

# **The Essence of Total Quality Management**

## **Philosophies in Business**

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## **Abstract**

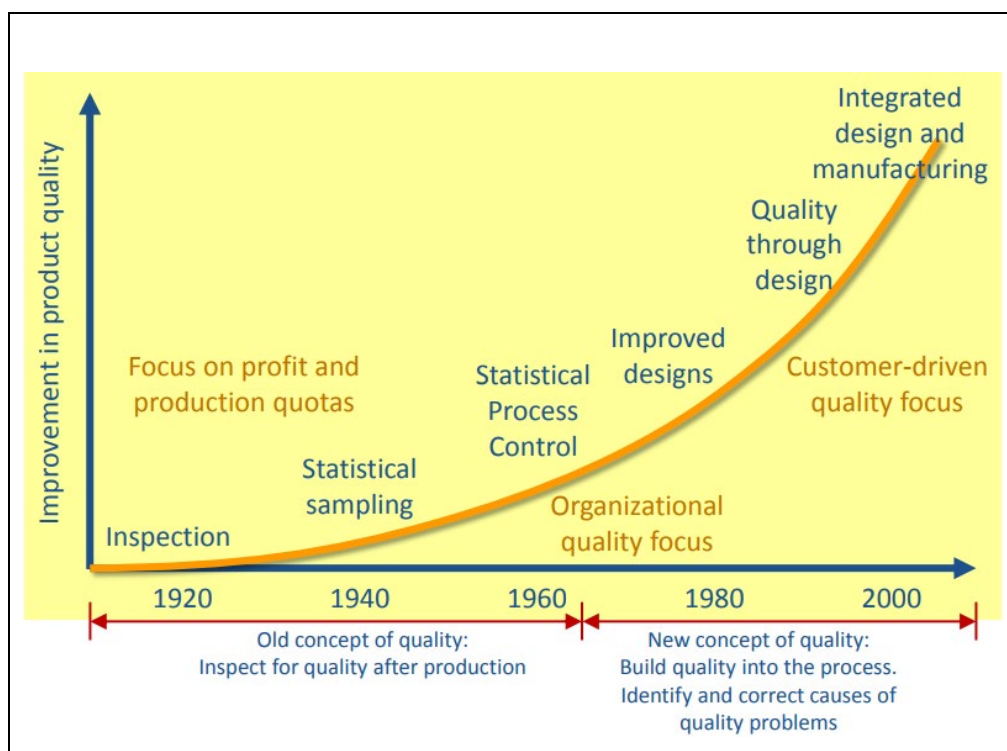
The importance of acknowledging the evolution and development of quality tools is important to be considered in this study. This paper critically appraises the essence of quality tools utilized since the 1920s. The use of quality tools began in the early twentieth century. Ngambi and Nkemkifu (2015) and Power (2013) posit that, quality management utilised mass inspection in the 1920s, statistical sampling in the 1940s, statistical process control in the 1960s and then progressed to improved designs in the 1980s and integrated design and manufacturing in the early 21<sup>st</sup> century. With the progress, total quality management came into place and it showed collaboration and appreciation for organizational stakeholders such as suppliers, employees, management and the customers. Using the theoretical approach of inquiry, the evolution of quality tools is assessed through the essence of Total Quality Management philosophies.

**Key words:** Quality tools, quality management, design and manufacturing, customers, evolution

## 1. Introduction

As the evolution of quality management continued, new approaches to quality were born after 1960. Power (2013) argues that from 1960 onwards quality management was driven by a focus on organizational quality. According to Kim, Kumar and Kumar (2012) and Evans (2011), organisational quality included the establishment of quality through improved process and product designs. The approach became popular in the 1980s. The quality methodology through improved design gradually changed in the early 21<sup>st</sup> century to become a customer driven quality focus approach (Power, 2013). The customer driven quality approach was known as the integrated design and manufacturing approach which is also the total quality management applied in today's operations.

Figure 1 provides a snapshot of how quality management tools have evolved over the years.



