



## Total quality Management: Theoretical Reading

*Hadidane Sabrina*

*Jijel university, (Algeria)*

*hadidanesabrina@uni-jjel.dz*

Abstract ;	Article info
<p><i>This research paper aims to introduce the concept of total quality management in terms of its different meanings among researchers due to the fact that quality is relatively. Edwards Deming, Joseph M. Juran, and Philip Crosby jointly developed the concept of total quality management. In this research paper, the researcher will try to address the most important theoretical foundations for total quality management among these theorists.</i></p>	<p>Received 01/11/2021</p>
	<p>Accepted 02/01/2022</p>
	<p><b>Keyword:</b></p> <ul style="list-style-type: none"> <li>✓ Quality.</li> <li>✓ Management.</li> <li>✓ Total quality.</li> </ul>

## 1. Introduction

The survival and growth of enterprise depended on their outstanding performance in changing environment, creating fierce competition between enterprises, which intensified after the liberalization of trade.

In order, for enterprises to respond to the requirements of their environment, modern management methods must be adopted, perhaps their mother's total quality management.

After the emergence of the demand for quality as a fundamental hatred in front of the enterprises, Edward Deming called to an administrative method that emphasizes quality, and to guide the goals towards achieving customer satisfaction and the profitability of the organization, which he called comprehensive quality management. He believes that the foundation must be geared towards acquiring quality, by adopting a new philosophy of management that depends on strategic thinking and flexibility of management.

Deming stresses that the most important reasons for the lack of quality lies not in materials and machines, but in human resources and their understanding of the culture of quality and training them to develop their ability to work well. Thus, most of Deming's principles were based on human resources, which emphasize that the philosophy of total quality management can only be achieved if management moves from saying to doing.

Therefore, total quality management has changed the interest of organizations from price-based competitiveness to quality dependence, and the competitiveness of the enterprise is defined as the ability to produce more and more efficiency and sell that product.

This research contribution comes to learn about the concept of total quality management, through the following elements:

What is total quality management (TQM)?

Deming total Quality Management.

Josef Juran total Quality Management.

Philip Crosby Quality Management.

Principles' of Total quality management.

**2. What is total quality management (TQM)?** To understand the meaning of total quality management, we must understand what does quality mean, and what does the term total mean?

**2.1 Quality:** the term quality means: A characteristic or a degree of superiority that something has (Guralnik, 1992 , p1161). Deming defines it as fulfilling the customer's needs and expectations now and in the future, therefore, it is not possible to give an accurate definition of

quality due to its basic association with the customer's wishes and requirements (Deming, 1986, p169).

Peter (1990) defined quality as a magic bullet, with provide lower cost, higher customer services, better products and higher margins. He also explained that quality is in the eyes of the beholder, this mean it is what the customer it is (Oluwatoyin & Oluseum, fall 2008, p05).

**2.2 Total :** Make-up of the whole, it means that quality includes all individuals and departments in the organization, thus, improvement is in all components of the enterprises, physical, human and organizational.

**2.3 Total quality management:** TQM may be defined as «a continuous quest for excellence by creating the right skills and attitudes in people to make prevention of defect possible and satisfy customers/ users totally at all times. TQM is an organization- wide activity that has to reach every individual within an organization» (Lakhe & Mohanty, 1994, p- p12).

TQM may be defined also as: «total quality management is the distinguished managerial innovation according to business vision and management leader» (Najim, & Youssif, & Al-Ensour, August 2017, p18).

According to Milakovitch Total quality management «is a total organizational approach for meeting customer needs and expectations that involve all managers and employees in using quantitative methods to improve continuously the organization's processes, product and services» (Milakovitch, 1990, p209).

Zaire & Simintiras state that: «Total quality management is the combination of the socio-technical process towards doing the right things (externally), everything right (internally) first time and all the time, with economic viability considered at each stage of each process » (Zaire&Simintiras, 1991, P 429).

According to Sylvie Mayeur, the Total quality management system in ISO 9001-2000 is: A way to manage the organization, based on quality and the participation of members of the organization for long-term success, by satisfying the customer (Mayeur, 2004, p 25).

We can understand from these definitions that quality management:

Contains the meaning of totalitarianism; it includes all the processes and components of the physical, human and organizational institution.

Geared towards continuous improvement.

Its ultimate goal is to satisfy the customer.

Its foundations are derived from the culture of the enterprises.

Generally, total quality management can be defined as: the art of customer satisfaction.

According to Price and Gaskill, there are three dimensions of total quality management: product and service dimension, people dimension and process dimension (Lakhe & Mohanty, 1994, p- 09- 33).

