A CONCEPTUAL FRAMEWORK FOR THE DEVELOPMENT OF QUALITY CULTURE IN THE CONSTRUCTION INDUSTRY

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The construction industry is being viewed as one with poor quality emphasis compared to other sectors like the manufacturing and service sectors. Many criticisms have been directed to the construction industry for generally shoddy workmanship. This is mainly the result of the industry’s failure to achieve the expected performance level in delivering its finished product and its customer service. Total quality management (TQM) is increasingly being adopted by construction companies as an initiative to solve quality problems in the construction industry and to meet the needs of the customer. However, construction firms have been continually struggling with its implementation. Cultural change is being recognised as an important aspect of total quality development. However, the issue surrounding quality culture and their development has not been comprehensively studied. Based on literature review, this paper discusses the issue of quality culture and a conceptual framework for the development of quality culture in construction industry.

Keywords: construction, culture, quality, quality culture, TQM.

INTRODUCTION AND BACKGROUND

The construction industry is being viewed as one with poor quality emphasis compared to other sectors like the manufacturing and service sectors (Kubal, 1994; Kanji and Wong, 1998; Wong and Fung, 1999). Many criticisms have been directed to the construction industry for generally shoddy workmanship. It not only the final product that is subject to criticisms but the processes, the peoples, the materials etc are under tremendous pressure for better quality in construction. This is mainly the result of the industry’s failure to achieve the expected performance level in delivering its finished product and its customer service (Dulaimi et al. 2001).

Several studies and reports recognise that problems surrounding poor construction quality constitute a major issue requiring rapid and positive improvement (BRE 1982, Building EDC 1987, Burati and Farrington 1987, Griffith 1990). Aspects such as inadequate information, poor communications, poor care in workmanship, and lack of site supervision will remain as a continuing problem until the cultural patterns and the reasons behind them are understood, appreciated and taken into account (Abdel-Razek 1998).

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Total quality management (TQM) is increasingly being adopted by construction companies as an initiative to solve quality problems in the construction industry and to meet the needs of the customer continuously (Kanji and Wong 1998). TQM has the potential to improve business results and competitiveness, greater customer orientation and satisfaction, worker involvement and fulfilment, team working and better management of workers within companies. Similar benefit may accrue to the construction industry and those it serves so long as it can break the vicious circle of mistrust, conflict and waste – the culture of confrontation – and replace it with a culture of quality (Seymour and Fellows 1999).

However, construction firms have been continually struggling with its implementation (Haupt and Whiteman 2004). The implementation of a TQM philosophy within the organization requires a cultural change (Sommerville et al. 1999) and its being recognised as an important aspect of total quality development (Adebajjo and Kohoe 1998). However, the issue surrounding quality culture and their development has not been comprehensively studied (Evans and Dean 2003, Gallear and Ghobadian 2004).

**Objective of the Research**

This paper is part of a PhD research and it presents literature review related to the quality culture. This paper begins with background of quality issues and quality culture in construction industry. The objectives of this research are:

- To identify factors involved in the development of quality culture through searching and reviewing previous research.
- To present the finding of the literature review as a guide to understand the issues and problems in the development of quality culture in the construction industry.
- To develop quality culture conceptual framework in the construction industry in Malaysia.

**Characteristic and Culture of the Construction Industry**

The construction industry has distinct characteristics that separate it from other industries. These characteristics which impact significantly upon its cultural framework are the physical nature of the product; the product is normally manufactured on the client's premises; many projects are one-off designs and lack available prototype models; the arrangement, where design has normally been separate from construction; the organisation of the construction process; and the methods used for price determination (Harvey and Ashworth 1993).

According to Kanji and Wong (1998), the construction industry has numerous problems because of its complicated nature of operation. This industry is comprised of a multitude of occupations, professions and organizations and they are involved in the different phases of a construction project. The client, consultants, contractor and sub-contractors of a construction project all have a role to play in delivering a quality project. Failure of any of the parties will seriously affect the quality of the final project.

