(IJRSSH) 2019, Vol. No. 9, Issue No. III, Jul-Sep **e-ISSN: 2249-4642, p-ISSN: 2454-4671**

QUALITY CONTROL MANAGEMENT

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ABSTRACT

The concept of modern quality is to contain most of the differences between consumers, some with one another, and then between them and the producers on the other hand. Quality is defined as matching the technical specifications of the commodity to the standards that lead to satisfying the consumer's desires from the technological aspects (strength and durability), psychological (taste, Shape, beauty), price, ethics (credibility, honesty of product and seller), effectiveness (ability of the product to perform the job expected from it). Quality was expressed in various senses over the years. For example, in the beginning of 1900, the meaning of the examination was taken. The finished products were examined in their entirety and the holes were re-corrected. In the 1940s, the expression of quality took on a special character. For quality, and pioneers in this field are (Shewhart), (Dodge), (Nelson),

FIRST: QUALITY CONTROL CONCEPT

In order to excel and excellence, the race is aimed at improving, developing, innovating and innovating in all the activities of the organization, the applied methods and techniques, and all the outputs produced in the form of goods or services. With increased attention to the community and customers, Quality is the difference in determining the centers of organizations in markets, and quality requires that each organization try to pool all its capabilities and use all its resources to achieve its objectives efficiently and effectively **(Abu-Nasr / 2008, p. 56).** The concept of quality varies among different segments of society according to the difference in their views. The concept of quality for the consumer may be good taste, good packaging, and efficiency in use, durability, and accuracy of the design. Of the specifications and standards specified in the design **(Moroccan/ 1995, p. 333).** Quality was expressed in various senses over the years. For example, at the beginning of 1900, the meaning of the examination was taken. The finished products were examined in their entirety and the holes were re-corrected. In the 1940s, the expression of quality took on a special character of quality, and pioneers in this area are (Shewart) (Dodge) (Nelson), where they developed the idea of presenting the processes of production to a certain level of natural fluctuations, so the responsibility of quality control through its statistical methods to detect such oscillations and control of production processes, And in the 1960s the concept of quality expanded It extends beyond the scope of production processes to include other functions of the facility forgotten integrated quality control **(Shroeder, 1981).**

Researchers are becoming increasingly interested in the quality control of industrial and service organizations according to the rapid changes and developments in the workers' environment for many reasons including:

A. Markets are comprehensive.
B. Producers' interest in the competitive advantages of the produced goods.
C. The emergence of huge numbers of new products.
D. Shorten the life cycle of the product.
E. Increase competitive offers to the customer.

The concept of modern quality has reached to contain most of the differences between consumers, some with one another, and then between them and the producers on the other hand. The quality is defined as

matching the technical specifications of the commodity to the standards that lead to satisfying the consumer desires in terms of technology (strength and durability), psychological (taste) (Credibility, honesty of the product and seller), and effectiveness (the ability of the product to perform the function expected of it) (Moroccan/ 1995, p. 333). Japanese organizations follow a high-quality management philosophy called Total Quality Management (TQM), a philosophy introduced by W. Edward Deming more than 40 years ago in Japan. The researchers trace the rise of the Japanese economy Japanese products have a significant share in world markets to apply the teachings of (Deming) in TQM. Deming's philosophy emphasizes the need to create a culture of continuous improvement of quality, such as the philosophy of Crosby, Juran, Taguchi, Feigenbaum, and Ishikawa. All these philosophies focus on not putting an end to improvements and continuing with the seven basic tools of statistical quality control and management to participate in decision-making.

According to Juran, the appropriate use is based on the five distinctive qualities of quality: **(Juran, 1962)**

1. Technological (hardness and strength).
2. Psychological (taste, shape, aesthetics).
3. Time (reliability and permanence).
4. Contractual (Terms of Guarantee).
5. Ethical (degree of credibility of the salesman and his trust).

