

A Review of Sustainability Concerning in Quality Management for Industries

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ABSTRACT

The purpose of this paper is to review on the sustainability of quality management which focusing on quality management. It will focus on organization of quality management from the lower stage to the higher stage. Thus, every level has their own unique way to manage the quality in order be world class leader in industry. This paper also will focus on total quality management and its relations with sustainability in industries sector. There are few points that will be covered in this paper to explain the relation between them.

Keywords: Quality management, Sustainable, Six Sigma, After Sales, Performance

I. INTRODUCTION

Quality Management is a management approach that originated in the 1950s and has steadily become more popular since the early 1980s. 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 processes being done right the first time and eliminate defects as well waste from their operations. Quality Management (QM); is a method conform the sustainability for an industry or service provided to civilians and customers by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

Quality management has been selected as the topic to be review since it has a potential to be implemented in order to produce a good quality of products and services. Besides that, it also helps to improve the quality control and sustain in the input that have been organized now. Moreover, it not only helps improving the quality of the products but also enhance the abilities and skills.

Nowadays, the demands of quality in every type of products and services is precious to all the clients and customers. This review takes example from the company that have implement the techniques and ideas. Reviews also been taken from the researcher that have made journal about the quality management

II. METHODS AND MATERIAL

An approach for this paper is by reviewing 10 related journals pertaining to sustainability in Quality Management's area.

Discussion will focus on each of respective journal which have being reviewed.

III. RESULTS AND DISCUSSION

A. Sustainable Development of Organization

The sudden financial change that happen step by step over the previous year tells that another adjustment of associations is required which it ought to control the associations towards a maintainable improvement. This was finished by presenting a model known as ISO 9004 whereby it is a quality administration framework and has turned into the guide for associations to make practical progress. The ISO 9004 embraced that associations ought

to be informed constantly about the partner's necessities and desires by this the associations can always adjust to the present needs in this manner giving fulfillment towards the partners. Moreover, the associations ought to excessively procure and use the same number of assets they can to accomplish the targets. It is completely imperative too for the associations to do benchmarking with different associations with the end goal of enhancing towards a maintainable achievement.

A reasonable model for the administration framework was explained where arrangements and techniques are developed, dormant change and consistent checking of outer and inside condition. The associations can be observed in four zones which are the money related (what are the partner targets), clients (by what method will the clients demonstrates thankfulness towards the associations), learning and advancements and the inward procedure point of view. By directing this, long haul targets of an association can be set and associations can then work towards the goal. In this manner, it is imperative for execution of aggregate quality administration to increase practical accomplishment of associations.

Research in which Quality Management methods, tools or practices have also been used in conjunction with sustainable development initiatives. There are four themes were identified which synthesize the research on Quality Management and its support to approach for sustainable development. The four themes are supporting sustainability through integration of management systems, Quality Management as support to the implementation of Environmental Management Systems and to the management of sustainability, supporting integration of sustainability considerations in daily work, and supporting stakeholder management and customer focus. Most research has been conducted within the first two themes. For future research, there are need to move beyond existing standards and management systems to enable more radical improvements, and the need for empirical evidence of the effect of integrated management systems on environmental performance.

Quality Management practices and tools must be developed and adapted in order to support sustainability considerations. There are many areas of future research that could help exploit the potential of QM to support

sustainable development. First of all, more researches needed on how to link IMS to critical business processes as a means of having impact on business decisions and performance. Second, empirical investigations into the effect of Integrated Management System (IMS) on environmental performances are required. The third area of future research, also related to Management Systems (MSs), is the need to move beyond existing standards and MSs to enable more radical improvements. Fourth, for QM tools and practices to support sustainability considerations as much as possible, it is necessary to develop and adapt the tools and practices, rather than apply them as they are. Lastly, the so-far mainly conceptual work on stakeholder management as a means of connecting QM to sustainable development must be further developed through empirical studies.