Rowlinson and Walker (1995) point out that the construction industry is also characterized by its non-standardization. Production processes are to some extent different from one another. Hence, no universal standard or specification can be applied to the product, which leads to difficulties in quality assurance. There are excessive changes to the details of the design of a project are typical throughout the construction process. Quality is often at risk because of the excessive changes.
Furthermore, the current construction culture is perceived by some as suffering from entrenched attitudes, poor communication, lack of trust and generally adversarial relationships at all levels. Many of the characteristics are rooted in management style and practices which have evolved over the years. Unless the attitudes and behaviours associated with these practices change, there will be no significant progress in improving the situation (ECI 1996). TQM can help to reverse this situation. Although, it is not a magic pill or panacea for all illnesses, it will, if properly implemented, help construction companies improve and will help all the parties come closer.

**Quality in Construction Industry**

Aggressive competition, both at the regional and international level, has imposed higher quality levels in almost all business activities and sectors. To ensure their position in the emerging international market, construction firms are actively engaged in trying to achieve internationally accepted quality levels based on two major framework of TQM – the ISO 9001 family of quality standard, and quality award criteria. Studies indicate that TQM reached an integrated set of commonly accepted practices as a result of the wide acceptance of these two frameworks (Wiele 1998). They require company wide organizations to establish a well-structured and explicit system that identifies, documents, coordinates and maintain all the key quality related activities throughout all relevant company and site operations to ensure customer quality satisfaction and economical costs of quality (Arditi and Lee 2003).

In the context of construction, quality has a three-fold meaning (Hart 1994): it means getting the job done on time; it means ensuring that the basic characteristics of the final project fall within the required specifications; it means getting the job done within budget. A quality construction project has to comprise all these dimensions. Actually, quality in construction is directly connected with conformance to specifications and fitness for use. According to Levitt and Samelson (1993) the TQM mission in construction is to build a quality product - i.e. an error-free one - for the user by preventing errors in the construction process by integrating quality, productivity, and safety. A major emphasis is on doing work right the first time, thereby cutting the amount of rework required to create construction that meets the user's requirements.

**Quality culture**

Culture is used to describe the collection of soft management and behavioral variables that form the psyche of the business organization. To manage and influence culture, it is necessary to first define and then develop a conceptual model of what culture are (Railey and Clare-Brown 2001). However, there is multitude of definitions of culture, each with its own slight variation depending on the focus of study, but most suggest culture is the pattern of arrangement, material or behaviour which has been adopted by a society (corporation, group, or team) as the accepted way of solving problems. As such, culture may be taken to include all the institutionalized ways and the implicit beliefs, norms and values and premises which underlie and govern behaviour (Ahmed et al. 1999).

Gryna et al. (2007) defined quality culture as the pattern of habits, beliefs and behaviour concerning quality. They stress that having a positive quality culture is an essential in achieving the quality goals of a company. Hence, quality culture is the main ingredient in a successful TQM program (Seraph and Sabistian 1993, Westbrook
An organization with a quality culture can be defined as one having clear values and beliefs that foster total quality behaviour (Linkow 1989). Changing corporate culture or organizational culture is increasingly recognized as one of the primary conditions for successful implementation of total quality management (Hildebrandt et al. 1991). As a result, it has been suggested that those organisations attempting to implement or manage quality programs need to pay more attention to the development of the appropriate quality culture (Dellana and Hauser 1999).

ISSUES AND PROBLEMS IN QUALITY CULTURE

The one common denominator that led to failure in all of the previous quality efforts was that they did not change the culture or the environment in which all these tools and processes were being used (Detert et al. 2000). If the TQM effort is inconsistent with the organisational culture, the effort will be undermined (Evans and Dean 2003). The Egan Report on Rethinking Construction (Egan 1998) stresses the need for the industry to make substantial changes in its culture and structure, as a driver for improvements inefficiency, quality and safety.

