

## A PROPOSED MODEL OF TQM IMPLEMENTATION IN BULGARIAN SMALL AND MIDDLE ENTERPRISES

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**Abstract:** *This paper is based on an empirical study of Total Quality Management (TQM) implementation in the Bulgarian small and middle Enterprises (SME). The main focus of the study was to identify critical quality factors for effective TQM implementation and to understand how these critical quality factors are deployed and implemented by Bulgarian organizations. The paper presents the outcomes from this research in the form of an implementation framework, constructed through the use of practical guidelines, the key steps of which have been validated and supported empirically*

**Key words:** *Quality, Quality Management, Total Quality Management, Quality Awards Model*

### 1. INTRODUCTION

Quality is an important consideration for executive thinking. The success of companies has dramatically influenced both quality and business management today. Total Quality Management is a management approach that originated in the 1950's and has steadily become more popular since the early 1980's. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with effective processes and no defects in operations. The main purpose of this study was to construct a generic framework for TQM, implementation to assist Bulgarian organizations to implement effectively the TQM initiatives. The aim is to know what is essential for the success of these organizations' TQM initiatives. This is, therefore, the general approach adopted for this study and it is essential in the construction of the generic framework. This required the achievement of four specific objectives. The first objective was to identify the quality factors that are critical to effective implementation of TQM based on the up-to-date existing knowledge of implementation. The effort involves Bulgarian organizations that are advanced in their use of TQM agreeing on a set of quality factors based on their implementation experiences. Other objective was to understand how the critical, quality factors are deployed and implemented. The investigation involves identifying the tactics and techniques used by Bulgarian organizations in implementing the quality factors. The final objective was to identify the critical issues in the pre-launch stage of TQM. This involves identifying the foundation elements for TQM implementation in the Bulgarian organizations. Specifically, this required:

- Identifying the critical quality factors of successful implementation based on the experience of Bulgarian organizations advanced in their use of TQM.

- Identifying the tactics and techniques used by those organizations in implementing the critical quality factors.

- Identifying the foundation elements for effective TQM implementation.

### 2. THEORETICAL ASPECTS

An extensive literary review was carried out to identify the elements necessary for the successful implementation of TQM. The roots of TQM go back to the teachings of Drucker, Juran, Deming, Ishikawa, Crosby, Feigenbaum and other people that have studied, practiced, and tried to refine the process of organizing management [3, 5, 6, 7, 8, 9, 15].

Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs [10].

TQM is a philosophy that involves everyone in an organization on continual effort to improve quality and achieve customer satisfaction [5].

Typical for an organization going through a total quality process would be a clear and unambiguous vision, few interdepartmental barriers, time spent on training, excellent supplier and customer relations and the realizing that quality is not just a product quality but also the quality of the the whole organization, including sales, finance, personnel and other nonmanufacturing functions [10].

There are some common points which are shown below.

- Top Management establishes a mid- and long-term vision and strategy.

- Top management determines the organization climate. It develops a quality culture by changing perception and attitudes towards quality.

- The importance of education and training is concerned in changing employees' beliefs, behavior and

attitudes and enhancing their competencies in carrying out their duties.

- The emphasis is on prevention of product defects, not inspection after the event, and on the reduction of the costs of quality to improve competitiveness.
- There are broad agreements that all aspects of activities should be looked at for quality improvement, as these all contribute towards quality. Functional integration is considered to be an important ingredient of TQM. Quality is a company-wide activity [8].

In summary, TQM is an approach supported by fundamental organizational power such as core technology, speed and vitality. TQM requires application of the principles of quality management are in every branch and at every level in an organization. Top management provides commitment, leadership, and the appropriate support for technical and human processes. It is imperative that management has a clear understanding of the process.

### 3. REVIEW OF QUALITY AWARDS MODELS

One of the most useful trends on TQM Implementation has been the self assessment activities of many companies. World-wide, there are several Quality Awards, such as the Deming Prize in Japan, the European Quality Award in Europe, the Malcolm Baldrige National Quality Award in the United States of America. The Deming Prize was established by the Board of Directors of the Japanese Union of Scientists and Engineers in 1951. Its primary purpose was to spread the quality gospel by recognizing performance improvements, issuing from the successful implementation of company-wide or total quality control, based on statistical quality control techniques. The Deming Prize proved to be an effective instrument for spreading quality management methods throughout the Japanese industries. There is also a checklist which is used to evaluate the performance. This checklist emphasizes the importance of top management's active participation in quality management activities and understanding of the main requirements of quality improvement programs. Also, the checklist provides the senior executives with a list of what they need to do [5].

