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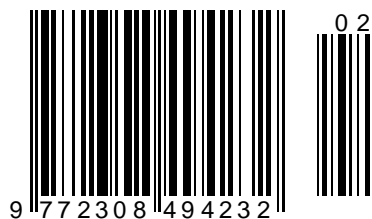
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Article



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DEVELOP A STRATEGY FOR INCREASING BUSINESS EFFICIENCY IN ENTERPRISES

Abstract: This article examines the effectiveness of the strategic management of enterprises, the factors affecting them, the efficiency of the enterprise and its competitiveness, as well as the improvement of organizational and economic management mechanisms.

Key words: strategic management, business activity, competitiveness, trend, management effectiveness, internal and external factors, innovation, integral indicator, strategy, evaluation, enterprise sustainability.

Language: English

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Introduction

Currently, the importance of strategic management in the practice of enterprise activity is increasing. This is due to the expansion of their authority and increased responsibility for their economic situation. The quality of modern management determines the efficiency of enterprises. Therefore, attracting the most modern techniques and technologies to enterprises is considered one of the priority tasks today.

Currently, most of the enterprises need to develop the concept, strategy and program of their development.

The long-term success of any enterprise depends on the developed strategy. If the development strategy of the enterprise is not developed with one or another error, this situation does not allow the enterprise to take a stable and strong position in the market. Modern science and practice have extensive experience in strategic planning and management, but many strategies still cannot adapt to the changing conditions of the external and internal environment. This shows that not all problems of strategic management have been solved yet, and this situation is primarily related to the development of mechanisms of strategic stability of enterprise development.

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In the strategic management system, it is assumed that the future activity of the enterprise will be determined based on the study of retrospective indicators and the application of the extrapolation method. Extrapolation is the application of trends established in the past to the future. In other words, when developing a forecast, the conditions of the enterprise's activity will not deteriorate in the future, that is, it is determined that the end of the enterprise's activity will be good compared to the previous periods. This is the manifestation of a trend that increases the development of the enterprise.

To assess the future stability of the enterprise, a complex integrated indicator representing the development trend is used; an extended system of indicators is used for deeper analysis and reserve identification. Thus, the assessment of the future stability of the enterprise involves the assessment of various aspects of the enterprise's activity, moreover, such an assessment is carried out in dynamics and space.

In 2017-2021, the action strategy for the further development of the Republic of Uzbekistan also sets priorities such as "deepening structural changes, increasing the competitiveness of enterprises and increasing the export potential". Effective execution of these tasks requires improvement of modern management mechanisms and efficiency of innovative activities of production enterprises.

Analysis of literature on the topic

Issues of increasing the efficiency of the enterprise and developing economic activity in the strategic management system R.S.Kaplan, D.P.Norton, I.Ansoff, V.P.Barancheev, M.Porter, R. .S.Muratov, I.A.Djalolova, S.Sh.Oripov, problems of their activity management mechanism, I.O.Ulashev, Sh.A.Atamuradov, G.Sh.Khonkeldieva, Researched in the scientific works of R.R. Abduraupov, M.Q. Pardaev, Kh. Nabiev, D.Kh. Nabiev and others.

Despite the carried out scientific and research work and the conducted scientific and theoretical research, in the context of today's globalization and democratic market reforms, the issues aimed at assessing the factors affecting the improvement of the efficiency of the enterprise and the development of economic activity in the strategic management system have not been systematically covered.

Research methodology

Analysis, synthesis, induction, deduction, statistical grouping, expert assessment, scientific abstraction and other methods were widely used in the research process.

Enterprises operating in the Republic of Uzbekistan were taken as the object of research.

The main goal of the research is to improve the efficiency of strategic management of enterprises.

The practical significance of the research results allows determining the main directions of effective improvement of strategic management at the enterprise level.

Analysis and results

Creating an understanding of the enterprise has important economic value. Many literatures present different opinions about the enterprise. For example, in the textbook "Corporate Economics" by R.S.Muratov, I.A.Djalolova, S.Sh.Oripov, the enterprise is defined as follows. An enterprise is an independent economic entity that produces products, performs work, and provides services in order to satisfy social requirements and obtain net profit. In the study guide "Economics and Management of the Enterprise" by I. O. Ulashev, Sh. A. Atamuradov, the enterprise is defined as follows.

An enterprise is a legal entity that is considered the main link of society, produces and exchanges products based on the use of private resources, and performs other work and services in order to satisfy the demand of the population and obtain profit or perform other social functions. is an economic entity of various sizes that has [7].

In our opinion, a legal entity that has the right, produces and sells products or exchanges products, performs work, provides services based on the use of property owned by the right of ownership or the right to fully manage the economy, in accordance with the current laws, in the conditions of competition and equality of all forms of ownership an independent business entity that carries out its activities is an enterprise.

Based on the above, the enterprise has social, economic and political relations with the state, citizens and legal entities during its activities and makes a significant contribution to the sustainable development of the national economy.

Currently, the development of the enterprise can be achieved only with the continuous introduction of innovations. M. Porter defined the role of innovation in companies' achievement of competitive advantage as follows: "... the company gains competitive advantage through innovation. They approach newly introduced procedures using both new technologies and new working methods in a broad sense.

Once a company has gained a competitive advantage through innovation, it can only maintain that advantage through continuous improvement. "Competitors will immediately and surely overtake any company that stops improving and introducing innovations."

The competitiveness of the enterprise means the production and sale of goods that are more attractive to consumers than the goods of competitors. Continuous monitoring of the competitive environment is a necessary condition for production to satisfy needs in the most efficient way. Conclusions

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about the state of the competitive environment are the basis for the development of the enterprise's innovation policy.

In essence, the advantage achieved over competitors is due to innovation, and therefore, the ability to introduce new elements that provide any advantage over competitors in the enterprise's activity is a necessary component of the competitiveness of this enterprise.

Enterprise sustainability is a complex economic category that characterizes its long-term effective operation (Figure 1) and is based on three elements: enterprise competitiveness, economic security, and economic efficiency. It should be noted that these elements are closely related and work together, but have different functional tasks. Competitiveness determines the potential of enterprise development, and stability determines the long-term perspective of the enterprise.

It can be said that the stability of the enterprise is the competitiveness distributed over time. In small intervals of time, these two concepts have equal power.

The production potential expressed in the organization of production, labor and management of

the enterprise, its technical and technological capabilities is an element that ensures timely innovation. The higher the production potential of the enterprise, the lower the level of the share of costs for product production and its quality. The quality of the produced product, which is higher than the quality of competitors' goods, is a material representation of the innovative potential.

The objective reasons caused by the need for the development of economic systems to transition to an innovative type require a comprehensive solution to the problems of effective interaction of scientific-technical and economic factors in the entire innovation-investment process. In our opinion, the rational combination of technological and economic potentials is the central issue of managing the innovation-investment process.

Table 1 gives an assessment of the factors affecting the stability of the enterprise. It analyzes the main innovative trends in enterprises and the factors that negatively affect the introduction of innovations, as well as the factors that ensure the development and support of innovations.

Table 1. Analysis of factors affecting the stability of enterprises

№	Factors	The results of the influence of factors
1.	Knowledge and skills	The lack of knowledge and skills in production enterprises, precisely in terms of management (laws of the market economy), prevents the introduction of innovative management.
2.	Level of concentration	The high level of centralization limits the ability of lower level managers to think creatively and take a creative approach to management.
3.	Communication system	Poor organization of the communication system or the manager's inability to use it effectively causes the problem of timely delivery of information and news in some cases.
4.	Contractual relations	Managers and employees do not know exactly the tasks and do not follow them, which hinders the development of the management process.
5.	Interest in innovation	Low interest in innovation by managers, that is, low flexibility in management.
6.	Encouragement	Inadequate development of the incentive system in management reduces the interest in introducing innovative management.

The large number of factors makes it possible to classify them according to certain signs.

The external factors of the enterprise include: the state's anti-crisis policy in the economic sphere; the demographic situation in the country; political stability; the development of science and technology; the development of transport infrastructure.

Internal factors are formed in the internal environment of the enterprise, in its subsystems (employees, production, marketing, sales, finance, organizational structure). Management of internal

factors allows the enterprise to determine the reserves of strengthening stability and to quickly manage production in case of changes in external factors.

The systematic development of the enterprise is carried out by successively passing the stages from centralization to decentralization. This means that every element of the enterprise becomes planned and organized. In essence, the transition to a decentralized scheme of management by the enterprise changes the management paradigm itself as a goal-directed

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external influence on the object to change it to another state.

Development of the elements of the enterprise to the level of independent decision-making in the conditions of an unknown external environment is the necessity of ensuring the competitiveness of the enterprise.

On the other hand, the enterprise must have certain characteristics as a whole in the external environment, as a goal-oriented development. The main of them is controllability. In this regard, the management of an enterprise with a similar decentralization feature will have a different form, different from the traditional form.

Systematic management of enterprise development can be implemented in the following sequence of the characteristics being formed: flexibility - adaptability - competitiveness.

Application of innovative technologies to the activity of enterprises, use of strategic management methods serves to increase efficiency indicators and production volume.

According to the results of the analysis, in order to introduce strategic management of the innovative activities of enterprises, first of all, it is necessary to improve the knowledge and skills of management personnel, to reduce the level of centralization and to introduce new information technologies into the system of information exchange between stages, to increase the interest of management employees to innovation, to develop an incentive system, it serves to ensure that each manager clearly and fully understands the tasks assigned to him and to fulfill them on time, to reduce the level of informal communication[8].

The economic efficiency of investments is a component of the overall production efficiency. The main task is to bring as much profit and return as possible to investments in various levels of economic activity. Deviation from this rule can lead to the loss of resources, the destruction of past and present work of society.

The need to evaluate the economic efficiency of investments arises in all cases, such as new construction requiring additional capital investments, expansion of existing production, restoration and technical rearmament, modernization of production and development of organizational and technical measures. Sometimes, the production of a new type of products also requires investment and other funds, which means a preliminary assessment of the ratio of costs and results [9].

When assessing the economic efficiency of investments, enterprises must solve two tasks:

the first is to assess the effectiveness of the investment project, which creates the opportunity to choose the most optimal option in terms of the payback period and profitability of capital investments;

the second is to evaluate the effectiveness of investments in existing production (production of additional products, cost reduction, profit increase, etc.).

The process related to the production of new products or the improvement of previously existing types as a result of human scientific and technical activity is an innovative activity. The results of the introduction of innovation allow companies to gain a significant competitive advantage, which is an important motivating factor for the enterprise.

World experience shows that enterprises are interested in the introduction of advanced resource-saving developments in science, secondly, as a result of this global event, by further developing the potential of the enterprises of our republic, increasing its investment attractiveness, thirdly, by implementing deep diversification measures in enterprises, the production of stable and high-quality goods and efficiency will further expand the possibilities of radical improvement.

Due to the peculiarities of strategic management activities, it is necessary to develop a new comprehensive approach to resource management in order to create a flexible system of sustainable development of enterprises (Fig. 2).

One of the main conditions for the successful adoption of resource-saving technologies in enterprises is the complex developed on the basis of foreign recommendations on the introduction of these technologies into production by adapting them to the conditions of their use and the specific characteristics of their acceptance by managers and specialists in relation to the management of the introduction of resource-saving technologies. approach is necessary.

A comprehensive approach to managing the process of introducing resource-saving technologies implies systematic work in four main directions: optimization of the production structure, improvement of the enterprise's technological system, modernization of the material and technical base of production, and the use of modern organizational and management innovations. A comprehensive approach implies systematic work in all directions of the introduction of resource-saving technologies.

Only then can the enterprise preserve and restore natural resources; it is possible to achieve a synergistic effect, which is reflected in the saving of labor, material and financial resources; the increase of production stability and efficiency.

Specific aspects of sustainable development and management of enterprises of our republic are evaluated on the basis of SWOT-analysis, which is widely used in practice (Table 2).

SWOT analysis is considered a strategic planning method and is aimed at determining the existing factors in the internal and external environments of the organization. They are divided

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into four categories, namely Strengths, Weaknesses, Opportunities and Threats.

Table 2 SWOT analysis of enterprise development

Strengths	Weaknesses
Development of state programs for the development of enterprises	Lack of personnel for the development of modern services in enterprises
Financial opportunities provided to enterprises	Lack of infrastructure for exporting products and services
High export potential in enterprises	The presence of problems in the sale and storage of products
Opportunities	Dangers or threats
Opportunities to diversify products and services in enterprises	Price changes in domestic and foreign markets
Financial opportunities and benefits provided to enterprises	Increasing competition in the world market
Access to foreign markets	Changes in the economic and political situation in the states

As can be seen from the above table, there are also strengths and weaknesses in the management of enterprises. Therefore, management and heads of economic entities should pay special attention to free

parties, otherwise the expected economic efficiency cannot be achieved. In the end, enterprise activity can become not a factor of economic development, but its opposite.

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Issue



Article



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ON THE IMPORTANCE OF TRANSPORT AS A SYSTEM-FORMING FACTOR FOR THE SPATIAL AND SOCIO-ECONOMIC DEVELOPMENT OF RUSSIAN REGIONS. MESSAGE 1

Abstract: *in the article, the authors analyze the role and significance of the transport strategy in creating conditions for the socio-economic development of the regions of the Russian Federation. At the same time, in order to improve the quality of transport services, it is expected to reduce the total costs of society dependent on transport, increase the competitiveness of the domestic transport system, strengthen the innovative, social and environmental orientation of the development of the transport industry in the regions of Russia. The authors paid more attention to the development of the regions of the north of the European part of Russia, most of Siberia and the Far East, which have the greatest resource potential and low population density, where the need to develop new mineral deposits will provoke an increase in the quality of life of the population of these regions. In this case.*

Key words: *reliability, quality of life, economy, efficiency, population, migration, competitiveness, profit, resource potential, comfort, priority, demand.*

Language: English

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Introduction

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At present, the Russian economy is facing a systemic challenge, the nature and quality of which

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are determined by a combination of three fundamental factors:

the first factor is the strengthening of global competition, covering the markets for goods, services, capital, and other factors of economic growth. A restructuring of the world economy began, associated with a change in the balance between economic centers, an increase in the role of regional economic unions, and the expected spread of new technologies. This will entail a change in national and world cargo and passenger flows, an increase in the requirements for the quality of transport services;

the second factor is the growing role of human capital in socio-economic development. The level of competitiveness of the modern innovative economy is increasingly determined by the quality of professional staff. This fully applies to transport as an industry embarking on the path of innovative development;

the third factor is the depletion of sources of the export-raw material type of development, based on an intensive increase in fuel and raw material exports.

At the same time, significant restrictions on economic growth appeared in Russia due to the insufficient development of the transport system. Today's volumetric and qualitative characteristics of transport, especially its infrastructure, do not allow to fully and effectively solve the problems of a growing economy. All this requires a significant restructuring of Russian transport. Previous strategic documents in the field of transport were developed in the context of the transition to an economic growth strategy.

In the transition to an intensive, innovative, socially-oriented type of development, the country seeks to become one of the leaders in the global economy, which requires the adoption of adequate strategic decisions on the development of the transport complex in the long term. The tasks of the development of the transport complex, depending on the specific conditions of the socio-economic development of the regions, have their own specifics, focus and priorities, which are taken into account when developing the priorities of the state transport policy.

The development of the constituent entities of the Russian Federation located in the Center, in the North-West, in the Middle Volga region and in the Urals, with the largest industrial potential and high population density, will be focused on the growth of the innovative economy and the consumer sector. At the same time, it will be necessary to ensure an increase in quality, reliability, rhythm, widespread availability of services, mobility, and full satisfaction of the needs for transport services. Priority development will be given to passenger and freight road transport, systems of high-speed transportation of people and goods, and the sector of integrated transport and logistics services. The development of transport infrastructure in these regions will be aimed at increasing the capacity and technical characteristics

of the transport network of all types of transport, construction of bypasses of large cities and chord transport communications, new high-speed railways, highways, including toll roads, creation of an integrated network of transport and logistics complexes, creation of large airport hubs. The role of river transport will increase in ensuring domestic and foreign trade transportation of goods, as well as the transportation of passengers, mainly for tourist and recreational purposes.

The development of the regions of the north of the European part of Russia, most of Siberia and the Far East, which have the greatest resource potential and low population density, will be aimed at developing new mineral deposits, including those on the continental shelf, and improving the quality of life of people. Under these conditions, priority development will be given to railway transport, which ensures the cost-effective development of large flows of bulk cargo, including for export. An increase in reliability and a reduction in the cost of life support for remote and hard-to-reach areas of the country will be ensured. Maritime transport will also play an important role. The main task is to develop shipping along the Northern Sea Route. In the future, it is possible to turn it into an international transport route.

The development of a network of highways of federal and regional significance, as well as the creation of entrances from settlements to railway stations, will continue. The main problems are increasing the availability of transport services for the population, so the development of inland water transport, the expansion of the network of regional air transportation require coordinated efforts at all levels of government.

In the Central Black Earth region, the North Caucasus, the Volga region, the southern regions of the Urals, Siberia and the Far East, the local paved road network, which in the future should connect all settlements, will be predominantly developed.

The growth of the country's foreign trade and transit traffic, as well as cross-border cooperation with neighboring countries, will require the development of the transport infrastructure of border checkpoints and approaches to major seaports.

Main part

The prospect of the evolution of "reasonable man" is considered. Evolution differs from revolution as a leap, discontinuity in movement, in the time of implementation - it is long and includes various states of movement in the presence of stability of the vector of change. The vector of evolution is laid down in its initial moment. For homo sapiens, "reasonableness" was defined as a vector, that is, the ascent to reasonableness, and then to reasonableness itself, was already laid in the extremely lower essence of this movement. It is logically and historically correct to recognize the social form of its movement as a system-

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forming factor in the evolution of a person into a "reasonable person". It is in sociality that one must look for the causes of all evolutionary changes in man, both positive and negative.

After the Age of Enlightenment and some time, conditioned by the triumph of rationality, when philosophy focused on reason as a source of creative power, raising rationality to the absolute of the world order, there came a time of recession - in economics it is called "correction". Correction in the interpretation of the significance of rationality for human evolution and its public way of implementation turned out to be a very serious test for understanding the essence of rationality. The inconsistency in the understanding of the very subject of research is associated with the collisions of the social movement: disunity in the structure of society, the struggle for leadership in politics, economics, and the social hierarchy. The history of social life, throughout its entire length, rather concealed the rationality of the original social subject, and in recent centuries, society seemed to have fallen into turbulence. Can't calm down at all.

- The evolution of homo sapiens is mainly hampered by increased social egoism, which manifests itself in political, economic and national forms, and activates the individual status of egoism, that is, along with economic, political and socio-historical forces, there are forces that deform morality - a qualitative indicator of personality.

- The real ability to bring the social factor in line with the vector of evolution lies in the improvement of education, which is most effective in an integrated form with an emphasis on raising the civic responsibility of the individual. The "competency model" has an exclusively applied value in the context of a personal one.

- In the course of the evolution of a rational person, the vector shifts from the general direction to the improvement of the mind to the historically specific one in order to form a "prudent person".

- It requires a fundamental restructuring of the methodological basis of research used, a rethinking of the philosophical legacy, especially the conceptually most important idea of Hegel to distinguish between two dialectically connected statuses of the existing: to be a reality and to be a reality.

Unlike politics, science continues to prove its high efficiency at the global level of activity. Politicians entered the third millennium with two most important conclusions of scientific knowledge:

Firstly, scientists have proved that there is no systemic ecological crisis yet, but the parameters characterizing what is happening in world politics are such that the development of the natural factor of human life with increasing acceleration is approaching a loss of stability and transition to turbulence. If in politics, where the role of subjective factors is significant, it is allowed to discuss the

possibility of "controlled chaos", then the crisis of the natural order of the organization of the natural environment will naturally turn into a total crisis, putting humanity on the brink of existence. It is unequivocally necessary, at least, to remove the prohibitive burden on the natural conditions of life and, for a start, to slow down the acceleration of crisis phenomena in nature, which is still real. In the report of the International Commission on Environment and Development (ICED), prepared under the leadership of authoritative specialist Gro Harlem Brundtland, laid at the heart of the concept of sustainable development, it is emphasized that irrational economic policies and an uncritical attitude towards new technologies have led to the emergence of trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within the framework of a world economy that relies only on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process";

secondly, politicians need to mobilize and remember their professional responsibility for the fate of homo sapiens, to shift economic policy from the path of absolutization of competition for profit to the path of compromise and cooperation, which allows realizing the conclusion of science about the need to achieve sustainable social development in the face of growing dynamic disequilibrium. The noosphere, which Leroy and Vernadsky wrote about, is formed in the interaction of natural and socio-economic processes, its configuration is not set, a priori, by the human mind. "Reason" and "reasonableness" are not identical. "Intelligence" may be similar to "Absolute Intelligence", but not the total intelligence of homo sapiens. Even the creation of "Divine Mind" was not flawless, let us recall the text of the classic work of the famous scientist and orthodox Christian J. Goethe. Faust questioned the creator's instrument of creation, replacing "In the beginning was the word" with "In the beginning was the deed". The content of the fragment of the book also testifies to the position of the author himself, his logic of thoughts, it is built on the priority of the "case", which comes into conflict with rationality.

I. Goethe, thanks to a special attitude to activity, anticipated the problems of our modern times. A contemporary of I. Kant, G. Hegel, F. Schelling, a foreign member of the St. Petersburg A. N. logically built thinking, he was aware that the word, despite its highest function of being a form of manifestation of conceptual thinking, itself becomes the activity of the mind, confirming the system-forming place of the

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matter in relationships man with nature. It is within the framework of the subject of action that a person must prove the reasonableness of the vector of his evolution. The author of the article about Goethe in the Soviet (!) Encyclopedic Dictionary had reason to conclude: "Goethe embodied the search for the meaning of life in action."

The history of mankind, throughout its entire length, was based on practical activity, on the one hand, and found its final expression in the practical form of creativity of the spirit, on the other. Freedom of creativity outside the sufficiency of practical equipment is the lot of a single subjective reality, it is finite in itself and is doomed to be a fantasy. The strength of the spirit is determined not so much by the spirit itself, but by the strength of the potential for practical objectification of the creative process. Freedom of creativity is the condition of its power, which, in turn, is conditioned by practical activity. Berdyaev, in search of the true direction of social progress, believed that humanity is still mastering the "lowlands" of its being, so strength remains its main tool. Rationality is expressed in logic, paving the route to the true direction of movement, to that, which Confucius and Lao Tzu sacredly called "The Way". In this logic, the meaning of the Christian understanding of the measure of activity is also revealed: "Strength is in truth!"

Ideas N.A. Berdyaev deserve attention, but they should be taken critically. K. Jaspers did not agree with Berdyaev's opinion, believing that humanity managed to rise spiritually high in the "Axial Age" of Antiquity, realizing the unity of the transnational movement. Practical life is also an argument against Berdyaev's assertion. In the 20th century, despite all its contradictions, the understanding of the importance of the social-democratic content of political programs, the relevance of transnational relations for solving the most important problems of social development, and responsibility for a common history with nature has increased.

Supporting the essence of the conclusion of the authors of the monograph "The Concept of the Quality of Life": "The time has come for a "vertical ascent along the steps of the spirit", let us clarify that it is more about the need to accelerate this ascent, because it was in the historical past that it was prepared and began, and in the newest time began to slip.

Two hundred years ago, G. Hegel instructed: "A thoughtful consideration of the world already distinguishes between that which, in the vast realm of external and internal existence, is only a transient and insignificant, only a phenomenon, and that which in itself truly deserves the name of reality. Since philosophy differs only in form from other types of awareness of this content, it is necessary that it be consistent with reality and experience. One can even consider this coherence at least as an external touchstone of the truth of philosophical doctrine,

while the highest ultimate goal of science is the reconciliation of self-conscious mind with the existing mind, with reality, generated by the knowledge of this coherence. In the preface to the Philosophy of Right, Hegel formulated the essence of his reflections in two well-known propositions:

In Western Europe today, thinkers whose reflection bears little resemblance to a philosophical desire to separate the reasonable and real from the accidental and short-lived in development, to reveal the methodological significance of the Hegelian desire to understand the connection between the historical and the logical in development, are in vogue today. The democratic credo: "The freedom of everyone is a necessary prerequisite for universal freedom" - was absolutized on the basis of individual rights, subordinating private requirements to the right to ensure the progress of the social movement towards progressive changes.

The special status of the individual in history is indisputable. The history of civilization in Europe began with the rights of the individual to freedom of feelings, thoughts and actions, the individual is the initial subject of social life and the ultimate goal of social progress. However, the special status of the individual is determined by the social context. Robinsons are able to survive on their own, but they are powerless to make history. Demands to ensure the rights of the individual are reasonable and valid only within the framework of strengthening a democratically built social system within a democratically organized social order and the legally protected status of the state as a product of the free will of the majority.

The main events of history have always been determined by the ratio of the total private awareness and really reasonable in the dynamics of social progress. To which it should be added that as social progress along the path of development, the presence in the movement of two large-scale factors increased: first of all, the importance of integration processes and, secondly, the ambiguous inclusion of natural conditions that lost their ability to normal reproduction under the irrational impact of economic policy

Formally - logically, from the recognition of social progress as the content of the history of mankind, two conclusions follow: about the positive dynamics of the progress of the rationality of thinking in its mass expression, once, and the displacement of errors from the political provision of social renewal, two. So it would probably be if history were the realization of the ascent of the rationality laid down in it by G. Hegel. The real history does not stand on its head - the carriers of the mind, but on the fact that thanks to which a person went from Homo habilis and Homo erectus to Homo sapiens - the activity of reproducing intelligence socialized in the development of the human race. Hence the

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contradictions between the historical movement and its comprehension at the level of rationality, which can be confirmed by the contradictions between philosophical assessments and political construction,

The key to understanding the noted inconsistency in understanding the social movement can be the distinction made by I. Kant in the reasonableness of "pure" and "practical" forms of activity. "Pure" reason, according to I. Kant, is the ability to unconditional thinking. With a "pure" mind, thinking is born and, thanks to a "pure" mind, all people think on an equal footing, similarly, a basis is created for the possibility of a consistent, identical perception of the world. However, with such thinking, the content tends to an infinitesimal value, so G. Hegel called "pure reason" "empty reason".

The principle of activity of the "pure" mind is consistency, which is convenient from the point of view of the technology of thinking, but is not very productive for achieving mutual understanding of mankind divided by a common history, since it implies a high filling of thinking with differing knowledge, combined with opinions. On the basis of "pure" reason, due to its extreme abstractness, it is difficult to build a common platform for cooperation, but it is thanks to "pure" reason that such a prospect really exists. I. Kant found a mental basis for achieving mutual understanding: "The first step, he explained, taken by us beyond the limits of the sensually perceived world, forces us to begin our new knowledge with the study of an absolutely necessary essence and from its concepts to derive concepts of all things, since they are purely intelligible". Mutual understanding is possible as mutual knowledge. "Any human knowledge, I. Kant clarified, begins with contemplation, passes from them to concepts and ends with ideas."

The "road map" is also characteristic of productive cognition. The movement of knowledge in a general direction and along a common path inevitably contributes to rapprochement in understanding the order of movement. "Practical" mind I. Kant represented as a "thinking" will. It is called upon to indicate what "should be done" in the context of the contradictory existence of right and duty. It is expedient to see in the universality of formally organized thinking an abstract prerequisite for the possibility of achieving consistency in understanding what is happening in the world and the consequences of the development of existing being. Despite the fact that "pure" reason is essentially removed from the content of the world movement, because it is consistent, and it is torn apart by contradictions, it would be unprofessional to underestimate the practical value of the reality of the universal orderliness of human speculation.

Attempts to question the universality of the organization of thinking of homo sapiens were provoked by anti-human and anti-scientific

ideologies. They are officially condemned by the world community. All numbers in the natural series consist of units. In the limit, the unit is comparable to an infinitesimal value that can be neglected, however, Pythagoras raised the unit and bracketed the natural series. For him, the unit was more than just a number, it was the system-forming factor of the series. Without one, there were no other numbers. "0" (zero) in an abstract sense with respect to the subject content loses its meaning altogether, however, even in such a crisis status, it retains its existence. Why? Because "0" is potentially significant. "0", put in a certain row, already acquires an objective expression - it determines the real possibility that what characterizes this series. According to "0" we cannot be given a quantitative equivalent of the phenomenon, but its quality, albeit purely nominal, is already defined in "0". Abstraction, for which objectivity tends to "0" can be compared with the calculus of infinitesimal quantities. Two or three centuries ago, infinitesimal quantities were of no interest to practical thinking. Nowadays, much is concentrated on them in science and practice. So it is with Kant's idea of "pure" reason, the time for the significance of the fact of "pure" thinking is coming. Anticipating such a time, F. Engels noted: "The unity of the world does not consist in its being, although its being is its prerequisite for its unity, for the world must first exist before it can be united." We see something similar in I. Kant's idea of "pure" reason. albeit purely nominal, already defined in "0".

In G. Hegel's criticism of "pure" and "practical" reason, there is certainly a "rational grain". I. Kant contrasted form and content, could not reveal the dialectics of their connection, simplified contradictions to antinomies, divided the latter into different realities, at the same time I. Kant brilliantly pointed out the natural-historical basis for resolving the inconsistency of specific configurations of thinking. He did this in an abstract form, hardly aware of the historical perspective, but it was he who, from the height of philosophical generalization, discovered something without which it would not even be advisable to discuss the solution of global problems in the modern world community, divided by the national format.

When humanity becomes rational, the individual rationality of homo sapiens will acquire a social form of the reality of rationality, the vector of contradictions will change, not competition, but participation will become dominant, the great German thinker I. Kant will be remembered as a discoverer, and G. Hegel as a pilot of movement in the contradictions of real history.

The dialectical materialism of K. Marx and F. Engels stood on the "shoulders" of these thought giants. The underestimation and, to some extent, the oblivion of the contribution of German classical philosophy to the analysis of the social movement is

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the result of a change in historical eras. I. Kant and G. Hegel created when the need of the bourgeoisie for radical social changes was urgent, it took the place of the locomotive of progress and needed those who saw the path of history and spiritually paved the movement of capitalism. It is not important how to understand the struggle of socially formed forces in society, the main thing is to realize that the change of the social subject in politics is the beginning of the end of what he did, being a historically creative force. Plato accepted democracy only because he saw no alternative to it even in an ideal state.

The solution of the dialectical contradiction between the particular and the general in social progress remains the most difficult problem for ideology, politics and morality. It is here that various kinds of speculation dominate, hence the nature of spiritual evolution in the last two centuries. Reasonableness is simplified to situational reasonableness, the role of the subconscious is actualized, mysticism, theosophy, utilitarian thinking flourish, thinking is replaced by the ability to look for ready-made solutions, the producing potential of reasonableness is being replaced by the consumer one. Even the quality of life is determined on the basis of the ability to satisfy needs. Few people remember that it is precisely in the needs that the interdependence of a living organism and the environment of its existence is laid.

Biological evolution was a natural mechanism for weakening and partially overcoming the subordination of a living being to natural conditions. F. Engels' commentary on Hegel's understanding of the origin and development of thinking is interesting: "When Hegel, F. Engels noted, passes from life to knowledge through fertilization (reproduction), then there is already in embryo the doctrine of development, the doctrine that once given organic life, it must develop through the development of generations to the breed of thinking beings. In the biological history of species, the prerequisites for subsequent subjectivity at high levels of development were formed. "... It goes without saying, F. Engels explained, that we do not think to deny in animals the ability for planned, deliberate actions. On the contrary, a planned course of action always exists in the embryo, wherever protoplasm, living protein exists. But all the planned actions of all animals failed to impress nature with the stamp of their will. Only a human could do this. In short, the animal only uses external nature and produces changes in it simply by virtue of its presence; man, by the changes he introduces, makes it serve his purposes, dominates it. On the margins of the manuscript, F. Engels specified: "It ennobles." The systems thinking of F. Engels was not content with the one-sidedness of man's "domination" over nature. The beginnings of the ideas of Leroy and Vernadsky must be sought already in the 1870s. Biological history contains part of the answer

to the question: why, then, did the "intention" embedded in the trend of movement not be fully realized? It was not possible to realize it in most of the history of man,

In order for an evolutionary transition to take place, allowing one to obtain a subjective form of the reality of a living being, it was necessary to form a more effective mechanism of cognition as the ability to discover stable, necessary and general relationships in life conditions and be a tool for controlling changes in relations with the environment. What was needed was the rationality of thinking, allowing the subject to responsibly think of himself in the "subject-object" system.

The transition to Homo sapiens is not the last in the evolution of man. Homo sapiens has become, simplifying, a semi-finished product of that form of subjectivity, which is called upon to replace "practical criticism" of natural circumstances with "practical co-creation" with the natural environment, to make it from an object of activity an "object-subject". At a new stage of evolution, a "prudent person" should be formed. The rise of critical thinking and a critical attitude to the very ability to think coincided with a crisis in society - its critical state. Such a coincidence is not accidental. The critical characters of modernism and postmodernism differ substantially. Postmodernism critically rethinks the mechanism and conditions of critical thinking, tries to adapt the critical potential to the changed circumstances of life.

Criticism of criticism looks clearly less convincing. D. Hume, B. Pascal, I. Kant, G. Hegel, K. Marx and F. Engels, if they did not manage to understand all aspects of the system of conceptual thinking, then they formulated the problems and found methodological approaches to the description of the phenomena under study. They determined the critically important moments of the organization of the abstract component of thinking.

Returning to the idea of a "pure" mind and its critical analysis, let's illustrate the practical value of this achievement by a parallel with the actualization in the second half of the 20th century and the first decades of the current concept of "quality" of life. There is no more methodological and practical significance in the concept of "quality" of life than in Kant's proposal to single out "pure" reason. For which part of humanity is the concept of "quality of life" methodologically and vitally relevant? Even the "golden" billion, for the most part, sees such a life in the movies, on TV and behind a high fence with guards. The vast majority of the Earth's population still survives. It is commendable that the richest began to realize their involvement in the contradictions of development, to create charitable foundations, but no charity will change the critical state of the situation.

It is necessary to change the ideological and methodological approaches to understanding life on Earth, that is, to start with the most abstract and simple

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- understanding the commonality of human nature and the lack of an alternative to cooperation. Only in the general system, armed with a single way of organizing thinking, people are able not to deviate from the path of development.