**3. Deming total Quality Management:** Deming (1900 - 1994) tends to believe in Y's theory of organizational behavior, with its owner, McGregor Douglas, believing that the human being within the organization is an active being who loves to work, and the administration must give him the right conditions. These include: strong organizational culture, co-decision-making, democratic leadership. Deming believed that total quality management can only be achieved if it is founded on 14 principles.

**3.1 Deming's 14 points:** (Deming, 1993, p –p 6 – 11)

Create constancy of purpose for improving products and services.

Adopt the new philosophy.

Cease dependence on inspection to achieve quality.

End the practice of awarding business on price alone; instead, minimize total cost by working with a single supplier.

Improve constantly and forever every process for planning, production and service.

Institute training on the job.

Adopt and institute leadership.

Drive out fear.

Break down barriers between staff areas.

Eliminate slogans, exhortations and targets for the workforce.

Eliminate numerical quotas for the workforce and numerical goals for management.

Remove barriers that rob people of pride of workmanship, and eliminate the annual rating or merit system.

Institute a vigorous program of education and self-improvement for everyone.

Put everybody in the company to work accomplishing the transformation.( [asq.org/quality-resources/total-quality-management/deming-points](http://asq.org/quality-resources/total-quality-management/deming-points)).

These 14 points can be classified as follows: Points on human resource management (Adopt and institute leadership...), points on organizational culture (Adopt the new philosophy...).

**3.2 Deming's PDCA cycle:** The PDCA Cycle (Plan-Do-Study-Act) is a systematic process for gaining valuable learning and knowledge for the continual improvement of a product, process, or service. (deming.org/explore/pdsa/ 28/ 10/2021, 16:02h)

**3.2.1 Plan:** Recognize an opportunity and plan a change, define what you expect to do and to happen. In this step, you investigate the current situation in order to fully understand the nature of the problem being solved. Be sure that you develop a plan and a framework to work from, and specify the desired outcomes and results. (www.isixsigma.com/dictionary/deming-cycle-pdca). Planning is the most crucial phase of total quality management, this phase depends on: responsibility of top management, management representative, objectives and action plans.

**3.2.2 Do:** Create the prototype, test it, and collect data from the customer. Execute the process, implementing the plan and measuring its effectiveness. Try to run the process according to plan. This phase depends on: implantation and realization, awareness, communication, training, and operation control.

**3.2.3 Check:** Analyze the collected data to measure customer satisfaction. Study the actual result, compare them with expected result. This phase depends on: Analysis, monitoring, internal audit.

**3.2.4 Act :** Corrective actions, analyze differences, act on collected feedback. Begin the PDCA cycle again. This phase depends on: New strategic goal, optimization.

A cycle for solving problems in the continuous improvement work is presented by Deming. He speaks of PDCA Cycle short for "PLAN-DO-CHECK-ACT" but he often refers to this cycle as the "Shewhart-Cycle" (Gitlow, 1995, p.26).

**3.3 Deming's deadly diseases:** Deming identifies the most important barriers that total quality management face to improving effectiveness, and calls it: deadly diseases. These diseases are:

Lack of constancy of purpose.

Emphasis on short term profits.

Personal review systems without providing methods to accomplish objectives.

Mobility of management.

Running a company on visible figures alone.

Excessive medical cost.

Excessive legal damage awards (W. Edwards Deming, Out of the crisis(pp. 97-98).

#### **4. Josef Juran total quality management:**

«Joseph Juran (1904 - 2004) describes the quality from the customer perspective as having two aspects:

Higher quality means a greater number of features that meet customers' needs.

"Freedom from trouble": higher quality consists of fewer defects.

The man provides ethical standards that allow managers to manage many organizations to achieve breakthrough results, during respecting the customer requirements (Needs & Desires) » (Moyassar, 2001, p13).

Juran is responsible for what has become known as the "Quality Trilogy." The quality trilogy is made up of quality planning, quality improvement, and quality control the underlying concept is that managing for quality consists of three universal processes:

**4.1 Quality planning (quality by Design):** The Juran Quality by design model is a structured method used to create innovative design features that respond to customers' needs and the process features to be used to make those new designs. Quality by design refers to the product or service development processes in organizations (DeFeo, , [www.juran.com](http://www.juran.com), 15/04/2019).

Juran gives a definition to quality planning: the activity of developing the products and processes required to meet customer needs (Joseph & Godfrey, 1998, p 2118).

