

IMPLEMENTATION OF MODERN METHODS OF QUALITY MANAGEMENT AT ENTERPRISES

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Abstract. In the paper have been discussed the quality management system, outlines the fundamentals of quality management and requirements in accordance with the standards, stages of the quality control process, groups of quality indicators according to the properties present in them, identifies the principles of organizing quality control, factors affecting quality.

Index terms - Quality management, product quality level, efficiency, quality system, degree, quality improvement.

Introduction

The relevance of the chosen topic is due to the fact that in a market economy, an increase in the competitiveness of an enterprise cannot be carried out without constant improvement of its production activities aimed at improving the quality of products. One of the main criteria, along with the price, that determines the demand for products, is its quality. This is the main factor in ensuring the competitiveness of both products and the enterprise as a whole. The sustainable economic growth of the enterprise is facilitated by the achievement of goals in the field of improving product quality. Quality assurance is a complex issue that must be addressed across the entire enterprise.[1]

Literature review

Study of quality management systems, indicators that influence their development, principles of assessment and control of their activities.

Research result. The following scientists paid attention to product quality issues: A. A. Golikov, U. E. Deming, D. Coton, G. G. Azgaldov, S. D. Ilyenkova, S. T. Lapidus, M. Kh. Mexon, M. Thorsten, D. H. Harington. They were of the opinion that product quality is a set of properties, the influence of which makes it possible to distinguish one product from another, and the origin of quality occurs in the process of its release.[12]

Basic requirements of the basel committee on regulating capital adequacy and liquidity of commercial banks were studied by Berdiyarov B. [2], problems of small business investigated by Asanbekova M. [4], Maksudunov, A. [3,5,6], issue of empirical research on causal relationship between export and foreign investments in the economy of Uzbekistan based on granger test were made by Mustafakulov, S. I.[8], Burkhanov, A. [7],

econometric model of production capacity usage of textile enterprises in Uzbekistan were researched by Tursunov B.O. [9,10], Modernization and intensification of agriculture in the Republic of Uzbekistan were investigated by Yuldashev, N. K., Nabokov, V. I., Nekrasov, K. V. [11] and et.al.

One of the main issues of our time, which enterprises face, is product quality control and the degree of its improvement. To successfully solve this problem, it is necessary to create an optimal quality management system, which allows to ensure the production of a competitive and high-quality product, to establish quality control at all stages of the production process.

The main indicator of the company's activity is the quality of products. Its increase and improvement determines the position of the enterprise in the current market conditions, the development of scientific and technological progress, the increase in production efficiency, which is the main feature of the activities of the world's leading companies.

Effective control affects the quality of the goods, and also makes it possible to avoid all kinds of failures in work, identify and eliminate them with the least loss for the enterprise.

To carry out a quality control system, it is necessary to carry out the following stages [5]:

1. Define the control concept: it can be a comprehensive Controlling control system or private audits;
2. Setting the control task, which may consist in a decision on the need, accuracy, regularity, efficiency of the quality management process;
3. Study of objects and subjects of quality control, determination of methods, means and scope of the quality control system and setting the timing of the inspection;

4. Determination of planned and actual indicators of the level of product quality;

5. Search for deviations of the actual data with the planned ones and identifying the reasons for the deviation;

6. Analysis of deviations and causes, distribution of powers and determination of actions aimed at eliminating deficiencies.[6]

Quality assurance presupposes effective management of all phases of the business, from the conception of the idea to the manufacture of the product.

For the effectiveness of the quality control system, it is necessary to improve technical control services, which creates conditions for the development of real quality control plans based on the research and experience of the enterprise, prevention of rejects, imbalances in the production process, deviations of actual indicators from planned ones.

Analysis and results

The following features can be distinguished that make it possible to facilitate the technical control procedure [4]:

- incoming control, which is carried out upon receipt of raw materials and materials for the production of products;
- current control required to control the conformity of product quality to the requirements of regulatory documents;
- operational control of products, carried out during the execution process or after completion of one technological operation;
- acceptance control, as a result of which it is possible to draw a conclusion about the suitability of the product;
- inspection control carried out by specially authorized persons.

The experience of leading competitive firms has established that high-quality products that meet the requirements and preferences of consumers can only be manufactured taking into account a detailed study and analysis of the market. The most effective method used by the most successful companies is a quality management system based on international standards ISO 9000 series. This standard plays an important role for companies whose goal is to enter the international market.

