

# IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT, ISSUES & CHALLENGES

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**Abstract—** Total Quality Management (TQM) is a continuous process improvement by improving work methods to achieve the quality products. The implementation of TQM with Human Resource Management (HRM) can improve the organizational performance and efficiency; such as the small scale industries & Medium scale industries.

In today's demanding world innovation management is becoming one of the key drivers for change and competitive advantage within industry. SMEs need to respond speedily to these emerging changes so as to fulfill their customer needs more rapidly. The key component of a knowledge economy is a greater dependence on intellectual capabilities than on physical inputs or natural resources. The benefits of TQM tools and techniques are widely recognized following reports of its successful implementation in many large companies. It has led to these companies becoming highly competitive both locally and internationally through the production of quality products that meet customer requirements at the lowest cost and achieves the better position in the market significantly increasing their market share and profitability.

This Paper examines the current position of Small and Medium manufacturing Enterprises (SMEs) in their manufacturing methods and the techniques which they follow. The research paper aims to facilitate the implementation of TQM in SMEs by enabling them to benchmark their progress. The characteristics of SMEs and principles of TQM were closely researched to develop a TQM model based on 5 Pillars that would specifically cater to the needs and requirement of SMEs. A questionnaire was developed based on these 5 Pillars to assess the level of TQM implementation in manufacturing Small Scale & Medium scale Industry.

Implementation of the TQM in the SMEs led to the improvement of the quality of the product as well as the production of the product for the better way.

**Key words:** TQM - Total Quality Management, HRM - Human Resource Management, SMES – Small and Medium manufacturing Enterprises.

## I. INTRODUCTION

In Today's increasingly globalized economy, small and medium enterprises SMEs are now considered to be major source of dynamism, innovation and flexibility in the emerging and developing countries like India, as well as to the economics of most industrialized nations. In the last three decades, most of the literature shows that innovation is the key drivers to enhance the competitiveness of the manufacturing sectors in India (Porter 1966; Burgelman et al., 1988). Thus, in order to sustain the competitiveness in the global marketplace, they need to engage in a continuous improvement of technologies as well as innovation (Johnson et al., 2004).

Manufacturing Sector is the main engine of economic growth and wealth creator for a country; it creates a sustainable economic, encourages investments, creates jobs and builds the nation. "The share of manufacturing sector has been stagnating at a low level of 17% of GDP for over two decades. One of the major reasons for the reduced level of contribution by Manufacturing has been the inability of the country to build and maintain competitiveness needed to meet the global challenges as well as to develop a larger domestic market through low cost production" (National Manufacturing Competitiveness Council, report 2011).

In the developing country like India; the demand of the various products and the various need of the population should be fulfilled so that it is necessary to improve the manufacturing sector of the India. For the improvement of SMEs, which led to the various emergent in the economics of the India and also fulfilled the needs of the growing population of the India, SMEs form as a potential economics back-bone of many regions and make a large contribution to employment than the large firm (Peng, 2009). A similar trend exist in India too where SMEs have potential to be powerful engine growth and innovation in the field of manufacturing products and goods.

An efficient quality management requires quality actions to be planned, improved and controlled. Today, it is difficult to say that any industry is not facing a multitude of challenges either in terms of cost, or material or people. However, giant companies acquire certain level of expertise and knowledge to run their business, which is largely sufficient to handle their projects in most of the cases. Quality has been heralded as the source of competitive advantage during the 1980s and 1990s, particularly when Western companies began to see the loss of their market share to their Japanese competitors (Prajogo and Sohal, 2005).

Total Quality Management (TQM) has been considered as a widely applied process for improvements, but with mixed success (Samson and Terziovski, 1999). In this study, we focus on quality awareness to develop the quality culture. The result reveals some interesting facts that may be helpful in providing users with immediate and relevant information. We begin with background theory, which is followed by a quality awareness approach, and description of a case study. Discussion is then presented to lead towards the conclusion.

The Survival and growth of SMEs can be difficult in current competitive business environment and global marketplace; customers are more demanding to have better and cheaper products, higher services levels, more products varieties and fast delivery (Chow et al., 2008, Ketchen et al., 2008). In addition, the change of business models such as lower production models such as lower production cost, delivery of even-increasing customer value, flexibility with superior services and the pervasive impact of information technology (Chandra and kumar, 2000) are increasingly creating mammoth challenges for business to survive. For this competitive environment it is important that the process of the production so that it has continuous improvement but the cost of production should be low as much as. The implementation of the TQM led the SMEs to improve the business of the company and it also help to maintains it quality of the product since it focuses on

every phase of the process i.e. for the top management to the customer's feedback. In this research paper it focuses on the various factors which are responsible for the SMEs so that they are not able to implement the TQM in their company.

