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Research Paper

BENEFITS OF TOTAL QUALITY MANAGEMENT IN MECHANICAL WORKING IN OIL COMPANIES IN LIBYA

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The Libyan oil and gas manufacturing industry has been performing significantly well over the past decades (Rhaman, Shokshok, and Wahab 2011). It has been noted that only a few manufacturers are able to produce goods of high quality as a result of employing the philosophy of Total Quality Management (Xiang 2007). This depends on a proper understanding of the modern principles and understanding of Total Quality Management, which should enable the involved individuals effectively to apply the techniques of Total Quality Management. This is what will help in the achievement of the required results. In order to achieve this, the researcher engaged in-depth review of the literature regarding the implementation of Total Quality Management in Libya was done. Extensive survey was also carried out through interviews and questionnaires after which the results were analyzed. The results showed that the effective application of Total Quality Management in any industry or organization leads to increased customer satisfaction as well as reduced losses and increased profits in the Libyan oil and gas manufacturing industry. This paper presents a report on the research of the current practices of Total Quality Management as per the Libyan oil and gas manufacturing industry over the past decades. This paper aims at finding the current state of implementing Total Quality Management, as well as the potential results of the full implementation of Total Quality Management in the Libyan oil and gas manufacturing industry.

Keywords: Total Quality Management (TQM), Libyan gas and oil industry, Mechanical working

INTRODUCTION

The strengths and developments of industries in any country hugely rely on the extent of application of the Total Quality Management (TQM) (Zhang, 2000). This is determined by the application of TQM in all stages of production. A lot of companies promotes quality as the main value

for customers and regards it as a major method to achieve a competitive advantage in the markets. Due to the stiff competition, high public demand and the globalization of markets it is of great need for managers at all levels of management to ensure and apply the techniques of TQM. They should also learn how incessantly

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to improve the quality of their products and services. The oil and gas industry of Libya plays a critical role in the economy of Libya, for example, it is a major source of employment to the people of Libya as well as a huge source of revenue to the Libyan government. However, it has failed to employ the techniques of TQM despite its remarkable performance in both the local and international markets. Both the small, medium, and large sized oil and gas manufacturing industries of Libya have failed to implement the techniques of TQM. Industries which aim at achieving high levels of efficiency in its operations adopts TQM, therefore, its implementation will be very useful in Libya's case because it will help in increasing the satisfaction of customers, increase the chances of survival of the company and increase the quality of products and service of the involved company, hence more profits. The oil and gas industry of Libya will continuously enhance and upgrade its operations and activities. Therefore, achieve a competitive advantage at the global level because all its systems will be working together in an effort to achieve the same goals and objectives. In order to understand the benefits if implementing TQM with regards to Libyan industry, it is appropriate that the literature review is carried out.

RESEARCH PROBLEM

Total Quality Management is a management philosophy that is widely implemented in various organizations across the global arena. It has proved successful in the effort towards improving the performance of an organization, reducing production costs while at the same time increasing the profits (Lee and Lee 2007). Despite the above benefits, majority of companies in the oil and gas manufacturing

industry of Libya have not been implementing the techniques of TQM. This is despite the outstanding performance of the Libyan industries in the oil and gas markets within Africa and other European markets. There is a wide spread lack of implementation of the techniques of TQM. This is because of the rampant lack of knowledge of its importance, therefore, the strategic levels of management of the companies in the Libyan oil industry are not involved neither are they dedicated to the implementation of TQM. In management, there are several concepts associated with TQM, namely; the satisfaction of customers, effective leadership, the involvement of the organization's employees, effective partnership with other organizations, an incessant process of improvements with the involved organization and the application of measures of performance (Tennant, 2011).

The lack of implementation of TQM techniques in Libyan oil and gas companies has had several side effects within this industry. Among the problems associated with it is a lack of quality assurance in the production of goods and services (Bagad, 2008). There is poor management of the production process because there is a lack of proactive measure within these companies. There are widespread breakdown of machines leading to lack of timely delivery of products within this industry. There is a wide spread lack of satisfaction of both internal and external customers. The employees within these companies are not satisfied with the current working situations and methods of management. This comes along with a number of negative effects in terms of the final output in the industry, for example, due to low productivity as a result of low morale among the employees. Secondly, the external clients (consumer) are not satisfied with

the quality of the goods and services that they receive from these companies. This has resulted to the invasion of Libyan markets with similar goods from foreign countries. These goods are sold at a much cheaper price. This calls for an urgent implementation of TQM in this industry. According to (Newman and Case 1994), the implementation of TQM improves 90% of operating procedure, worker relationship, customer relationship, and financial performance within the involved organization. All these advantages will be enjoyed in the event of implementation of TQM in the Libyan oil and gas manufacturing industry. This will open doors to wider global markets.