**Figure 1 :** The evolution and development of quality management tools

**Source:** Power (2013)

As illustrated in Figure 1, in the early twentieth century quality management was conducted through inspection of systems and processes (Power, 2013). The approach was a reactive approach rather than proactive since it relied on inspection of processes after production have already taken place. According to Zahari and Zakuan (2016), the statistical sampling approach succeeded the inspection approach. Statistical sampling occurred in the 1940s before it graduated to be known as statistical process control that became popular in the 1960s. These three approaches to quality (inspection, statistical sampling and statistical process control) had three main aspects in common and these were a focus on profits, production quotas and inspection of quality after production (Power, 2013).

The value of total quality management and its applicability in creating a competitive advantage for bakery firm is strengthened by enormous effort that was put by quality management authorities.

Power (2013) alluded that quality management gurus who contributed towards effectiveness of total quality management include Juran (1988), Shewhart (1986), Ishikawa (1985), Deming (1982) and Crosby (1979). The work of these authorities is briefly provided in table 1 as follows.

**Table 1:** Contributions by quality management gurus

**Source:** Power (2013)

Name	Contribution
Walter A. Shewhart	Understanding of process variability and developed concept of statistical control charts
W. Edwards Deming	Stressed management's responsibility for quality and developed 14 points to guide companies in quality improvement
Joseph M. Juran	Defined quality as fitness for use and developed the concept of cost of quality
Armand V. Feigenbaum	Introduced the concept of total quality control
Philip B. Crosby	Introduced the concept of quality is free and zero defects
Kaoru Ishikawa	Developed the cause and effect diagrams and identified the concept of internal customer.
Genichi Taguchi	Focused on product design quality and developed the loss function

## 2-Philosophical Theories Driving the Total Quality Management Processes

### 2.1-The Shewhart Philosophy

The quality control charts were developed by Walter A. Shewhart. According to Shewhart (1986), variability exist in all manufacturing processes. Shewhart (1986) and Power (2013) added that the quality control philosophy led to the development of quality control charts and these were utilised to identify the cause of variability in manufacturing. According to Shewhart (1986), variability in manufacturing could be as a result of randomness or due to a specific cause for example knowledge and experience of operators as well as poor equipment.

### 2.2-The Deming philosophy

The Deming philosophy propagated by E. Edward Deming was so critical in the transformation of quality management across different sectors. According to Evans (2011), Deming developed the system of profound knowledge. Almansour (2015) added that the system of profound knowledge consists of four points that are system appreciation, knowledge variation, knowledge theory and psychology knowledge. These are briefly described as follows in the context of the bakery industry.

**Table 2:** The 14 principles of management

**Source:** Evans (2011) and Deming (1982)

Principles of management	Description
11. Management commitment	It refers to the overall obligation of the managers to create constant purpose for a continued improvement of product and service quality.
2. Learning the new philosophies	It embraces the ability of the organization to learn new ways of conducting work.

3.	Understanding inspection	Inspection need to be carried out carefully so that information can be gathered.
4.	Avoid price tag decisions	This means that the organization should not only make its decision on the bases of cost. The use of inferior material and components result in further costs in future.
5.	Improve constantly	Continuous improvement is regarded a tool to ensure survival and in a highly competitive industry.
6.	Institute training	Training is a necessary tool to create an effective workforce with high morale.
7.	Institute leadership	The organizational leaders need to provide the organization with direction, guidance, coaching as well as promotion of teamwork.
8.	Drive out fear	It is important that all factors that leads to fear are driven out of the organization. The types of fear can include fear of failure, fear of the unknown and fear for change.
9.	Optimise team effort	It is important that employees work as a team as barriers between individuals and departments lead to poor quality products and services leading to an inability to meet customer needs.
10.	Eliminate exhortations	It has to be noted that motivation is better achieved through trust and good leadership than slogans.
11.	Eliminate quotas and management by objectives	While goals are important, numerical goals set without a specification of the methods that can be used to reach the goals leads to frustration and resentment.
12.	Remove barriers to pride in workmanship	The system of regarding employees as a commodity need to be avoided. Workers should not be given monotonous work, subjected to inferior tools and supervisors who do not understand the work.
13.	Institute Education	Firms have the responsibility to develop the value and self-worth of the employees.
14.	Take action	Cultural change in the organization begins with top management and the inclusion of employees.