## II. LITERATURE REVIEW

There are many studies are done on the impact of TQM implementation in SMEs. Many of the researchers have done the various researches on implementation of the TQM in the SMEs and the following Reviews of the various research papers had been study to understand the various method of the Implementation and challenges of it in SMEs during the implementation of TQM.

Rajesh Kumar & Abhimanyu Samrat et al 2015, A study was conduct for the analyzing the effectiveness of QMS i.e. Quality Management System in the Gujarat manufacturing industries. In the study data form which consist of the combination of exploratory and descriptive nature. In primary data collection the survey questionnaire was divided into the different level related to the organization. The questionnaire administered on 62 respondents out of which 54 have been found to be valid. This response was used to analyze the result of the organization. The result analyzed that the QMS practice/ methodology which was followed by the Gujarat manufacturing industries and the difficult or challenges during the implementation of the Total Quality Management in the Gujarat. [1]

Thoo Ai Chin, Abu Bakar Hamid, Amran Rasli and Rohaizat Baharun., 2012, the study is about the study of the SCM (Supply Chain Management) in the Malaysia and the benefits of it in the SMEs and the large companies. It gives Challenges facing by the SMEs i.e. quality services, cost reduction and efficiency. It shows that the SMEs in Malaysia have to proper awareness of the SCM. It explains the benefits of the SCM in the SMEs and method to adopt this method's for the continuous improvement process and the strategies and the planning for the implementation. [2]

Youssef, Koch and Dolan (252, p.946), Quality techniques and behavior's entrenched within an organization or its sub-units under two conditions. First, these techniques and behavior are in congruent with criteria established by International Standardization Organization (ISO) or they are embodied in a framework of national or international quality award frameworks such as those of MBNQA or EFQM. Second , these techniques must help organization or its sub-units achieve a sustainable competitive advantage at both operational and strategic levels- that is they impact the business performance of an organization or one or more of it sub-units. [3]

Samuel K.M. Ho (100, p.16), There is natural skepticism among managers towards quality initiatives, and not without reason. Many organizations each year commit vast amount of time and effort to improving business performance, without any lasting or measurable results. Quality Gurus' ideas are result of their life-time understanding and experience about quality that could be used by every individual and organization, and their values are tremendous. [4]

## III. PROBLEM DEFINITION

In the research paper, it focuses on the various factors which influence's on the implementation of the TQM in small scale industries.

### The Objectives of the Research:

- To understand the Total Quality Management Practices in the Manufacturing Industries.
- To understand the issues & challenges of TQM Implementation in the Manufacturing Industries.

We are trying to understand the various issues and the Challenges in implementation of TQM in the small scale industry. For the understanding the challenges and the issues in the small scale industry we were selected the various manufacturing industries and the small & Medium Enterprises thought which we will draw the various conclusion on the TQM Practices adopted by the manufacturing industries and also the factor which effect the on the implementation of TQM.

For the improvement of the SMEs the various manufacturing companies is necessary to understand the issues of the SMEs so that it is easy to implement the various quality management practices in SMEs. The SWOT analysis is done on the SMEs.

Table 1 SWOT Analysis for the SMEs

<b>STRENGTHS</b>	<b>WEAKNESS</b>
<p>As a positive element of employment SMEs play an important in the solution to the unemployment problem.</p> <p>Increasing awareness for the adaptation of modern production techniques.</p> <p>Contribute to regional development.</p> <p>Developing political commitment for the design and implementation of SME policies.</p> <p>Increasing motivation for innovation and entrepreneurship.</p> <p>Working with a high proprietary interest rate, which makes enterprises less vulnerable to financial crises.</p> <p>Existence of pro-active bottom-up initiatives in favor of innovation.</p> <p>Adapt to changes with its flexible structure.</p>	<p>Low private and public expenditure on research and development.</p> <p>Inadequate use of modern marketing and business techniques force.</p> <p>Deficiency in quality and branding as well as qualified labor force.</p> <p>Insufficient level of institutionalization and specialization.</p> <p>Inadequate continuous monitoring and evaluation system for SME policy measures.</p> <p>Inadequate financial sources of SMEs.</p> <p>Cannot use modern marketing techniques.</p> <p>Educational level and the quality of SME managers and employees is not at desired level.</p> <p>Collaboration and productivity levels are low.</p>
<b>OPPORTUNITY</b>	<b>THREAT</b>
<p>It has been aware of the importance of SMEs in the economy.</p> <p>Discussion of SME and related policies at a number of platforms.</p> <p>EU membership process offers new opportunities</p>	<p>Economic uncertainty has a negative impact on SMEs.</p> <p>Lack of coordination between agencies which are providing services and support to SMEs.</p> <p>International sectorial-based presentation is</p>

