A Comparative Analysis between Small and Medium Scale Manufacturing Company through Total Quality Management Techniques

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Abstract

Objective is strategic goal, set by the organization through its strategic planning process for attainment of vision in larger frame of the future. Today, find much literature which abounds with case studies of successful companies, descriptions of quality concepts, and quality improvement approaches. However, most of this literature is rather weak in providing benchmark data or a framework that managers can use to evaluate and modify their own quality improvement efforts. This framework is important because it can be used to assess the status of quality practices in organizations and guide managers in their quality improvement initiatives, without being dependent on outside consultants. It is also useful in providing initial benchmark data about the strengths and weaknesses that exist within the firm in the process of pursuing a quality improvement program. Smaller firms are likely to face more risk in attempting technological or organizational change. Because large and medium companies can assess greater resources, they are more likely to survive a stumble when adopting a new technology or trying a new management concept such as TQM. Consequently, this causes smaller firms to place great importance on "doing it right the first time." They may not get a second chance. It is also helped small and medium size enterprises--would be able to design and implement their own less expensive and easy to follow TQM criteria, which ultimately will produce competent internal results for their company.This paper presents an introduction to total quality management, in general .The benefits, perceived weaknesses, and recent trends are analyzed using a search of the literature. The focus of this research is also established in this paper.

Keywords
TQM, Process Chart, Control Chart, Flow Chart, Pareto Chart.

Introduction

Conceptual Framework

In today's world due to insufficient quality or indifference to quality lead to disputes, this imposes serious drain on the financial resources of a company and limits profit potential. To be competitive in today's market, it is essential for construction companies to provide more consistent quality and value to their owners/customers**.** Interest in quality issues has been on the rise as firms come to realize that providing better quality leads to lower costs, reduction in appraisals and failure costs, and a higher market share. Within the past decade, the process of achieving quality improvement has become a priority for many organizations. Recent evidence also suggests that more and more corporations and organizations tend to recognize the importance and necessity of quality improvement if they are to survive in today's domestic and worldwide competition. Total Quality Management has been accepted throughout the world these days. Many organizations are trying to adopt TQM as a way of life.TQM is an organization wide quality focused culture. It is a system approach to quality management and a journey to achieve excellence in all aspects of organization's activity.

> "Total Quality management refers to a management process and set of disciplines that are coordinated to ensure that the organization consistently meets and exceeds customer requirements. TQM engages all divisions, departments and levels of the organization. Top management organizes all of its strategy and operations around customer needs and develops a culture with high employee participation. TQM companies are focused on the systematic management of data of all processes and practices to eliminate waste and pursue continuous improvement."

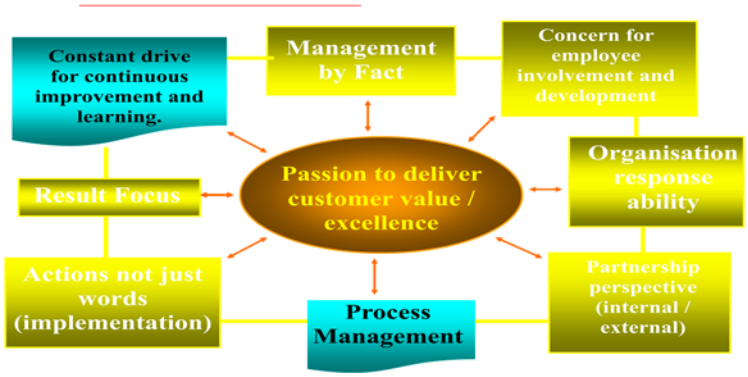

Figure 1: Total Quality Management

TQM is a management philosophy, a paradigm, a continuous improvement approach to doing business through a new management model. The TQM philosophy evolved from the continuous improvement philosophy with a focus on quality as the main dimension of business. Under TQM, emphasizing the quality of the product or service predominates. TQM expands beyond statistical process control to embrace a wider scope of management activities of how we manage people and organizations by focusing on the entire process, not just simple measurements.
TQM is a comprehensive management system which:

1. Focuses on meeting owners'/customers' needs by providing quality services at a cost that provides value to the owners/customers
2. Is driven by the quest for continuous improvement in all operations
3. Recognizes that everyone in the organization has owners/customers who are either internal or external
4. Views an organization as an internal system with a common aim rather than as individual departments acting to maximize their own performances
5. Focuses on the way tasks are accomplished rather than simply what tasks are accomplished
6. Emphasizes teamwork and a high level of participation by all employees