**4.2 Quality control (process control and regulatory):** Quality control is the method carried out every day to assure we are making and delivering the product or service to the right targets. For Juran quality control is primarily aimed at the prevention of errors. Quality control aims to determine what to measure, desired targets, measure actual performance and identify the gap between performance and goals.

Quality control at Juran is defined: the activity of evaluating actual performance, comparing actual performance to goals, and taking action on the difference (Joseph & Godfrey, 1998, p 2118).

**4.3 Quality improvement (Lean Six Sigma):** a set of techniques aimed at improving a company's production processes with a view to achieving a certain level of quality. This is done by: Prove the need, establish the infrastructure, and identify the improvement project, establish controls to hold the gains (Joseph & Godfrey, 1998, p 26).

Quality improvement means: the activity of raising quality performance to unprecedented levels (Joseph & Godfrey, 1998, p 2118).

Juran's management theory continued to develop throughout his lifetime. He died at the age of 103 in 2008. Juran's theory of quality management is part of other quality management theories such as Six Sigma and lean manufacturing (McGowan, www.business.com, 10/ 02/2021).

Juran proposed ten steps to quality improvement:

- Build awareness of the need and opportunity to improve
- Set goals for that improvement
- Create plans to reach the goals
- Provide training
- Conduct projects to solve problems
- Report on progress
- Give recognition for success
- Communicate results
- Keep score
- Maintain momentum ([www.qualitygurus.com/joseph-juran/01/11/2021](http://www.qualitygurus.com/joseph-juran/01/11/2021), 08 :36h).

Table 1. A Comparison of some Ideas Of The Two Gurus

No	Characteristics	Deming	Juran
1	Philosophy	Statistics For Quality	Managing for quality
2	Structure	Fourteens golden points	Ten stages to improve quality
3	Approach	Using a systematic & functional logic to reduce variability using continuous improvement ; cease mass inspection	Reduce variability using problems solving tech.(human elements)
4	Definition of quality	A predictable level of Uniformity, Dependability At Low Cost & Fit To Market	Fitness For Use to satisfied customer's needs
5	Books & Papers	Over 170 books and papers	Hundreds of papers, articles and Speeches, as well as more than 30 books
6	Institute	The W. Edwards Deming 1993 By daughter Diana Deming Cahill	the Juran Institute 1979 & Juran Foundation
7	Years Of Contributions	1900 – 1993	1904 – 2004
8	Changes Of Systems	Comes from outside the system, No matter how hard employees work or how few defects they produce, the tide of innovation and change cannot be held back.	comes from clashes between management and employees or situations in which changes he had recommended were rejected by clients for no logical reason

No	Characteristics	Deming	Juran
9	Medals	the Second Order Medal of the Sacred Treasure by the Emperor of Japan in 1960, the National Medal of Technology in 1987, the Edison Award in 1989, and the Shewhart Medal of the American Society for Quality and Control in 1955.	In 1992 Juran received the National Medal of Technology from President of usa , Before That He given by the Japan's imperial in 1981 middle of honor
10	Innovation	Comes from freedom from people who are responsible only to themselves, management before technology	Comes from Team spirit , From Efficient & Effective Goal , & Freedom From Trouble
11	Iso	ISO 9000 shows a lack of brains	ISO 9000 Learn Managers How To Reach Fitness
12	Benchmarking	Is the last stage of civilization	Learning From Competitors Is A Base For Improvement
13	Business Ethics	The 14 Golden points (2,6,7,8,9,11,12)	Ten Steps To Improve Quality (1, 2, 4, 6, 7, 8)
14	Causes of variation	Difference between common causes of variation and special causes, senior management responsible for 94% of Q. problems	80% of problems come from 20% of causes, and management should concentrate on that 20% "vital few." Which are due to workers
15	Quality Costs	No Optimum Level (Depending Upon Continues Improvement )	No Optimum Level (Quality Have A Price )
16	Employee Participation	Yes, Especially In Decision Making, Implement SQC Tools	Yes, Especially To Quality Circles, Improvement Teams
17	The Role Of supervisor	Has two responsibilities: to assist those who need special help and to improve the system.	Overlap The Root Cause: resistance to change or, cultural resistance.
18	Organization for quality	means : The consideration of quality goals and responsibilities for the entire company. Setting up of sub-units of the organization to be in charge of process improvement.	General Management Approach To Quality , Concentrated On Humane Aspects
19	Manager and the production supervisor	A coach Not A cop	Develop, coach, and lead cross-functional process improvement teams
20	Motivation	Effective motivation of individuals is needed to keep this human bond strong and	Avoid Campaigns To Do Perfect Work