for SMEs.  
 Strategy and action approach towards SMEs is accepted by the government.  
 EU markets will offer new opportunities for SMEs.  
 Intellectual and industrial property rights legislation and technical infrastructure was developed for SMEs.  
 Improvements in macroeconomic indicators of India will provide long-term benefits.

inadequate.  
 Social security contributions, tax rates etc. are high in liabilities.  
 Implementations of policy and strategy documents of SMEs are inadequate.  
 Issues regarding communications information and trust could not yet be overcome in some area.  
 International political and economic uncertainty  
 Low participation in lifelong learning programs by SMEs.

#### IV. RESEARCH METHODOLOGY

For the Research methodology following steps follow to understand the goal of the research as show in the flow diagram.

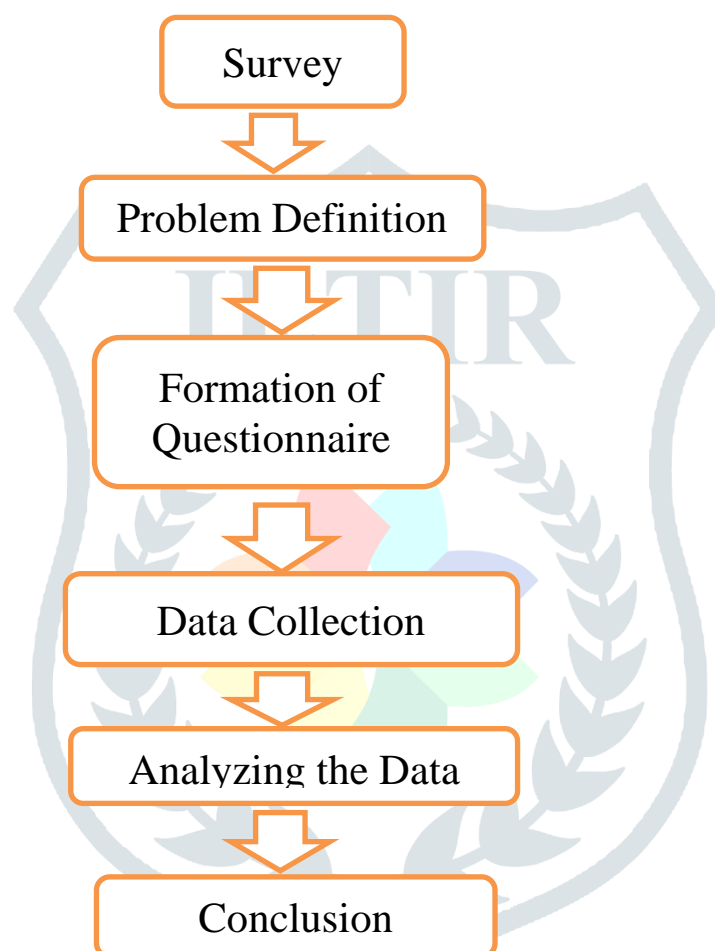


Fig.1 Flow Diagram for the Research methodology

#### 4.1 RESEARCH GOAL

In this research paper we aim to identify the attitudes of executives towards the TQM planning and investigate the TQM tools and technique used in the SMEs operating in the different size and different Sectors in Western Zone, Vasai Region. Moreover, we aim to determine whether the TQM tools & techniques used by SMEs and challenges of it according to the firm size and sector.

#### 4.2 DATA COLLECTION

In this study, a field survey using questionnaires were conducted for analysis. SMEs operating in various sectors in Western Zone were chosen as the research population. Randomly selected SMEs were taken as the sample of the research. Analysis has been carried out using data which were obtained from the SMEs in Western Zone by using a questionnaire form. The respondents were chosen from the middle and senior managers of SMEs. Questionnaires were subjected to respondents by interviewing face to face. Data obtained from questionnaires were analyzed.

