

A Study of Long Term Sustainability of Cement Industry

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Abstract:

This study was conducted to identify the important role of long-term sustainability of cement industry. The quality management is paly a very crucial or important role for long term sustainability of cement manufacturing industry. This paper provides the various approaches of quality management system and key important factor of quality management system which helps to the organization for long term sustainability. This paper is also providing the quality management (TQM) basic principle which helps to identify the how top management helps in implementation of quality management system, how employee involvements & customer satisfaction/feedback helps to improve our system and how helps the evidence-based decision to grow the organization and also improve the profitability (EBIDTA).

Keywords: *EBIDTA, Implementation, Profitability, Quality Management, Sustainability, TQM.*

1. INTRODUCTION

There are various types of management system & process are implementing in cement industry for more sustainability and improve profitability. But every process or system which organization implementing, quality management system and its basic principle paly a very vital role. In this paper we will find out/discuss the requirement of quality management implementation by studying of different literature and also find the more effective principle of quality management system which helps to grow the organization.

TQM is a set of systematic tasks carried out by the any organization to effectively and efficiently to achieve organization objectives and to provide good quality products and services with a satisfaction level of customers, at the appropriate time and reasonable price.

TQM is basically a set of principles, which helps to increase the satisfaction of all stakeholders by use of best available organizational resources, but the impact of each of quality management principle on organizational effectiveness is still debatable. So many studies have shown the impact of applying quality management principle and performance. Total quality management (TQM) is the term used to describe the comprehensive view of quality assurance. TQM is a holistic management concept for continual improvement of quality of goods and services delivered through the participation of all levels and functions of the organization. TQM is simply the approaches of quality into goods as well as services from the origin points for the satisfaction level of all concern stakeholders and also make the responsible of everyone which involves directly or indirectly in the organization. The effectiveness of TQM totally depends upon the all stakeholders of the organization. Now these days so many consideration, lot of scriptures, arguments, awareness & trainings about the quality controls and quality assurance in the manufacturing unit of Indian industry among cement manufacturing units, steel manufacturing units, automobile industry etc. It may be considered Indian manufacturing sector growing very right way by adopting all incoming challenges. However, even after good results the fulfilment of customer requirement of Indian manufacturing sector was always despotic. Total quality management initial monetizes in 1985 by naval air system to identify the management approaches for improvement of quality[11].

India is the second largest cement producer in the world having capacity ~ 7 percentages of total world cement manufacturing. The Indian cement manufacturing shows the positive growth in upcoming years with compound annual growth near about 6 percentages from financial year 2017 to financial year 2020. Looking robust demand of cement in Indian market to achieve the government goals for

infrastructure development and affordable housing scheme for all Indian citizen by 2022 by giving some financial benefits, Indian cement production capacity is expecting to reach by 550 million tons per annum by 2020 with more than 97 percentages with the private sector and balance with the government sector. The Indian cement sector having so many players hence they are not implement the price control and threatening. Now Indian cement market growth expecting ~ 1.15 times of GDP growth because the per capita cement consumption in India in year 2019 was ~ 225 Kg which was earlier ~ 190 Kg but it is less, if comparing developed country cement per capita consumption which is ~ 335 Kg.

2. LITERATURE SURVEY

Author (1) explained how total quality management (TQM) helps the organization to adopting and absorbing the new business challenges in coming recent year during global financial crisis and running trade war between developed country including more focus on better and controlled planning, cost effectiveness and leading in market competition. Studies only focus on experiences employee feedback which was associated with cement manufacturing sector and leading concrete suppliers hence qualitative approach and convenience sampling used. The final results show the customer satisfaction and top management involvement are two top most factors are to increase the ability of absorbing the new business challenges era. Apart from those continuities with suppliers and continual improvement are also play a very valuable role to overcome in competitive market [12].

Author (2) provided the framework for total quality management principles and basic dimensions for measuring the works. After the analysis with the help of collected data found the positive impact of total quality management (TQM) principles for organizational growth and especially important correlation between top management involvement, continues improvement and employee involvement.

