

## CONTRIBUTIONS AND THEORETICAL APPROACH TO TOTAL QUALITY MANAGEMENT

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### *Abstract*

*TQM as a management philosophy that allows organizations to pursue quality on a continuous basis from the top management, the suppliers, down to all the employees in the organization with principles that make up the concept of TQM such as team work, customer focus, employee involvement, training, competitive benchmarking, continuous improvement etc. Total quality management theories have originated over the years by different gurus and it has been applied to many major areas causing a huge shift in improvement in the quality of products and services. This paper therefore aims to discuss the contributions of the TQM experts some of which are Deming, Crosby, Juran and so on. Hence, a brief review of literature was done to examine and give insight on the concepts and philosophies from the forenamed experts.*

**Keywords:** Total Quality Management; Quality Control; Quality Circles

### **1. INTRODUCTION**

TQM is a concept explaining the continual effort made by all stakeholders in an organization to guarantee customer satisfaction by producing quality products and services. Michael, Sower & Motwani (1997) defined TQM as a management philosophy that allows institutions to pursue quality on a continuous basis which is determined by customers' contentment with the services they were provided with. Ali and Shastri (2010) further elaborated it by defining TQM as doing things right, improving continuously, fulfilling customers' needs and making quality the responsibility of every employee. TQM is an extensive approach because it starts from the top management, the suppliers, down to all the employees in the organization. From reviewed literature, there are principles that make up the concept of TQM and they are team work, customer focus, employee involvement, training, competitive benchmarking, continuous improvement and so on and the benefits that will be derived from using TQM include increase in revenue, increase in organization's goodwill, increase in market share to mention just a few.

Farooq, Akhtar, Ullah, and Memon (2007) described TQM as the art of arranging the entire to attain excellence. According to Addae-Korankye (2013), TQM is a search for excellence that guarantees the proper attitudes

and controls are established to prevent faults and promote customer satisfaction through high effectiveness and efficiency. Ngambi & Nkemkiafu (2015) defined it as a concept that focuses on continual improvement of an organization's processes in addition to the quality of the goods and services that those processes produce. TQM may be derived from these definitions as an idea that assures customer satisfaction by delivering quality via the efforts and participation of everyone in the company. TQM is based on a set of principles, which have been examined in many publications. They include teamwork, top management leadership/commitment, customer focus, employee involvement, continuous improvement, tool, training, team approach, champion, quality at the source, competitive benchmarking (Murad & Rajesh, 2010; Stevenson, 2012).

### **PRINCIPLES OF TOTAL QUALITY MANAGEMENT**

To provide a broad foundation on the nature of total quality management, a number of the principles for successful TQM practices are presented here.

**Customer focus** stresses the importance of organisations delivering products and services that satisfy their consumers' needs and expectations. In this case, both internal and external customers are served by this company. The external customers are the general public, whereas the internal customers are the organization's workforce (Ali & Shastri, 2010). Despite the fact that TQM places a heavy focus on external consumers, internal customers should also be satisfied (Najafabadi, Sadeghi & Habibzadeh, 2008). Ray, Nanda, and Ota (2016) support this by stating that in order to meet the demands of external customers, the internal customer's criteria must first be met. Since happy internal consumers translate into satisfied external customers, they'll be more motivated to give satisfying services to the exterior customers. In other words, when consumer demands are satisfied, it leads to satisfaction, which leads to increased sales and market share for the organization (Sadikoglu & Olcay, 2014).

**Continuous Improvement** is concerned with continually improving all aspects of the creation of goods and services (Stevenson, 2012). It is essential for an organization to continually develop its processes and methods to attain a higher quality of products and services in order to fulfill consumer demands and to thrive in an ever-growing market. Ray et al (2016) emphasizes the need of continual development in order to stay ahead of the competition and to ensure that customers are always satisfied.

**Team approach** emphasizes the utilization of teams to solve challenges, create synergy, and promote a culture of collaboration among personnel to achieve an organization's objective and goal. The Japanese were well-versed in this theory and thrived as a consequence of its application (Besterfield, Besterfield-Michna, Besterfield, Besterfield-Sacre, Urdhwareshe & Urdhwareshe, 2012). Employees that work as a team are more dedicated to the

business's aims and objectives, and therefore achieving quality in an organization is impossible without good collaboration (Dale, Boaden & Lascelles, 1994).

**Top management commitment** is paramount in the implementation of total quality management (Alamutu, Hotepo, Oyeobu & Nwatulegwu, 2012) since they are responsible for training the rest of the organization on the necessity of TQM. Most implementation of organizational changes, providing leadership and training requests are approved by the top management (Mehra, Hoffman & Sirias, 2001).

