An implementation model for quality assurance

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Abstract

The implementation of quality assurance has been focused on establishing documented systems. This focus is largely due the systematic nature of this quality approach [8]. In order to maximize the benefits of Quality Assurance, it is necessary to address such important factors as corporate culture, structure, leadership and national culture of the organization. Indeed, these factors are critical for the implementation of any strategy. This paper proposes a coherent Quality Assurance implementation model that incorporates the above four factors. The proposed tenets of corporate culture, structure, leadership, and national culture are fit with the elements of Quality Assurance as well as with one another. This fit is likely to ensure a successful Quality Assurance implementation.

Key words: Quality assurance; Implementation; Culture; Structure; Leadership; National culture

1. Introduction

There are basically two approaches to Quality management, namely Quality Assurance (QA) and Total Quality Management (TQM). Quality Assurance is considered an earlier step in the quality evolution [11], and is therefore more widely used than Total Quality Management. This is particularly true in Europe, Africa and Asia [7, 1, 43]. This paper proposes an implementation model for QA. The implementation of any strategy is largely dependent on the culture, structure and leadership of the organization [44]. The proposed model aligns the above three dimensions in addition to national culture that plays a crucial role in the success of quality initiatives [1, 65]. This paper also shows the fit among these dimensions and between them and the major tenets of QA. The importance of fit was stressed by many authors [40]. Peters and Waterman [45] also highlighted the importance of achieving a close fit among the seven S's of strategy, structure, systems, shared values, skills, style and staff, structure, systems, shared values, skills, style and staff. This paper is not intended to be an alternative for existing quality systems such as ISO 9000. It is focused on strategic implementation rather than on the strategic content.

This paper includes seven sections. The remainder of this section presents QA and TQM. The next four sections are respectively dealing with the

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corporate culture, structure, leadership and national culture of a QA organization. Section six presents an implementation model for QA.

QA and TQM are considered two different approaches to quality [42]. QA is a systematic approach to the pursuit of quality [8]. The purpose of QA is the conformance of products, services, and processes to given requirements and standards [42]. This conformance is achieved through systematic measurement and control as well as process standardization [13]. QA includes, and is an extension of, quality control [23, 42]. QA is concerned with quality planning and defect prevention through programs and documented systems throughout the company's supply chain [23]. Quality responsibility is shared with all functions with the view to "build in" quality. ISO 9000:1994 have been considered as the most popular QA system.

On the other hand, TQM is a comprehensive management approach aiming at satisfying or delighting customers [42, 63]. TQM stresses the importance of culture in designing, producing, and improving products and services that satisfy customers [8]. There is no agreement on elements of TQM but the most cited components that distinguish TQM from QA are continuous improvement, empowerment and customer satisfaction [64, 15, 2, 21].

2. Corporate Culture

Corporate culture has become very popular in the 1980's as reputable journals such as Administrative Science Quarterly, Organizational Dynamics, and the Journal of Management Studies devoted special issues to this topic. The cultural theory of organizational effectiveness takes as its foundation the notion that the values, beliefs and meanings that underlie a social system are the primary source of any motivated and co-ordinated activity Kilman, [31]. Indeed the success of any strategy depends on how well it fits with the existing culture. The better the fit is, the better the implementation [45].

Quality Assurance is more concerned about systems and structure than it is about people [8]. As a result little research has been conducted on the cultural dimensions of QA. Establishing a quality system and achieving conformance do however require certain distinct set of values. Mallak et.al. [38] conducted a cultural study of ISO 9000:1994 certification which has been the most popular quality assurance system. Their study revealed that the factors of decisiveness, team orientation, risk aversion, stability, attention to details, and high organization or formalization to "definitely work for certification". Indeed these values support control, conformance and systems. Attention to details is essential for precision in documentation and implement-
ation, and thereby supports conformance. Decisiveness is essential to maintain control and maintain stability and conformance. High organization or formalization ensures clear adherence to rules and regulation and achieve conformance. Teams are considered as effective measures of control [58]. Team orientation is therefore supportive of conformance. Team orientation is also important for system development and implementation. Stability and risk aversion reduce potential variations and reinforce conformance. We therefore make the following proposition.

**Proposition 1:** Firms implementing QA in order to achieve conformance to requirements are more successful when their culture is dominated by the values of decisiveness, team orientation, risk aversion, stability, attention to details, and high organization.

3. Structure

The success of any organization rests heavily on the compatibility between its strategy and its structure [6]. In the following, we will propose the main tenets of QA structure.

The purpose of QA is conformance to given requirements and standards. It is therefore internally focused and concerned primarily with reduction of variations through developing quality systems in addition to supervision, inspection, and control [58]. This means that QA requires a significant level of centralization and formalization. Centralization is pertinent to supervision and control while formalization requirement is clearly manifested in the whole concept of ISO 9000. A study conducted by Mallak et. al. [38] revealed that formalization is strongly supportive of ISO certification. Moreno-Lonzo and Peris [42] developed a model for strategic management, organizational design and quality management. This model placed the QA organization on the high formalization and high centralization quadrant.