ISO 9000 series standards were introduced by the technical committee based on the analysis of the accumulated experience of leading enterprises in the field of creation, implementation and operation of product quality systems. They represent recommendations for quality management and general requirements for ensuring high quality, the development of elements of quality systems [8].

There are 10 groups of product quality indicators according to the properties present in them:

1. Indicators of purpose - determination of useful properties of the product, its main tasks, suitability and purpose of its use.
2. Indicators of reliability - determination of the service life of the product, the preservation of all

parameters in time, long-term performance, the ability to perform the corresponding functions, the ability to undergo repair.

3. Ergonomic indicators characterize the consistency of the product design with the characteristics of the human body for convenient use of the product.

4. Aesthetic indicators - indicators characterizing the integrity of products, information expressiveness, rationality of form.

5. Technological indicators determine the degree of product adaptability to use and repair with the least loss for the enterprise. This group includes indicators of the cost of production, labor intensity, capital intensity and material consumption of products;

6. Standardization and unification reflects the saturation of products with standards, the level of unification with other products;

7. Patent and legal indicators - updating technical solutions, protecting products with patents and, as a result, unhindered sale in the country and abroad;

8. Environmental - indicators characterizing the degree of harmful effects on the environment during the manufacture, use and disposal of the product;

9. Safety indicators are such features of a product that, when using it, ensure that there is no unacceptable risk associated with damage.

10. Economic indicators include the costs of the enterprise associated with the development, manufacture and sale of products, which are included in the cost price and, as a consequence, in the price of the finished product.

Successful management of the organization's activities is carried out through the allocation and description of the processes of structural and functional divisions of industrial enterprises, this is the key idea of the process approach. With its use, enterprises can form and maintain conditions that affect the improvement of the quality of products that meet the requirements of consumers. The use of the process approach gives managers the opportunity to identify and form the management of the main processes in the development of all areas of the production enterprise. [9] Today, the process approach used in many enterprises is considered as a process of achieving the set goals of the enterprise using management functions. Each of which consists of several related actions and is a separate process. It is possible to assess the influence of the process approach on the result of an enterprise's activity using two main components: assessing the impact of the quality management system and assessing the impact of the processes of the same system on the company's performance [7]. Of particular importance for assessing the results of an enterprise using the process approach is the presence of criteria distributed according to the degree of importance for the process. The importance of each criterion is assessed by the consumer of the results of the process. To determine

the results of the processes of the QMS, the methodology "Analysis of criteria for evaluating the processes of the quality management system" is used. The advantage of this technique is the speed and ease of calculation. It is calculated to calculate a generalized indicator of all process criteria for a certain period of time using the following formula:

$$Cr_p = Res / A_{plan}$$

here: Res – Actual results of activities;

Res – Planned results of activities.

The performance indicator of the QMS is one of the important stages in the functioning of the QMS, in which the organization is able to manage interrelated processes as a system. The indicator of the results of the QMS activity is based on the initial data on the progress of the processes and the conformity of the product quality, the state of corrective and preventive measures, as well as the measures initiated based on the results of previous studies by the management. Table 1 presents the results of the quality management system.

The application of the proposed method will allow the enterprise to conduct a timely assessment of the QMS and ensure that consumers fully fulfill all their requirements and expectations regarding the quality of products, technology of production processes and methods of control over the release of finished products [5]. To improve the quality management system of any enterprise, it is necessary to modernize the organizational structure of the enterprise itself. In this case, it would be reasonable to create a full-fledged product quality department, which will independently exercise control over the compliance of product quality with the established requirements of the QMS and guarantee this compliance of product quality with its consumer. The main functions of the quality management department will be the following: - maintaining the quality of the company's products, as well as improving it, methods of improving product quality and meeting the requirements of the QMS; - assessing the level of product quality at the enterprise and in its branches using original or borrowed methods. Based on these studies, the company's management makes decisions on improving its activities, as well as on new forms of cooperation with suppliers, based on the principles of competition. - internal and external audits (checks, examinations, audits, inspections) of the quality management system, as well as internal and external quality control in all departments of the enterprise. - corrective and preventive measures; - training and education of personnel. The tasks of the quality management department are to prevent and eliminate the release of products at an enterprise that does not meet the requirements of the QMS standards [3]. Quality problems in a market economy are an important aspect of improving living standards, both economic, social and environmental security. The most important component of the entire quality system is product quality.

TQM (Total Quality Management) is the adaptation of classical operational management to the variability of the external environment, when production standards as a management method become ineffective. Only negligence and malicious intent are associated with deliberate failure to achieve the required level of quality. The rest is not fault, but a misfortune brought on by poor management. A culture of quality is the result of sustained efforts, which are rewarded with a strong competitive position in the market.

