

SYSTEMIC TREATMENT OF QUALITY MANAGEMENT (QUALITY MANAGEMENT SYSTEM)

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Total Quality Management (TQM) is a set of management practices throughout the organization, geared to ensure the organization consistently meets or exceeds customer requirements.

TQM is an approach that organizations use to improve their internal processes and increase customer satisfaction.

Keywords: *quality, management, public organization, companies, construction company, total quality management, quality improvements, quality policy, modern methods, statistical tools.*

MANAGEMENTUL CALITĂȚII TOTALE

Managementul calității totale (TQM) formează un set de practici manageriale în cadrul organizației, orientate spre îndeplinirea în mod constant a cerințelor clientului sau chiar spre depășirea acestora.

TQM este o abordare pe care organizațiile o folosesc pentru a îmbunătăți procesele interne și a asigura satisfacția clienților.

Cuvinte-cheie: *calitate, management, organizații publice, companii, companii constructive, managementul calității totale, ameliorare calitativă, politică de calitate, metode moderne, instrumente statistice.*

Total Quality Management (TQM): TQM is a set of management practices throughout the organization, geared to ensure the organization consistently meets or exceeds customer requirements. TQM places strong focus on process measurement and controls as means of continuous improvement.

Before reading more about TQM, it might be helpful to quickly review the major forms of quality management in an organization. These are briefly described at the top of the Quality Management topic.

Statistical Tools: Quality management must be based on facts. If we strive to improve and solve quality problems, we must rely on information and analyze it using reliable statistical tools.

Statistical tools that we can use are varied, and statistical analysis can be performed in several forms simultaneously. The process and the various factors in the process should be described in the form of a quality chain of customers and suppliers, to define the input and output of each factor and set the parameters we want to measure. You can test the endurance of the chosen parameters and test, for example, whether the different suppliers meet them. Such analysis will give a measure of the level of quality, and directions for examination for improvement. Other statistical analysis can be done by a histogram showing the distribution of the factors or distribution of defects. Using a detailed analysis, one can identify the most significant factors or deficiencies and treat them as part of quality circles or by any other corrective action. Another statistical analysis is examining the correlation between two data. Using scatter diagram, showing the dependence between a certain statistic data and another, it can be known whether there is a correlation between the data. If one of the data is an input of some other date, and there is a high correlation between them, one can strongly control the output data by the input data. If the two data are outputs of various factors then it is necessary to check the common factor influencing them so strongly and resulting in a high correlation between them.

Another method for statistical analysis, which is rather complex and not suitable, for many reasons, for the field of construction, is the Taguchi method.

7 Important Principles of Total Quality Management: Total Quality Management (TQM) is an approach that organizations use to improve their internal processes and increase customer satisfaction. When it is properly implemented, this style of management can lead to decreased costs related to corrective or preventative maintenance, better overall performance, and an increased number of happy and loyal customers.

However, TQM is not something that happens overnight. While there are a number of software solutions that will help organizations quickly start to implement a quality management system, there are some underlying philosophies that the company must integrate throughout every department of the company and at every level of management. Whatever other resources you use, you should adopt these seven important principles of Total Quality Management as a foundation for all your activities.

1. Quality can and must be managed: Many companies have wallowed in a repetitive cycle of chaos and customer complaints. They believe that their operations are simply too large to effectively manage the level of quality. The first step in the TQM process, then, is to realize there is a problem and that it can be controlled.

2. Processes, not people, are the problem: If your process is causing problems, it won't matter how many times you hire new employees or how many training sessions you put them through. Correct the process and then train your people on these new procedures.

3. Don't treat symptoms, look for the cure: If you just patch over the underlying problems in the process, you will never be able to fully reach your potential. If, for example, your shipping department is falling behind, you may find that it is because of holdups in manufacturing. Go for the source to correct the problem.

4. Every employee is responsible for quality: Everyone in the company, from the workers on the line to the upper management, must realize that they have an important part to play in ensuring high levels of quality in their products and services. Everyone has a customer to delight, and they must all step up and take responsibility for them.

5. Quality must be measurable: A quality management system is only effective when you can quantify the results. You need to see how the process is implemented and if it is having the desired effect. This will help you set your goals for the future and ensure that every department is working toward the same result.

6. Quality improvements must be continuous: Total Quality Management is not something that can be done once and then forgotten. It's not a management "phase" that will end after a problem has been corrected. Real improvements must occur frequently and continually in order to increase customer satisfaction and loyalty.

7. Quality is a long-term investment: Quality management is not a quick fix. You can purchase QMS software that will help you get things started, but you should understand that real results won't occur immediately. TQM is a long-term investment, and it is designed to help you find long-term success.

In Table 1, there is a description of the different roles of each factor, and its commitments to achieving continuous improvement of the process, as described by Juran (Juran, 1993).

Table 1

Continuous Improvement Practices

Responsibility for Quality		
As a Customer	As Process Executive	As Supplier
Define my requirements from the supplier clearly and in a documented manner	Measure the means of quality and measure others	Understand the customer's requirements, document and track the products I provide
Return defective products	Constantly improve my processes, reduce defects and work duration	Reduce defects and variance in my products
Provide feedback for the supplier on the quality of his products	Document and present my method of work, the defects and my plans to improve quality	Measure the quality of the products from the point of view of the customer

Deming describes the process of continuous improvement through a cycle called the "Deming Cycle" (Deming, 1986) in which four recurring tasks are described and which are required for continuous improvement. (Fig.1).