The strength of social subjectivity, starting with the individual, is in the ability to think, and this should be developed first of all. The diversity of languages hides the universality of the organization of thinking; differences in culture and ways of managing indicate that peoples move along a common historical path in their own way, depending on the specific circumstances of the action. In view of the phenomena of history, behind their national identity, it is not always easy to discern the logic of the generality of the movement.

It is also necessary to understand that historical logic is formed as dialectical, it fundamentally does not coincide with the matrix of formal thinking. We have already noted that the logic of the movement process not loaded with specific content reflects the final states in change and is based on the principle of consistency, it has more simplicity and clarity, which is natural for any initial state of movement. Historical logic, on the contrary, is called upon to regulate not the relatively final states of movement, but movement itself. Dialectical logic fixes the order of self-movement, built on the unity of the opposite, it is the logic of the inconsistency of movement, inherent in its primary state - the dialectic of the individual, particular and universal.

What exists in the movement of history turns into a truly historical, "irrational" - into "reasonable", using Hegelian terminology, naturally, and dialectical logic reveals the contradictions of the laws of historical development. The dialectical logic of social progress emphasizes its natural development, which serves as a basis for asserting that the desired phenomenon is fundamentally knowable.

Historical knowledge is complicated not so much by the contradictions of the real process as by the state of the initial ideologized positions of researchers. In physics there are concepts of "observer", "reference system", "reference point". Something similar formally exists in historical cognition, only here it is subjectivized conceptually - it continues ideological reflection in politics.

Politics actively intervenes in historical analysis; objective dialectics is replaced by sophistry and eclecticism. No wonder history is often rewritten. Ideological and political obstacles to knowledge hinder the achievement of intersubjectivity in understanding the past. The distortion of the past entails the formation of a subjective historical experience, on the basis of which a tendentious understanding of the present and development prospects is built.

Ideological delusions are very dangerous, they gradually develop into self-deception, disorientate

political activity, and lead to social crises, which was emphasized by V.V. Putin at the St. Petersburg International Economic Forum 2021, answering questions from the heads of the world's largest news agencies about the reasons for the collapse of the superpowers.

There are few grounds for hoping for a constructive ideological compromise, but in ideology, in addition to its core, which determines the fundamental interest of the social subject in the historical movement, there is also a periphery that contains views on infrastructural problems. It is here that it is realistic to count on the fact that the ideological cover of the basic interest provides for a certain backlash - the admission of totally significant agreements in solving problems that are urgent for humanity, mainly in the social sector of transformations.

It is immediately important to determine the prospect of such changes within the framework of the forms of opportunity. The modern world will not support overtly negative scenarios, so ideologies build plans for the future, using the ambiguity of the concept of "possibility", which opposes the concept of "impossibility". Ideological manipulators speculate on the differences between "formal" and "real" possibilities. Possibility in ideological programs is presented outside of its specific status, which contradicts the requirement of concrete historical presentation.

Aspirations to put on the main path of social progress the achievement of "quality" of life, politics, "quality" ecology look tempting. However, how feasible is all this in a regulated perspective? It is not right to place an abstract possibility in a series of practical actions. It should be "in the mind", serve as an abstract vector of politics, and politics should solve those problems that have matured as a "real" opportunity. In the "real" possibility, the conditions of the "abstract" ripen. Having embodied in reality, having become the reality of being, the "real" possibility at the same time makes the "abstract" possibility "real", opens up the prospect for it to become reality, to acquire "reasonableness".

The idea of "quality" of life now and in the near future is practically irrelevant as a global political problem. Moreover, the desire for the "quality" of life will deepen the social contradictions within the total humanity. First, it is necessary to ensure a relatively qualitative right of people to life within the limits of the elementary requirements of civilized development. A task that requires the accumulation of considerable forces. In addition, the very concept of "quality" of life is defined in an overly abstract way. "Conceptually, to determine the problems of the quality of life, rightly write the authors of the monograph "The Concept of the Quality of Life", it is possible, if we proceed from the unity of mankind, regulate relations with the biosphere, increase the role

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of science, the priority value of wisdom and spirituality...". The unity of humanity is still purely formal, due to the commonality of the planet; the attitude to the biosphere, more precisely, to the biosphere, since human activity is partly included in it, remains at the level of the "force-reaction" system, and not symbiosis; investments in science still depend on its ability to be a direct productive force, which clearly does not correspond to the actual status of science, its rationality. Wisdom and spirituality are the products of an individual's education and the rationality of his participation in social life. As the classical paradigm of the development of education is replaced by a "competence-based" model, the improvement of thinking, feeling and needs for the activity of the individual, really runs the risk of remaining an advantage of the previous generations who managed to get education before modernization.

Objectively-critical specialists, in search of overcoming the "one-dimensionality" of personal formation under the influence of modernization caused by the Industrial Revolution and its consequences, back in the middle of the last century, spoke in favor of changing the nature of industrial production, drawing public attention to the need not to make science and education dependent on the needs of mass production, and make the development of production dependent on the activities of scientists and teachers.

"In the modernization of society, we read in Britannic(e), the significance of the individual becomes more and more important, gradually supplanting such units of society as the family, community or professional group...". The rise of the role of individuality, along with the strengthening of specialization in production and the weakening of the functioning of such traditional factors of socialization as the family, professional ties, dooms the individual to an independent search for self-expression.

The one-dimensionality of labor, due to the nature of the source of life of the individual - production, enhanced by the specifics of education, which is organized in the service of production, exacerbated by the loss of family values and the decrease in the influence of the professional community, literally kicks the individual out of the system of stable social ties. She can only rely on her own potential and luck in casual relationships.

Interpersonal distance increases. In chemical reactions, electrons located in distant orbits "fly away", something similar happens in public life. The weaker the significance of social interaction, the more homogeneous and one-dimensional the personality is formed. Knowledge and skills replace thinking. In such a situation, extraordinary abilities and willpower are needed, which cannot be a mass gift. Economic crises are built on by sociocultural stagnation. The crisis in the system of social relations is already fixed by researchers in the titles of monographs. Culture is

deprived of the traditional spiritual basis. The entertainment industry is not so harmless, especially when it is induced to undermine spiritual cultural foundations. The scheme is well developed: entertainment is accessible with its simplicity and the natural need for unloading after hard work, but one thing, when entertainment takes its rightful place in the structure of a person's life, and another, when entertainment displaces the creative potential of a person. Modern "Oblomovs" do not always lie on sofas, but the end awaits them just as sad because of the inevitability of personality deformation. Times change, the patterns of social change are stable over time.

The British sociologist W. Beck called modern society a "risk society", paying special attention to changes in the system of social and individual values. The individual loses the socio-cultural guidelines of life, becomes "not rooted". Similar changes were predicted by K. Jaspers, A. Toynbee, N. Berdyaev, Zh.P. Sartre. W. Beck's compatriot E. Bauman is convinced that the individual in modern society is nominally social. In fact, he feels among people, as if he was in "an uninhabited world", or in an inhabited and extremely difficult to live. The prerequisites for the transition from the real world to the virtual world are being created. The essence of the problem facing humanity, A. Peccei believes, "is precisely in the fact that people do not have time to adapt their culture in accordance with the changes that they themselves make to this world, and the source of this crisis lies within,

Western researchers prefer situations? In contrast to sociologists and culturologists who think in general terms, they actually describe the tendencies of the social movement, leaving out of the analysis the underlying forces that lead to the manifested changes. The identification of the causal factors of crisis phenomena requires an answer to a very painful question: what is the way out of the described policies? Do not put aside attempts, if not to overcome negative changes in society, then at least slow them down by improving cultural factors, primarily education. The Bologna Protocols were formally signed only by our politicians, who in the 1990s did not feel their political responsibility and did not feel a sense of duty associated with conscience.

Europe has suffered the practical and spiritual experience enshrined in them. This experience and its results were not ideal, but they turned out to be a way out in a difficult historical situation. In the modern world, there are two seemingly incompatible trends. On the one hand, centripetal processes are intensifying in national relations, integration is taking place, accompanied by synergistic effects, for example, thanks to the standardization of education, trust is strengthened, the social space for free movement expands, without which the comprehensive development of the individual is impossible. On the

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other hand, as studies show, the "atomization" of the personality continues, "the transition of the personality to peripheral social orbits", which leads to the instability of its position, the weakening of social ties - "rootless".

In fact, everything is connected, trends exist as the realization of opportunities, they are, in principle, controlled and managed politically. One of the effective tools is education policy. There are unique finds in the European experience of education integration. The history of this process has shown that integration should be directed by professionals, not bureaucrats; education can by no means be an economically determined activity; the development of education should combine the transnational with the national; the formation of professional competencies must be subordinated to the formation of the personality of a citizen. The modern industrial society has exhausted the resources of its historical rationality; already in the middle of the 20th century it aroused the critical mood of prominent political figures and scientists. Evidence of the depth of the crisis was the desire to qualitatively change the industrial system. In the foreseeable future, society is unlikely to be able to develop without improving the industrial mode of production, but it is capable of significantly restructuring the production industry, and most importantly, reshuffling the relationship of sociocultural practice with industrial production. Realizing that history will not yet emerge from the evolution of industrial production, the authoritative economist and diplomat J. Galbraith published his work *The New Industrial Society* (1967) back in the late 1960s. Fifty years later many of the ideas of the American researcher have become even more relevant, especially his desire to justify the historical need to update the concept of capitalism by convergence with the achievements of socialist management. Contrary to the desire of domestic liberals to bury socialism as an alternative production system to a market economy, the history of the need to objectify the rational into reality makes it necessary to critically reconsider both the socialist experience of the industrial development of society and its criticism by ideologically biased critics. Concerned about the limitations in preparing the individual for social realities in the system of publicly organized education in the United States, J. Galbraith wrote: "The most important - in the long term - for the emancipation of the human personality is obviously especially higher ... higher education, which is now widely adapted to the needs of the industrial system. The teaching staff of universities and colleges should have a decisive influence on the nature of the education that young people receive and the content of scientific research. The needs of the industrial system should be of secondary importance in comparison with the tasks of the general spiritual and intellectual development, - the author of the concept of the "New Industrial

Society" argued "as a result of the critical analysis." And so that no one had any doubts about what exactly was being discussed, J. Galbraith clarified: "He (the teacher) must realize this and exercise his power not in the interests of the industrial system, but in the interests of the comprehensive development of the human personality." The "cog" of the human personality was made not by socialism, but by the industrial system, common to both socialism and capitalism. The problems of improving education are universal for social development in the conditions of the industrial nature of production. The difference exists mainly in the attitude towards such problems on the part of the state. In the USSR, striving to build a socialist system of industrialization, the political regulator of the development of education was the state, expressing the program ideas of the CPSU. In the US, there is no formal regulator, but there are all-powerful industrial groups and vigorous lobbying of their interests by parties in the struggle for political leadership in the system of government. The quality of education in the USSR was subordinated to the formation of personality in the process of vocational training, which was often accompanied by costs in a special aspect. In this connection, the state introduced the status of "young specialist" - a kind of "transitional" period for graduates in mastering the profession in real production. In the United States, graduates are "finished" by the companies themselves, depending on their own needs and capabilities, with an emphasis not on civil status, but on competence. For clarity, we note a fact that is not very comfortable for the domestic interpretation of competencies - Americans distinguish between competencies and sociocultural characteristics of an individual. They understand that it will not be possible to decompose the content of the concept of "personality" into competencies without a solid and especially significant remainder, of course, if you do not speculate and juggle this concept. In what range of competencies should courage, bravery, selflessness, fidelity to duty, honor, patriotism, love, friendship, mercy be placed?

J. Galbraith was not alone in criticizing the dangers of the one-sidedness of professional training in universities. Complementing the vices of adapting education to the specifics of industrialization created by standardization, E. Fromm, the leader of the Frankfurt School of sociologists, repeatedly noted the substitution of understanding of cognition as a creative process in the production of knowledge by mastering ready-made technologies for consuming existing knowledge. "If it is true, we read from Fromm that an intelligent person is, first of all, one who is able to be surprised, then this statement is a sad commentary on the mind of modern man. With all the virtues of our high literacy and universal education, we have lost this gift - the ability to wonder. It is believed that everything is already known - if not to

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ourselves, then to some kind of specialist who is supposed to know what we do not know. We think, that it is most important to find the right answer (among ready-made ones), and asking the right question is not so important. Orientation towards learning, the ability to consume the accumulated bank of knowledge makes the initial state of the individual's activity dependent not on his abilities, but on circumstances external to him. The "industrialization" of education leads to the oppression of individuality, suppresses the need for its self-expression in cognitive activity. From the standpoint of humanism, E. Fromm put forward a project to create, in particular in the United States, a harmonious, "healthy society" based on psychoanalytic "social and individual" "therapy". K. Jaspere also falls into resonance with the thoughts of J. Galbraith and E. Fromm, explaining: "The value of each individual person will only then be inviolable, when specific people are no longer considered as interchangeable material for the formation of a universal measure. The social and professional type we are approaching we accept only as our role in the world. The individuality of a person is initially created by the activity of her mind, which corresponds to both the biological and social understanding of a person, therefore, the emphasis of education at all levels and in all forms should be unchanged - made on the development of thinking. Heraclitus already realized that "knowledge does not teach the mind much", so you need to learn how to activate thinking as a technology for the production of knowledge. Aristotle was convinced that "you need to teach to think, not thoughts." Confucius taught: "Learning without reflection is useless...". "The study of wisdom, according to Y. Kamensky, elevates and makes us strong and generous." The founder of didactics explained: "The mind illuminates the way for the will, and the will commands the actions." The wise expression of D. Descartes is well known: "I think, therefore I am". Little has changed in the interpretation of the essence of education for two and a half thousand years, let us refer to our compatriot P. Sorokin: "... The essence, he wrote, of the social process is thought, the world of concepts ..., it is also the main initial factor of social evolution. All the main types of social life (world outlook, art, practice) are conditioned by knowledge (science) or, which also represent a modification of this factor. All social relations are ultimately conditioned by thought. This, in particular, is confirmed by De Roberti's "law of delay". Modernization of domestic education is a product of policy, focused on a one-sided reflection of the experience of Western Europe and North America. It is not our intention to explore the reasons why an interesting experience has been ideologically filtered. Systematic assessments of the Europeans and Americans themselves, very instructive monitoring of educational policy since 1953, as well as the thoughts of prominent specialists and simply experienced

teachers, for example, Bel Kaufman, were selectively excluded from it. B. Kaufman's book "Up the stairs leading down" was very popular in the Soviet Union, but after 1989 it was not reprinted. Perhaps because of the frankness of the judgments of a person who sincerely experienced an education crisis in the United States. Inviting the reader to name three reasons for what is happening, she added to them the fourth, which "is not customary to talk about - the moral climate in which we live. Is learning highly valued in America? The bookworm and the crammer make everyone laugh, and what could be more absurd than an absent-minded eccentric professor? At the forefront we put material well-being, money; the very word "success" refers not to the achievements of the mind and spirit, but to financial prosperity. But the main thing is to give the Americans concrete results and as soon as possible. And the acquisition of knowledge is not a product, but a process that continues while we are alive ... We, the author sums up his reflections, neglect the need to learn and cognize ...". Since the 1960s, the United States has been looking for ways to solve the problems in education that arose in connection with the obvious passion of politicians for the social and practical function of the school. The absolutization of utilitarianism inevitably led to the one-dimensionality of personal development - "technological slavery". Americans, sensing a dead end movement, made a kind of maneuver. They divided the movement towards higher education into two parallel paths, relatively speaking, with normal gauge and narrow gauge. Colleges differ from universities mainly in that they do not include educational and scientific experience in the program. University students are obliged to participate in the scientific work of the organization.

The idea is conceptually interesting, it can be adapted to domestic education at universities, clearly prescribing the content of bachelor's training and determining the advantages of the professional status of a specialist. In the history of Russia, a similar practice took place. In St. Petersburg, from the middle of the 19th century, the Institute of the Corps of Railway Engineers with a full cycle of professional engineering training and the Technological Institute with a shortened program of scientific knowledge worked in parallel. Graduates of these universities, of course, had different status both in the profession and in society.

At the same time, the desire to turn universities into research organizations by reducing the general professional training of specialists looks doubtfully appropriate:

firstly, the status of graduate school is thus replaced;

secondly, there is a real danger of nullifying the upbringing of a professional culture and a responsible attitude to national identity.

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Having mastered the required knowledge, research skills and a foreign language at the expense of the domestic taxpayer, many graduates of such universities, even before completing their studies, are actively looking for a profitable investment of their capital outside their homeland. Liberal ideologists are satisfied with this outcome of the process, and regulators are obliged to think: how right is it to work for “colleagues-competitors” who are looking for any reason to limit our capabilities with regular sanctions. In the leading firms of the West, in senior positions, according to S.P. Kapitsa, today more than 30 percent of specialists are from the Russian Federation, while Russian production, according to the speech of G. Gref at the St. Petersburg International Economic Forum 2021, is experiencing a growing shortage of specialists. Reflecting objective trends in public life, the growing potential of a person's personal participation in them with his unique rationality, German classical idealism, in the form characteristic of idealism, elevated rationality up to its absolutization beyond the limits of human rationality. But, in addition to the system developed by G. Hegel, there was also a universal and most perfect dialectical way of thinking that he identified, thanks to which his worldview system also worked for some time. The dialectical approach made it possible to interpret the author's intentions in a different way, to understand them quite rationally, and to use them in practical politics. First of all, we have in mind the idea of distinguishing between the "real" and the "actual" in social life, of being aware of the natural-historical perspective of their mutual transition. Policy is built on a combination of experience,

In A.P. Chekhov's story "Intruder", a fisherman caught unscrewing the nut that fastens the rail to the sleepers explains to the investigator that he could not do without it. The hook should be located close to the bottom, fish trifle floats on top, which no one needs. The big fish you want to catch is at depth. The integration taking place in the world is a regularity and reasonableness of its development. One must learn to integrate into it, filtering the existing reality in such a way as to have something from it that has the potential to turn into reality, to move from the real to the rational.

The historical spiral continues to spin around the axis of human intelligence. Only in our time it becomes more relevant to think not about the essence of rationality, but about the prospect of its evolution into prudence. The future belongs to the “prudent man”. Prudence is able to resolve the contradictions of reality: to find a balance of national and universal interests; guarantees the harmony of social needs and the preservation of the natural order; needs and rational organization of production; personal and social. It elevates culture as the primary essential force; defines scientific knowledge as a systemic socially oriented activity; values education as a basic

source of humanism and democracy. The formula for prudence is simple: everyone should do what they do best, but always remember that the best awaits him only if the requirements of a single historical movement for all are fulfilled. Reason is given to man to do good. “Reality is rational,” G. Hegel is right, but rationality itself is valid only as a creative good.

The criteria for human prudence are contained in the evolution of homo sapiens. It is advisable to consider the birth of the ability of consciousness to self-realization of its activity as the highest achievement of the evolution of rationality. Prudence will come when self-consciousness itself acquires a steadily rational form of activity aimed at a consistently rational systemic solution to the above-mentioned contradictions of social progress. In the religious aspect, the prudence of a person will reveal in full the spectrum of his likeness to the creator. The “prudent man” will become a truly creative social subject. The control function of conscience will be completed by the responsibility of the individual not only for himself, but also for everything that happens - “I am responsible for everything”! Awareness of personal responsibility will ensure the balance of the one with the common. Personality as usual.

Experienced acquisitions of the integration of European higher education would be very useful for implementation in our country. It turned out the opposite. Our modernization was designed like a European one with a deadly amendment to funding on a residual basis. The Europeans elevated the improvement of education to the most important direction of social policy, in Russia they sent them to go with the flow of the financial flow, supplying them not with an engine, and not even with a sail, but with an oar and a pole, so that they feel responsible for themselves. In Europe, the management of mass education is the prerogative of professionals, with us - officials, for whom its reality exists in their own distant past, therefore they manage education according to formal reports developed according to the patterns of bureaucracy.

The version that the history of man does not end with the formation of homo sapiens, on the contrary, the development of “reasonable man” is a kind of necessary introduction to his evolution into “reasonable man”, the emergence of a new round in the spiral of human progress, which will be characterized by neither adaptation nor egoistic transformation of the environment, and the universality of cooperation based on the systematically built activity of a “prudent person” requires clarification of a number of concepts. These concepts have been nominally known for a long time, but during the development time there was no agreed definition of their content. Our goal is not to give a new interpretation, we believe that it is sufficient, in the situation that has formed in cognition, to set our priorities.

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Separately, we note that since we are talking about the problem of species evolution, it is advisable to analyze it at two levels of knowledge: at the level of representations of mass thinking - "common sense" and within the limits of professional conceptual expression in scientific and philosophical knowledge. R. Descartes called "common sense" "reason from nature", believing that it contains "the ability to correctly judge and distinguish true from false" in conditions of methodically limited thinking. "Common sense," according to the French scientist and philosopher, people are best endowed with than anything else, because everyone believes in himself so much common sense that even people who are the most demanding in other areas are usually content with the common sense that they possess.

As a predecessor of I. Kant and G. Hegel, R. Descartes tried to define the most general concepts in the theory of knowledge, starting with "thinking". "By the word thinking (cognitatio), he wrote, I mean everything that happens in us in such a way that we perceive it directly by ourselves; and therefore not only to understand, to will, to imagine, but also to feel means here the same thing as to think. R. Descartes divided the mental activity into two bases: perception by the mind and determination by the will. Reason and reason identified. He explained the delusions by the fact that the actions of the will are more extensive and more significant than the mind: "... Although God did not give us a comprehending mind, we should not consider him the culprit of our delusions, the philosopher explained, the created mind is finite, and the finite mind, by its very essence, cannot comprehend everything".

Thinking appeared at the very beginning of human evolution. Man inherited thinking, thanks to purely natural history, completing and transforming it in his own special development. Consciousness has become a product of the evolution of already proper human thinking, split into rational and rational activity. Reason implements thinking within its consistency. The mind operates within the framework of conflicting thoughts. The mind has a dialectical nature. Apparently, the quality of human thinking was formed in the direction of reflecting the dialectics of nature in it. In the light of the idea that we are developing, only dialectical thinking, focused on resolving conflicting knowledge, can be a platform for ascent to the "prudent person".

The logic of human evolution is built in such a way that a person at any stage of his history is forced to change the natural conditions of life, to come into conflict with nature. Another thing is that the contradictions at each stage are specific. Once it was about survival, a person had to prove his right to exist by any means. The survival formula is simple: "either or". Nature severely tested a person for strength - the stability of existence, and a person, being in extreme conditions, took from nature, regardless of the

consequences that he was not always aware of. Rational thinking provided for most of human history, but as the number of species grew and its practical power grew, contradictions aggravated, ecological constants were violated. Social progress was loaded with negative products of its own development, the ascent was accompanied by breakdowns. The inconsistency in the changes in reality weakened the position of rationality in the historical movement. History has tested the very rationality of man. Reconstruction of thinking was required, it became necessary to think, reflecting not the final states of phenomena, but their movement. In movement, thinking discovered self-movement as a change by the force of the contradictory relations that form everything that exists.

The reasonableness of thinking in the era of R. Descartes, B. Spinoza, F. Bacon and G. Leibniz undoubtedly already existed, but it did not yet have the status of relevance, it did not acquire the significance of reality. Reason operated in the absence of sufficient objective conditioning. Nevertheless, R. Descartes brilliantly guessed the vector of the direction of human progress towards the dominant development of thinking. Through education, his phrase entered the history of philosophy and mass consciousness: "I think, therefore I exist." It seems to us that the public and partly professional reactions to the above statement of the philosopher are not commensurate with the author's intention. The phrase was "cut out" from the context, and R. Descartes twice on two pages revealed his interpretation of these words. Paragraph 7 of the Principles of Philosophy, he unambiguously titled: "That one cannot doubt without existing, and that this is the first certain knowledge that can be acquired. The author's reasoning on the formulated thesis is completed by the following phrase: "It is so absurd to assume that what thinks does not exist while it thinks that, despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions. presented to those who methodically arrange their thoughts. In paragraph 10, R. Descartes corrected the meaning of what was said in paragraph seven: "Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence without denying that in order to think one must exist. The author's reasoning on the formulated thesis is completed by the following phrase: "It is so absurd to assume that what thinks does not exist while it thinks that, despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions. presented to those who methodically arrange their thoughts. In paragraph 10, R. Descartes corrected the meaning of what was said in paragraph seven: "Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence without

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Contrary to the widespread interpretation of the content of the thesis, R. Descartes did not give his idea a worldview format, remaining within the declared dualism. The philosopher did not seek in it a solution to the problem of the nature of the substance of being. He just tried to understand the nature of man as a "thinking thing", to find out the relationship between "soul" and "body". The concept of "existence" had a local content for him, both "soul" and "body" were included in its scope, it held them together in the same way. For R. Descartes, it was important to find the basis for the "most reliable" recognition of existence, and not all, but exclusively human reality. And he found this argument in thinking: "The concept of our soul or thought precedes that which we have of the body, and this concept is more reliable, since we still doubt whether there are bodies in the world,

We, discussing in detail the experience of the reflections of the French scientist and philosopher, want to emphasize the very fact of recognizing the priority value of thinking as evidence that the scientific and philosophical awareness of the significance of human rationality has come into contact with the religious exaltation of human rationality, created "after the model and likeness" of the divine mind. . Homo sapiens evolved, actively developing their mental abilities. The use of the concept of "soul" was characteristic of the beginning

of the New Age, it synthesized all levels of thinking and more clearly included mental activity, primarily will. R. Descartes, as if prophetically predicted the systemic significance for the future of man of virtue, however, in his understanding, virtue did not rise to the heights of conceptual thinking.

R. Descartes approached the idea of prudence of a "reasonable person" from the side of spiritual responsibility for feelings, thoughts and deeds, but in his mind not only prudence, even reason itself remained an abstract concept, because "thinking", an exhaustive manifestation of the soul, was not structured, except for the traditional differentiation into sensory actions and mental forms. The consciousness of R. Descartes largely inherited medieval terms, modernizing the content of those ideas that were "packed" in them. The process of rethinking traditional views on human intelligence was still beginning. History did not easily reveal the growing role of the creative potential of thinking in the life of man and society. The problem of the structural organization of thinking acquired urgency.

The new time has necessitated a new approach to thinking. The former interpretation of the freedom of human wisdom, localized within the framework of religious prescriptions, to be an instrument for moving along the path indicated by the true creator of all that exists, seriously hampered the development of mental activity, however, could only slow down the progress of rationality. The low rate of social movement during the Middle Ages testified to its conditionality on the part of ideological regulation, but at the same time, the energy of rationality continued to accumulate. The real power of the mind could be transformed within itself, added, multiplied, striving for a critical mass of action. And, most importantly, the power of human intelligence was able to begin to actively operate with changes in the theory of knowledge.

Philosophy had to make the transition from that type of understanding of thinking, to which G. Hegel's expression "barbarism of thinking" can be applied with a certain stretch. But, in order to fulfill its historical mission, philosophy itself had to change, become "critical" and "speculative." "Philosophy, G. Hegel pointed out, should make thinking itself an object of thought." And he further clarifies what has been said in relation to philosophy as a science: "The only goal and business of science is to achieve the concept of its concept and, thus, come to its starting point and to its satisfaction." G. Hegel had in mind a specific technology of philosophical knowledge, when the desired concept is determined by developing descriptive concepts. Assessing the merit of I. Kant, who critically studied the tools of thinking, their real possibilities, G. Hegel approached thinking as creativity. The "pure" and "practical" reason, "common sense" was replaced by the dialectical triad of rationality of G. Hegel. In thinking, he identified three levels of activity: "sensuality", "reason" and

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"mind". Thinking was identified with activity, which showed its cognitive and social power. "Insofar as thinking, as an active one," the philosopher explained, "is taken in relation to objects—as a reflection on something—insofar as the universal, as a product of its activity, has the meaning of the essence of the matter, essential, internal, true." Hegel uses the concept of "spirit", but he contrasts "spirit" with "thinking". "Spirit" is a spontaneously organized natural state of consciousness of a person who is directly included in the world of things, including human society. The spirit "as a feeling and contemplative has the sensible as its object, as an imaginative one - images, as a will - goals." "The highest inner essence of the spirit, according to G. Hegel, is thinking." The thinking of the "spirit" manifests itself in the forms of rational and rational activity. "Consciousness, the thinker clarified, forms ideas about objects for itself before concepts about them, and only by passing through ideas and turning its activity on them does the thinking spirit rise to thinking knowledge and comprehension through concepts." Reason precedes reason and acts together with it. The lot of rational activity has been and will remain reflection on objects, their relations. The mind is able to analyze the opposite results arising in cognition, it is not given to it to resolve the contradictions that characterize the unity of opposites, therefore the understanding shares the existence of opposites. Reasoning activity is dialectical in a limited way, it can bring together and oppose opposites, but cannot synthesize them: there are thesis and antithesis, but there is no synthesis, which indicates the incompleteness of the technological cycle in cognition. Knowledge is inhibited from within. These were the antinomies of I. Kant, which did not allow him to overcome the barrier of cognition. Modern quantum mechanics relies on the principle of complementarity, unable to resolve the relationship of opposites.

The pinnacle of dialectical thinking in the philosophy of G. Hegel is "reasonable dialectics". Reason rises above reason, but it also presupposes the preparatory work of the latter. G. Hegel's thinking works in the interaction of its modes of manifestation. The dialectic of reason completes the work begun by reason. The entire dialectical way of thinking - the "road map" - consists of the establishments: identities - differences - differences - opposites - contradictions (grounds). "Contradiction is what actually drives the world and it is ridiculous to say that contradiction cannot be thought," G. Hegel summed up his reflections. G. Hegel developed the basic scheme of dialectical thinking, but the main thing is that the dialectical approach to cognition helped him raise the understanding of reason as a real creative force.

After the philosophical recognition of the creative power of the mind, the question of the vector of this power became relevant. As a matter of fact -

the vector of development of the "reasonable person". To apply something, you need to have it. Having completed the ascent from efficiency and direct entry to rationality, man found himself at the beginning of his new history. Philosophy and science, having analyzed the structure of human thinking, having determined its potential, were able to build the architecture of the manifestation of rationality, to discover the natural nature of thinking in the forms of rational and rational activity. Together with reason and will came the possibility of human freedom with all its individual and social dangers.

The possession of rationality and free will predetermined the need to learn how to use the new forces born in evolution. It was necessary to become a tamer of the mind, to master the art of giving it the direction that the will, objectified in practice, must and can realize as an instrument for resolving contradictions that are no longer mental, but real. The evolution of rationality of a particular state of a person turns into the evolution of rationality for the benefit of everyone and everything, - into the development of human reasonableness, rationality acquires the scale of universality.

Prudence is the pinnacle of the evolution of human intelligence in its modern interpretation. Without this historically built configuration, rationality will remain within the boundaries of its abstract certainty, for the logical necessity to be rational is similar to Kant's "pure reason". The rest, different from the prospect of rationality becoming prudence, scenarios for the promotion of rationality: the isolation of rationality on itself and not having certainty - deprive evolution of historicism.

The need for knowledge of the future is natural for a person, it continues the ability that originated in biological movement - the possibility of anticipatory reflection, described by P. Anokhin. When time pushes its boundaries in front of a living being, then this perspective must be used in the interests of development. The famous American writer and philosopher R. Emerson wrote: "In the face of the universe, let us rejoice that we have reached not a dead end, but a boundless ocean. Our life appears not so much as the present, but as a prospect, open to us not so much as petty deeds for which it is spent, but as a promise of that abundantly flowing vitality. And he added: "For the most part, it is perceived only as a promise, this vitality will still manifest itself; we know that we must not sell ourselves too cheaply, for we belong to something very great. So forward and again - forward! In daylight hours, we know for sure that a completely new picture of life and a new understanding of our duties to it are already possible for us.

R. Emerson is right in presenting the future in which descendants will find themselves as a "completely new picture" of life. Prudence is not a simple natural continuation of human rationality, it,

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despite all its similarity with modern rationality, opposes it. Rationality allows quantitative difference, and this, in turn, comparability of different states and competitive relations. Prudence is distinguished by its qualitative certainty. It cannot be less or more. It is not surprising, therefore, that the history of Homo sapiens is filled with conflicts along the entire perimeter of social relations. And in relations with nature, rationality often served as an instrument to justify destructive practices. The abstractness of rationality - it determined the way the development of human actions, leaving the object to which these actions were directed. The priority position in the rationality of the subject deformed the systemic construction of a person with the world of relations. Ultimately, the costs were reflected in the rationality. The abstract nature of the position of rationality was also manifested in its definition. G. Hegel, having singled out inconsistency as a quality of thinking at the level of reason, solved the problem within the boundaries of the science of logic, in the most general form, which can be qualified as an introduction to the theory of reason. The Hegelian triadic scheme of tracing the progression of thinking is able to provide effective assistance to those who have met in cognition with opposites in the unity of their existence. However, everything listed here formalizes the technology of intelligent activity, dissects the stages of the movement of thoughts, serves as a "road map" of thinking, which you need to be able to read, calculate and, - the most difficult, - then go through a real route in the conditions of always insufficient information about specific traffic conditions. If we proceed from the fact that the movement of objects and the ways of their relations are reflected in the structure and history of thinking, then the contradictions of reason reproduce the relations of opposites in objects. But thinking is non-material, and therefore the contradictions of thinking are specific, not mirror images. The contradictions of objects were formed in the process of their movement, and the contradictions of the mind went through a comparable path. The formation of rationality was due to the contradictions of being, but thinking could not simply repeat this real experience. Thinking, in order to rise to rationality, has passed a difficult path. At each stage of the path, it formed the possibility of inconsistency in cognition, starting with the prelogical and limited logic of states identical to itself (rest),

Prior to the studies of L. Levy - Brühl, presented in his works "Cognitive Functions in Lower Societies" (1910), "Primitive Thinking" (1930) and other works, anthropology was dominated by the British concept of the identity of the mental mechanism of "primitive" people and modern ones. English anthropologists did not take into account the historicity of the evolution of the thinking of homo sapiens. L. Levy - Brühl put forward a very important thesis about the existence of a type of logical thinking known to us before the

history, having previously called thinking "pralogical" and emphasizing that it is not antilogical, it is also not illogical. Calling it pralogical, I only want to say that it does not seek, first of all, like our thinking, to avoid contradiction. It is subject to the law of participation. Oriented in this way it has no inclination to fall into contradictions without any reason (that would make it completely absurd for us), but it does not even think about avoiding contradictions. Most often it treats them with indifference.