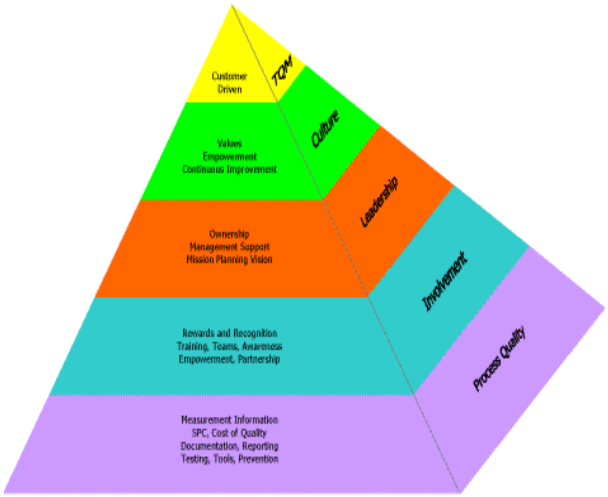

Figure 2: TQM elements

Scope of the Study

TQM system drives the business processes of company for superior business results by changing the focus of all activities in the company to the customer. To change the focus of all activities to customer and customer needs, TQM system presumes that:

- Entire business process of company is an unending "chain" for delivery of continuously improved products and services to the total satisfaction of its customers, and

- Individuals or groups within the company who are performing an activity or activities concerning those products or services are “links “in that chain.

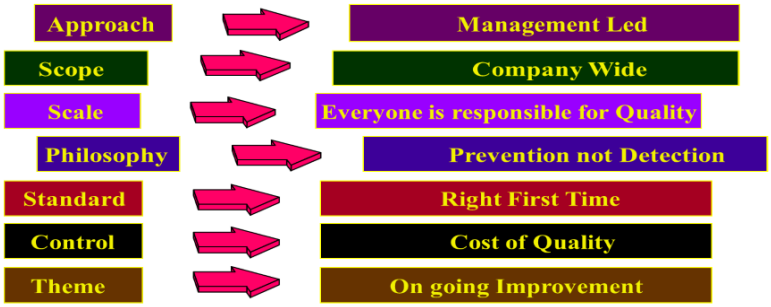

Figure 3: Scope of TQM

Review of Literature

In the 1940s, Japanese products were perceived as cheep, shoddy imitations. Japanese industrial leaders recognized this problem and aimed to produce innovative high quality products. They invited a few quality gurus, such as Deming, Juran to learn how to achieve this aim. Deming suggested that they can achieve their goal in five years; not many Japanese believed him. However, they followed his suggestions. Maybe the Japanese thought it was rude to say that they did not believe Deming. Or maybe they thought it would be embarrassing if they could not follow his suggestions. Whatever reason it was, they took Deming’s and other gurus’ advice and never looked back. In the 1950s, quality control and management developed quickly and became a main theme of Japanese management. The idea of quality did not stop at the management level. Quality circles started in the early 60s. A quality circle is a volunteer group of workers who meet and discuss issues to improve any aspects of workplace, and make presentations to management with their ideas. A by-product of quality circles was employee motivation . Workers felt that they were involved and heard. Another by-product was the idea of improving not only quality of the products, but also every aspect of organizational issues. This probably was the start of the idea, total quality. The term ‘total quality’ was used for the first time in a paper by Feigenbaum at the first international conference on quality control in Tokyo in 1969. The term referred to wider issues within an organization.Ishikawa also discussed ‘total quality control’ in Japan, which is different from the western idea of total quality. According to his explanation, it means ‘company-wide quality control’ that involves all employees, from top management to the workers, in quality control. In the 1980s to the 1990s, a new phase of quality control and management began. This became known as Total Quality Management (TQM). Having observed Japan’s success of employing quality issues, western companies started to introduce their own quality initiatives. TQM, developed as a catchall phrase for the broad spectrum of quality-focused strategies, programmes and techniques during this period, became the centre of focus for the western quality movement. In 1988 a major step forward in quality management was made with the development of the Malcolm Baldrige Award in the United States. The model, on which the award was based, represented the first clearly defined and internationally recognized TQM model. It was developed by the United States government to encourage companies to adopt the model and improve their competitiveness. In response to this, a similar model was developed by the European Foundation of Quality Management in 1992. This EFQM Excellence Model is the framework for the European Quality Award. While leading organizations compete to win awards, the main purpose of these awards is to encourage more companies to adopt quality management principles. The models are practical tools; they help organizations to measure where they are now and where they want to be in the future. The models also help organizations to create a plan to reduce the gap between these positions. Today, hundreds of quality awards and several models exist all over the world. TQM models are often called Business Excellence Models. Also, TQM itself is now often called Business Excellence. This is to distinguish the “new TQM” from the past work on TQM.

