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ON THE IMPORTANCE OF THE EIGHT PRINCIPLES OF QUALITY MANAGEMENT FOR THE PRODUCTION OF IN-DEMAND PRODUCTS

Abstract: In the article, the authors came to the conclusion that forced "autarky" became a powerful stimulus for such impressive growth, but it is neither necessary nor possible to repeat the experience of overcoming it in our days. We believe that with Today, the main, fundamental, long-term line of our state should be leaving the state of autarky and switching as quickly as possible to the rails of normal economic, first of all, cooperation with other countries. Practical significance: the main provisions and conclusions of the article can be used in scientific, pedagogical and propaganda activities for a deeper understanding of the history of industrialization in the USSR and for finding methods and techniques for overcoming autarky, regardless of its origins. At the beginning of the 21st century, there is a significant difficulty in determining the main trend of development of human society. The 19th century and the beginning of the 20th century were the era of the struggle of autarkies, while the second half of the 20th century was the era of the struggle of two globalization projects - communist and capitalist. After the collapse of the USSR, researchers began to talk about the inevitability of one project - the capitalist project of Western liberal democracies. However, the beginning of the 21st century is characterized by increased international tension and an increase in protectionist measures, and, in this regard, autarky and imperialism are again on the agenda. Reflecting on this topic, the authors conclude that there is a hybrid of globalization and autarky, as well as a new clash of modern globalization projects.

Key words: autarky, industrialization, import substitution, collectivization, loans, economic isolation, economic growth, foreign specialists, principles of trade, social policy, globalization, imperialism, civilization.

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Introduction

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The current state of the Russian economy, the proclamation of the import substitution policy pushes Russia onto the path of autarky, that is, to "self-satisfaction, the creation of a closed, autonomous economy within a separate country." Today, autarky has actually become a weapon of struggle against our country, a means of not only economic isolation, but also economic strangulation. How to survive in the conditions of an undeclared, but ongoing economic and ideological war is the most important problem today. Life, difficult economic circumstances force our state to seek new, even unusual ways of economic development. A kind of economic mimicry is underway.

Few people know that we, i.e. the Soviet Union, have already experienced a similar situation, albeit under completely different circumstances, during the years of Soviet industrialization. But the sources of autarky in the 1920s and 1930s and the current one are different. Now it is an element of economic warfare, and not at all a desire of the Russian leadership and its inhabitants to separate themselves from anyone. On the contrary, for almost a quarter of a century the new (political) Russia has been striving to be part of the world economy. Today, no one in their right mind dreams of creating an absolutely independent economy, producing everything themselves and not depending on anyone. But during the period of Soviet industrialization, the question was practically posed in precisely this vein. To make the USSR economy independent of capitalists, to produce everything themselves – such were both the slogans and the practice of being. "Get rid of imports", "Give us Soviet (tractors, aluminum, combines, etc.)" - these were the slogans of the 1930s. In our opinion, such a principle of economic development in the USSR was determined not so much by doctrinal principles as by the realities of life. The economic concept of the Soviet leadership, starting practically from V. I. Lenin, proceeded from the danger of the restoration of capitalism, the loss of the gains of the socialist revolution. "We are a hair's breadth away from any invasion" - this slogan and thesis of policy dominated the entire pre-war Soviet history of the country. This danger dictated both the structure of industrialization (the primacy of heavy industry with a military bias) and its pace. Fear of possible aggressors required non-trivial economic solutions and principles. This fear led to the formation of an economy with elements of autarky. Stalin proclaimed back in the late 1920s: "We are 50-100 years behind the advanced countries. must run this distance in 10 years, or we will be crushed." The 20th century is the era of two opposing trends - autarky and globalization. The category of "autarky"

belongs to such a discipline as geopolitics, and its popularity among researchers of the early 20th century was due to the complex legacy of the 19th century. Autarky means the economic and geographical independence of a region. One of the representatives of the German school of geopolitics - Karl Haushofer - connects autarky with the expansion of living space (Lebensraum), thereby justifying Germany's imperialist war against other states. Germany's militant attitude at the beginning of the 20th century was due to the fact that this country was late to the division of the world and was interested in changing spheres of influence. In the 19th century, the main concern of the Germans was the unification of their lands and the creation of a single state, while global politics was created by the Russian and British empires, whose confrontation became known as the Great Game. Until the end of World War II, international politics was a struggle between different states for their interests. However, after its end, the situation changes, as the USSR becomes one of the largest economies in the world, possessing enormous political influence on other states. Offering an alternative to the social structure of Western countries, the USSR became the center of the communist bloc of states, which entered into a confrontation with the bloc of capitalist states, in the center of which was the USA. The presence of nuclear weapons in both blocs served as a deterrent, and therefore, instead of a "hot" war, the conflict took on the character of a "cold" war, expressed in a clash of countries controlled by large powers and a diplomatic game. At times, the cold war threatened to escalate into a hot war - an example is the Cuban Missile Crisis, during which the world found itself on the brink of a nuclear catastrophe. The second half of the 20th century in international relations is no longer a struggle of states, but a struggle of socio-economic systems and the ideologies corresponding to them, so the USSR and the USA offer two different types of globalization - communist and capitalist.

Main part

The International Organization for Standardization (ISO) was created on February 23, 1947 by fifteen national standardization organizations to carry out activities aimed at promoting the development of standardization on a global scale to facilitate the exchange of goods and mutual assistance, as well as to expand cooperation in the field of intellectual, scientific, technical and economic activities. The history of ISO 9000 quality standards goes back to the British standards BSI 5750, which were approved by the British Standard Institute in 1979. In turn, these standards are often considered to go back to the American military standards MILQ 9858, adopted in the late 50s in the USA. The ISO

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9000 series of standards is a package of documents on the creation of quality systems and quality assurance, prepared by members of the international organization known as ISO/Technical Committee 176 (ISO/TC 176). Today, the BSI 5750 standard is known as the ISO 9000 standard, version 1987. The term "version" means that the standard has now been revised to take into account the quality requirements of a number of specific products that were not taken into account when the first version of the standards was developed. In fairness, it should be noted that in our country, starting in the 1950s (at the same time that Japan was building its famous TQM (total quality management) system), integrated quality management was developed at the enterprises of the aviation and military industries. At that time, many engineering and organizational solutions for quality systems were developed and proposed, such as:

- Saratov system of defect-free manufacturing of products (BIP) – 1955;
- Gorky KANARSPI (Quality, Reliability, Resource, From the First Product) – 1958;
- Yaroslavl system of scientific organization of work on increasing the service life of engines (NORM) – 1964;
- Lviv system of defect-free labor (SBT) – 1967;
- Lviv quality management system based on standardization (KSUKP) – 1975, etc.

Since 1963, the Committee for Standards, Measures and Measuring Instruments under the Council of Ministers of the USSR (later the USSR State Standard) under the leadership of Professor V. V. Boytsov began a consistent study of issues related to increasing the role of standards in improving product quality. By the end of the 1960s, a number of scientific, methodological and practical problems had been studied, which made it possible to talk about the great potential of standardization in improving product quality. At the initiative of the Soviet Union, in June 1971, the XV Conference of the European Organization for Quality Control (EOQC, now the European Organization for Quality - EOQ) was held in Moscow and, at the suggestion of Soviet scientists, was devoted to the role of standardization in improving product quality. Later, at subsequent EOQC conferences, the topic "The Role of Standardization in Improving Quality" became a permanent one. Despite the existing misunderstanding, the world scientific and technical community gradually recognized standardization's objective normative and organizational-methodological role in quality management processes. The USSR representatives had something to report on at these conferences, because at that time the Integrated System of Product Quality Management (ISQM) had already been created, described and implemented at many enterprises. In 1978, the President of the EOC (A. V. Glichev) approached the President of ISO (V. V. Boytsov) with a proposal to

prepare ISO standards on quality management based on the accumulated experience. The proposal was accepted, and work on the first international standards on product quality management began within the ISO. As already mentioned, the first standards were based on the British standards BSI 5750, and not KSUKP, since the processes taking place in the Soviet Union at that time made it difficult for Soviet specialists to actively participate in the work on the standards. Therefore, scientists and specialists from Great Britain, Germany, Switzerland, Czechoslovakia and the USA made a great creative contribution. Despite this, the ISO standards, as well as KSUKP, are based on the same basic provisions, namely:

1. Product quality is a characteristic controlled object. As already mentioned, control actions should be implemented based on the principles of general control theory, consistently establishing planned quality targets, organizing the actions of the actuator that ensures the fulfillment of these targets, comparing the actual value of the result obtained with the planned target, implementing direct and feedback links and the ability to influence the actuator in the event of deviations of the actual quality values from the planned target.

2. Quality management aims to create products of such a quality level that satisfies certain needs, consumer demands, and established requirements.

3. Quality management is an organic component of the overall enterprise management system.

4. All members of the workforce and all personnel participate in quality management and assurance.

5. Quality management should extend to all stages of the product life cycle and be implemented at all hierarchical levels of enterprise management.

6. Quality management is a clear interaction of all departments, all participants in the production process, with a well-formulated goal - ensuring or improving quality.

7. The quality management system is created on the basis of a previously developed model.

8. The actions of the system personnel, their duties, responsibilities and rights are strictly documented. (Within the framework of the KS UCP - these are the organization's standards). The documentation is periodically reviewed and updated.