No	Characteristics	Deming	Juran
		vibrant.	
21	Supplier Rating System	No Need	Yes To Help Him To Improve Its Performance
22	Purchased Material	Inspection Too Late (Sampling System Allow Unconformance To Penetrate)	Most Important & complex Problems (Surveys Are Best Solution )
23	Statistical Process Control	Must Be Used	Recommends It Unless It Doesn't Lead To Tool Based Approach

Source: Moyassar, 2001, p- p 21-22

**5. Philip Crosby total quality management:** Philip Crosby's (1926- 2001) ideas on quality came from his vast experience of working with an assembly line. His main focus was on zero defects which ultimately led to the adoption of this concept by the modern Six Sigma Quality movement.([www.shmula.com/philip-crosby](http://www.shmula.com/philip-crosby), 11/10/2021, 12;20 H ).

He is best known for popularizing the Zero Defect. His approach to quality is best described by the following concepts:

Zero defects do not mean that people never make mistakes, but that companies should not begin with allowances or sub-standard targets with mistakes as an in-built expectation. Instead, work should be seen as a series of activities or processes, defined by clear requirements, carried out to produce identified outcomes ([www.bl.uk/people/philip-crosby](http://www.bl.uk/people/philip-crosby), 28/10/2021, 10 :12h).

The definition of quality is conformance to product and customer's requirements. Crosby's quality is the conformance to specifications.

Quality is achieved if the product has no defects. Zero Defects should be the performance standard.

Prevention is the system of quality: According to Crosby, the traditional quality control approach taken by American firms is not cost effective. Instead, production workers should be granted the authority and responsibility to ensure that quality goods or services are produced at every step of the process (Hackman &Wageman, 1995, p 310).

Quality measurement is the price of non-conformance: Crosby believed that the company goal should be zero defects.Quality should be measured by the price of nonconformity. Therefore; managers need to demonstrate that a higher standard of performance can lead to perfection—to zero defects (Alghamdi, , Dec 2016, p 33).

The Crosby- style exhortation to do things right the first time is criticized for if this were all that was necessary to obtain good quality we would all have an easy time of it ( Juran & Godfrey, 1998, p413).

## **6.Principles of Quality Management:**

(bestpractice.biz/what-are-the-seven-principles-of-quality-management/ 27/10/2021, 08:02h)

**6.1 customer focuses:** This principle stresses that a business should understand its customers, this aim is to focus on both direct and indirect customers. What they need and when. While trying to meet, but preferably, exceed customers' expectations. Customer focus means you need to manage customer relationships and watch their satisfaction.

**6.2 Leadership:** Without clear and strong leadership, organization flounders. This principle is concerned with the direction of the organization. The manager should have clear goals and objectives, and ensure its employees are actively involved in achieving those targets. The aim of leadership should be to establish unity of purpose. By doing this, your leaders improve effectiveness and efficiency within your company.

**6.3Engagement of people:** By empowering people at all levels, you encourage them to thrive. A thriving workforce adds value to their organization's quality management. You can meet this goal by talking to your staff and affirming employees' contributions to your business. By becoming a more efficient organization, you will build confidence in your stakeholders by optimizing performance(Ross,www.british-assessment.co.uk/insights/the-8-principles-of-quality-management /26/10/2021,13:33h).

**6.4 Improvement :**Continual improvement should be an active business objective. Focus on constant improvement by responding to market changes and customers' changing needs. Gear all your quality systems toward finding new ways to do things and make the services or goods you provide better. Avoid resistance to change. Your organization needs to evolve and improve to remain competitive.

**6.5Evidence-Based Decision-Making:** Implementing the Quality Management Principles will allow decisions to be made with clarity. A logical approach, based on data and analysis, make relevant data available to the decision-makers in your organization, encouraging objectivity. Unfortunately, in a fast-paced workplace, decisions can often be made rashly, without proper thought. To make this possible, manager needs to train staff to study and test data and information.

**6.6 Relationship Management:** ISO 9001:2015 focuses on relationship management with suppliers and partners. Expand this to include customer. This principle promotes the relationship between the company and its suppliers; recognizing it is interdependent. A strong relationship enhances productivity and encourages seamless working practices.

**6.7 Process Approach:** The process approach aims to achieve consistent and predictable results. Quality management systems consist of several different processes that work together. People must therefore be recruited to develop and supervise these processes to be effective. In addition

to ensuring that everyone understands the goals and knows what the end result should be. Information must be shared to help continuously improve quality management. (bestpractice.biz/what-are-the-seven-principles-of-quality-management/ 27/10/2021. 10:55h)

The common principles between Deming, Juran and Crosby can be summarized as follows:

Quality does not mean the largest quantity or the lower price, but is a good quality that fits the requirements of the customer and is suitable for use.