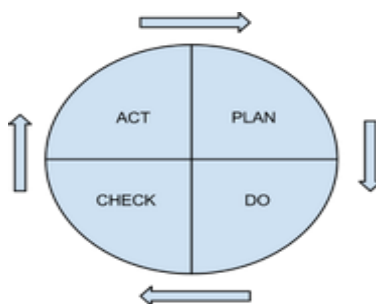


Fig.1. Deming's Continuous Improvement Cycle.

The Model of the TQM Method: TQM method is described in different ways. One possible model of the theory is the model of Kanji & Asher, 1993. They argue that there are four guiding principles, and 8 core concepts which describe total quality management. The guiding principles and core concepts are described in Table 2. The model is depicted in Figure 2.

Table 2

Principles and Core Concepts of TQM

Principles	Core Concepts
Please the Customer	Customer satisfaction Internal Customers are Real
Management Through Facts	Every Job is a Process Measurement
Management Based on People	Teamwork People Make Quality
Continuous Improvement	Continuous Cycle Prevention

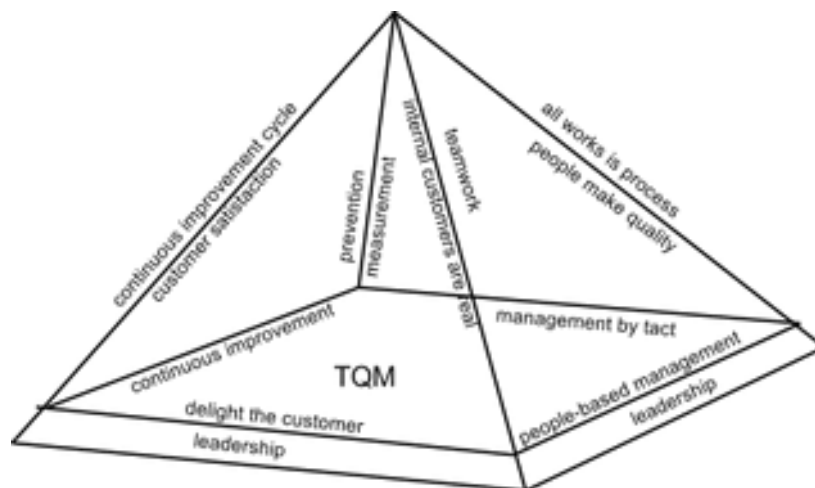


Fig.2. Pyramid Model of TQM.

Tools for Implementing Total Quality Management: The means for establishing the method can be described using the model in Figure 3 (Oakland, 1990).

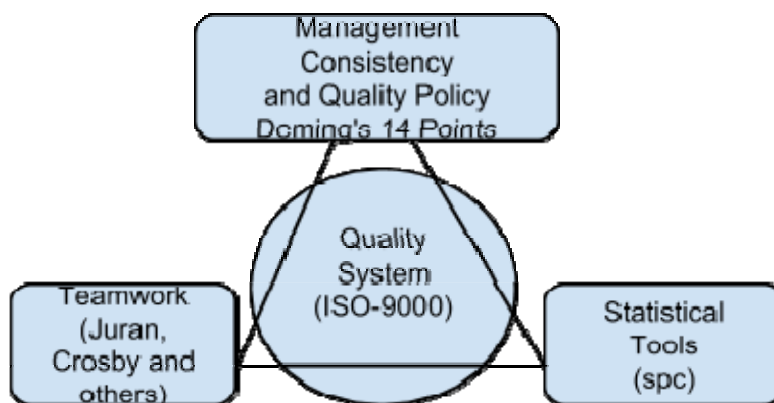


Fig.3. The Implementation TQM Model.

Management Constancy and Quality Policy: Management constancy and the quality policy of an organization can be defined in many forms. Guidelines can be found in different places. The most common source is Edward Deming. Here are the 14 points of Deming (Deming, 1986):

1) Create constancy for continuous improvement of product and service, in order to create a competitive advantage.

2) Adopt the new philosophy. We cannot continue to live with acceptable levels of delays, mistakes and defective manner of execution.

3) Cease dependence on mass inspection. Institute statistical tools, instead, that would prove that quality is structured.

4) End the practice of working with suppliers on price tag alone.

5) Constantly and forever improve the system of production and service. That will increase the quality and productivity, as well as reduce costs.

6) Institute modern methods of training on the job.

7) Shape a leadership that aims to help people perform their work better. The responsibility of managers and supervisors must change from numbers and quotas to quality.

8) Drive fear out of the organization. Allow everyone to work efficiently for the organization.

9) Break down barriers between departments and areas. Employees of various departments must work together to solve problems and improve quality.

10) Eliminate slogans and exhortations. Eliminate demand for "zero defects" and for a higher level of efficiency without giving means and methods to do so. Quality problems are anchored in the method, not in the employee.

11) Eliminate goals and numerical quotas, including management by objectives.

12) Remove barriers robbing workers of their right to pride in their work. The intention is to eliminate the rating system of workers according to their performance and to cancel management by objectives.

13) Institute a vigorous program of education and training and encourage everyone to improve.

14) Make sure that all people in the workplace work to realize the change.

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