Company Profile

The study is a comparative analysis between small and medium scale industry.AMUL K. BAKERS is a small scale industry in which 15 workers are there. It is situated in industrial area Laxmibai nagar, Indore. It manufactures bread and toast. It supplies bread and toast in Indore only. Owner of this factory is Mr. Ashok Kumar Jagwani. Medium scale industry is POPULAR BREAD AND FOOD PRODUCTS. It is also situated in industrial area Laxmibai nagar,

Indore. Mr. Harish Bhatia is owner and Mr. G.K. Neema is senior factory in charge of factory. Here 60 workers engage in manufacturing process of bread, toast and sauce. All departments are separate of each other. They have 3 depot offices in Indore city. They supply products in all over Madhya Pradesh.

Research Methodology

The Sample Design

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. While developing a sampling design, we must pay attention to the following-

1) Sample Area-Collect data from managers, senior supervisor and workers
2) Sample Size-10

Tool for Data Collection

Data constitute the subject matter of analysis. Data are the information gathered by the researchers for the purpose of a project. The primary sources of information are memos, letters, interviews, laws, regulations, court decision and most of the government data including census, economic and labor data. In this study, questionnaire method to collect the data. The Questionnaire was designed using the eight core areas of TQM, which are management Leadership, employee involvement in decision making, customer focus, system approach for management, continuous improvement, HRM and training, and beneficial supplier relationship as a basis.

Questionnaire Method used for primary data collection .In this study; questionnaire method to collect the data. The questionnaire was designed using the eight core areas of TQM, which are

1. Management leadership
2. Employee involvement in decision making
3. Customer focus
4. System approach for management
5. Continuous improvement
6. HRM and training
7. Beneficial supplier relationship

Questionnaire is categorized in 4 sections-

a) Section I--General information about the company and TQM status
b) Section II--The core area of TQM
c) Section III--Detailed operation practices that reflect TQM core areas
d) Section IV--Tools and techniques of TQM

Section I was developed for the purpose of obtaining general information about the respondents and their company in relation to TQM. In section II, the respondents were required to know the core areas of TQM according to their degree of contribution to the TQM implementation process. In Section III respondents were given statements of operation processes that reflect criteria of the core values of TQM. The respondents were required to indicate their level of agreement with each statement. TQM tools and techniques. In Section IV, were tested on their level of usefulness to the organization in a TQM implementation process.

SECTION I (GENERAL FRAMEWORK)

Question: Are you familiar with the philosophy of Total Quality Management?

Table 1: Workers familiarity with TQM

AMUL K. BAKERS	
Yes	1
No	9

POPULAR BREAD AND FOOD PRODUCTS	
Yes	4
No	6

In this analysis, for AMUL K.BAKERS 10% are familiar and 90% are unfamiliar and in POPULAR BREAD AND FOOD PRODUCTS 40% are familiar and 60% are unfamiliar With TQM philosophy.

SECTION II (GENERAL FRAMEWORK)

Question: General 7 core elements of Total Quality Management. Points given which are suitable for each element as long as the total points for the section total up to exactly 100.

Table 2: Percentage of core elements

AMUL K. BAKERS	
Management leadership	6
Employeeinvolvement in decision making	23
Customer Focus	20
System Approach for Management	3
Continuous Improvement	29
HRM and Training	4
Beneficial Supplier Relationship	15

POPULAR BREAD AND FOOD PRODUCTS	
Management leadership	3
Employeeinvolvement in decision making	4
Customer Focus	32
System Approach for Management	12
Continuous Improvement	22
HRM and Training	10
Beneficial Supplier Relationship	17

In this analysis, for AMUL K.BAKERS only focus on 3 areas like employee involvement in decision making, customer focus and continuous improvement but POPULAR BREAD AND FOOD PRODCTS focus and improve all areas.

SECTION III (ABOUT QUALITY MANAGEMENT PROGRAMS)

Management Leadership

Question: In order for quality improvement programs to be successful, top management must be visibly committed to quality and needs to demonstrate through their words and actions.

Table 3: Management Leadership 1

AMUL K. BAKERS	
Disagree	3
Agree	3
Not Known	4

POPULAR BREAD AND FOOD PRODUCTS	
Disagree	3
Agree	6
Not Known	1

In this analysis for AMUL K.BAKERS 30% are disagree,30% are agree and 40% are unaware but in POPULAR BREAD AND FOOD PRODUCTS 30% are disagree,60% are agree and 10% are unaware about committed vision of top management.

