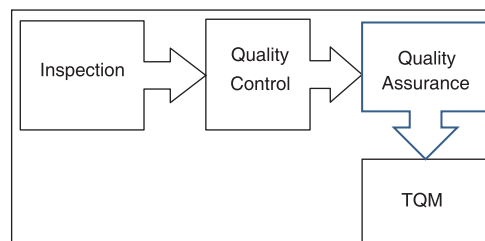


Figure 1: Evolution of total quality management from quality

2013, whereas few are mentioned from reputed international journals to international conferences, like: Reliability and Maintainability Symposium, International Conference on Computers and Industrial Engineering, Engineering Management Conference, Portland International Conference on Management and Technology and Frontiers in Education Conference proceedings to IEEE Review, The TQM Magazine, Management Review, Quality Management Journal, Information and Management, Human Systems Management, Employee Relations, International Business Review, International Journal of Quality and Reliability Management, The Institution of Electrical Engineers, International Journal of Operations and Production Management, International Journal of Production Economics, Management Accounting Research, Journal of World Business, Journal of Organizational Behavior, European Journal and Business Innovation, Computer Integrated Manufacturing System, International Journal of Quality Science, Journal of Operations Management, Managing Service Quality, European Journal of Innovation Management, International Business Review, Journal of Management Science, Technovation, Journal of Operations Management, Strategic Management Journal, Management Science, Journal of Materials Processing Technology, Industrial Management, Data Systems, Managing Service Quality, etc.

3. OBJECTIVE OF THE STUDY

- To know the facets of total quality management.
- To work out the most used elements and methods.

4. METHODOLOGY

A number of conducts of steering literature reviews are in practice and some are: A systematic review methodology, a meta-analysis, or a narrative literature review [6]. Only systematic review methodology is considered for the purpose to abate pre-judices, which processes the literature in three phases: Planning, conducting and reporting.

Planning phase ascertains the review objectives and decorum where full length articles based upon TQM are considered.

Conducting phase is started with the duration of review process from 2003 to 2013.

Reporting phase is to systematic analyses the review results in the following sections where disparagingly appraised the literature to ascertain the facets, elements and methods used and to understand the others view point about TQM in that period (2003-2013). Features, elements and methods of the TQM given by different researchers, professionals, academicians, etc. are appreciated.

4.1 Delineations of TQM

Many researchers have pronounced TQM in their own ways and several more attempts are made to express the TQM, which are illustrated as under:

Author	Year	Description
Beer [7]	2003	Top-down TQM programs often fail to create deep and sustained change in organizations
Kaynak [8]	2003	TQM is a holistic management philosophy that strives for continuous improvement in all functions of an organization
Wali <i>et al.</i> [3]	2003	TQM is universally accepted as the change management programs
Kodali [9]	2003	TQM has now been recognized as a generic management tool, relevant for service and public sector organizations
Garg <i>et al.</i> [10]	2005	
Stading and Vokurka [25]	2003	TQM is one of the quality approaches to enhance overall performance, for many companies
York and Miree [26]	2004	TQM is an integrated management and a set of management methods and tools
Dale [27]	2004	Besterfield (2004, p. 24) defined TQM as both a philosophy and a set of guiding principles
Irani <i>et al.</i> [11]	2004	Total quality management is identified as an origin of innovation, competitive advantage, and organizational culture
Rungtusanathama <i>et al.</i> [28]	2005	TQM is a comprehensive management paradigm with many definitional elements and relationships
Yang [29]	2005	TQM is a holistic approach aims to maximize customer satisfaction
Ryan and Moss [30]	2005	TQM success lies in viewing it as a holistic process rather than a selective or contingent process
Ozden and Birsen [31]	2006	TQM is also an integrated management philosophy
Hafeez <i>et al.</i> [32]	2006	Total quality management is called as a management philosophy
Dahlgaard, and Dahlgaard-Park [33]	2006	TQM is less a fixed and rigid quality framework and measures the customer satisfaction
Garg <i>et al.</i> [12]	2006	TQM is now becoming recognized as a generic management tool, just as applicable in service and public sector organizations
Karuppusami and Gandhinathan [13]	2006	TQM is an integrative management philosophy
Vouzas and Psychogios [34]	2007	In almost all definitions of TQM, two substantial aspects can be identified: The "hard" side and the "soft" side. The "hard" (or technical) side refers to management tools, techniques and practices, while the "soft" (or "philosophical") is associated with management concepts and principles
Chang and Sun [14]	2007	TQM is portrayed as a set of guiding principles
Keng [15]	2007	TQM is a key strategy to keep competitive superiority and a management method to improve productivity and efficiency
Wu and Wang [35]	2008	Total quality management is an overall business quality improvement system. It is as brand or system to guarantee the aspiration of total quality

(continued)