Author (3) discussed, developed and shown the relationship between total quality management (TQM) pillars and satisfaction level of customers. Author also identify the both positive and negative impact of total quality management with respect to organization performance. Finally end results shows the very significant and positive impact between the total quality management principle and satisfaction level of customers and also shows the significant positive impact of employee experience, employee feedback, employee knowledge sharing and customer-oriented fact-based decision to improve the satisfaction level of customers.

Author (4) studied and told about the key performance indicator for sustainable manufacturing of Indian cement manufacturing industry. End of results identified the total 13 numbers key performance indicator (KPI) and weightage of key performance indicators which helps the continuous manufacturing process with desirable quality to achieve the end user satisfaction level.

Author (5) discussed looking the cement demand in markets and increase in cement manufacturing capacity must be reduced the defective bag manufacturing by packing bag manufacturer to overcome the shortage of bags for producing cement to fulfill the market requirements. Looking the production pressure and to meet the bag requirement for cement manufacturing company factory pouch pocket is one of the effort. The most important factor to know the manufacturing system of packing bags with the help of S(Suppliers)-I(Input)-P(Process)-O(Output)-C(Customers) to reduce the defective bag manufacturing. After that set the internal targets with the help of control chart, making the product characteristics as per end user requirements and identify the different types of waste and key factor which affecting the bag quality. Used the cause-effect relationship and failure mode effect analysis and get the key factors of the process based results for process improvement to reduce the defective bag. By the implementing of both total quality manufacturing (TQM) and lean manufacturing, end results shows the very important role of soft dimensions of TQM practices to reduce the defective bag manufacturing even after production pressure to meet the demands.

Author (6) discussed about to implement the both total quality management (TQM) and lean manufacturing (LM) process together to achieve the organization objectives. On the basis of collected data by questioner survey, author analysis the data by principal component analysis and its result shown the effectiveness of the implementation of total quality management and lean manufacturing together. Total three critical success factor found with respect to total quality management and seven numbers with respect to lean manufacturing process [11].

Author (7) identified the impact of total quality management (TQM) on tools & techniques and how enhancing the organization objectives. Studied conducted on many techniques such as benchmarking,

QFD, taguchi model, fish bone diagram and many other techniques. The end results shown the positive significant impact for organizational growth to achieve the set objectives in terms of increase in profitability, increase share prize, good quality product, to meet the customer expectation and also identified the top management involvement, top management leadership, training and development of employee, acceptance of modern technology & process leading towards to achieving the organization goals.

Author (8) carried out the studies about the strategic management practices in Indian cement industry for expansion of capacity. End results shown the nearly 192 kg consumption per capita consumption which was it comparing globally which is nearly 362 kg per capita consumption hence indicates the Indian cement industry expansion scope but due market competition rate of return is poor, unstructured sales management required the strategic management techniques to improve the profitability.

Author (9) discussed about the organization performance after certification of ISO 9001- quality management certification. Final results shown the positive significant impact on company performance.

Author (10) analyzed the soft total quality management process and their impact with respect to organization growth with the help of theoretical framework and making some hypothesis. After analyzing the data found the results supported to hypothesis and found the soft total quality management process leading the organizational performance.

Author (11) discussed about the framework and impact of soft total quality management. Its indicate the main target of soft TQM practices and philosophy to achieve the set organization objectives in context to Indian cement industry. Final result shown the by implementing of soft total quality management practices improve the profitability by different cost reduction measures, capture the more market by improving quality of goods and improve the ground services or easily can be say soft TQM helps to improve the return on investment.

Author (12) carried out the studied to see the improvement in productivity and safety after implementation of integrated management system (Quality, Environment and Safety). After analysis the collected data shown the improvement in productivity rate and production process show the influence of integrated management system as well as safety. Another result shown the safety system improvement not ensure the productivity improvement. Its shown only the safety system improvement along with the process system improvement.

Author (13) studied and discussed about the organization way forward after adopting of total quality management principles and considering in key role in organization. Final results shown the total quality management principle and its application not implemented properly in Asian continental and its limited to only some minor change depending upon the organization culture [11].

2.1 Research Gaps

Almost all researcher shows the positive impact of total quality management but need to be analyze the impact of immature implementation of total quality management system in organization.