The introduction of TQM in among manufacturing industries in Libya will require the strategic management of these companies to give due considerations to their members of staff, customers and to their strategies of operation (Khalid, 2011). It is, therefore, for this reason that the researcher identified a great need to look into the concept of TQM and its implementation in the Libyan gas and oil industry. A lot of researches have concluded that the implementation of TQM has a lot of positive results to the organization that implements it. These include increased customer satisfaction, improved methods of management, incessant improvement and upgrade within the organization, factors that are lacking in the Libyan oil and gas industry.

LITERATURE REVIEW

This section is going to give a brief overview of the various works of literature that has been done with regards to the implementation of TQM within organization and major service and manufacturing industries across the global arena. TQM is a set of principle, a philosophy, and a tool

of management that can be used as a guideline to all members of a particular organization and industry with the aim of improving the operational processes of the industry (Nilsson and Rapp, 2005). It needs every member of the organization or industry to be actively involved in all processes, for example, decision making since their participation and contribution are regarded very important. Every member in an organization is critical towards the process of improving the quality of products and services that are offered to the customers. This is not only important in customer satisfaction, but also important to employee satisfaction because they are able to contribute in management process through their suggestions. Despite the general benefits of TQM, there is no one single standard way of implementing TQM the management of the industry. It is, therefore, noted that organizations which are oriented towards the satisfaction of their customers vary in the manner in which they Implement TQM. This is because they employ different techniques of improving their processes. TQM is regarded as a way of thinking that is very critical to the success of an organization. It is a set of principle, a philosophy, and a tool of management that can be used as a guideline to all members of a particular organization and industry with the aim of improving the operational processes of the industry (Nilsson and Rapp, 2005). It needs every member of the organization or industry to be actively involved in all processes, for example, decision making since their participation and contribution are regarded very important. Every member in an organization is critical towards the process of improving the quality of products and services that are offered to the customers. This is not only important in customer satisfaction, but also important to

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Survey Design and Preparation and the Collection of Data

In this research, a questionnaire for the survey was developed and distributed to the various participants (companies) in Libya. The questionnaires were designed in a manner aimed at meeting the goals and objectives of this research. The questionnaires were used to collect the general information regarding the performance of the Libyan gas and oil industries in the absence of TQM and the presumed benefits of TQM in the event of its implementation. The questions were framed in both the closed and open-ended formats. The objective of this research study is to investigate the benefits that the implementation of TQM will bring forth in the mechanical working of the Libyan oil industry. In this process, a total of 20 companies involved in the oil and gas-manufacturing industry of Libya helped in the effort towards finding the expected responses. These companies ranged from small to medium sized companies within Libya.

Data Analysis

The data collected were gathered and analyzed to determine if there was any question, which was not answered. The collected data were analyzed in order to determine the correlation between the barriers found in the second section of the

questionnaire. In order to find out this relationship, the adequacy of the sampling was measured using the Keiser-Meyer-Oklin method of sampling adequacy. The results of the sampling were found to be at 0.85. This shows that the sample results were reliable because it is based on a scale of 0 to 1. The questionnaire was also subjected to a reliability test, and it was found its Cronbach Alpha value was recorded as greater than 0.77. This shows that the questionnaire was reliable.

The Benefits of TQM in Mechanical Working in the Libyan oil Industry

TQM is a philosophy of high-quality management throughout all the parts of an organization's system (Nitin *et al.*, 2011). It is aimed at, reducing wastes, saving time, reducing costs while increasing profits, and increasing the market share. In order to achieve this, the management of the involved organization must ensure that they are able to meet the needs of both the external and internal customers. This is met through strong implementation of strategic planning in all the functional departments of the company or industry involved. The ability to control quality should be an integral section of the processes of production. Therefore, it should include an incessant process of improvements, executing activities in the right manner and elimination of all wastes, quantitative analysis in order to detect any deviations from the expected standards of quality (Pino, 2000). This will help in achieving a major goal and objective of reducing costs and increasing profits while at the same time satisfying the needs of both the external and internal customers. This study revealed that there are several benefits associated with the implementation of TQM in the mechanical working in Libyan oil industry.