The Excellence Model of the European Foundation for quality management (EFQM) is a management procedure for all companies in Europe, which leads to Excellence [10].

The model consists of nine criteria and can be used for the evaluation of the progress of an organization toward Business Excellence. The performance criteria are occupied with how the organization furnishes its main activities. By using these criteria have been obtained good results..

In 1987, the US Congress passed the Malcolm Baldrige National Quality Improvement Act, and thus established an annual quality award in the USA. The aim of the award is to stimulate American organizations to improve quality, customers' satisfaction, and improve overall company performance and capabilities. The model framework may be used to assess an organization's current quality management practices,

benchmark performance against key competitors and world-class standards, improve relations with suppliers and customers. These assessments can provide top managements with a clear baseline of current quality performance.

The broad aims of these Awards are summarized as follows:

- Increase awareness of the importance of quality management because of its important contribution to superior competitiveness.
- They emphasize that their performance need to focus on the results [11].
- Encourage systematic self-assessment against established criteria and market awareness simultaneously.
- Deployed quality strategies and on benefits derived from implementing these strategies [12].
- Promote understanding of the requirements for the attainment of quality excellence and successful deployment of quality management.

### 4. METHODOLOGY

There were the methods of data collection for this study-questionnaire survey and open interviews. Different data analysis was used depending on the methodology and objectives of the research. An overview of data collection and analysis is presented.

#### *Level 1. Questionnaire Survey*

The aim of the survey was to identify factors that are perceived by Bulgarian organizations as critical to the success of their implementation of the quality initiative. The whole population (78 organizations) of ISO-9000 certified organizations were targeted to obtain a large database of information.

#### *Level 2. Open interviews*

The aim of the open interviews was to explore the critical stages each company went through from the early stages of deciding to implement TQM, when TQM was launched. A smaller number of companies were selected for this purpose.

#### *Level 3. Data Analysis*

The data analysis aimed to identify and interpret a majority consensus amongst respondents in their ratings of the quality factors..

### 5. FINDINGS

The results of this survey questionnaire were analyzed. The analysis revealed that the quality factors are perceived as critical and absolutely essential for the successful implementation of TQM. These factors were identified into three tiers of critiques, where nine of them are found fundamental to be addressed in the early stages of the implementation process. The discussion identified the important prerequisites to successful implementation of the critical quality factors. These formed the important tactics and techniques to effective implementation of the critical quality factors. The second level of qualitative research involved identifying the foundation elements of TQM implementation using the case study approach. The

discussion of the finding of five case study companies revealed that, in the pre-launch of TQM implementation, the companies' top management realized the tangible benefits of TQM implementation, invested time and effort in training and education, demonstrated active commitment and involvement, and gained internal stakeholders (company-wide) commitment and involvement. From these cases, the foundation elements of TQM implementation support addressing the following critical quality factors as:

- Top management commitment and involvement.
- Middle managers and employee commitment and involvement.
- Communication.
- Training and education.
- Quality infrastructure.
- Formal documented quality management system.

In summary, TQM is an approach supported by fundamental organizational power such as core technology, speed and vitality. TQM requires the application of the principles of quality management in every branch and at every level in an organization. Top management provides commitment, leadership, and the appropriate support to technical and human processes. It is imperative that management has a clear understanding of the process.

## 6. DEVELOPMENT OF THE PROPOSED TQM MODEL

The knowledge of total quality management is still very limited. This means that it is improper and unscientific to provide a complex model for TQM implementation.

Therefore, TQM a logical and simple model closely based on the empirical evidence derived from the analysis of the three levels of investigations is provided, including the major top management actions, the organizational activities and the guidelines for effective implementation.

### *Major top management actions*

Major top management actions are the actual quality levers that top management need to perform and deploy to implement the critical quality factors and the foundation elements.

Therefore, the findings of the survey questionnaire presented earlier comprise the fundamentals of the major top management actions.

These findings offer a practical, logical and simple framework that is based on arranging the critical factors from the most critical to the least critical in deriving the major top management actions of effective implementation.

The findings from the case studies presented earlier revealed that there are two main stages that require different major top management actions, namely, the pre-launch stage and the implementation stage.

Therefore, the two-stage approach, representing two categories of major top management actions, is adopted appropriate.

*Pre-launch stage.* The major top management actions that must be taken pre-launch of the TQM programme..

*Implementation stage.* The major top management actions in the implementation process.

The major top management actions needed in the implementation of TQM.

These activities identify the tactics and techniques employed to perform the major top management actions. These activities are defined primarily by the findings of the interviews.

