

Total Quality Management (TQM): As an Element in Enhancing Competitive Gain of Companies

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Abstract: *Organizations worldwide have been exploring ways to improve business practices to gain competitive edge. In this current scenario of very stern competition, companies are forced to invest great efforts to ensure high satisfaction of their customers and thus ensure their loyalty. In the described circumstances, the concept of Total Quality Management (TQM) became a survival factor of companies in the market. Basis gaining competitive advantage in global markets is reflected in the adoption and development of the concept of TQM as a management philosophy that includes a set of tools and processes, the output of which bring consumer satisfaction and continuous improvement.*

Keywords: Total quality management, ISO standards, TQM tools.

1. Introduction

Sharp international competition, changing values in society and increased demands of customers, are forcing us today on a comprehensive quality offensive in all areas. In such circumstances, it is unacceptable for quality to be focused on production of clean products. At the present time of challenges it is necessary for quality to be understood as a comprehensive task, which includes products, processes and services in all areas, and it is requested from the management to re-define the quality of this request, not only in the production process, but also in services procurement, personnel services, financial services, construction, and sales.

In the world quality is considered as the most important phenomenon of our age with its emphasis on permanent trend. Increase of the quality importance came as a complete response of civilization to the consequences of the industrial revolution, whose main parameters are productivity and profit, the basic parameters are volume and quantity, and the disastrous consequences are destruction of natural resources, environmental pollution and the increasing threat to public health and safety of people.

The modern concept of quality was, for the first time, implemented in Japan after the Second World War. It is believed that the quality is a key of the Japanese business success. Since 1984, quality has become a national priority in America and today it is a key that can ensure that America retain its primacy in the world. Quality is now designated as a global phenomenon which, in its full meaning, won Europe after Japan and America.

1.1 Total Quality Management - The Basis of the Concept

The basis of competitive advantage in global markets is reflected in the adoption and development of the concept of

TQM. Total quality management combines the concept of product quality, process control, security and quality improvement in all areas of activity. Basically, the concept of TQM is "win-win attitude" that results in processes that produce products without error, with competitive prices and high value. It is the "race for quality", which aims to unify the needs of all users with the improvement of internal processes that increase the profit of organization, on the one hand, and create conditions for the production of new products and services and greater market learning, on the other side.

These factors are required for the success of TQM:

- Effective training;
- Effective implementation;
- Full commitment of top management.

Training could be presented as a football team training, before the match, and the implementation as a real game. In the theory TQM appears as a simple system, but the implementation can be very complex because the whole company can be taken into account for the medium of long term. No recipes for a patent, because each TQM implementation is realized in accordance with the peculiarities of each company separately.

Attempts to determine the universal definition of TQM concepts often were sketchy with the language and content and unclear to the end. Internationally accepted standard of DIN ISO 8402 (March 1992), contributed to the clarification of the term and according to him, Total Quality Management is defined as: "... methods of keeping the organization, which is based on the cooperation of all of its members, which puts quality in the forefront and which seeks long-term business success with customer satisfaction as a gain for the members of the organization and society" (Stojiljkovic et al., 1996).

Target TQM criteria arising from the above definitions are extensive comprehensive and as such represent a distinctive TQM concept. They include the satisfaction of all groups that have the right on it (owner, customer, supplier, associate and society) as well as aspects of quality time and costs. Total quality management system significantly diverges from the quality management system that deals exclusively with just one part of the criteria - the quality factor.

W. Edwards Deming, founder of PDCA (Plan - Do - Check - Art) model of management, known in the literature as Deming's cycle is considered, in the literature, as official founder of TQM concept. According to him the concept of TQM implementation is done with over 14 key points. Further development of Deming's settings leads to the six basic stages required for successful implementation of TQM programs. Those phases are following:

- 1) Permanent improvement;
- 2) Active participation of employees;
- 3) Benchmarking;
- 4) Just-in-time (JIT);
- 5) Taguchi concepts;
- 6) Knowledge of TQM tools.

The essence of TQM is to act preventively, so that no errors occur (rule of "zero defects" is an ideal which is difficult). If errors occur they should be disclosed on the site of emergence and immediately removed. Quality costs are the costs that are aimed to prevention, control and eventual elimination of defects. If the error occurs, it is very important to detect and remove them before the product is placed on the market. Quality is what consumers recognize, not producers. If errors are detected by consumers, the cost of improving negative image is very high, and sometimes it is impossible to fix this image completely. Because of this, it is necessary to implement the integral quality control. The emphasis is not only on the control of finished products and services, but on the whole process (all of this is followed by the appropriate documentation).