One of the benefits of implementation of TQM to the mechanical working of Libyan oil industry is defect and waste reduction (Nitin *et al.*, 2011). This is because the major aim of TQM is improvement of quality in all the processes within the industry, therefore, all the process involved in the Libyan oil industry will undergo improvement. As a result, all products that will be manufactures in the Libyan oil industry will be of high quality and satisfactory to external customers. Therefore, the whole industry will ensure high-quality products within this industry. TQM is a philosophy of high-quality management throughout all the parts of an organization's system (Pino, 2000). It is aimed at increasing the market share, reducing costs, and increasing profits. In order to achieve this, the management of the involved organization must ensure that they are able to meet the needs of both the external and internal customers. This is met through strong implementation of strategic planning in all the functional departments of the company or industry involved. The ability to control quality should be an integral section of the processes of production. Therefore, it should include an incessant process of improvements, executing activities in the right manner and elimination of all wastes, quantitative analysis in order to detect any deviations from the expected standards of quality (Pino, 2000). This will help in achieving a major goal and objective of reducing costs and increasing profits while at the same time satisfying the needs of both the external and internal customers.

Another benefit that TQM will bring to the Libyan oil industry is the satisfaction of customers. This is because the implementation of TQM will enable these industries to produce high-quality goods and services that are meeting the demands of consumers. On the other hand,

the employees will also be satisfied with the new systems of management. In order to succeed in this effort, it will require all the strategic management levels within the Libyan oil and gas manufacturing industry to fully support the implementation of TQM techniques. In addition to this, they will have to make this program very supportive and implement it in a very friendly manner. This can be achieved through the following ways. Firstly, the strategic level of management of the organization can choose to implement TQM through an approach that suits the current culture within the involved organization. This means the integration of quality techniques and principles in a manner that will ensure a continuous improvement of the organization (Rani *et al.*, 2012). Secondly, this can be achieved through regular processes and activities of training and educating the employees of the involved company so that they can change their behaviors and attitudes to be in line with the new goals and objectives of TQM techniques introduce in the company. Therefore, managers should ensure that all employees participate in the effort towards the achievement of the goals and objectives of TQM. This will help in the development of a strong organizational culture that is quality oriented.

The reduction of cost of production is also another positive benefit of implementing TQM in Libyan oil industries (Rani *et al.*, 2012). Quality management will apply in the financial department whereby there will be appropriate management of funds. Similarly, all the stages of production will be operated at a minimum cost.

RESEARCH FINDINGS AND DISCUSSION

The response from the participants only 45% of

the companies are currently implementing TQM in their process, 30% of the companies were considering implementing it, while 25% of the companies were not even interested in the philosophy. This reluctance to implement TQM is mainly because of the presumed good performance of Libya in regional markets and as a result of the high demand of gas and oil products. Some participants cited lack of interest from the management for the lack of implementation of TQM. However, most participants from the strategic management level indicated that they incessantly encourage the adoption of TQM in their companies. Here, a total of 70% of managers agreed that the implementation of TQM has significant benefits and would upgrade the Libyan oil industry. On the other hand, 30% of the managers involved in the research did not see a significant effect of TQM. Similarly, 80% of other respondents (employees and clients) indicated in their responses that TQM has significant positive effect on the company that practices it. This result shows that both the managers, employees and consumers are fully aware of the importance of TQM in any organization. Based on the second section of the research questionnaire, the participants were able to indicate various barriers towards the implementation of TQM in their companies. A total of 65% of the managers who were involved in the project said that most Libyan companies lack the knowledge and skill regarding the implementation of TQM, hence the reluctance to adopt it. Similarly, employees cited lack of training to give them the skill of TQM as their major barrier and the reason behind their lack of engaging in TQM practice. A total of 55% of managers also involved cited inadequate resources for training and equipped their employees with TQM techniques. This shows that more effort should be put in terms

of implementing TQM in the Libyan gas and oil industry.

CONCLUSION

In conclusion, TQM is regarded as a way of thinking that is very critical to the success of an organization. It is a set of principle, a philosophy, and a tool of management that can be used as a guideline to all members of a particular organization and industry with the aim of improving the operational processes of the industry. The Libyan oil and gas manufacturing industry has been performing significantly well over the past decades. Despite this, there has been a lack of application of the TQM in this industry, thereby, raising concern with the quality of oil and gas products in Libya and even at international level. The process of implementing TQM in an organization needs a change in the organization culture, particularly in the Libyan case. This has resulted to the invasion of Libyan markets with similar goods from foreign countries. These goods are sold at a much cheaper price. However, the research has revealed a widespread lack of implementation of TQM due to the barriers and lack of interest on the side of strategic management of these companies. The respondents have also revealed that they are not satisfied with the current methods of management in their companies. This leads to low quality in the production of goods in this industry, an event that leads to lack of satisfaction of both the employees and customers. The research has also proven that the implementation of TQM in has a lot of significant benefits to the involved organization; hence, its implementation will upgrade the Libyan gas and oil industry.

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