Many countries except Asian country proper implementing the quality management system with positive significant results. Need to be top management ensure the proper implementation of the total quality management in Indian cement industry to overcome the financial crisis.

3. TOTAL QUALITY MANAGEMENT APPROACH

The cement business is a major consumer of crude resources, fills, different energy, materials, vitality and major impacting industry to environment. Thus, it is important to manage and optimize the all available resources for sustainable and continues operation. Total quality management principles and different kind of approaches with adopting different tools helps to manage the operations very effectively and ensure the long term sustainability. Basically total quality management provides a path way to grow our organization with right direction with involvement of all stakeholders [11].

- Customer Focus: Every organization existence with loyal customers. So must be identify the customer present and future requirement and meet the requirement with good product quality and services.
- Leadership: Top management providing the guidance and direction of the organization. They lead to maintain the healthy working environment for complete involvement of peoples to achieve the organization goal.

- Engagement of People: Each and every employee must be doing the work jointly towards to achieving the organization objectives. Every employee must be motivated and take the own responsibility to achieving the target. Self-discipline and motivating with team is the most important part of engagement of people.
- Process Approach: A basic fundamental of total quality management is focus on process based approach and thinking to carried out any activity. A process is in sequential steps and take the activity wise data from all available resources and list out the priority with considering all aspects like customer satisfaction, financial impact etc. In this step process are well defined and targets & its result must be measurable.
- Continual/Continuous Improvement: Continual improvement process lead to the organisation to adopt the market change rapidly and provide the product accordingly. It's a major and important aspect of total quality management which affecting the overall organization performance and fulfil the requirement of stakeholder and also help to know the capability of the organization, system and people. Continual improvement process basically is a group of task which helps to identify the adopting new changes and challenges.
- Fact Based Decision: Total quality management facilitate to any organization collecting and analysing the data on continuous basis to take the correct decision to fulfil the requirement of stakeholder and also improve the analysing ability of team [12].
- Relationship Management: Relationship management is a very effective approach to interact with our customer and suppliers and increase the individual ability for any sudden change and improve the organization financial health.

APPLICATION OF TQM PRINCIPLE

Customer Focus	<ul style="list-style-type: none"> • Understand the customer requirement • Every internal stakeholder must be knowing the customer requirement. • Competitive price • Long term relation with customer
Leadership	<ul style="list-style-type: none"> • Setting to customer-oriented goal • Consideration of all requirement of stakeholder. • To maintain the trust • Motivating to peoples
Engagement of Peoples	<ul style="list-style-type: none"> • Creating self-discipline • To understand the organization requirement. • People taking the lead • People contribute individually.
Process Approach	<ul style="list-style-type: none"> • Define the roles & responsibility • Assessment of risk & impact • SWOT • Define process
Continual Improvement	<ul style="list-style-type: none"> • Efforts to improving process & products • Measurable objectives • Reward • Ready to adopt new challenges
Fact Based Decision	<ul style="list-style-type: none"> • Data collection & analysis • Linked with objectives • Easily assessable • Effectiveness

Relationship Management	<ul style="list-style-type: none"> • Transparent communication • Two-way communication • To identify the key customer • Motivation
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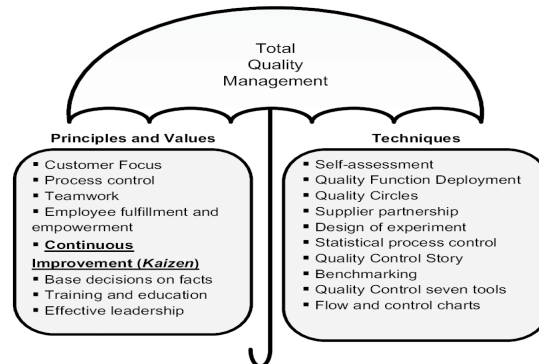


Figure 1: Elements & Techniques of TQM

4. CONCLUSION

Looking the present competitive market of cement industry, we strongly recommending to implementation of total quality management for Indian cement industry. Its helps to overcome with financial crisis, producing good quality product with reasonable price, to improve the profitability (EBITDA), strengthen the employee empowerment, transparent system, optimum use to raw materials, to support the environment and increase the trust among all stakeholder including customer.

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