The set of international standards for quality systems published in 1987 by the International Organization for Standardization (ISO) included the following main standards:

- ISO 9000 "General quality management and quality assurance standards"
- ISO 9001 "Quality systems - Model for quality assurance or design and/or development, production, installation and servicing"
- ISO 9002 "Quality systems - Model for quality assurance in production and installation"

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- ISO 9003 "Quality systems - Model for quality assurance in final inspection and testing"
- ISO 9004 "Quality management and quality system elements - Guidelines"
- Terminology standard ISO 8402, as well as a number of other documents.

They immediately gained worldwide recognition, becoming one of the most popular documents on quality management. ISO Technical Committee 176 (Quality Management and Quality Assurance), responsible for the development of these documents, decided to organize a revision of ISO standards in two stages. The first stage included a limited revision, which resulted in the version ISO

9000:1994, where the number of standards included in it was expanded to twenty, and they were called the ISO 9000:1994 series of standards. In 1994, a version of these standards was published that expanded the main ISO standard (9000-1, -2, -3, -4), paying more attention to the issues of quality management of intellectual products, and then processed products and services. The main reason for the revision was that organizations implementing ISO 9000 quality systems did not have a methodology for management systems. At the same time, the terminology standard ISO 8402 was also revised. The full list of standards is presented in Table 1.

Table 1. List of ISO 9000:1994-02 standards

ISO 8402. Quality management and quality assurance	
ISO 8402:1994	Terms and definitions
ISO 9000. General quality management and quality assurance standards	
ISO 9000-1:1994 EN 29000	Part 1. Guidelines for selection and use
ISO 9000-2:1993	Part 2. General guidelines for the application of ISO 9001, ISO 9002 and ISO 9003
ISO 9000-3:1991	Part 3. Guidelines for the application of ISO 9001 to the development, supply and maintenance of software
ISO 9000-4:1993	Part 4. Guidelines for managing the reliability program
ISO 9001-ISO 9003. Quality systems	
ISO 9001:1994 EN 29001	Model for quality assurance in design, development, production, installation and maintenance
ISO 9002:1994 EN 29002	Model of quality assurance in production, installation and maintenance
ISO 9003:1994 EN 29003	Model of quality assurance in finished product inspection and testing
ISO 9004. General quality management and elements of a quality system	
ISO 9004-1:1994	Part 1. Guidelines. General Provisions
ISO 9004-2:1991	Part 2. Guidelines for services
ISO 9004-3:1993	Part 3. Guidelines for recyclable materials
ISO 9004-4:1993	Part 4. Guidelines for quality improvement
ISO 10005-ISO 10007. Quality management	
ISO 10005:95	Guidelines for the quality program
ISO 10006:97	Guidelines for Quality Assurance in Project Management
ISO 10007:95	Configuration Management Guidelines
ISO 10011-ISO 10015, ISO 19011.	Guidelines for the audit of quality systems
ISO 10011-1:1990	Part 1. Verification
ISO 10011-2:1991	Part 2. Qualification requirements for quality systems auditors
ISO 10011-3:1991	Part 3. Management of inspection programs
ISO 10012-1:1992	Quality assurance requirements for measuring equipment. Part 1. Metrological confirmation system for measuring equipment
ISO 10012-2:1997	Quality assurance of measuring equipment - Part 2: Guidelines for control of measuring processes
ISO/TO 10013:2001	Guidelines for the development of quality management system documentation
ISO/TO 10014:1998	Guidelines for quality economics management
ISO 10015:1999	Quality Management. Training Guidelines

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ISO/TU 16949:2002	Quality management systems. Particular requirements for the application of ISO 9001:2000 to the production of motor vehicles and their spare parts
ISO 19011-A ISO	Guidelines for Auditing Quality Management Systems 19011-B

The ISO 9000 series of standards, together with the ISO 10000 series of standards and the ISO 8402 standard, were first referred to as the ISO 9000 "family" of standards. The main content of the ISO 9000 standards is recommendations containing functions that should be implemented at an enterprise in order to organize effective quality work. The ISO 9001 standard of 1994 provided the following list of recommended elements of quality systems, namely:

1. *Management responsibility*, which provides for the responsibility of the enterprise management to determine the policy and goals in the field of quality, the responsibility to create and implement a quality system, and also to manage it.

2. *Quality system*— an element that obliges the supplier to develop, document and maintain a quality system as a means of ensuring that products meet established requirements. All necessary procedures for performing the functions of the quality system and a general description of the quality system – a Quality Manual – must be developed.

3. *Contract analysis*— an element that obliges the supplier to assess its ability to fulfill the contract before concluding it, and during the process of fulfillment – to regularly check and document the achievement of the characteristics required by the contract.

4. *Design Management*, as a result of which the project must establish and confirm the level of product quality that meets consumer demands and the requirements of safety and environmental protection legislation. It must also provide for project evaluation criteria, conduct project analysis and verification upon completion of certain design stages, and approve the project after its development.

5. *Document and data management* -to establish the procedure for the development, approval, release and amendment of all necessary documents.

6. *Procurement*, in which the main attention is paid to the selection of qualified suppliers and incoming quality control of purchased products and materials.

7. *Management of customer supplied products*. This element should provide for the supplier's ability to provide inspection, storage and maintenance of the consumer's products when they are used in production.

8. *Product identification and traceability*. This very important element is necessary to create confidence that the required materials and purchased products are used in the production process, for which their quality must be confirmed by the relevant documents. The manufactured parts and units must also have accompanying documents and the necessary

markings to establish their belonging to a particular product.

9. *Process management* in order to comply with the requirements of design documentation in the manufacture of products by creating controlled conditions. This requires the development of production technology, the use of the necessary equipment and control over the implementation of the established parameters of the production process and the achievement of the required product characteristics.

10. *Control and testing*, as a result of which the achieved quality level is determined and its compliance with the level laid down in the design documentation is assessed. This includes incoming inspection of materials and purchased products, inspection and testing during the production process, and final inspection and testing with the preparation of relevant protocols.

11. *Control, measuring and testing equipment management*, without which an objective assessment of product quality is impossible. This should include: establishing the necessary measurements and their accuracy; identification, calibration and verification of equipment, as well as ensuring the required conditions for its preservation.

12. *Control and testing status*. This element requires maintaining a certain level of control and testing: control and testing carried out by certified equipment, trained specialists, using proven and calibrated measuring instruments, so that the results obtained can be trusted.

13. *Management of nonconforming products*, establishing rules for the use of products with deviations from the documentation or the procedure for isolating ultimately rejected products in order to guarantee that the manufactured products do not contain parts, units or materials that do not meet the established requirements. In this case, timely detection, removal and isolation of defects must be provided.

14. *Corrective and preventive actions*, necessary to prevent the recurrence of defects by eliminating the causes of their occurrence.

15. *Loading and unloading operations, storage, packaging, preservation and delivery*. These elements of the quality system are intended to ensure that the supplier maintains the safety of the product until it is delivered to the consumer.

16. *Quality data recording management*. Here it is necessary to have an established procedure for collecting, systematizing, maintaining, storing and providing the consumer with quality data to confirm the conformity of the product with the established

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requirements and the effectiveness of the quality system.

17. *Internal quality checks*, that allow regular monitoring of the performance of functions (elements) of the quality system and compliance with the relevant regulatory documents. In this case, inspection plans must be drawn up and their results recorded, and the inspections themselves must be carried out by personnel who are not directly responsible for the activity being inspected.

18. *Personnel training* to ensure the required qualifications of personnel.

19. *Maintenance*. The need for maintenance is determined depending on the established requirements.

20. *Statistical methods*. The supplier shall define the needs for statistical methods used in the development, control of processes and evaluation of product characteristics, and shall establish appropriate procedures for their application.

In 2000, a new series of ISO 9000 standards was published, significantly simplifying the system of documents, on the other hand, bringing it closer to TQM. The second stage of the process of revising the ISO standards of the said series provided for a more complete revision and was reflected in the version of the ISO 9000:2000 standards. The two most important goals of the second revision were the development of a simplified version of the standards, which would be equally applicable to small, medium and large organizations, as well as determining the quantity and implementing detailing of the required documentation in such a way that it most fully meets the desired results of the organization's activities. In 2000, a fundamental restructuring of the standards was carried out, which took into account all the achievements in the field of quality that have occurred recently (including the development of TQM) and all the experience of implementing ISO 9000 accumulated by that time. In the process of developing the new version of the ISO 9000 standards, a number of activities were carried out:

- user requirements analysis;
- verification of compliance of drafts of new versions of standards with regulatory documentation on draft standards;
- confirmation of user satisfaction with projects;
- analysis of user feedback on documents being developed.

In addition, the ISO/TC 176 Subcommittee 2 website provided updated information on the progress of revision preparations and active discussion of the standards under development at all stages.

Also, various industry concepts are published, for example, the QS9000 standard, regulating the requirements for quality systems of suppliers of the US automobile industry; Technical conditions ISO/TU 16949, establishing the requirements for quality systems of suppliers of the automobile

industry, but already at the global level. The latest version of the ISO 9000 series of standards, adopted in 2000 (ISO 9000:2000 standards), pays special attention to the documentation of the quality management system and emphasizes the importance of the document as the main part of the system, allowing to clearly record the quality parameters and giving the opportunity to control them. Brief characteristics of the ISO 9000 standards. In 2000, a new version of the 9000 series of standards was released. The standards were developed so that organizations of any form of ownership, size, industry affiliation and specificity could implement and ensure the functioning of effective quality management systems. The complex of the new version is represented by four standards.