The mind, having determined a new stage of human evolution, turned out to be not so perfect as to complete the evolution. The mind of homo sapiens did not raise the resolution of contradictions to the level of realization of the universality of development interests. The concreteness of the particular in the conflict of opposites blocked the development of rationality itself, it submitted to a particular orientation. The evolution of the rationality of homo sapiens has reached a dead end of private or "egoistic rationality".

In an abstract form, mankind has realized the historical limitations of the progress of the rationality of homo sapiens, even calculated the time of the "red line" of the movement of its private rationality in interaction with the natural condition of life - 2030. It remains to make one transition - to turn the perspective into the actuality of existing being, to give the rationality of knowledge the power of universal will, which turns out to be in an unresolvable contradiction with the rationality of homo sapiens. Humanity at the stage of homo sapiens has come to a historical crossroads.

There are two development options. First: on the historical basis created over many millennia by homo sapiens, to make the transition from the rationality of man to the rationality of mankind and thus continue history with a new content of human activity. The second is to follow the paved path, improving rationality in its traditional expression, when rationality is based on the abstractness of actions, and rationality itself is tied to private interests. In other words, the intelligence of a species is represented by the sum of the intelligences of the individuals that make up the species, which already in the primary state makes obvious the reality of the contradiction that hinders progress.

In rationality, historically and epistemologically, there is what is necessary for the development of the species - the technology of cognition of the contradictions of reality, but in the existing state of rationality there is no general specific direction vector of rationality. By elevating competition to an absolute instrument of progress, the ideology expressing a conditional commonality of rational interests further exacerbated the fluctuations in particular forms of rationality. In addition, today one should be afraid not so much of the uncertainty of the total manifestation of private rationality, as of the aspirations of certain

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authoritative forces whose actions are aimed at maintaining real contradictions, by and large, of artificial origin.

Dynamic disequilibrium is good for the stability of the mechanical movement of bodies, but not for human relations. To what extent is the favorable prospect of the social development of rationality determined? To have a basis for answering this question satisfactorily, one must examine the social forces that are capable of directing individual rational actions and controlling their dynamics. The social factor in the development of individual awareness of reality was studied in detail by French sociologists: Durkheim, Galbwachs, Blondel, and others. They, as a rule, considered society within the limits of social consciousness. They were interested in the spiritual social superstructure: opinions, knowledge, behavior and other manifestations of spiritual activity. The spiritual part of social life was defined by them as "collective representations". The conditionality of the formation of "collective ideas" was mainly outside the brackets of such studies, which can be recognized as an appropriate limitation in the interests of studying the specific problem of the formation and development of the individual's consciousness. It is reality sui generis that acts directly on the consciousness of the individual.

"Society is a reality sui generis," E. Durkheim argued, it has its own properties that cannot be found at all or in the same form in the rest of the world. Therefore, the representations that express it have a completely different content, purely individual representations ... ". E. Durkheim formulated the conclusion from the analysis of the study of the problem as follows: "Collective representations are the product of an extensive, almost boundless cooperation that develops not only in space, but also in time. Therefore, they seem to concentrate a very peculiar mental life, infinitely richer and more complex than the mental life of an individual. Hence it is clear why the mind has the ability to go beyond empirical knowledge.

In this context, the "empirical" is identical to the "individual", "private" E. Durkheim extended the understanding of "collective representations" to the area of conceptual thinking: "If concepts were only general ideas," the sociologist argued, they would not particularly enrich knowledge, because the general, as we have already pointed out, does not contain anything that would not be in the particular. If these are primarily collective ideas, then they add to what we have learned from our personal experience, all the wisdom and knowledge that the social group has accumulated and preserved over the centuries. To understand a thing means at the same time to capture or define its essential elements and attribute them to a known set of things, for each civilization has an organized system of concepts that characterizes it.

"Collective consciousness, according to Durkheim, is the highest form of mental life, it is the consciousness of consciousnesses. Being outside and above local and individual contingencies, it sees things only from their permanent and essential side, which it fixes in the transmitted concepts. Looking down, it sees further to the side. At each given moment, it embraces the entire existing and known reality, and therefore it alone can provide the mind with a framework suitable for accommodating the entire totality of beings and allowing us to make this totality the object of our thinking.

Some of E. Durkheim's statements are disputable, but the logic of his research is important to us. It allows us to trace the movement of the author's thought in a very significant direction, presented in the Hegelian synthesis of the individual and the general. E. Durkheim proves that the concept in its purely abstract form serves as a transitional state of knowledge into concrete - abstract, or concrete - theoretical knowledge, from which there is a way to turn it into a conviction and thereby determine the actions of the will. The understanding of rationality in the philosophy of the Enlightenment and, to some extent, in its continuation in the following centuries was overly abstract. The concept of "collective representation" creates the prospect of enriching the content of rationality with a specific meaning and allows us to expect with optimism in the future the rationality of a "prudent person" developed into universality. Truth,

One of these "working" concepts is "wisdom" and its detailed study, for example, in the concept of "philosophy". IN AND. Dahl reported: "Wise, based on goodness and truth, eminently reasonable and well-intentioned." Philosophy V. I. Dahl calls "love of wisdom." "The mind of V.I. Dahl defines it more clearly and understandably: "a spiritual power that can remember (comprehend, cognize), judge," think, apply, compare "and conclude" decide, draw a conclusion", the ability to correctly, consistently link thoughts, from causes, consequences of it and to the goal, the end, especially when applied to the case. Reason, meaning, intellectus, verstand, mind, ratio, vernunft. The spirit of V. I. Dal traditionally divided into mind and will. "Intelligence" put in a common row with "understanding", "reason". G. Hegel's idea to divide reason and reason by the type of logical thinking, having formally opposed the logical order of reasoning and the dialectical one, V. I. Dal did not reflect, although, probably, he was familiar with his main works. He probably tried to explain the terms as adequately as possible in the interests of the living Great Russian language. In the Encyclopedic Dictionary of F. A. Brockhaus and I. A. Efron, popular before the revolutions of 1917, the word "wisdom" is absent, "mind" is presented as a set of mental actions that distinguish a person, "reason" is included in the volume of rationality. The modern interpretation of

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Summarizing the ideas about the prospects of a "reasonable person" expressed in different countries, on different continents, at different times, in different directions, specialists cannot fail to notice one thing in common in their thoughts. Each of them, in their own way, is concerned about the inconsistency of the evolution of intelligence. A more concrete assessment would be possible if there were a more definite professional and public understanding of rationality itself and the auxiliary concepts that describe its quality. Unfortunately, as the well-known Russian

proverb says: "the shoemaker himself without boots, and the pieman without pies."

In the context of our topic, such a situation in cognition serves as confirmation of the basic thesis that "reasonableness", being the direction of human evolution, taking shape even in the history of the predecessors of homo sapiens, could not become the pinnacle of human history. The reason for this is the excessive abstractness of rationality. We have already noted that the "reasonableness" of homo sapiens is very close in its epistemological status to the "pure mind" of I. Kant. It is no coincidence that in a number of scientifically popular publications, when interpreting "reasonableness", a comparison is used with the Kantian interpretation of reason. A finite or, more precisely, a localized understanding of the quality of an evolutionary stage can be closed on itself - its own development, but in this way it limits itself and its history. Inevitably, the "dissolution" of objectivity in its abstractions, which happened with the rationality of omo sapiens.

The promotion of evolution presupposes that development acquires concreteness, created by the inclusion of subject complementarity in it. It is necessary to inform the evolution vector of something that will concentrate the movement. Much can be concretized rationality, as evidenced by the variety of ideas expressed by people concerned about the fate of man.

Judging by the growing misunderstanding; inconsistencies in views on social progress, social and individual values, driving forces of development, ways of resolving conflicts; the sustainability of nihilism; absolutization of the consumer attitude to life, competition in everything and forever, it is not difficult to come to a pessimistic conclusion in assessing the prospects for the rationality of modern man.

Historical examples, as well as individual natural facts, cannot be arguments in proof. This is the general theoretical rule. A theory can only be "beaten" by another theory that is more effective in explaining the change in facts, that is, from facts that contradict the existing theory, one should first build an alternative theory in order to then oppose its advantages to the current theory. This is the general order, which always has a special case. Having grouped the social practice of the end of the second millennium of a new era and adding to it the practical life of the beginning of the new millennium, we will, without exaggeration, get a sad result of the evolution of rationality.

Having dealt with colonialism, racism, fascism, "reasonable man" created the means of universal destruction and tested their effect on his own kind at a time when circumstances did not require this at all. Such a scale of intimidation was not known to our ancestors by reason and their weak-minded ancestors. The absolutization of competition leads to the suppression of rationality. Competition, just like

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selfishness, manifests itself in two forms: in the form of a struggle for survival and in the form of competition - civilized interaction in the struggle for leadership. For some reason, supporters of the first form of competition count only profits, pretending that there are no costs from such competition, or write them off as inevitable costs of production development. In the press, we have not found even approximate data on the extravagance of irrational competition.

The covid pandemic has exposed the unreasonableness of politics: a low level of political culture, selfishness in politics. But behind everything that science calls political activity, there is the rationality of homo sapiens. The modern reasonableness of homo sapiens is good alone with itself, in the individual format of existence, while providing everything necessary and without force majeure. At the same time, there is no reason to underestimate the formation of human intelligence as a significant achievement of human evolution and the basis for its continuation.

Our version connects the new history of rationality with the orientation of the mind towards goods in their broadest sense. "Benefits" we define as the fundamental conditions of human existence and development. Some of the benefits are of natural origin, but most of the benefits are created and maintained by human activity itself.

Having a mind is meaningfully abstract, so it is not enough to be intelligent in life. Only having learned to use the power of reason, a person, in the interests of all mankind, will be worthy of it and will have the right to be called truly reasonable. To use the mind in the final destination means to increase the benefits. It is to the blessings that man owes his birth and his whole life. This is something that he should always accept with gratitude. To be grateful is the second side of a person's rationality, which makes rationality concrete. Those who understand the rationality of a person as a tool to create good things and treat them with dignity are not mistaken.

The very enumeration of the basic range of human benefits speaks in favor of such a statement: Nature, Society, Motherland, Family, People who lived and live the same. The great humanist Exepuri was asked: what would you do if you were on an unfamiliar planet? Without hesitation, he replied: "I shouted -" People, where are you! When everyone realizes that what is valuable is not what has a price tag indicating the amount, but what is vital, the mind will be realized as a characteristic of a person, it will fulfill its historical mission - to make a person not formally, but really reasonable.

The basic range of benefits is completed with tools for its creation and enrichment: responsibility for maintaining the natural environment, its ability to reproduce itself and us normally; participation in the development of social relations; service to the

Fatherland, fidelity to duty; love for the family, relatives and friendliness in relations with oneself - like. Social institutions are at the service of ensuring human well-being: environmental protection; health and healthy lifestyle; education; security; improving the production of material goods; life protection in social reproduction; science, art, physical culture, sports and tourism, transport support for the organization of physical and social space and everything that helps to live more effectively in time,

All of these benefits are known to almost everyone and for a long time. The problem is to make them out of existing alienated phenomena as actual values of the human mind, to give them the meaning of reasonable necessity. The initial condition for solving the problem is not a secret - the quality and availability of the benefit of creating tools are necessary. However, only at the level of the current state of rationality can one naively expect that the quality and availability of welfare tools will automatically transform them into the desired benefits in the minds of mass homo sapiens.

Formally, everyone knows that vaccination protects against infection, guarantees health, in extreme cases, not the most difficult course of the disease. Evidence of the good and access to the good are present, there is no awareness of the good. Instead of real reasonable actions, we have endless discussions about the inappropriateness of the technologies recommended by science and healthcare to protect the quality of life.

Perhaps only education has been endowed by the mind of a person with the status of significance of a universal scale, and then not so much in the primary meaning - to realize rationality in the interests of self-development of the individual, - but in order to ensure social and professional advancement of people.

The rationality of a person is projected in two directions: into his own movement and outside his reality, and the second is dependent on the first. Logic shows that education is an activity, first of all, in the interests of personal self-development, it enriches the mental, sensual and practical expression of individuality, creates the prerequisites for interest in the individual in her environment, opens up the prospect of social ascent. However, the mass awareness of the obvious logic of self-affirmation of the individual through education clearly does not meet the standards of reasonableness. Education by the mind of the majority of modern representatives of homo sapiens is perceived not as a need for spiritual development, but as a necessary measure for solving utilitarian problems. The global university dropout statistics show that, less than 2/3 of freshmen make it to graduation. Japan stands apart, where the cult of an educated person is high. To blame one personal unreason in relation to education would be unfair. Three social subjects are involved in education: the personality of the pupil (student), teaching staff and

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state institutions. To the extent that teachers and administrators with regulators act as subjects of the process, and not as nominees - organizers and mediators of the implementation of the will of those who really govern and determine the goals of education, education can be viewed through the prism of its personal and social value. The history of education as a socially significant institution is closely connected with the history of philosophical thought. So it was in the West and in the East. The concepts of "teacher", "thinker", "philosopher" initially coincided both in status and in personal terms. Pythagoras, Socrates, Plato, Aristotle, Buddha, Lao Tzu, Confucius, Mei Tzu went down in history twice: as philosophers of the first wave and as the founders of pedagogical art. What is usually called pedagogical science is in fact a technology of education, over which the philosophy of education rises, dominating strategically. In pedagogy, two components are distinguished: a philosophical attitude and the art of translating it into the mass consciousness with the help of the mastery of a systematically built learning process. In fact, there is a technology of education, over which rises, dominating strategically, the philosophy of education. In pedagogy, two components are distinguished: a philosophical attitude and the art of translating it into the mass consciousness with the help of the mastery of a systematically built learning process. In fact, there is a technology of education, over which rises, dominating strategically, the philosophy of education. In pedagogy, two components are distinguished: a philosophical attitude and the art of translating it into the mass consciousness with the help of the mastery of a systematically built learning process.

The policy in the field of education is called upon to determine and control the balance of the ideological, ideological, educational and practical components, so that two forces interact in the educational process - the power of thinking and the power of knowledge. It is necessary to minimize the risks of absolutization of the abstractness of thoughts and the utility of knowledge.

The well-known Russian historian and teacher V. O. Klyuchevsky wrote about pedagogy: she is "not a nanny, but a morning alarm clock: the word was given to her not to rock someone else's child to sleep her thought, but in order to wake someone else's." A teacher, they used to say in Russia, is not the one who teaches, but the one from whom one learns. It is education that has the potential of universal activation of mental activity, opens up the power of rationality to the individual.

Of all generally significant social institutions, education bears the greatest historical burden in promoting social and personal development. This is the main tool for the socialization of the human individual into a personal individuality; the sustainability of the reproduction of social progress,

and in the national context, the development of the identity of the nation and the prevention of nationalistic egoism.

Improving education is a strategic task, because its solution presupposes the achievement in education of the harmony of national and universal interests. Based on the traditions of the national mentality, it is responsible for the formation of universal humanistic and democratic values. In this connection, in the European documents regulating the development of university education, it is clearly stated that the educational business is outside the totality of economic enterprises. J. Galbraith also wrote about this, protesting against industrial pressure on educational activities. And a century before J. Galbraith, R. Emerson spoke about the socio-economic problems of education in his lectures, explaining their origin by industrial activity: "The whole current organization of the economy makes me think deeply: because it has created a false relationship between people in the sense that I already feel free from the need to show good breeding and nobility in relations with a person whose services I pay for with money. Human relations in such an economy are not determined by rationality. They depend on what is alienated by the capacity for rational activity from rationality itself. Meanwhile, R. Emerson summed up: "Society does not gain anything as soon as a person tries to update the order of things without updating himself." which is alienated by the capacity for rational activity from rationality itself.

Education is directly aimed at shaping the social status of a person. Indirectly, through the socialization of the individual, it contributes to social development. The social platform for the effectiveness of educational activities is subjective rationality, which is realized through all subjects of public life. In the orientation towards rationality, it is a guarantee of educated activity to preserve social progress, and it is also the reason for the uneven implementation of this function. Only a systematically holistically built education from enlightenment to the limits of professional training is able to ensure the social advancement of a graduate along the main historical path - the development of civilization, bring the consciousness of students into resonance with rationality, activate their thinking in the direction of creation, reveal the historical significance of unity in the worldview of national, transnational and universal values. Otherwise, social progress will lose the power of rationality with the vector of universal welfare. Reasonableness will lose its essence - to be an instrument of the historical creation of goods. The logic of the development of rationality is valid only in combination with the vector of comprehensive improvement of reality, the subject of which is an educated person, and the main goal of an educated person is the growth of human well-being.

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Hence the high demands in the organization of public education on its first side - spiritual development in the educational activity of the student's personality. The history of higher engineering education in Russia began with the St. Petersburg Institute of the Corps of Railway Engineers, the first rectors of which were a Frenchman of Spanish origin A. Betancourt and a citizen of France and Russia, an authoritative scientist in the field of hydraulic engineering and mechanics P. Bazin. Addressing the graduates of 1832, P. Bazin instructed: "Most of all, we strive to inspire that in the field of service, so rightly called the field of honor, knowledge is only a tool; that the possession of it does not relieve from the performance of any obligation, that even the most extensive information becomes vain without unrepachable behavior, and that one must first be an honest person,

IN. Klyuchevsky clarified: "In education, two things are distinguished: one is the development and alignment of individual characteristics, personal properties and inclinations of a person, the other is the development of a general type, the inoculation of those social rules, concepts and interests that make up the culture of the time and that make diverse personalities capable of to a friendly hostel.

The Covid 2019 pandemic has actualized the problems of implementing successful education. Interest in the history of education was activated. Goethe correctly noted: "Everything clever was invented before us. Our task is to reflect on this again." The history of education, which has a serious influence on the subsequent course of its development, began in the "Axial Age" - VI - IV centuries BC. The school came to the aid of family or home education.

The school organization of the educational process, like the home organization, began as a search for the optimal form. The search took shape in two directions. In the first one, the student's freedom of participation in the organization of the educational process dominated. Students migrated from one teacher to another, which was considered normal behavior. "Class", as a phenomenon, existed only phantomly. The second was based on the stationary relationship of the teacher with the student. Along with the teacher, the figure of the "teacher" arose - the one who accompanied the student to school and back, and was also a tutor. The concept of "pedagogy" ("pedagogy") is closer in content to the first status of a teacher. In its content, most of all that corresponds to the technical and technological components of the educational process.

The teacher had to prepare the students for the movement along the Path of life, to help them climb this Path and to place pointing semantic landmarks. Confucius, for example, explained to his students: "Strive for the truth, hold on to virtue, rely on humanity, and amuse yourself with the liberal arts."

From the historical experience of the organization of education, several fundamental conclusions of universal significance can be drawn:

First, education is most effective in the form of school organization. It, unlike home, contributes to the development of the communication potential of the emerging personality. Criticizing the principle of Betsky to exclude the family factor from education in order to more effectively implement socially and politically significant goals, V.O. Klyuchevsky wrote: "The family will never give up their educational work, they will not want to turn into a simple handicraft workshop that produces pedagogical and recruiting raw materials for the school and the barracks." It is necessary to develop education by improving the school form of its organization. It is diverse, which confirms its high functional and evolutionary potential.

Second: the system-forming factor of the school form of education is the activity of the teacher. It is necessary to create conditions for his creativity on the basis of mutual understanding and joint work with students. The function of the administration is not to command teachers, but to build optimal conditions for organizing their professional work. The state, which is responsible for the development and security of the country, determines the core of the mission of education and the way in which educational institutions are organized: schools, auxiliary institutions. Criticizing the "pedagogical sins, logical errors and psychological oversights" of Betsky's school education reform program, Klyuchevsky explained that he was ready to forgive him everything for the consistency of "requirements that educators treat children" with meekness, courtesy and love ", they always kept a cheerful look with them and maintained in them "a cheerful spirit and a cheerful disposition." Where this is not there, there can now be no pedagogy, no school."

Third: education is a source of personal knowledge necessary for the freedom of its creative activity in society, but the main task of education is to learn to reproduce and replenish existing scientific and cultural knowledge, that is, to teach to think within the framework of humanistic and democratic traditions. In the middle of the 19th century, R. Emerson bitterly stated: "The spirit of irreconcilable criticism is revealed in aspirations to reform the education system. The current system is accused of not caring about naturalness or truth. They complain that it does not involve learning practically necessary things. We comprehend the same words; ten or fifteen years they keep us locked up, while college and university follow the school, and finally they are released, having provided information that no one needs - we remember a lot of words, but we can't do anything. The Romans considered useless everything that cannot be learned without sitting down at a desk. The English have an old rule: "Spend all summer in the

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fields, all winter in your office." By the way, Charles Darwin did just that before he discovered the laws of evolution. A hundred years later, B. Kaufman confirmed the danger of extremes in relation to knowledge. Finding a balance between the abstract and the utilitarian in knowledge relaying is not easy. There is only one way out: it is necessary to teach to think, then the student will be able to independently make the necessary-sufficient selection of knowledge. The power of knowledge is made when they go back to the forms of conceptual thinking of the mind through contradictions in the movement of the student's consciousness.

Fourth: the basis of the organization of education should be cultural support for the development of the individual in school education. The history of the cultural formation of personality in school is based on mastering the development of national and universal cultures and ends with the formation of a culture of professional activity.

Fifth: the presence of originality in the organization of school education in the West and East, South and North is essential in form, but not essential in its essence. As social progress progressed, formal differences were partially preserved, and the significance of their influence on content was minimized. The integration of educational activities has become a leading trend. It is a trend, since the universalization of education should not be detrimental to national interests.

Sixth: competencies that characterize the quality of school preparation of students determine the particular manifestations of the personality, that is, they are an application, development, projections of the unitary quality of the personality. Personal competencies are conditionally real, they are simply the names of individual abilities of the individual, "noumena" in the interpretation of medieval "realists". The interpretation of competence in the spirit of the "nominalists", attempts to decompose the quality of the personality in them without a trace, are doomed to an inevitable fiasco. In the competence of the individual, in fact, they renamed what used to be the "professionally important qualities" of an employee.

Seventh: a symbol of the movement of Russia before the steam locomotive was a trio of horses, specially harnessed. N.V. called her "Bird Troika". Gogol. The education movement is also carried out by a trio: culture, science, practice. The dynamics of their combination is quite stable. Culture is a guarantee of the quality of the individual; science is a tool for the effectiveness of professional activity of an individual's activity; practice is the most important guiding goal of the educational process. Education teaches a person to think, science organizes thinking, practice straightens it. This conclusion is confirmed by the history of the growth of universities in Europe in the Middle Ages, the characteristics of which are given in Table 1.

Table 1. Characteristics of the growth of universities in Europe in the Middle Ages

<i>Centuries</i>	<i>XIII</i>	<i>XIV</i>	<i>XV</i>	<i>XVI</i>
<i>Number of universities</i>	<i>19</i>	<i>44</i>	<i>80</i>	<i>180</i>

The technology of educational activity is developed by pedagogy, a theory that combines philosophical understanding with the art of organizing the implementation of basic installations into a practical mass result.

The mission of education is determined by professional scientific creativity and the political interests of the state. It is aimed at solving humanitarian, cultural and socio-economic problems of strengthening the democratic institutions of society. Moreover, professional analysis should dominate over bureaucratic innovations. Bureaucratic initiatives are dangerous for the improvement of education along its entire perimeter.

The quality of education is measured by its effectiveness, efficiency - by the quality of an individual's education, the quality of an individual's education - by the activity of its participation in improving professional activities and developing social relations. The criteria for the quality of an individual's education are philanthropy, patriotism,

democracy, social and business (professional) activity, the need to continue education.

The economics of education is designed to financially ensure the quality of the organization of educational activities as a fundamental system-forming factor for the future of a single country and humanity as a whole.

Just as a railway train acquires official status and begins to function only after it has been put on the main track, so a person becomes a person when he ascends the path of vocational education. Technical school, college, university put graduates on the Path of life. A (classic) railway track has two rails and a graduate relies on two components of his movement - his personal and professional acquisitions. A rational interpretation of what has been described reveals the concept of "socialization" - the embedding of the individual in the process of social movement. The school is a universal institution of socialization, and in order for both parties to benefit from socialization - the individual and society, school education must be spiritual and practical. Any sustainable deviation from

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the spiritual and practical course of school education is fraught with serious costs both for the individual and for society. The virtuality of practice and spirituality formalizes them, they lose their real power in the matter of cultural and professional formation of the personality.

We have summarized a number of rules for the effective organization of educational activities. They are quite simple and, as R. Descartes argued, do not need, therefore, comments.

These rules are as follows:

1. "Knowledge does not teach the mind much" (Heraclitus)
2. "One should not teach by thoughts, but by thinking" (Aristotle)
3. Teaching "eye to eye", "eye to screen" is a surrogate option when education is simplified to learning. Spirituality is a monopoly of subjective relations.
4. Everyone learns, both the one who teaches and the one who is taught. Teaching is a reliable way to learn.
5. The only way to learn is to learn by yourself with the help of everything else.
6. A person is born, a personality is born in education, it is also deformed by education.
7. School is the path to life. Education has a beginning, but no end other than the natural.
8. The school is the temple of education, but each temple is located on the street, it also participates in education.
9. The teacher is a way of life, the student is their reflection.
10. An optimally organized education is the highest of the arts.
11. Do not skimp on improving education.
12. Knowledge without understanding is like a "dry storm" - there is little benefit, but there can be many troubles.

Education is the most important institution for sustainable reproduction and development of homo sapiens. With the help of education, social experience is preserved and improved, generations are working on mistakes in overcoming natural and artificial contradictions. The epistemological basis of education is the developing thinking of the individual - the ability of the student's mind to perceive and process knowledge. The main value of education is reasonable capacity, its potential, the main problem is to create optimal organizational conditions for the manifestation of reasonable principles in all subjects of educational activity.

The structure of education and the systematic nature of relations in education are determined by the organization of thinking and should reflect the needs of social progress. The system-forming factor in the functioning of education is the relationship between education and training, which clearly demonstrates their purpose. Education is called upon to ensure the

preservation of the values acquired by previous development of private, national, universal and professional scales. Knowledge is to orient the personality and the social subjects of its life activity - family, social group, national formation and communities in the labyrinths of contradictions of the natural-historical movement.

In the technical aspect, the improvement of education is built into two related tasks: first, to optimize the ratio of education and training, taking into account the dominant position of education in order to preserve species identity; secondly, to update knowledge in order to increase the sustainability of the development of the species. The second task is realized in social generations. The very concept of "social generation" owes its relevance to the organization of the reproduction of the species through education. Education is a condition for the optimal adaptation of a species to the environment of existence, and training is a "navigation mechanism" for inclusion in the universal system of relations between society and nature. Rationality is a specific human platform of education, the organization of which should be aimed at developing one's mental and moral base.

In the development of all living things, the factor of complementarity operates, which gives the development the efficiency and stability of the state of movement. The essence of this factor connects the ability to act and the attitude towards it. The ability to think, including rationally, does not in itself create a definite direction of activity. A steam locomotive is an instrument of movement, and it was created that way, but in exceptional cases it can also be used as a steam generator, warm people, animals, maintain production conditions, which was done in the 1990s by responsible leaders, understanding rationality not as an advantage in thinking but as a way to do good. The rationality of homo sapiens is its ability to create a culture, without which social progress loses its human value.

According to the religious worldview, the rationality of a person is the embodiment of his likeness to the Creator. But even the Creator, possessing absolute possibilities, failed to give human rationality the universal power to create only good, to unite human rationality and the universality of good deeds. A "wise man" did not become a "wise man" at the same time. Therefore, there are two versions. The first is that intelligence acts on its own; charity also exists separately. They are able to intersect privately. Second, there are two types of intelligence, reflecting the levels of human social progress. The rationality of homo sapiens is a platform for the continuation of its evolution, during which individual manifestations of the unity of rationality and good aspirations are transformed into a new type of human reality - prudence. The "reasonable man" is being replaced by a "reasonable man", capable of solving those

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problems of development that turned out to be clearly beyond the strength of his predecessor. "Prudence" becomes a necessary feature of the species. Formalization of the content of the concept, as a rule, is associated with giving some convention to the content itself. But such a logical procedure contributes to the advancement of knowledge, so the technique is quite common. We will also use it to better understand the content of the concept of "prudence". Let us first recall that "prudence" finds its expression in the development of rationality.

The formula of "prudence" is triune, it includes the interaction of three links of a single action by nature: "knowledge of the truth", "truthfulness as a personal responsibility for knowing the truth in words and deeds", "sequence of activities to objectify true knowledge". The secret of "prudence" is simple, its implementation is difficult. "Prudence" is valid only on the scale of socially significant actions. This is a kind of analogue of "herd immunity". The difficulty in achieving such a result is due to contradictions in the relationship of two dialectical opposites - "single" and "general".

In society, this complexity is exacerbated by the unevenness of social progress and the associated disproportionate distribution of its products. That is why modern society needs the abstract intelligence of homo sapiens. In a single reality, the harmony of personal interest and social is achievable in any configuration of social relations. On a general scale, such coherence can be obtained only by changing the socio-economic basis that determines public consciousness. A natural basis for prudence has been formed. Changes are required in the mouths of social life - a transition from bourgeois-democratic egoism to social-democratic collectivism and participatory in the management of socially significant actions.

As a rule, thinking is analyzed as a tool for cognition, we tried to consider thinking as a tool for the development of consciousness, and, as a result, of the person himself.

General conclusion. The consciousness of modern man is defined as intelligent activity, and this corresponds to an abstract understanding of rationality. Our current rationality is largely potential, which is convincingly evidenced by the attitude of thinking towards opposites. We either do not appreciate them, or we consider them in the traditions of Kite's understanding as antinomies, that is, recognizing opposites, we do not rise to the realization of their dialectical unity. The dominant position in modern intelligence is still occupied by reason, whose activity is limited to the separation of opposites, giving them the status of their own reality and analyzing the finiteness of their state. An explosion as an outstanding tool for analyzing objects of reality and managing within the finiteness of their existence by the behavior of homo sapiens. Reason is very conservative in solving the problem of turning an

object into a subject of interaction, which makes reason a highly specialized way of cognition. It is more convenient for reason to show its abilities "here and now", to separate objects and subjects forever, to emphasize the finiteness of their reality. Perspective thinking, recognizing dialectical transitions, the unity of subjects and objects in development, aggravates the analytical ability of the mind. The modern rationality of thinking is therefore conditional and can only be recognized as an evolutionary stage with a necessity preceding the actual rationality of a "prudent person". Intelligence must open up and become the dominant state of consciousness. The history of rationality moves in the direction of its dialectical essence. Dialectical ability is embedded in the mind. It is necessary to improve the dialectics of thinking - the achievement in dialectical thinking of the unity of the form of thoughts, their actual content and expression in the will, which ensures the process of objectification of true knowledge, combining the understanding of existing reality in the context of systemic changes. In single terms, this unity has already been achieved. What is relevant now is not theoretical evidence, but the need to transform

Reactions of individual manifestations of the reality of rationality into universal achievements. A modern rational person will have to transition to thinking that subordinates the solution of development problems in a historical perspective. Then what seems utopian to us today will appear realistically possible, because the understanding of development will change. Thinking within the limits of the ultimate reality of objects will be replaced by an awareness of the change in the final states of things as a regularity of the dialectic of development. Thinking at the level of prudence creates real grounds for the identity of thinking and being. Apparently, the most effective social tool for the next evolution of a person from homo sapiens to a prudent person should be education, the effectiveness of which is directly dependent on the quality of politics and the will of politicians.

The provisions of the Strategy are taken into account when developing and amending national and federal projects (programs) of the Russian Federation.

Conclusion

There is no need to hope for a "miraculous transformation" in the understanding of transport and transport science. The current view of transport is rooted in the practice of economic policy, the architecture of economic planning has been laid out for it, in which transport is assigned a "working" place - to be in the "service" of production, but not the locomotive of its promotion. The history of the rise of Rome, Holland, Spain, Portugal, Britain, a little later than Germany, and the historical experience of the Russian State do not teach politicians. Even the birth of space transport has changed little in the political understanding of transport, and as long as political

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reflection is not built on the basis of general scientific thinking, scientific and philosophical ideas will remain wishes, but not imperatives.

The integration of economic science is realized unilaterally, it loses its specific methodological base, borrowing mathematical methods of analysis. They are certainly fruitful and no one doubts their effectiveness, however, the movement of economic science, in addition to the "quantitative" coast, also has a political one, on which the qualitative guidelines of the movement, regulated by the world outlook, are built. Not transport should be subordinated to the development of the economy, but the economy should be developed on the basis of the modern understanding of transport as a system-forming factor in the movement of the world in general and social progress in particular. The history of man as a biological species and social form of human reality testifies that evolution was carried out thanks to the development of living space by mankind, moving first in physical space, and, as the formation of their own social space, and in it. Civilization is the product of this process. In the new millennium, the significance of space for the improvement of human life is even more relevant, therefore, no matter how high the value of social space is, it is necessary to go beyond this form and consider the problem of spatial development of the world with the help of transport, understood in a broad ideological context, as a priority in politics. And the most practical politics develop not as a systemic reaction to the action of forces from the existing reality of the world, but is built on the basis of the outstanding ability of homo sapiens consciousness to anticipate objective changes in reality. The methodology of science is an effective tool for obtaining new knowledge.

Transport science is one of the few branches of technology in which the production and operation of the equipment it uses are divided into two independent production areas with their own scientific and engineering support. Therefore, the methodology of transport science as an operational branch of technical sciences has additional specifics in relation to the specifics of the methodology of technical knowledge.

Transport science is designed not only to ensure the improvement of transport, but also to form the initial requirements and data for the innovative improvement of the products of industries serving transport.

In relation to transport, these industries are transport electrical engineering and telemechanics, petrochemistry and polymer chemistry, the paint and varnish industry, the production of garage equipment, technical diagnostic tools, etc.