**Employee involvement** includes providing workers the power to make decisions via duties that will aid in the addressing of issues that will aid in the achievement of organizational objectives. Every person in the firm must be actively involved in order to ensure successful TQM implementation. When employees are given the authority and responsibility for making changes, they become more motivated. This enables them to make decisions and gain knowledge about challenges and solutions (Stevenson, 2012).

**Training** equips employees with the necessary skills and procedures to enhance production quality. According to Oakland (2003), training is the major component in improving quality. Bank (1992) suggests the success of a proper TQM implementation is mainly based on the promotion of effective training programs and teamwork. Training should be part of the overall strategy and the purpose should be to acquire more skills to constantly improve quality. Employees will have a sufficient understanding of the industry and the organization's structure if they receive suitable and efficient training. As a result, their motivation to work, overall performance, and loyalty to the business will all improve significantly. Aside from deliver high-quality services, they'll be able to minimize complaints while also enhancing the level of customer satisfaction (Sadikoglu & Olcay, 2014).

**Competitive benchmarking** involves identifying organisations that excel in their industries and closely examining their processes, studying and copying their techniques in order to enhance one's own operations (Stevenson, 2012). Specifically, the organization compares its performance against that of its rivals by focusing on a few key industry metrics. Benchmarking according to Camp (1993), is a self-evaluation and self-improvement technique in which an organization compares itself with rivals in order to determine its strengths and flaws. It is worthy of note that the organization does not have to be in the same line of business with the organization that is understudied.

Other principles are supplier relationship, zero defects, knowledge of tools, supplier quality, decisions based on facts rather than opinions, quality at the source, champion amongst others (Stevenson, 2012)

## **BENEFITS OF TOTAL QUALITY MANAGEMENT**

Total quality management has proved to be beneficial to organisations and its stakeholders at large. Some of the benefits are improved quality in processes,

products and services, fewer complaints from customers and customer satisfaction, higher profits and increased market share, fewer production or service problems leading to increased productivity, lower production costs and liability costs, greater customer loyalty (Lowery, Beadles & Carpenter, 2000).

### **SELECTED CONTRIBUTIONS OF TOTAL QUALITY MANAGEMENT GURUS**

Total quality management is an advanced management framework that incorporates the fundamental principles put together by Deming, Juran, Philip Crosby, Armand Feigenbaum and Kaoru Ishikawa (Besterfield et al, 2012). Total quality management theories have been attributed to the studies of several scholars such as Deming, Juran, and Crosby to mention a few.

#### **Deming's contributions**

After the second world war, W. Edwards Deming, a statistics professor at New York University during the 1940s, moved to Japan to help the Japanese enhance quality and production. Deming's talks were so well received by the association of Japanese scientists who invited him were so intrigued with the lectures presented by Deming. They then went ahead to establish an award in his name which is annually awarded to organisations to differentiate in their quality excellence programs. Deming spent nearly 30 years working with the Japanese before becoming well-known in his own nation who later embraced his philosophy in quality management programs (Stevenson, 2012).

The guru identified 14 points of management to assist organizations enhance their product and service quality which are the creation of constancy of objectives and purposes by developing a long term continuous strategy to improve the product and service, adoption of the new philosophy by everyone in the organization, understanding the purpose of inspection to improve the process and cost of quality and where appropriate reliance on mass inspection should be eradicated, discontinuing the system of awarding business on pricing alone but on quality, constant improvement of the system to ensure quality, productivity and cost reduction, instituting new training methods for employees to ensure effective job performance, instituting new and modern ways of supervision to implement the quality philosophy, eradicating fear by encouraging open communication between the employees and the management, breaking all barriers both internally and externally to foster teamwork, cooperation and unity, eliminating exhortations by making tools, techniques and methods available before asking for a higher level of productivity, eliminating numerical quotas and management by objectives, preventing loss of pride in workmanship by removing restrictions such as ineffective machineries, inadequate trainings, disciplinary supervision and so on that deprive workers of being proud of their job, training and education for everyone to meet the changes in the requirements of the organization and

establishing a structure that will execute the philosophy of quality and continuous improvement (Deming, 1986 as cited in Alghamdi, 2016)

**Juran’s Contributions**

After Deming, Joseph M. Juran commonly referred to as “the father of modern quality management” contributed mostly on the theory of quality management amidst other experts and was also recognised for his writings in a book titled “Quality Control Handbook” in 1951 (Deepa, 2014). Juran taught the Japanese manufacturers how to improve the quality of their goods like Deming and his presentations stressed on the functions of management such as planning, organizing, controlling and the duty as well as the commitment of management in accomplishing quality objectives (Omachonu & Ross, 2004). The “Quality Trilogy” which is quality planning, quality improvement and quality control emerged as one of his major contributions. (Juran & Godfrey, 1998).