ISO 9000:2000 Quality management systems - Fundamentals and vocabulary. This standard presents the main provisions of the new versions of the standards, the quality management system itself, as well as the terms and definitions used. It describes the eight principles of quality management, approaches to quality management systems, the roles of top management and documentation, the importance of requirements for continual improvement, the role of statistical methods and the relationship of quality management systems with other management systems and excellence models. *ISO 9001:2000 Quality management systems. Requirements*. This standard establishes requirements for quality management systems instead of the old trio of standards ISO 9001, 9002 and 9003. The standard is intended both for the purposes of building a quality management system at an enterprise (organization) and for certification purposes. This standard should be used by both internal (organization) and external (consumers of the organization's products, certification bodies) consumers in order to assess the organization's ability to meet consumer, their own and legislative requirements. *ISO 9004:2000 Quality management systems. Guidelines for performance analysis and improvement*. This standard is a recommendation and is intended for use both in the construction of a quality management system and for its further improvement. These recommendations apply to the establishment, operation and continuous improvement of the effectiveness and efficiency of the quality management system. The version of this standard replaces several standards of the previous version, providing recommendations for various sectors of the economy. *ISO 19011 Guidelines for auditing quality and environmental management systems*. This standard provides recommendations on the content of the main provisions of audits, management of audit programs, implementation of quality and environmental management systems, as well as a list of qualification criteria for auditors of quality and environmental management systems. Initially, this standard was intended for auditors and organizations

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that were to conduct internal and external audits of quality and environmental management systems. However, users of this standard can also be organizations involved in certification and training of auditors, accreditation and standardization in the field

of conformity assessment, internal auditors of enterprises and organizations. Eight principles of quality management system. ISO 9000:2000 defines eight principles of quality management.

To successfully manage and operate an organization, it is necessary to direct it and manage it in a systematic and transparent manner.

Success can be achieved by implementing and maintaining a quality management system designed to continually improve performance while taking into account the needs of all interested parties. Managing an organization includes quality management along with other aspects of management. Eight principles of quality management have been defined to guide top management in improving the organization's performance:

a) Consumer orientation

Organizations depend on their customers and therefore must understand their current and future needs, meet their requirements and strive to exceed their expectations.

b) Leadership of the manager

Managers ensure unity of purpose and direction of the organization. They should create and maintain an internal environment in which employees can be fully involved in solving the organization's problems.

c) Employee involvement

Employees at all levels are the backbone of an organization, and their full involvement enables the organization to utilize their abilities to advantage.

d) Process approach

The desired result is achieved more effectively when activities and related resources are managed as a process.

d) Systems approach to management

Identifying, understanding, and managing interrelated processes as a system contributes to the effectiveness and efficiency of an organization in achieving its goals.

e) Continuous improvement

Continuous improvement of the organization's performance as a whole should be seen as its permanent goal.

g) Fact-based decision making

Effective decisions are based on analysis data and information. h) Mutually beneficial relationships with suppliers
An organization and its suppliers are interdependent, and mutually beneficial relationships enhance the ability of both parties to create value.

These eight quality management principles form the basis for the quality management system standards that belong to the ISO 9000 family.

Let's consider the principles of the quality management system in more detail.

Principle 1. *Consumer focus*. "Modern organizations depend on their customers and therefore must understand their current and future needs, meet their requirements and strive to exceed their expectations." The quality management system (QMS) must focus on customer requirements in all its processes. Examples of such processes are contract analysis, new product design, and corrective actions. The QMS also provides for the collection and analysis of customer complaints. Companies trading in global markets have long been using this principle; it has become an axiom for them. ISO 9000 series standards are intended for all types of organizations, including those that do not need to focus on the customer (e.g., state educational institutions, various government departments, federal and regional monopolists, etc.). The main requirement of the standard for a quality management system is "the goal of increasing customer satisfaction" by "ensuring customer and mandatory requirements." Therefore, a mandatory condition for the functioning of the quality

management system is the identification of consumer requirements (organization of work to collect consumer requirements and wishes, application of strategic and tactical marketing methods, provision of complete information to product/service developers, etc.), manufacturing products (provision of services) in accordance with these requirements, provision of service and other services when selling products and measuring customer satisfaction. An organization that has implemented a quality management system based on ISO 9000 series standards should strive to have and increase the number of so-called "loyal" customers, those who will not only be loyal, but will also bring in new customers. How to achieve customer loyalty?

1. Do not limit yourself to satisfying the client's formal requirements, recorded in the contract, technical specifications or other documents, but try to anticipate his unspoken desires and try to satisfy them. Perhaps a sincere desire for this is even more important than the result itself.

2. Each potential client is approached individually. This entails such far-reaching consequences as the rejection of the principles of mass

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production. It is not a question of reducing, but rather, on the contrary, of increasing its volumes due to the expansion of demand. This is, in essence, a new type of production, in global practice it is called thrifty, or sparing, production. This is the very first and fundamental principle of quality management, which can be characterized by the words:

"The consumer should get what he wants, when he wants it, in the form he wants it. The company should strive not only to satisfy the consumer's expectations. This is the least it should do. The company should strive to make the consumer delighted by giving him even more than he can expect." The advantages of implementing this principle are:

- growth of producers' profits and their market share due to flexibility and quick response to consumer desires;
- increasing the prestige of the organization;
- consumer confidence;
- a stable future and development opportunities for the organization.

Principle 2. Leadership of the manager. "Managers ensure unity of purpose and direction of the organization's activities. They should create and maintain an internal environment in which employees can be fully involved in solving the organization's problems." For any area of activity within the QMS, such management should be provided that guarantees the construction and implementation of internal and external processes in such a way as to achieve the greatest efficiency of the activity. This principle excludes management based on a "double" standard, when management calls for one thing, and management decisions contradict these calls. J. Juran noted that about $\frac{3}{4}$ of all quality problems in an organization are caused by an incorrectly built management system and decisions made by managers. Most of the reasons for the problems that arise, especially at Russian enterprises, are associated with untimely or incomplete provision of practical activities. In such conditions, personnel have to make additional efforts not provided for by their work functions, which gives rise to dissatisfaction of personnel and a decrease in their trust in management. This principle implies that in an organization implementing a quality management system, the management assumes responsibility for the effectiveness and efficiency of its activities, the conditions for ensuring production activities, and direct and open recognition of management errors. In addition to responsibility, for such a management system based on the principles of TQM, the main competence of the top manager should be leadership qualities. A leader is a person who leads. He does not

need to use force and overcome the resistance of the staff. The latest studies of the management features of successful global organizations show that the presence of a leader in the top management position provides enormous competitive advantages. A leader is able to captivate people and solve the main task of many Russian managers - to ensure that the goals of the organization coincide with the goals of the staff. A leader cannot be appointed, one can only be one, become one. A leader who heads the activity aimed at improving quality, himself shows initiative and voluntarily assumes responsibility and the necessary powers. Monitoring and regulating the balance between responsibility and powers is one of the main tasks of management. In such a system, many of the usual functions of a boss disappear. Administration and control are replaced by completely different functions: to become a teacher, an advisor, an assistant, a trainer. And most importantly - a part of the team of the entire collective, its main part. The first person - the leader - promotes the emergence of leadership in the organization, creates a leadership system. This system covers all employees in the organization, it is not limited to any levels of hierarchy. That is, it is not only the lot of managers of various ranks who have subordinates. All employees of the organization should be leaders. Leadership is taking responsibility for the entire organization, for the entire team, for achieving specific significant results. Ordinary employees should also be leaders in the processes they are responsible for improving, or in the projects they lead. Deming once developed the basic concepts of leadership in the modern sense. He identified 9 signs of a leader, 9 of his characteristic features. The table below compares traditional management (TM) and alternative management (AM). The main conditions for implementing this principle are a deep understanding of the basic principles of quality improvement activities by the manager and his ability not only to realize the correctness of this activity, but also to change himself in real practical activities. Detachment from quality improvement activities and placing all responsibility on the relevant structural units and officials, that is, a direct violation of this principle leads to a formal implementation of the system. The advantages of implementing this principle include:

- goal setting and planning;
- identification of priority goals and objectives;
- increasing management responsibility for performance results;
- orientation and motivation of personnel to achieve common goals and objectives;
- increasing the efficiency of the organization.

Table 2. Comparison of the characteristics of leadership traits in traditional and alternative management

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Leadership in TM	Leadership in AM
Leader	A marked absence of leaderism
Charisma	Charisma, if it does not harm, then it does not help either, since it creates a barrier between the leader and the members of his team
Directiveness of every word	Does not require orders
Everyone listens to him	Listens himself
Watches how he is being "groomed"	He helps people himself"
Suspicion, fear of intrigue	Trusts people
He decides everything himself	Helps people come to good decisions themselves
Arbitrarily interferes with any processes	Based on statistical methods, he is able to understand what relates to the variability of processes
Loyalty of subordinates	Activity, initiative, willingness to take responsibility
They are afraid of him	They trust him
The leader is supposed to know everything	He emphasizes that he is not the most competent person better than his subordinates, which, in fact, gives him grounds for interfering with their activities.