This requires involving everyone in the organization in quality improvement. Therefore, management must enable all employees to participate in the preparation, implementation and evaluation of improvement activities

This is important as middle management have a major role to play, since they must not only grasp the principles of TQM, but they must also go on to explain them to the people for whom they are responsible, and ensure that their commitment is communicated.

This means focusing on business processes that add value to customer satisfaction.

The continuous improvement of existing products, services and processes is fundamental for continuous customer satisfaction.

Ensure that continuous improvement and problem solving are based on facts and systematic review. Rely on facts in making decisions concerning continuous process improvement. Review documentation to identify improvement opportunities.

(1) Provide necessary training for problem identification and solving skills based on the use of facts.

(2) Promote teamwork as one of the organization's guiding values.

Form various types of teams to work on continuous improvement projects. Reinforce teamwork by rewarding and recognizing successes.

(3) Measure customer satisfaction. Use various tools to get feedback from customers to measure their satisfaction.

Collect data using customer surveys, and review internal data related to sales records, delivery time and customer complaints to measure customer satisfaction. Use these data sources to identify gaps for improvement.

(4) Use tools and techniques. Use tools and techniques to identify performance gaps for continuous improvement. Use the cost of quality and self-assessment tools developed in this study to identify opportunities for continuous improvement. Analyse the costs of quality and classify them.

At later stages, use National Quality Awards Criteria to conduct self-assessment. Use benchmarking whenever possible. Provide training for key personnel on how to use the various tools and techniques (see Table.1).

A framework of TQM implementation has been derived from the findings of the fieldwork and the knowledge of the literature.

Such a framework contributes a lot to the Bulgarian context, particularly with the absence of any implementation framework and any national quality award model. Moreover, this study adds to the available literature an empirical research that considers the TQM system as a whole.

Table 1

## TQM Implementation

TQM Phases	TQM Elements	Management Methods and Tools
Customer Focus	Customer focus	Customer complaint, Investigation, Market investigation, Customer Satisfaction survey, After sales service, Formally feedback system, Customer day
Planning Process	Leadership	Top management commitment, Policy, Corporate quality council, Division and Site quality council, Cross functional quality council
	Vision and Plan statement	Vision/ Mission statement, Quality policy, Quality goals, Quality planning
Process Management	Supplier quality management;	Supplier audit, Training, Potential supplier evaluation, Supplier certification
	Product Design,	Concurrent engineering, Reliability engineering, Designing for manufacturability, Design of Experiments (DOE), Quality Function deployment (QFD), Value engineering, Computeraided Design (CAD)
Process Improvement	Evaluation	Strategic evaluation, Business evaluation, Quality costs, Department evaluation Benchmarking, Employee performance evaluation, Quality audit, Team evaluation
	Process control and improvement;	PDCA Cycle, 7 QC tools, SPC, FTA, FMEA, Process capability, Equipment maintenance/ improvement, Sampling Inspection, Selfinspection
Employee Participation	Recognition and reward;	Condition improvement, Salary promotion, Bonus system, Moral award, Award ceremony
	Education and training;	Quality awareness education program, Quality Management method education, Training for job Requirements, Individual training plan, Education promotion
	Participation	Within functional delegated team, Cross functional delegated team, Information communication, Quality control circle, Voluntary team, Job rotation, Improving employee, Establishing, Quality culture, Suggestion activities
	Communication	Information communication, News letterPoster, Slogan, Quality day

## 7. CONCLUSIONS

A framework for TQM implementation in the Bulgarian context has been based on the discussion of the findings from the investigations of the practices of Bulgarian organizations. The framework illustrates the relative disadvantages of the critical quality factors and their interrelationships, and it is constructed using inputs from the TQM Bulgarian organizations, in order to offer

Bulgarian management relevant guidelines for decision made for TQM implementation. The framework can be applied to organizations from the various sectors, because as it is based on findings from heterogeneous organizations. It is used in other current frameworks of implementation provided by researchers, experts and consultants, and national quality awards such as MBNQA, EQA etc. There are some changes that occur in organizations' TQM programmes over time and different circumstances (company culture, size, etc) may prevent a single model from adequately explaining the phenomena that arise. It is, therefore, recommended that organizations complement the implementation guidelines by continually seeking out and studying the best implementation practices to understand how others are achieving success in implementing and sustaining TQM. This is an evidence in the continuous evolution of implementation approaches such as MBNQA and EFQM. The framework is applicable to organizations in various sectors, emphasizing topdown deployment and bottom-up participation as an implementation approach to achieve continuous customer satisfaction.

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