B. Strategies for competitiveness

A strategy of high quality leads to a sustainable competitive advantage. Relationships between Total Quality Management (TQM), production performance and customer-related performance and the associations were analysed through statistical methods such as Pearson's correlation and structural equation modelling (SEM). The findings suggest that TQM and its adoptions have significant correlations with production performance and customer-related performance. This, study the importance of TQM in enhancing performances of manufacturing companies. The result indicates that retail-manufacturing companies should emphasize greater attention to quality measurement aspects of TQM and a greater degree of management support for TQM initiatives to ensure strategic sustainable competitive advantage. It is suggested that TQM would be able to support and accentuate production performance as well as increase the level of customer-related performance. Industry should also develop strategic management techniques to compete in open market economy. Once the strategies are appropriate, business can maintain sustainable competitive advantage and further enhance the wide area of TQM devices towards the customer's goals achievement.

TQM is a potential source of sustainable competitive advantage, reviews existing empirical evidence, and report findings from a new empirical study of TQM's performance consequences. Also, the results validate

some of the key linkages and support beliefs and evidences by researchers regarding the relationships between TQM, production performance and customer-related performance. In addition, it helps in resolving controversy about the magnitude and measurements of performance gains from adopting TQM. By strengthening TQM processes, improved performance will likely to occur. Finally, it suggests what TQM factors that should be emphasized or prioritized to stimulate performances. The result indicates that manufacturing companies should emphasize greater attention to both TQM processes and a greater degree of management support for TQM enhancement initiatives

C. Customer Quality

Implementing Quality management (QM) will definitely met the customer requirements. It is being used to strengthen the business operation for various types of industries. This method is being driven by the constant attainment of customer satisfaction through the continuous improvement (known as Kaizen) to all of level in the organizational processes.

The quality management involves the continuous improvement in quality, productivity and effectiveness obtained by establishing management responsibility for input processes as well as output. This concept is a continues as well a chain reaction since it involves not only the organization staff but suppliers and customers which the activities will be conducted continually. Basic good implementation in quality management practices were confirmed by results as Table 1.

TABLE I
APPROACH METHOD FOR QUALITY

No	Quality Item	Approach method
1	Quality management policy	quality management document distribution to all employees
2	Quality management method	objective setting in all process and standard work instruction in all processes
3	Top management involvement	quality policy and objective planning and operation involvement
4	Quality Activity	Quality control

		operations
5	Quality tool techniques	Check sheet
6	Human oriented quality management	On job training
7	Data collection and analysis	customer detail and product detail

Another discussion on the automotive industry which is experiencing a significant inclination in global market volumes accompanied with recent declination in profit margins and prolonged life span of a new car. Therefore, automakers have switched their attention to after sales business which proves to be a recession- resistance business, especially after the world financial crisis in 2008. It tells that the after sales business is significantly important to increase revenues and maintain customer's loyalty contributors. Besides that, it is also focuses on the automotive after sales key performance indicators and their pertinent developed models in conjunction with considering the quality management systems which are implemented in automotive manufacturers.

It is articulated in a manner to review the reported literature in automotive key performance indicators definition and importance. Moreover, further discusses on the contemporary quality management systems in automotive industry and its impact on customers satisfaction can be done.

The importance of after sales services is to increase the quality performance and customer satisfaction. The research focused on different case studies conducted and manages to come up with different findings pertaining to each different main topic in their surveys. In addition, it is also focused on quality improvements in the product development phase which was investigated in a model connecting customer satisfaction (CS) with component-level design targets to lead the quality improvement effort. It also shows that the majority of companies rely on three pillars for the perspective of utilizing and controlling a high -quality system: the bonding relation with customers (with suppliers), reducing the variation in processes and implementing the Kaizen principle for continually improving the products. In other words, the QMS measures the customer satisfaction, the reduction of process variation and gradual continual improvement. However, it focused too much on after sales services to

maintain customer loyalty and satisfaction but failed to realize that the technology in the coming years will be so advanced that customers will then be persuaded to a philosophy that purchase is better than repair

