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MODERN PRINCIPLES OF QUALITY MANAGEMENT

У статті досліджено змістовні характеристики поняття «якість», модель управління якістю відповідно до циклу безперервного покращення та обґрунтовано на цій основі набір принципів управління якістю. Встановлено, що якість розуміється як процес безперервного вдосконалення, спосіб ведення бізнесу в Україні, який повинен відповідати міжнародним стандартам ISO 9000. Наведена піраміда якості з урахуванням стандартів якості та споживчих властивостей. Відповідно до міжнародного досвіду представлено ключові аспекти якості. Встановлено, що основна роль та відповідальність в системі управління якістю належить вищому керівництву підприємства. Забезпечення якості відбувається з урахуванням сукупності взаємозв'язаних технічних, організаційних, економічних, соціальних факторів. Обрано та описано сучасні принципи управління якістю, які є базовими та всеосяжними правилами орієнтованими на клієнтів.

Ключевые слова: *якість, стандарт, принципи, управління, система, менеджмент, підприємство.*

Formulation of the problem. In the context of major globalization transformations and crises, much attention paid to the problems of mastering and implementing enterprise management based on quality. Quality management is one of the key functions of corporate and project management, the main means of achieving and maintaining the competitiveness of any enterprise.

The historical experience of the USA, Japan, Germany and a number of other countries shows that ensuring the sustainable and harmonious development of any enterprise with effective management systems based on quality is one of the main levers with which it was possible to overcome the crisis in the economy and take a strong position on the world market.

Since 2008, Ukraine has acquired full membership in the World Trade Organization. Membership in this organization has become an important factor in the further integration of Ukraine into the world economy. This allows Ukraine to defend its national trade and economic interests and join in the development of new global trade rules. At the same time, high-quality foreign products enter the domestic market, which are inferior to Ukraine in competition, which may affect the loss of market positions of the national manufacturer. Therefore, the issues of creating an effective quality management system at Ukrainian enterprises are relevant.

Analysis of recent research and publications. Leading foreign scientists such as P. Berghom, E. Deming, J. Juran, F. Crosby, D. Rabbitty, M. Hammer, D.Champi, M. Robson, F. Ullah and others.

The works of many well-known domestic scientists, in particular E.S., are devoted to issues of quality in the enterprise management system. Askarov, D.G. Goltsev, E.A. Goncharov, Yu.B. Kabakov, P.Ya. Kalita, L.S. Kirichenko, V.M. Koreshkov, I.V. Luzan, I.S. Lutsenko, A.I.Momot, K.M.Rakhlin, L.A. Tkachenko, A.D. Shadrin and others.

An analysis of publications on the above issues proves that the existing approaches in Ukraine to defining the concept of “quality” complement each other and allow us to consider this concept from different points of view. At the same time, “quality” as an object of management

at an enterprise has not been sufficiently disclosed, which determined the relevance and need to continue research in this direction.

The purpose of the article is to study the meaningful characteristics of the concept of "quality", the model of quality management in accordance with the cycle of continuous improvement, and to substantiate on this basis a set of principles of enterprise quality management, taking into account the impact on the interests of business process participants.

Presentation of the main material. Quality management defined by the International Organization for Standardization and considered as the actions taken during the creation, operation or consumption of products to establish, ensure and maintain the required level of quality.

The concept of "quality" in a broad sense is a universal philosophical category that covers both phenomena of the external world and human consciousness. There are more than 100 formulations of the term "quality" in the literature.

Japanese scientist K. Ishikawa (1950) described the concept of "quality" as the degree to which the needs of the product consumer are satisfied. Other scientists practically did not change the content in their definitions of "quality"[1].

Leading American quality systems expert Joseph Juran believes that "quality" is fitness for use. This concept includes four elements: consumer perception of the product design; the degree to which the product conforms to the design; availability of goods for purchase, their reliability and repair; accessible service [2].

The Ukrainian Quality Association interprets the concept of "quality" as a process of continuous improvement, a way of doing business when it is necessary to be better in relation to others, and not just have products of better quality [3].

According to the International Organization for Standardization (ISO), quality is the sum of the properties and characteristics of a product that give it the ability to satisfy specified or intended needs. There is also a definition of product quality given in State Standard 15467-79, according to which product quality is a set of product properties. That determine its suitability to satisfy certain needs in accordance with its purpose [4, p. 112]. The ISO 9000 series standards established a unified, internationally recognized approach to contractual terms for assessing quality systems and at the same time regulated the relationship between manufacturers and consumers of products. In other words, ISO standards are strictly consumer-oriented.