QA also requires a process-based organization. A QA organization is conceived as a flow of interdependent processes [36]. The fact the QA organization is process based necessitates the formation of cross-functional teams that will insure that the process is in control. These teams are measures of control rather than empowerment [58, 5]. These teams are run by rules and regulations. Furthermore, because a QA organization is centralized, any needed decision pertaining to the process is taken at management higher levels.

**Proposition 2:** Firms implementing QA in order to achieve conformance to requirements are more successful when their structure is characterized by
centralization, formalization, and cross-functional teams that process control through complying with directives, rules, and regulations.

4. Leadership

The role of top management is critical for quality success [16], Juran [29], Dale and Duncalf [12], Lascelles and Dale [35]. Top management commitment will lead employees at all levels to invest time and effort in the change program if that program has the full and credible support of top management [34].

QA is a systematic approach to quality [8] aiming at conformance to requirements. Furthermore, the QA structure is formal, centralized, and focused on process control as proposed in the previous section. Against this background, we propose that a QA leader should be decisive, patient with details and concerned with structures and systems.

4.1 Decisiveness

Decisiveness is considered a main component of a QA culture [38]. QA Leaders should therefore be decisive themselves in order to be able to infuse this value in the organization. Crosby [10] considered decisiveness to be essential for leading a quality organization. He argued that vacillating on decision is most destructive to leadership effectiveness. The objective of conformance requires leaders to stick to their decisions. Furthermore, the fact that QA organization is centralized means that leaders need to take more decisions by themselves. This puts greater emphasis on leadership decisiveness.

4.2 Patience with Details

Conformance to requirements requires performance to be accurately measured and compared to standards. Indeed, QA leaders are concerned with monitoring and control [Garvin, 1988]. Mallak et. al. [38] considered attention to details to be a factor highly supportive of ISO certification. Being culture makers, QA leaders need to be patient with details themselves in order to infuse these values throughout the organization. Scharp [49] stated “what gets measured gets done”. Measurement also plays a role as key motivator as demonstrated in use of measured improvement targets by Japanese companies [13]. Ensuring work is done according to accurate measurements requires managers to be patient with details. Dale and Cooper [14] argued that senior managers need to learn about statistical process control methods to use them
in their decision making to demonstrate active interest in the quality implementation.

4.3 Concern with Structures and Systems

QA is a systematic approach to quality [Collins, 1994]. Reduction of variations and the production of a consistently good quality are essential in any QA organization. QA leaders are concerned with defect prevention through systems and documented processes throughout the supply chain [30, 47, 55, 54]. Fenwick [18] and Scholtes and Hackerbord [54] indicated that management has to establish organizational policies, structures, and practices that are consistent with the quality vision. Mallak et. al. [38] indicated that a high level of organization or formalization is highly supportive of ISO certification. Section three of this paper suggested that a QA organization is highly formalized and centralized. It was also argued that QA is primarily concerned with process control. QA leaders should look for faults in the system [52] in order to reduce special causes of variations. Leaders should therefore be concerned with systems and structure in order to convince their subordinates of its importance and to achieve process control. Such leaders should stress the clarity of employees' roles and goal and goals very clearly, the control system that will ensure that those roles and goals are accomplished, and the rewards that will follow these accomplishments.

Proposition 3: Firms implementing QA in order to achieve conformance to requirements are more successful when their leadership is decisive, patient with details, and concerned with structures and systems.

5. National Culture

Laza and Wheaton [36] suggested TQM implementation is conditioned by the differences in environment of each organization. Ngowi [43] highlighted the role of national culture in implementing TQM. The variations in national cultures have been examined and analyzed by Glenn and Glenn [19], Kluckhorn and Strodbeck [32], Triadis and Albert [60], and Hofstede [25, 27]. The work of Hofstede is, however, considered the most popular and the most comprehensive [56]. National culture influence organizational values [46] and structure [4] as well as the way managers behave [39].

Recent studies have addressed the impact of national cultures on TQM implementation. Ashcroft and Foreman-Peck [3] argued that quality models need to be sensitive to the culture in which they operate. A model described by Lysons and Hatherly [37] was found to fit better in the UK context than that of Australia. In an international study, Adam, et al. [1] validated the
'culture-specific' hypothesis by proving that no two regions in the world (Asia, Europe or North America) were similar to one another in terms of the models that explain TQM implementation. Ngowi [43] studied the impact of culture on TQM implementation in the construction sector of Botswana and highlighted the influence of both the national and organizational cultures on TQM implementation. He concluded that inconsistencies existed in the interactive processes involving TQM implementing firms and both national and organizational cultures. Corbett and Rastrick [9] examined management culture and quality performance in New Zealand firms. They found correlations between different management cultures and quality performances. Zhang [65] examined quality management approaches in China and observed that China was more into QA and that it has a long way to go to create a culture for effective management of quality. Compared with their Norwegian counterparts, Shanghai companies place greater emphasis on quality control and statistical methods while neglecting customer satisfaction [59].

