

Review Paper on Effectiveness of Implementing Quality Management System on Construction Projects

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Abstract- Construction industry plays an important role in the development of any country. The development of construction industry depends on the quality of construction products and projects. Quality is one of the critical factors in the success of construction projects in Pune. Improvement in the quality of construction projects is linked with quality management in the project life cycle. Although quality management at every stage of project life cycle is important but the quality management at the design and construction stage contributes significantly on final quality outcome of construction projects. This paper therefore highlights the importance of quality management in the design and construction phase. It presents the findings of two Projects in Pune and suggests some proactive measures for the improvement of quality in the design and execution phase of construction projects.

Keywords- Quality Management, ISO 9001

I. INTRODUCTION

Globally, construction industry is one of the largest contributors to the Gross Domestic Profit (GDP) of any country. The construction projects has increased rapidly in the recent years, reflecting the interest of private and public sector investing more funds into property development. As the investment has increased the expectation of quality product has also increased. Now quality management has become an integral part of construction. Acknowledging the quality issues in construction and increasing demand for quality products, specific regulations to the implementation of the Quality Management Systems have been framed. ISO 9001 standards were set up for this purpose. Market quality problem for Russian companies is very acute because the competition on the international is intense. Implementation of the quality management system (QMS) will help bring the company to a new level, because the QMS is designed to continually improve the activities of companies. The largest developer of voluntary international standards is the international organization for standardization – ISO. It began its work in 1947, and since then has published more than 21 thousands of

standards covering almost all aspects of technology and production.

II. STATE OF DEVELOPMENT

Sergey Lukichev a, the results of the study show that there is a lot of suggestions about how to obtain a certificate of quality, but there is no algorithm of actions for the implementation of the system design companies in the construction industry. The quality management system needs to be developed in our country. ISO 9001:2015 aims to create a management system, therefore, the QMS may improve competitiveness in the global market. And therefore further demand for certification will increase.

AnupW S, the research uses a qualitative questionnaire approach to gather data. A case study which substantiates the questionnaire is conducted using content analysis method. Conclusions are drawn based on the results of the analysis and the case study data. Suitable suggestions on how to overcome the issues of implementation of QMS has been made by consulting the experts through an unstructured interview.

D.Ashokkumar, Quality is one of the critical factors in the success of construction projects. Improvement in the quality of construction projects is linked with quality management in the project life cycle. Although quality management at every stage of project life cycle is important but the quality management at the execution (construction) stage contributes significantly on final quality outcome of construction projects. This project mainly focuses the importance and factors that affects the quality management in the execution (construction) phase. The project also includes visiting of some construction companies and conducts the questionnaire survey, then analyse the difficulties (major factors) and the cost variance due to quality defect in quality management and suggests some proactive measures for the improvement of quality in the execution phase of construction projects.

Pravin P. Mane, the questionnaire survey has been carried out in the present study by taking interviews of participants of

project. The participants of project include owner/builder, project management consultant, contractor, various consultants and suppliers. The questionnaires have been prepared by authors based on quality aspects in construction project for builder / contractor, consultants and customers / occupants of buildings. This paper describes the analysis of data collected during interviews & questionnaires with builder / contractor.

Abdul-Rahman, this research explores preliminarily the practices of quality management, management commitment in quality management, and quality management implementation problems in construction projects in the context of Malaysian construction industry. The research applies semi-structured interview approach with twelve project management practitioners. The findings of the study indicate that the state of quality management in construction projects in Malaysia needs to be strengthened and there are problems in relation to quality management implementation that require attention and further research. The paper provides an insight on the state of quality management in construction projects in Malaysia.

J. J. Smallwood Consistency only results from a documented Quality Management System (QMS) which effectively integrates Quality Assurance (QA), Quality Control (QC) and Quality Improvement (QI). QMS's also facilitate the synergy between occupational health and safety, productivity and quality, as they ensure the use of, inter alia, documented procedures and instructions which when followed prevent defects, accidents, rework, waste, and ultimately complement the sustainability of the environment. Clients and users seek assurance: that the construction process will not result in fatalities, injuries and disease, damage to the environment, and that buildings and structures will be free from defects, costly maintenance and will not compromise the environment or adversely affect the inhabitants. To this end, findings of descriptive surveys conducted in South Africa among general contractors will be presented which include inter alia: most contractors do not have a documented QMS; competitive advantage, improved productivity and reduced cost predominated among reasons for implementing a documented QMS; cost, client satisfaction, productivity and future work predominated among factors negatively affected by non-achievement of quality, and unqualified artisans, shortened project periods, inadequate details and inadequate specifications predominated among factors which negatively affect quality.

