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A CASE STUDY IN A MANUFACTURING UNIT FOR IMPACT OF ORGANIZATIONAL CULTURE ON QM

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ABSTRACT

The objective of this work is to improve the understanding of the relationship between quality management practices and organizational culture. This is carried out through action research within the framework of an improvement project in a production unit of the Badve Engineering group.To define and analyze organizational culture, the competing values framework was used as a model and the entity under examination was evaluated based on the dimensions of this framework. Rational culture, characterized by a focus on productivity and goal achievement, was found to have the greatest influence on the unit. The work addresses various quality management practices and their potential in different organizational cultures. The Lean culture supports several quality practices that have been used to provide suggestions on how the entity can further develop its quality management. Research has shown that the practice that requires the most attention in a given unit is the process management practice, which involves moving from quality control to preventative measures and working to reduce deviations within production. To achieve higher performance in process management practices, it is important to increase employees' sense of empowerment and involve those closest to the process in the unit's quality efforts. In conclusion, using frameworks and models to evaluate organizational cultures has proven difficult due to the complexity of the concept of culture.

Keywords: action research, competitive values framework, organizational culture, process management, quality management, quality management practice.

1. INTRODUCTION

In the competitive environment of today, it is crucial to stay ahead of competition and continuously satisfy customers. Quality management practices have been widely implemented, and while some organizations experience great success, other initiatives have failed (Jinhui Wu et al. 2011). Many studies have started questioning the universal application of quality management in all organizations, and they claim that some of the quality management practices are dependent on the organizational context, such as industry, firm size and country (Sousa & Voss 2001). Further, Prajogo and McDermott (2005) argue that among several factors, which all have been attributed as key determinants for quality management success, organizational culture is among those listed at the top. These studies indicate that the organizational context, and consequentially its culture, will have an impact on the outcome of implemented quality management practices. There are different views on whether quality management practices are associated with, and therefore supported by only one single culture, or if quality management practices can be built on different cultural dimensions (Prajogo & McDermott 2005). Quality management could be treated as something that includes cultural elements such as a switch of mindset of the adapters, which indicates that there are only a single quality culture that is appropriate for philosophies such as TQM and Lean etc. Naor et al. (2008) state that quality management is more than tools and techniques and that it has a value system as an underlying foundation. The cultural setting of the organization will affect the outcome of the methods and also the performance of the organization (Naor et al. 2008). Further, quality management could also be seen as a pure constitution of practices and tools that would fit into different organizational cultures. The latter would imply that different cultural characteristics can be associated with different elements of quality management (Prajogo & McDermott 2005). This research will take the position that quality management is different from organizational culture, and that it is possible to adapt practices to suit the context of where they are being implemented (Sila 2007).

2. LITERATURE REVIEW

Through time, quality in manufacturing terms has developed from inspection to TQM. Quality has become one of the most important drivers of the global competition today. Intensifying global competition and increasing demand for better quality by customers has caused companies to realize that they have to provide high quality product or services in order to successfully battle in the marketplace. TQM can be defined as an enhancement to the traditional way of doing business. It is a proven technique to guarantee survival in world-class competition [25]. Total quality management consists of organization-wide efforts to install and make permanent a climate in which an organization continuously improves its ability to deliver high-quality products and services to customers According to [26], TQM is an effective system for integrating the quality development, quality maintenance and quality improvement efforts of

various aspects of a system so as to enable services at most economical level and derive full satisfaction. TQM is aimed at the satisfaction of customer needs in an efficient, reliable and profitable way. It involves a radical direction through which an organization perform her day to day operations in other to ensure that quality is put at the top of mind of every employee and departments in which they operate.

The staff resource is the only one that competitors cannot copy. It consists of those activities designed to provide for and coordinate the people of an organization [27]. According to some quality experts it is also the only resource that can energize-that is, produced output whose value is higher than the sum of its parts. When asked about the 'secret' behind the superior products, one manager from Toyota's Kentucky plant, a three time winner of the Power Gold Plant Quality Award. The quality machine is the workforce" [28]. The people management consists of activities which include recruiting, selecting, training and developing, counseling, motivating and rewarding employees and handling other matters of employee well-being. Authors of these studies discussed people management from several perspectives which can be categorized into involvement and commitment, effectiveness and development and health, safety and wellbeing. Describes how all people are encouraged and enabled to contribute to achieving organizational goals and continually improving the organization. Employee involvement approaches can range from simple sharing of information to self-directed activities such as setting goals, solving problems and making decisions. Five of Deming's 14 points (points 6, 7, 8, 10 and 13) relate directly to the notion of involvement and empowerment [29].