Perhaps the concept of total quality management like other administrative concepts, which vary in terms of concepts and ideas, according to the angle of view by this researcher or that. This conceptual variation, however, is almost identical in terms of the intended content, as it focuses on the objective that the organization seeks to achieve, which is the consumer through the interaction of all the actors in the organization.

Brocka & Brocka (1992) defined it as the way in which the organization can continuously improve performance at all levels of operational work by optimizing the use of human and material resources.

Hoffer et al. (1994) emphasized that it is a management philosophy designed to make the organization more flexible and flexible in establishing a robust structural system through which all employees work to win customers through collective participation in the planning and implementation of operational performance.

TQM can be defined as: (the administrative philosophy and the organization's practical practices that seek to put all of its human resources as well as raw materials to be more efficient and efficient to achieve the objectives of the enterprise). Therefore, we note through these definitions that:

1. The objectives of the organization may include consumer satisfaction, as well as the different project such as growth, profitability, competitive position within the market, or community perception of the services provided.
2. The organization works within the community through its service, so it needs a broad consumer concept.
3. The use of these entries is under different names, including:

A. Continuous development of quality.
B. Total quality.
C. Total administrative operations of the project.
D. Quality management in its broadest sense in the Organization. Cost-efficient administrative quality **(Hammoud/ 2005, p. 76).**

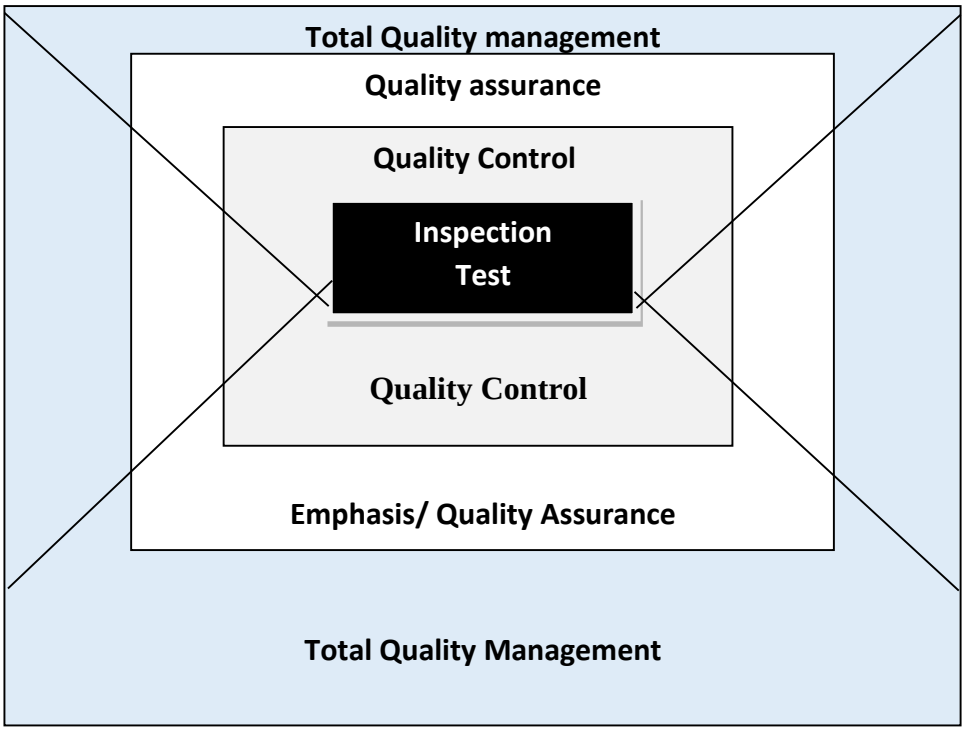
SECOND: THE HISTORICAL PERSPECTIVE OF TOTAL QUALITY

The quality system was created during the 1940s by the American scholar Edward Demming, the title of the TQM. The TQM was published in the United States by scientists of management, statistics, and engineering sciences in the mid-1950s when the first public article 1956 on this subject in Harvard business review **(Abu-Nasr/ 2008, p. 57).** Japan has made an active contribution to the rise and impact of advancement in the field of productive operations in general, and quality has been particularly important in the development of the attention of all specialists, researchers and in various advanced and opposing human societies **(Hammoud, 2005, p. 71)**. And the evolution of the concept of quality during the decades of the twentieth century, the quality was focused until