Total quality management means change in all parts of the organization.

The commitment leadership is essential for the implementation of total quality management.

The most important element in the application of total quality management is the human element.

Total quality management based on continuous training and learning

The success of total quality management depends on the staff.

Spreading the culture of quality among workers and encouraging training and education in order to develop competencies.

The ultimate goal of total quality management is customer satisfaction. It should be noted that the element of time was not within the principles of these researchers because Speed doesn't make up for quality.

## **7. Conclusion:**

Quality management is an administrative philosophy proposed by Edward to bring institutions to the level of quality and customer satisfaction. This administration emerged in the 1980s and was applied in economic institutions, but their success and positive results have made institutions of different activities work to implement them.

The current article defines the concept of total quality management, and its concept has been adopted as the art of customer satisfaction. The article also touched on the theories of total quality management, such as the ideas of Edward Deming, Joseph Juran and Philip Crosby, who differ in their definition of the concept and principles of quality but agree in their assertion that its primary objective is to satisfy the customer.

## 5. Bibliography List:

David B. Guralnik( 1992), Webstars new world dictionary, London.

Gitlow ,H. Oppenheim et al (1995) "*Quality Management*" 2<sup>nd</sup> Edi. , Irwin Inc.

Edward Deming (1986), Out of the crises, Library of congress cataloging – in – publication Data, Cambridge.

Adediran Oluwatoyin and Adediran Oluseum (2008), Total quality management: A test of the effect of TQM on performance and stakeholder satisfaction, Thesis proposal for master's degree in business administration, school of management, Bleking institute of technology.

Sylvie Mayeur (2004), Guide opérationnel de la qualité: Faut – il tuer la qualité totale, MAXIMA éditeur, France.

Joseph. M. Juran and A. Blanton Godfrey (1998), Juran's Quality Handbook, 5<sup>th</sup> edition, McGraw-Hill, New York.

[asq.org/quality-resources/total-quality-management/deming-points](http://asq.org/quality-resources/total-quality-management/deming-points).

Moyassar I. Ahmed( 2001). A comparative study of Deming's and Juran's total works: changing the quality culture towards Total Quality Management, Journal of Business [www.researcherid.com/rid/I-5440-2017](http://www.researcherid.com/rid/I-5440-2017)

Joseph A DeFeo, The Juran Trilogy: Quality Planning, [www.juran.com](http://www.juran.com), (15/04/2019)

Geraldine McGowan, Management Theory of Joseph Juran, [www.business.com](http://www.business.com), 10/ 02/2021) [www.bl.uk/people/philip-crosby](http://www.bl.uk/people/philip-crosby), 28/10/2021, 10 :12h

[bestpractice.biz/what-are-the-seven-principles-of-quality-management](http://bestpractice.biz/what-are-the-seven-principles-of-quality-management).

Derrick Ross, [www.british-assessment.co.uk/insights/the-8-principles-of-quality-management/](http://www.british-assessment.co.uk/insights/the-8-principles-of-quality-management/) 27/10/2021, 12:28h

R.R. Lakhe and R.P Mohanty( 1994), Total Quality Management: concept, evolution and acceptability in developing economies, International journal of quality and reliability management, Vol 11, N09, MCB university, (p- p- 09- 33)

Najim A. Najim, A.S.H. Youssif, Jasser A. Al-Ensour (August 2017), Total quality management (TQM) Organizational characteristics and competitive advantage, Journal of Economic and financial studies, Vol 05, N 02, ( pp 12-23.)

Milakovitch, M. E ( 1990). Total quality management in the public sector, National productivity Review, 10(02), (195- 215)

Zaire. M and Simintiras. A.C (1991), The sales link in the customer – supplier chain, Productivity, Vol32, N3, ( PP. 427-432)

W. E. Deming ( 1993), The new economics for industry, Education Government published by MIT centre for Advenced Engineering Study reliability management, Vol 11, N09, (p- p- 09- 33)

Richard Hackman and Ruth Wageman( 1995), Total quality management: Empirical, Conceptual, and practical issues, Administrative science quarterly, 40 (pp309-342)

Hamad Alghamdi, Toward better understanding of total quality management (TQM) (Dec 2016), Journal of business and Economcpoticy, Vol 3, N04, ( pp 29-37)