[30] focused on the social and psychological aspects of and on and identified factors responsible for over and underutilization of and on. They concluded that since and on empower shop floor employees, it improves their morale. [31] compared and contrasted people aspects within the TQM environment and human resource management. [32] studied the impact of implementing TQM as a cultural intervention in an electronics company They found that TQM had a significant positive effect on the employees' involvement and commitment to the organization. In another study, [33] examined the relationship between employee participation, employee satisfaction and found that the relationship is bidirectional in contrast to popular belief of unidirectional relationship. [33] Identified employee involvement and commitment as one of the critical success factors for TQM.

3. METHODOLOGY

The main aim of this chapter is to outline the detailed methodologies implemented in the research process that was adopted in this study. This research broadly aims to investigate the factors that influence Quality management implementation. The extant Quality management literature suggests that Quality management implementation barriers will inhibit the effective implementation of Quality management In order to address these barriers, many strategies have been suggested, but the role of existing organisational culture to address these barriers has, to date, not been investigated systematically. In the previous chapter the author proposed a number of relationships between organisational culture and Quality management barriers. In this context, the author proposed a framework that integrates four constructs of organisational culture as conceptualised by Denison and Spreitzer, (1991) and six constructs of TQM implementation derived from a systematic review of the literature. In order to examine its validity in the Badve group, the proposed framework was empirically tested using a robust methodology as outlined in this chapter. The considerations and steps involved in selecting and justifying the research methods were discussed. Consequently, this chapter explains how this study was conducted and why it was conducted in this way. Accordingly, the chapter is broadly divided into and structured according to the following elements of the overall research design:

- Selection of research method and its major elements;
- Deriving a sample;
- Designing a data collection instrument;
- Reliability and validity test of the designed research instrument;
- Selecting data analysis tools and methods.

There have been many attempts to categorize practices of quality management and many frameworks have been documented (Kaynak 2003). For example, some authors use the Malcom Balridge National Quality Award as a framework (Samson and Terzioviski 1998). Even if many use different names for their practices, Kaynak (2003) has showed that there are similarities between them. This thesis will use the classification from Flynn et al. (1994), who organize quality management practices into seven dimensions, which have widely been used in quality management research. These dimensions are; top management support, customer relationship, supplier relationship, workforce management, quality information, product/service design, and process management, Table 1. These practices have been divided into two further dimensions which are infrastructure and core quality management practices (Naor et al. 2008; Zu 2008). Core quality management practices are seen as hard and methodology oriented practices while the infrastructure quality practices are treated as soft, people- and culture oriented practices.

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Table 1. Description of quality management practices, based on the division made by Flynn et al. (1994)

Infrastructure Quality Management Practices	Description
Top Management Support	Top management accepts quality responsibility; is evaluated on quality; participate in quality improvements efforts; makes, strategies and goals for quality.
Customer Relationships	Measure customer needs and expectations; involve customers in quality improvement; determine customer satisfaction
Supplier Relationship	Rely on a small number of suppliers; involve suppliers in product development; evaluate suppliers based on quality; provide training and technical assistance for suppliers.
Workforce management	Recognize employee performance on quality; encourage team work; provide training; involve employees in quality decisions.
Core Quality Management Practices	
Quality Information	Collect timely data on quality defects; quality data are available to managers and workers; quality data are used for quality improvements.
Product/Service Design	Thorough review before production; involve multiple departments; simplify design; design for manufacturability.
Process Management	Use SPC; design mistake proof processes; preventive maintenance; clean shop floor, meeting schedules.

Sousa and Voss (2001) argue that the practices level is best suited for empirical analysis, since principles can be too wide, and techniques can be too detailed. It is not feasible to compare different quality tools and techniques to each other, since many tools can be connected to the same type of quality practice. A company can be involved in Statistic Process Control (SPC) which is a technique that supports the process management practice, while another can use process data collection and have the same practice in mind. Practices are the observable targets of quality management that managers work with (Sousa & Voss 2001).

4. EXPERIMENTAL STUDY

Badve established and an accomplished company, one of the top Suppliers of Automotive Components and Aggregates. They manufacture Sheet Metal, Fabricated, Plastic Moulded Components having facilities including Robotics and multiple Surface Treatments. . They have the reputation of having high quality products, which has made them the premium brand that they are today. People at badve are proud of their great culture, and they have won national award for entrepreneurship. Award for the year 1995-96 at the hands of Honorable Shri Shankar Dayal Sharma (The Then President of India where the employees rank their employers. Badve headquarter is located in pune maharastra. There are many units and the study is carried out in one of these units. As the company is a global corporation it also has several production plants on other locations around the india. The badve group adopt “total productive maintenance” as a means of creating safe and participative work environment in which all employees target the elimination of losses in order to continously enhance the capacity of its processes, leading to higher empolyee morale and greater organisational and customer profitability.