the late 1940s on effective inspection methods for inspection and research in an attempt to identify defective units after production. Then turned to the activities of statistical analysis of operations (statistical process control), and then developed in the sixties to quality assurance, which is marked by a QA to ensure the suitability of the product to use, or the suitability of the product to the design and conformity of the technical specifications to the TQM in the eighties. The oldest interest in quality is attributed to the 18th century BC in the Babylonian civilization in the time of King Hammurabi. It is included in the famous Hammurabi obelisk. The historical facts indicate that the Egyptian pharaohs in the 5th century BC emphasized the quality of building the pyramids and ancient Egyptian temples. Overall quality evolution into seven stages are:

1. The stage of professional responsibility for quality control during the middle ages until the nineteenth century.
2. The stage of the responsibility of the head of the workers for quality control during the beginning of the twentieth century, and until the end of the second decade of the impact of the industrial revolution.
3. The stage of quality control examination during the period (1920-1946).
4. The stage of quality control statistically during the period (1940-1960).
5. The stage of total quality control during the period (1960-1980).
6. Total Quality Management during the period (1980-2010).
7. The stage of happy customer (2010) which begins its features in 2010 or a little earlier.

After the years of the Second World War, American Edmund Deming took the new theory in the administration, taking ideas from Japan. The Japanese were devastated after the war, looking to rebuild their economy, The Deming Principles became the schematic content paper they wanted, and now, more than six decades later, Japanese products are required globally **(Abu-Nasr, 2008, p. 58).**



THIRD: DEFINITION OF THE TERM QUALITY

The term quality refers to accuracy and proficiency in construction, and in the administration we find that Juran defines it as valid for use, and Crosby Crosby is defined as matching requirements and specifications.
There are several definitions available for TQM, including: (Abu Al-Nasr / 2008, pp. 62-63)

1. It is defined as the method of organization management aimed at achieving the cooperation and continuous participation of the employees of the organization in order to improve the product or service and activities that achieve the satisfaction of customers and employees and the requirements of the community. (W. Edwards Demming).
2. Quality is defined as appropriate for the intended use requested by the customer. (Ross, 1995, p: 5)
3. Quality is defined as conformity to specifications designed on the basis of a good or service (Marklandans et al., 1995, p: 269)
4. Defined as a set of principles aimed at continuous improvement through the development of administrative methods and technical tools and quantitative methods in the organization while working to build and strengthen a positive atmosphere for relations between employees and customers (Saylor James).
5. ISO defines total quality as an approach to management in the organization that focuses on quality, builds on the participation of all its members, and targets long-term success through customer satisfaction and benefits for all members of the organization and society (Abu Al-Nasr, 2008, p. 65-66).

FOURTH: QUALITY DIMENSIONS

Quality dimensions are classified through which the degree of satisfaction of customer needs is determined as follows: **(Dilworth, 1992, p: 160)**

A- Performance: such as color and clarity in the image of the TV.

B- The Authority: Such as the availability of electronic control over the television set.

C- Reliability: The probability of the product performing efficiently, without interruption for a period of time and under predetermined operational conditions, also called reliability.

D- Possibility of maintenance: What is the degree of difficulty or increase in the cost of repair, and how long it takes.

F- Conformity: It means measuring the extent to which the final product meets the predefined specifications.

G- Aesthetic properties: such as how the outward appearance of the product.

H- **Conscious quality**: is the sense of confidence in the level of quality that customers develop on the basis of what they see, their past experience and the reputation of the organization, which reflects the customer's attitude towards the organization rather than a commodity it produces or service.