Principle 3. Employee involvement. "Employees at all levels are the backbone of an organization, and their full involvement enables the organization to use their abilities to advantage." The QMS should ensure that the personnel involved in the work are qualified and capable of performing the activity for which they are intended. If we consider the influence and role of personnel in the organization's activities (Figure 1), it becomes clear that the effectiveness of the organization's activities will directly depend on the professional level, attitude and motivation of the personnel. In the last century, the only panacea for quality improvement activities for a long time was the quality control function. This activity was the responsibility of individual employees - controllers and quality control departments. Edward Deming in his 14 principles and Japanese enterprises, building their TQM system based on these principles, proved that quality management is a collective activity that

requires the joint efforts of each employee of the organization. This is completely natural, since experts in the field of quality management have long established that quality should be addressed not only at the production stage, but also at all stages of the product life cycle. This means that those involved in marketing, planning, research, design, production support, and those directly involved in production, as well as the sales department, economic services, lawyers, HR department, etc. - all without exception must be involved in such activities. At the same time, in all services and at all management levels, responsibilities and authorities must be defined with respect to both general and specific quality work: their volume and technology (methods, rules) for implementing the action program, as well as freedom of action and initiative of personnel within the framework of their job competence.

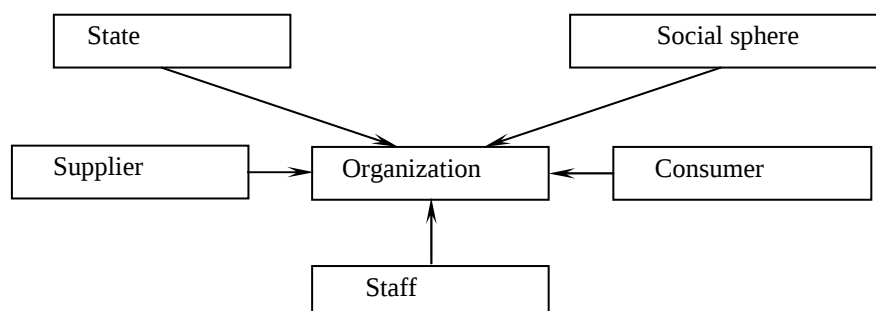


Figure 1. Factors influencing the organization's activities

Involvement of employees in quality improvement activities and the organization as a whole can be implemented in different ways. At Japanese enterprises, personnel actively participate in making strategic decisions. The top management of the enterprise develops strategic goals and objectives, which are then discussed at all levels, ending with the

team level. The personnel of the enterprise make their additions, changes, adjustments in accordance with their capabilities, and then, taking this into account, the final decision is made. In addition, the whole world knows that team work forms are actively used at Japanese enterprises, such as quality circles, teams for improving activities, cross-functional teams. At all

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levels of the enterprise, teams solve problems related to their activities. The effectiveness of such activities is incredibly high and employees directly participate in making management decisions. The main condition for personnel involvement is the construction of an appropriate corporate culture, a management system in which initiative is encouraged, a progressive system of motivation and incentives is in effect, the contribution of each employee to the common cause is assessed according to the principle of "the country should know its heroes", and powers are actively delegated. In such a system, employees become employees. The advantages of implementing the principle include:

- the desire of staff to participate in the continuous improvement of the organization's activities;
- increasing the responsibility of personnel for the results of their activities;
- increasing staff interest in the organization's success and their involvement in solving common problems.

Principle 4. Process approach. The desired result is achieved more effectively when the activity and the corresponding resources are managed as a process. The new process model, aimed at carrying out work in controlled conditions, should be easier to use than the old one, since it describes the activity of the enterprise as a series of interconnected "inputs" and "outputs", as it happens in reality. The previous version of the standards assumed a functional approach to activity. This is a fundamental difference between the new version and the previous ones.

Processes are understood as logically ordered sequences of actions that transform inputs into outputs. If we analyze any activity performed by people, then all of it is carried out in the form of processes (sequences of actions). The activities of an organization from the point of view of quality management are considered as a chain of processes of the product life cycle. These are sequentially interconnected processes that begin with a consumer requirement and end with consumer satisfaction. This approach to activity has a great advantage over the functional approach. The process description of activity allows both to identify the main business processes of the organization and to determine the interrelations of detailed processes, which are a decomposition of the main processes. At the same time, the inputs and outputs of processes, their connections with each other, and their consistency (the outputs of the previous process are consistent with the input of the current one) are clearly established. This approach practically excludes the "dropout" of any function from the activity, duplication of functions, as often happens in the traditional (functional) management system. Each process is assigned an owner who has the authority to make all decisions on this process with his team and

is responsible for its effectiveness, quality indicators. In a functional management system, actions (functions) of one process are often carried out in different structural divisions, and each is responsible only for it. But no one monitors the final performance of the totality of these functions. The activity described in the form of processes becomes, as it were, "transparent", visible to managers, which makes it easy to analyze and optimize it. Establishing performance indicators for each process, collecting and analyzing these indicators lead to more complete and appropriate decisions by managers (process owners), decisions based on facts. The process approach allows:

- identify priority areas for the organization's development;
- predict the results of activities;
- assess the possibilities for its improvement;
- use resources more efficiently, reduce production costs and shorten production cycle times.

Principle 5. Systems approach to management. "Identifying, understanding and managing a system of interrelated processes aimed at achieving a set goal increases the effectiveness and efficiency of the organization." When developing a QMS, this principle means that the enterprise strives to combine the processes of creating products with processes that allow checking the conformity of products to customer needs.

Until the 60-70s of the last century, the main quality activity was quality control. This activity was a separate specific activity of any enterprise. Japanese enterprises, which at that time were creating their famous TQM system, considered the issue of continuous quality improvement in all processes of the product life cycle, at all management levels, in the work of each employee to be the main basic principle. In other words, the enterprise must be engaged in continuous quality improvement in all elements of its activity system. This condition is facilitated by the process approach, the fourth principle of the ISO 9000 series of standards. The quality management system also assumes the implementation of the principle of constant, continuous improvement, based on the Shewhart-Deming cycle. It is impossible to apply this principle in a separate part of the activity; if it is implemented, it is implemented everywhere, in all areas of the enterprise (organization) activity.

In addition, the systems view requires coordination of all aspects of the organization's activities. This leads to the linking of tasks arising within the framework of the quality concept with the organization's mission, vision, strategic goals, etc. At the same time, a mechanism is required for the planning process and for communicating plans to each workplace, which implies the possibility of adjusting them. For this purpose, a process known as "hoshin kanri" or "policy structuring" was developed in Japan. For a long time, enterprises and organizations

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evaluated their activities only by financial indicators. This was the so-called "post-mortem accounting", which reflected the results of activities already carried out. Financial indicators only showed what happened as a result of the enterprise's (organization's) activities, but did not indicate the reason for such results. In recent years, it has become clear that this is not

enough. It is important for an enterprise (organization) to know what is happening in internal processes, whether consumers and its own personnel are satisfied, whether the professional competence of the personnel meets the organization's requirements (Figure 2). Currently, this system is known as the "balanced scorecard".

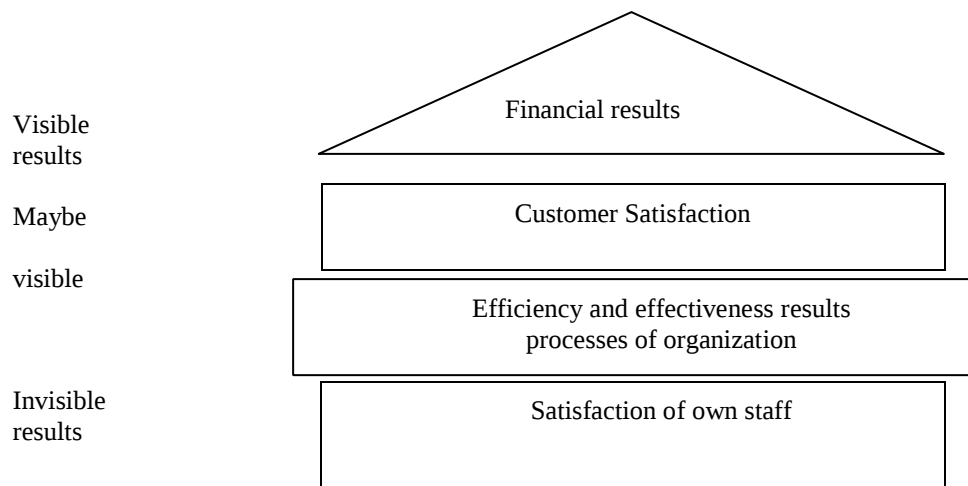


Figure 2. Structure of the balanced scorecard

A systems approach based on continuous improvement and a process approach leads to a revision of traditional ideas about the organization.

Principle 6. Continuous improvement. "Continuous improvement of the organization's overall performance should be considered as its permanent goal." The enterprise aims to effectively meet the future needs of the customer and achieve performance results through the QMS.