SECTION IV (TOOLS AND TECHNIQUES)

Based on your experience, please rate the following tools and techniques according to their level of usefulness in ensuring the success of quality improvement programs.

Question Control Chart

Table 4: Control chart Usage

AMUL K. BAKERS	
Yes	2
No	8

POPULAR BREAD AND FOOD PRODUCTS	
Yes	5
No	5

In this analysis for AMUL K.BAKERS 20% are disagree and 80% are agree but in POPULAR BREAD AND FOOD PRODUCTS 50% are disagree and 50% are agree that control chart helps to improve the quality of product.

Results

In the analysis of both small and medium scale industries:

1) Small scale industry does not aware about Total Quality Management framework. They do not organize any training program for workers and employees.
2) They only focus toward the customer requirement, do not concern about satisfaction of workers.
3) They do not give priorities to the workers in a case of management decision making process.
4) In a Small scale industry, all workers are contract basis. Due to that, workers do not that much dedicated for good quality product.
5) Small scale industry chooses suppliers on the basis of price only. It affects quality of product.
6) Management is too much strict toward workers. They do not believe to create supportive and healthy atmosphere for workers.
7) Small scale industry does not update technology on time to time basis. They still do work manually.
8) They produce the product on the basis of order only. So there is no policy, procedure and discipline in factory.
9) Small scale industry makes changes in a product quickly but that is not possible for medium scale industry.
10) Small scale industry is less flexible to solve customer complains.

Suggestions

Based on the research results obtained from this study, the following is the summary of the action plan that small and medium size manufacturing companies should take in their journey in implementing TQM programs within their organization.

1) Organizations that are committed to improving their productivity and pursuing a total quality management program often need to know where to start.
2) The foundation of an effective total quality management effort is a commitment. For successfully implement TQM in their organization, they have to believe in it--be committed to it.
3) Employees and workers should be a part of quality program for improvement in product and service.
4) Satisfied employees help to create satisfied customers.
5) The most influential factors for their job satisfaction and TQM program to be successful are mastery of the knowledge and skills essential for doing one's job and development of a positive relationship at work, which can be refined through supportive environment at workplace.
6) Based on the results of this study, Problem Solving Techniques and Team Building types of training were chosen as the two most important types of training that an organization should embark upon, and should be given a higher priority in your organization's TQM journey.
7) The pillar of TQM success also involves the development of a quality management system to provide the necessary controls, discipline, and standardization of improvements. It also involves the use of quality management tools and techniques to make improvements and solve problems for small scale industry.
1) 8)From the research results, tools such as Process Chart, Control Chart, Flow Chart, Pareto Chart and techniques such as ISO 9000 and Benchmarking are considered to be highly Useful to small and medium scale manufacturing companies.
8) In comparison, smaller organizations seem to regard the customer focus core element as a more important element than do medium sized organizations. This could be due to the fact that personal touch and close customer-supplier relationships are often prevailing in smaller organizations.
9) In general, all types of training were found to be useful to small scale manufacturing companies.
10) Small and medium scale industry should adopt customer feedback as a continuous improvement tool for effective change.
11) Small scale industry should be adopting the new technology for technological advancement.

Conclusion

Based on the results of the study, the following conclusion appear to be justified due to the consistency of the findings:

1) The number of employees in the organization does not play a significant role in the perceived contribution of total quality management core elements. The finding indicates that regardless of whether the organization is small or medium sized, the perceived importance of the elements contribution still remains the same.
2) The findings indicate that most of the current small and medium scale manufacturing companies do have a quality improvement program established in their organization.
3) The research also supported conclusions on the crucial importance of management leadership and worker involvement in the TQM implementation process. It does not make any difference, whether the company is small or medium scale; management leadership and worker involvement appeared to be the top two reasons needed for quality improvement programs to be Successful.
4) Small and medium scale organizations do not seem to pay much attention to the issue of using data to make judgments compared to other core elements.
5) The prospect of TQM success is more likely to happen in a small and medium scale organization compared to the large organization. The notion that TQM is only useful for large and established organization can be rejected based on the findings of this study.
6) The research revealed that in general the usage of TQM tools and techniques do not depend on the number of employees operating in the company. The familiarity with TQM programs also does not much affect the choice of TQM tools and techniques. Basically the choice could be dependent on other issues, such as types of organization and the complexity of the tools. Through the studies, the tools that are considered to be useful and popular are Pareto Chart, Control Chart, Process Chart and ISO 9000.

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