THE THEORETICAL BASIS OF TOTAL QUALITY MANAGEMENT PRODUCTS AND SERVICES

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Abstract. In the article considered the concept of quality as an important criterion for assessing the success of the organization. Presented the arguments concerning the necessity quality management in the enterprise. Among the large number of models of quality management has been allocated a total quality management (TQM) and quality control system. Particular investigated the general provisions (purpose, objectives and tactics, etc.), the evolution of the quality management system. Compared to traditional and total quality management system was found basic elements of TQM. Here is a list of the most common techniques and tools used in the implementation of the concept of TQM in the organization. Based on the principles, methods and tools as well as business process lifecycle created a new conceptual model of total quality management.

Keywords: quality management, enterprise, total quality management, quality control system.

Introduction

The quality of products and services is one of the important criteria of successful activity of any organization. Qualifications required for quality consumer products have become significantly more stringent.

In modern competitive environment for markets of products, companies in developed countries increasingly apply effective tool to ensure success - the quality system. They correspond international requirements of international and European standards of quality and certification of products and services. The effectiveness of this tool is increasing due to the adoption of new legislation in the world. It establishes the stringent requirements for product safety, protect the rights and interests of consumers and others.

It’s important for Ukrainian enterprises to produce qualitative products for consumers to support domestic commodity producer that gradually reduce the share of imported goods. Thus, consumers will ensure the growth of national economy. High quality is the guarantee that Ukraine will become a more competitive in international commodity markets. So, this topic is important for Ukraine on the path to its integration into the European markets.

Based on this we can formulate the main task which consists in a comprehensive study of the theoretical foundations of total quality management products and services.

Results

Quality as a category of management – an integral concept that characterizes effectiveness of all aspects of life of the enterprise, from the process of strategy development, marketing and further including all stages of the life cycle of products and services. That is why in recent years became widespread quality management system which cover not only specific production processes in the enterprise. Quality systems help organizations to provide satisfaction of consumers products, convince the staff of the expediency of implementation. Besides, quality systems provide the continuous improvement for increase in the probability meeting the needs of consumers (Varzhapetyan, 2008).

Modern quality management – activities of leadership of organization aimed to creation of such conditions of production that are necessary and adequate to produce quality products. In the process of quality management developing Policy of Quality, defines the strategic and tactical goals, is distributed personal responsibility performers.

Quality management in a simplified sense of the term refers to the operational nature of the tools that are required to meet the quality requirements. At the same time, quality is seen as a process aimed at achieving producer confidence in carrying out their requirements, both within the organization and beyond.
In recent years designed and made quite a lot of theoretical and practical developments in quality. Among them there are two main provisions: everything is be done in the interest of customer needs which you know, cheaper to do well from the first time. Based on these provisions is currently the most an effective model of quality is a model of a comprehensive (total) quality management system that will ensure the realization of the previous two statements (Belinskij, Dovgan, 2005).

Total quality management – is an approach to the management of an organization, which is aimed at quality and based on the participation of all its members (staff of all departments at all levels of the organizational structure). Adopted abbreviation of the term total quality management - TQM (Total Quality Management).

This approach today considered to be the revolution in quality management. The modern concept of TQM established in the early 90s under the influence of W. Shewhart, W. Deming, J. Juran, A. Feigenbaum, K. Ishikawa, and the Japanese experience of quality management.

The most common, this concept has gained in industrialized North America, Europe and also Japan, South Korea and Taiwan. Visually the evolution of total quality management presented in Figure 1.

<table>
<thead>
<tr>
<th>Deming Prize Foundation in quality. Formation principles of TQM</th>
<th>Implementation of ISO 9000</th>
<th>Establishment of national and international awards in sphere of quality</th>
<th>Improvement of general management of the enterprise based on the principles TQM</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-generation model (1950 – 70's)</td>
<td>TQM models of the second generation (1980 – 90s)</td>
<td>TQM models of third generation (2000)</td>
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**Fig.1. Stages of development of the concept of TQM**

The objective of TQM: achievement of long-term success by maximizing the satisfaction of customers, employees and society.