The Desired industry Culture- The badve group adopt “total productive maintenance” as a means of creating safe and participative work environment in which all employees target the elimination of losses in order to continously enhance the capacity of its processes, leading to higher empolyee morale and greater organisational and customer profitability.

5. RESULTS AND DISCCUSION

As earlier stated, culture is something complex and multi-layered. Even though there are indications that the unit under study has tendencies in all four quadrants of Competing Values Framework, the most influential and prominent for this particular organization is the rational culture. The unit is characterized by its focus on goal-achievement, productivity and structure, which are all present in a rational culture. However, even though rational culture is the one of the four quadrants from the Competing Values Framework where the unit has its strongest emphasis, the organization also have shown to be present in the other quadrants. Examples of this are the unit’s focus on innovativeness which belongs in the developmental culture, hierarchical way of sharing information, and finally its

structure to encourage teamwork among employees which fits into the group culture. This research has shown that core practices, such as process management, are supported by the infrastructural quality management practices to reach high performance. Production is a combined socio-technical system, and both of these subsystems need to be emphasized for the process management to reach its full capacity. It is believed that workforce management and top management support are the two infrastructure quality practices that are contributing the most to improved process management. In order to reach a mindset where the organization strives for constant improvement of processes there needs to be an acceptance and commitment from top management, where the finding of a potential improvement area is praised and appreciated. At the same time as top management needs to show more support for the process they also need to show more support and encourage the employees. It is especially the employees closest to the process that are considered most valuable, and with the most knowledge, when working with process management such as stabilization and standardization. As a base for those three practices lays the rational culture within the organization and it is believed that the existing culture along with improvements of these three practices will increase the overall performance, see Figure 12.

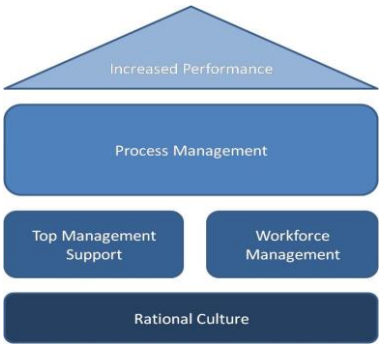

Figure 12. The correlation and support of infrastructural quality management practices on process management

The workforce management practice is tightly related to empowerment of people and means that concerned employees themselves should participate more in improvement projects at the unit. The unit aims to have a stable organization where knowledge is built up over time. It would be beneficial for the unit to make use of this built up knowledge by involving and empowering the employees. One example is the development of work descriptions, which should be done by involving the people closest to the process. This will generate a feeling of increased responsibility and ownership towards the task which will also facilitate people acting according to the set descriptions. It can be hard to achieve a successful workforce management by only support from the rational culture. However, it is considered a very important factor to reach increased performance and the organization should make use of its tendencies of a group culture to improve this quality practice. All employees need to feel empowered to improve the processes. The unit's workforce needs to feel as they can contribute to the improvements of production by providing ideas that are taken into consideration by management. As the unit is currently working in CIPs, these should positively be strongly emphasized with regards to improvements of production processes. Table 3 illustrate where the focus should be within each practice highlighted.

Table 3. Recommended focus for each suggested practice

Process Management	Standardization of processes and development of work descriptions.
	Focus on preventing bad quality rather than controlling and correcting.
Top Management Support	Take full responsibility for quality. Thorough top management support
	and responsibility to create high quality processes which supports
	reaching the set quality goals.
	Truly empower employees to not only be invited to participate but also
	to contribute.

Workforce Management	Use group incentives, such as annual honour reward rather than short
	term individual monetary incentives.
	Allow more creativity. Make use of ideas, involve people in
	standardization/improvement projects
	Listen to the people closest to the process.

6. CONCLUSION

This study suggests that there is a need for both social and technical factors to be in place in order to continuously increase quality. It has been obvious that quality is not only about the choice of process parameters and control, but something that is created together with the people behind the machines. Further, the conducted study has contributed to an understanding on the connections between organizational culture and the choice of quality management practices within a production unit. As master thesis students, it has been a great learning to see how the models and theories are, and sometimes are not, used in an organization. When the understanding of quality and process thinking differs from the communicated and best-practice ways taught at university, it can be hard to act and respond. The change of working methods takes time, and behaviours are undeniably rooted in the organizational culture. Finally, the differences in national culture, and the impact that it has on the daily work has been a great learning. To be able to work in different national environments, one needs to adapt and find ways of interacting on the same level. This understanding is thought to be of great importance for all organizations working in a globalized world.

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