Based on the results of the above, let us present the types of qualities in the form of a pyramid (Fig. 1).

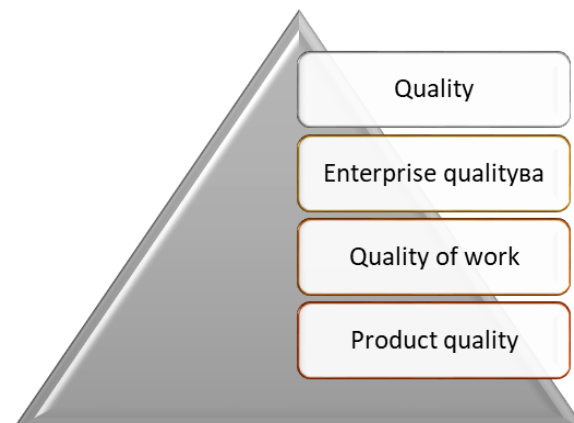


Fig. 1. Quality pyramid according to quality standards and consumer properties

The product cost category is one of the most valuable. These categories used when selecting design and development items, as well as individual needs, planning development and evaluating its results, determining its effectiveness and the efficiency of the warehouse, organizing work, and the minds of producing new products.

Both physical and technical aspects are important, such as products - this is the largest part of the physical products that people process. Products containing a high degree of reliability make it possible to have high technical capacities associated with its color content and reliability too. Are

economical and warehouse, fragments in each robot and a very large number of necessary. The product has a marketable form and provides economic benefits.

International experience shows that those countries achieve significant success in social and cultural development, which are able to ensure the highest quality of their products and services. Therefore, quality is a determining indicator of the company's competitiveness in the long term (Fig. 2).

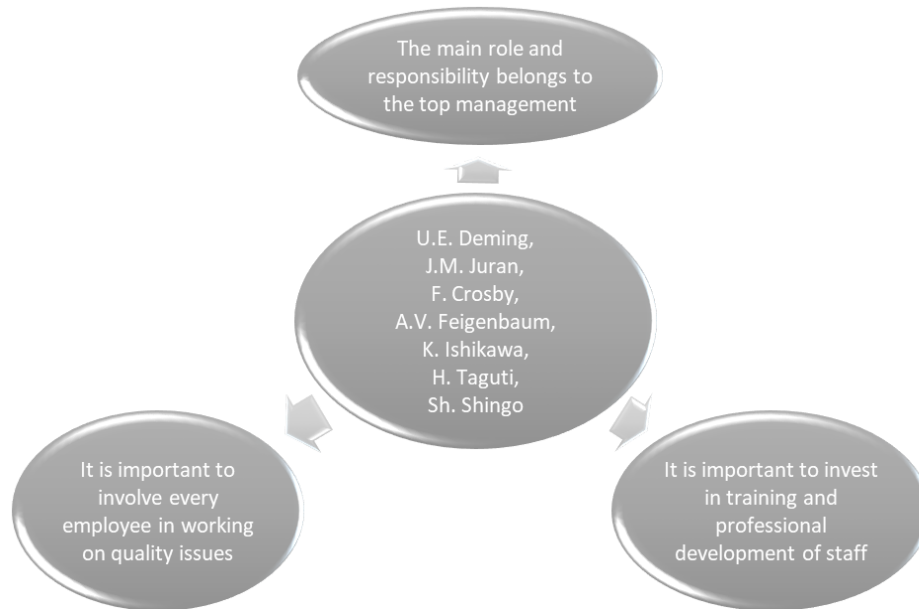


Fig. 2. Key aspects of quality [5]

In order to solve the problem of ensuring society's needs in quality products, purposeful management of the process of formation and quality assurance is necessary. Quality management encompasses a set of interconnected technical, organizational, economic, and social factors (Fig. 3).

