

# Quality Analysis In Construction Industry

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**ABSTRACT**—*In this paper the importance of implementing quality management in construction industry are presented. First, we concentrate on the problem defining construction quality. We use data from our studies on quality in construction industry to figure out the problem of defining quality. Then, we focus on the difficulties with implementing quality management in construction industry. We present data from our surveys to further illustrate the problem. It will present possible benefits of implementing quality management in construction industry. The results show that applying Quality management in construction industry can improve quality, reduce costs, reduce employee injuries, and customer satisfaction.*

**Keyword**—**Quality Management System, International Organization for consistency, Statistical Package for the Social Sciences.**

## 1, INTRODUCTION

Quality management System is a customer-oriented, feature focused management philosophy for continuous improvement. It is often termed a journey, not a destination. Quality management is to improve the performance of one's business. It is a means to that end, not an end in itself. Much research has been done with regard to the implementation of TQM and it is believed that the benefits of higher customer satisfaction, better value products, and higher market share are often obtained subsequent the adoption of TQM by construction companies. Although QMS has been implemented in the Indian construction industry, it is not followed properly. QM is a company-wide effort that involves everyone in a management in an effort to improve performance. It allow every aspect of a company and makes quality a primary strategic objective. QM is achieved through an integrated effort among personnel at all levels

to increase customer satisfaction by constantly improving performance. The aim of this paper is to examine how Quality management can be applied more actively in the construction industry. It seeks to assist contractors in identifying the steps necessary for the implementation of QM. For this purpose, a comparative analysis of different contractors working in the Indian field is presented to identify obstacles and benefits experienced in their cases.

## **2, OBJECTIVES OF QUALITY MANAGEMENT SYSTEM**

QM places importance on prevention of errors, not correction. The aim which works that is 100% free of accidents, free of errors, and free of waste. The objective of the project is to do things correct from the first time, eliminating rework and waste. To achieve this, it is necessary to focus on a process. It is a task or a series of work. A process might be the preparation of a drawing, the fabrication of structural concrete, the vibration of fresh concrete, or a way in which the project manager acts with a client, consultant and with other members of the projects. The main aim of this study is to develop a measurement model and methodologies for the identification and quantity of construction processes for continuous improvement and customer satisfaction. In this it will lead to an overall improvement of value, productivity and the competitiveness of the building industry as it enters into the next step.

The objectives of the project were:

- (1) To identify quality-management organizations and techniques that have been found to be effective in the construction manufacturing; and
- (2) To identify the obstacles of the organizations and the ways to developed and implemented Quality management.

### **3, TERMINOLOGIES**

**Quality,** Quality is defines as the degree of excellence in a competitive sense, such as reliability, serviceability, maintainability or even individual characteristics.

**Quality Systems,** Quality systems refer to the organizational structure, procedures, processes and property needed to implement quality management.

**Quality Control,** Quality control is defines as the operational technique and activity; for example, providing a means to control and measure the characteristics of a material, structure, component, or system that are used to fulfil requirements for quality.

**Quality Assurances,** Quality assurance is the planned and systematic activities implemented within quality system and demonstrated, as needed, to provide enough confidence that an entity will fulfill necessities for quality.

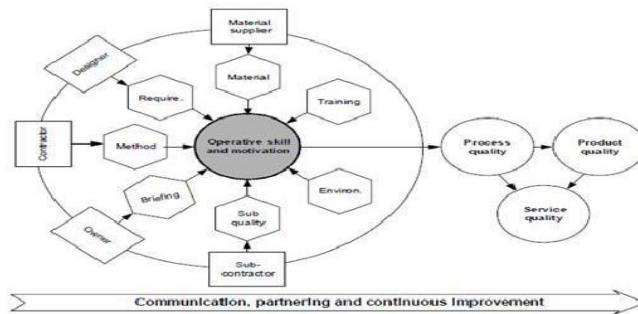
**Quality Management,** Quality management refers to all activities of overall management functions, especially top management leadership, that conclude quality policy objectives and responsibilities for all members of the association.