Transport science in its current form is not a phantom and not a scientific and educational discipline. Its status reflects the prevailing idea of transport. She herself realizes the transition to the science of transport, corresponding to the post-non-

classical stage in the history of science. That is why it is so important to define the concept of "transport", in its actual content. F. Engels was right in emphasizing the trend of increasing importance in scientific knowledge of methodology. V.I.'s warning also came true. Lenin that the main burden on philosophy will be in epistemology. The language of technical thinking is a drawing, the language of scientific thinking is a concept. Concepts must correspond to the actual reality and change following the expansion of the boundaries of scientific knowledge.

The consciousness of the immensity of Russia comes into our souls also thanks to rail travel. There are countless railway specialties - heat engineering, a specialist in diesel engines, in electromotive traction, in electrical networks, in logistics, signaling, in optimal configuration of trains and control over the weight load on the track; on railway bridges, maintaining crossings in accordance with safety requirements, etc. This is by no means a complete list of those areas where there is thought, professional knowledge and the will of a travel engineer. These professions do not exist on their own. They are linked into a system of successive and complementary areas of activity, where each of them "leads his part" in the orchestra, in the beating of the pulse, in the life of the railway. Rough, seemingly dead pieces of iron, thanks to the concerted efforts of the "conductors" of communications, they provide a solution to economic, strategic, cultural tasks, without success in solving which Russia will get chaos the next morning, an avalanche of growing failures and additional difficulties in everyday life, which, of course, is unacceptable for the population of the regions of the Arctic Zones of the Russian Federation with its high migration. The purpose of developing the Strategy is to propose a set of strategic directions, measures and steps aimed at reversing the negative trends in the economy and social sphere of the regions of Russia and at its entry into a sustainable trajectory of socio-economic development, which is based on a model of accelerated economic growth and strengthening the economic base of the regions Russia for the subsequent improvement of the quality of life and well-being of its inhabitants.

The mission (strategic goal) of the socio-economic development of the regions of Russia is the growth of the genuine well-being of the inhabitants of these regions, the creation of opportunities for their self-realization by outstripping the rate of creation of new high-tech and knowledge-intensive jobs compared to other regions of Russia, the growth of the level and quality of life, access to social and cultural benefits.

The concept of true well-being comes from the assumption that today the content of the concepts of "development" and "progress" has acquired a new meaning. Development is becoming human-oriented (humanistic) and environmentally-oriented, based on

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investments in human capital, innovative sectors of the economy, and the preservation of ecosystems. This means an increase in the subjective feeling of personal happiness, including not only the level of income, but also non-economic indicators, including the value of leisure, eco-system services, and the quality of work.

Genuine well-being is assessed by an expanded set of indicators that characterize the quality of human life from all sides (opportunities for self-realization, wealth inequality and other indicators of inclusive economic growth, subjective happiness, quality of the urban environment, environmental indicators, healthy life expectancy, indicators of human development, development of democratic institutions and public participation, etc.). This takes into account not only the economic (level of income, volume of production and investment), but also the social, environmental, spatial and managerial (institutional) components. Economic development not only does not contradict the conservation of nature (“industrialization at any cost”), but also leads to a reduction in social disproportions,

The goal for the period up to 2026 (the first stage) is to ensure rapid economic growth and development of the social sphere of Russian regions at rates above the national average based on strengthening the economic base, stimulating entrepreneurial initiative, sustainable spatial development and improving the efficiency of state and municipal government. At the first stage, due to outstripping growth rates, basic conditions will be created for entering the trajectory of sustainable development.

The goal for the period 2027 - 2030 (second stage) is the formation of a new model for the development of the regions of the Russian Federation, based on the principles of sustainable development, including through the implementation of the provisions of the Decree of the President of the Russian Federation dated May 7, 2018 No. 204 "On national goals and strategic development objectives Russian Federation for the period up to 2030".

At the second stage, a new model of sustainable long-term development of the regions of the Russian Federation will be formed due to investments in human capital, ecology, and industrial renewal, which implies the harmonious development of the economic, social and environmental components.

The goal for the period 2031-2035 (the third stage) is to increase the true well-being of people and their subjective sense of happiness through the scaling of the sustainable development model, the transition to a fundamentally new quality of economic growth, in which social, economic and environmental development complement each other, the introduction of best practices environmentally-oriented and human-oriented development.

Thus, by 2035, the Strategy is designed to realize the existing human potential of the regions of the

Russian Federation, increase opportunities for self-realization, ensuring an increase in the level and quality of life, access to social and cultural benefits, creating an environment of equal opportunities for everyone. This will create conditions for the implementation of a catch-up development model (with growth rates higher than the average Russian ones) with access to a model of sustainable long-term development by 2027.

The implementation of the Strategy will make it possible to make a consistent transition from the old industrial model of extensive economic growth at the expense of natural resources to a sustainable development model that balances economic, environmental and social components. The new development model will be based on the concentration of added value in the region, the development of innovations and human potential, the implementation of a smart specialization policy for certain territories, the greening of industry, and the creation of a new quality of business and management institutions.

The implementation of the Strategy will help strengthen the status of the northern regions of the Russian Federation as a geostrategic Arctic zone of the Russian Federation. In the Strategy for the spatial development of Russia until 2035, the northern regions of the Russian Federation are considered as geostrategic, which are essential for ensuring the territorial integrity of the country and the security of the state. The northern regions of the Russian Federation are included in the list of geostrategic territories as regions bordering the countries of the European Union, with a level of economic development below the Russian average. Among the main directions of development of the regions of the Russian Federation, those that are focused on realizing the potential of the border geographical position of the Russian Federation as promising large centers of economic development stand out.

The Russian Arctic in the long term is positioned as one of the pilot regions of the Russian Federation for the implementation of the global sustainable development agenda for the period up to 2035 at the regional level in Russia. This agenda was adopted on September 25, 2020 by the UN member states, including Russia.

Within the framework of the Strategy, by 2035, the regions of the Russian Federation are considered as special regions with territories with a unique specialization at the national and regional levels. At the same time, the regions themselves already perform or are potentially capable of performing several functions at once (“development through diversity”) at the national level: an innovative industrial center, a scientific and educational center, a transport and logistics center, a digital economy center, a tourist center, a territory of cooperation and interactions, areas of sustainable development.

The Strategy identifies 7 equivalent and

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interrelated strategic areas focused on the formation of human potential, the creation of new incentives to live and work in the regions of the Russian Federation, and 50 main tasks for moving forward in each of them. At the same time, some of the activities can be implemented at the regional and municipal levels, but with the participation of the federal authorities of Russia. Within the framework of the strategic direction "Infrastructure for Life", the main directions of infrastructure development are set as a necessary condition for the development of the economy and the social sphere.

The strategic direction "Development of the economy and entrepreneurship" defines measures to strengthen the key competitive and promising sectors of the Russian Arctic economy.

Within the framework of the strategic direction "Development of tourism and the hospitality industry", the unique tourist and cultural opportunities of the regions of the Russian Federation are separately disclosed.

The strategic direction "Sustainable Spatial Development" is aimed at realizing the unique spatial potential of the republic.

The strategic direction "Improving environmental sustainability and security" sets the

values of sustainable development, a green economy in order to pass on to future generations the opportunities that we have today.

The strategic direction "Human Capital and the Social Sphere" is aimed at the development of science and education, health care, and social support for people. The multiplication of human potential is the biggest task, a necessary condition for retaining the population, solving problems in the field of industrial development.

Finally, the strategic direction "Effective Governance: Tools for Implementation" sets the vector in the field of creating a modern development management system, introducing advanced practices of public participation, and new instruments of tax, budget and investment policy.

The system of 7 strategic directions is linked to 7 long-term strategic goals and is generally aimed at creating conditions for the integrated development of human potential and securing the population in the regions of Russia by providing basic needs in education, healthcare, infrastructure, a favorable environment, jobs, including highly qualified, concomitant development of services and institutions.

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ON THE IMPORTANCE OF TRANSPORT AS A SYSTEM-FORMING FACTOR FOR THE SPATIAL AND SOCIO-ECONOMIC DEVELOPMENT OF RUSSIAN REGIONS. MESSAGE 2

Abstract: *in the article, the authors analyze the role and significance of the transport strategy in creating conditions for the socio-economic development of the regions of the Russian Federation. At the same time, in order to improve the quality of transport services, it is expected to reduce the total costs of society dependent on transport, increase the competitiveness of the domestic transport system, strengthen the innovative, social and environmental orientation of the development of the transport industry in the regions of the Russian Federation. The authors pay attention to the development of the regions of the north of the European part of Russia, most of Siberia and the Far East, which have the greatest resource potential and low population density, where the need to develop new mineral deposits will provoke an increase in the quality of life of the population of these regions.*

Key words: *reliability, quality of life, economy, efficiency, population, migration, competitiveness, profit, resource potential, comfort, priority, demand.*

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Introduction

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Rationality is the ability of a person, within the framework of systemic relations with the natural environment, to complete the animal (biological) form

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of subordination to nature not only by the art of adaptation, but also of transformation.

Planning arose in the process of mastering by a person those advantages that rationality provided him. And here it is necessary to clearly dialectically oppose rationality and consciousness as specific characteristics of modern man. Intelligence is predominantly a biological attribute, consciousness is its specific historical development in the conditions of the social form of human life, a kind of way to realize the potential of intelligence. In this connection, the systemic use of the concepts of "consciousness" and "reasonableness" differs. "Reasonableness" is included in the composition of consciousness as a tool for building the latter. Intelligence singled out a person from the totality of biological species, consciousness allowed him to develop into a modern person and build his human, social structure of relations, thanks to the ability to foresee and plan, and by planning,

Planning is an attribute of activity, one of its qualitative features. It is twice qualitative: both as a qualitative sign of activity, and as a measure of measuring the level of perfection of activity. The art of planning shows the active side of homo sapiens. To a certain extent, this is a sign of the highest state of activity. Attempts to oppose planning and creativity are nothing more than a desire to limit the universality of planning, to simplify the nature of human intelligence. It is also wrong to oppose planning to freedom of competition. Both creativity and competition are ways of manifesting activity, therefore, all its attributes must be present in them. Another thing is that the general is realized through the special and, therefore, in its reality it is specific, concretized. S.V. Kovalevskaya ventured on an original solution to the problem of describing the rotation of a rigid body with a shifting center of gravity - aerobatics in mathematics, according to the Paris Academy of Sciences, accessible to her only by L. Euler and J. Lagrange, they planned their actions both objectively and in time, meeting the deadline. Even the ancestors of the current apologists for the fight against the planned economy, the pioneers of the development of the wealth of North American lands, the cowboys, who are considered to be free from everything, planned their actions within the limits of available knowledge. At the beginning of the third millennium, the most urgent question is: how to optimize the organization and management of production development in the priority of consumer interests and environmental safety. available before it only to L. Euler and J. Lagrange, planned their actions both objectively and in time, meeting the deadline. Even the ancestors of the current apologists for the fight against the planned economy, the pioneers of the development of the wealth of North American lands, the cowboys, who are considered to be free from everything, planned their actions within the limits of

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The underestimation of the strategic scope of planning reveals the flaws that are born from the understanding of rationality, and ultimately the defects of the rational ability of those behind the attacks on the universality of planning. In relation to planning, one can easily trace:

firstly, the lack of panoramic thinking;

secondly, his ideological orientation towards the narrow format of utilitarianism as perverted pragmatism.

The outstanding achievements of the classics of political economy should include exactly what scientists economists, who guard the interests of the current heirs of the revolutionaries - the bourgeois of the eighteenth-nineteenth centuries, seek to carefully disguise:

- fundamentalthe position in the production of that labor that can be concretely measured in the product produced;
- development of a theory of value in relation to such aore;
- freedom of the producer as a necessary condition for the development of production;
- the decisive factor in the development of production is labor productivity, and the improvement of productivityand labor is due to the division of labor, which also facilitates the introduction of scientific and technological achievements into production;
- the goals of the economic movement are only partly within the development of production, the main goal is determined by the systemthe position of

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production itself in the life of man and society. Production is a tool for solving problems of social and personal development, therefore, planning must be socially and culturally oriented.

Planning reveals the level of depth of knowledge of the economic process that requires management, and the degree of rationality of managerial actions. The latter needs a special explanation.

Intelligence, as a phenomenon, has a twofold interpretation. In the philosophy of the past and in the new century, "reasonableness" was understood and is understood as an independent phenomenon that realizes the identity of thinking and being, for example, in Hegel the expression of this was the absolute idea; or is considered as a unique ability of the subject - the highest level of the ideal ability to reflect reality. The characteristic of such a level is determined by the adequacy of reproduction by thinking of what is happening outside it.

Reasonableness is a guarantee of the possibility of obtaining an ideal copy of objective reality. The task of thinking, which has reasonableness, is to transform the possibility into a corresponding result. The process of cognition - reflection of reality by thinking is natural, therefore it can and should be planned. Here the main condition for obtaining a product is to match the actions to the nature of the object. There are many obstacles on the way to the truth, connected both with the peculiarity of the planned action and with the specifics of the thinking itself. Thinking is capable of knowing the truth, but it is also characterized by movement in a false direction, which may be a delusion, or may be deliberate in order to fit the result of the fulfillment of someone's interests, to be a consequence of moral dishonesty.

Human intelligence has its own special history, but it is absurd to understand it separately from biological evolution and the sociobiological continuation of natural history. Before human rationality appeared as the special intelligence of learned liberal economists, infected with the idea of reformism, it was itself a derivative product of labor activity, that is, the formation of economic reality.

The real history of the mind is built into the history of the development of what was eventually called the economy by a natural-historical process, therefore, socio-cultural progress, revealing the potential of human intelligence, must immanently belong to the economic movement. The concept of "superstructure" characterizes not some artificial constructive addition to the main structure, it helps to understand the architecture of a monolithic structure. No matter how you depict the first floor and do not call the second the first, you will not be able to get rid of their structural unity - the second will be considered above the first and the second will be, thanks to the first: there will be no first, there will be no second. But the first without the second is quite independently real.

Optimization in planning destroyed the system of organization of health care, education; forest fires became regular disasters, floods were added to them, significantly different from the usual and known for a long time. The authorities are trying to blame them on the "natural disorder" provoked by climate change, but few people already believe in such an explanation. The population migrates from the Far East, Eastern Siberia, Western Siberia is next, and some 50 years ago people actively went to these places to build, raise science and culture. BAM was built by the whole world, finances were limited, but they found money for social and cultural life, albeit on a modest scale.

Those who developed the plans understood from real experience the impossibility of implementing projects without something that serves the development of the individual, satisfies his cultural needs, and warms the soul. After all, people went to large construction sites from places inhabited and equipped. To the question: what's the matter? The answer is simple. At the described time of rise, with all the punctures and costs, the goal was universal - the well-being of the Fatherland. Of course, even at that time the benefits were not shared equally - there were both rich and poor, the main thing was that the goal seemed to be the same and the opportunity to make a career was equally put. They built and produced not for the pleasure of "golden paratroopers", they promoted the country and themselves along with it.

Capitalism, we repeat, by the 20th century completed its "classical" history and was forced to rebuild, refusing under compulsion what had once helped it quickly increase its advantages: the colonial system collapsed as a result of a long struggle for independence; wars with the aim of redistributing property became a dangerous business - they could return like a boomerang; had to accept the idea of peaceful coexistence; it was necessary to strengthen the social direction in economic policy; the question of the maximum load on the natural habitat arose sharply. There have already been different stages in the history of capitalism: the primary accumulation of capital; revolutionary activity; monopolization of capital; concentration and dominance of finance capital.

Speculative thinking is a well-known phenomenon that arises in philosophical reflection or in the course of scientific discourse. Its epistemological nature is well studied - the systemic assessment of individual aspects of the subject of thinking and, as a result, the absolutization of the meaning of these aspects. Mental speculation falsely reflects objective reality, therefore, it is permissible to qualify it as a cost in the production of the required knowledge. Very rarely has speculation been the product of artificially inducing the process of cognition in the wrong direction. The "scientific permissibility of speculation" (by liberal economists)

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has a completely different epistemological mechanism of education, indicating that there is nothing related to postulates, delimiting the scientific way of cognition from non-scientific ones, in their thinking. We must always clearly differentiate philosophical reflection, scientific thinking and non-scientific ways of knowing the world. The problematic nature of philosophical knowledge is logically compatible with the subjective costs of thinking. The falsifiability of philosophically identified problems is limited, since philosophical knowledge is conventionally standardized.

Scientific knowledge, on the other hand, must be subject either to strict verification or equally severe falsification. It does not reproduce in consciousness its attitude to the object (subject), it is, in content, a completely objectified process. Even the choice by the subject of thinking of a coordinate system, a reference point, etc. is regulated at all stages of cognition. When scientific knowledge is "enriched" by the "permissibility of speculations", then such an addition testifies to one thing - the desire to modernize the post-non-classical stage of the history of science with something that has nothing to do with the current time or with scientific history in general. Allowing speculation not as a cost, but as a scientific phenomenon in the knowledge of economic movement, innovator economists want to squeeze a subjective action in nature into the chain of objective reflection of the developing reality, sliding into solipsism in perspective. Scientific knowledge is objective, the characteristic of the scientific nature of knowledge begins with objectivity, if economic thinking strives to be scientific, it must filter knowledge on the basis of objectivity. "The admissibility of speculation" is tantamount to its legalization in scientific knowledge. This is nonsense for legal sciences, logic, ethics, aesthetics, cultural studies, a negative phenomenon for historical science, political science, and sociology. As a fact of objective reality, speculation undoubtedly exists, therefore, scientific - economic, political science, psychological, legal interest in it is justified, however, it is one thing for science to pay attention to a fact, and quite another - the desire to substantiate the regularity of speculation's system belonging to economic science as a necessary condition its development. Scientific knowledge is objective, the characteristic of the scientific nature of knowledge begins with objectivity, if economic thinking strives to be scientific, it must filter knowledge on the basis of objectivity. "The admissibility of speculation" is tantamount to its legalization in scientific knowledge. This is nonsense for legal sciences, logic, ethics, aesthetics, cultural studies, a negative phenomenon for historical science, political science, and sociology. As a fact of objective reality, speculation undoubtedly exists, therefore, scientific - economic, political science, psychological, legal interest in it is justified, however, it is one thing

for science to pay attention to a fact, and quite another - the desire to substantiate the regularity of speculation's system belonging to economic science as a necessary condition its development.

Speculation is persistently tried to be presented as a necessary link in scientific thinking, and this is done in the interests of that minority that controls distribution, and does not produce a real product. Within the framework of artificially constructed relations in the superstructure of production, speculation has long been legally flourishing, but it is unnatural within the framework of the established system of production itself, where everyone, regardless of their position, is a participant and has the right to count on their legitimate share in the product produced. The order of distribution is determined mainly by property, and only then by the share of participation in the production of goods. The gap between the two realities - labor and property, formed in connection with the pattern of development of production and social superstructure, the direct creator of a real product and its real owner opens up a real opportunity to supplement the objectively natural reality, the conditionally existing, virtual or speculative reality. It is she who is considered as a way of movement to property.

Speculation is a roadmap to the capital that may be sufficient to start a real business. And in this version, speculation has a real meaning, it can be a conditional fact of scientific research. But under the dominance of financial, essentially speculative capital, speculation has become a steadily autonomous variety of activity, divorced from the production of a real product. Speculation in the market is an excessive form of intermediary activity. It has already become an obstacle to the development of production. And so it began to concentrate the costs of the social movement. By and large, speculation has matured, blossomed, and outgrown the limits of the right-protected reality.

The "specialist" displaces the individual from the goals of social development. Economists need a specialist, sharpened by the technology and organization of production, personal development for liberal economists seems to be transcendent for the purposes of production. Production requires for its development not a person, but a knowledgeable and able to work specialist. They build the functions of culture and education for the training of a specialist. You don't have to go far for arguments, there is no need to dive into the history of the United States, you just need to turn towards the modernization of domestic special education - secondary and higher, displacing from the programs everything that contributes to personality development in order to focus the process on training a specialist in the direction. The personal model of education has given way to a competent one.

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Globalization of the economy is a policy that uses the objective trend of integration of national economies. This is clearly seen in the example of the WTO. The WTO, on the one hand, stimulates the planned form of managing economic movement, on the other hand, it strictly regulates the possibilities of planning the development of the economy on a national scale, subordinating national interests to global goals, the justification of which, from a scientific point of view, looks insufficient, politically biased. Meanwhile, having joined the WTO, the country is forced to accept the conditions of this, to a large extent, political game.

National economic development projects are increasingly loaded and adjusted not in the national interest, which has to be put up with as the costs of globalization. At the same time, it should be borne in mind that there is no alternative to integration. Homo sapiens exists as a universal species. The earth is his common home, development is a common interest, synthesizing biological evolution and socio-cultural arrangement.

When planning, it is necessary to proceed from the dialectical requirement of a comprehensive objective analysis of reality, once and, the need to act together in the common interest, two. States have something to share, but you can't test history for strength, humanity has no other and never will. Dialectics has opened up to us the range of confrontation, both practical and theoretical. The struggle is reasonable only within the boundaries of unity, therefore, contradictions should be filtered through the need to obtain a common result that corresponds to the laws of motion of the human reality of being.

To achieve certain results in his research activities, the researcher must master the "secret" of the method and possess the heuristic technology of scientific thinking. In this he should be helped by the results of research, the main task of which is to provide a heuristic form of cognition with a system of strictly verified and tested principles, methods, rules and norms. This system is formed on the basis of objective laws and patterns of reality.

Paradoxically, the methodology of technical sciences is poorly reflected in the specialized literature. Numerous philosophical works focused on expanding the worldview horizons touch upon its issues only in passing, limiting themselves to a historical analysis of the role of natural science in the change of epochs in the creative activity of mankind.

These studies are devoted to the history and methodology of transport science, research technologies in the interests of transport. The key stages in the formation of the Russian transport branch of transport science are given on the basis of the most important achievements of domestic transport scientists, the influence of the most

successful developments on the formation of Russian transport is illustrated.

The work reflects the current state of development of transport in Russia. The goals, content, methodology and technologies of research in technical sciences are outlined, the specifics of objects and methods of transport research are shown.

Transport in a new format is considered as a phenomenon that is part of the basis of the systemic organization of reality. An analysis of the existing understanding of transport shows that the restriction of the content of the concept of "transport" by the industry engaged in the transport of goods within the exclusively social reality is in conflict with the initial premise of the definition of transport as a means of movement and the history of human transport, which began before the birth of differentiated production. The traditional understanding of transport as a means of movement within the social life of a person has developed under the influence of the significance of this component of the world for him. Such a limitation of the scope of reality reflected in the content of the concept of "transport" violates the logic of the formation of a scientific concept. The volume of phenomena, fixed by the content of the concept, must be equivalent to the content. If it is argued that "transport" is the subject of the definition, and "movement of goods" is its specific feature, then we must qualify "movement of goods" as a universal action. When the "movement of goods" is reduced to the movement of the totality of products of human activity itself, then the characteristics of transport should also be sequestered. That is, here we should no longer talk about "transport" as such, its universality, but about "public transport", a component of which can be made "individual transport". When the "movement of goods" is reduced to the movement of the totality of products of human activity itself, then the characteristics of transport should also be sequestered. That is, here we should no longer talk about "transport" as such, its universality, but about "public transport", a component of which can be made "individual transport". When the "movement of goods" is reduced to the movement of the totality of products of human activity itself, then the characteristics of transport should also be sequestered. That is, here we should no longer talk about "transport" as such, its universality, but about "public transport", a component of which can be made "individual transport".

The problem is that the logical analysis of the inconsistency of the existing understanding of transport shows the formal side of the imperfection of the definition, while scientific, like philosophical knowledge, requires subject certainty. It is necessary not only to bring the scope of the concept into line with its content, but also to find that in the world of actual existence that is the subject reflected in the construction of the concept, that is, to load the concept

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with real content so that it works normally in scientific knowledge, thanks to its concreteness. As a peculiar form of cognition, science arose in modern times (XVI-XVII centuries) in the era of the formation of capitalist production. Since that time, science begins to develop independently. But it is constantly connected with practice, receives from it tasks and impulses for development and,

Science is a form of people's spiritual activity aimed at producing knowledge about nature, society and knowledge itself, with the immediate goal of comprehending the truth and discovering objective laws based on a generalization of real facts and their relationship. Science did not exist at all times and not among all peoples.

Unlike experiential knowledge (empiricism), science is not content only with the question "what", but also asks "why". Using analysis, science moves from the "whole" to the "particular", and vice versa when applying synthesis.

Science uses induction to move from experience and observation to concepts, judgments, and conclusions, and deduction to move from the general to the particular, always testing one with the other.

At the end of the Middle Ages, the concept of "science" began to be replaced by the concept of "natural science". Since then, the possibilities of science have increased dramatically due to the fact that mathematics has become the second of the two main tools, and experiment, discovering and investigating patterns, its first tool. Even Kant judged particular sciences according to the extent to which they used mathematics.

Under the influence of experimental mathematical science, the European outlook changed and its influence on the spiritual life of other countries increased. This strengthening was especially due to the laying of a strict foundation for the technique that arose from medicine.

Further development caused a deeper division of science into specialties. The rationalism of science is based on the principle of the supremacy of reason, faith in the unlimited power of human knowledge. Having conquered science, the scientist went further and has now become the main form of education and upbringing. This turned a scientist into a specialist, and a higher educational institution into a place for training a specialist. Scientific research is characterized by objectivity, reproducibility, evidence and accuracy. Three of its interrelated levels are distinguished: empirical, theoretical and philosophical. At the first stage, new facts of science are established and empirical regularities are formulated on the basis of their generalization. At the second level, general patterns for a given subject area are put forward and formulated, allowing to explain previously discovered facts and empirical patterns, as well as to predict and foresee future

events and facts. Therefore, the main components of scientific research are:

- 1) formulation of the problem;
- 2) preliminary analysis of the available information, conditions and methods for solving problems of this class;
- 3) formulation of initial hypotheses;
- 4) theoretical analysis of hypotheses;
- 5) planning and organization of the experiment;
- 6) conducting an experiment;
- 7) analysis and generalization of the obtained results;
- 8) verification of initial hypotheses based on the facts obtained;
- 9) the final formulation of new facts and laws, obtaining explanations or scientific predictions.
- 10) implementation of the obtained results in production.

For applied scientific research, an additional stage is allocated - the implementation of the results obtained in production. The structure of scientific research is determined by various combinations of the listed stages, which can be carried out in a different order with certain repetitions and changes. In some cases, certain steps may be missing.

Classification of scientific research can be done on various grounds. The most common is the division into fundamental and applied, quantitative and qualitative, unique and complex, etc. The mutual imposition of these classifications and their more careful division give a multi-stage classification hierarchy of scientific research.

An analysis of the activities of the institute of science in modern society gives grounds to assert that its main function is the production and multiplication of reliable knowledge, which makes it possible to reveal and explain the patterns of the world around.

Mathematization of science is the basis for improving machines, tools, processes in any production, establishing patterns of interaction between elements of machines, systems, optimizing technological processes and parameters of complex objects. That is why teaching mathematics and physics should be the basis for training engineers in any industry.

Speaking about the role of transport science in the national economy, in the development of production, we emphasize its avant-garde role not only in improving the technology already created, but also in raising new issues that need to be addressed in order to move to a higher level of transport development. Thus, the improvement of production and even mass production of well-known products is impossible without the use of knowledge contained in the theories of mechanics, chemistry, physics and other sciences.

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The knowledge in question is reliable information about the creation, operation and efficiency of the entire transport system.

Scientific knowledge in relation to transport science is a special type of knowledge accumulated by the activities of special representatives of the human society of scientists and characterized, first of all, by the possibility of comparison with some reality of the development of society.

So, the system of transport science includes knowledge about the objective reality studied by technical science, but the system itself can and should be the subject of study. The science that studies it is called the methodology of science. First of all, each science has a "hard core" - reliable knowledge that has been formed over the years. Further, science consists of the "science of the cutting edge", which includes both true, not yet consolidated, and not true, not yet dead, knowledge. The third part of science that penetrates both the "hard core" and "the science of the cutting edge" is the history of science, which is unimportant from the point of view of particular issues, but significant when it comes to generalizations.

The "hard core" of science consists of:

- factual material drawn from empirical experience;
- the results of its initial conceptual generalization in concepts and other abstractions;
- concepts and other abstractions based on given problems and scientific assumptions (hypotheses);
- laws, principles and theories "growing" out of them;
- philosophical attitudes;
- sociocultural grounds;
- methods, ideals and norms of scientific knowledge;
- thinking style.

Often the structure of knowledge is considered in dynamics: "problem - hypothesis - theory".

A problem is a form of knowledge, the content of which is that which is not yet known by man, but which needs to be known. This is knowledge about ignorance, this is a process between setting and decision.

A hypothesis is a form of knowledge containing an assumption formulated on a number of facts, the true meaning of which is not defined and needs to be proven. Knowledge is probabilistic in nature and requires verification of the grounds. The advancement of a new hypothesis is based on the results of checking the old one, even if they were negative (for example, in physics, the concepts of "phlogiston", "caloric", "ether").

Theory is the most developed part of scientific knowledge, which gives a holistic display of the regular and essential connections of a certain area of reality. Any theory must meet two requirements:

- 1) consistency (internal and external);
- 2) falsifiability (providing for the possibility of refutation or experimental verification).

In addition, each theory must have the main elements:

1. Initial foundations - fundamental concepts, principles, laws, equations, axioms, etc.;
2. An idealized object is an abstract model of the essential properties and relationships of the studied subjects);
3. The logic of the theory, aimed at clarifying the structure and changing knowledge;
4. A set of laws and statements derived from the main provisions of a given theory in accordance with certain principles.

The main functions of the theory:

1. Synthetic function - combining individual knowledge into a single, integral system;
2. Explanatory function - identification of causal or other dependencies, connections of a given phenomenon;
3. Methodological function - formulation on the basis of the theory of diverse specific methods, methods and techniques for solving problems;
4. Predictive function - a function that allows you to evaluate the strength of the theory;
5. The practical function is the translation of the results of the theory into practice, both in terms of technology (direct production of new products) and intellectual (effective use of theory to create other theories); theory should be a guide to action.

The best theory should:

1. Communicate as much information as possible, i.e. have deeper content;
2. Possess greater explanatory and predictive power;
3. Be logically more rigorous;
4. Be more rigorously tested by comparing predicted facts with observations.

What are the criteria of scientific knowledge, its characteristic features? One of the important distinctive qualities of scientific knowledge is its systematization. It is one of the criteria of scientific character. Scientific systematization is specific. It is characterized by the desire for completeness, consistency, clear grounds for systematization. Scientific knowledge as a system has a certain structure, the elements of which are facts, laws, theories. Separate scientific disciplines are interconnected and interdependent.

The desire for validity, evidence of knowledge is an important criterion of scientific character. Justification of knowledge, bringing it into a single system has always been characteristic of science. There are different ways to justify scientific knowledge. To substantiate empirical knowledge in transport science, multiple checks, access to statistical data, etc. are used. When substantiating theoretical concepts, their consistency, compliance

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with empirical data, and the ability to describe and predict phenomena are checked.

The main methods of obtaining empirical knowledge in science are observation and experiment.

Observation is such a method of obtaining empirical knowledge, in which the main thing is not to make any changes in the studied reality during the study by the process of observation itself. In contrast to observation, within the framework of an experiment, the phenomenon under study is placed in special conditions. It is important to emphasize that empirical research cannot begin without a certain theoretical attitude. In the course of constructing a theory, scientists use various methods of theoretical thinking. In the course of a thought experiment, the theorist, as it were, plays out the possible behaviors of the idealized objects developed by him.

A mathematical experiment is a modern version of a thought experiment in which the possible consequences of varying conditions in a mathematical model are calculated on computers.

The methods and means used in different sciences are not the same. Differences in the methods and means used in different sciences are determined both by the specifics of subject areas and the level of development of science. However, in general, there is a constant interpenetration of methods and means of various sciences. The apparatus of mathematics is being used more and more widely.

Methods developed in one scientific area can be effectively applied in a completely different area. One of the sources of innovation in science is the transfer of methods and approaches from one scientific field to another. The question of the structure of scientific knowledge. It is necessary to distinguish three levels in it: empirical, theoretical, philosophical grounds.

At the empirical level of scientific knowledge, as a result of direct contact with reality, scientists gain knowledge about certain events, identify the properties of objects or processes of interest to them, fix relationships, and establish empirical patterns.

To clarify the specifics of theoretical knowledge, it is important to emphasize that the theory is built with a clear focus on explaining the objective reality of transport operation, describes directly real objects and is characterized by a very specific number of properties.

The theoretical level of scientific knowledge deals with the most abstract ideal objects and theories that describe a specific area of reality on the basis of fundamental theories.

The strength of a theory lies in the fact that it can develop, as it were, on its own, without direct contact with reality. Since in theory we are dealing with an intellectually controlled object, the

theoretical object can, in principle, be described in any detail and obtain arbitrarily distant consequences from the initial ideas. If the original abstractions are true, then the consequences of them will be true.

The empirical and theoretical levels of scientific knowledge are organically linked. The theoretical level does not exist on its own, but is based on data from the empirical level. But it is essential that empirical knowledge is inseparable from theoretical ideas; it is necessarily immersed in a certain theoretical context.

In the history of science, there is a tendency to reduce all natural science knowledge to a single theory, to reduce it to a small number of initial fundamental principles. In the modern methodology of science, the fundamental unrealizability of such information is realized. It is connected with the fact that any scientific theory is fundamentally limited in its intensive and extensive development. A scientific theory is a system of certain abstractions, with the help of which the subordination of essential and non-essential properties of reality in a certain respect is revealed. Science must necessarily contain various systems of abstractions, which are not only not reducible to each other, but cut reality in different planes. This also applies to transport science.

Science is a system of human knowledge about the objective laws of the development of nature and society, and at the same time it is the activity of people.

In the course of the development of transport science, four trends are distinguished: in accumulation, in systematization, and in the use of acquired knowledge.

I. Integration of science with the progress of transport technology and transport production.

There are three stages in this process:

1. In the XVII-XVIII centuries. the main functions of science are generally considered: empirical (collection, description, establishment and systematization of facts) and theoretical (explanation, generalization and forecasting of trends and patterns), and therefore, science explained only the nature of phenomena that have already found their application in transport, and according to this, transport science (if we can talk about transport science in this period) lagged behind the needs of transport (water and horse-drawn).

