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ECONOMIC ESSENCE AND SCIENTIFIC APPROACHES TO THE CONCEPT OF QUALITY MANAGEMENT

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Abstract.
his article analyzes the economic content of the concept of quality management, its role in the activities of modern enterprises and the main scientific approaches. The stages of the formation of quality management, the concepts of famous scientists and their practical application are covered. Conclusions are given on the economic efficiency of the implementation of quality management.

Keywords:
quality management, total quality management (TQM), Deming cycle, ISO 9000 standards, competitiveness, quality costs, enterprise efficiency, customer satisfaction.

Аннотация. В данной статье анализируется экономическое содержание концепции управления качеством, ее роль в деятельности современных предприятий и основные научные подходы. Рассматриваются этапы формирования управления качеством, концепции известных ученых и их практическое применение. Приводятся выводы об экономической эффективности внедрения управления качеством.

Ключевые слова: управление качеством, всеобщее управление качеством (ВУК), цикл Деминга, стандарты ISO 9000, конкурентоспособность, затраты на качество, эффективность предприятия, удовлетворенность клиентов.

Introduction

In the modern economic environment, where globalization and technological changes are accelerating, one of the biggest challenges facing enterprises is to maintain a consistently high level of product and service quality. Market competition is no longer limited to price, but primarily to quality indicators. Consumer choice is increasingly tied to this criterion. Therefore, the concept of quality has gone beyond the scope of mere technical characteristics and has become an important strategic category of the enterprise's economic activity.

Quality management is a set of interrelated management actions aimed at organizing the processes of product production and service provision in accordance with consumer requirements. The market position of the enterprise, customer loyalty, profitability and long-term stability are largely determined by how effectively this management system is implemented.

This article systematically examines the economic essence of the concept of quality management, its scientific theoretical foundations, stages of formation and main scientific approaches.

The economic essence of the concept of quality management

The term "quality" has been understood differently at different stages of historical development. Initially, it was interpreted only as the conformity of a product to specified technical

parameters, but since the second half of the 20th century this concept has been significantly expanded. According to the generally accepted definition today, quality is the ability of a product or service to satisfy the stated and implicit needs of the consumer. This definition has also been strengthened by the International Organization for Standardization (ISO).

From an economic point of view, quality has a dual nature. On the one hand, it is an important factor that creates added value; on the other hand, ensuring quality requires specific costs. The main task of quality management is to balance these two sides, avoiding unnecessary costs and at the same time maximizing value for the consumer.

The economic essence of quality management can be analyzed in the following main areas:

First, rational management of quality-related costs. According to the traditional approach, these costs are divided into four groups: the costs of preventing defects, the costs of assessment and control, the costs of internal defects (identified within the enterprise), and the costs of external defects (returned by the consumer). Experience shows that every dollar spent on the first two groups reduces the costs of the next two groups several times.

Secondly, increasing the competitiveness of the product. A product with high quality indicators occupies a strong position in the market, which expands the enterprise's revenue base. Such products are often sold at a higher price, but are still in high demand.

Third, efficient use of internal resources. In an enterprise where a quality management system is implemented, waste of raw materials is reduced, labor productivity increases, and equipment downtime is reduced. All this leads to a natural decrease in the cost of production.

Fourth, strengthening the social capital of the enterprise. An enterprise that produces quality products has a positive reputation both among consumers, partners, and society. This ensures a significant increase in the brand value and market capitalization of the enterprise in the long term.

Main scientific approaches to quality management

The theory of quality management has gone through several stages during the 20th century and has formed as a current integrated system. Below is a brief analysis of the main approaches that have enriched this area theoretically and practically.

1. Statistical quality control theory (W. Shewhart)

The scientific foundations of quality management are associated with the work of the American researcher Walter Shewhart. In the 1920s, he first proposed the systematic use of mathematical statistical methods in the management of production processes. Shewhart's greatest contribution was the introduction of the concept of control charts into science. With the help of these tools, it became possible to distinguish between random and systematic errors in the production process and take timely corrective measures.