The task of TQM: permanent improvement of quality through regular analysis of the results and adjusting activity the complete absence of defects and non-production costs, performance intended just in time.

Tactics of TQM: warning the causes of defects, the involvement of all staff in improvement of quality activities, active strategic management, continuous quality improvement of products and processes, the use of scientific approaches to solving problems, regular self-assessment.

Methodological tools of TQM: tools for collecting data, methods of data presentation, methods of statistical data processing, general management theory, theory of motivation and psychology of interpersonal relations, economic analysis, system analysis of production, management through planning (Evans, 2007).

Based on the concept of TQM can be built up quality system. According to the research results can be seen as far progressive is total quality management compared with the traditional management and changes in approaches to enterprise business processes and in particular quality (Table 1).

For achievement of purpose (maximum satisfaction of inquiries of customers, employees and society) is planned special activity and formed a group of performers their work is documented and analyzed. According to the analysis the quality of research planned to put into Ukrainian enterprises these elements TQM, the most important of which are:

- involvement of the top management, especially first-person of organization in planning and problem solving in quality;
- focusing the entire activity of organization to the needs and wishes of both external and internal customers;
- ensure the possibility of real participation everyone in the process achieving the main objective – meet the needs of the consumer;
- focusing on processes which regarded as the optimum system achieving the main objective – maximizing the product value for the consumer and minimize its costs both for the consumer and for the producer;
- permanent continuous improvement of product quality;
- basing of all decisions of the organization only in facts and not on intuition or experience of its employees (Veksler, 2008).
### Differences between basic principles of traditional quality management system and system TQM (developments)

<table>
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<tr>
<th>Traditional principles of management</th>
<th>Principles of management TQM</th>
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<td>Addressing the needs of the customer</td>
<td>Addressing the needs of the consumer, society and the organization's staff</td>
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<td>Planning ensuring and control of improvement of product quality in cyclic mode</td>
<td>Planning, ensuring control and improvement of quality of all processes and systems in continuous mode</td>
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<td>Development of mainly corrective impacts</td>
<td>Development of mainly preventive impacts</td>
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<tr>
<td>Training quality management staff only department of quality assurance</td>
<td>Training quality management of all staff</td>
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<td>Putting functions of quality assurance on control quality department</td>
<td>Putting functions of the quality management of all employees, governments of all levels</td>
</tr>
<tr>
<td>Decision in quality only emerging issues and tasks of todays</td>
<td>Regular detection and resolving in quality of chronic problems, long-term planning of quality and measures to achieve it</td>
</tr>
<tr>
<td>Implementation of each worker autonomous task</td>
<td>Coordination and cooperation activities of all employees in sphere of quality</td>
</tr>
<tr>
<td>Activity directed on methods and tools focused on discussion</td>
<td>Activity directed on results, focused on effective action</td>
</tr>
<tr>
<td>Decisions are made based on the views</td>
<td>Decisions are reached based on facts</td>
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The concept of TQM realized in the organization using appropriate methods and tools. Nowadays in the world accumulated and continues to steadily expand this arsenal of methods and tools that enables any company to use them for introducing the concept of TQM taking into account specific conditions of development of the company. Consider the most famous and most common methods and tools:

1. Cycle of Deming "plan – design – check – work".
2. Seven simple statistical methods. These include: control sheet, Pareto chart, cause-effect diagram, histogram, scatter diagram, location data and control card.
3. The concept of "just in time". It was developed in Japan in the shipbuilding industry in the 60-ies and provides the production and delivery of finished goods at the time their implementation assemblies - at the time of the finished product, some of the details - at the time of assemblies, and materials - at the time of production details.
4. The deployment of quality function – economic and mathematical methods, which in quality management system decide the following tasks: analysis of customers' expectations about the quality and prices of products; rationing of requirements for product quality, the definition of technical requirements in safety products and more.
5. Analysis of the types and consequences of potential failures. Contains the description of procedures for the analysis of the design process of product, it's development and manufacturing technology; it includes the following stages: preparation for analysis, the analysis of potential failures (defects), risk assessment, identification of activities and checking results.
6. The methods of Taguchi quality engineering design. These methods are based on the use of "good design products".
7. The program "zero defects". The program is proposed by F. Crosby and based on the following the concept positions as transference attention from detection and elimination at preventing the appearance of defects, directing efforts on reducing the level of defects in manufacturing and others.
8. Using groups (circles) of quality. As part of the quality system is used groups of participation in quality management and quality circles. First quality circles appeared in Japan in 1962 on the initiative of K. Ishikawa. They provide a wide involvement of production departments workers and their immediate supervisor to the work on quality control and improvement of the production processes for its improvement.
9. Formation of corporate culture. Involves the formation of positive attitude organizations staff to the problem of providing high quality products their responsibility for the results of the organization.
10. Reengineering processes - a radical restructuring of the basic processes in response to the needs of internal and external customers to ensure rapid increase in the basic organizational performance.
11. Maintaining the product life cycle (CALS). The appearance of this concept in the middle of 1980s caused by attempts to increase the competitiveness of producers through the use of modern information technology.

12. Benchmarking – a search for best practice of execution of relevant work that can be used for own business.

13. Model of business excellence. This systematic totality of criteria based on the principles of TQM and designed to assess activity of the organization in quality (Shapoval, 2006).

Experts on total quality management are divergent in thoughts what exactly is the fundamental principles of TQM. A number of these principles varies from 5 to 17. We select 8 principles of total quality management, which often used as the fundamental orientation of organization on consumer, the role of leadership, employee engagement, continuous improvement, process approach, making decisions based on facts, participation in the improvement of product organizations of all staff and suppliers, beneficial relationship with suppliers.

Thus, we can make provisional, simplified model of total quality management, which includes the satisfaction of internal and external customers, suppliers, staff and owners at the expense of elements TQM (Figure 2).

If consider model of TQM, based on all the main elements of total quality management: principles, methods, tools, functions and business processes, we obtain the global conceptual model. This model is most commonly opens essence of the concept of total quality management, which presents all the principles of total control, including: customer orientation, continuous improvement, system approach, total quality control, etc.; methods and tools of total quality management: Deming cycle, seven statistical methods, the concept "just in time" deployment of quality function, etc. Principles, methods and means affect on the course of the business processes of the product life cycle managed by the basic functions of total quality management: planning, organization of quality assurance, quality of work motivation, quality control. They are interdependent with each other. Graphically, this model is presented in Figure 3.

Consequently, quality is the key to effective activity of any enterprise that produces goods or provides services. An important factor that affects competitiveness. The highest indicator of high quality in the organization and its high competitiveness is the functioning of the quality system, which determined the choice of the topic and its relevance. In particular, the most perfect among such quality systems is a system of total quality management.
Conclusion

In the article were investigated theoretical foundations of total quality management, history of total quality management tools and the methods used in TQM and basic principles of the system.

Today, many experts think that implementation of the system quality-based standards of ISO 9000 enables organization to fix only a minimal level of quality management and in the initial stage open the way to foreign markets. For the success and development need to implement a total management system, in which the quality system according to these standards – a necessary part.

The main findings this research are the following provisions:
• quality is one of the most effective instruments to secure success and an important criterion for entry into international markets;
• it is important to develop a theoretical and practical base for the development and implementation of TQM;
• for a total quality management system future;
• necessary to introduce into Ukrainian enterprises total quality management to obtain high results of the activity;
• important to use modern approaches and methods concerning quality management both within TQM, and outside it.

Thus, the working system of total quality management system can be a real tool for continuous improvement of activity of the enterprise and a source of increasing economic benefits. And also provide domestic enterprises exit to international, especially European markets.

References