In this section, we propose the more suitable national cultures for QA and TQM respectively. The cultural dimensions developed by Hofstede are chosen for this study because of their comprehensiveness and well-established impact on strategic decision processes [56].

5.1 Hofstede Dimension of National Culture

According to Hofstede [25, 27], dominant culture values vary along five factors, namely: power distance, uncertainty avoidance, individualism-collectivism, masculinity versus femininity and short-term vs. long-term orientation. Shackleton [56] considered these factors to be the most comprehensive dimensions of national culture. These dimensions are described below.

**Power Distance**

Power Distance (PD) is the degree of inequality among people running from relatively equal to extremely unequal. It explains the degree to which members of a culture are prepared to accept and expect inequality between superiors and subordinates. Logically, more PD societies display very hierarchical systems. In high PD cultural contexts, it is typical that superior-subordinate relations are characterized by total obedience on the part of subordinates for superiors. In low PD cultures, on the other hand, superiors tend to delegate authority and adopt consultative processes to take decisions.

In high PD cultures, subordinates expect and accept close supervision of their work and performance. They tend to refer to their superiors before taking direct actions in ambiguous and confusing situations [25]. In low PD
cultures, subordinates tend to question their superiors and are quite often willing to give constructive suggestions. Organizations in low PD countries are likely to be generally decentralized and are unlikely to have tall organization structures.

**Uncertainty Avoidance**

Uncertainty Avoidance is the degree to which people feel threatened by ambiguous situations [25]. Societies that have High Uncertainty Avoidance are likely to have greater control in well-planned organization structures. Countries such as Germany, Japan and Spain that are found to have Uncertainty Avoidance will have expertise and knowledge-driven organizations and seek to exercise control through well-planned processes. These societies are likely to encourage formal organization structures and written rules for decision making and are unlikely to promote informal organization structures.

**Individualism-Collectivism**

Individualism-Collectivism is the degree to which people act as individuals or as group members. In individualistic societies the individual is assumed to take care of himself and his immediate family members and relatives. In collectivist societies the group, in exchange for conformance and unconditional loyalty, cares for the individual. Rewards for achievement of goals differ according to the degree of Individualism and Collectivism of a nation. Individualistic societies, for instance, would reward the individual and non-conformist more than Collectivist societies [25]. Individuals in these societies feel unconstrained by environmental factors and can exercise self-improvement [51]. Collectivist societies such as Japanese and Chinese that place a high emphasis on team work tend to motivate organizational members with the help of government-driven group incentive schemes [65].

**Masculinity-Femininity**

Masculinity-Femininity is the degree to which Masculine values such as assertiveness, performance, success and competition prevail [27]. In Masculine societies such as Japan, individuals tend to be more assertive and goal-oriented thereby aiding the process of attaining a higher degree of performance. They take pride in their work and expect recognition of their Masculine values. In Masculinity-driven societies, management styles are assertive to provide a clear sense of direction and control of organizational members to attain goals and objectives. Femininity driven societies encourage group decision making and define achievement in terms of contacts and work en-
Long-term-Short-term Orientation

Long-term-Short-term Orientation considers Long-term values such as thrift, savings, obedience and persistence [27]. Long-term orientation involves preserving status-based relationships, thrift and deferred gratification. A society with these values would rely on organization structures influenced by a strategic mode of thinking. The organizations that rely on Long-term Orientation demonstrate a pattern of major goals and objectives, and a clear road map to attain these goals and objectives over a period of time. In countries with long term orientation such as Taiwan, employees prefer a relatively high level of tight formal planning by the company [57]. Organizations with Short-term Orientation, on the other hand, tend to be tactical in their responses to the environment and demonstrate opportunistic behaviors in their decision making [41].

5.2 National Culture for QA

QA deals with conformance that is achieved through supervision, inspection and control as well as prevention. Section three of this paper suggested that QA organization is a centralized one while section four suggested that QA leaders should be decisive. QA can therefore be implemented more effectively in countries with masculinity high power distance such as Honk Kong, Philippines, Mexico, Japan and Venezuela [25, 27]. The study of Adam et. al. [1] appears to support this suggestion. Countries like New Zealand, with its masculine culture, and Honk Kong and Mexico that have a high power distance, were found to be more into quality assurance than customer satisfaction.