Quality is when our customers come back to us and our products do not come back to us **(Siemens Quality Logo 2003, p. 23)**

FIFTH: THE PRINCIPLES OF TOTAL QUALITY MANAGEMENT

TQM books have been written frequently, and TQM principles can be defined as follows:

1- Continuous improvement.
2- Internal & external customer satisfaction.
3- Quality relates to every activity.
4- The permanence of improvements...
5- Everyone is responsible for quality and quality improvement.
6- Strong and persistent top management leadership is essential for success.
7- Continuous education and training for everyone are essential for success**. (Abu-Nasr / 2008, p. 72)**.

SIXTH: OBSTACLES TO THE APPLICATION OF TQM

Stephen R. Covey, one of the most prominent contemporary management scientists, says that the main reasons that hinder quality in any organization are:

1. Loss of confidence in the manager.

2. Poor communication.
3. Uncontrolled staff.
4. Time constraints.
5. Unified opinion.
6. Poor reward and incentive system.

The following can also be added:

1. Strict hierarchy.
2. The incompetence of emerging communications.
3. The tendency to avoid responsibility.
4. Fear of failure.
5. Refrain from a delegation of authority.
6. Routine disabled.

In Egypt, the results of research and studies on the application of TQM in the government sector showed that there are many problems and obstacles facing this application in governmental organizations, including:

1. Lack of administrative stability.
2. Not to benefit from training.
3. The inability to identify clients of government organizations.
4. Weak financial system.
5. Weak management information system.
6. To refrain from using the standards and specifications of the international quality assurance. Such as (BS 5750) or ISO 9000 (Abu-Nasr/ 2008, pp: 82-83)

The Japanese stressed that quality is the responsibility of all the members of the organization, and not only the responsibility of the quality control department, but all the activities of the organization affect the development of the system of quality control, such as: market research, research and development, production planning, procurement, production engineering, shipping, after sale).

SEVENTH: QUALITY COSTS

The cost of quality is defined as (expenditure required to stabilize a certain level of product quality in the organization) and is divided into two main parts: Mirta, 1993, p: 20.

1. Direct Quality Costs is classified into two categories:

A: Control costs:

First: (Prevention Costs)

1) Quality Planning.
2) New product Review.
3) Training.
4) Process Control.
5) Data Analysis.
6) Quality Reports.

Second: Appraisal Costs Include Cost:

1) Materials Inspection.
2) Inspection and Test.
3) Tools Calibration.
4) Inventory Evaluation.

B: Failure Costs:

First (internal failure costs) the cost includes:

1) Scrap.
2) Rework.
3) Retest.
4) Down Time.
5) Loss.
6) Coordination.

Second: External Failure Costs The cost includes:

1) Repair.
2) Rejects.
3) Warranty Expenses.
4) Discounts.

2. Indirect Quality Costs Intangible costs such as:

A) Loss of Reputation.
B) Customer Dissatisfaction.
C) Customer Incurred.

The cost of direct quality is calculated by the following equation:

Direct Total Cost of Quality = Control Cost + Failure Cost

= (Cost of prevention + inspection and evaluation costs) + (Cost of internal failure + cost of external failure)

$$)FC + ((CC) = TQDC$$

$$\text{-------} (12 -1)(IFC +EFC) + (PC +AC)=$$

Whereas TQDC = Total Quality Direct Cost.

EIGHTH: (STATISTICAL QUALITY CONTROL)

In 1924, WA Shewhart, who worked for Bell Telephone Laboratories, devised a statistical scheme to control the variables in the product and was the beginning of statistical quality control. At the same time, the two worlds (H. F. dodge and HG Romig) (100%), which is no longer appropriate, especially during the Second World War, and the escalation of the production rate. The use of statistical control methods for quality provides the following advantages:

1. More regularity of the quality of goods produced.
2. Provide the means to detect errors when operating.
3. Reduced inspection costs.
4. Reduce the number of rejections.
5. Improve the relationship with the customer.
6. Identification and knowledge of the ability of operations.
7. Diagnosis of disturbance in production processes.
8. Provide the foundations for possible investigation specifications.