**Total Quality Management,** Total quality management is the management approach of an organization, which concentrates on quality based on the participation of its members and aims at long-term success through fulfillment and benefits to all members of the organization and society

**Data Collection Company Identification,** Companies for questionnaire survey are mainly classified in to three levels according to the project cost. They are high level, middle level, and low level companies. High level companies are those project cost is more than 100 crore, Middle level companies having project cost ranges from 5 to 100 crore, and Low level companies having project cost less than 5 crore.

**Design of Questionnaire,** A opinion poll was designed to understand the knowledge about Qualitymanagement system practices in the construction projects. Data was collected from the responsiblepersons from the site such as project manager, project engineer or site engineer. Questionnaire mainly focused on the following areas.

- Knowledge of QMS
- Training about Quality



**Figure.1.0 Human-centric approach of TQM**

#### **4, RESULTS AND DISCUSSION**

Collected data were analyzed using statistical tools analysis method, SPSS (Statistical package for the social sciences) is a statistical analysis and data management software wrap up. SPSS can take data from almost any type of file and use them to generate tabulated information(Report), charts, and plots of distribution and trends, expressive statistics, and conduct complex statistical analyses. Some of the analysis results of the questionnaire were shown below.

**Table 1 .Is training in (QM) or other quality improvement philosophies given to employees?**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
No training is given	3	15.0	15.0	15.0
Some training is available	9	45.0	45.0	60.0
A training program is in effect	4	20.0	20.0	80.0
Others	4	20.0	20.0	100.0
Total	20	100.0	100.0	

**Table 2. Percentage Of Managerial/Supervisory Staff Who Have Undergone Quality Improvement Training”**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
25-50	1	5.0	5.0	5.0
50-75	13	65.0	65.0	70.0
75-100	6	30.0	30.0	100.0

**Table 3. Percentage Of Non-Managerial/Technical Staff Who Have Undergone Quality**

**Improvement Training**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
25-50	14	70.0	70.0	70.0
50-75	5	25.0	25.0	95.0
75-100	1	5.0	5.0	100.0
Total	20	100.0	100.0	

**Table 4. Training Currently Emphasizes:**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Process control	1	5.0	5.0	5.0
Team work	8	40.0	40.0	45.0
Customer satisfaction	11	55.0	55.0	100.0
Total	20	100.0	100.0	

**Table 5. The major objectives of your quality programs are:**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Increase productivity	2	10.0	10.0	10.0
Cost reduction	1	5.0	5.0	15.0
Involvement of employees in the quality building effort	17	85.0	85.0	100.0
Total	20	100.0	100.0	

**Table 6.Obstacles in the implementation of tqm program**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Changing behaviour and attitude	3	15.0	15.0	15.0
Schedule and cost treated as the main priorities	2	10.0	10.0	25.0
Lack of education and training to drive the improvement process	8	40.0	40.0	65.0
Lack of top-management commitment/understanding	1	5.0	5.0	70.0
Lack of employees commitment/understanding	6	30.0	30.0	100.0
Total	20	100.0	100.0	

**Table .9. Are You Aware Of Any Industry Programs To Implement QMS Or Of The ISO 9000 Standards?**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	11	55.0	55.0	55.0
No	9	45.0	45.0	100.0
Total	20	100.0	100.0	

**Table.11. In Your View, Which Of These Words Best Define Quality?**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Satisfying external customer (outside the organization)	20	100.0	100.0	100.0



**Table.10. Would A (QM) Program Be Beneficial To Your Organization?**

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
We are implementing such a program	2	10.0	10.0	10.0
Yes	8	40.0	40.0	50.0
Can't say	10	50.0	50.0	100.0
Total	20	100.0	100.0	

## CONCLUSIONS

This study identified the customer satisfaction can be greatly enhanced by improving construction quality in all levels of by

Training for staffs

- Training for employees
- Relationship with your customer
- Quality Goals.
- Important of Quality.
- ISO 9000 standards.
- Elimination of defects.

The above areas were identified after analysing the results of the questionnaire; by concentrating on these areas we can achieve a system of continuous improvement in construction quality.

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