The management principles that were put forward by Deming (1982) signifies that the factors that are critical in ensuring a total quality management system in the organization. Hence, this sub-section is important towards a development of a conceptual framework in this study. The coming sub-sections will provide further insight into philosophies of quality management.

### 2.3 The Juran philosophy

The Juran philosophy is based on a concept called the trilogy of quality (Bell & Omachonu, 2011; Juran, 1989). According to Juran (1989), components within the trilogy of quality include quality planning, quality improvement and quality control. Bell (2010) states that quality planning refers to the process of formulating goals while understanding both internal and external environment.

The concept of quality improvement was further explained by Fotopoulos and Psomas (2010) as the ability of an organization to break through optimum performance achieved through the use of right employees, ability to diagnose causes of poor performance and developing remedies for poor performance. Quality control on the other hand was clarified by Hayati, Ali and Idris (2012) as the process for meeting quality goals during operations. Marin and Ruiz-Olalla (2011) further state that quality control involves determination of what to control thus an understanding of units of

measurements so that data may be objectively evaluated. The aspects brought by Juran (1989) were also instrumental in building a total quality management conceptual framework.

## **2.4 Feigenbaum philosophy**

The Feigenbaum philosophy came with the concept of total quality control that later became known as the total quality management (Zehir, Ertosunb, Zehir & Muceldilli, 2012). Feigenbaum philosophy conceptualized total quality management as a system to integrate quality development, quality maintenance and quality improvement. However, as stated by Sadikoglu and Olcay (2014) and already mentioned in the evolution of total quality management section in this study, Feigenbaum's philosophy lacked management philosophies such as people empowerment, team work and supplier development. According to Goetsch and Davis (2010), these aspects that were lacking within the total quality control philosophy were fully coordinated in the total quality management philosophy.

## **2.5 Crosby philosophy**

The Crosby philosophy emphasizes five major aspects as alluded by Evans (2011). According to Crosby (1979), the first aspect within the Crosby philosophy is that quality means conformance to requirements and not elegance. Jaafreh and Al-abadallat (2013) argue that the second point made in the Crosby philosophy is that there is no such thing as quality problem since quality problems should be identified by those responsible for creating the problems. Furthermore, Evans (2011) added that there are accounting, manufacturing, design and front desk problems; and all emanate from functional departments.

The third point made by Crosby (1979) is that there is no such thing as the economies of quality because it is always cheaper to do the right first time. In this point is emphasized that the organization should always ensure that the right processes and systems are in place for quality to be achieved. According to Evans (2011), the fourth aspect made by the Crosby philosophy is that the only measurement is the cost of quality. Ngambi and Nkemkiafu (2015) further state that the cost of quality is the expense of non-conformance. The fifth point is that the only performance standard is zero defects as elaborated by Evans (2011). These five points assist in elaborating towards factors that affect the achievement of a total quality management programme within the baking firm.

## **2.6 Taguchi philosophy**

The Taguchi philosophy is made up of three elements of quality (Power, 2013). The first element explains the loss that occurs due to poor quality. According to Phan, Abdallah and Matsui (2011), poor quality of products and services result in the creation of loss to both the organization and the society. Power (2013) added that while the organisation suffers from financial loss the society suffers from inferior products. The second element is alluded by Parast and Adams (2012) as the off-line control and it states that it is important to design products that will be robust even outside the parameters of the engineers. In other words, it is important that the designed products are robust not only to the eyes of the designers but also to the customers and the society. The third element emphasizes the importance of innovations in the statistical design of products and processes. Thus, innovations need to be able to create value for the organization and the customers.

## **3. Conclusion and Recommendations**

In order to ensure a performance improvement in terms of procurement processes, quality of operational systems, production, customer satisfaction and profitability for a firm in a competitive environment, the adoption of total quality management is needed (Ghrakhani, Rahmati, Farrokhi & Farahmandian, 2013). Quality management specialists such as Sadikoglu and Olcay (2014) advocate for the adoption of a total quality management approach which is achieved through factors such as leadership, knowledge management, suppliers, customer focus, employee involvement and process management. The philosophies that are provided in this section are critical towards the identification of factors that affect total quality management.



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