It can be said that the use of statistical quality control methods, and the training of workers, are considered the most important factors for the success of quality management programs in organizations, especially the use of the seven tools that have proved highly capable of solving quality problems in Japanese organizations. (Mohsen and Al-Najjar / 2009, pp. 482-483)

NINTH: ISO 9000 SPECIFICATION

1. International Organization for Standardization (ISO): International Organization for Standardization (ISO) was established in 1974, after a meeting of delegations from 25 countries in London in 1946, based in Geneva. (150) countries and the term ISO is the name of the International Organization for Standardization arranged by the name of the organization in French. The word ISO is derived from the Greek isos which means equal (Azzawi / 2002, p. 29)

The objective of this organization is to promote, develop, standardize, and develop relevant activities at the international level for the purpose of facilitating global trade, exchange of goods and services, and development of cooperation in the fields of scientific, technological and economic activities (Marquard, 1997, 10)

The International Organization for Standardization (ISO) is composed of technical committees, which are abbreviated as "TC", which have the powers to establish sub-committees, which are abbreviated as "SC", "working groups" (B) WG of its members represented by standardization bodies in different countries. The objective of preparing drafts of international standards is considered as part of the main program of these technical committees. It is the responsibility of the International Organization for Standardization (ISO) to develop specifications in all fields except for the technical specifications of the electrical and electronic products, the technology assigned to the International Electrical and Electronic Commission (EIC). (9000) is the most famous in the world now because of its association with the international business dealings. (Hammoud, 2005, p. 107)

ISO 9000: Quality Management Systems ISO 9000 is designed to provide the customer, the buyer of the product or the service with the assurance that it has been produced in a manner that meets its requirements. The best way to do this is to standardize the procedures, Helps ensure that quality is built into the company's operations. (Slack et al, 1998, p: 775)

ISO 9000 does not speak about the true quality of the product (Krajewski and Ritzman, 1999, p: 233). It does not specify any performance quality standards, nor does it specify product quality levels. It works by the principle that the quality of the product or service is determined by during fitness for use or purpose (Evans, 1997, p: 56)

2. ISO 9001: 1987 The ISO 9000: 1987 was published in 1987. The first revision and revision was done in 1994 with the issuance of the ISO 9000 - 9000 specifications, and a second revision and revision in 2000. Resulting in the issuance of the current version

of ISO 9000 - 2008, and is expected to be issued the results of the review, and the third update of the specifications enabled the name of ISO 9000 - 2008 at the end of 2008.

3. Family Standards ISO 1994: 9000 - ISO: The family of ISO 9000 - ISO 1994 standards includes all the specifications published, as well as those which were under development by the ISO / TC 76 Technical Committee consisting of three parts: ISO 8402: Contains all terms related to quality management and assurance and definitions. It aims to create a single language of internationally agreed quality in the form of a glossary of terms to be at the top of the ISO 9000 family. This specification provides definitions for a number of quality terms which can to be divided into four different groups namely:

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First: General terms.

Second: quality terms.

Third: Terms related to quality systems.

Fourth: Terms related to tools and methods of quality control.

2. ISO 9000 series: ISO 9000 and 9004 specifications, ISO 9001, 9002, 9004 and ISO 9002 specifications. This series consists of the following specifications:

* - ISO 9000 Quality Management and Quality Assurance, consisting of parts:

• 9000 ISO Guidelines for testing and use.

• 9000 ISO General Guidelines for the application of contractual specifications ISO 9001, 9002, 9003.

• 9000 ISO Guidelines for the application of the ISO 9000 specification in the development, supply and maintenance of software.

ISO 9000• a guide on the management of reliability programs that includes product characteristics: productivity, reliability, and maintainability.

* - Contractual specifications for quality assurance: ISO 9001, ISO 9002, ISO 9003:

The above specifications represent the QMS models of external quality assurance and are designed for evaluation and contracting. These three models are in fact successive subgroups of each other and ISO 9000: 1994 has to choose one of these three specifications to measure its quality system, each serving as a guide to conduct an independent audit as a third party to the organization.

• ISO 9001: is the most comprehensive specification covering design, production, and installation and service activities.

