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Quality Culture Framework Proposal for Libyan Industrial Companies

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***Abstract*—**Libyan industrial companies face many challenges in today's competitive market. Quality management culture approaches is one of these challenges which may furnish the road to the Libyan industrial companies to effectively empower their employees and improve their ability to respond to the international competition. The primary objective of this paper is to design a practical approach to guide Libyan industrial companies toward successful quality culture implementation.

***Keywords*—**Libyan manufacturing industries, TQM, Quality culture, Quality framework.

I. Introduction

ALL organizations realize and share the fact that products with better quality will lead their firms to a higher product reputation, increase their competition position, increase their market share, improve their exporting capabilities, and improve their financial status [1]. TQM is a management philosophy focuses to achieve customer expectations through the participation of all employees in continuous improvements and monitoring of the entire organization production activities [2]. Weber and Sorenson [3] defined TQM as "An approach to planning and implementing continuous organizational improvement", they argued that TQM focus is on identifying problems, building commitments, satisfying customer's expectations, promoting and sharing employees in open decision making. Prajogo and McDermott [4] defined TQM as "Management model that aims to meet customer needs and expectations within an organization through continuous improvement of the quality of goods and services and by integrating all functions and processes within an organization".

A study conducted by Prajogo and Sohal [5] investigated TQM innovation performance relationships, and compare this relationship against quality performance. The study considered both manufacturing and non-manufacturing organizations operating in Australia, the researchers found that TQM positively and significantly related to both product innovation performance and product quality, where product quality level of relationship is found greater than with product innovation performance.

Since TQM becomes crucial part of operations management within industry and manufacturing environment, a number of TQM models have been established, each having its own structure and features. Oakland [6] and Bugdol [7] cited the following as the most well-known models: Deming Model, Malcolm Baldridge Model, European Model, and Oakland Model. All these models promoted quality awareness as an essential part of competitiveness and the sharing of information on successful quality strategies as well as understanding quality excellence requirements. Fig. 1 illustrates the Oakland Model as an example; it shows that the process core is in the heart of the model, where the main features of the TQM are dealing with the relationships between suppliers and customers. The hard elements: teams, tools, and systems are shown on the diagram; the whole process is surrounded by other elements known as the soft elements: communication, culture, and commitments. All these elements are integrated and working together as a whole system within the TQM model [6]. It is a well-known fact that it is these soft elements (culture, commitments, and communication) that bind the whole concept of TQM, and they are much harder to implement than the hard elements, as they are concerned with people and change management.

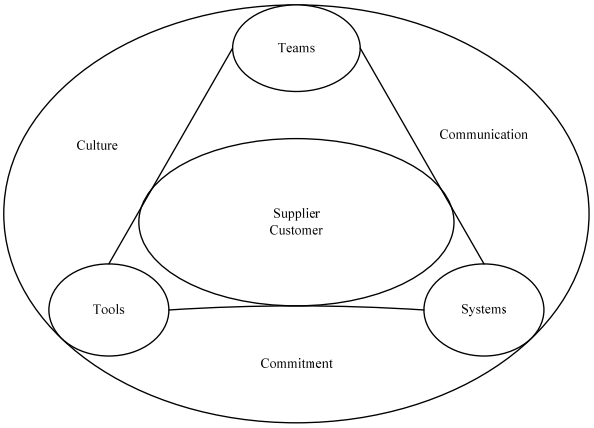

Fig. 1 Oakland Model
Source: [6]

Another example of TQM models is illustrated in Fig. 2, the Malcolm Baldrige national quality model. It consists of seven categories; quality leadership, strategic quality planning, customer focus and satisfaction, quality information and analysis, human resources, development, and management, management of process quality, and quality and operational results [8]-[10]. The seven categories of the model are divided into two main categories; organizational practices consist of six criteria, and organizational performance consists of one criterion. The organizational practices are quality leadership,

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strategic quality planning, customer focus and satisfaction, quality information and analysis, human resources, development, and management, and management of process quality. The organizational performance is quality and operational results [4].