As reported by Kajewski and Weippert (2001), research indicates that one of the last available ‘mechanisms’ left for organisations to improve their competitive position within the construction industry is by considering its people (culture) along with its technology. In other words, if one wants to make construction industry organisations, groups and project teams more efficient and effective, then one must better understand the role that culture plays within them (Schein 1997). Unfortunately, this transformation of personalities (culture) and traditional processes is not easy (Michel 1998), characteristically hindered by the industry’s unique and determined way of ‘doing things’ the way it always has, and by its deeply embedded and resistive nature to change.

Quality and Organisational Culture

The organizational culture needed to support TQM is one that values customers, improvement, and teamwork. Organizations where a focus on customers, continuous improvement, and teamwork are taken for granted have a good chance of succeeding at total quality. Most organizations do not have such a culture prior to exposure to TQM some degree of cultural change is necessary. (Evans and Dean 2003)

The foundations of the quality orientation of a company are defined at the corporate level. The corporate quality culture is the organizational value system that encourages a quality-conscious work environment. It establishes and promotes quality and continuous improvement through values, traditions and procedures (Goetsch and Davis 2006). According to Evans and Lindsay (1996), quality conscious companies adopt quality management systems that focus not only on delivering high quality finished products but also on creating and/or sustaining performance improvement in the internal and external services generated by the company. Hence, the existence of a strong quality culture should help a construction organisation achieve client satisfaction as well as sustaining competitive advantage by delivering higher quality service and producing higher quality facilities (Yasamis et al. 2002).

Culture Change

Cultural change aims to change the existing culture of an organization. A change in culture and philosophy necessitates changes in peoples’ behaviour. Changes in individuals are aligned to and affected by organizational change. If organizations are cultures then cultural change is organization change (Bate 1994). Culture in
organizations has been described as patterns of shared assumptions (Schein 1991), socially acquired and shared knowledge that is embodied in organizational frames of reference (Martin 1992) or as common and clear understandings (Meyerson 1991). Hence, the implementation of TQM requires changes to the shared assumptions, frames of reference, and understandings that most organizations have developed through interaction with their environment (Ngowi 2000). This is because these philosophies and practices are invariably embedded with their own set of cultural beliefs, norms, values and assumptions (Riley and Clare-Brown 2001). In order to implement TQM approach, the construction organisation must understand the underlying culture base and set this against TQM model. This requires a cultural and behaviour shift in the construction organisation which a change in values, organizational structure, the way people work together, and the way people feel about participation and involvement.

QUALITY CULTURE: A CONCEPTUAL FRAMEWORK

An emphasis on the technical requirement of quality is a common occurrence in the construction industry, particularly when construction firms first introduce quality management in their organizations (Low and Alfelor 2000). However, there is widely recognized that to be effective, organization should address both the technical and non-technical (or cultural) issues. As suggested by Cameron (2001), organizations need to adopt a quality culture, not just a quality process or set of quality techniques. According to him, adopting a quality culture means the quality is reflected in the basic values, the general orientation toward work, the taken-for-granted assumptions and expectations, and the ideology of the organization.

Saha and Hardie (2005) described a culture of quality as one that promotes leadership rather than supervision; inspires commitment on the part of staff to the chosen quality activities; uses teams as main style of management; allows staff at all levels to participate in work related decisions; promotes pride in workmanship; eliminates fear; and inspires people to seek continuous improvements. This type of culture cannot be ordered by management, it must instead be an integral part of how the organisation carries out its business.

There are varieties of cultural influences on individuals and stakeholder which shape their expectations. There were referred to as the frames of reference which include national culture, vocational culture (industry, institutional and professional culture) and organizational culture (adapted from Johnson and Scholes 1997). Hence, the development of quality culture in organisation is influenced by these frames of reference. Laurent (1989) observed that national cultural may shift but very slowly, and argued that while organizational culture may be more amendable to change, real changes in national culture may take generations to evolve. Indeed, the organisational culture appears to be stronger influence than vocational and national culture in developing a quality culture in construction firms.