• ISO 9002: covering production, installation and service activities.

• ISO 9003: Covers inspection and final product inspection only.

* - ISO 9004 Quality Management and Quality System Elements:

The internal use guidelines are provided and used by the organization itself for the purpose of developing its quality system to meet the needs and requirements of the business and to take advantage of the opportunities it offers.

• 9004 ISO Guidelines for the application of quality management and quality system elements.

• 9004 ISO Guidelines for the application of the ISO 9000 standard to the service sector.

• 9004 ISO Guidelines for the application of the ISO 9000 specification to manufactured materials.

ISO 9004 Quality Improvement Guidelines.

The ISO 9000 series is one of the most comprehensive and widely used ISO standards issued in 1987 for the first time and has undergone several modifications. The specifications in this series are of two types: Lai (1996, p: 15-16).

A. Core and Core Specifications:

First: The contractual specifications represent the basis on which the rest of the three ISO 9001, ISO 9002, ISO 9002 and ISO 9002 standards are based.

Second: Non-contractual specifications: Indicative specifications:

• ISO 9000 ISO Guidelines for testing and use.

• ISO 9004-2 ISO 9001: 2000 Guidelines for the application of quality management and quality system elements.

B. Supplementary Guidance Standard the other parts comprising ISO 9000 and ISO 9004 are as follows:

ISO 9000 parts:

- ISO 2-9000 ISO.
- ISO 3 - 9000 ISO.
- ISO 4-9000 ISO.

ISO 9004 parts:

- ISO-9004 ISO.
- ISO 9004 ISO.
- ISO 4-9004 ISO.

3. The two descriptors ISO 10011 ISO and ISO 10013:

* - ISO 10011 Guidelines for quality system audits and includes three parts:

- ISO-10011 ISO Quality Audit.

ISO 9001: 2000 2- Qualifications of quality auditor.

- ISO 3- 10011 ISO Management Audit Program.

* - ISO 10013 Guidelines for the management of the quality audit program.

These two specifications are part of the ISO 10000 series, which includes specifications of the number 10005-10017, and parts of those specifications, which are a set of specifications related to technical aspects of quality or quality technology:

- ISO 10005 ISO guidelines on quality plans.
- ISO 10006 ISO Quality Assurance Guidelines for Project Management.
- ISO 10007 ISO Guidelines on the General Form of Management.
- ISO 10011 ISO Guidelines for Quality System Audit consisting of three parts.
- ISO 10012 ISO Quality requirements for measuring devices include:

Management of measuring and checking devices.

ISO-10012 ISO Adjustment of measurement processes.

- ISO 10013 ISO Guidelines for Quality Manual Preparation.
- ISO 10014 ISO Guidelines on Economic Impacts in Quality Management.

ISO 10015 ISO Guidelines on Education and Continuing Training.

- ISO 10016 ISO Guidelines for Inspection and Inspection Records.
- ISO 10017 ISO Guidelines on the Application of Statistical Methods.

4. ISO 26000 specifications

It is the future standard for the social responsibility of the private sector and civil society organizations to contribute to the development of society and to participate in the implementation of social and humanitarian projects. The private sector and civil society organizations also contribute to the sustainable development and progress of any society.

5. Benefits of ISO certification:

1) Gain customer satisfaction.

2) Customers continue to deal with the organization.

3) Provide high quality goods, or provide high quality services.

4) Increase sales of goods or services.

5) Increase the profits of the Organization.

6) Create a good image of the establishment in the business environment.

7) Contribute to strengthening the competitiveness of an enterprise.

8) Helps the establishment to increase its share of the market.

9) The continuous improvement and improvement of the quality of the services provided by the Organization, or the continuous improvement and improvement of the quality of services provided by the Organization.

10) Raise the morale of the employees of the organization.

11) Encourage cooperation and coordination among the departments of the Organization.

12) Reduce the percentage of damaged and defective goods or services.

13) Interview the needs of the local market.

14) Interview with the needs of the global market **(Abu-Nasr/ 2008, pp. 99-100).**