Total quality management as opined by Juran is seen as fitness or suitability for usage or for customers. He was of the notion that for an organization to thrive and flourish, the needs of the customers should be identified using appropriate guiding factors and by concentrating on fitness for usage, the organization is averted from under or over specifying products and services (Hafeez, Malak & Abdelmeguid, 2006).

**Table 1: The processes in the Juran’s Trilogy**

Quality planning	Quality control	Quality improvement
Set quality goals. Determine the customers (external and internal) and discover their needs. Translate the needs of the customers by creating product or service features. Design the processes that can achieve the product or service features. Set process evaluation controls. Transfer the plans to operations and create room for process validation	Identify the items to be controlled and their units of evaluation. Set goals and objectives on quality. Measure the actual performance. Compare the actual performance to set goals. Take action on the variance.	Establish the need. Establish an effective system or infrastructure to effect the improvement process. Determine the improvement strategies and constitute the project teams with a project owner Make available to the teams the resources to identify the causes, provide solutions and create measures to hold the gains

**Source:** Juran & Godfrey, 1998.

According to Juran, the ten quality improvement steps for improving the satisfaction of customers are to increase sensitization to the necessity and opportunities to improve, establish goals and objectives for improvement,

strategise and organize to achieve the goals and objectives (set up a quality council, identify issues and challenges, choose projects, form teams, and assign facilitators), make arrangements for training, execute projects to proffer solutions to problems, give account of improvement, give recognition and acknowledgements, convey the outcomes, keep score, and keep momentum by integrating yearly progress into the company's usual procedures and operations (Neyestani, 2017). Deming and Juran used the statistical process control to explain total quality management which Crosby opposed because quality according to him is defined as adherence to specifications, which may be judged by the cost of non-compliance.

### **Crosby's Contributions**

Philip B. Crosby coined the slogan "get it right the first time" and introduced the concept of zero defects. He published his book "Quality is free" in 1979 where he postulated that the costs of poor quality are far higher than conventionally recognized, and that, rather than considering quality initiatives as costs, organizations should view them as a method to save money, because the benefits created by quality efforts will more than pay for themselves (Stevenson, 2012).

He believed that the costs of low quality are extremely high and he thus provided 4 "absolutes" and 14 steps for continuous improvement in quality. Ngambi & Nkemkiafu (2015) listed the 4 "absolutes" as:

- Quality is the ability to meet specifications or requirements.
- The greatest approach to ensure quality is to prevent it.
- The standard criterion and evaluation for quality is Zero Defects.
- The cost of nonconformity is used to evaluate quality.

From these absolutes, Crosby devised a fourteen-step plan for improving quality over time which are management commitment and their standpoint on quality, quality improvement team to handle the process of quality improvement, measurement to give a presentation of existing and prospective non-conformance issues in a manner that allows objective, cost of quality to characterize the elements of the cost of quality (COQ) and clarify the utilization as a management technique, quality awareness for increasing individual employee concern about product or service conformance and the organization's image of quality, corrective action to solve the challenges disclosed from the precedent action points, exploring the several functions needed to establish a zero-defect process, employee education for effective performance of their duties, planning and zero-defects day to show all the employees that a change has occurred, goal and target setting in order to actualize the commitments made, error-cause removal by creating an atmosphere for the employees to communicate to the top management difficult situations that may result to the inability to fulfill commitments,

recognition and rewarding the participants, quality councils of the right people that will disseminate information on quality management consistently, do-it-all-over-again continual process of quality improvement(Oakland, 2003).

### **Feigenbaum's contributions**

Armand Feigenbaum was an American quality expert who contributed to world-class organisations as Hitachi and Toshiba in Japan (Feigenbaum, 1991). Feigenbaum firstly introduced the concept of Total Quality Control (TQC) which is known in recent times as total quality management (Fields, Hague, Koby, Lommel & Melby, 2014) and produced his book titled "Quality Control Handbook" in 1951 (Montgomery, 2009). The guru believed that a total commitment to quality is the most appropriate approach to proffer solutions to quality challenges. Feigenbaum adopted a three-step quality approach unlike Deming and Juran which includes quality leadership, quality know-how and organizational commitment. The fundamental principles of quality to Feigenbaum model of quality is a process or initiative carried out throughout the organization, an ethic model that is majorly customer centric, inextricably linked with innovation, requires constant upgrading as well as singular and collective zeal, budget-friendly and low capital-intensive path to increased production productivity and executed through a comprehensive system that is linked to consumers and suppliers. These principles explain that to produce a product of exceptional quality, total quality control should be adopted rather than implementing just the production quality control (Feigenbaum, 1991).

Total quality control as a proficient quality management style is in the four major action points which are establishing quality goals or standards, comparing performance to the standards, taking action on the unmet goals or standards and making corrections for improvement (Feigenbaum, 1991).

