

Review Paper on Total Quality Management

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Abstract: *In the current scenario of highly competitive domestic and global business environment, the implementation of the Total Quality Management (TQM) concept has become an important business style and a key survival tool for both the manufacturing and service industries, from large to small, to achieve the business goal and market value. A good number of large-scale companies have embraced TQM for achieving the company's goal and mission there. Negligible Small and Medium Enterprise (SME) units have however implemented TQM. While SMEs play an important role in the country's economic growth and growing population demand, especially in developing countries like India, SMEs are still resistant to adopting TQM. Many Indian SMEs have established suitable QMS (Quality Management System) under customer pressure to obtain ISO 9001 certification leading to quality assurance, but have failed to adopt TQM due to lack of awareness. As such, it has become very important to understand the reasons behind their reluctance in implementing TQM. A number of literatures on the research on the Critical Factors for the successful implementation of TQM and the reasons responsible for the resistance of the SME in implementing TQM are discussed in this review paper. The result will motivate and help them to remove or minimize the barriers of SMEs in implementing TQM to attain business excellence in future research.*

Keywords: *Benchmarking, Quality Management System, Quality Assurance, Small and Medium Enterprise and Total Quality Management.*

I. INTRODUCTION

During the last few decades, both the large scale manufacturing industries and SMEs are facing considerable changes in the business environment, including increase of consumer awareness about to the quality, cost and the design and other parameters of the product, rapid growth advancement of technology, globalization of business is achieved by the company, etc. As a result, the major challenges faced by the manufacturing industry is quality improvement and the continuous development of the new product and its efficiency in addition to innate cost competitiveness and on time delivery of the product.

To address the challenges being faced by the industries in today's highly competitive business world, TQM[1] has become the key survival tool and vital business requirement for all the industries both large industries and SMEs. TQM philosophy has been successfully adopted by all large manufacturing industries. However, it is also true that SMEs are still lacking behind to adopt TQM. Though SMEs play a vital role in the economic growth of the country, particularly in all developing countries like India for the employment growing population of the developing

country. A most of manufacturing SMEs[2] are working as the supplier of the large scale manufacturing industries. So, they are becoming integral part of larger supply chains management and the quality of their products also becomes remarkably important and they will not be able to achieve competitive success, if they are not quality aware and on time supply of their products and services. There should be an adequate statistical quality control system in the first phase, then an operational quality management system in the second phase and overall quality management in the final phase for continuous quality improvement and the production of the new product or innovation to enhance customer satisfaction, resulting in increased profitability and improved business.

II. FACTORS OF TOTAL QUALITY MANAGEMENT AND ORGANISATIONAL PERFORMANCE

Based on an extensive literature review of conceptual as well as empirical studies there are seven factors critical to TQM implementation and 45 measures of TQM performance. The seven factors include top management commitment; quality measurement and benchmarking; process management; product design; employee training and empowerment; vendor quality management; and customer involvement and satisfaction. The factors are briefly explained below:

II.I. Top management commitment:

The degree of exposure and help that management takes to implement a complete quality environment is vital to the TQM implementation's[3] success. Four distinctive ways in which management can promote implementation of TQM: allocation of budgets and resources; visibility control; progress monitoring; and change preparation. Transferring management assistance to the shop floor should be the focus of attention. The management will plan to reduce historically organized rates of activities and redundant roles. Simplifying the organization will lead to the establishment of an infrastructure of integrated business functions participating as a team and supporting the strategic vision of the company.

II.II. Quality measurement and benchmarking:

A company must embrace strong acceptance and maintenance of a measurement and benchmarking plan for the overall quality. Quality programs[4] should calculate the percentage or number of pieces that deviate from the appropriate, to avoid a defect from repeating. Performance costs could include relevant changes in market share, cost of warranty, and cost of testing, reworks and waste. The cost of non conforming raw materials could include lost revenue or productivity costs and would aid in vendor selection and certification.

II.III. Process management:

This factor emphasizes adding value to processes, increasing quality levels, and raising productivity per employee. Numerous tactics were stressed to accomplish this aspect though. The list includes: developing work center practices and introducing operator-controlled processes that lead to lower unit costs, adopting principles of

continuous improvement, reducing operator material handling duties, encouraging a production system design and achieving a compact process flow.

II.IV. Product design:

Development methods provide a perfect starting point for qualitative success analysis. There is a wide range of options before plans are finalized. Organizations should consider the factors when planning the product design[5] processes: fully understand customer product and service requirements; emphasize fitness of use, clarity of specifications and productivity; involve all departments affected in the design reviews; and avoid frequent redesigns.

II.V. Employee training and empowerment:

Employees must be geared towards a company's culture[6] of dedication to continuous improvement, educated about organization objectives, and made to feel a part of the team. Proper training requires description of the overall business processes and the requirements for product quality. Specific training assessment metrics include: the time and resources companies spend on training employees and on quality values management, problem-solving skills, and teamwork. On the other hand, specific measures of employee empowerment include: the degree to which cross-departmental and work teams are used, the extent of employee autonomy in decision making, the extent of employee interaction with customers and the extent to which employee suggestion systems are being used.

II.VI. Vendor quality management:

Many enterprises now support the need to work closer with their suppliers, at least in theory. Partnerships with suppliers have the greatest appeal to most enterprises due to the shared risks associated with new product development. Partnerships between vendors should be based on a quality program and agreed documentation of progress towards continuous quality improvement

II.VII. Customer involvement and satisfaction:

There are two main areas that should tackle customer service: internal customer service and external customer security. Components of an internal customer service plan should include the provision of timely and reliable deliveries, the presentation of improvements or cost-saving suggestions for management and the authorization of employees to self-implement solutions, cross-training of more than one job and adequate technical training. An external customer service system should include delivering timely information and quick response to complaints to customers, and maintaining a corporate goal of reducing the quantity of queries or concerns while acknowledging all employees positive efforts in providing outstanding service. Measures must be those that show where improvements have been made and where improvements are possible, rather than simply monitoring the work of the people.