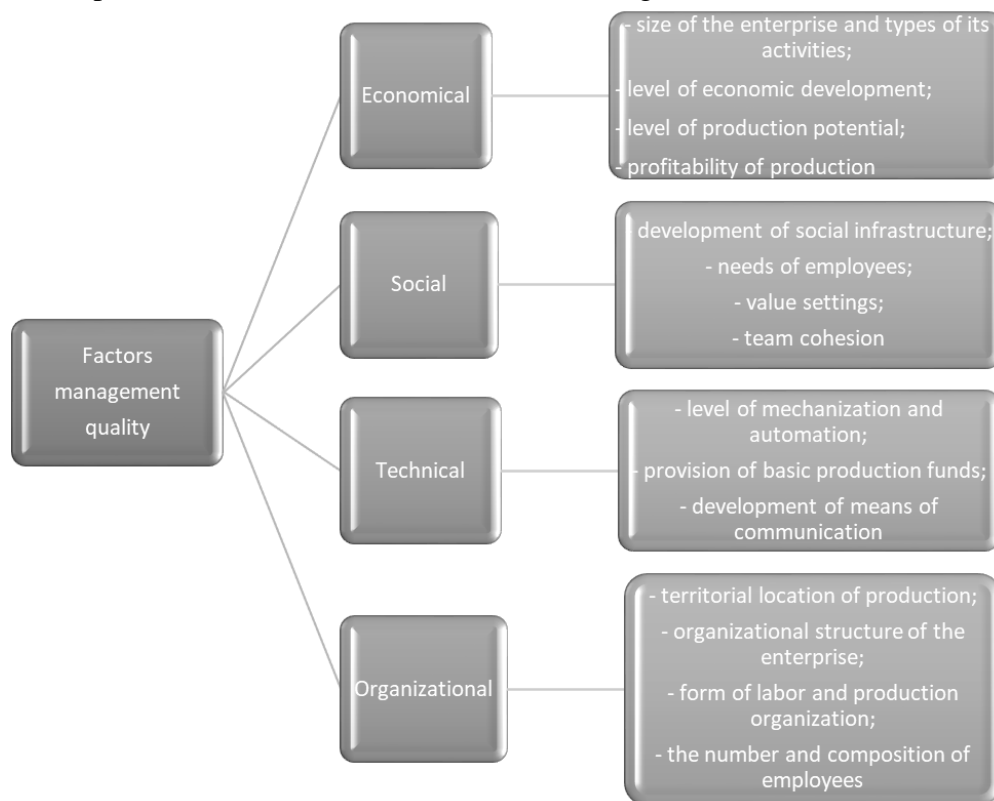


Fig. 3. A set of interrelated factors in product quality management [6]

Quality determined by the action of many subjective and objective factors, both internal and external. To ensure a consistently high level of quality, a quality management system is required.

A quality management system is a set of interrelated and interconnected elements that allow an organization to set quality policies and goals and achieve them [7].

The goals of creating a quality management system are to implement the enterprise’s policy in the field of quality, achieve and maintain the quality of products (works, services) at a standard level and ensure the fulfillment of consumer requirements, constantly improve product quality to increase satisfaction with the product of both the consumer and other interested parties. The quality management system is an integral part of the overall management system for the production and economic activities of the enterprise in accordance with the quality management standard.

Analyzing the above, we believe that quality management is a clear interaction between all departments, all participants in the production process, which has a well-formulated goal - ensuring or improving quality. Quality management is applied in every industry, not only in manufacturing, but in all industries, in all types of companies from large to small, even if they are involved in the international market or not.

Quality management ensures that a company operates efficiently. Therefore, an effective quality management system built taking into account Edward Deming's cycle of continuous improvement, when the emphasis is not on increasing profits, but on constantly improving the quality of products and services. Time has confirmed Deming’s teachings, which take the role of the process of self-organization and internal motivation of both people and companies themselves to a new level (Fig. 4) [8].