### **Ishikawa's contributions**

Deming and Juran had a strong effect on Kaoru Ishikawa, the late Japanese quality expert, and their views inspired his ideas. The creation of the cause-and-effect diagram, often known as the fishbone diagram, to reduce and prevent errors and mistakes, as well as the adoption of quality circles (QC) tools, which include workers in quality improvement, are two of his major contributions (Stevenson, 2012). He believes that using the "Seven QC tools" (Pareto chart, Cause and Effect Diagram (Ishikawa diagram), Stratification Chart, Scatter Diagram, Check Sheet, Histogram, and Control Chart) can address 95 percent of quality problems. He published "What is Total Quality Control?" after introducing quality circles where he opined that total quality control should be on the whole organization rather than just the products and services (Deepa, 2014). His philosophies on total quality management includes customer focus rather than producer focus, humanism as a

management concept, full participative management, cross-functional management, the use of facts and data for presentations, as well as statistical methodologies, tearing down the sectional barrier, prioritizing quality (first over short-term profits (Ishikawa & Lu, 1985, as cited in Neyestani, 2017)

### **BARRIERS TO THE IMPLEMENTATION OF TQM PRACTICES**

Often times, many organisations that see little need for TQM are satisfied with their revenue, current market share, productivity and believe they are performing above average in their current state until other organisations begin to take over their market share. Once the organization switches over to enforcing the TQM approach, there will be obstacles that will hinder its implementation (Besterfield et al, 2012). Some of these barriers are discussed below.

- **Lack of Management Involvement and Commitment:** the ultimate responsibility rests on the commitment and involvement of the management to ensure organizational success. The role of all employees in implementing the principles of TQM must be continuously communicated to them by the management while the top management takes the lead role. The enthusiasm and drive of the management in applying the principles of TQM to the organization will determine the motivation of the employees to do the same (Oakland, 2003).
- **Lack of Continuous Training, Education and preparation:** adequate preparation through continuous training and education on the principles of TQM should be a must for everyone in the organization because a successful and proper TQM implementation is mainly based on the promotion of effective training programs and teamwork (Bank, 1992).
- **Inability to Change Organizational Culture:** To change an organizational culture can be challenging and often times, employees resist change by posing challenges due to a number of reasons such as habit, uncertainty, fear of the unknown, inadequate communication etc. that obstructs the implementation of TQM. For an organization to reduce this resistance, they should educate and communicate adequately the benefits of the TQM approach to the employees to move employees from a state of fear to trust, engage in strategies such as participation and involvement, negotiation and agreement and so on.
- **Poor Planning:** everyone in the organization must be actively involved and participate in the evolution of the implementation plan and any necessary alterations that might occur. There must also be room for effective communication amongst all the stakeholders in the course of development and implementation of the plan.
- **Failure to Develop Employee Participation and Empowerment:** inability to empower employees may cause the workforce to resist the implementation of TQM practices in the organization which may lead to failure to produce results. It also portrays the idea that the employees are



not capable of solving problems which can result into red-tapism (Stevenson, 2012).

Other barriers to the implementation of TQM practices are inadequate understanding of TQM, provision of insufficient resources, improper reward system and lack of strong motivation, paying inadequate attention to internal and external customers (Goetsch & Davis, 2010).

### **CRITIQUE OF TQM**

Although TQM practices are implemented in organisations to increase their competitiveness, it has however been criticized (Stevenson, 2012) and some of them are discussed below.

- Some advocates of TQM programs concentrate too much on quality while failing to consider other important objectives.
- Improper planning of such program can lead to incomprehension of the program resulting in vain results.
- Conflict of the program with the strategies and plans of the organization.
- Embarking on quality efforts may not lead to results.

### **CONCLUSION**

TQM is an approach that focuses on the satisfaction of customers through the continuous improvement of processes, products and services. TQM requires top management involvement and commitment, solid focus on the customers, involvement of the workforce, continual improvement amongst others. The aforementioned 5 quality experts made important and major contributions to fully comprehend the core and nature of TQM even though their methodologies, perspectives, opinions differed. While the contributions and explanations of these experts on quality management may differ, however, their objective is centered towards the improvement of quality of products and services in the organization. Their similar principles and contributions are outlined below:

1. Quality goal setting
2. New processes and procedures of improving quality and productivity
3. Training and education of employees
4. Customer-centricity
5. Constant need for improvement
6. Continuous system and process improvement
7. Management and organizational commitment

The major focus of the contributions of these experts is continuous improvement in quality standards, adopting quality systems and processes throughout the whole organization that will meet or even exceed the requirements of the customers. The onus lies on the management to overcome

the obstacles in the implementation of TQM in order to achieve a successful TQM program as well as enjoy the benefits associated with the implementation of TQM practices in the organization.

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