According to Emory and Cooper (1995:pp 278), there are three primary types of data collection (survey) methods namely:

**4.2.1 PERSONAL INTERVIEWING:** In personal interview respondents see the questionnaire and inter-act face to face with the interviewer, thus lengthy and complex, and variable questions can be asked.

**4.2.2 TELEPHONE INTERVIEWING:** In telephone interviews the respondents interact with the interviewer, but they do not see the questionnaire, this limit the type of questions that can be asked to short and simple one.

**4.2.3 SELF-ADMINISTERED QUESTIONNAIRES/SURVEYS:** Mail questionnaire are self-administered, calling for the questions to be simple with detailed associated instructions (Emory & Cooper, 1995:278).

While all of the above listed methods were used, the primary data collection method used in this survey is Self-administered questionnaires/surveys. Remenyi et al. (2002:290), defines the concept of 'survey' as: "the collection of a large quantity of evidence usually numeric, or evidence that will be converted to numbers, normally by means of a questionnaire". The data collection method used in the survey, falls within the context of a survey, defined by Collis and Hussey (2003:60), as: "A sample of subjects being drawn from a population and studied to make inferences about the population".

For the formation of the questionnaires form various factors are taken in the consideration so that get much information about the factor which effect the implementation in the SMEs and the parameters regarding to it.

Respondents were asked to evaluate their firm's total quality management. In our research we used these TQM success factor's dimensions:

- a. Leadership/ Top Management,
- b. Strategic planning process,
- c. Strategic quality management,
- d. Process quality management,
- e. Conception quality management,
- f. Education and training,
- g. Supplier quality management,
- h. Customer satisfaction,
- i. Employee responsibility and involvement,
- j. Important innovation,
- k. Quality results (business results),
- l. Knowledge and analysis,
- m. Needs of the employee,
- n. Government Policy,
- o. Resource and Requirement,
- p. Finance.

The quality performance construct includes the following dimensions:

- a. Product performance,
- b. Product / service quality,
- c. Productivity,
- d. On time delivery,
- e. Product reliability,
- f. Product durability,
- g. Suitability of product design specifications,
- h. Product standardization,
- i. The percentage of defective material from the supplier,
- j. Total warranty cost,
- k. Ratio of quality control inspectors to direct production operators,
- l. The percentage of total waste product.

On the bases of the above factor the questionnaires are form and data is collected from the SMEs. This form is used to interpretive the data and the factor which are effecting in the implementation of the TQM in SMEs.

#### 4.3 Analyzing the Data

In the is step the data of which are collected from the various sources it will analyzed the following data is for the implementation of TQM in the SMEs there are the factors which effect in the implementation of the TQM

The following factors are studied in SMEs

1. Top Management Commitment,
2. Development Capabilities,
3. Technological Opportunities,
4. Competitive Pressure,
5. New Product Development,
6. Information Sharing,
7. Supply Chain Management,
8. Long Term Strategic Goal,
9. Research and development,
10. Continuous Improvement,
11. Financial Performance.

#### V. CONCLUSION

Innovations are substantial for the economic performance of SMEs in all over the world. This work has reviewed the most important innovation factors according to SMEs owner and manager. The decision model is based on the questionnaire. The decision makers found this technique very useful because model makes a deep reflection on the problem, as well as determine the criteria influencing innovation factors, and analyses the influences among criteria and set priorities using the models proposed here. The Director Manager's & the employee of the company had to answer some questionnaires that, though at first seemed difficult, were relatively simple and easy to answer. We asked the relative strength of mainly simple yes/no types question related to the factors. This procedure improves the current decision-making process, providing more rigor and scientific robustness. Although this report points out different factors to promote the innovation factors, there are other things you can see in the relationship between the different innovation factors that can be added to decision model. In other words, if you build an open innovation model, it is obvious to find different results. Prior studies such as Karpak and Topçu, (2010) indicate that the most influential factor affecting the success of SMEs is regulation and policies.

In the second place there is facility location and in the third place there is stage of industry. According to the research of Talebi et al., (2012), the most influential factor in SMEs innovation is the stage of industries following by demand, industry -university linkage, attitude to work change and size and age.

This study examines the factors influencing the innovation performance of SMEs, and the results of this study shows that the most important criteria's for the decision makers are Management skills, Technological capability, financial factor, and firm size with a total weight of nearly half of the total weight. Management Skills is often considered as the most influential factor related to the performance of an SME (Man et al., 2002). And also management skills plays critical role in innovation process by promoting the entrepreneurial activity in the firm, provide resources being open minded and by supporting collaboration.

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