Information and Communication Technology a Catalyst to Total Quality Management (TQM)

M. A. Bejjar
FSEG Nabeul, Tunisia

INTRODUCTION

With the advent of TQM, companies continuously monitor the performance of their processes and services to meet the needs of stakeholders and customers. Thus, quality management has proven to be an excellent approach to increase productivity, performance, and earnings, with improved customer satisfaction and employee. Comparably, ICT has a significant impact on most organizations and has been extensively studied in recent years. Much research has shown that ICT improves the performance of organizations (Chowdhury, 2003; Dedrick, et al., 2003; Morikawa, 2004).

The objective of this research is to present the impact of ICT on TQM. The second objective is to examine the role of these technologies in the implementation of TQM in organizations and develop a model integrating the process of implementing total quality and ICT.

This research also includes three parts. The first section presents the definition of TQM and its general principles. The second section will address the impact of ICT on TQM and the role of these technologies in building elements of the TQM process. The third section will present the research model consists of five groups which are the values of TQM, infrastructure, tools, process approach and results.

THE TOTAL QUALITY MANAGEMENT

Definition of TQM

TQM involves the application of the principles of quality management in all aspects of the organization, including customers and suppliers, and their integration with key organizational processes. This is an approach that involves continuous improvement by all staff of the organization.

According to Hellsten and Klefsjö (2000), TQM can be defined as a management system that consists of interrelated values, process management, planning and customer focused benchmarking improvement teams and tools such the control charts.

TQM is an effective system for integrating quality development, maintaining the quality and efforts to improve the quality of various aspects of a system to more profitable services and to draw the full satisfaction. TQM aims at meeting the needs of customers in an efficient, reliable and cost effective. Vorley and Tickle (2001), defines TQM as the synthesis of the organizational, technical and cultural society. They felt that TQM is the heart and spirit of the organizational philosophy, which in turn affects the quality.

THE MAIN PRINCIPLES OF TQM

The Commitment of Management and Leadership

The management commitment is key to the success of TQM (Martinez-Lorente et al., 1999; Dewhurst et al., 2003). TQM requires a change in effective organizational culture and that can only be made possible thanks to the deep involvement and commitment of management, continuous improvement and open communication.

Senior management must be involved in the application and must stimulate the process of TQM. Management must provide the necessary leadership to motivate all employees. These views are further emphasized by Tan (1997) which states that management

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must strengthen commitment through real ownership and shared success. Cooper and Ellram (1993), have identified leadership as critical to the implementation of organizational changes.

The Quality Culture

According to Oakland (1995), "TQM is a way to manage organizational processes to ensure total customer satisfaction at every stage, both internally and externally." According to Dale et al (1994), the cultural change an approach an approach to modify within organizations the culture of cooperation which must be centered on the customer. The need for cultural change is underscored by the role it plays in the life of an organization.

The relationship that existed between TQM and organizational culture was examined by Dellana and Hauser (1999). They set out four principles are: customer focus, continuous improvement, employee involvement and leadership as the basis of a typical framework of TQM.

According to Dale et al (1994), culture influences the business area of executive groups, how they interpret the information and the responses given to changing external environments.

Customer Focus

According to Goetsch and Davis (1997), customer satisfaction must be top priority and can be achieved by producing high quality products that meet or exceed expectations.

Forza and Filippini (1998) explained the need for any organization to maintain a close relationship with their clients to understand their needs and measure how it has managed to achieve customer requirements.

According Muffatto and Panizzolo (1995), a high level of customer satisfaction is only achieved through the provision of services or products whose characteristics satisfy the needs or requirements of customers. Needs and customer expectations are driving the development of new offers.

The Total Involvement

Contrary to what prevails in the ideology of TQM, the traditional involvement of employees is narrow-minded;

it is focused on work rather than process-centric. The approach of TQM involves "the achievement of the general interest of employees, participation and contribution in the process of quality management" (Dale and Cooper, 1993). The concept requires a quality culture throughout the company, giving autonomy or level of freedom to employees to make decisions that affect their work. Thus, employees are encouraged to perform its functions as information processing, problem solving and decision making (Dimitriades, 2000).

The main objective of the full involvement of the employee is to enhance customer satisfaction internally and externally by developing a flexible environment that enables innovation.

Continuous Improvement

Continuous improvement means "a commitment to an ongoing review of technical and administrative processes in search of better methods" (Fuentes-Fuentes et al., 2004). Turney and Anderson (1989) define continual improvement as the relentless pursuit of improvement in delivering value to customers. This was supported by Dean and Bowen (1994), who argued that customer satisfaction can be achieved only through the constant improvement of processes that create the product or service.

TQM is concerned about the continuous improvement in all production processes, from planning and decision making to execution of work by operational staff. The principle behind the idea of continuous improvement is basically the idea that mistakes can be avoided and defects can be avoided. According to Stahl (1995), "continuous improvement refers to the refinement and improvement of products, services and organizational systems to obtain better value to customers."

The continuous improvement process designed to identify and eliminate the cause of an error, to prevent its recurrence.

Training

Training is a vital part of TQM as it provides an understanding and increased knowledge to be effective in any transaction. The need for training can be justified by some of the following reasons:

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