2. The emergence of specialized transport science, which begins to “catch up” with transport production, solving problems related to the implementation of existing needs in practice. There is a separation of transport science from the production work of transport workers. Invention in transport becomes a special (specialized) type of activity.

3. At the present stage, it is no longer transport science that relies on transport production, but transport production - on transport science. And

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although transport production still provides transport science with both the tasks to be solved and the means of scientific work, science is ahead of production, predicts and determines its transformations. Along with the empirical and theoretical functions, the functions of searching and substantiating the ways of practical use of scientific achievements in transport are being developed.

4. This trend is manifested in such factors as the growth of the capital-labor ratio of research workers, the automation of information, computing and design work, the increase in the share of materialized labor in the costs of transport science.

Main part

At the end of the 19th century, applied (industry) transport science, and then experimental design and design development, specialized, separated from institutions of a general scientific profile. This division of labor led to an increase in its productivity, a reduction in the period separating the promotion of a scientific idea from its implementation to the period of the creative life of one generation (15–30 years).

In the 1970s, implementation was singled out as an independent sphere of application of scientific work in transport, i.e. information services for transport production, technical assistance in the installation, adjustment, operation and improvement of transport systems, consultation and retraining of personnel, transfer of experience. The costs of introducing scientific and technological achievements in transport are usually 8–10 times higher than the costs of transport science itself. In addition, the research itself becomes more complicated and becomes more expensive. At the same time, the period of their possible use in all types of transport is sharply reduced, because the obsolescence of new technology and the revision of scientific concepts are reduced. Science ceases to be a free resource and turns into an unlimited but expensive resource.

This requires a transition in the transport industry from an extensive one (due to the creation of new scientific institutions, an increase in the number of personnel, and the involvement of resources from other industries) to the intensive development of science.

The convergence of the sciences of nature (natural science) and society through their connecting link - the science of technology, including its organization (technology) in a broad sense.

It is at the junction of these two sciences that the most important discoveries occur, the application of which in transport can radically change the prevailing stereotypes.

In the economic practice of domestic transport, the experience of countries that pursued a targeted

innovation policy during the 20th century, which was under continuous state protectionism, was very little used. The spread of innovations was very insignificant and, as a result, led to the formation of prerequisites for reducing the incentives for scientific research and for an innovation crisis in domestic transport.

Transport science is among the young in the spectrum of technical sciences, and transport has become its object only since the beginning of the 1930s.

Therefore, the theoretical foundations of technical sciences can be fully considered as the foundation of transport science.

Considering the development of the science of transport in relation to research for transport, it is necessary, first of all, to analyze their specificity, associated with their pronounced operational orientation. When studying transport science in relation to other technical sciences, the following are distinguished:

- the purely operational goals of the research being undertaken;
- operational issues (i.e. operational coloring of the subject of study under study);
- implementation of research and innovative proposals put forward based on their results in the field of transport.

Accordingly, the studies of the transport branch of transport science determine the operational objectives, operational subjects and operational implementation of transport research. When all three characteristic elements of the methodology of the completed study are of a pronounced operational color, they speak of the operational nature of the study, whether it is a commissioned research work or an exploratory study.

The narrow-branch differences in the transport branch of transport science are entirely limited by the specifics of the transport itself, which is studied by modern transport science. Therefore, we can only talk about the features of scientific research carried out for transport by the methods of transport science, which in turn are due to a combination of the expressed operational problems of the formed socio-economic "order" for specific operational research and the unique nature of the objects of research in transport. This combination underlies the selection of research methods most suitable for transport science, and highlights the considered transport branch of transport science.

In operational research, a number of priority areas can be identified:

1. The study of transport objects and their aspects that directly determine the results of transportation.
2. The study of changes in the operational properties and characteristics of transport objects in the process and under the influence of operation.

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3. Research of management processes and functioning of technical and organizational objects, the results of which are potentially realizable in the field of road transport and only as an exception - in industries directly serving transport.

In the most general form, the specifics of the methodology of research on transport can be determined by the following provisions:

1. The need to justify the relevance of the study of the operational aspects of the facility in the interests of the operating industry, taking into account its capabilities to implement the expected results.

2. The focus of research is on the study of a small sample of many operated similar objects of different families, manufacturers, duration of operation.

3. The need to confirm the applicability of the results of the study to a set of the same type of operated objects that differ in the spread of properties.

4. Obligation to prepare, based on the results of the study, an innovative project proposal applicable to the entire set of the same type of operated facilities or part of it.

5. The need for an economic justification for the applicability of the project innovation proposal.

The uniqueness of the operational nature of the research object in transport was predetermined by the combination of the production of these objects outside the operating industry under study, the mass operation of hundreds of thousands of objects of the same type, their multidimensionality and a significant spread of characteristics. For the same type of vehicles, spare parts, fuel and lubricants, production and technical base, the indicated spread is significantly higher than for the same type of railway, river or air transport facilities.

Transport is an exploiting sub-industry. Without producing the necessary resources for itself, it consumes the products of other branches of industry and uses the personnel trained for it. Moreover, these industries produce and modernize these products independently, relying mainly on consumer demand, only in isolated cases and only in some respects adjusting their activities based on the results of research by operators.

The activities of transport are focused on meeting the needs for transportation and rational use of the resources consumed in this case. Accordingly, research for transport is much narrower in its goals than in other branches of technical sciences, and even research in the interests of rail or air transport.

In terms of their objectives, research for transport is limited to purely operational issues and industry-specific opportunities for this operating industry to apply the results of scientific activities. As a result, objects for research in the interests of transport are also selected based on the use of its

resources for subsequent innovative transformation and taking into account the specifics of the multiplicity and multidimensional nature of these objects. Research, the results of which the transport industry is unable to implement on its own, as a rule, does not receive its long-term direct support and is curtailed regardless of the results.

In the traditional sense, the methodology of science is the doctrine of the methods and procedures of scientific activity, as well as a section of the general theory of knowledge, in particular the theory of scientific knowledge (epistemology) and the philosophy of science. Moreover, the scientific method is understood as an ordered method of cognition, research, bringing the researcher closer to the truth. The system of operations, procedures, techniques, or their description for working with technical means or data, or for establishing facts, is called a technique.

In the applied sense, the methodology of science is a system (a complex of interdependent and interrelated set) of principles and approaches of research activity, on which the researcher (scientist) relies in the course of obtaining and developing knowledge within a particular natural science or technical discipline.

In this paper, the methodology of sciences is considered precisely in the applied relation, using the example of one of its branches - the methodology of transport science.

The evolutionary development of the methodology and methods of science is based on tradition, which in turn serves as the foundation. However, it is not so much the methodology of science in its applied meaning that is undergoing development, but the understanding of its applications in the ever-emerging branches of technical sciences. The replenishment of ideas about the methodology of science and technical sciences, in particular, is an extremely slow process, in contrast to the replenishment of the amount of knowledge with the flow of new information that science provides.

Today, the methodology of science is primarily aimed at solving such problems as:

- analysis of the structure of scientific theories and their functions;
- the concept of scientific law;
- procedures for testing, confirming and refuting scientific theories, laws and hypotheses;
- methods of scientific research;
- reconstruction of the development of scientific knowledge.

Despite the fact that methodological research is carried out on the basis of a wide variety of philosophical schools and trends, their results often do not depend on the philosophical orientation of the researcher and are of universal value.

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As you know, the same term "science" refers to the totality of knowledge, and the type of activity, and the very field of scientific activity. As a field of activity, science is usually divided into fundamental and applied. Technical sciences as a whole are referred to the field of applied science.

The volume of funding for civilian scientific research in Russia as a share of GDP, and even more so in absolute terms, is less than 1% of the US figures.

The object of study of technical sciences are the created

human technical objects, technologies and their properties

Technical objects are studied by technical sciences, first of all, in relation to their common fundamental aspects:

1. Purpose and effectiveness of the application.
2. structures or organizations.
3. functioning.
4. Management.
5. operational properties.
6. Dynamics of health, wear, performance properties as the resource develops and aging in operation.
7. Interactions with personnel and the environment.

Until the end of the 19th century, engineering and technical sciences were one and the same. The mass application of technology and industrialization led to the separation of technical sciences and the formation of engineering as a system of independent areas of activity in each of the areas of production and transport. Engineering in each of the industries has become massive. It is engineering that directs practical activity in transport. The authorities and the system of financing only regulate its balance by means of transport and territories.

Engineering (engineering) is looking for the most rational solutions within the framework of already tested, sufficiently confirmed knowledge within the limits allowed by regulatory documents. It is the normative documents (standards, norms, instructions, SNiP, regulations, technical regulations, guidelines, administrative regulations, registers, rules, registers, charters, etc.) that accumulate knowledge about technical objects.

This knowledge is obtained by the forces of technical sciences as a result of research.

Regulatory document - an official document of the established form, designated in a certain way, approved by the authorized state body within its competence in compliance with the procedure established by law, containing generally binding (or intended for use in a certain area or conditions) norms, designed for an indefinite circle of persons and repeated application. Unlike technical literature, normative documents are a carrier of data that have passed an examination according to state-established

procedures and are allowed by state authorities to be used by engineering in practical activities. The role of the state in this case is to ensure the safety of practical activity and its consequences through the adequacy of regulatory documentation.

Differences in research and design methodologies also predetermine differences in their content. In the technical sciences, it is obligatory to work out the goals of the study, while the design goals are set from the outside even before it begins. Research may not be innovative in the broad sense of the term. Research can do without experimental research, and instead of theoretical constructions, include only calculations using known methods.

The applicability and effectiveness of research is almost always limited by the number of developed options for the object, the optimality of the designed object is sought and confirmed only for certain very specific implementation conditions and only for a limited number of possible implementations and executions of the object. The applicability of research results in technical sciences is much wider and is limited only by the limits of the investigated sets of object characteristics in the studied conditions.

A theory is a set of inferences that reflects objectively existing relationships and connections in an object and between the object and the environment.

A strict formal statement of the accepted research hypothesis in technical sciences is the basis of the theoretical part of the research, in which then mathematical models, quantitative descriptions of the studied aspect of the research object are created and studied.

From the point of view of mathematicians, the formal presentation of the accepted hypothesis is just a "mathematization" of the hypothesis, but in technical sciences this "a priori" stage often requires the greatest effort and deepening in understanding the object under study.

The main goal of the absolute majority of theoretical studies is to solve the following problems:

- studying the patterns of the objects under study;
- study of relationships in the functioning, structure, characteristics and properties of the objects under study;
- modeling of research objects, their characteristics or functioning;
- comparison of the equivalence of possible models of the object under study;
- solving problems of analysis, synthesis and optimization of the parameters of the objects under study, including new ones, synthesized or transformed. When conducting theoretical research, general logical and special methods of cognition are used, and most often in combinations. In one study,

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the combination of theoretical research methods is individual for each specific scientific problem and researcher.

Of the general logical methods, the following methods are most often used:

- comparison - comparison of homogeneous objects according to the features that are essential for this consideration; analysis - the mental or physical division of an integral object into its constituent elements (features, properties, relationships) and the study of these parts, regardless of the whole; synthesis

- mental or physical connection of the constituent elements (features, properties, relations) of an object into a single whole, taking into account knowledge about the constituent elements;

- abstraction - mental abstraction from a number of features (properties) of an object while highlighting other features (properties) that are of interest for solving a specific problem; analogy - the assumption of the similarity of certain properties of different objects based on the similarity of their other properties;

- generalization - the establishment of common features and properties of a group of objects;

- induction - the development of a general conclusion based on private premises;

- deduction - derivation of conclusions of a particular nature on the basis of general premises;

- modeling is the creation and study of a model that replaces the object under study, with the subsequent transfer of the information obtained to the original. The traditional approach to the theoretical study of a technical object, which has already become a classic, borrowed from natural science research, consists in a deterministic analytical description of the considered aspect of this object. The description is built on the basis of known fundamental regularities using the arsenal of the indicated general logical methods (abstraction, idealization, generalization, deduction, etc.) and previously accumulated knowledge about the quantitative and qualitative characteristics of the object. This approach is productive only for sufficiently studied (well-structured) objects, for example, not the most complex objects of theoretical mechanics. But for real, not yet fully studied objects,

By definition, an experiment (lat. experimentum - test, experience) is a method of cognition or a single set experience, the study of an object under controlled and controlled conditions by influencing it with other material objects with the possibility of repeatedly reproducing it when repeating the conditions of the experience. There are no purely experimental studies; in all cases, analysis, determining the goals of an experimental study,

formulating a hypothesis, building a quantitative model or justifying a hypothetical expected result of an experiment are performed theoretically and precede each of the experiments. Experiment planning, comprehension and explanation of its results, development of proposals for their practical use also belong to the field of theoretical research. They are inevitably present in one form or another in different proportions in every work, both "purely" experimental and theoretical, in every R&D in technical sciences. After all, theoretical work is inevitably based on the results of previous experiments.

In the technical sciences, experiment is of paramount importance.

Measurement- a set of operations performed to determine the quantitative value of the quantity.

The measurement transformation under the conditions of the uniqueness of the measurement equation and the possibility of the existence of its solution can be formally described in relation to the measurement of physical quantities at the macrolevel by the main measurement equation $Q = Nq$, where Q is the measured value; q is the unit of the measured value; N is a numerical value that defines the relationship between Q and q .

Measurement result error (measurement error) is the deviation of the measurement result from the true (actual) value of the measured quantity. The measurement error can be represented as the difference between the measurement result (the value of the physical quantity obtained during the measurement) and the true value of the physical quantity $N = x - Q$, where x is the measurement result (the value of the physical quantity obtained during the measurement); Q is the true value of the physical quantity.

Observations- this is the perception of information by instruments or human senses, ensuring its objectivity and controllability (including due to its repetition).

Survey- direct predominantly quantitative determination of the characteristics of the object under study with the participation or by the method of the researcher.

Tests- a technical procedure for determining one or more characteristics of technical objects in real or simulated conditions in accordance with established requirements, including through the actual application of a technical object for its intended purpose.

Statistical Research - collection and processing of statistical data on homogeneous objects, identification of statistical relationships in their structure, functioning and information exchange.

Expert research. One of the most responsible is the state forensic activity, which includes technical and other engineering and transport expertise as classes.

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Forensic examination - this is a study carried out on the basis of a court decision by a specialist (expert) of issues, the solution of which requires special knowledge in the field of science, technology, art, craft, carried out in the manner and within the time limits established by the current procedural regulatory legal acts.

Just as the objects of research in transport are not homogeneous, the arsenal of methods for their study is also diverse. The objects of transport science are almost always of a multidimensional nature, borderline for different sciences and involved research methods. Therefore, unlike most other technical sciences, almost every study on transport uses the widest range of methods, both theoretical and experimental studies. This fully applies to the application of theoretical research methods in transport. The arsenal of methods for theoretical research of transport science in transport has no other significant differences.

For objects of research into the operation of transport, a systematic approach is most often used, which is a general scientific methodology for setting problems in the study of complex objects. In transport science, the role of the systems approach is twofold: it is not only a tool for the most general formulation of the research problem, but at the same time a means of finding the goals of the most rational and productive innovative transformation of the object under study as an improved part of transport.

Classification of methods of theoretical research in transport:

1. Systems approach.
2. Statistical and probabilistic method.
3. Modeling with the obligatory use of idealization and formalization methods.
4. design method.
5. Abstract-logical methods of evidence, analysis, synthesis, abstraction, deduction, idealization, ascent from the abstract to the concrete.
6. empirical method.

As a rule, a combination of these methods is used in one study. The combinations in which these methods are used in each specific study depend on its goals, object, scope, content, and on the preferences of the researcher. But the system approach, the statistical-probabilistic method and modeling, if necessary, used in combination with other specified methods, have received the predominant application in modern transport science. Experimental studies are of particular importance for transport science.

Due to the specifics of the goals of research in transport, the multidimensionality and variability of the properties of its objects, their study without experiment, as a rule, is not carried out. It cannot be argued that theoretical studies are less significant for transport objects than experimental ones, but in comparison with other branches of technical

sciences, their ratio in transport science in terms of novelty and volume of new results is more shifted in favor of experiment. And it is the differences in experimental studies that determine the specifics of the methodology of transport science. The most specific for the applications of transport science in transport are operational observations, statistical studies and measurements. They are used more often than others both separately and in combination with each other and with other methods of experimental research. The same three methods are used more often than others, in particular, on the subject of transport. Research for transport, carried out at the intersection of technical sciences, is often carried out using highly specialized research methods unusual for transport science, borrowed from related branches of science, from metallography and gas spectroscopy to psychological tests of personnel. In transport, experimental studies, as a rule, are combined in each scientific work. For example, operational observations and automatic recording of processes are almost always combined with statistical studies and statistical processing of results, and tests with measurements. In one work, 3-5 types of experimental studies are often used in combination.

Operational Observations - a form of data collection on indicators of operation or operational functioning of transport facilities, for example, on production units of existing transport enterprises. Operational observations provide information about the performance, performance consequences, and performance properties of the item under study, including the evolution of these properties as the resource wears out. Operational observations are carried out directly on real production facilities in the process of their commercial use.

Measurements in transport research, as in other branches of technical sciences, they are most typical for the study of technical and technological objects. In the arsenal of methods of transport science, direct and indirect measurements, technical diagnostics and "diagnostic" methods of indirect assessment of the calculated parameters of the properties and states of technical objects and processes that are not available for any measurement are the most widely used. To perform measurements, both mass-produced, metrologically certified and verified universal-purpose measuring instruments, and on-board technical diagnostic tools, and new measuring installations, stands and instruments specially created for a specific study are used.

Significantly less often in the arsenal of experimental methods of transport science, surveys are used. This is an element, first of all, of expert studies of the state of complex technical, man-machine and industrial technological and organizational objects of transport. As a rule, technical objects are examined in a static state, in a

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non-operating state, and man-machine and industrial technological and organizational objects - in operating modes or in both states.

Tests of new technology are within the competence of the industry. Transport on its own conducts only operational tests (including comparative operational tests) of new equipment proposed by manufacturers for their operation, including maintenance, repair and diagnostics. Their purpose is limited to obtaining estimates of the degree of applicability and efficiency of the operation of vehicles and equipment in specific operating conditions. Operational tests usually cover a significant portion of the life of the tested objects before decommissioning (or major repairs, if any), but can also be carried out in several stages for each test object, at relatively long intervals of operation. Usually, for performance tests, requirements are preliminarily developed for compliance with which they are planned to be carried out.

Automatic registration It is used in all experimental studies of relatively fast processes, processes that repeat many times, and phenomena and processes hidden from observation. For example, experimental studies of the working processes of engines, braking systems, suspensions, electrical equipment and electronic control systems are only feasible with automatic data recording. This fully applies to experimental studies of the working processes of electric and hydraulic equipment drives, their electronic components, and the functioning of modern computerized technical diagnostic tools.

The traditional understanding of transport finally took shape in the 19th century, when, reflecting the achievements of the industrial revolution, transport was identified with technical means of transferring goods for various purposes and moving people. As a result, "transport" was assigned to the sphere of material production, distributing it objectively between technical creativity and economic theory, which was tantamount to a sentence to become the subject of self-supporting activity. Both in the 20th century and in our time, the official interpretation of transport has remained unchanged, despite radical changes in the functioning of transport, indicating its special significance for social progress, personal development and, possibly, in the long term - the preservation of life on Earth.

If the reduction of transport to its technical form of expression can still be justified by the corresponding successes of science and technology, the obvious dominance in the history of transport of artificially created means and devices for changing the position of objects in space-time, then the silence of the influence of the transport factor on the nature of social and natural history can only be qualified as a lag of awareness from the real movement of life.

In Aristotelian logic, the concepts are identical not only within the limits of the existing mentality,

but also in a general way. Whether great thinkers are also not without sin, they also err. After two and a half millennia, G. Hegel discovered the historical logic of the concepts themselves, showing that the concepts are dialectical. They are not only loaded with new content, but also change their volume from time to time, and, as a result, look new. "In rational logic (the logic developed by Aristotle, the sophists, the scholastics - Auth.), the concept is usually considered as a simple form of thinking and, more precisely, as a general idea; as if the concept as such is something dead, empty, abstract," wrote the German philosopher. And clarified:

"Of course, the concept should be considered as a form, but as an infinite, creative form...". From the point of view of philosophy, the transformation of scientific, scientific and technical concepts is a natural phenomenon that requires increased attention. One cannot feel modern, much less strive to peer into the future, without realizing the significance of a dialectical approach to concepts, including those that seem perfect. Philosophy has gone through the same trial. Expanding philosophy from Nature to Man, Socrates and Plato, especially the latter, in order to "purify" and "concentrate" on the main thing, separated from it the "philosophy of nature" - "natural philosophy" (natural philosophy). Subsequently, the more adequate term "natural science" appeared. Over time, under the influence of positivism, it was reduced to "science". Shakespeare's Hamlet says to Horatio: "There are many things around, Horace, that your science could not even dream of." W. Shakespeare used the modern term "philosophy". But already a late translation of the text is presented in the meaning of "science". The term "natural philosophy" is also found in the title of I. Newton's generalizing work "The Mathematical Principles of Natural Philosophy". Only at the turn of the XVII-XVIII centuries. the brilliant physicist came even closer to the term "science". The content of the concept has changed significantly.

According to the mechanism of cultural development, concepts are revealed and preserved in encyclopedias. Let's trace the domestic history of the concept of "transport".

The originality of the concept of "transport" is associated with a collective, generalizing type of education. The relevance of the concept and its name have matured with the diversification of transport. It is unlikely that at the time of the existence of two types of technical transport - water and land on biological traction - it was necessary to generalize them. Apparently, the modern history of the concept began after the advent of railway traffic, that is, closer to the middle of the 19th century. The first of the classics of explanatory (interpretative) literature of Russian origin, the term "transport" was included in his famous Dictionary by V.I. Dahl is a contemporary of the discovery of public steam traction in the country. We read: "Transport frn. transportation of

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goods, delivery. Convoy, goods or supplies convoy. Transportation, cargo state-owned ship. Transfer of total, in account books from page to page. In gambling: transferring a bet to another card. It is mysterious that V.I. Dahl, explaining the term, expanded it sufficiently in socio-cultural terms, citing the financial, reporting office and the practice of card games, which are very popular in society, but ignored the technical transport novelty - the construction and operation of railways. By the end of the 1860s, Russia fully entered the "club" of railway powers.

It can be assumed that the process of the genesis of concepts takes place somehow indirectly, not coinciding in time with the increments occurring in objective reality. Dal lived in Moscow, St. Petersburg, the Baltic States; saw the advantages of rail traffic, was aware of its transport affiliation, but left rail transport out of the brackets of the definition of transport. It is clear from this story that in the formation of a concept and its metamorphoses there may not always be logically and historically justified changes. This is what seems interesting.

Half a century after the publication of the Explanatory Dictionary of V.I. Dahl, Russian culture was enriched by the Encyclopedic Dictionary of F.A. Brockhaus and I.A. Efron. Its authors found themselves in more favorable conditions. By the beginning of the 20th century, all the currently existing types of traditionally understood transport declared themselves. Air was added to the water, land. Steam traction ceased to be the only technical energy, a car was designed with an internal combustion engine, and an electric motor was created. Scientific theory and engineering thought began to approach space transport.

At the same time, Brockhaus and Efron ended up in "perestroika" time. They needed to integrate the established experience of transport history and the trends of its continuation in the definition of transport. The choice in such a case is small: either to absorb as many characteristics as possible into the interpretation, or, realizing that you cannot collect everything, limit yourself to a concise explanation that sets the vector of understanding. They took the second path: "Transport, a set of means for the movement of goods, troops, etc." The definition of transport in it cannot be attributed to the merits of the Dictionary, even taking into account the difficulties of an objective order. It seems that the authors decided not to dive into the essence of the transport reality.

20th century made no significant changes to understanding of transport. This conclusion is confirmed by the definition of transport in "Modern Explanatory Dictionary of the Russian Language" and "The Great Illustrated Encyclopedia", divided into 32 volumes and claiming, not without reason, for a qualified scientific analysis of published materials. The first source "corrects" V.I. Dahl. It turns out that the history of the term is not French, it

is from Latin (transportār - to carry, transport). The essence of the definition is the same - "a branch of the national economy associated with the transportation of people and goods." Additionally, the identification of transport with the cargo (batch) assigned to be transported by vehicles is involved.

"Encyclopedia" almost verbatim publishes the definition from the "Dictionary": "Transport, the branch of material production, which is responsible for the transportation of people and goods." Further, modes of transport are distinguished in some detail. There is an attempt to link the differentiation of transport with the quality of natural environments."

Like 300 years ago, transport in the new millennium is entirely reduced to the branch of material production, its analysis is limited to systems of technical and economic reality. Political accents of transport development are subordinated to its technical interpretation. As a technical reality, transport is related to production and is determined based on the interests of economic activity in accordance with the criteria of economic rationality.

It is absurd to doubt that in Modern and Contemporary times transport developed in a technical form and is a part of material production. The question is: how appropriate is it to reduce the phenomenon of transport to this specific form, how does this form relate to the history of transport as a whole? Is it characteristic of part of its history or the entire history of transport? Is it possible, for example, to consider the feat of a warrior who ran a marathon distance in order to fulfill an order and deliver a report of victory as a type of transport service? Formally, everything here is consistent with the definition of transport, except for the mass character of the scale and the traditional production product, but war is a specific material phenomenon directly related to production, therefore, the execution of an order in any form should be attributed to the sphere of production management.

The warrior was formally a vehicle of biological nature, which also does not contradict the interpretation of transport.

Our appeal to the definition of transport in the historical past is explained by the desire to overcome the technical and economic dependence of the development of the theory of transport. The understanding of transport as the most important component of human development and social progress would be facilitated by transport science, but here we find ourselves in a stalemate: in order to understand transport, we need transport science, and in order to have transport science, we need a scientific understanding of its subject, i.e. transport. The philosophical context becomes more and more obvious, without which one cannot get out of this logical impasse.

Technical transport has radically transformed a person's life, changed the person himself and his

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attitude to the world. The fears of those who feared that railway construction for absolute monarchies would be worse than the guillotine came true. The monarchs have changed their usual status to a decorative and representational one, they serve history, demonstrate the inextricable connection of times, reassuring their compatriots. Production has become mass, entangled in its contradictions and attitudes towards natural laws that protect the natural order. Mass production is being formed on a new principle of organization - "lean production". "Humanity is on the verge of a transition to a new civilization - a civilization of quality." Once again, the understanding of democracy as a systemic factor in achieving real harmony between the interests of the individual and society has changed. At first, democracy was slave-owning, - local. The great French bourgeois revolution defined the "three pillars" on which a true - universal democracy should be built: freedom, equality and fraternity. The monopolization of capitalism, the controlled diversification of property, and the dominance of speculative, finance capital have amended the formula of revolutionary democracy. Under the guise of the development of democracy, the liberals have simplified the understanding of "equality" and "brotherhood", removing from capital the responsibility for their real implementation in the society of "equal opportunities" and reducing "brotherhood" to social partnership.

A political excursion into the genesis of democracy is not our goal. This is just a means to promote the main idea of the article: why did everything in life - nature is no exception - changed under the influence of the development of transport, and the very interpretation of transport remained the same, although it has changed considerably over the past time of its very active history? How justified is such conservatism in scientific and philosophical thinking?

Meanwhile, the content and volume of scientific concepts imply their refinement - expansion, narrowing, conditional concretization. So, in the XIX century. "refined" Euclidean geometry, in the XX - Newtonian physics and Darwinian evolutionary theory. These corrections emphasized the objective truth of the teachings, making them even more scientifically built.

"Technical transport" is a product of science and engineering art. Arguments in favor of transforming the concept of "transport" will look more weighty if they include the metamorphosis of the concept of "engineer", taking as the initial sign of "engineer" what a linguist with a degree in mathematics from Dorpat University V.I. Dal. Recall, according to Dahl, "engineer-scientist builder". Dahl contrasted the engineer with the architect and the architect, but spoke of "engineering as the art of the engineer."

The art of thinking and its implementation in a

practical product by an engineer, according to V.I. Dahl, makes the engineer, as a professional, related to artists. IN AND. Dahl was not embarrassed by either the differences in vocational education or the specifics of work. He knew how to "see" at the root and look into the future. In our time, part of the social and economic activity is assigned to the field of engineering work. I.V. Stalin, not without reason, called the writers "engineers of human souls." The ancient Greeks called engineers those who, in their opinion, "deceive nature."

In the classical interpretation, there is no rigid attachment of an engineer, as, for example, transport, to the sphere of material production. An engineer is defined precisely as "scientific builder", i.e. a representative of scientifically equipped labor, aimed at changing the objective reality. Slave-owning democracy was local, but in relation to the free citizens of the polis, it was a professionally tailored political construction. The civil law of Rome still surprises specialists. The version according to which the history of engineering began not with technical, but with social creativity, is quite viable. It is not necessary to call socio-constructors engineers, we will give them the name "pre-engineers". There is a complex history of the concept, however, it is generally recognized. The trajectory of understanding transport, given its scale and functional uniqueness, should not be an exception - to serve as a factor in personal and social development at the same time.

In the sociocultural context, the identification of transport with a component of material production looks like an oversimplification of its understanding, even in general terms. Functions and status must be commensurate. The engineer objectifies the productive component of the social movement. The function of transport is much wider. Transport carries out the movement as such, is included in the movement as a universal factor.

Against the background of the absolutization of the technical understanding of transport, the definition of transport is perceived as confrontational. "Britannic(oh)". It is so unusual that we give it almost in full: "... transport, in biochemistry, the passage of molecules and particles through cell membranes, acting as selective barriers, allowing some substances to pass through and retaining others ... The transport of these vital substances is carried out thanks to several systems . Through the membrane "holes" (open channels), diffusion (passive transport) of ions occurs directly into the cell; other ion channels use chemical changes to facilitate the diffusion of substances across the membrane, "pumps" force solutes to pass through the membrane even if their concentration is higher on the other side (a form of active transport). Primary active transport directly uses the energy released during cellular metabolism.

Authors of articles published in "Britannic(e)",

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as a rule, are well-known specialists, therefore, in whatever relation to the public understanding of their interpretation of the subject, the attitude towards it must be professional - comprehensively justified. The quality of the shift in the understanding of transport from artificial-technical to natural-natural in the essential analysis is not so high quality. Britannica offers a different perspective, a change in subject, but not functional orientation.

In principle, understanding the functional essence of transport, there are significantly fewer changes in the approach, although there is a correction here as well. In the traditional, "technical" interpretation, transport is exposed as a means, in Britannic (e) transport tends to be identified with the factor in the implementation of movement. More importantly, Britannic is pushing the historical horizons of transport to the biochemical level. But even in this projection of the definition of transport, the author of the article in Britannic(e) is professionally restrained. Nature. It would be quite logical to consider transport from the standpoint of physical nature, which determines the quality of the movement of matter.

As long as the understanding of transport is opposed to natural reality, natural materials and processes in the scientific research of transport are allowed in an auxiliary, rather than basic quality, the doctrine of transport risks being left without modern scientific understanding. The post-non-classical stage in the development of science is relatively young, many of its features are still in the making, but the growing importance of the effect of synergy of systemic interaction in the sciences of nature, man and society can be judged quite definitely. In this connection, dialectics again comes forward in knowledge, contrary to the desire of the designers of vocational education to push it behind the scenes of the formation of the thinking of future specialists.

There is no transport science in the official international classifications. And it is not clear what exactly it is connected with. Either it has not yet matured enough to meet all the basic requirements of the reality of science; whether its current status of development has not passed the level inherent in applied scientific knowledge obtained by using the achievements of the existing recognized sciences; or someone, in a fit of professional ambition, arbitrarily switched the arrow of transport knowledge from the path to an educational and scientific discipline to the main scientific one. A historical view of how the construction of railway transport, the undisputed transport leader until the 1950s and 1960s, was "learned" suggests that development impulses were given from outside - from classical mechanics, physicists, metallurgists, chemists. In a number of European countries actively embarking on the development of railway transport, Russia followed Great Britain, France, Germany, but we were the first

to realize the science-intensive process, understood the significance of the scientific foundations of progress in railway construction. D.I. Zhuravsky, whose thinking was formed by the outstanding mathematicians and mechanics Guryev, Bunyakovsky, Ostrogradsky, radically changed the approach to the construction of railway bridges; A.P. Borodin built in 1882 the first special locomotive scientific laboratory in Kyiv in the history of locomotive construction and operation of steam traction; NOT. Zhukovsky not only was the author of the theory of wing lift, but also made a significant contribution to the theory and its practical application in railway transport. Let's take a look at his articles: "On the movement of railway cars and steam locomotives on rails at the inversion", "The operation of the Russian through and American non-through traction device when starting the train from its place and at the beginning of its movement", "Traction force, travel time and breaking forces in the traction device and coupling when broken, sharply variable profile"; N.P. Petrov deduced formulas for traction calculations. His formulas for the total specific resistance of a steam locomotive, the average working pressure of steam in the cylinders, made it possible to take steam locomotive construction under scientific control; S.P. Syromyatnikov brought, using the latest scientific discoveries, the efficiency of a steam locomotive to 10–10.5% versus 5–6%; A.N. Krylov made a practically revolution in shipbuilding due to the scientific theory of the keel and roll of a ship, etc.

Technically revived transport is not only demanded comprehensive scientific support, it also served as a locomotive, carrying away scientific progress with its movement. The birth of space transport could not have happened before scientific thinking had matured, having reached certain conditions due to the loading with ideas, theories, methodological innovations, technical engineering solutions of "transport science". K.E. Tsiolkovsky was fascinated by the construction of airships no less than by vehicles that made it possible to successfully move in outer space, precisely because he saw the prerequisites for understanding the scientific and technical problems of space exploration in the movement and assembly of air transport vehicles. Where there is space as a problem, there are universal scientific problems of the implementation of human movement in it through technical tools.

The size of outer space naturally increases the number of such problems, because the problems of travel time are added to the number of problems associated with distances. Time in space is measured by the lifetime of a person, which makes traditional transportation a meaningless technical means. There are two ways out of this impasse - to design a transport with a speed of "C", or to allow it to use "wormholes" in the structure of world space.