TQM (Total Quality Management) is a quality-oriented approach to the management of an organization, based on the participation of all its members and aimed at achieving long-term success by satisfying customer needs and benefits for all members of the organization and society. The foundations of this systemic theory of quality management were laid in the middle of the 20th century. Edwards Deming, who worked in Japan for a long time. They include:

- knowledge about systems, systems approach and optimization;
- fundamentals of statistical theory and knowledge of variability;
- foundations of the theory of knowledge;
- fundamentals of psychology.

Roughly speaking, TQM is the adaptation of classical operational management to the variability of the external environment, when the norms of production as a management method become ineffective. The concept is based on quality - the quality of materials, processes, products, delivery, service. There can be many reasons for poor performance of work: poor materials, technology, organization of supplies, poor lighting, power outages, lack of training and lack of training of personnel, and much, much more. Only negligence and malicious intent are associated with deliberate failure to achieve the required level of quality. The rest is not fault, but a misfortune brought on by poor management.

In the 1980s. E. Deming developed and implemented a management program, fourteen basic provisions of which echo the principles of management by A. Fayol:

1. Consistency of Purpose - Set yourself a goal of continuous improvement of products and services and be consistently firm and constant in achieving it.
2. New philosophy - adopt a new philosophy: radically rethink your views on the essence of management and the role of a manager in the modern world. We have entered a new economic era, and this is the great merit of Japan.
3. End Addiction to Bulk Control - Eliminate the need for bulk inspection and inspection as a way to achieve high quality.
4. End the practice of purchasing at the lowest price - do away with the evaluation and selection of suppliers, considering only the prices of their products.
5. Improve every process to achieve higher quality, higher productivity and lower costs.
6. Introduce into practice modern approaches to training and retraining of personnel.

7. Establish "Leadership" - Learn and practice the "leadership" system as a method of work designed to help workers do their best work.

8. Cast Out Fears - Encourage effective two-way communication, use other means to root out fear, apprehension and hostility from within the organization.

9. Break down barriers between departments, services, departments.

10. Refuse to use posters, slogans, appeals to employees, as the vast majority of problems arise in the system and it is not in the power of employees to change something in it.

11. Eliminate arbitrary targets and quantifiable targets — Ditch work instructions and standards that set production targets, worker quotas, and executive targets.

12. Empower workers to be proud of their work - remove barriers that prevent them from being proud of their work.

13. Encourage the pursuit of education and improvement - Establish an education program for employees and strongly support the desire for self-improvement.

14. Top management's commitment to quality improvement and effectiveness is essential - Clearly define top management's unwavering commitment to continuous quality and performance improvement.

Conclusions

In TQM theory, it is customary to distinguish eight principles of quality-based management:

- customer orientation - organizations depend on their customers, therefore, must understand their current and future needs, fulfill their requirements and strive to exceed their expectations;

- Leadership of the leader - leaders ensure the unity of purpose and direction of the organization. They should create and maintain an internal environment in which people can be fully involved in solving the organization's tasks;

- employee involvement - people at all levels are the backbone of the organization, and their full involvement enables the organization to make the most of their capabilities;

- process approach - the desired result is achieved more efficiently when activities and associated resources are managed as a process;

- a systems approach to management - identifying, understanding and managing interrelated processes as the system contributes to the effectiveness and efficiency of the organization in achieving its goals;

- Continuous improvement - Continuous improvement of the organization as a whole should be seen as an enduring goal;

- fact-based decision making - effective decisions are based on the analysis of data and information;

- mutually beneficial supplier relationships - an organization and its suppliers are interdependent, and

a mutually beneficial relationship enhances the ability of both parties to create value.

These eight quality-based management principles form the basis for the quality management system standards in the ISO 9000 family.

The experience of introducing TQM into Russian practice allows us to distinguish five main components:

- creation of documented quality systems;
- relationships with suppliers;
- relationship with consumers;
- motivation to improve quality;
- training in the field of quality.

It is important to note that TQM is, first of all, a philosophy, a way of dealing with work. And its implementation must begin with the training and education of employees. A culture of quality is the result of sustained efforts, which are rewarded with a strong competitive position in the market.

The study of the satisfaction of teachers and staff and the degree of influence of the university on society is measured by such indicators as the mechanisms for collecting and analyzing information about the satisfaction of university staff; the degree of staff satisfaction with various aspects of work at the university; mechanisms for collecting information about the impact of the university on society, the level of perception of the university by society.

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