QA also focuses on designing and planning for quality through documented systems. This implies that QA requires a high level of formalization. Indeed, section three of this paper suggested that a QA organization is a formal one. Section four suggested that QA leaders should be concerned with structures and systems. The study of Mallak et. al. [38] revealed that risk aversion and formalization are highly supportive of ISO 9000 certification. Logically, we can suggest that countries with high uncertainty avoidance such as Belgium Greece, Portugal, France, Spain, Italy, Japan, Chile and Argentina [27] are well placed to implement QA. A large majority of companies in Europe, where high uncertainty avoidance is dominant, are working for, or have, quality systems. [7].

The QA focus on planning also suggests that dimension of long term-
orientation is also likely to facilitate the implementation of this components, for Countries with long-term-orientation are likely to be highly concerned with planning for defect-prevention. These countries also maintain status-based relationships that are in tandem with formal organizations. Japan that possesses this cultural dimension has demonstrated a high level of success in QA [33]. Similarly, Chinese companies have been noted for their focus on QA as opposed to TQM [65, 59]. Collectivism is also a suitable dimension for QA. In collectivist countries, people are more inclined towards conformance with the group. Malaysia, Thailand, Mexico, Indonesia, China, and Japan who are considered to be collectivist countries [27] have been more inclined towards QA [62, 33, 59].

Proposition 4: Firms implementing QA in order to achieve conformance to requirements are more successful in national cultures characterized by high power distance, high uncertainty avoidance, masculinity, and collectiveness.

Having discussed the corporate culture, organizational structure, leadership and structure of QA and TQM, we will now propose an implementation model for QA.

6. QA Implementation Model

The proposed QA implementation model is shown in Figure 1. recognizing that the implementation of any strategy is dependent on corporate culture, structure, leadership and national culture. This proposed model puts

![QA Implementation Model](image-url)

Figure 1 QA Implementation Model
together proposed dimensions of QA implementation discussed above and indicates the interactions between them.

QA is a systematic approach to quality. It is focused on conformance through control and systems. The proposed cultural values for an effective QA implementation include stability, attention to details, decisiveness, risk aversion, formalization, and team orientation. Stability and attention to details are supportive of conformance while decisiveness supports the control dimension of QA. Risk aversion reinforces systems and leads to conformance. Systems are also reinforced by the values of formalization and team orientation.

The structure of a QA organization is based on process control, centralization, formalization and cross-functional teams that are run by rules and regulations. Process control is necessary for conformance. It is supported by the values of stability, attention to details, formalization, risk aversion and team orientation. Centralization is necessary to ensure control, and it is supported by the value of decisiveness.

Formalization and cross-functional teams are related to systems. Formalization is supported by the values of risk aversion and formalization while cross-functional teams are supported by the value of team orientation. It is proposed that leaders of QA organizations should exhibit patience with details, decisiveness, and concern for systems and structure. Patience with details, which is consistent with the cultural value of attention to details, serves the purpose of conformance and process control. Decisiveness is necessary for a centralized organization. It is consistent with the cultural value of decisiveness and serves the purpose of control. Concern for systems and structure enhances systems and enables the formation of a formal organization and cross-functional teams. The values related to this dimension are risk aversion, formalization and team orientation.

It is also proposed that national cultures characterized with collectivism, masculinity, high power distance, high uncertainty avoidance, and long term orientation are more suitable for QA implementation. Collectivism enhances conformance and process control. It is related to the values of team orientation, risk aversion, and stability. Masculinity supports control and centralization, and it is consistent with the culture and leadership dimension of decisiveness. Similarly, high power distance supports control and centralization while being consistent with decisiveness. High uncertainty avoidance and long term orientation enhance formalization and the commitment to
systems. They are related to the leadership dimensions of concern for systems and structure and the cultural values of risk aversion and formalization.

It is easy to notice that a high level of consistency and harmony exist among the components of the QA model. Corporate culture, structure, leadership, and national culture are consistent with the elements of QA and well as with one another. This consistency is likely to ensure a successful QA implementation.

7. Conclusion

This paper proposed an implementation model for QA. A successful QA implementation requires a corporate culture dominated by the values of decisiveness, team orientation, risk-aversion, stability, attention to details, and high organization or formalization. Such a culture is fit for achieving conformance. QA also requires a formal and centralized organization that uses cross-functional teams that have to abide by the rules and regulations in order to ensure process control. Leaders of QA organization must be patient with details and concerned about systems and structure. QA is implemented more effectively in national cultures characterized by collectivism, masculinity, high power distance and high uncertainty avoidance and long term orientation.

The above discussion shows how total and holistic QA implementation is. First all dimensions of corporate culture, structure, leadership and national culture are fit with the QA components of conformance, control and systems. Second these dimensions are all fit with one another. This model provides managers with an integrated approach for QA implementation that is likely to contribute to significant decrease in failure rates of quality initiatives. This model does not stop at the QA content but answer highly important questions about the organizational antecedents of culture structure and leadership.

References