Vehicles have learned to conquer time. Each

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next step on the path of transport progress was moving it into a new natural environment: earth - water - air - airless space. With the change in the "elements", the speed capabilities increased, and with them the horizons expanded, until the movement "stumbled" into the scale of deep space.

The main problemspace transport - not the acceleration of the vehicle, but the dimensions of space, measured by space units, qualitatively different from earthly, human ones. A spacecraft can serve as a passenger or controlled research vehicle only if it becomes like a physical particle with a speed of "C", or, as if a "drill" passes through the barriers of the qualitative structure of outer space, finds passages into parallel space and through it reaches the final goal, essentially reducing the time.

How feasible are these arguments? In the scientific aspect, they are consistent with the modern understanding of time, space and the movement of matter. They also do not contradict the dialectical-materialistic interpretation of the structural nature of objective reality. There remains a scientific and technical perspective. The history of technical transport sets up an optimistic response. However, the decision of the "dispatcher" to light the "yellow" will also cause understanding. The essence of the matter, apparently, is that the technical development of transport - the current state of space is no exception, in the physical context has not yet reached those starting points from which it would be possible to start in the exploration of deep space and the universe as a whole. Separate successful experiments with the use of transport technology should not be absolutized.

The existing technical transport is built on the level of the achievements of mechanics and classical physics, which discovered the laws of the macrocosm - the world of terrestrial material phenomena. Space transport will be physically different. With certain costs, it is fair to call the current transport "mechanical", and the transport of the future - "physical". It will be built on the laws and requirements of the mega and micro worlds. He will be even closer to the physical essence of nature, confirming the version that transport is not so much a means as a factor that ensures movement. An artificial mode of transport has a natural prototype, and the time will inevitably come when the "secondary" (artificially created) transport will be similar to the original one.

In both scientific and technical projects, there is an invariant frame of reference - life, health and the socio-cultural essence of a person. In the history of public transport - past, present and future - its human dimension is absolutely significant, that is, it does not allow derogations. Transport is a technical tool for the development of homo sapiens. All other manifestations of transport are also significant for us due to its systemic position in nature, but this is already an indirect connection.

The certainty of transport science should be sought in its subject basis. At one time, technical sciences in the form of an established scientific system were also absent until the 19th century; engineering was taught by "pure" physicists, chemists and mathematicians. Scientists and construction scientists needed to understand the real social scale of technology, its social and humanitarian significance. Technique from the totality of technical devices of various classes had to mature into a technical force that changes the world of human activity and the person himself. The new history of technology has become a continuation. The Industrial Revolution, which established the foundations of modern production and democratic relations. Technological progress led to the development of mass production, mass production brought to the fore the development of technology and made technology an actual subject of science.

In the 21st century history repeats itself dialectically, transport again leads the social movement. Transport science was the second plan of engineering sciences, chemistry and engineering sciences, biology and engineering sciences, cultural studies and science. The role of fundamental natural science is growing in transport progress - this is how the conclusion that science is turning into a direct productive force in the development of society and the individual should be understood.

"Transport" is a system-forming worldview concept. The modern concept of transport, despite the scientific and technical approach, corresponds only to the level of thinking in the form of representation. To bring the reflection of the phenomenon in accordance with its actual status, it is necessary to advance knowledge to the level of the concept, which the authors undertook in the proposed article.

Conceptual thinking is the highest achievement of the ascent of knowledge in the process of evolution of "reasonable man". This is confirmed by the fact that the content of the concept is universal both at the level of consistent (formally - logical) thinking, and contradictory - dialectical. The history of thinking at the level of a concept suggests that the further course of the evolution of rationality - the formation of the consciousness of a "prudent person" will also occur due to the improvement of conceptual thinking.

We owe the recognition of the importance of the generalizing form of knowledge to the thinkers of the Axial Age, primarily to the Greek philosophers. Personally, historians single out Plato and Aristotle. The latter managed to unravel the natural nature of the formation of concepts and built their production into a system of stable order, adding to Plato's merit to present the concept as a form of higher knowledge, the logic of thinking that governs the conceptual organization of obtaining knowledge of higher dignity.

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The next most important achievement in the study of the conceptual construction of knowledge was the discovery by G. Hegel of the historicism of conceptual thinking. Hegel brought into line the movement of the reality of the world and the process of its cognition, and proceeding from the idea of the identity of thinking and being. At the same time, Hegel highly appreciated the genius of Aristotle. "He (Aristotle) wrote G. Hegel, possessed such a power of mind that allowed him to endow thinking with what belongs to him as such. The logic of Aristotle remains the basis of logic to our time. This science is interesting because in it we get acquainted with the methods of finite thinking, and this science is correct if it corresponds to its intended subject. G. Hegel's conclusion was also optimistic: "The study of this formal logic, no doubt, will bring certain benefits; this study, as they say, refines the mind. We learn to concentrate thought, we learn to abstract, whereas in ordinary consciousness we are dealing with sensory representations that intersect and entangle with each other. Acquaintance with the forms of finite thinking can serve as a means of preparing for the empirical sciences that are guided by these forms, and in this sense, logic is called instrumental.

The instrumental function of thinking is characteristic of rational activity, it is important for scientific knowledge when, having made a discovery, it develops the possibilities of its use within the limits of some certainty achieved. Dialectics, on the other hand, is an immanent transition from one definition to another, in which it is revealed that these definitions of the understanding are one-sided and limited, i.e. contain a negation of themselves. The essence of everything finite is that it sublates itself. Dialectics is, therefore, the driving soul of any scientific development of thought and is the only principle that introduces an immanent connection and necessity into the content of science".

Having determined the epistemological and methodological significance of the dialectical approach to cognition, G. Hegel brought thinking to the need for a new look at the concept, more specifically, at considering the concept as a historical phenomenon. "The forward movement of the concept, G. Hegel emphasized, is no longer either a transition or an appearance in another, but is a development, since what is distinguished is immediately posited as identical with the other and with the whole, and definiteness is posited as the free being of the holistic concept." The dialectical interpretation of the specificity of the concept as a form of scientific thinking significantly changed, along with the recognition of development, the scope of the concept, removing the restrictions imposed by a narrow professional view. The development of the concept was subordinated to a systematic approach. According to Hegel, the peculiarity of the concept is that that it reveals its nature and content in the process of its

development: "We must consider the movement of the concept only as a game: the other posited by this movement is in fact not the other." The philosopher illustrates his idea with a biblical text: "In the teachings of Christianity, this is expressed in such a way that God not only created the world that opposes him as some other, but gave birth to a son from time immemorial, in which he, as a spirit, is in himself."

It is also interesting how G. Hegel interpreted the content of the concept development process. The concept in its development "remains with itself", revealing "itself in its process as the development of itself." In other words, the essence, grasped by thought in the form of a concept, is invariant, but the very invariance of the essence due to the reserve of development consists of stages of development. Consequently, the history of a concept is a progressive movement of the disclosure of its essence. The concept is enriched in content without changing its essence. In it, the opposites of everything general and special are always in unity.

We will use these features of the development of the concept to resolve the contradiction in determining the content of the concept of "transport" in the scientific and scientific-information literature, and offer a new conceptual view of transport and transport science. And here we already follow the advice of F. Engels: "Natural science has advanced so much," he wrote, that it can no longer avoid dialectical generalization. But it will facilitate this process for itself if it does not forget that the results in which the data of its experience are generalized are the essence of concepts, and that the art of using concepts is not something innate and is not given along with ordinary, everyday consciousness, but requires real thinking, which also has a long empirical history behind it, as long as the history of the empirical study of nature.

On the example of the history of the concept of "measure of movement", F. Engels traced how the specificity of the content developed following the improvement of the methodological support of scientific knowledge. Starting with Galileo, through Descartes, Huygens, Leibniz, D. Alembert, reaching Thomson and Helmholtz, he convincingly demonstrated his thesis: "Where it comes to concepts, dialectical thinking leads to at least as fruitful results as mathematical calculations".

The content of a concept must be built in such a way that all the phenomena defined with its help can get into the scope of the concept, and for this it is necessary to overcome the inevitable contradictions that form the essential relations of these phenomena. F. Engels elegantly demonstrated the advantages of logical thinking as a tool for resolving contradictions in science on the example of a two-hundred-year-old discussion about which formula to measure mechanical motion. Who is right? Descartes, who proposed a formula for calculating the momentum mv , or Leibniz, who specified that a formula is required.

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“Mechanical motion, explained F. Engels, indeed has a double measure, but each of these measures is valid for a very definitely limited range of phenomena ... mv is mechanical motion measured by mechanical motion; is a mechanical movement $\frac{mv^2}{2}$ $\frac{mv^2}{2}$

The concept is the highest and universal form of thinking, due not only to the scale of reflection, but also to the systemic organization of the content, and the presence of systemic dialectical opposites in it, that is, those that, on the one hand, negate each other, and on the other, cannot be otherwise, as together, because their real cognitive power is due to the unity of existence within an integral system.

Dissecting the systemic nature of knowledge expressed by a concept, it is easy to see that in the content of the concept, thinking reconstructs, along with the changing reality, the history of cognition itself, its diverse profile.

Start productively, with the allocation of two areas of application of conceptual thinking - theoretical and practical. Ideally, both of these areas, having independent value, should complement each other, however, in real life, there is not always an appropriate balance of scientific interests. If in theoretical terms, contemplation in an abstract light from objectivity constitutes a special danger, then in practical terms it is the substitution of the essence of knowledge by the desire to simplify its mathematical description, in the interests of a narrowly practical professional matter.

From which follows a systemically significant recommendation for vocational education - to preserve the domestic tradition of higher education, orienting the educational process towards the formation of systemic scientific thinking - the core of a specialist's professional culture.

Conceptual thinking is abstract in form, designed to provide a significant scale of speculation, but in content it is substantive, ultimately aimed at a practical result, which is not taken as a utilitarian "here and now", because such a result will remain "here and now", blocking the perspective of activity but in a wider sociocultural context.

A story similar to the contradictory description of mechanical movement by mechanics happened with the understanding of transport, also directly related to movement.

In foreign scientific and scientific - information publications, two, at first glance, opposite approaches to understanding transport are opposed: reducing transport to a set of phenomena of exclusively natural origin and determining the nature of transport based on its artificial origin. Let us turn to sources that enjoy undeniable authority.

The English Encyclopedia Britannica, one of the oldest and most respected, states: “Transport, in biochemistry, the passage of molecules and particles through cell membranes, acting as selective barriers,

allowing certain substances to pass through ... and retaining others The transport of these vital substances is carried out through several systems. For its passage, transport uses holes in the membrane (“membrane holes”), which serve as a kind of traffic channels. A system characteristic is introduced into the description of transport - transport combines mobile and stationary elements. Transport is also divided into “passive”, which moves through membrane holes due to self-propulsion, using its own energy accumulated in movement, and “active”, when energy support is included in the transport system, produced by the cell's ion channel pumps. "Active" transport is divided into "primary" and "secondary". "Primary" directly uses the energy of cellular metabolism. "Secondary" transport is more complex. Its transit through the membrane involves either connection with other molecules that carry the transport, or occurs by exchange with molecules following in the opposite direction (“oncoming conjugated transport”). Cell membranes are evolutionarily rebuilt for the functioning of the transport system. They are able to move apart to pass in and out mating parts larger than the “membrane holes”. Its transit through the membrane involves either connection with other molecules that carry the transport, or occurs by exchange with molecules following in the opposite direction (“oncoming conjugated transport”). Cell membranes are evolutionarily rebuilt for the functioning of the transport system. They are able to move apart to pass in and out mating parts larger than the “membrane holes”. Its transit through the membrane involves either connection with other molecules that carry the transport, or occurs by exchange with molecules following in the opposite direction (“oncoming conjugated transport”). Cell membranes are evolutionarily rebuilt for the functioning of the transport system. They are able to move apart to pass in and out mating parts larger than the “membrane holes”.

The limitation of transport to the sphere of biochemical movement opens up the possibility of a comprehensive and sufficiently thorough study of it, including external relationships, which is necessary to fill the concept with content, but we complicate the understanding of transport in a wide format of natural forms of movement, leading to a highly specialized profiling of scientific knowledge. How expedient it is to apply such sequestration - there is no explanation, there is only a statement of fact.

Somewhat ahead of the course of the analysis, we will express our point of view in order to complete the presentation of the British version of the understanding of transport. It seems to us that the identification of the interpretation of transport with the organization of traffic at the biochemical level is not justified. It is also impossible to exclude a dead-end route in relation to the final destination. However, it

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should be noted that the original approach of British specialists, their desire to be critical of the dominant concept in understanding transport, can help in promoting scientific and philosophical research on the subject. At one time, D. Hume, with his criticism of thinking, awakened the philosophical spirit of Europe. Few people showed solidarity with Hume's ideas in philosophy and political economy, nevertheless, he inscribed himself in history in the development of scientific and philosophical thought. The parallel with D. Hume in our history is quite appropriate. The public understanding of transport looked too stationary. Such a state of knowledge of knowledge in science is always alarming. What was needed was an irritant of scientific thought.

The author of the "Transport" article in Britannica spoke locally, summarizing the national professional scientific approach. The substantive limitation of the understanding of transport in a private application did not look unconventional in relation to the prevailing opinion in society. The dominant view, which identified transport with a type of developed human activity, seemed large-scale only because it was part of the life of homo sapiens. In fact, the prevailing understanding of transport in society was even more private and less historical.

It is possible that the scientific thought in the UK, with its special view of transport, tried to be closer to the scientific achievements of the latest time, distancing itself from the technical creativity following science. Be more scientific than technical. Whether the author and his associates thought about the consequences of an ideological nature or not, one can only guess. Nevertheless, the inclusion of transport in the processes that ensure the manifestation of life on Earth has clearly expanded the boundaries of its reality and brought transport closer to the functionally fundamental relations of nature. The "humanization" of transport leaves many questions. Let us turn to the sources that determine transport on the other side of the Channel.

At the beginning of the 21st century, the well-known domestic publication Mir Knigi translated and printed the three-volume Encyclopedia of Technology (AXIS. Enciclopedia de Tecnologia: Tecnologia. Ingenieria.), published in Spain. Its first volume is devoted to Energy. Transport. Construction. The definition of transport in the Encyclopedia repeats the essence of the content found in the vast majority of similar publications: "Transport is a special branch of material production that transports people and goods." To illustrate the statement, let's compare it with the definition in the Russian "Big Illustrated Encyclopedia of 32 volumes": "Transport, the branch of material production, which is responsible for the transportation of people and goods." The following is the classification of transport. The "Modern Explanatory Dictionary of the Russian Language"

defines transport as "a branch of the national economy,

All the above definitions are taken from sources published in the current century, so the question seems logical and appropriate: when did they become such? The history of a concept is formed depending on the change in its content, which is due to changes in reality and in cognition itself. Let's turn to historical materials. We have the opportunity to trace the evolution of the content of the concept of "transport" according to authoritative domestic sources. Their authors were distinguished by a high culture, which absorbed world cultural and scientific achievements, which can be taken as a basis for asserting that their interpretation of transport also reflects world experience. "Explanatory dictionary of the living Great Russian language" V.I. Dahl is interesting both as a scientific work and as a source of interpretation of the content of words in the mass consciousness. In the Dictionary of V.I. Dahl presents the vocabulary of the literary language of the first half of the nineteenth century, that is, the words that A.S. Pushkin, known, in particular, for his special view on the role of transport. In 1882, a second edition appeared in four volumes, "corrected and greatly enlarged from the author's manuscript." Definition of transport V.I. Dahlem deserves attention because the famous linguist tried to go beyond the brackets of a simple retelling of those considerations that took place in the press before him. At that time, there was nothing to supplement the technical content of the concept reflected in the word. In addition to waterfowl and land transport, there was nothing else. The construction of railways was just starting, political debates about the need for a railway connection for Russia continued. Welcome of Nicholas I for the development of a working draft of the St. Petersburg - Moscow railway P.P. Melnikov received with great difficulty. However, V.I. Dahl was able to discern in transport something more significant than his contemporaries. He was clearly not satisfied with the reduction of transport to the movement of goods and passengers, however, his desire to push the boundaries of the traditional understanding of transport, V.I. Dahl carried out somewhat unusually through card games and accounting techniques. We are interested not so much in what exactly he did unusual as in a self-critical attitude towards the established standard of interpretation. "Transport, French. transportation of goods, delivery // convoy, goods or supplies by convoy. Transportable cargo ship. Transfer of the total in the account books, from page to page. In gambling: transferring a bet to another card. IN AND. Dahl collected in the content of the concept of "transport" elements from clearly non-adjacent fields of activity, presenting the word as a tool for describing a fairly significant amount of differing actions. This was the first critical test of the prevailing view of transport on the part of a specialist in the domestic special

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literature. The signal sent by V.I. Dalem, was not heard, in any case, by the compilers of the next well-known dictionary F.A. Brockhaus and I.A. Efron did not react to the initiative of their eminent predecessor, on the contrary, they further reduced the characteristics of transport. In the Illustrated Encyclopedic 24-volume Dictionary of F.A. Brockhaus and I.A. Efron transport is defined extremely succinctly, as the authors probably thought, in essence: "The totality of means for the movement of goods, troops, etc." The human factor is not highlighted, it is included in cargo transportation. Formally, people can qualify as a type of cargo. The formation of an understanding of transport confirms the idea of G. Hegel that "what is usually understood as concepts is rational definitions or only general ideas; they are therefore in general finite determinations. The concept must contain three moments: universality, singularity and singularity, and "the moments of the concept cannot be isolated from each other." The unity of the moments forming the concept creates its dialectical concreteness. represents rational definitions or only general ideas; they are therefore in general finite determinations. The concept must contain three moments: universality, singularity and singularity, and "the moments of the concept cannot be isolated from each other." The unity of the moments forming the concept creates its dialectical concreteness. represents rational definitions or only general ideas; they are therefore in general finite determinations. The concept must contain three moments: universality, singularity and singularity, and "the moments of the concept cannot be isolated from each other." The unity of the moments forming the concept creates its dialectical concreteness. Consciously and spontaneously, the understanding of transport developed in the direction of its final subject.definition. The direction of development was determined by the improvement of the movement of goods in space and time. As a natural consequence of these certainties, the concept of transport was finally formed under the influence of the Industrial Revolution. Substantive discrepancies in ideas about the content of the concept of "transport" were not conceptual contradictions. They testified that transport occupies a local scale subject place in the world and cognition, is a private matter in relation to the world as a systematically organized integrity. An example with the interpretation of transport V.I. Dalem looks like an accidental step towards a different conceptual understanding, but he is certainly original and could at other times start a "chain reaction" of the emergence of an alternative result of the industrial revolution that has developed in the process of mastering, look at transport. Industrialization and the success of the development of industrial mass production predetermined the increased demand for transport, precisely in its traditional private sense. To this conclusion it is

necessary to add also the socio-cultural function of the transport, which was traditionally used. Industrialization has intensified the flows of socio-cultural progress on the scale of national development and transnational relations. At the same time, it left its mark on the formation of a new worldview in the specific perspective of industrial dependence. In such a situation, the traditionally understood transport came to the forefront of progress, becoming its most important factor. This historical fact is indicative. Under the Tilsit Treaty of 1806, Napoleon undertook to provide Alexander I with personnel assistance in the design and organization of professional training for engineers, taking into account the experience of the most scientifically advanced technical university - the Paris Polytechnic School, which arose in 1794. What exactly will the university be like? The Russian emperor had to decide. Alexander I chose the transport direction of education. By decree of 1809, the Corps of Railway Engineers was formed, which included the Institute of the Corps of Railway Engineers. For nearly a century, this university has been the flagship of the national engineering education.

Let us refer to another significant recognition that contributes to the sustainability of the understanding of transport as a transportation industry. The well-known American political economist, statesman, author of the concept of the "New Industrial Society" J. Galbraith argued: "A characteristic feature of the functioning of the industrial system is that it manages to inspire people with such mindsets that create a reliable basis for planning and entail the recognition of its goals". From which J. Galbraith concluded: ... A clear understanding of reality and a critical attitude towards it are required in order to provide a systematic critical examination of the beliefs inspired by the industrial system. What we did, however, was initially guided primarily by relying on logic in a more indirect form of thinking. The starting point of our critical analysis of the traditional understanding of transport and its British alternative was an unreasoned jump from the concept of "movement" to the concept of "cargo". In the characteristics of transport, the basic concept is "movement". It should extend to everything that it carries, in other words, transports, because the movement always and everywhere carries something. And in this naturally conditioned mode of existence, "movement is consistent with the concept of transport." If someone seeks to isolate transport and call it a special, specific, particular expression of movement, that is, to identify the concept of "transport" with a certain movement, then he will have to introduce the corresponding signs into the characteristic of the isolated movement. G. Hegel emphasized that, unlike representation, the concept has a universal status and should not be formed as a sum of representations. The modern understanding of transport remains at the level of general ideas. There

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is no universality in defining transport as "carriage of goods". Let us repeat: any movement immanently includes the fact of transportation. Even in the 1st second of the Big Bang - the source of the Solar System, when the energy of the particles could not allow them to have mass, the Higgs bosons still carried themselves, were transport. Defining transport as a "transportation industry", the authors do not define transport, but only its variety - "industrial transport". It is surprising that when classifying transport (more precisely, "public transport"), analysts do not notice their methodological inconsistency. F. Engels in the second half of the nineteenth century, V.I. Lenin at the beginning of the twentieth warned that the development of scientific knowledge will collide mainly with the epistemological and methodological difficulties of cognitive activity. Narrow specialists will become hostages of those objective restrictions that they have arranged for themselves. The era of G. Hegel and I. Kant has gone into the history of bourgeois society, but their brilliant ideas are still alive and relevant. They just need to be read and understood. Weak logical and, especially, dialectical roots in the study of complex phenomena, even when the very set of expressed and stably preserved thoughts predicts in which direction one should look for a way out, hinder the ascent from ideas that satisfy here and now to the universality of conceptual thinking characteristic of science. The prospect of the evolution of "reasonable man" is considered. Evolution from revolution like a leap discontinuity in movement, differs in the time of implementation - it is long and includes various states of movement in the presence of stability of the vector of change. The vector of evolution is laid down in its initial moment. For homo sapiens, "reasonableness" was defined as a vector, that is, the ascent to reasonableness, and then to reasonableness itself, was already laid in the extremely lower essence of this movement. It is logically and historically correct to recognize the social form of its movement as a system-forming factor in the evolution of a person into a "reasonable person". It is in sociality that one must look for the causes of all evolutionary changes in man, both positive and negative.

After the Age of Enlightenment and some time, conditioned by the triumph of rationality, when philosophy focused on reason as a source of creative power, raising rationality to the absolute of the world order, there came a time of recession - in economics it is called "correction". Correction in the interpretation of the significance of rationality for human evolution and its public way of implementation turned out to be a very serious test for understanding the essence of rationality. The inconsistency in the understanding of the very subject of research is associated with the collisions of the social movement: disunity in the structure of society, the struggle for leadership in politics, economics, and the social hierarchy. The

history of social life, throughout its entire length, rather concealed the rationality of the original social subject, and in recent centuries, society seemed to have fallen into turbulence. Can't calm down at all.

After analyzing the situation, the authors attempted to substantiate the following conclusions:

- The evolution of homo sapiens is mainly hampered by increased social egoism, which manifests itself in political, economic and national forms, and activates the individual status of egoism, that is, along with economic, political and socio-historical forces, there are forces that deform morality - a qualitative indicator of personality.

- The real ability to bring the social factor in line with the vector of evolution lies in the improvement of education, which is most effective in an integrated form with an emphasis on raising the civic responsibility of the individual. The "competency model" has an exclusively applied value in the context of a personal one.

- In the course of the evolution of Homo sapiens, the vector shifts from the general direction to the improvement of the mind to historically - concrete - to form a "reasonable person".

- It requires a fundamental restructuring of the methodological basis of research used, a rethinking of the philosophical legacy, especially the conceptually most important idea of Hegel to distinguish between two dialectically connected statuses of the existing: to be a reality and to be a reality.

Unlike politics, science continues to prove its high efficiency at the global level of activity. Politicians entered the third millennium with two most important conclusions of scientific knowledge:

Firstly, scientists have proved that there is no systemic ecological crisis yet, but the parameters characterizing what is happening in world politics are such that the development of the natural factor of human life with increasing acceleration is approaching a loss of stability and transition to turbulence. If in politics, where the role of subjective factors is significant, it is allowed to discuss the possibility of "controlled chaos", then the crisis of the natural order of the organization of the natural environment will naturally turn into a total crisis, putting humanity on the brink of existence. It is unequivocally necessary, at least, to remove the prohibitive burden on the natural conditions of life and, for a start, to slow down the acceleration of crisis phenomena in nature, which is still real. In the report of the International Commission on Environment and Development (ICED), Under the leadership of the authoritative expert Gro Harlem Brundthland, which is the basis of the concept of sustainable development, it is emphasized that unsustainable economic policies and an uncritical attitude towards new technologies have led to the emergence of trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total

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competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within the framework of a world economy that relies only on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process"; underlying the concept of sustainable development, it is emphasized that irrational economic policies and an uncritical attitude towards new technologies have led to the emergence of trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within the framework of a world economy that relies only on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process"; underlying the concept of sustainable development, it is emphasized that irrational economic policies and an uncritical attitude towards new technologies have led to the emergence of trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within the framework of a world economy that relies only on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process"; that irrational economic policies and an uncritical attitude towards new technologies have created trends that neither the planet nor its people can sustain for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within the framework of a world economy that relies only on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process"; that irrational economic policies and an uncritical attitude towards new technologies have created trends that neither the planet nor its people can sustain for long. The problem is complicated by the fact that total

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secondly, politicians need to mobilize and remember their professional responsibility for the fate of homo sapiens, to shift economic policy from the path of absolutization of competition for profit to the path of compromise and cooperation, which allows realizing the conclusion of science about the need to achieve sustainable social development in the face of growing dynamic disequilibrium.

The noosphere, which Leroy and Vernadsky wrote about, is formed in the interaction of natural and socio-economic processes, its configuration is not set a priori by the human mind. "Reason" and "reasonableness" are not identical. "Intelligence" may be similar to "Absolute Intelligence", but not the total intelligence of homo sapiens. Even the creation of the "Divine Reason" was not flawless, let's recall the text of the classic work of the famous scientist and orthodox Christian I. Goethe. Faust questioned the creator's instrument of creation, replacing "In the beginning was the word" with "In the beginning was the deed". The content of the fragment of the book also testifies to the position of the author himself, his logic of thoughts, it is built on the priority of the "case", which comes into conflict with rationality.

I. Goethe, thanks to a special attitude to activity, anticipated the problems of our modern times. A contemporary of I. Kant, G. Hegel, F. Schelling, a foreign member of the St. Petersburg A. N. logically built thinking, he was aware that the word, despite its

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highest function of being a form of manifestation of conceptual thinking, itself becomes the activity of the mind, confirming the system-forming place of the matter in relationships man with nature. It is within the framework of the subject of action that a person must prove the reasonableness of the vector of his evolution. The author of the article about Goethe in the Soviet (!) Encyclopedic Dictionary had reason to conclude: "Goethe embodied the search for the meaning of life in action."

The history of mankind, throughout its entire length, was based on practical activity, on the one hand, and found its final expression in the practical form of creativity of the spirit, on the other. Freedom of creativity outside the sufficiency of practical equipment is the lot of a single subjective reality, it is finite in itself and is doomed to be a fantasy. The strength of the spirit is determined not so much by the spirit itself, but by the strength of the potential for practical objectification of the creative process. Freedom of creativity is the condition of its power, which, in turn, is conditioned by practical activity. ON THE. Berdyaev, in search of the true direction of social progress, believed that humanity is still mastering the "lowlands" of its being, so strength remains its main tool. Rationality is expressed in logic, paving the route to the true direction of movement, to that, which Confucius and Lao Tzu sacredly called "The Way". In this logic, the meaning of the Christian understanding of the measure of activity is also revealed: "Strength is in truth!"

Ideas N.A. Berdyaev deserve attention, but they should be taken critically. K. Jaspers did not agree with Berdyaev's opinion, believing that humanity managed to rise spiritually high in the "Axial Age" of Antiquity, realizing the unity of the transnational movement. Practical life is also an argument against Berdyaev's assertion. In the 20th century, despite all its contradictions, the understanding of the importance of the social-democratic content of political programs, the relevance of transnational relations for solving the most important problems of social development, and responsibility for a common history with nature has increased.

Supporting the essence of the conclusion of the authors of the monograph "The Concept of the Quality of Life": "The time has come for a "vertical ascent along the steps of the spirit", let us clarify that it is more about the need to accelerate this ascent, because it was in the historical past that it was prepared and began, and in the newest time began to slip.

Two hundred years ago, G. Hegel instructed: "A thoughtful consideration of the world already distinguishes between that which, in the vast realm of external and internal existence, is only a transient and insignificant, only a phenomenon, and that which in itself truly deserves the name of reality. Since philosophy differs only in form from other types of awareness of this content, it is necessary that it be

consistent with reality and experience. One can even consider this coherence at least as an external touchstone of the truth of philosophical doctrine, while the highest ultimate goal of science is the reconciliation of self-conscious mind with the existing mind, with reality, generated by the knowledge of this coherence. In the preface to the Philosophy of Right, Hegel formulated the essence of his reflections in two well-known propositions:

In Western Europe today, thinkers whose reflection bears little resemblance to a philosophical desire to separate the reasonable and real from the accidental and short-lived in development, to reveal the methodological significance of the Hegelian desire to understand the connection between the historical and the logical in development, are in vogue today. The democratic credo: "The freedom of everyone is a necessary prerequisite for universal freedom" - was absolutized on the basis of individual rights, subordinating private requirements to the right to ensure the progress of the social movement towards progressive changes.

The special status of the individual in history is indisputable. The history of civilization in Europe began with the rights of the individual to freedom of feelings, thoughts and actions, the individual is the initial subject of social life and the ultimate goal of social progress. However, the special status of the individual is determined by the social context. Robinsons are able to survive on their own, but they are powerless to make history. Demands to ensure the rights of the individual are reasonable and valid only within the framework of strengthening a democratically built social system within a democratically organized social order and the legally protected status of the state as a product of the free will of the majority.

The main events of history have always been determined by the ratio of the total private awareness and really reasonable in the dynamics of social progress. To which it should be added that as social progress along the path of development, the presence in the movement of two large-scale factors increased: first of all, the importance of integration processes and, secondly, the ambiguous inclusion of natural conditions that lost their ability to normal reproduction under the irrational impact of economic policy

Formally - logically, from the recognition of social progress as the content of the history of mankind, two conclusions follow: about the positive dynamics of the progress of the rationality of thinking in its mass expression, once, and the displacement of errors from the political provision of social renewal, two. So it would probably be if history were the realization of the ascent of the rationality laid down in it by G. Hegel. The real history does not stand on its head - the carriers of the mind, but on the fact that thanks to which a person went from Homo habilis and

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Homo erectus to Homo sapiens - the activity of reproducing intelligence socialized in the development of the human race. Hence the contradictions between the historical movement and its comprehension at the level of rationality, which can be confirmed by the contradictions between philosophical assessments and political construction,

The key to understanding the noted inconsistency in understanding the social movement can be the distinction made by I. Kant in the reasonableness of "pure" and "practical" forms of activity. "Pure" reason, according to I. Kant, is the ability to unconditional thinking. With a "pure" mind, thinking is born and, thanks to a "pure" mind, all people think on an equal footing, similarly, a basis is created for the possibility of a consistent, identical perception of the world. However, with such thinking, the content tends to an infinitesimal value, so G. Hegel called "pure reason" "empty reason".

The principle of activity of the "pure" mind is consistency, which is convenient from the point of view of the technology of thinking, but is not very productive for achieving mutual understanding of mankind divided by a common history, since it implies a high filling of thinking with differing knowledge, combined with opinions. On the basis of "pure" reason, due to its extreme abstractness, it is difficult to build a common platform for cooperation, but it is thanks to "pure" reason that such a prospect really exists. I. Kant found a mental basis for achieving mutual understanding: "The first step, he explained, taken by us beyond the limits of the sensually perceived world, forces us to begin our new knowledge with the study of an absolutely necessary essence and from its concepts to derive concepts of all things, since they are purely intelligible". Mutual understanding is possible as mutual knowledge. "Any human knowledge, I. Kant clarified, begins with contemplation, passes from them to concepts and ends with ideas."

The "road map" is also characteristic of productive cognition. The movement of knowledge in a general direction and along a common path inevitably contributes to rapprochement in understanding the order of movement. "Practical" mind I. Kant represented as a "thinking" will. It is called upon to indicate what "should be done" in the context of the contradictory existence of right and duty. It is expedient to see in the universality of formally organized thinking an abstract prerequisite for the possibility of achieving consistency in understanding what is happening in the world and the consequences of the development of existing being. Despite the fact that "pure" reason is essentially removed from the content of the world movement, because it is consistent, and it is torn apart by contradictions, it would be unprofessional to underestimate the practical value of the reality of the universal orderliness of human speculation.