The methodological substantiation of the concept of continuous quality improvement was given by E. Deming in the form of the PDCA cycle (plan – do – check – act), which in the Russian adapted translation means "plan – do – check – adjust" (Figure 3). The PDCA cycle is widely known as the "Deming cycle". At the same time, in Japanese literature it is called the "Deming wheel", and in European literature – the "Shewhart-Deming cycle". An interesting modernization of this cycle under the name "modern

quality management cycle" is proposed in the work by V. E. Shvets, extending the RVSA chain to eight links:

- define requirements (for products, processes, procedures),
- plan,
- organize (distribute responsibility, authority and define interaction),
- carry out the process,
- check and identify any matches or discrepancies,
- analyze discrepancies,
- take corrective actions,
- use motivation.

In particular, describing the experience of Pandy's leaders, Newman and Cavenagh offer a 5-stage model for building an OIASC organization, including such stages as "definition - measurement - analysis - improvement - control". With regard to two improvement strategies, it looks like this (Table 2): In the 50s of the last century, Deming proposed this.

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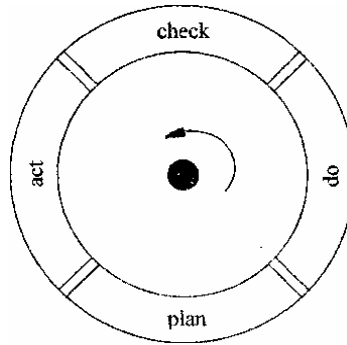


Figure 3. The Deming cycle was introduced to Japanese managers as a new concept of doing business. Subsequently, Japanese specialists and managers developed various elements and subsystems of the Kaizen method of continuous improvement based on this principle.

Table 2. Model of building the OIASK organization

OIASK	Improvement	Design/modernization
Definition	Identifying the problem. Defining the requirements. Establishing the goal.	Identifying a narrow or broad problem. Defining a vision of the goal/change. Clarifying the scope and customer requirements.
Measurement	Justify the problem/process. Measure the problem/goal. Measure key steps/cost drivers.	Measuring current results against requirements. Collecting process performance data
Analysis	Developing causal hypotheses. Identifying the "few but vital" sources of the problem. Confirming the hypothesis	Identifying "best practices" Process design assessment: • contribution to added value; • bottlenecks/gaps; • alternative options Clarification of requirements
Improvement	Developing options. Ways to solve the problem. Testing the solution, standardizing the solution/measuring the results	Designing a new process: • eliminating assumptions and ambiguities; • using a creative approach; • Establishing principles for performing operations. Implementing a new approach, structures, systems
Control	Entering standard measurements to maintain performance at a given level. Adjusting (as problems arise)	Input of measurements and regular procedures for updating information to maintain indicators at the target level. Adjustment (as problems arise)

The main provision of this principle is that it includes quality management of processes of all activities of the enterprise (organization), as a result of which it becomes possible to plan activities from the point of view of quality assurance, control them during implementation, correct emerging deviations and take actions aimed at improvement. Improvement of activities in the quality management system is carried out both in each process and in the entire system as a whole. This approach assumes a new principle of organizing activities - constancy of change. What is a cycle of continuous improvements? This is a cycle of constant change. Thus, despite its apparent simplicity, this principle requires a serious

restructuring in the consciousness of the management and then the personnel, as well as in the organization and management of the organization. This means that it is necessary to move from management by "punishment" for problems, defects, inconsistencies in activities, to management in which the problem is identified, and everyone participates in its solution. Moreover, the top manager should be the first to take the first step and then gradually and patiently change the management style in the organization. It should be understood that such changes do not happen instantly. The use of this principle allows:

- increase competitiveness;

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- respond quickly to the emergence of progressive developments, methods and technologies and implement them in accordance with the capabilities of the organization;

- improve the professionalism of staff by training them in methods and means of continuous improvement.

Principle 7: Fact-based decision making. "Effective decisions are based on data and information analysis." Information sources include audit results, corrective actions, process performance, customer complaints, and other sources.

The main difference between the activities of an organization implementing a quality management system and a traditional organization is the constant collection of information on the effectiveness and efficiency of processes at all levels of the organization. What data do managers of traditional organizations usually collect? These are general financial indicators: productivity, cost price, expenses, profit, etc. Management specialists call them "post-mortem accounting" data. This is actually true, because these data indicate the results obtained when nothing can be changed. In the event of a decrease in the main indicators, it is difficult for management to figure out in which element of the management system the failure occurs. In this case, you can assume anything. Management does not know how the consumer feels about the offered products, what level of hidden defects their products have, what are the service shortcomings, whether their own employees are satisfied with their work in this organization. As practice shows, people often introduce a subjective factor into their judgments and see patterns where there are none, and take chances for patterns. Therefore, managers make decisions practically in conditions of complete uncertainty. Every organization keeps accounting records, but rarely does it keep management records. However, such data help to see "clearly" what is happening with the organization's activities even before the reporting period. The Shewhart-Deming cycle in the quality management system is used at all levels of the organization, data is collected and analyzed weekly, monthly, quarterly, which allows for constant adjustments to activities and the prediction of possible negative manifestations. Consumer satisfaction indicators allow us to see how much they like a given product or service, how long they are ready to be our clients, what is the structure of these consumers. If an organization receives data from a consumer in a timely manner, it can just as quickly find out the cause of dissatisfaction or additional wishes of consumers. In addition, it is necessary to constantly compare yourself with competitors, know the advantages of the characteristics of their products, the advantages and disadvantages of your products, for which benchmarking methods and tools are currently actively used. Personnel satisfaction indicators are no

less important than customer satisfaction indicators. Managers often forget that they are not the only ones doing all the work in the organization, the entire team does it. And the effectiveness and efficiency of the organization depends on how this team works (each employee in their place). Of course, it will work in any case. But with low staff satisfaction, the organization will inevitably move towards bankruptcy, and with high satisfaction, on the contrary, it will develop. One more aspect related to staff should be mentioned. In organizations with a traditional management system, managers most often make decisions independently, without resorting to advice and recommendations from staff. However, only those directly involved know all the specific features and problems of the activity. When they are unknown to managers, their decisions are often not just ineffective, but even more disruptive to the activity. Process indicators show the state of the internal activity of the organization. Measuring processes allows you to work on their continuous improvement, which leads to an improvement in the organization's activity as a whole, and most importantly - to an improvement in products or services. Collecting and analyzing process data allows you to identify the nature of the causes that cause activity problems and influence them correctly. Process measurement is based on the theory of variability, which divides all causes that cause problems into two large groups: general and special causes of variations. The advantage of this approach is that precise knowledge of what types of causes caused the problem allows you to make the right management decision. If there are general causes of variations, it is necessary to improve the system and process; if there are special causes of variations, it is impossible to interfere with the process and system, and decisions should be made with "local" influence. How can you find out which of the two types of causes are causing problems in an activity? In Japan, "seven simple methods" have been developed to find out exactly. These usually include:

- checklists (information collection tools that record not only basic data, but also additional information about the operating conditions of the process, which subsequently facilitates the search for the system element that is the source of the problem);

- Pareto charts (a method by which the types of problems and defects that need to be resolved first are determined, as they create the highest level of deviations);

- histograms (a tool that allows you to display data variability in a graph);

- control charts (a method of collecting and analyzing data that allows one to identify the presence of common and special causes of variation);

- scatterplots (a method for determining data correlation);

- stratification (a method that allows one to determine the stratification of data);

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- Ishikawa diagram (a cause and effect diagram that helps identify the root causes of a problem).

Making decisions based on facts means distinguishing reliable or valid facts from false or dubious ones. This is where the concept of “statistical thinking” developed by W. Shewhart and E. Deming comes to the rescue.

Statistical Thinking– is a method of diagnosing the state of processes and/or systems, based on the theory of variability and aimed at making optimal management decisions. Statistical process control is a process of analyzing and solving problems based on

statistical thinking, using both statistical (probabilistic) and non-statistical methods in order to carry out actions necessary to achieve and maintain a state of statistical controllability of processes, and to continuously improve their stability and reproducibility.

The activities of an organization based on the process approach and the management mechanism based on the Shewhart-Deming cycle differ significantly from the activities of a conventional organization (Figure 4).