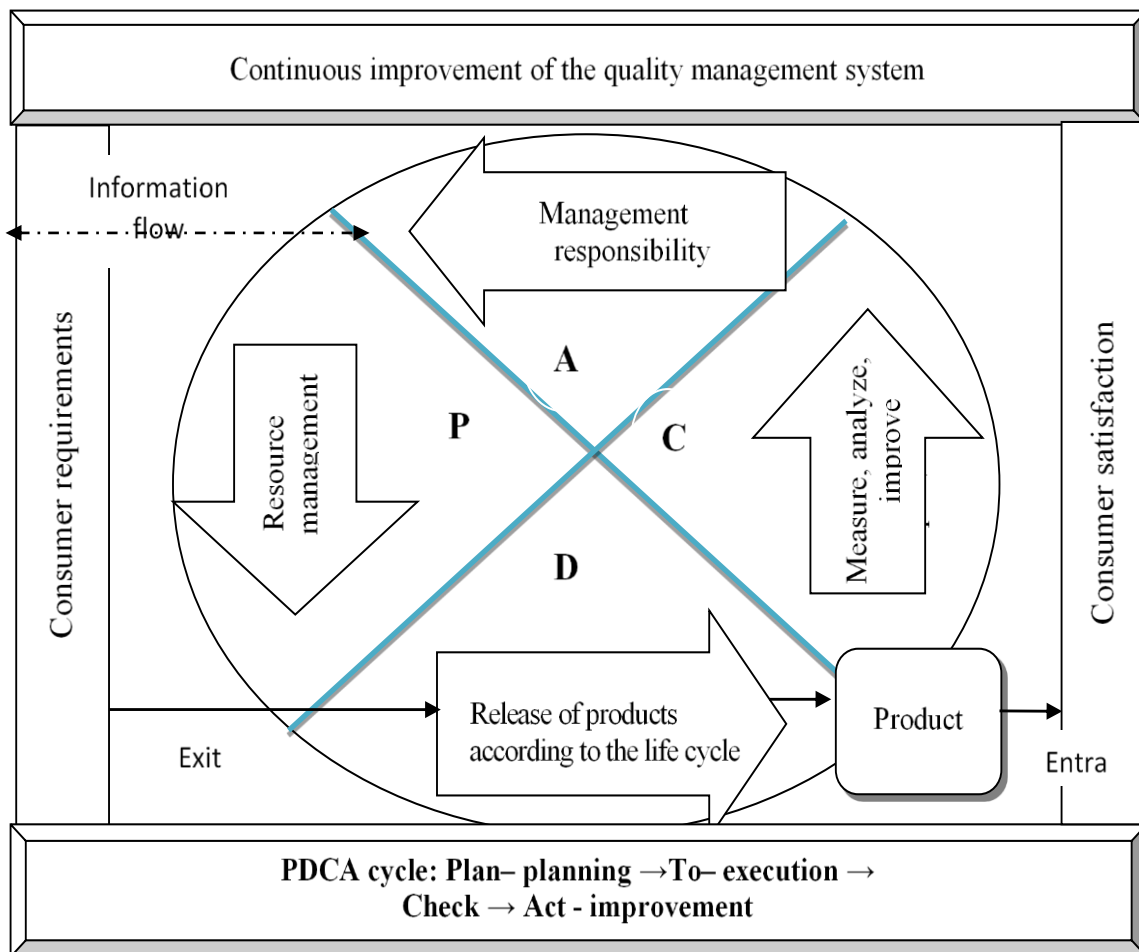


Fig. 4. Model of the quality management system using E. Deming's cycle of continuous improvement [8]

Figure 4 illustrates a quality management system based on the processes described in the ISO 9000 series of standards. It shows that stakeholders play a significant role in providing input elements to the organization. Monitoring stakeholder satisfaction requires assessing information about those parties' perceptions of the degree to which their needs and expectations being met. Stakeholders in quality management: consumers and end users; employees of the enterprise; owners/investors (such as shareholders); suppliers and partners; society through various associations and government structures that the enterprise or its products influence.

The quality management system model in Fig. 4 provides for the use of Edward Deming's continuous improvement cycle, in which [8]:

Plan - planning: development of goals and processes (process engineering) necessary to achieve goals, planning activities in accordance with meeting customer needs, regulating business processes in the potential management system, planning resource allocation, determining criteria for evaluating planned activities;

Do – execution: preliminary data analysis and preparation of workers to carry out business processes in accordance with the developed plan and taking into account the product life cycle, documenting activities and results;

Check – verification: collection of information and monitoring of results, comparative assessment of the obtained indicators with the planned ones, analysis of the results obtained, identification of the reasons for deviations, further monitoring of business processes, summing up and assessing the level of achievements,

Act - improvement: development and implementation of measures to improve quality management, review of planned resource provision, making changes to current plans, making decisions to prepare for a new cycle of continuous improvement of enterprise quality management.

The modern concept of quality management based on a set of principles of quality management, which formed E. Deming (14 principles), J. Juran (10 stages of quality improvement), F. Crosby (14 stages of quality improvement), D. Rabbitti, P. Bergh (7 successful quality factors), 12 principles acceptable for Ukraine, and the sequence of their use [9].

We propose that the modern principles of enterprise quality management include the following:

1. Form goals for continuous improvement of activities. Enterprise management must constantly work to develop quality policies and goals, which revised over time. It is advisable for managers to promptly turn strategic goals into specific production tasks and set deadlines for their implementation.

2. Establish customer focus. The focus of quality management is meeting customer needs and striving to exceed their expectations. The task of the enterprise is to ensure that it is not the products that returned, but its consumers. After all, attracting new consumers is 3-4 times more difficult than retaining existing ones. In this regard, the enterprise management plans activities to analyze customer satisfaction and monitors the results.