Attempts to question the universality of the organization of thinking of homo sapiens were provoked by anti-human and anti-scientific ideologies. They are officially condemned by the world community. All numbers in the natural series consist of units. In the limit, the unit is comparable to an infinitesimal value that can be neglected, however, Pythagoras raised the unit and bracketed the natural series. For him, the unit was more than just a number, it was the system-forming factor of the series. Without one, there were no other numbers. "O" (zero) in an abstract sense with respect to the subject content loses its meaning altogether, however, even in such a crisis status, it retains its existence. Why? Because "O" is potentially significant. "O", put in a certain row, already acquires an objective expression - it determines the real possibility that what characterizes this series. According to "O" we cannot be given a quantitative equivalent of the phenomenon, but its quality, albeit purely nominal, is already defined in "O". Abstraction, for which objectivity tends to "O" can be compared with the calculus of infinitesimal quantities. Two or three centuries ago, infinitesimal quantities were of no interest to practical thinking. Nowadays, much is concentrated on them in science and practice. So it is with Kant's idea of "pure" reason, the time for the significance of the fact of "pure" thinking is coming. Anticipating such a time, F. Engels noted: "The unity of the world does not consist in its being, although its being is its prerequisite for its unity, for the world must first exist before it can be united." We see something similar in I. Kant's idea of "pure" reason. albeit purely nominal, already defined in "O". Abstraction, for which objectivity tends to "O" can be compared with the calculus of infinitesimal quantities. Two or three centuries ago, infinitesimal quantities were of no interest to practical thinking. Nowadays, much is concentrated on them in science and practice. So it is with Kant's idea of "pure" reason, the time for the significance of the fact of "pure" thinking is coming. Anticipating such a time, F. Engels noted: "The unity of the world does not consist in its being, although its being is its prerequisite for its unity, for the world must first exist before it can be united." We see something similar in I. Kant's idea of "pure" reason. albeit purely nominal, already defined in "O". Abstraction, for which objectivity tends to "O" can be compared with the calculus of infinitesimal quantities. Two or three centuries ago, infinitesimal quantities were of no interest to practical thinking. Nowadays, much is concentrated on them in science and practice. So it is with Kant's idea of "pure" reason, the time for the significance of the fact of "pure" thinking is coming. Anticipating such a time, F. Engels noted: "The unity of the world does not consist in its being, although its being is its prerequisite for its unity, for the world must first exist before it can be united." We see something similar in I. Kant's idea of "pure" reason. Two or three centuries ago,

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In G. Hegel's criticism of "pure" and "practical" reason, there is certainly a "rational grain". I. Kant contrasted form and content, could not reveal the dialectics of their connection, simplified contradictions to antinomies, divided the latter into different realities, at the same time I. Kant brilliantly pointed out the natural-historical basis for resolving the inconsistency of specific configurations of thinking. He did this in an abstract form, hardly aware of the historical perspective, but it was he who, from the height of philosophical generalization, discovered something without which it would not even be advisable to discuss the solution of global problems in the modern world community, divided by the national format.

When humanity becomes rational, the individual rationality of homo sapiens will acquire a social form of the reality of rationality, the vector of contradictions will change, not competition, but participation will become dominant, the great German thinker I. Kant will be remembered as a discoverer, and G. Hegel as a pilot of movement in the contradictions of real history.

The dialectical materialism of K. Marx and F. Engels stood on the "shoulders" of these thought giants. The underestimation and, to some extent, the oblivion of the contribution of German classical philosophy to the analysis of the social movement is the result of a change in historical eras. I. Kant and G. Hegel created when the need of the bourgeoisie for radical social changes was urgent, it took the place of the locomotive of progress and needed those who saw the path of history and spiritually paved the movement of capitalism. It is not important how to understand the struggle of socially formed forces in society, the main

thing is to realize that the change of the social subject in politics is the beginning of the end of what he did, being a historically creative force. Plato accepted democracy only because he saw no alternative to it even in an ideal state.

The solution of the dialectical contradiction between the particular and the general in social progress remains the most difficult problem for ideology, politics and morality. It is here that various kinds of speculation dominate, hence the nature of spiritual evolution in the last two centuries. Reasonableness is simplified to situational reasonableness, the role of the subconscious is actualized, mysticism, theosophy, utilitarian thinking flourish, thinking is replaced by the ability to look for ready-made solutions, the producing potential of reasonableness is being replaced by the consumer one. Even the quality of life is determined on the basis of the ability to satisfy needs. Few people remember that it is precisely in the needs that the interdependence of a living organism and the environment of its existence is laid.

Biological evolution was a natural mechanism for weakening and partially overcoming the subordination of a living being to natural conditions. F. Engels' commentary on Hegel's understanding of the origin and development of thinking is interesting: "When Hegel, F. Engels noted, passes from life to knowledge through fertilization (reproduction), then there is already in embryo the doctrine of development, the doctrine that once given organic life, it must develop through the development of generations to the breed of thinking beings. In the biological history of species, the prerequisites for subsequent subjectivity at high levels of development were formed. "... It goes without saying, F. Engels explained, that we do not think to deny in animals the ability for planned, deliberate actions. On the contrary, a planned course of action always exists in the embryo, wherever protoplasm, living protein exists. But all the planned actions of all animals failed to impress nature with the stamp of their will. Only a human could do this. In short, the animal only uses external nature and produces changes in it simply by virtue of its presence; man, by the changes he introduces, makes it serve his purposes, dominates it. On the margins of the manuscript, F. Engels specified: "It ennobles." The systems thinking of F. Engels was not content with the one-sidedness of man's "domination" over nature. The beginnings of the ideas of Leroy and Vernadsky must be sought already in the 1870s. Biological history contains part of the answer to the question: why, then, did the "intention" embedded in the trend of movement not be fully realized? It was not possible to realize it in most of the history of man,

In order for an evolutionary transition to take place, allowing one to obtain a subjective form of the reality of a living being, it was necessary to form a

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more effective mechanism of cognition as the ability to discover stable, necessary and general relationships in life conditions and be a tool for controlling changes in relations with the environment. What was needed was the rationality of thinking, allowing the subject to responsibly think of himself in the "subject-object" system.

The transition to Homo sapiens is not the last in the evolution of man. Homo sapiens has become, simplifying, a semi-finished product of that form of subjectivity, which is called upon to replace "practical criticism" of natural circumstances with "practical co-creation" with the natural environment, to make it from an object of activity an "object-subject". At a new stage of evolution, a "prudent person" should be formed. The rise of critical thinking and a critical attitude to the very ability to think coincided with a crisis in society - its critical state. Such a coincidence is not accidental. The critical characters of modernism and postmodernism differ substantially. Postmodernism critically rethinks the mechanism and conditions of critical thinking, tries to adapt the critical potential to the changed circumstances of life.

Criticism of criticism looks clearly less convincing. D. Hume, B. Pascal, I. Kant, G. Hegel, K. Marx and F. Engels, if they did not manage to understand all aspects of the system of conceptual thinking, then they formulated the problems and found methodological approaches to the description of the phenomena under study. They determined the critically important moments of the organization of the abstract component of thinking.

Returning to the idea of a "pure" mind and its critical analysis, let's illustrate the practical value of this achievement by a parallel with the actualization in the second half of the 20th century and the first decades of the current concept of "quality" of life. There is no more methodological and practical significance in the concept of "quality" of life than in Kant's proposal to single out "pure" reason. For which part of humanity is the concept of "quality of life" methodologically and vitally relevant? Even the "golden" billion, for the most part, sees such a life in the movies, on TV and behind a high fence with guards. The vast majority of the Earth's population still survives. It is commendable that the richest began to realize their involvement in the contradictions of development, to create charitable foundations, but no charity will change the critical state of the situation.

It is necessary to change the ideological and methodological approaches to understanding life on Earth, that is, to start with the most abstract and simple - understanding the commonality of human nature and the lack of an alternative to cooperation. Only in the general system, armed with a single way of organizing thinking, people are able not to deviate from the path of development.

The strength of social subjectivity, starting with the individual, is in the ability to think, and this should

be developed first of all. The diversity of languages hides the universality of the organization of thinking; differences in culture and ways of managing indicate that peoples move along a common historical path in their own way, depending on the specific circumstances of the action. In view of the phenomena of history, behind their national identity, it is not always easy to discern the logic of the generality of the movement.

It is also necessary to understand that historical logic is formed as dialectical, it fundamentally does not coincide with the matrix of formal thinking. We have already noted that the logic of the movement process not loaded with specific content reflects the final states in change and is based on the principle of consistency, it has more simplicity and clarity, which is natural for any initial state of movement. Historical logic, on the contrary, is called upon to regulate not the relatively final states of movement, but movement itself. Dialectical logic fixes the order of self-movement, built on the unity of the opposite, it is the logic of the inconsistency of movement, inherent in its primary state - the dialectic of the individual, particular and universal.

What exists in the movement of history turns into a truly historical, "irrational" - into "reasonable", using Hegelian terminology, naturally, and dialectical logic reveals the contradictions of the laws of historical development. The dialectical logic of social progress emphasizes its natural development, which serves as a basis for asserting that the desired phenomenon is fundamentally knowable.

Historical knowledge is complicated not so much by the contradictions of the real process as by the state of the initial ideologized positions of researchers. In physics there are concepts of "observer", "reference system", "reference point". Something similar formally exists in historical cognition, only here it is subjectivized conceptually - it continues ideological reflection in politics.

Politics actively intervenes in historical analysis; objective dialectics is replaced by sophistry and eclecticism. No wonder history is often rewritten. Ideological and political obstacles to knowledge hinder the achievement of intersubjectivity in understanding the past. The distortion of the past entails the formation of a subjective historical experience, on the basis of which a tendentious understanding of the present and development prospects is built.

Ideological delusions are very dangerous, they gradually develop into self-deception, disorientate political activity, and lead to social crises, which was emphasized by V.V. Putin at the St. Petersburg International Economic Forum 2021, answering questions from the heads of the world's largest news agencies about the reasons for the collapse of the superpowers.

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There are few grounds for hoping for a constructive ideological compromise, but in ideology, in addition to its core, which determines the fundamental interest of the social subject in the historical movement, there is also a periphery that contains views on infrastructural problems. It is here that it is realistic to count on the fact that the ideological cover of the basic interest provides for a certain backlash - the admission of totally significant agreements in solving problems that are urgent for humanity, mainly in the social sector of transformations.

It is immediately important to determine the prospect of such changes within the framework of the forms of opportunity. The modern world will not support overtly negative scenarios, so ideologies build plans for the future, using the ambiguity of the concept of "possibility", which opposes the concept of "impossibility". Ideological manipulators speculate on the differences between "formal" and "real" possibilities. Possibility in ideological programs is presented outside of its specific status, which contradicts the requirement of concrete historical presentation.

Aspirations to put on the main path of social progress the achievement of "quality" of life, politics, "quality" ecology look tempting. However, how feasible is all this in a regulated perspective? It is not right to place an abstract possibility in a series of practical actions. It should be "in the mind", serve as an abstract vector of politics, and politics should solve those problems that have matured as a "real" opportunity. In the "real" possibility, the conditions of the "abstract" ripen. Having embodied in reality, having become the reality of being, the "real" possibility at the same time makes the "abstract" possibility "real", opens up the prospect for it to become reality, to acquire "reasonableness".

The idea of "quality" of life now and in the near future is practically irrelevant as a global political problem. Moreover, the desire for the "quality" of life will deepen the social contradictions within the total humanity. First, it is necessary to ensure a relatively qualitative right of people to life within the limits of the elementary requirements of civilized development. A task that requires the accumulation of considerable forces. In addition, the very concept of "quality" of life is defined in an overly abstract way. "Conceptually, to determine the problems of the quality of life, rightly write the authors of the monograph "The Concept of the Quality of Life", it is possible, if we proceed from the unity of mankind, regulate relations with the biosphere, increase the role of science, the priority value of wisdom and spirituality...".

The unity of humanity is still purely formal, due to the commonality of the planet; the attitude to the biosphere, more precisely, to the biosphere, since human activity is partly included in it, remains at the

level of the "force-reaction" system, and not symbiosis; investments in science still depend on its ability to be a direct productive force, which clearly does not correspond to the actual status of science, its rationality. Wisdom and spirituality are the products of an individual's education and the rationality of his participation in social life. As the classical paradigm of the development of education is replaced by a "competence-based" model, the improvement of thinking, feeling and needs for the activity of the individual, really runs the risk of remaining an advantage of the previous generations who managed to get education before modernization.

Objectively-critical specialists, in search of overcoming the "one-dimensionality" of personal formation under the influence of modernization caused by the Industrial Revolution and its consequences, back in the middle of the last century, spoke in favor of changing the nature of industrial production, drawing public attention to the need not to make science and education dependent on the needs of mass production, and make the development of production dependent on the activities of scientists and teachers.

"In the modernization of society, we read in Britannic(e), the significance of the individual becomes more and more important, gradually supplanting such units of society as the family, community or professional group...". The rise of the role of individuality, along with the strengthening of specialization in production and the weakening of the functioning of such traditional factors of socialization as the family, professional ties, dooms the individual to an independent search for self-expression.

Robinson Crusoe was alone in the absence of people, and modernization created the conditions for the individual to be a Robinson among people. The one-dimensionality of labor, due to the nature of the source of life of the individual - production, enhanced by the specifics of education, which is organized in the service of production, exacerbated by the loss of family values and the decrease in the influence of the professional community, literally kicks the individual out of the system of stable social ties. She can only rely on her own potential and luck in casual relationships.

Interpersonal distance increases. In chemical reactions, electrons located in distant orbits "fly away", something similar happens in public life. The weaker the significance of social interaction, the more homogeneous and one-dimensional the personality is formed. Knowledge and skills replace thinking. In such a situation, extraordinary abilities and willpower are needed, which cannot be a mass gift. Economic crises are built on by sociocultural stagnation. The crisis in the system of social relations is already fixed by researchers in the titles of monographs. Culture is deprived of the traditional spiritual basis. The entertainment industry is not so harmless, especially

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when it is induced to undermine spiritual cultural foundations. The scheme is well developed: entertainment is accessible with its simplicity and the natural need for unloading after hard work, but one thing, when entertainment takes its rightful place in the structure of a person's life, and another, when entertainment displaces the creative potential of a person. Modern "Oblomovs" do not always lie on sofas, but the end awaits them just as sad because of the inevitability of personality deformation. Times change, the patterns of social change are stable over time.

The British sociologist W. Beck called modern society a "risk society", paying special attention to changes in the system of social and individual values. The individual loses the socio-cultural guidelines of life, becomes "not rooted". Similar changes were predicted by K. Jaspers, A. Toynbee, N. Berdyaev, Zh.P. Sartre. W. Beck's compatriot E. Bauman is convinced that the individual in modern society is nominally social. In fact, he feels among people as if he has fallen into "an uninhabited world" or into an inhabited and extremely difficult world. The prerequisites for the transition from the real world to the virtual one are being created. The essence of the problem facing humanity, A. Pececi believes, "is precisely in the fact that people do not have time to adapt their culture in accordance with the changes that they themselves make to this world, and the source of this crisis lies within.

Western researchers prefer situations? In contrast to sociologists and culturologists who think in general terms, they actually describe the tendencies of the social movement, leaving out of the analysis the underlying forces that lead to the manifested changes. The identification of the causal factors of crisis phenomena requires an answer to a very painful question: what is the way out of the described policies? Do not put aside attempts, if not to overcome negative changes in society, then at least slow them down by improving cultural factors, primarily education. The Bologna Protocols were formally signed only by our politicians, who in the 1990s did not feel their political responsibility and did not feel a sense of duty associated with conscience.

Europe has suffered the practical and spiritual experience enshrined in them. This experience and its outcome were not ideal, but they turned out to be a way out in a difficult historical situation. In the modern world, there are two seemingly incompatible trends. On the one hand, centripetal processes are intensifying in national relations, integration is taking place, accompanied by synergistic effects, for example, thanks to the standardization of education, trust is strengthened, the social space for free movement expands, without which the comprehensive development of the individual is impossible. On the other hand, as studies show, the "atomization" of the personality continues, "the transition of the

personality to peripheral social orbits", which leads to the instability of its position, the weakening of social ties - "rootless".

In fact, everything is connected, trends exist as the realization of opportunities, they are, in principle, controlled and managed politically. One of the effective tools is education policy. There are unique finds in the European experience of education integration.

The history of this process has shown that integration should be directed by professionals, not bureaucrats; education can by no means be an economically determined activity; the development of education should combine the transnational with the national; the formation of professional competencies must be subordinated to the formation of the personality of a citizen. The modern industrial society has exhausted the resources of its historical rationality; already in the middle of the 20th century it aroused the critical mood of prominent political figures and scientists. Evidence of the depth of the crisis was the desire to qualitatively change the industrial system. In the foreseeable future, society is unlikely to be able to develop without improving the industrial mode of production, but it is capable of significantly restructuring the production industry, and most importantly, reshuffling the relationship of sociocultural practice with industrial production. Realizing that history will not yet emerge from the evolution of industrial production, the authoritative economist and diplomat J. Galbraith published his work *The New Industrial Society* (1967) back in the late 1960s. Fifty years later many of the ideas of the American researcher have become even more relevant, especially his desire to justify the historical need to update the concept of capitalism by convergence with the achievements of socialist management. Contrary to the desire of domestic liberals to bury socialism as an alternative production system to a market economy, the history of the need to objectify the rational into reality makes it necessary to critically reconsider both the socialist experience of the industrial development of society and its criticism by ideologically biased critics. Concerned about the limitations in preparing the individual for social realities in the system of publicly organized education in the United States, J. Galbraith wrote: "The most important - in the long term - for the emancipation of the human personality is obviously especially higher... higher education is now widely adapted to the needs of the industrial system." The teaching staff of universities and colleges should have a decisive influence on the nature of the education that young people receive and the content of scientific research. The needs of the industrial system should be of secondary importance in comparison with the tasks of the general spiritual and intellectual development, - the author of the concept of the "New Industrial Society" argued "as a result of the critical analysis."

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And so that no one had any doubts about what exactly was being discussed, J. Galbraith clarified: "He (the teacher) must realize this and exercise his power not in the interests of the industrial system, but in the interests of the comprehensive development of the human personality." The "cog" of the human personality was made not by socialism, but by the industrial system, common to socialism, and for capitalism. The problems of improving education are universal for social development in the conditions of the industrial nature of production. The difference exists mainly in the attitude towards such problems on the part of the state. In the USSR, striving to build a socialist system of industrialization, the political regulator of the development of education was the state, expressing the program ideas of the CPSU. In the US, there is no formal regulator, but there are all-powerful industrial groups and vigorous lobbying of their interests by parties in the struggle for political leadership in the system of government. The quality of education in the USSR was subordinated to the formation of personality in the process of vocational training, which was often accompanied by costs in a special aspect. In this connection, the state introduced the status of "young specialist" - a kind of "transitional" period for graduates in mastering the profession in real production. In the United States, graduates are "finished" by the companies themselves, depending on their own needs and capabilities, with an emphasis not on civil status, but on competence.

For clarity, we note a fact that is not very comfortable for the domestic interpretation of competencies - Americans distinguish between competencies and sociocultural characteristics of an individual. They understand that it will not be possible to decompose the content of the concept of "personality" into competencies without a solid and especially significant remainder, of course, if you do not speculate and juggle this concept. In what range of competencies should courage, bravery, selflessness, fidelity to duty, honor, patriotism, love, friendship, mercy be placed?

J. Galbraith was not alone in criticizing the dangers of the one-sidedness of professional training in universities. Complementing the flaws in the adaptation of education to the specifics of industrialization created by standardization, E. Fromm, the leader of the Frankfurt School of sociologists, repeatedly noted the substitution of understanding of cognition as a process of creativity in the production of knowledge by mastering ready-made technologies for consuming existing knowledge. "If it is true, we read from Fromm that an intelligent person is, first of all, one who is able to be surprised, then this statement is a sad commentary on the mind of modern man. With all the virtues of our high literacy and universal education, we have lost this gift - the ability to wonder. It is believed that

everything is already known - if not to ourselves, then to some specialist who is supposed to know what we do not know. We think, that it is most important to find the right answer (among ready-made ones), and asking the right question is not so important. Orientation towards learning, the ability to consume the accumulated bank of knowledge makes the initial state of the individual's activity dependent not on his abilities, but on circumstances external to him. The "industrialization" of education leads to the oppression of individuality, suppresses the need for its self-expression in cognitive activity. From the standpoint of humanism, E. Fromm put forward a project to create, in particular in the United States, a harmonious, "healthy society" based on psychoanalytic "social and individual" "therapy". K. Jaspere also falls into resonance with the thoughts of J. Galbraith and E. Fromm, explaining: "The value of each individual person will only then be inviolable, when specific people are no longer considered as interchangeable material for the formation of a universal measure. The social and professional type we are approaching we accept only as our role in the world. The individuality of a person is initially created by the activity of her mind, which corresponds to both the biological and social understanding of a person, therefore, the emphasis of education at all levels and in all forms should be unchanged - made on the development of thinking. Heraclitus already realized that "knowledge does not teach the mind much", so you need to learn how to activate thinking as a technology for the production of knowledge. Aristotle was convinced that "to teach, you need to think, not thoughts." Confucius taught: "Learning without reflection is useless...". "The study of wisdom, according to Y. Kamensky, elevates and makes us strong and generous." The founder of didactics explained: "The mind illuminates the way for the will, and the will commands the actions." The wise expression of D. Descartes is well known: "I think, therefore I am". Little has changed in the interpretation of the essence of education for two and a half thousand years, let us refer to our compatriot P. Sorokin: "... The essence, he wrote, of the social process is thought, the world of concepts ..., it is also the main initial factor of social evolution. All the main types of social life (world outlook, art, practice) are conditioned by knowledge (science) or, which also represent a modification of this factor. All social relations are ultimately conditioned by thought. This, in particular, is confirmed by De Roberti's "law of delay". Modernization of domestic education is a product of policy, focused on a one-sided reflection of the experience of Western Europe and North America. It is not our intention to explore the reasons why an interesting experience has been ideologically filtered. Systematic assessments of the Europeans and Americans themselves, very instructive monitoring of educational policy since 1953, as well as the thoughts

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of prominent specialists and simply experienced teachers, for example, Bel Kaufman, were selectively excluded from it. B. Kaufman's book "Up the stairs leading down" was very popular in the Soviet Union, but after 1989 it was not reprinted ... Perhaps because of the frankness of the judgments of a person who sincerely experienced an education crisis in the United States. Inviting the reader to name three reasons for what is happening, she added to them the fourth, which "is not customary to talk about - the moral climate in which we live. Is learning highly valued in America? The bookworm and the crammer make everyone laugh, and what could be more absurd than an absent-minded eccentric professor? At the forefront we put material well-being, money; the very word "success" refers not to the achievements of the mind and spirit, but to financial prosperity. But the main thing is to give the Americans concrete results and as soon as possible. And the acquisition of knowledge is not a product, but a process that continues while we are alive ... We, the author sums up his reflections, neglect the need to learn and cognize ... ". Since the 1960s, the United States has been looking for ways to solve the problems in education that arose in connection with the obvious passion of politicians for the social and practical function of the school. The absolutization of utilitarianism inevitably led to the one-dimensionality of personal development - "technological slavery". Americans, sensing a dead end movement, made a kind of maneuver. They divided the movement towards higher education into two parallel paths, relatively speaking, with normal gauge and narrow gauge. Colleges differ from universities mainly in that they do not include educational and scientific experience in the program. University students are obliged to participate in the scientific work of the organization.

The idea is conceptually interesting, it can be adapted to domestic education at universities, clearly prescribing the content of bachelor's training and determining the advantages of the professional status of a specialist. In the history of Russia, a similar practice took place. In St. Petersburg, from the middle of the 19th century, the Institute of the Corps of Railway Engineers with a full cycle of professional engineering training and the Technological Institute with a shortened program of scientific knowledge worked in parallel. Graduates of these universities, of course, had different status both in the profession and in society.

At the same time, the desire to turn universities into research organizations by reducing the general professional training of specialists looks doubtfully expedient. Firstly, the status of graduate school is thus replaced, and secondly, a real danger is created to nullify the upbringing of a professional culture and a responsible attitude to national identity.

Having mastered the required knowledge, research skills and a foreign language at the expense of the domestic taxpayer, many graduates of such universities, even before completing their studies, are actively looking for a profitable investment of their capital outside their homeland. Liberal ideologists are satisfied with this outcome of the process, and regulators are obliged to think: how right is it to work for "colleagues-competitors" who are looking for any reason to limit our capabilities with regular sanctions. In the leading firms of the West, in senior positions, according to S.P. Kapitsa, today more than 30 percent of specialists are from the Russian Federation, while Russian production, according to the speech of G. Gref at the St. Petersburg International Economic Forum 2021, is experiencing a growing shortage of specialists. Reflecting objective trends in public life, the growing potential of a person's personal participation in them with his unique rationality, German classical idealism, in the form characteristic of idealism, elevated rationality up to its absolutization beyond the limits of human rationality. But, in addition to the system developed by G. Hegel, there was also a universal and most perfect dialectical way of thinking that he identified, thanks to which his worldview system also worked for some time. The dialectical approach made it possible to interpret the author's intentions in a different way, to understand them quite rationally, and to use them in practical politics. First of all, we have in mind the idea of distinguishing between the "real" and the "actual" in social life, to be aware of the natural-historical perspective of their mutual transition.

In A.P. Chekhov's story "Intruder", a fisherman caught unscrewing the nut that fastens the rail to the sleepers explains to the investigator that he could not do without it. The hook should be located close to the bottom, fish trifle floats on top, which no one needs. The big fish you want to catch is at depth. The integration taking place in the world is a regularity and reasonableness of its development. One must learn to integrate into it, filtering the existing reality in such a way as to have something from it that has the potential to turn into reality, to move from the real to the rational.

The historical spiral continues to spin around the axis of human intelligence. Only in our time it becomes more relevant to think not about the essence of rationality, but about the prospect of its evolution into prudence. The future belongs to the "prudent man". Prudence is able to resolve the contradictions of reality: to find a balance of national and universal interests; guarantees the harmony of social needs and the preservation of the natural order; needs and rational organization of production; personal and social. It elevates culture as the primary essential force; defines scientific knowledge as a systemic socially oriented activity; values education as a basic source of humanism and democracy. The formula for

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prudence is simple: everyone should do what they do best, but always remember that the best awaits him only if the requirements of a single historical movement for all are fulfilled. Reason is given to man to do good. "Reality is rational," G. Hegel is right, but rationality itself is valid only as a creative good.

The criteria for human prudence are contained in the evolution of homo sapiens. It is advisable to consider the birth of the ability of consciousness to self-realization of its activity as the highest achievement of the evolution of rationality. Prudence will come when self-consciousness itself acquires a steadily rational form of activity aimed at a consistently rational systemic solution to the above-mentioned contradictions of social progress. In the religious aspect, the prudence of a person will reveal in full the spectrum of his likeness to the creator. The "prudent man" will become a truly creative social subject. The control function of conscience will be completed by the responsibility of the individual not only for himself, but also for everything that happens - "I am responsible for everything"! Awareness of personal responsibility will ensure the balance of the individual with the general. Personality as usual

Experienced acquisitions of the integration of European higher education would be very useful for implementation in our country. It turned out the opposite. Our modernization was designed like a European one with a deadly amendment to funding on a residual basis. The Europeans elevated the improvement of education to the most important direction of social policy, in Russia they sent them to go with the flow of the financial flow, supplying them not with an engine, and not even with a sail, but with an oar and a pole, so that they feel responsible for themselves. In Europe, the management of mass education is the prerogative of professionals, with us - officials, for whom its reality exists in their own distant past, therefore they manage education according to formal reports developed according to the patterns of bureaucracy.

The version that the history of man does not end with the formation of homo sapiens, on the contrary, the development of "reasonable man" is a kind of necessary introduction to his evolution into "reasonable man", the emergence of a new round in the spiral of human progress, which will be characterized by neither adaptation nor egoistic transformation of the environment, and the universality of cooperation based on the systematically built activity of a "prudent person" requires clarification of a number of concepts. These concepts have been nominally known for a long time, but during the development time there was no agreed definition of their content. Our goal is not to give a new interpretation, we believe that it is sufficient, in the situation that has formed in cognition, to set our priorities.

Separately, we note that since we are talking about the problem of species evolution, it is advisable to analyze it at two levels of knowledge: at the level of representations of mass thinking - "common sense" and within the limits of professional conceptual expression in scientific and philosophical knowledge. R. Descartes called "common sense" "reason from nature", believing that it contains "the ability to correctly judge and distinguish true from false" in conditions of methodically limited thinking.

As a predecessor of I. Kant and G. Hegel, R. Descartes tried to define the most general concepts in the theory of knowledge, starting with "thinking". "By the word thinking (cognitatio), he wrote, I mean everything that happens in us in such a way that we perceive it directly by ourselves; and therefore not only to understand, to will, to imagine, but also to feel means here the same thing as to think. R. Descartes divided the mental activity into two bases: perception by the mind and determination by the will. Reason and reason identified. He explained the delusions by the fact that the actions of the will are more extensive and more significant than the mind: "... Although God did not give us a comprehending mind, we should not consider him the culprit of our delusions, the philosopher explained, the created mind is finite, and the finite mind, by its very essence, cannot comprehend everything".

Thinking appeared at the very beginning of human evolution. Man inherited thinking, thanks to purely natural history, completing and transforming it in his own special development. Consciousness has become a product of the evolution of already proper human thinking, split into rational and rational activity. Reason implements thinking within its consistency. The mind operates within the framework of conflicting thoughts. The mind has a dialectical nature. Apparently, the quality of human thinking was formed in the direction of reflecting the dialectics of nature in it. In the light of the idea that we are developing, only dialectical thinking, focused on resolving conflicting knowledge, can be a platform for ascent to the "prudent person".

The logic of human evolution is built in such a way that a person at any stage of his history is forced to change the natural conditions of life, to come into conflict with nature. Another thing is that the contradictions at each stage are specific. Once it was about survival, a person had to prove his right to exist by any means. The survival formula is simple: "either or". Nature severely tested a person for strength - the stability of existence, and a person, being in extreme conditions, took from nature, regardless of the consequences that he was not always aware of. Rational thinking provided for most of human history, but as the number of species grew and its practical power grew, contradictions aggravated, ecological constants were violated. Social progress was loaded with negative products of its own development, the

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ascent was accompanied by breakdowns. The inconsistency in the changes in reality weakened the position of rationality in the historical movement. History has tested the very rationality of man. Reconstruction of thinking was required, it became necessary to think, reflecting not the final states of phenomena, but their movement. In movement, thinking discovered self-movement as a change by the force of the contradictory relations that form everything that exists. The time has come to put rationality on the main path of thinking, capable of managing inconsistency in knowledge.

The reasonableness of thinking in the era of R. Descartes, B. Spinoza, F. Bacon and G. Leibniz undoubtedly already existed, but it did not yet have the status of relevance, it did not acquire the significance of reality. Reason operated in the absence of sufficient objective conditioning. Nevertheless, R. Descartes brilliantly guessed the vector of the direction of human progress towards the dominant development of thinking. Through education, his phrase entered the history of philosophy and mass consciousness: "I think, therefore I exist." It seems to us that the public and partly professional reactions to the above statement of the philosopher are not commensurate with the author's intention. The phrase was "cut out" from the context, and R. Descartes twice on two pages revealed his interpretation of these words. Paragraph 7 of the "Principles of Philosophy" he unambiguously titled: "That there can be no doubt, not existing, and that this is the first certain knowledge that can be acquired. The author's reasoning on the formulated thesis is completed by the following phrase: "It is so absurd to assume that what thinks does not exist while it thinks that, despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions.

Contrary to the widespread interpretation of the content of the thesis, R. Descartes did not give his idea a worldview format, remaining within the declared dualism. The philosopher did not seek in it a solution to the problem of the nature of the substance of being. He just tried to understand the nature of man as a "thinking thing", to find out the relationship between "soul" and "body". The concept of "existence" had a local content for him, both "soul" and "body" were included in its scope, it held them together in the same way. For R. Descartes, it was important to find the basis for the "most reliable" recognition of existence, and not all, but exclusively human reality.

We, discussing in detail the experience of the reflections of the French scientist and philosopher, want to emphasize the very fact of recognizing the priority value of thinking as evidence that the scientific and philosophical awareness of the significance of human rationality has come into contact with the religious exaltation of human rationality, created "after the model and likeness" of the divine mind. Homo sapiens evolved, actively

developing their mental abilities. The use of the concept of "soul" was characteristic of the beginning of the New Age, it synthesized all levels of thinking and more clearly included mental activity, primarily will. R. Descartes, as if prophetically predicted the systemic significance for the future of man of virtue, however, in his understanding, virtue did not rise to the heights of conceptual thinking.

R. Descartes approached the idea of prudence of a "reasonable person" from the side of spiritual responsibility for feelings, thoughts and deeds, but in his mind not only prudence, even reason itself remained an abstract concept, because "thinking", an exhaustive manifestation of the soul, was not structured, except for the traditional differentiation into sensory actions and mental forms. The consciousness of R. Descartes largely inherited medieval terms, modernizing the content of those ideas that were "packed" in them. The process of rethinking traditional views on human intelligence was still beginning. History did not easily reveal the growing role of the creative potential of thinking in the life of man and society. The problem of the structural organization of thinking acquired urgency. New concepts emerged.

The new time has necessitated a new approach to thinking. The former interpretation of the freedom of human wisdom, localized within the framework of religious prescriptions, to be an instrument for moving along the path indicated by the true creator of all that exists, seriously hampered the development of mental activity, but could only slow down the progress of rationality. The low rate of social movement during the Middle Ages testified to its conditionality on the part of ideological regulation, but at the same time, the energy of rationality continued to accumulate. The real power of the mind could be transformed within itself, added, multiplied, striving for a critical mass of action. And, most importantly, the power of human intelligence was able to begin to actively operate with changes in the theory of knowledge.

Philosophy had to make the transition from that type of understanding of thinking, to which G. Hegel's expression "barbarism of thinking" can be applied with a certain stretch. But, in order to fulfill its historical mission, philosophy itself had to change, become "critical" and "speculative." "Philosophy, G. Hegel pointed out, should make thinking itself an object of thought." And he further clarifies what has been said in relation to philosophy as a science: "The only goal and business of science is to achieve the concept of its concept and, thus, come to its starting point and to its satisfaction." G. Hegel had in mind a specific technology of philosophical knowledge, when the desired concept is determined by developing descriptive concepts. Assessing the merit of I. Kant, who critically studied the tools of thinking, their real possibilities, G. Hegel approached thinking as creativity. The "pure" and "practical" reason,

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"common sense" was replaced by the dialectical triad of rationality of G. Hegel. In thinking, he identified three levels of activity: "sensuality", "reason" and "mind". Thinking was identified with activity, which showed its cognitive and social power. "Insofar as thinking, as an active one," the philosopher explained, "is taken in relation to objects—as a reflection on something—insofar as the universal, as a product of its activity, has the meaning of the essence of the matter, essential, internal, true." Hegel uses the concept of "spirit", but he contrasts "spirit" with "thinking". "Spirit" is a spontaneously organized natural state of consciousness of a person who is directly included in the world of things, including human society. The spirit "as a feeling and contemplative has the sensible as its object, as an imaginative one - images, as a will - goals." "The highest inner essence of the spirit, according to G. Hegel, is thinking." The thinking of the "spirit" manifests itself in the forms of rational and rational activity. "Consciousness, the thinker clarified, forms ideas about objects for itself before concepts about them, and only by passing through ideas and turning its activity on them does the thinking spirit rise to thinking knowledge and comprehension through concepts." Reason precedes reason and acts together with it. The lot of rational activity has been and will remain reflection on objects, their relations. The mind is able to analyze the opposite results arising in cognition, it is not given to it to resolve the contradictions that characterize the unity of opposites, therefore the understanding shares the existence of opposites. Reasoning activity is dialectical in a limited way, it can bring together and oppose opposites, but cannot synthesize them: there are thesis and antithesis, but there is no synthesis, which indicates the incompleteness of the technological cycle in cognition. Knowledge is inhibited from within. These were the antinomies of I. Kant, which did not allow him to overcome the barrier of cognition. Modern quantum mechanics relies on the principle of complementarity, unable to resolve the relationship of opposites.