1.2 International Quality Standards – ISO

An important condition for appearance on the international market is to obtain the certificate of quality system. Application of ISO 9000, ISO 14000, getting the CE mark etc. are an integral part of a serious business. For those who do not understand the essence of the philosophy of quality standards represent the outer limit which must be fulfilled. Some countries do not adhere prescribed procedures enough, and the process of "make-up" dossier is done when evaluator of the quality system should come in the company. It is not understand that the standards are not coercion, but help in the process of doing business. Possession of the certificate of ISO 9000 does not guarantee that a product has a high quality. The certificate indicates that in the company there is effective and

documented system security and quality control. ISO standard prescribe only demands that quality systems should meet - in other words they give only a general framework. Designing within this framework is the responsibility of the companies. Proper implementation of ISO 9000 provides better process control through a defined process of work, precise competence of individuals, teams or departments. The effects are visible through improved quality (with less variation), greater productivity, reduction of errors, and thus reduced cost per unit product, a greater degree of involvement and satisfaction of employees, greater customer satisfaction, better relationships with suppliers and so on.

1.3 Tools of TQM Concept

One of the preconditions for successful implementation of TQM concept is reflected in the training of all employees in the organization to use the tools through which TQM is implemented. The tools of TQM are used for accurate measurement of results and their comparison with the planned results. They are defined in the latest version of ISO 9000:2000. Insufficient use of tools is something that is present in the practice of our companies and it is their major drawback, because their application makes it easy to carry out operational tasks of quality management and obtain valuable information for making many decisions. The purpose of TQM tools can be divided into three major groups:

1. Tools for generating (creating) ideas:

- a. Form for collecting data - are used to facilitate specific research and prevent from technical errors in data collection.
- b. Diagram of distribution - allows determination of the trend through regression analysis and graphical representation.
- c. Cause and affect diagram (fishbone) - shows the quality problem and its potential causes ranked by the importance (first, second, third row, etc.). Further, analysis ranks the cause and proposes corrective measures for the removal of critical causes. Analysis of field effect gives information about the possibility of application specific decisions. Not only that the factors "for" and "against" decisions are reviewed, but also the correction capabilities of these relation (group of factors) are reviewed.

2. Tools for organizing data which include:

- a. Pareto Diagrams - represents a kind of histogram and display characteristics of the decreasing frequency, which facilitate determination of the potential causes of errors.
- b. Process Diagrams - graphically displays the progress of the process or system in a very simple but effective way to help with understanding the flow.

3. Tools for problem identification:

- a. Histograms - show graphically the layout of the frequency of observed features
- b. Control Cards - follow the variations of the process over the period of time. Through them it is determined whether the process is statistically controlled or some samples occur and cause unanticipated fluctuation of the process.

One of the methods, that is not included in this division, but deserves to be mentioned because of its signification, is Quality Function Deployment method. In practice the method is also known as "house of quality". Thanks to this method and its methodology customer requirement are translated into parameters (technical characteristic of products), and those in the processes and systems. All these data are compared with competitors in order to determine priorities for correction.

None of these tools have strictly defined form of templates or applications. Also, noted clustering of the tools ranked by the operational tasks of quality management is not accurate. One tool can be used to solve multiple tasks. Beside these, there are other tools. The order of their use depends on the specific situation. However, the tools are only techniques used by employees who understand the importance of the concept of total quality management. This brings us back to the beginning of this work - the essence is in the people, in introducing the philosophy of quality in the entire company.

2. Conclusion

Application of TQM concept in practice, encounter various barriers. Employees generally perceive the quality as something imposed to them, as another requirement in a series that "must" be fulfilled. It is often identified as getting the certificate on the application of ISO standards. Constitutive part of this thinking is that the quality is the care of the sector for quality assurance, and that employees in other sectors do not have in common with it.

For successful business it is necessary that the philosophy of quality is understood and accepted by all the employees in company, especially top management. If top management does not support the quality system, employees in the sector for quality and middle level management cannot achieve signification results in its introduction and implementation. In a situation where top management accept and medium level of management does not accept the quality system, the situation is somewhat simpler, and results are achieved by giving specific tasks to the mid-level management. In the case when management accepts the philosophy of quality, but most employees do not accept it, the results are also achieved by giving specific tasks that "must" be realized. All described situations give "some" results, but not the maximum.

Successful companies, particularly in Japan, transferred philosophy of quality to all employees. In such circumstances there are received numerous ideas for improving the process. Employees are motivated to work quality. They are satisfied, and this leads to very good results in company. Many problems that have been solved are complex and require formation of multidisciplinary work teams. Regardless to the theoretical justification of teamwork, in practice, problems arise because many employees are not willing to cooperate. For the cultivation of team spirit, it is necessary to establish a system of rewards by which the personal interests would be in correlation with the team goals and the team goals with the interests of the company

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