3. Provide “leadership” management. Leaders establish unity of goals, directions and create conditions for employee participation in achieving the quality goals of the enterprise. Leaders create conditions for providing personnel with the necessary information and resources for functioning and implementing corrective and preventive actions for the rational use of enterprise resources in the main functional processes. Leadership standards created to achieve enterprise success.

4. Involve all enterprise personnel in the quality improvement process. In the quality management system, the entire enterprise team from the top management level to the lower level equally plays an important role in the implementation and support of the quality system. All members of the workforce must constantly care about improving the quality of products (services) provided to customers. Each level of personnel is required to perform its functional duties in accordance with its level of competence. The basis for involving employees in the development and maintenance of quality management systems are the motives to ensure compliance of the results of their activities and exceeding the requirements established for employees.

5. Focus on the process and its results. Consistent and expected results become more effective and efficient when business managers establish an effective management system to evaluate individual

performance based on the results of completed production tasks. The motivation of enterprise employees plays an important role in the quality management system, since not only the social activity of employees, but also the results of their activities depend on it.

6. Inform subordinates of the cost of marriage. Enterprise managers take responsibility for solving problems and contribute to the formation of close interaction between individual performers and the manager. Particular attention in this direction given to organizing internal audits, the result of which is the development of effective recommendations and subsequent monitoring of their implementation.

7. Provide continuous quality improvement. In order to ensure competitiveness, continuous improvement of activities is necessary. It is advisable for business leaders to respond quickly to external and internal changes that may affect the effectiveness of the quality management system. The general form of participation of enterprise employees in maintaining the quality management system is their intellectual activity, their knowledge and experience.

8. Carry out relationship management. During its operation, the enterprise maintains a constant level of interaction with its audience and supply chain. To succeed, businesses must create and maintain positive relationships with their business partners and customers. Relationship management involves techniques for increasing customer support for a company and its offerings, as well as brand loyalty. A business's well-established relationships with audiences and suppliers can contribute to sustainable success by optimizing their impact on productivity and quality levels.

The proposed principles of quality management are separate principles of the ISO quality management standard and are a solid basis for the process of building an ISO 9001 quality management system to meet internal (on the enterprise side) and external (customer side) needs. They can also become the basis for improving the productivity and competitiveness of an enterprise.

Conclusions and offers. Thus, product quality is one of the most important criteria for the functioning of enterprises in a saturated market. Improving product quality determines the growth rate of production efficiency and scientific and technological progress, and affects competitiveness and intensification of the economy. Therefore, product quality management is an important issue that needs constant solutions to ensure high quality of finished products. Quality management is the process of optimal combination of interdependent quality categories in order to achieve the most efficient production and high productivity of social labor.

Modern quality management should focus on the nature of needs, their dynamics and structure, incentives caused by economic and technical competition, and market conditions. Necessary rationally combine actions, means and methods will ensure timely production of products and the development of new products that can meet future consumer demands and market needs.

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EVTUSHENKO NATALIA, MALEVSKY PETER. MODERN PRINCIPLES OF QUALITY MANAGEMENT. *The article examines the substantive characteristics of the concept of “quality”, the quality management model in accordance with the cycle of continuous improvement and the justification on this basis of a set of principles for enterprise quality management.*

It established that quality understood as a process of continuous improvement, a way of doing business in Ukraine, when it is necessary to be better in relation to others, and not just to have products of better quality.

Modern practice of trade relations includes the customer checking and assessing the supplier's existing quality management system, which considered by the customer as an additional guarantee of the stability of the quality of supplies. In this sense, the quality system must comply with the international standards ISO 9000.

The quality pyramid presented in accordance with quality standards and consumer properties: quality, enterprise quality, work quality, product quality. Key aspects of quality presented in accordance with international experience. It established that the main role and responsibility in the quality management system belongs to the top management of the enterprise, for which it is important to involve each employee in work on quality issues and carry out activities to improve the qualifications of personnel.

To solve the problem of ensuring the quality of products (services), it is necessary to purposefully manage the process of formation and quality, taking into account a set of interrelated technical, organizational, economic, and social factors.

It proven that effective quality management based on Edward Deming's cycle of continuous improvement, when the emphasis is not on increasing profits, but on constantly improving the quality of products and services.

The set of quality principles formed by foreign scientists studied. Modern principles of quality management, which are basic and comprehensive customer-oriented rules, selected and described.

Key words: *integrity, standard, principles, management, system, management, enterprise.*