Culture can be divided into two major components of intrinsic (values, beliefs, assumptions, ‘who and what we are’, ‘what we find important’) and extrinsic elements (behaviour, norms, rituals, symbols, ‘how we go about things around here’). The intrinsic element is a psychological element and the extrinsic element behavioural. These elements also appear to have an individual and a collective aspect, the classification of which is on a continuum from some negative position to a positive position. The quality culture is therefore made up of a collection of individual cultures.
and other sub cultures within the environmental constraints and promotions of the organisation.

Although culture is unique to each organisation (Trought 1995), it is generally agreed that certain dimensions commonly define quality culture. There are thirteen (13) important dimensions of quality culture which TQM practitioners and researchers generally agree that should be present in organizations whose culture complements TQM implementation (Gryna et al. 2007, Geotsch and Davis 2006, Gallea and Ghabadian 2004, Kriemadis 2004, Evans and Dean, 2003, Eva Rita 2003, Ngowi 2000, Johnson 2000, Adebanjo and Kehoe 1999, Bubshait and Ali 1995, Bergman and Klefsjo 1994, Handfield and Gosh 1994). This include leadership and top management commitment, customer focus, continuous improvement, education and training, teamwork, worker involvement, empowerment, supplier partnership, rewards and recognition, communication, motivation, organisation structure, and strategic and quality policy.

**Concept of Quality Culture in Construction Industry**

The changes in perception toward quality management have opened a new outlook to war quality. More emphasis is being put on ensuring everyone understands the importance of quality and changing the attitudes and behaviour is the hard task. Quality is not only the manager's responsibility but everyone must play part.

Figure 1 shows the conceptual framework of quality culture development. The development of quality culture based on the framework views the overall individual to group responsibility that develops the total value of quality culture which supports the organizational culture. Everyone must play part in the organizational culture to ensure correct understanding of the importance of quality and changing the attitude and behaviour through the instrinsic and extrinsic element of the culture. Organizational culture will be transmitted to all organization activities which involve instrinsic and extrinsic elements of the organization. This will in turn be transmitted to every member in the organization. All instrinsic and extrinsic elements of culture will affect the organization culture throughout the development of quality culture. Consequently, it makes the concept of quality culture more acceptable with expected wider attention. It does not mean that the quality system nowadays is not relevant for practices, but this system will function well when the organization has developed quality culture. The reason can be seen from different aspects: the existence of barrier in quality system which may be less if the organization can develop strong quality culture.
The development of this framework will employ a triangulated methodology. Preliminary interviews with the expert are been conducted with the aim of identifying the key factors and their importance in developing a quality culture in organization. An industry wide questionnaire survey will then be undertaken to measure and test the proposed relationships among the key constructs outlined in the framework above and finally the validation of the framework will be done through the workshop discussion with the expert panel.

CONCLUSION

The construction industry has numerous problems in getting quality performance as a result of the complicated nature of the industry. TQM is being increasingly applied to the construction company to solve quality problem. The implementation of a TQM required a culture change and change in management behaviour. The organizations need to shift from their current culture to a TQM culture that focuses on quality as a key strategy.

A review of literature identified thirteen important culture dimensions that contribute to successful implementation of TQM. These dimensions of quality culture should be adopted by the construction organization in implementing TQM for continuous improvement. Initial investigations also concur that the implementation of TQM is influenced by organisation, vocational and national cultures. However, the organization culture has stronger influence than national and vocational culture. The
review shows that TQM is embedded in a culture that may or may not be consistent with the organisational, vocational or national culture. Where inconsistency is the case, conflicts arise. The proposed framework could serve as a model for developing a quality culture in organisation, so that a construction firms can using them creatively in order to minimised inconsistency and conflicts. Hence, these will improve their performance and competitiveness.

REFERENCES