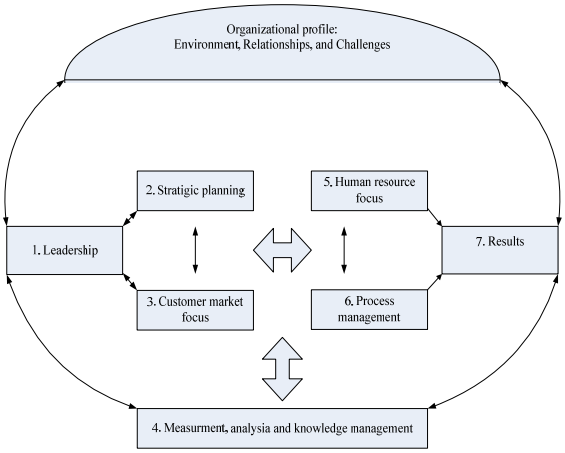

Fig. 2 The Malcolm Baldrige national quality framework
Source: [10]

A study in Australia conducted by Sohal and Terziovski [11], concluded that assigning TQM implementation task in organizations is a major work which will take a number of years to accomplish. They found that there are many ways and many approaches to implement TQM, and insisted that no single approach is considered the best to implement the philosophy. This was supported by Tari [12] in his study on ISO 9000 certified firms titled 'study components of successful TQM', where the researcher concluded that no unique model nor approach for a good TQM implementation program. The implementation approach must be supported and accepted by all employees, and hard and soft skills must be included in their training and education programs.

The research focus of this paper comes from the day-to-day management problems in Libyan industrial companies, caused mainly by the absence of quality management system implementation in Libyan industrial companies [13], [14].

Libya is a Middle Eastern country and located on North Africa. It was considered a poor country until early 1960's, when oil and natural gas is discovered. Ever since Libya has turned to industrialization through participation in the oil and gas production technology as well as cement, iron and steel, textile, and food manufacturing industries. Since then, Libya is committed and dedicated to develop superior abilities to make goods and products meet the standards of quality requirements for their customers, which can be achieved by the use of the most suitable and appropriate available technology, and through an effective managerial systems [15].

Libyan government spent a lot of money on building up an infrastructure to facilitate independence in different areas. This effort was unsuccessful because the culture that was needed to change the attitudes of the people towards the new changes was not there. Nowadays, there is an urgent need for a radical reappraisal of traditional management practices within Libyan companies and large-scale and transformation in the way in which business is done in the Libyan environment, particularly in the area of quality management [13].

The Business Competitiveness Index (BCI), a powerful tool that measures the sophistication of companies, their operations, and the quality of the business environment, ranked Libya in 109th position, with only Paraguay ranking lower. In this Index, a number of barriers and obstacles in Libyan companies preventing the country from developing are stated. Barriers such as lack of vision, poor leadership, waste of expensive resources, disregard of the potential of human resources as an important agent for change, overlooking customers, and the absence of a scientific systematic approach towards organizational management [16].

II. Methodology

This research is needed to conduct an empirical study of the improvement of quality management systems by the use of appropriate quality culture framework to be implemented within Libyan industrial companies. Shokshok et al. [17] defined the existing national and organizational culture variables and their impact on the quality management system implementation in Libyan manufacturing companies. AbRahman et al. [18] defined the benefits and barriers facing Libyan manufacturing companies from implementing TQM.

In line with these results regarding the existing status of culture and quality management systems in Libyan industrial companies, the Author will design and propose a suitable quality culture framework for the Libyan industrial companies. The framework of quality culture will be formulated on the basis of cultural variables and the theoretical model of quality practices implementation constructs and overall business performance. The combination of the elements of cultural variables, quality process items and overall business performance constructs the quality culture framework. Thus, the framework consists of the national and organizational culture variables, and the seven elements of MBNQA.

Libyan industrial companies require a clear approach to develop their quality management. The suggested approach must be simple guide to encompass as much as possible element towards quality culture implementation. The approach allows the company to develop their own quality journey more clearly, especially in terms of the preparation and remedial action in each quality activity and the expected results.