Tan Chin Keng, to identify the problems faced by construction companies in implementing ISO 9001 Quality Management System and to identify the strategies adopted by the ISO certified construction companies in overcoming or

minimizing the implementation problems. Case study approach has been selected to collect data for this research. For the purpose of the case study, five construction companies were selected to be interviewed. One representative from each company is interviewed in order to get more information from their perspective regarding the benefits, problems and strategies for the implementation of ISO 9001 QMS. The research findings concluded that improved company's management & work efficiency as the most important benefit from the implementation of the system while lack of awareness on the system among staff is the most significant problem. It is suggested training and audit (internal and external) need to be enhanced to overcome those implementation problems.

Nafees Ahmed Memon, Improvement in the quality of construction projects is linked with quality management in the project life cycle. Although quality management at every stage of project life cycle is important but the quality management at the design and construction stage contributes significantly on final quality outcome of construction projects. This paper therefore highlights the importance of quality management in the design and construction phase. It presents the findings of two major cities in Pakistan and suggests some proactive measures for the improvement of quality in the design and execution phase of construction projects.

Ammad Hassan Khan, A qualitative and quantitative survey was circulated among different stakeholders including Clients, Consultants and Contractors to assess the level of the contractor's performance, the project monitoring and controlling techniques, proper health and safety requirements, client satisfaction and workers experience in construction industry projects. The practice of professional quality management in building projects is increasing, however, many flaws and negligence are still found in local practices. This analysis also indicates that political and socio-economic factors play a significant role in maintaining the quality level in local industry. Therefore, the allocation of sufficient resources, proper training of workers, and recruitment of quality control staff and the use of advanced technologies are recommended for proper implementation of QMS (Quality Management System).

Sepani Senaratne, the key research question of this study was "how do Sri Lankan construction contractors approach quality planning?" Within this question, the study's primary objectives were to explore whether the Sri Lankan construction contractors practice quality planning effectively and the extent to which they are ready to implement strategic quality planning. The research method adopted for this study was qualitative and used three case studies representing three

major contractors in Sri Lanka. The study revealed that ISO 9000 is the most popular quality management system practiced by Sri Lankan construction contractors. The contractors are not yet ready to implement strategic quality planning due to several barriers. Building on these case study findings, several prerequisites for the successful implementation of strategic quality planning are proposed that will be useful for contractors who operate in similar environments.

JiangpingWan, Case study on improving quality management of W company's new product development project includes the analysis of the current situation within the quality management of W company's new product development project (current situation and identify existing problems), improvement study (analysis the cause of existing problems and design the improvement scheme) and implementation. Through monitoring the implementation process, we have an evaluation analysis for the implementation results. The purpose of this study is to improve quality management of new product development project.

SavitaSangle, The objective of this paper is to point out the latest studies which focused on increase the business quality through implementation of TQM in construction industry and its suitable application in different phases of project construction and it also describes the basic theory of Six sigma, principles, methodology, and various tools used for reducing defects. A case study of residential building is taken in which 7 QC tools used by applying DMAIC principle. The six sigma methodologies have been adopted to improve the quality. The findings suggest that proper training and management support and minor changes in current work procedure can help improve the quality and ultimately customer satisfaction which is of prime importance.

MohdZaid Malik, Adaption of new ideas, tools and techniques enlightenment that it can be employed in the construction industry also. The goal of this research is to review the latest studies which focused on improving quality through implementing TQM in the construction industry and its appropriate applications in the different phases of construction projects. The construction sector is an important business field for developing country. In India, the construction sector is second to the agriculture sector. Construction sector facing many problems in management and quality. Total quality management process is a modern system in the field of quality and the implementation of quality in construction sites. Total quality management includes Juan, Deming and Crosby techniques as well as ISO standard.

PriyankaHirave, For the last few decades Total Quality Management (TQM) techniques have been used extensively

and beneficially in the area of manufacturing and industrial engineering to control the process and prevent defects before they happen. TQM focuses on the quality of management systems, not the management of quality, on continuous improvement of processes in order to improve every feature of an organization. The implementation of TQM is fundamentally a process of culture change. This paper provides an insight on the need of total quality management in construction industry as there is absence of an in-depth study exploring the TQM in the Construction Industry.

Harshil Shah, Quality management is most important consideration in any infrastructure construction project. The paper constitutes about the quality management practices of infrastructure construction projects. Indian government declares schemes and policies for growth in quality of construction work. The main aim of this research is to achieve high quality of construction work and give most advantageous quality of infrastructure to society and also encounter the requirements of all the interested parties of the infrastructure projects. Little research work was done and studied for finding applied problems of quality management in a practical and current situation of an infrastructure project. Analysis and conclusions from a questionnaire survey and data analysis were done from the quality audits, problems pertaining to contractor's quality management in projects of the infrastructure.

III. CONCLUSION

This paper focuses only on the literature review of previously published studies. The findings of this paper are the quality management system needs to be developed in our country. ISO 9001:2015 aims to create a management system; therefore, the QMS may improve competitiveness in the global market. And therefore further demand for certification will increase. The research findings concluded that improved company's management & work efficiency as the most important benefit from the implementation of the system while lack of awareness on the system among staff is the most significant problem. It is suggested training and audit (internal and external) need to be enhanced to overcome those implementation problems.

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