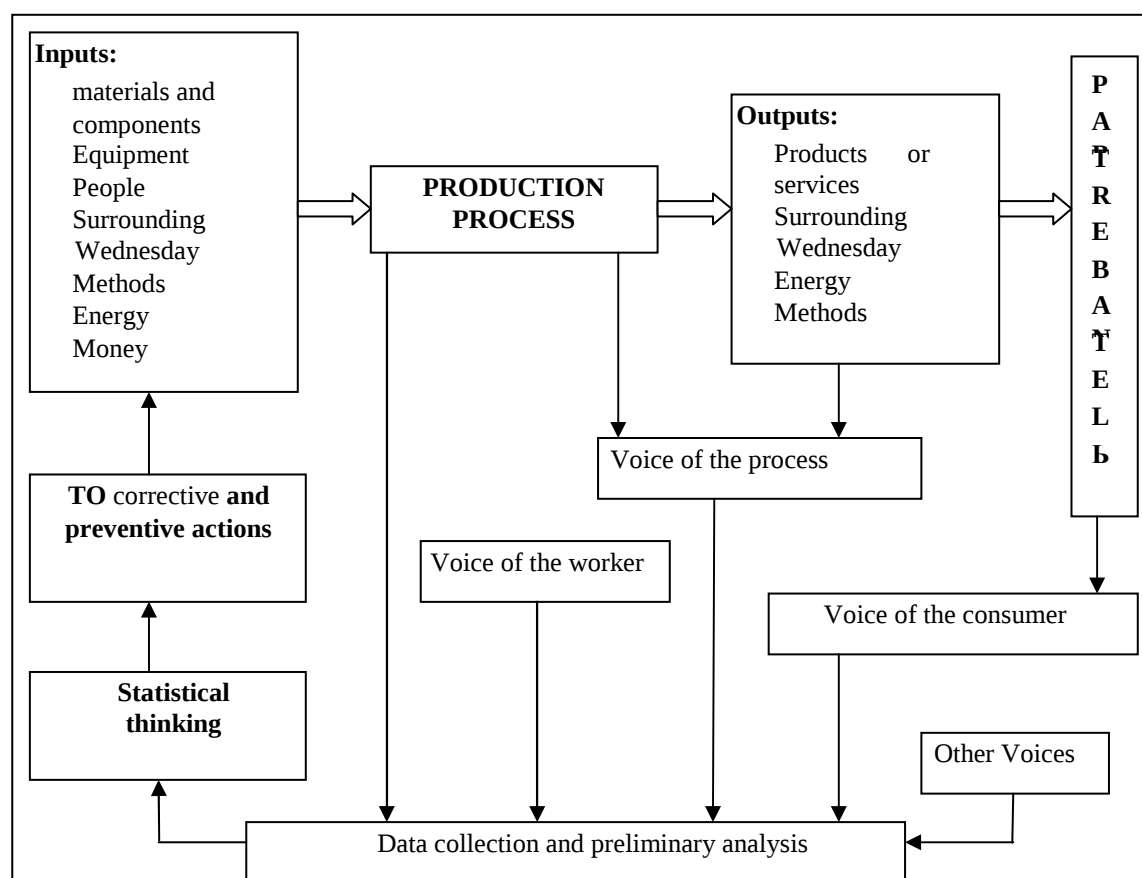


Figure 4. Organizational activities based on statistical thinking

The activities of such an organization differ from the usual ones in that a large amount of different data is collected from consumers, employees, process indicators and others based on the results and processes, which are analyzed by managers at all levels of the organization. And then, based on the identified facts, corrective and preventive actions are taken that change (improve) the activities of the processes and the organization as a whole.

Principle 8. Mutually beneficial supplier relationships. “An organization and its suppliers are interdependent. Mutually beneficial relationships between them enhance the ability of both parties to create value.” This principle suggests changing the

organization’s strategy toward cooperation and mutually beneficial supplier relationships.

The relationship between a consumer enterprise and a supplier traditionally boiled down to the consumer choosing a supplier, usually based on a single criterion - low price. Then came the understanding that the quality of products is significantly affected by the quality of raw materials, materials and components. At the same time, all of the listed components significantly affect the cost. With the traditional approach to relationships, the consumer cannot influence the improvement of the quality of the supplier's products. Gradually, large global companies such as Toyota and Ford began to create new systems

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of relationships with suppliers. Currently, such companies strive to keep under control all commodity and material flows circulating between their enterprises and suppliers. The new system of relationships is manifested in various types of activity. Many have switched from an endless change of suppliers to long-term cooperation with one or two suppliers of one type of product. At the same time, the main condition for cooperation is usually the presence of a quality management system (preferably certified) and the ability of the enterprise to conduct an audit at the supplier. But the consumer not only exercises quality control over the supplier's processes, but also helps him in training personnel, implementing advanced technologies and jointly develops plans for improving joint activities aimed at improving the quality of the final product. In conclusion, I would like to cite the anti-principles of ISO 9000:2000, allowing you to see the hidden facets of the system and penetrate deeper into the essence of the matter. Anti-principles of ISO 9000:2000.

1. Consumer focus.

The client is always wrong and he pays us money for that. He is greedy, scandalous, has a bad character, capricious, can never express his demands, and therefore we do not give him discounts, give in to disputes, are considerate and always smile at him, wishing with all our might that he never dies, and at the same time we are interested in his satisfaction.

2. Leadership of the manager.

Leaders- these are maniacs, convinced that they know for others where to lead, what directions to choose and how to manipulate people's involvement, reveling in their importance and healthy appearance. Although a real leader-manager is one who does not interfere with people's work.

3. Employee engagement.

Employee engagement- a method of removing all responsibility for results from management and shifting it to employees, speaking beautiful words about delegating authority and suggesting that they forget about salaries and bonuses, working 8 hours a day from 8 am to 8 pm with two days off a month, added to the next vacation for the previous year.

4. Process approach.

Process approach- a way to do work, knowing how to close the entrances to it and always find the exits after the work is not done. An excellent method to destroy the organization, confuse all relationships and turn work into a game of squares, rectangles, circles and arrows. And most importantly, how to find the one who is responsible for the arrows.

5. Systems approach to management.

Systematic approach- writing an ordered set of uncoordinated documents that indicate: what, where, when, how and with whom to do, in order to forget forever why the company was created and how to make money.

6. Continuous improvement.

Continuous improvement- a method of never doing the right thing right the first time, convincing everyone that what you have done can be continually improved, you just need to believe in the effectiveness and efficiency of corrective actions.

7. Fact-based decision making.

Management based on facts is a way to overwhelm all employees with an insane amount of data and information; to force all employees to build graphs, charts, maps, competing with each other in the beauty of these visual products and the number of numbers in the pictures, continuously improving their appearance with the goal of convincing consumers that any company is 90% producing information (which is actually white noise).

8. *Mutually beneficial relationships with suppliers.* Two views:

1) Mutually beneficial for the consumer

Love suppliers - a source of money for consumers. When they (suppliers) run out of money, they (consumers) will find new suppliers and force them to be certified according to MS ISO 9001 to show the seriousness of their intentions.

2) Mutually beneficial supplier

Anyone can produce and deliver products to a client, but only a real professional can squeeze money out of them.

Main changes in ISO 9000 version 2000 and benefits of the new version

Fundamental changes in the new (2000) version of ISO 9000 series standards, namely:

1. The total number of ISO 9000 standards has been significantly reduced. This has allowed enterprises and organizations to simplify their selection and application. The basic standards of the new version have formed an integrated package and provide maximum benefits to users.

2. The first versions of ISO 9000 standards were used for implementation and certification mainly in large enterprises. After the release of the new version in 2000, the standards found wider application in small and medium-sized enterprises, in the service sector and in government agencies.

3. With the advent of the new version of ISO standards, there is no need to choose between the implementation of ISO standards, TQM system implementations or business excellence models, since all quality system models contain 80-90% of the requirements of ISO 9001:2000 in their basic foundation. Now enterprises and organizations have the opportunity to build a quality management system based on ISO 9001:2000, improve it based on ISO 9004:2000 or simultaneously develop a system similar to TQM or business excellence models and awards.

4. The new version of the standards differs fundamentally from previous versions in that the old ones provide for a functional approach to management, while the new version provides for a

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process approach, which most accurately describes the actual activities of enterprises and organizations

focused on consumer requirements and their satisfaction.

INTERNATIONAL STANDARDS ISO 9000 series

before 2000 after 2000

ISO 8402
ISO 9000
(parts 1, 2, 3, 4)

ISO 9001
ISO 9002
ISO 9003
ISO 9004
(parts 1, 2, 3, 4)

ISO 10011
(parts 1, 2, 3)

ISO 14010
ISO 14011
ISO 14012

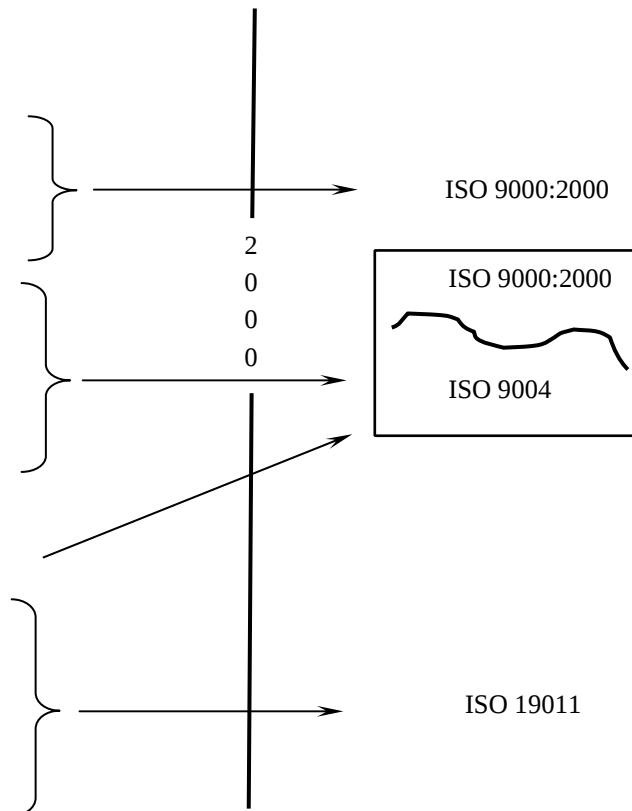


Figure 5. Transition from the 1994 standards to the new edition of the 2000 standards

5. The revised standards introduce a requirement to measure quantitative measures of customer satisfaction.

6. The new version of the standards sets out more stringent and broad requirements for senior management responsibilities, including relationships with staff and customers.

7. ISO 9000:2000 standards place a clear emphasis on the requirement for continual improvement, and the Shewhart-Deming cycle of plan-do-check-act is an integral part of them.