The following elements are considered by the author when developing the quality culture framework:

i. Simple in structure.
ii. Represent a clear road map of quality development.
iii. Systematic and easily understood.

III. Quality Culture Framework Design

Fig. 3 illustrates the framework as a guide to improve the manufacturing industry within Libya. The conceptual framework contains two main elements: macro (elements

external to the organization) and micro (elements internal to the organization). Their presence is based on previous researches, e.g.: [19]-[26].

The macro (external to the organization) consists of the proposed strategy for the related institutions within the country along with their role that can be applied in order to contribute to improving the Libyan industrial companies. The vision of improving the Libyan industrial companies can be fully realized only if all the related institutions such as governmental, academia, business, consultancy and technical training centers work together to attain this common goal. All institutions within the country are affected and influenced by the country's national culture.

Quality results are in the heart of the framework as a desired status to be achieved through applying the proposed strategy. Soft elements such as leadership, strategic quality planning, customer and market focus, measurement analysis and knowledge management, workforce focus and process management are crucial to the successful achievement of quality culture practices, as they are all centered around the core. These factors have a positive influence on quality improvement and company's market position [27]. The Micro level (internal to the organization) contains these soft elements which all are affected by the driving organizational culture of the organization.

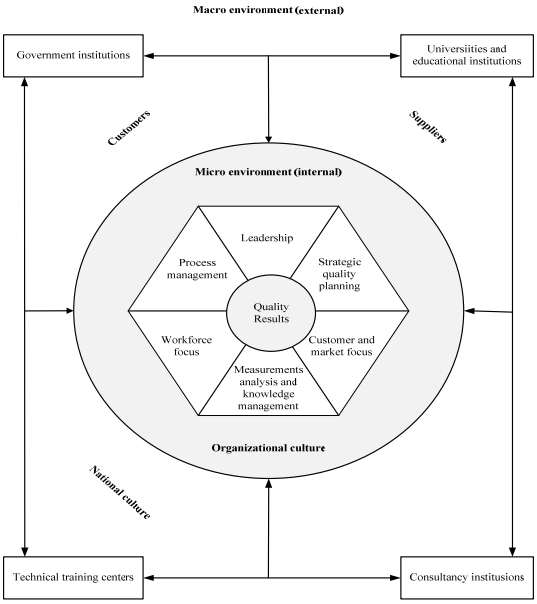

Fig. 3 Quality culture conceptual implementation framework

IV. Comparison to Other Frameworks

The main similarities and differences of the current study framework with selected frameworks are summarized in Tables I-III. Current study framework suggested national and organizational culture change, in which most of the frameworks under comparison did not specify culture importance and influence on quality management implementation. Chin and Pun [28] did not propose a new quality management framework, rather they depended on UMIST-TQM framework which is already has been proposed and validated by B. G. Dale [29].

TABLE I
Elements for Comparison with [30]

	Current study framework	Hamzah and Ho[30]
Focus	Medium and large companies	Small and medium companies
Generic	Yes	Yes
Classification	Award criteria based model	Training based model
Process for implementation	Simple and comprehensive	Simple
Culture	Included	Not specified

TABLE II
Elements for Comparison with [31]

	Current study framework	Yusof and Aspinwall[31]
Focus	Medium and large companies	Small and medium companies
Generic	Yes	Yes
Classification	Award criteria based model	Principal based model
Process for implementation	Simple and comprehensive	Simple and comprehensive
Culture	Included	Not specified

TABLE III
Elements for Comparison with [28]

	Current study framework	Chin and Pun [28]
Focus	Medium and large companies	Large companies
Generic	Yes	Yes
Classification	Award criteria based model	UMIST - TQM framework
Process for implementation	Simple and comprehensive	Simple and comprehensive
Culture	Included	Included

V. Conclusion

This paper covers in detail the design of quality culture framework. The Author suggests the validation of the framework to be conducted with Libyan quality experts, and through six months implementation in selected Libyan industrial companies. This study is the most recent to design and propose a quality culture framework, it makes contribution by providing an insight into the needs of quality practices implementation in Libyan industrial companies.

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