III. CULTURAL DIFFERENCES AND TQM

Several other scholars have looked at TQM's relationship and its success with regional and organizational cultural differences. The underlying Chinese values of humiliation, adaptability and harmony with people, harmony

with the universe, interdependence and respect for authority have been found to have significant influence on four dimensions of quality, namely climate, processes, methods and results. It is also found that both TQM principles[7] and managerial ideology of TQM implementation can influence changes in the cultural profile. Some findings include that TQM had the most effect on process management, focus on customers and leadership and management and less effect on focus on suppliers, performance results, strategic planning and focus on material resources. Human resource problems, performance appraisal and strategic problems were the most important obstacles to TQM success respectively. Also, the success of TQM in hospitals with organic organizational structure and medium organizational culture was found higher than mechanistic and bureaucratic hospitals with weak organizational culture.

IV. TQM FRAMEWORKS IN HEALTH CARE

Health care organizations are peculiar in the nature of their operations and their clients. Good health is genuinely a basic need for all and unlike other sectors, consumers (patients) cannot be segmented on the basis of social or economic factors. The health care services are aimed at people who belong to a wide range of incomes and need a variety of medical treatments. It is expected that service providers will concentrate on both moral and ethical aspects of business. Consequently, the application of TQM[8] and its success in healthcare has been a separate subject of service sector study. Research in this area has addressed issues such as the production of survey instrument, service quality system, obstacles and challenges, and the adaptation of various TQM models such as the MBNQA model and the EFQM model of excellence. Good health is a critical human need and inadequate quality of health care is essential to their lives. Increasing costs, technological advances, aging populations, competitiveness and marketing of health services at the expense of business ethics have drawn academics, professionals and governing body's attention to managing health care performance. Healthcare systems have made various efforts to manage their problems. The latest of the efforts has been the deployment of performance measurement, monitoring and improvement initiatives. Umbrella organizations such as the World Health Organization (WHO) and the Organization for Economic Co-operation and Development (OECD) have taken an international lead in encouraging health system performance measurement. Most developed countries are looking at performance assessment to assess and increase the productivity of their health systems. A number of countries have tried to control this proliferation through the development of theoretical frameworks for coordinating and prioritizing initiatives. In these theoretical frameworks, the performance of health care systems has been defined by certain performance attributes; among them are the quality of care, access to care and care costs.

V. CRITICAL SUCCESS FACTORS FOR TQM IMPLEMENTATION

Key researchers were researching the Critical Success Factors for implementation of TQM i.e. Factors that affect the successful implementation of TQM in SMEs. The authors have identified various Critical affecting factors in a number of research studies, which are to be carefully considered with the aim of successful implementation of Total Quality Management. However, although such influencing factors are responsible for the successful implementation

of TQM, they are not really the difficulties faced by SMEs when it comes to adopting TQM[9], for which they lose interest in implementing TQM.

The important element of the economy which is responsible for the driving innovation and competition in the many economic sectors. The problem could be in decision according to the market conditions with many external and internal factors are considered. The factors of the considerations in SMEs are:

- Financial Factor
- Firm Size
- Institutional factor
- Technological Factor
- Consumer Preference
- Economic factor
- Culture factor
- Market Orientation
- Competitive Advantages
- Learning capability

These are the above factor are studied to understand the Successful Implementation of the TQM in SMEs.

In recent study of critical factors of quality practices defined top management support as main driver for Quality Management[10] implementation for creating the values, defining the organizational goals to satisfy the customers. In studies, customer satisfaction is consented as second most important factor which provides the measures for organizational efforts and effectiveness. For the Implementation of TQM; there are several factors for the better implementation and successful results of the TQM.

- Development of the new product
- Financial factor
- Innovation
- Team Work
- Human Management System
- Technology Adopted
- Method of the Quality Assurance

The models are formed to understanding relation of factor and the influence of the TQM model.

VI. COMMON DIFFICULTIES OF SMES IN TQM IMPLEMENTATION

There are certain common factors affecting innovation and the implementation of the TQM in the SMEs. Those critical factors are given below:

- Financial Factor
- Technology Factor
- Consumer Factor
- Economic Factor
- Communication Factor
- Top Management Skill
- Teamwork
- Competitive Advantage
- Market Orientation
- Government Policy

Based on the discussion above, there are several factors that affect the SMEs during the successful implementation of the TQM. Due to the continuous improvement process, the efficient implementation of the TQM will improve the organization's performance with improving the product quality.

VII. CONCLUSION

Studies have suggested a fairly large number of TQM implementation factors / elements / constructs / dimensions. Many of them showed up more often than others. TQM and performance enhancement have a positive relationship, particularly the quality award requirements from Malcolm Badrige support this relationship between quality management practices and business results. A study indicates that there are many empirical studies that analyze the success relationships of TQM practices in large firms but the small and medium firms also need a little more researchers focus. Culture, both regional and organizational, also has a considerable impact on the application of TQM and its effectiveness. The literature suggests all aspects in which TQM affects the organizational culture and community greatly contributes to the success of the TQM plans. For various reasons, the service sector as such finds itself lagging behind in the successful implementation of the TQM activities. The situation worsens further when this paper look at the facilities that are targeted at consumers, such as health care. While the literature on the dimensions of service quality in the healthcare industry is full of studies from the developed world, researchers from developing countries have been exploring the applicability of the related models and frameworks in their specific context.

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