The advantages of ISO 9000:2000 over previous versions are:

1. *Reduction in the number of standards (instead of 16–4).* Structure of standards has become more transparent: one of the standards (ISO 9001) is intended for certification purposes; another (ISO 9000) contains the basic provisions of the system and a glossary of terms; a third (9004) has become a methodological standard, as well as a guide to analyzing and improving activities; recommendations for conducting an audit, which simultaneously helps organizations implementing the system to more clearly understand the requirements for the system, are contained in (ISO 19011).

2. *The standards form an integrated package (ISO 9001 and ISO 9004 were developed as a coordinated pair)* The ISO 9004 standard fully complies with the sections of the 9001 standard, significantly expands the concepts and contains more detailed interpretations of the requirements.

3. *Standards have been restructured based on business processes and have a more logical structure (previously there were 20 unrelated blocks).* The 20 blocks previously contained requirements for 20 main functions performed in the activities of an enterprise (organization). At the same time, the activities retained the shortcomings of the functional structure. The new version assumes a process approach to activities, i.e., representing activities in the form of interconnected and interacting processes with coordinated inputs and outputs and a chain of processes oriented toward identifying consumer requirements and satisfying their requirements.

4. *The structure is based on 4 newly introduced sections:*

- management responsibility;
- resource management;
- product life cycle processes;
- measure, analyze, improve.

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5. *Introduction of the principles of the process approach.* The ISO 9000:2000 series of standards has been restructured based on a process approach that better matches the actual activities of an enterprise (organization) and ends with the establishment of a quality management system that is more effective in implementation, operation and verification.

6. *Clearly formulated criteria for “consumer satisfaction assessment”.* Strengthening customer satisfaction requirements and monitoring this indicator as a basis for continuous improvement provides the user with confidence that the organization is not only “doing the right thing” (efficiency) but also “doing it right” (effectiveness).

7. *Based on 8 universal principles of quality management.* In addition to the requirements for developing a quality management system, ISO 9000 standards proclaim 8 principles of quality management, which reflect the best experience in building such systems (Japanese TQM), and also guide developers to specific actions in developing this system. These same principles form the basis of most models of quality systems and quality awards, which allows for simplifying activities in the field of quality and expanding opportunities for improvement.

8. *Convenient to use in service sector enterprises, small businesses, and government enterprises.* The language of standards is less industrially oriented. The new version of standards allows developing a quality management system at any industrial enterprises, organizations in the service sector of government agencies, regardless of their size, specifics, and forms of ownership.

9. *Tougher and broader requirements for management accountability.* The new ISO 9001 standard sets specific requirements for the role of management in the development and operation of a quality management system. The standard devotes an entire section to the topic of management responsibility.

10. *Demand for continuous improvement.* In the standard, unlike previous versions, all sections and the quality management system model contain principles of continuous improvement. The developed, certified system must constantly improve its activities.

11. *The standards are maximally compatible with other standards and systems.*

ISO 9001:2000 ensures maximum compatibility with ISO 14001 for environmental management systems. One of the standards in the series (ISO 19011) allows for joint or integrated audits of environmental and quality management systems.

5. Trends in improvement and development of ISO 9000 series standards

As is known, three versions of ISO 9000 series standards have been developed over the past 20 years: in 1987, 1994 and 2000. Each of them summarized the

accumulated experience in the field of quality management and was aimed at satisfying the requirements of consumers of standards - enterprises and organizations from almost all countries of the world. Before talking about the trends in the development of ISO 9000 series standards, it is necessary to summarize the results of the implementation of the existing version of the standards. TC 176, based on the analysis of the results of the application of ISO 9000 series standards, version 2000 and the conclusions made based on the generalization of world experience, determined the following assessments:

1. The ISO 9004 standard is not in high demand by industry. This means that the recommendations of TC 176 on building quality management systems are not needed by most enterprises. There are two main reasons for this situation:

- the introduction of the 9004 standard requires a serious restructuring of quality work, a transition to horizontal structures and process management, team organization of work, as well as other forms of modern management. This is difficult, requires material and financial costs, a change in the mentality of the team and the management of the enterprise. As a result, most enterprises are implementing the 9001 standard, which allows the possibility of obtaining a certificate without penetrating into the essence of the requirements established in it, i.e. their formal implementation;

- the very concept of the 9004 standard no longer satisfies the interests of business. There have been many innovations in the field of management, and in the conditions of globalization and increased competition, business requirements for the 9004 standard are increasing. Therefore, the decision of ISO/TC 176 to revise the 9004 standard by 2009 is quite logical.

2. The top managers of enterprises do not take an active position in relation to ISO 9000 series standards.

3. About a million enterprises have implemented and certified quality management systems according to the ISO 9001 standard. At the same time, a number of foreign studies indicate that approximately 50% of them, and according to some estimates up to 80%, did not achieve the expected results in terms of manufactured products.

The consequence of the situation noted in the third point is two circumstances:

- Firstly, the authority of the certificate for a quality management system that meets the requirements of MS ISO 9001 has been significantly undermined among consumers. The reason for this lies not only in the shortcomings of the standard, but also in the fact that there is a lot of formalism in the work on its implementation. The current certification system for compliance with this standard has also contributed to this state of affairs;

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- Secondly, the lack of desired results led to the development of special standards for quality management systems in a number of industries. One of the main differences between these standards and ISO 9001:2000 is the establishment of more specific requirements for the organization of quality work, which made them more suitable for audit. In addition, the introduction of industry standards for quality management is accompanied by the creation of special certification systems with high requirements for auditors, with strict conditions for admission of certification bodies to it.

Why do many businesses and organizations not benefit from the ISO 9000 series of standards as much as they could? There are several reasons.

1. *Substitution of content with form.* Without properly implementing the ISO 9001 standard in essence, many enterprises, nevertheless, for various reasons, feel the desire and need to have a certificate of compliance of the QMS with this standard.

2. *Conservatism of enterprises.* The heads of many enterprises, speaking about their intention to apply ISO 9000 series standards and even making the corresponding decisions, do not want to change anything significantly. As a result, some provisions and norms of the standard are applied, but in general, quality management at such an enterprise is not ISO 9001.

3. *The paradox of the management level.* As a rule, the task of implementing the ISO 9000 series standards ideology at the enterprise falls on the quality departments. The management does not understand that a reorganization of management as a whole, a change in ideology, a deep understanding and perception by the management of the basic principles and principles of the quality management system are required. In this case, the rejection of the system comes both from the management and from the majority of structural divisions and personnel of the enterprise.

4. *The problem of insufficient coordinating powers.* The quality of the final product or service is created by almost all employees of the enterprise, and to achieve the required quality, coordination of the activities of all departments and services is required. To create a QMS and its subsequent monitoring, a management principle is required. In accordance with the ideology of ISO 9000 series standards, such a management principle should be a quality management representative. In practice, one of the management members is awarded the title of quality management representative, but is not given the full necessary powers of a system manager; he continues to be perceived simply as a functional manager.

5. *Problems of incompetence.* The application of ISO 9000 series standards requires deep understanding, special knowledge and professionalism. However, many simplify the situation, believing that they will understand quality

management without special training. As a result, the work on implementing the standards is carried out incompetently, at an amateur level. The result is also appropriate.

6. *Specific issues of ISO 9004 standard.* Currently, the main concern of business is the very rapid change of the environment and the risks that arise with it. Business needs management capable of making adequate changes at the enterprise to ensure its sustainability. The existing ISO 9004 model, unfortunately, does not fully contain such a mechanism. In addition, as already noted, an attempt to rebuild the management of an enterprise as a whole through standards supposedly aimed only at quality, in many cases causes rejection.

At present, there is a tendency for trust in the ISO 9001 standard to decline on the part of consumer enterprises. This is evidenced by the active development of the industry (industry standards) for quality systems, in particular, in the automotive industry. For example, VAZ and KAMAZ clearly require their suppliers to have a certificate of compliance with the industry standard ISO/TU 16949, and not with the ISO 9001 standard. Their arguments boil down to the fact that the requirements for the management system formulated in ISO/TU 16949, firstly, take into account the specifics of the industry (homogeneous group of products), and secondly, they are specific. For example, this standard, unlike standard 9001, establishes:

- Personnel responsible for product quality must have the authority to stop production to correct quality problems;

- Top management should define quality objectives and measurable indicators that should be included in the business plan and used in the implementation of the quality system;

- in statistical acceptance testing by an alternative attribute, the acceptance number must be equal to zero defects.

There is an opinion that quality, as the goal of the management system, is a broader concept and should characterize the enterprise as a whole, and not only its products or services. This concept includes the fulfillment of the requirements and desires of not only consumers, but also investors, employees and their families, society. As well as legislative and regulatory bodies. Today, globalization complicates the situation. The understanding of quality and value is transformed as the enterprise's products cross many geographical, cultural and political boundaries. Therefore, comprehensive improvement is important for business, in this sense, the quality management system, in order to be effective, must turn into a business management system covering the entire enterprise - a complex and dynamic structure that consists of interrelated processes: forming value through the creation and provision of goods and

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services; supporting this activity; ensuring strategic planning and management.

Development trends *according to ISO 9001 standard*.