Author	Year	Description
Martnez-Costaa <i>et al.</i> [36]	2008	TQM is typically defined as a system of practices with overarching or systematic impact on company practices and performance
Agus and Hassan [16]	2009	TQM is a concept based on continuous improvement
Leng [17]	2009	TQM is not simply a set of tools and techniques but a holistic quality approach combining human and technical elements
Kumar <i>et al.</i> [18]	2009	TQM is considered as an important improvement tool for quality and business performance
Chen and Chen [39]	2009	TQM is a managerial method for improving competitive ability and management techniques on promoting a firm's main viable capability
Dakic [19]	2010	TQM as a management philosophy that includes a set of tools and processes, which outputs bring consumer satisfaction and continuous improvement
Srinivasu <i>et al.</i> [38]	2010	TQM is a systems approach to management that aims to enhance value to customer
Thamizhmanii and Hasan [37]	2010	TQM is a management technique and a systematic approach to quality, process improvement to delight the customers
Kumar <i>et al.</i> [20]	2011	TQM is a modern management philosophy and a journey, not a destination. TQM is a systematic management approach and is a way of managing the industries
Agus and Hassan [21]	2011	TQM provides a vision
Brun [22]	2011	TQM is an integrated practice
Ahuja [23]	2012	TQM has emerged as a customer-centric approach encompassing a set of management policies
Koilakuntlaa <i>et al.</i> [40]	2012	TQM is considered as an important quality and business performance improvement tool
Naghshbandi <i>et al.</i> [41]	2012	TQM is a management method to improve productivity and efficiency leading to top quality
Kaur <i>et al.</i> [24]	2013	TQM is an approach that seeks to improve quality and performance

TQM: Total quality management

4.4.1 Facets of TQM

Facets viewed by the innumerable authors in the reviewed papers are as such:

- TQM is viewed as an approach by most.
- TQM is viewed as a philosophy least than the preceding one.
- After that TQM is viewed as a tool and technique.
- Then, TQM is viewed as a process.
- In the similar way, TQM is viewed as a method and system then culture, strategy and way after then concept and program.
- Few are viewed TQM as a theory, paradigm, style, resource, framework and commitment.

These facets are specified in the Figure 2 below:

4.2 Elements considered

In the reviewed papers, elements used are categorized as such:

1. Strategic elements
 - Top management commitment and approach
 - Employee's empowerment
 - Ownership
 - Long-term orientation and persistence
2. Human elements
 - Motivation
 - Training and education
 - Employees' commitment and participation
 - Human resource or personnel management
 - Employee's co-operation and teamwork
 - Customer focus
 - Employee's attitude
 - Leadership
3. Circumstantial elements
 - Customers and suppliers relations
 - Competitive position
 - Continuous improvement
 - Cultural change

- Customer focus and satisfaction
 - Employees' satisfaction and employment continuity
4. Procedural elements
 - Continuous process improvement (Juran trilogy, plan-do-study-act cycle, kaizen, re-engineering, problem solving methods, etc.)
 - Performance measures (times series graph, control chart, capability index, Taguchi's loss function, cost of poor quality, Malcolm Baldrige National Quality Award, etc.)
 - Design management and product design process
 - Purchasing and supplier quality management
 - Process management, process improvement and error prevention
 - Customer acknowledgment
 - Competitive advantage
 5. Structural elements
 - Quality in daily work
 - Communication
 - Information, analysis and feedback
 - Organization for quality
 - Supplier integration and partnership

Above described elements are illustrated in the Figure 3 below:

4.3 Methods applied

A detailed review of the literature revealed the various methods are exercised those are depicted in the Figure 4 also:

- Survey based on
 - Questionnaire
 - Group interviews
 - Telephone
 - Literature Review
- Modeling
- Case study and observation
- Analytical research
- Applied research

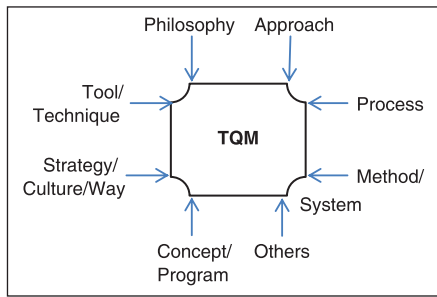


Figure 2: Facets of total quality management

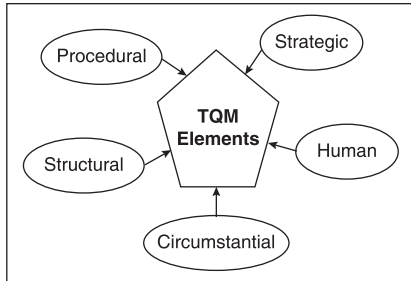


Figure 3: Total quality management elements

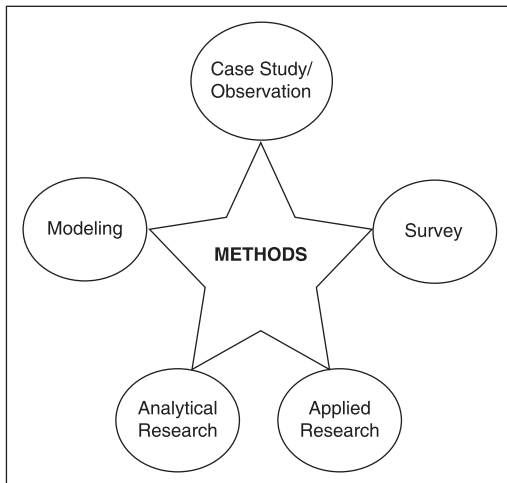


Figure 4: Total quality management methods

5. FINDINGS

TQM is considered by most of the researchers is as an approach and a philosophy.

The implementation of TQM is principally based upon the constraint of the concerned organization and furthest considered elements are categorized into five sub-divisions namely:

- a. Strategic elements (employee’s empowerment, top management commitment and approach, etc.).
- b. Human elements (motivation, employees’ commitment and participation, etc.).
- c. Circumstantial elements (customers and suppliers relations, employees’ satisfaction and employment continuity, etc.).
- d. Procedural elements (Continuous process improvement, performance measures, design management, etc.).

- e. Structural elements (quality in daily work, communication, supplier integration and supplier partnership, etc.).

The methods realized by utmost researchers are: Survey, Modeling, Case study, Analytical, and Applied research the most.

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