2. The concept of continuous improvement (E. Deming)

Edward Deming occupies a unique place in the history of quality management. He made a significant contribution to the reconstruction of Japanese manufacturing industries after World War II, and it was there that he published his famous “14 Principles of Management.” At the heart of Deming’s approach is the idea of continuous improvement. He expressed this in the famous PDCA cycle: Plan — Do — Check — Act. Any process in this cycle is constantly being improved, which ensures long-term sustainable growth for the enterprise.

3. Quality Triad Theory (J. Juran)

Joseph Juran proposed to imagine quality management as a system consisting of three interrelated processes. In his opinion, quality management in any enterprise should cover the following three areas: quality planning (identifying consumer needs and designing processes for their implementation), quality control (comparing current indicators with established standards) and

continuous quality improvement (searching for and implementing new opportunities). These three areas form a closed loop system.

4. The concept of "Zero Defects" (F. Crosby)

In his famous book "Quality is Free", Philip Crosby substantiated with economic calculations that the costs of quality assurance are always less than the losses caused by defective products. He defined quality as "full compliance with requirements" and put forward the idea of "zero defects". According to Crosby's concept, an enterprise should not accept the current level of product quality as the norm, but should constantly work to eliminate each defect.

5. Japanese approach (K. Ishikawa)

Japanese scientist Kaoru Ishikawa integrated specific elements of Japanese corporate culture into quality management. He developed the concept of "quality circles" — small groups of employees who regularly meet to collectively discuss problems in the production process and propose solutions. Another famous idea of Ishikawa is the cause-effect diagram (fishbone diagram), which is recognized as an effective tool for analyzing the root causes of a problem.

6. Loss function theory (G. Taguchi)

Japanese engineer and statistician Genichi Taguchi proposed looking at quality in terms of economic losses. According to his approach, any deviation of a product from the target (ideal) value — even if it is within the permissible tolerance limits — causes a certain economic loss for society. This loss increases proportionally to the square of the deviation. This theory of Taguchi showed the need for maximum careful design of quality from the design stage.

7. ISO 9000 international standardization system

In the 80s of the 20th century, quality management was raised to the level of international standardization. The standards included in the ISO 9000 family set out clear requirements for building a universal quality management system for organizations of any type of activity. Currently, the ISO 9001 certificate is considered the most widespread quality management standard in the world and serves as a practically necessary "passenger ticket" for an enterprise to enter international markets.

Economic efficiency of quality management

The implementation of a quality management system brings a wide range of economic benefits to the enterprise. These benefits can be summarized in the following areas:

— cost reduction due to a significant reduction in the number of defective products and returns;

— prevention of excessive use of raw materials, energy and other resources and increased labor productivity;

— expansion of repeat sales due to increased customer satisfaction and loyalty;

— opening up export opportunities and opening the way to international markets;

— increased interest and personal responsibility of employees in the success of the enterprise;

— growth of the enterprise brand and overall market capitalization.

According to international research, investments in quality management usually pay for themselves several times over within 3–5 years. The experience of Japanese enterprises in the post-war years is a clear confirmation of this idea: companies that consistently implemented TQM principles became world market leaders within 10–20 years.

In Uzbekistan, effective work has also been carried out in recent years to introduce a quality management system. Many local enterprises have received ISO 9001 certificates, and specialists in this field are being trained in higher educational institutions. This process makes a significant

contribution to increasing the competitiveness of the country's products in the international market, expanding exports, and the overall modernization of the economy.

Conclusion

In today's competitive environment, quality management has become not just a simple technical task of an enterprise, but an important factor determining its entire strategic development. Through systematic quality management, an enterprise can simultaneously rationalize its costs, expand its revenue base, and most importantly, ensure long-term sustainable development.

Shewhart's statistical control, Deming's PDCA cycle, Juran's triad, Crosby's idea of "zero defects", Ishikawa's quality circles, Taguchi's loss function and international standards of the ISO 9000 family - all this together forms the theory of modern integrated quality management. The practical application of these approaches should be adapted to the specific conditions, field of activity and strategic goals of each enterprise.

In-depth study of the principles of quality management, their effective use in practice and training of qualified specialists are among the most urgent tasks today for the sustainable development of the economy of the Republic of Uzbekistan and the establishment of a strong position of national products in world markets.

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