The usefulness and necessity of this standard in TC 176 is beyond doubt. The new version is being prepared in accordance with the technical specifications for this standard, which provide for changes of an explanatory nature only, without changing the essence of its norms. The proposed changes were discussed in working groups and were adopted at the working level with virtually no disagreement. This made it possible to plan its adoption and publication for 2023.

According to ISO 9004 standard. The new version of the ISO 9004 standard is being prepared based on the concept of previous versions: i.e., being one of the standards of the Quality Management Systems group, it will be much broader in content and will claim the role of a manual on general management. Initially, an option was considered in which the new version would be based on the Japanese standard JIS/TS Q 0005:2005 "Quality Management Systems. – Guidelines for Sustainable Development". However, the problems of perception of such standards by senior management and other levels of enterprise management caused hesitation among the developers of ISO 9004. The draft ISO 9004 standard is a model for self-assessment of the maturity level of an enterprise. At the same time, the standard provides for five maturity levels: beginner, advanced, flexible, innovative, sustainable. Accordingly, the standard contains assessment criteria for each level. What is most important in the ISO 9000 series of standards, what requirements should be strengthened based on Russian realities, Russian experts discuss.

1. *About the original principle.*

The standards should be based on a system-integrated methodology that has stood the test of time. While maintaining its integration capabilities, the system-integrated methodology will be further developed. Complexity and systemicity will be used more widely at all levels of quality management and in all functions, penetrating deep into the systems, facilitating the streamlining of structural and functional elements, helping to solve such problems as a comprehensive assessment of proposals to improve the efficiency of quality system elements, activating the use of the so-called human factor, advanced technological processes and many other equally important tasks.

2. *On the criteria for assessing quality systems.*

If previously quality systems were mainly supposed to ensure compliance of manufactured products with the requirements of standards and technical conditions during the entire period of their validity, now the quality system must first of all ensure the manufacture of products that are well-sold by consumers, bring profit, i.e. competitive and

advantageous for the manufacturer. It must be assumed that the next generation of quality systems will develop practical methods for the balanced accounting of both quantitative and natural indicators, such as: reducing the time for creating new products and entering the market; reducing losses from defects and complaints; accelerating product certification processes; accurate and timely assessment of market conditions; intensification of the production process; ensuring stability in the competitive struggle, etc.

3. *On fact-based decision making and monitoring.*

Timely adoption of effective, well-founded decisions in quality systems requires extensive preparatory work to search for and verify facts, circumstances, capabilities of technology, economics, and the market, which are becoming more dynamic and mobile. In many cases, the process of preparing and making decisions turns into difficult professional, moral and ethical tests. The difficulties of making decisions have been compounded by a steady trend toward reducing the time for their preparation and decision-making, caused by increasing competition. Monitoring will take its rightful place in the functional and organizational structure of the next-generation quality systems. This will allow, in combination with the S-curve law, to evaluate the level of system efficiency, its growth rates, and also to determine the moment of the necessary transition to a higher-level model or the implementation of qualitative changes in the current model.

4. *On the scientific validity of choosing from among alternative options.*

The rapid development of modern technological capabilities allows creating new products and methods of organizing their production, offering in ever-increasing quantities possible alternative options for control systems for these processes. At present, in almost all cases, the choice is made empirically, relying on the experience of specialists, quality managers, their professionalism and intuition. However, empirical methods are gradually being supplemented to an ever-increasing extent by qualimetry methods. Recently, the possibilities of entropy methodology have been considered for choosing the best options for improving quality systems or product quality. There are also other methods used in other areas of science that are promising for solving our problem, and they are waiting for their researcher.

5. *On the duality of quality and harmony systems.*

It is widely believed that the efficiency of quality systems depends on the chosen model. This is true, but only partly. In practice, in many cases, when designing systems, implementing them, improving them, the main attention and efforts are focused on the structural and functional component. At the same time, another very important component (people's

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actions) remains in the shadows, although it is precisely this that sets the mechanism embedded in the model into action. Organizational and functional, structural diagrams of quality systems are quite well understood and understood. The issues of harmony, maintaining optimal proportions between elements, blocks of structural diagrams and their functional content still remain without due attention. Work on increasing the level of proportionality and harmony of quality systems for the sake of increasing their efficiency, one must assume, will be characteristic of the next generation of quality systems.

6. *On the human factor, ethics, liberalization and power.*

What was said in the previous paragraph about the role of people's actions allows us to conclude that the next generation of quality systems will be characterized by humanization, i.e., a deepened interest in people, in improving individual and collective relationships between people in the production process. The complex fabric of these relationships within the framework of quality systems must not only be understood, but also put into certain standards: codes, rules of conduct, commandments, etc. The problems of spirituality, morality, and ethics must be developed more deeply and meaningfully.

Conclusion

In conclusion, it can be said that the modern era is an era in which globalization is an absolute tendency, including autarky as an element. The opposition of globalization and autarky is not absolute. Their unity is expressed in complex processes characteristic of the 21st century. The tendency towards globalization implicitly exists in autarky itself: each state that fights for the expansion of its living space, or a pretender state that wants to change the configuration of the international division of labor, strives to "globalize" the world in one way or another. This aspiration exists, even if it is not recognized by the political elite of a particular country. Despite the statements of American politicians about "economic nationalism", the United States needs the existing international division of labor. Americans want to maintain their dominant position in this system through the influence of the media and economic control over other states with the help of the dollar, which is both the national currency of the United States and the currency in which international trade is carried out. This aspiration was one of the reasons for the victory of the Democratic

candidate in the last presidential election. Modern China also needs globalization, realizing that a large domestic market cannot be the basis of the Chinese economy forever, and sooner or later the PRC will have to face the economic interests of other countries in the international arena. Despite all the conflicts and contradictions, the modern world-system is still a capitalist microeconomy. In this regard, it can be said that the modern era is not just an era of globalization, but an era of globalizations - in this regard, it is very similar to what happened in the 20th century. The key difference from the 20th century is that modernity is characterized not by a clash of opposing socio-economic systems (capitalism and communism), but by a struggle of different forms of the same system - capitalism. And the struggle between autarkies is being waged for what will be the new hegemon in the capitalist microeconomy of the future.

Naturally, today we need to quickly do what has been talked about for the last 10 years - "get off the raw materials needle in export." The idea is absolutely banal and obvious. As for the experience of the industrialization era, we must point out the propaganda fallacy - industrialization was carried out at the expense of grain (bread) sales. This is not entirely true. Let us give some figures: The greatest revenue from grain export was obtained in 1930 - 883 million rubles. In subsequent years, grain prices on the world market fell sharply. The export of large quantities of grain in 1932-1933, when the country was starving and on ration cards, brought in a total of only 389 million rubles, and the export of timber yielded almost 700 million rubles. Only the sale of furs in 1933 allowed us to earn more than for the exported grain (and grain was bought from the peasants at a very low price).

But today we must honestly explain to people what awaits them in the near future, and how long the period of forced autarky will last. This is being done now, but is it enough?

The main, fundamental, long-term line of our state should be leaving the state of autarky and moving as quickly as possible to the rails of normal economic, first of all, cooperation. Using military terminology, one can propose the term "permanent attack on isolation". Still, the main goal should not be the creation of an independent autonomous economy, as they tried to do in the 1930s, but on the contrary, the use and attraction of all the achievements of civilization in general and modern technologies in particular.

References:

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1. Rebrin, Yu.I. (2024). *Quality Management: Textbook*. (p.174). Taganrog: Publishing house of TRTU.
2. (2021). *Efficiency and Quality Management. Modular program: Trans. from English* / edited by I. Prokopenko, K. North: in 2 parts, Part 1. (p.800). M.: Delo.
3. Feigenbaum, A. (2023). *Product quality control*. (p.471). Moscow: Economica.
4. Imai, M. (2024). *Gemba Kaizen: The Path to Cost Reduction and Quality Improvement. / trans. from English*. (p.346). Moscow: "Alpina Business Books".
5. Porter, M. (2019). *Competition / Translated from English*. (p.608). Moscow: Williams Publishing House.
6. (2024). *"What is Six Sigma? A Revolutionary Method of Quality Management"* / Pande P., Holp. / trans. from English - M.Zh. Alpinina, Business Books, 2024, 158 p.
7. Womack, J.P. (2024). *Lean Manufacturing: How to Eliminate Waste and Make Your Company Prosper [Text]* / James P. Womack, Daniel T. Jones / trans. from English, 2nd ed, (p.473). Moscow: "Alpina Business Books".
8. George, M.L. (2023). *Lean Six Sigma: Combining the Quality of Six Sigma with the Speed of Lean [Text]* / Michael L. George; trans. from English, (p.360). Moscow: "Alpina Business Books".
9. Shingo, S. (2023). *Fast Changeover: Revolutionary Technology for Optimizing Production [Text]*. (p.344). Moscow: "Alpina Business Books".
10. Vader, M. (2022). *Lean Manufacturing Tools: A Mini-Guide to Implementing Lean Manufacturing Methodologies [Text]* / M. Vader; trans. from English, (p.125). Moscow: Alpina Business Books.
11. Imai, M.(2024). *Gemba Kaizen: The Path to Cost Reduction and Quality Improvement [Text]* / Masaaki Imai; trans. from English. (p.346). Moscow: "Alpina Business Books".
12. Porter, M. (2024). *Competition: trans. from English*. (p.496). Moscow: Williams Publishing House.