D. Six Sigma and Quality Tools

The research not only focusing on satisfying the clients in developing new products and services, but also quality because quality is critically important nowadays to help organization to stand out from their competitors. The quality team have to take initiative to use quality tools and technique in their improvement activities and decision making process. The concept of Quality Management (QM) is quite old and was first originated in Japan after Second World War. The concept was emphasis on improving quality and using quality tools in the manufacturing sector. Total Quality Management (TQM) and Six Sigma methodology, Quantitative Tools ensures better decision-making, better solutions to problems, and even improvement of quality and productivity for products. Having the quality management system in place is a prerequisite of its successful application on a day to day basis. Continuous improvement process is based on application of Deming's quality cycle or PDCA-cycle. The 7 QC Tools are simple statistical tools used for problem solving. Kaoru Ishikawa has stated that these 7 tools can be used to solve 95 percent of all problems which are Pareto Diagram, Cause & Effect Diagram, Histogram, Control Charts, Scatter Diagrams, Graphs and Check Sheets. Six-Sigma has the potential to change the quality program of an organization. Six step in Six Sigma is DMAIC Process, Defining, Measuring, Analysing, Improving and Controlling.

Quality management refers to the ability of a product or service to consistently meet or exceed customer requirement or expectation in the manufacturing industry. This is one of the part that covered inside production planning control. Lean Six Sigma (LSS) is a combination of Lean and Six Sigma methodologies. Lean and Six Sigma are business management strategies commonly used in production industries to improve process efficiency and quality. But, since 1990s this method also has been used inside medical and health sector to provide quality improvement. This is important

since medical and health sector day by day facing increment of customer demand.

In order to sustain an organization's performance, the most reliable methodology to be used is the Six Sigma. It promotes an effective and systematic approach. In medication field, Six Sigma has been proven to enhance the quality of its services. By referring to a journal Application of Six Sigma Methodology to Reduce Medication Errors in The Outpatient Pharmacy Unit: A Case Study from The King Fahd University Hospital, Saudi Arabia by Ahmed Al Kuwaiti, there are several improvements that have been made by implying this Six Sigma approach to the medication field.

This approach is applied in the five phases which are define, measure, analyse, improve and control. The define stage setting the goal to reduce up to 20% of medication error. It is measured and analyse by referring to customer's specifications. The improvement made including providing the unique identifier for patients, prescription label barcode scanning, preparing training program to replicate past experiences with medications error also implementing and operationalize 5s methodology to standardize the workflow and operations.

In the control phase, the implementation has resulted in sustaining the improvements. Overall, it results better quality and performance of the services. The "Poke-yoke" mistakes proofing technique is used if amendment on process, activity or workstation is necessary. Several prescription dispensing is changed and the errors occurs at data entry has been successfully prevented. The quality is incorporated at the source as well as the pharmacy. Through this operation, the right medication with the right prescription to the right patients is implemented and the error such as wrong dose and medication is evaded.

These steps are all essentials in delivering the medication according to the needs of the patients. The systematic and organisable of the medication is obtained through the operation of the Six-Sigma. These are reliable in helping to decrease the medication errors as for ensuring the patients safety since in medication field, the patients safety are the main concerns. Without good services, the operations of this medication field will be disrupted. Thus, having a good method to analyse and improve the current condition of services is vital for this

field. The Six-Sigma is a great approach that has been practiced throughout the manoeuvres.

IV. CONCLUSION

As a conclusion, every part of the management plays an important role in order to produce a high-quality products and services. With the current high demand of quality products, the needs of best quality management are required in order to have a sustain quality management. Starts with the early stage of management until the top management should be focusing on the quality management in order to produce a great quality and high standard products and services. The production of product is continuous so that the quality management also need to do so to sustain a high quality products.

There are many information regarding the total quality management and its relations to the surrounding. It can also be seen a lot of advantages on applying total quality management in the industries and its environment.

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