The pinnacle of dialectical thinking in the philosophy of G. Hegel is "reasonable dialectics". Reason rises above reason, but it also presupposes the preparatory work of the latter. G. Hegel's thinking works in the interaction of its modes of manifestation. The dialectic of reason completes the work begun by reason. The entire dialectical way of thinking - the "road map" - consists of the establishments: identities - differences - differences - opposites - contradictions (grounds). "Contradiction is what actually drives the world and it is ridiculous to say that contradiction cannot be thought," G. Hegel summed up his reflections. G. Hegel developed the basic scheme of dialectical thinking, but the main thing is that the dialectical approach to cognition helped him raise the understanding of reason as a real creative force.

After the philosophical recognition of the creative power of the mind, the question of the vector of this power became relevant. As a matter of fact - the vector of development of the "reasonable person". To apply something, you need to have it. Having completed the ascent from efficiency and uprightness to rationality, man found himself at the beginning of his new history. Philosophy and science, having analyzed the structure of human thinking, having determined its potential, were able to build the architecture of the manifestation of rationality, to discover the natural nature of thinking in the forms of rational and rational activity. Together with reason and will came the possibility of human freedom with all its individual and social dangers.

The possession of rationality and free will predetermined the need to learn how to use the new forces born in evolution. It was necessary to become a tamer of the mind, to master the art of giving it the direction that the will, objectified in practice, must and can realize as an instrument for resolving contradictions that are no longer mental, but real. The evolution of rationality of a particular state of a person turns into the evolution of rationality for the benefit of everyone and everything, - into the development of human reasonableness, rationality acquires the scale of universality.

Prudence is the pinnacle of the evolution of human intelligence in its modern interpretation. Without this historically built configuration, rationality will remain within the boundaries of its abstract certainty, for the logical necessity to be rational is similar to Kant's "pure reason". The rest, different from the prospect of rationality becoming prudence, scenarios for the promotion of rationality: the isolation of rationality on itself and not having certainty - deprive evolution of historicism.

The need for knowledge of the future is natural for a person, it continues the ability that originated in biological movement - the possibility of anticipatory reflection, described by P. Anokhin. When time pushes its boundaries in front of a living being, then this perspective must be used in the interests of development. The famous American writer and philosopher R. Emerson wrote: "In the face of the universe, let us rejoice that we have reached not a dead end, but a boundless ocean. Our life appears not so much as the present, but as a prospect, open to us not so much as petty deeds for which it is spent, but as a promise of that abundantly flowing vitality. And he added: "For the most part, it is perceived only as a promise, this vitality will still manifest itself; we know that we must not sell ourselves too cheaply, for we belong to something very great. So forward and again - forward! In daylight hours, we know for sure that a completely new picture of life and a new understanding of our duties to it are already possible for us.

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R. Emerson is right in presenting the future in which descendants will find themselves as a "completely new picture" of life. Prudence is not a simple natural continuation of human rationality, it, despite all its similarity with modern rationality, opposes it. Rationality allows quantitative difference, and this, in turn, comparability of different states and competitive relations. Prudence is distinguished by its qualitative certainty. It cannot be less or more. It is not surprising, therefore, that the history of Homo sapiens is filled with conflicts along the entire perimeter of social relations. And in relations with nature, rationality often served as an instrument to justify destructive practices. The abstractness of rationality - it determined the way the development of human actions, leaving the object to which these actions were directed. The priority position in the rationality of the subject deformed the systemic construction of a person with the world of relations. Ultimately, the costs were reflected in the rationality. The abstract nature of the position of rationality was also manifested in its definition. G. Hegel, having singled out inconsistency as a quality of thinking at the level of reason, solved the problem within the boundaries of the science of logic, in the most general form, which can be qualified as an introduction to the theory of reason. The Hegelian triadic scheme of tracing the progression of thinking is able to provide effective assistance to those who have met in cognition with opposites in the unity of their existence. However, everything listed here formalizes the technology of intelligent activity, dissects the stages of the movement of thoughts, serves as a "road map" of thinking, which you need to be able to read, calculate and, - the most difficult.

If we proceed from the fact that the movement of objects and the ways of their relations are reflected in the structure and history of thinking, then the contradictions of reason reproduce the relations of opposites in objects. But thinking is non-material, and therefore the contradictions of thinking are specific, not mirror images. The contradictions of objects were formed in the process of their movement, and the contradictions of the mind went through a comparable path. The formation of rationality was due to the contradictions of being, but thinking could not simply repeat this real experience. Thinking, in order to rise to rationality, has passed a difficult path. At each stage of the path, it formed the possibility of inconsistency in cognition, starting with the prelogical and limited logic of states identical to itself (rest), through antinomies to dialectics.

Prior to the studies of L. Levy - Brühl, presented in his works "Cognitive Functions in Lower Societies" (1910), "Primitive Thinking" (1930) and other works, anthropology was dominated by the British concept of the identity of the mental mechanism of "primitive" people and modern ones. English anthropologists did not take into account the historicity of the evolution of

the thinking of homo sapiens. L. Levy - Brühl put forward a very important thesis about the existence of a pre-history of logical thinking of the type known to us, having previously called thinking "pralogical" and emphasizing that it is not antilogical, it is also not illogical. Calling it pralogical, I only want to say that it does not strive, first of all, like our thinking, to avoid contradiction. It is subject to the law of participation. Oriented in this way it has no inclination to fall into contradictions without any reason (that would make it completely absurd for us), but it does not even think about avoiding contradictions. Most often it treats them with indifference.

The mind, having determined a new stage of human evolution, turned out to be not so perfect as to complete the evolution. The mind of homo sapiens did not raise the resolution of contradictions to the level of realization of the universality of development interests. The concreteness of the particular in the conflict of opposites blocked the development of rationality itself, it submitted to a particular orientation. The evolution of the rationality of homo sapiens has reached a dead end of private or "egoistic rationality".

In an abstract form, mankind has realized the historical limitations of the progress of the rationality of homo sapiens, even calculated the time of the "red line" of the movement of its private rationality in interaction with the natural condition of life - 2030. It remains to make one transition - to turn the perspective into the actuality of existing being, to give the rationality of knowledge the power of universal will, which turns out to be in an unresolvable contradiction with the rationality of homo sapiens. Humanity at the stage of homo sapiens has come to a historical crossroads.

There are two development options. First: on the historical basis created over many millennia by homo sapiens, to make the transition from the rationality of man to the rationality of mankind and thus continue history with a new content of human activity. The second is to follow the paved path, improving rationality in its traditional expression, when rationality is based on the abstractness of actions, and rationality itself is tied to private interests. In other words, the intelligence of a species is represented by the sum of the intelligences of the individuals that make up the species, which already in the primary state makes obvious the reality of the contradiction that hinders progress.

In rationality, historically and epistemologically, there is what is necessary for the development of the species - the technology of cognition of the contradictions of reality, but in the existing state of rationality there is no general specific direction vector of rationality. By elevating competition to an absolute instrument of progress, the ideology expressing a conditional commonality of rational interests further exacerbated the fluctuations in particular forms of

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rationality. In addition, today one should be afraid not so much of the uncertainty of the total manifestation of private rationality, as of the aspirations of certain authoritative forces whose actions are aimed at maintaining real contradictions, by and large, of artificial origin.

Dynamic disequilibrium is good for the stability of the mechanical movement of bodies, but not for human relations. To what extent is the favorable prospect of the social development of rationality determined? To have a basis for answering this question satisfactorily, one must examine the social forces that are capable of directing individual rational actions and controlling their dynamics. The social factor in the development of individual awareness of reality was studied in detail by French sociologists: Durkheim, Galbwachs, Blondel, and others. They, as a rule, considered society within the limits of social consciousness. They were interested in the spiritual social superstructure: opinions, knowledge, behavior and other manifestations of spiritual activity. The spiritual part of social life was defined by them as "collective representations". The conditionality of the formation of "collective ideas" was mainly outside the brackets of such studies, which can be recognized as an appropriate limitation in the interests of studying the specific problem of the formation and development of the individual's consciousness. It is reality sui generis that acts directly on the consciousness of the individual.

"Society is a reality sui generis," E. Durkheim argued, it has its own properties that cannot be found at all or in the same form in the rest of the world. Therefore, the representations that express it have a completely different content, purely individual representations ... ". E. Durkheim formulated the conclusion from the analysis of the study of the problem as follows: "Collective representations are the product of an extensive, almost boundless cooperation that develops not only in space, but also in time. Therefore, they seem to concentrate a very peculiar mental life, infinitely richer and more complex than the mental life of an individual. Hence it is clear why the mind has the ability to go beyond empirical knowledge.

In this context, the "empirical" is identical to the "individual", "private" E. Durkheim extended the understanding of "collective representations" to the area of conceptual thinking: "If concepts were only general ideas," the sociologist argued, they would not particularly enrich knowledge, because the general, as we have already pointed out, does not contain anything that would not be in the particular. If these are primarily collective ideas, then they add to what we have learned from our personal experience, all the wisdom and knowledge that the social group has accumulated and preserved over the centuries. To understand a thing means at the same time to capture or define its essential elements and attribute them to a

known set of things, for each civilization has an organized system of concepts that characterizes it.

"Collective consciousness, according to Durkheim, is the highest form of mental life, it is the consciousness of consciousnesses. Being outside and above local and individual contingencies, it sees things only from their permanent and essential side, which it fixes in the transmitted concepts. Looking down, it sees further to the side. At each given moment, it embraces the entire existing and known reality, and therefore it alone can provide the mind with a framework suitable for accommodating the entire totality of beings and allowing us to make this totality the object of our thinking.

Some of E. Durkheim's statements are disputable, but the logic of his research is important to us. It allows us to trace the movement of the author's thought in a very significant direction, presented in the Hegelian synthesis of the individual and the general. E. Durkheim proves that the concept in its purely abstract form serves as a transitional state of knowledge into concrete - abstract, or concrete - theoretical knowledge, from which there is a way to turn it into a conviction and thereby determine the actions of the will. The understanding of rationality in the philosophy of the Enlightenment and, to some extent, in its continuation in the following centuries was overly abstract. The concept of "collective representation" creates the prospect of enriching the content of rationality with a specific meaning and allows us to expect with optimism in the future the rationality of a "prudent person" developed into universality.

One of these "working" concepts is "wisdom" and its detailed study, for example, in the concept of "philosophy". IN AND. Dahl reported: "Wise, based on goodness and truth, eminently reasonable and well-intentioned." Philosophy V. I. Dahl calls "love of wisdom." "The mind of V.I. Dahl defines it more clearly and understandably: "a spiritual power that can remember (comprehend, cognize, judge," think, apply, compare "and conclude" decide, draw a conclusion", the ability to correctly, consistently link thoughts, from causes, consequences of it and to the goal, the end, especially when applied to the case. Reason, meaning, intellectus, verstand, mind, ratio, vernunft. The spirit of V. I. Dal traditionally divided into mind and will. "Intelligence" put in a common row with "understanding", "reason". G. Hegel's idea to divide reason and reason by the type of logical thinking, having formally opposed the logical order of reasoning and the dialectical one, V. I. Dal did not reflect, although, probably, he was familiar with his main works. He probably tried to explain the terms as adequately as possible in the interests of the living Great Russian language. In the Encyclopedic Dictionary of F. A. Brockhaus and I. A. Efron, popular before the revolutions of 1917, the word "wisdom" is absent, "mind" is presented as a set of mental actions

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that distinguish a person, "reason" is included in the volume of rationality. The modern interpretation of wisdom and "reason" in Russian dictionaries is unintelligible. "Wisdom" is deep knowledge, understanding of which "Prudence" is deliberation in actions and deeds, prudence, prudence. "Reason, mind, reason, ability to think."

Summarizing the ideas about the prospects of a "reasonable person" expressed in different countries, on different continents, at different times, in different directions, specialists cannot fail to notice one thing in common in their thoughts. Each of them, in their own way, is concerned about the inconsistency of the evolution of intelligence. A more concrete assessment would be possible if there were a more definite professional and public understanding of rationality itself and the auxiliary concepts that describe its quality. Unfortunately, as the well-known Russian proverb says: "the shoemaker himself without boots, and the pie-maker without pies."

In the context of our topic, such a situation in cognition serves as confirmation of the basic thesis that "reasonableness", being the direction of human evolution, taking shape even in the history of the predecessors of homo sapiens, could not become the pinnacle of human history. The reason for this is the excessive abstractness of rationality. We have already noted that the "reasonableness" of homo sapiens is very close in its epistemological status to the "pure reason" of I. Kant. It is no coincidence that in a number of scientifically popular publications, when interpreting "reasonableness", a comparison is used with the Kantian interpretation of reason. A finite or, more precisely, a localized understanding of the quality of an evolutionary stage can be closed on itself - its own development, but in this way it limits itself and its history. Inevitably, the "dissolution" of objectivity in its abstractions, which happened with the rationality of homo sapiens.

The promotion of evolution presupposes that development acquires concreteness, created by the inclusion of subject complementarity in it. It is necessary to inform the evolution vector of something that will concentrate the movement. Much can be concretized rationality, as evidenced by the variety of ideas expressed by people concerned about the fate of man.

Judging by the growing misunderstanding; inconsistencies in views on social progress, social and individual values, driving forces of development, ways of resolving conflicts; the sustainability of nihilism; absolutization of the consumer attitude to life, competition in everything and forever, it is not difficult to come to a pessimistic conclusion in assessing the prospects for the rationality of modern man.

Historical examples, as well as individual natural facts, cannot be arguments in proof. This is the general theoretical rule. A theory can only be "beaten" by

another theory that is more effective in explaining the change in facts, that is, from facts that contradict the existing theory, one should first build an alternative theory in order to then oppose its advantages to the current theory. This is the general order, which always has a special case. Having grouped the social practice of the end of the second millennium of a new era and adding to it the practical life of the beginning of the new millennium, we will, without exaggeration, get a sad result of the evolution of rationality.

Having dealt with colonialism, racism, fascism, "reasonable man" created the means of universal destruction and tested their effect on his own kind at a time when circumstances did not require this at all. Such a scale of intimidation was not known to our ancestors by reason and their weak-minded ancestors. The absolutization of competition leads to the suppression of rationality. Competition, just like selfishness, manifests itself in two forms: in the form of a struggle for survival and in the form of competition - civilized interaction in the struggle for leadership. For some reason, supporters of the first form of competition count only profits, pretending that there are no costs from such competition, or write them off as inevitable costs of production development. In the press, we have not found even approximate data on the extravagance of irrational competition.

The covid pandemic has exposed the unreasonableness of politics: a low level of political culture, selfishness in politics. But behind everything that science calls political activity, there is the rationality of homo sapiens. The modern rationality of homo sapiens is good alone with itself, in the individual format of existence, while providing everything necessary and without force majeure. At the same time, there is no reason to underestimate the formation of human intelligence as a significant achievement of human evolution and the basis for its continuation.

Our version connects the new history of rationality with the orientation of the mind towards goods in their broadest sense. "Benefits" we define as the fundamental conditions of human existence and development. Some of the benefits are of natural origin, but most of the benefits are created and maintained by human activity itself.

Having a mind is meaningfully abstract, so it is not enough to be intelligent in life. Only having learned to use the power of reason, a person, in the interests of all mankind, will be worthy of it and will have the right to be called truly reasonable. To use the mind in the final destination means to increase the benefits. It is to the blessings that man owes his birth and his whole life. This is something that he should always accept with gratitude. To be grateful is the second side of a person's rationality, which makes rationality concrete. Those who understand the

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rationality of a person as a tool to create good things and treat them with dignity are not mistaken.

The very enumeration of the basic range of human benefits speaks in favor of such a statement: Nature, Society, Motherland, Family, People who lived and live the same. The great humanist Exepuri was asked: what would you do if you were on an unfamiliar planet? Without hesitation, he replied: "I shouted -" People, where are you! When everyone realizes that what is valuable is not what has a price tag indicating the amount, but what is vital, the mind will be realized as a characteristic of a person, it will fulfill its historical mission - to make a person not formally, but really reasonable.

The basic range of benefits is completed with tools for its creation and enrichment: responsibility for maintaining the natural environment, its ability to reproduce itself and us normally; participation in the development of social relations; service to the Fatherland, fidelity to duty; love for the family, relatives and friendliness in relations with oneself - like. Social institutions are at the service of ensuring human well-being: environmental protection; health and healthy lifestyle; education; security; improving the production of material goods; life protection in social reproduction; science, art, physical culture, sports and tourism, transport support for the organization of physical and social space and everything that helps to live more effectively in time,

All of these benefits are known to almost everyone and for a long time. The problem is to make them out of existing alienated phenomena as actual values of the human mind, to give them the meaning of reasonable necessity. The initial condition for solving the problem is not a secret - the quality and availability of the benefit of creating tools are necessary. However, only at the level of the current state of rationality can one naively expect that the quality and availability of welfare tools will automatically transform them into the desired benefits in the minds of mass homo sapiens.

Formally, everyone knows that vaccination protects against infection, guarantees health, in extreme cases, not the most difficult course of the disease. Evidence of the good and access to the good are present, there is no awareness of the good. Instead of real reasonable actions, we have endless discussions about the inappropriateness of the technologies recommended by science and healthcare to protect the quality of life.

Perhaps only education has been endowed by the mind of a person with the status of significance of a universal scale, and then not so much in the primary meaning - to realize rationality in the interests of self-development of the individual, - but in order to ensure social and professional advancement of people.

The rationality of a person is projected in two directions: into his own movement and outside his reality, and the second is dependent on the first. Logic

shows that education is an activity, first of all, in the interests of personal self-development, it enriches the mental, sensual and practical expression of individuality, creates the prerequisites for interest in the individual in her environment, opens up the prospect of social ascent. However, the mass awareness of the obvious logic of self-affirmation of the individual through education clearly does not meet the standards of reasonableness. Education by the mind of the majority of modern representatives of homo sapiens is perceived not as a need for spiritual development, but as a necessary measure for solving utilitarian problems. The global university dropout statistics show that, less than 2/3 of freshmen make it to graduation. Japan stands apart, where the cult of an educated person is high.

To blame one personal unreason in relation to education would be unfair. Three social subjects are involved in education: the personality of the pupil (student), teaching staff and state institutions. To the extent that teachers and administrators with regulators act as subjects of the process, and not as nominees - organizers and mediators of the implementation of the will of those who really govern and determine the goals of education, education can be viewed through the prism of its personal and social value.

The history of education as a socially significant institution is closely connected with the history of philosophical thought. So it was in the West and in the East. The concepts of "teacher", "thinker", "philosopher" initially coincided both in status and in personal terms. Pythagoras, Socrates, Plato, Aristotle, Buddha, Lao Tzu, Confucius, Mei Tzu went down in history twice: as philosophers of the first wave and as the founders of pedagogical art. What is usually called pedagogical science is in fact a technology of education, over which the philosophy of education rises, dominating strategically. In pedagogy, two components are distinguished: a philosophical attitude and the art of translating it into the mass consciousness with the help of the mastery of a systematically built learning process.

The policy in the field of education is called upon to determine and control the balance of the ideological, ideological, educational and practical components, so that two forces interact in the educational process - the power of thinking and the power of knowledge. It is necessary to minimize the risks of absolutization of the abstractness of thoughts and the utility of knowledge.

The well-known Russian historian and teacher V. O. Klyuchevsky wrote about pedagogy: she is "not a nanny, but a morning alarm clock: the word was given to her not to rock someone else's child to sleep her thought, but in order to wake someone else's." A teacher, they used to say in Russia, is not the one who teaches, but the one from whom one learns. It is education that has the potential of universal activation

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of mental activity, opens up the power of rationality to the individual.

Of all generally significant social institutions, education bears the greatest historical burden in promoting social and personal development. This is the main tool for the socialization of the human individual into a personal individuality; the sustainability of the reproduction of social progress, and in the national context, the development of the identity of the nation and the prevention of nationalistic egoism.

Improving education is a strategic task, because its solution presupposes the achievement in education of the harmony of national and universal interests. Based on the traditions of the national mentality, it is responsible for the formation of universal humanistic and democratic values. In this connection, in the European documents regulating the development of university education, it is clearly stated that the educational business is outside the totality of economic enterprises. J. Galbraith also wrote about this, protesting against industrial pressure on educational activities. And a century before J. Galbraith, R. Emerson spoke about the socio-economic problems of education in his lectures, explaining their origin by industrial activity: "The whole current organization of the economy makes me think deeply: because it has created a false relationship between people in the sense that I already feel free from the need to show good breeding and nobility in relations with a person whose services I pay for with money. Human relations in such an economy are not determined by rationality. They depend on what is alienated by the capacity for rational activity from rationality itself. Meanwhile, R. Emerson summed up: "Society does not gain anything as soon as a person tries to update the order of things without updating himself."

Education is directly aimed at shaping the social status of a person. Indirectly, through the socialization of the individual, it contributes to social development. The social platform for the effectiveness of educational activities is subjective rationality, which is realized through all subjects of public life. In the orientation towards rationality, it is a guarantee of educated activity to preserve social progress, and it is also the reason for the uneven implementation of this function. Only a systematically holistically built education from enlightenment to the limits of professional training is able to ensure the social advancement of a graduate along the main historical path - the development of civilization, bring the consciousness of students into resonance with rationality, activate their thinking in the direction of creation, reveal the historical significance of unity in the worldview of national, transnational and universal values. Otherwise, social progress will lose the power of rationality with the vector of universal welfare. Reasonableness will lose its essence - to be an

instrument of the historical creation of goods. The logic of the development of rationality is valid only in combination with the vector of comprehensive improvement of reality, the subject of which is an educated person, and the main goal of an educated person is the growth of human well-being.

Hence the high demands in the organization of public education on its first side - spiritual development in the educational activity of the student's personality. The history of higher engineering education in Russia began with the St. Petersburg Institute of the Corps of Railway Engineers, the first rectors of which were a Frenchman of Spanish origin A. Betancourt and a citizen of France and Russia, an authoritative scientist in the field of hydraulic engineering and mechanics P. Bazin. Addressing the graduates of 1832, P. Bazin instructed: "Most of all, we strive to inspire that in the field of service, so rightly called the field of honor, knowledge is only a tool; that the possession of it does not relieve from the performance of any obligation, that even the most extensive information becomes vain without unrepachable behavior, and that one must first be an honest person, IN. Klyuchevsky clarified: "In education, two things are distinguished: one is the development and alignment of individual characteristics, personal properties and inclinations of a person, the other is the development of a general type, the inoculation of those social rules, concepts and interests that make up the culture of the time and that make diverse personalities capable of to a friendly hostel.

The Covid 2019 pandemic has actualized the problems of implementing successful education. Interest in the history of education was activated. Goethe correctly noted: "Everything clever was invented before us. Our task is to reflect on this again." The history of education, which has a serious influence on the subsequent course of its development, began in the "Axial Age" - VI - IV centuries BC. The school came to the aid of family or home education.

The school organization of the educational process, like the home organization, began as a search for the optimal form. The search took shape in two directions. In the first one, the student's freedom of participation in the organization of the educational process dominated. Students migrated from one teacher to another, which was considered normal behavior. "Class", as a phenomenon, existed only phantomly. The second was based on the stationary relationship of the teacher with the student. Along with the teacher, the figure of the "teacher" arose - the one who accompanied the student to school and back, and was also a tutor. The concept of "pedagogy" ("pedagogy") is closer in content to the first status of a teacher. In its content, most of all that corresponds to the technical and technological components of the educational process.

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The teacher had to prepare the students for the movement along the Path of life, to help them climb this Path and to place pointing semantic landmarks. Confucius, for example, explained to his students: "Strive for the truth, hold on to virtue, rely on humanity, and amuse yourself with the liberal arts."

From the historical experience of the organization of education, several fundamental conclusions of universal significance can be drawn:

First: education is most effective in the forms of school organization. It, unlike home, contributes to the development of the communication potential of the emerging personality. Criticizing the principle of Betsky to exclude the family factor from education in order to more effectively implement socially and politically significant goals, V.O. Klyuchevsky wrote: "The family will never give up their educational work, they will not want to turn into a simple handicraft workshop that produces pedagogical and recruiting raw materials for the school and the barracks." It is necessary to develop education by improving the school form of its organization. It is diverse, which confirms its high functional and evolutionary potential;

second: the system-forming factor of the school form of education is the activity of the teacher. It is necessary to create conditions for his creativity on the basis of mutual understanding and joint work with students. The function of the administration is not to command teachers, but to build optimal conditions for organizing their professional work. The state, which is responsible for the development and security of the country, determines the core of the mission of education and the way in which educational institutions are organized: schools, auxiliary institutions. Criticizing the "pedagogical sins, logical errors and psychological oversights" of Betsky's school education reform program, Klyuchevsky explained that he was ready to forgive him everything for the consistency of "requirements that educators treat children" with meekness, courtesy and love ", they always kept a cheerful look with them and maintained in them "a cheerful spirit and a cheerful disposition." Where this is not there, there can now be no pedagogy, no school";

third: education is a source of personal knowledge necessary for the freedom of its creative activity in society, but the main task of education is to learn to reproduce and replenish existing scientific and cultural knowledge, that is, to teach to think within the framework of humanistic and democratic traditions. In the middle of the 19th century, R. Emerson bitterly stated: "The spirit of irreconcilable criticism is revealed in aspirations to reform the education system. The current system is accused of not caring about naturalness or truth. They complain that it does not involve learning practically necessary things. We comprehend the same words; ten or fifteen years they keep us locked up, while college and university follow

the school, and finally they let us out, having provided information that no one needs - we remember a lot of words, but we know absolutely nothing. The Romans considered useless everything that cannot be learned without sitting down at a desk. The English have an old rule: "Spend all summer in the fields, all winter in your office." By the way, Charles Darwin did just that before he discovered the laws of evolution. A hundred years later, B. Kaufman confirmed the danger of extremes in relation to knowledge. Finding a balance between the abstract and the utilitarian in knowledge relaying is not easy. There is only one way out: it is necessary to teach to think, then the student will be able to independently make the necessary-sufficient selection of knowledge. The power of knowledge is made when they go back to the forms of conceptual thinking of the mind through contradictions in the movement of the student's consciousness;

fourth: the basis of the organization of education should be cultural support for the development of the individual in school education. The history of the cultural formation of personality in school is based on mastering the development of national and universal cultures and ends with the formation of a culture of professional activity;

fifth: the presence of originality in the organization of school education in the West and East, South and North is essential in form, but not essential in its essence. As social progress progressed, formal differences were partially preserved, and the significance of their influence on content was minimized. The integration of educational activities has become a leading trend. It is a trend, since the universalization of education should not be carried out to the detriment of national interests;

sixth: competencies that characterize the quality of school preparation of students determine the particular manifestations of the personality, that is, they are an application, development, projections of the unitary quality of the personality. Personal competencies are conditionally real, they are simply the names of individual abilities of the individual, "noumena" in the interpretation of medieval "realists". The interpretation of competence in the spirit of the "nominalists", attempts to decompose the quality of the personality in them without a trace, are doomed to an inevitable fiasco. In the competence of the individual, in fact, they renamed what used to be the "professionally important qualities" of an employee;

seventh: a symbol of the movement of Russia before the steam locomotive was a trio of horses, specially harnessed. N.V. called her "Bird Troika". Gogol. The education movement is also carried out by a trio: culture, science, practice. The dynamics of their combination is quite stable. Culture is a guarantee of the quality of the individual; science is a tool for the effectiveness of professional activity of an individual's activity; practice is the most important guiding goal of

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the educational process. Education teaches a person to think, science organizes thinking, practice straightens it. The technology of educational activity is developed by pedagogy, a theory that combines philosophical understanding with the art of organizing the implementation of basic installations into a practical mass result. The mission of education is determined by professional scientific creativity and the political interests of the state. It is aimed at solving humanitarian, cultural and socio-economic problems of strengthening the democratic institutions of society. Moreover, professional analysis should dominate over bureaucratic innovations. Bureaucratic initiatives are dangerous for the improvement of education along its entire perimeter. The quality of education is measured by its effectiveness, efficiency - by the quality of an individual's education, the quality of an individual's education - by the activity of its participation in improving professional activities and developing social relations. The criteria for the quality of an individual's education are philanthropy, patriotism, democracy, social and business (professional) activity, the need to continue education. The economics of education is designed to financially ensure the quality of the organization of educational activities as a fundamental system-forming factor for the future of a single country and humanity as a whole. Just as a railway train acquires official status and begins to function only after it has been put on the main track, so a person becomes a person when he ascends the path of vocational education. Technical school, college, university put graduates on the Path of life. A (classic) railway track has two rails and a graduate relies on two components of his movement - his personal and professional acquisitions. A rational interpretation of what has been described reveals the concept of "socialization" - the embedding of the individual in the process of social movement. The school is a universal institution of socialization, and in order to in order for both sides to benefit from socialization - the individual and society, school education must be spiritual and practical. Any sustainable deviation from the spiritual and practical course of school education is fraught with serious costs both for the individual and for society. The virtuality of practice and spirituality formalizes them, they lose their real power in the matter of cultural and professional formation of the personality. In the technical aspect, the improvement of education is built into two related tasks: first, to optimize the ratio of education and training, taking into account the dominant position of education in order to preserve species identity; secondly, to update knowledge in order to increase the sustainability of the development of the species. The second task is realized in social generations. The very concept of "social generation" owes its relevance to the organization of the reproduction of the species through education. Education is a condition for the optimal adaptation of

a species to the environment of existence, and training is a "navigation mechanism" for inclusion in the universal system of relations between society and nature. Rationality is a specific human platform of education, the organization of which should be aimed at developing one's mental and moral base. In the evolution of rationality into the historically specific reality of "prudence", education is given a special factorial position. Rationality is a specific human platform of education, the organization of which should be aimed at developing one's mental and moral base. In the evolution of rationality into the historically specific specific reality of "prudence", education is given a special factorial position. Rationality is a specific human platform of education, the organization of which should be aimed at developing one's mental and moral base. In the evolution of rationality into the historically specific specific reality of "prudence", education is given a special factorial position.

In the development of all living things, the factor of complementarity operates, which gives the development the efficiency and stability of the state of movement. The essence of this factor connects the ability to act and the attitude towards it. The ability to think, including rationally, does not in itself create a definite direction of activity. A steam locomotive is an instrument of movement, and it was created that way, but in exceptional cases it can also be used as a steam generator, warm people, animals, maintain production conditions, which was done in the 1990s by responsible leaders, understanding rationality not as an advantage in thinking but as a way to do good. The rationality of homo sapiens is its ability to create a culture, without which social progress loses its human value.

According to the religious worldview, the rationality of a person is the embodiment of his likeness to the Creator. But even the Creator, possessing absolute possibilities, failed to give human rationality the universal power to create only good, to unite human rationality and the universality of good deeds. A "wise man" did not become a "wise man" at the same time. Therefore, there are two versions:

the first is that intelligence acts on its own; charity also exists separately. They are able to intersect privately;

second, there are two types of intelligence, reflecting the levels of human social progress. The rationality of homo sapiens is a platform for the continuation of its evolution, during which individual manifestations of the unity of rationality and good aspirations are transformed into a new type of human reality - prudence.

The "reasonable man" is being replaced by a "reasonable man", capable of solving those problems of development that turned out to be clearly beyond the strength of his predecessor. "Prudence" becomes a necessary feature of the species. Formalization of the

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content of the concept, as a rule, is associated with giving some convention to the content itself. But such a logical procedure contributes to the advancement of knowledge, so the technique is quite common. We will also use it to better understand the content of the concept of "prudence". Let us first recall that "prudence" finds its expression in the development of rationality.

The formula of "prudence" is triune, it includes the interaction of three links of a single action by nature: "knowledge of the truth", "truthfulness as a personal responsibility for knowing the truth in words and deeds", "sequence of activities to objectify true knowledge". The secret of "prudence" is simple, its implementation is difficult. "Prudence" is valid only on the scale of socially significant actions. This is a kind of analogue of "herd immunity". The difficulty in achieving such a result is due to contradictions in the relationship of two dialectical opposites - "single" and "general".

In society, this complexity is exacerbated by the unevenness of social progress and the associated disproportionate distribution of its products. That is why modern society needs the abstract intelligence of homo sapiens. In a single reality, the harmony of personal interest and social is achievable in any configuration of social relations. On a general scale, such coherence can be obtained only by changing the socio-economic basis that determines public consciousness. A natural basis for prudence has been formed. Changes are required in the mouths of social life - a transition from bourgeois-democratic egoism to social-democratic collectivism and participatory in the management of socially significant actions.

As a rule, thinking is analyzed as a tool for cognition, we tried to consider thinking as a tool for the development of consciousness, and, as a result, of the person himself.

General conclusion. The consciousness of modern man is defined as intelligent activity, and this corresponds to an abstract understanding of rationality. Our current rationality is largely potential, which is convincingly evidenced by the attitude of thinking towards opposites. We either do not appreciate them, or we consider them in the traditions of Kite's understanding as antinomies, that is, recognizing opposites, we do not rise to the realization of their dialectical unity. The dominant position in modern intelligence is still occupied by reason, whose

activity is limited to the separation of opposites, giving them the status of their own reality and analyzing the finiteness of their state. An explosion as an outstanding tool for analyzing objects of reality and managing within the finiteness of their existence by the behavior of homo sapiens. Reason is very conservative in solving the problem of turning an object into a subject of interaction, which makes reason a highly specialized way of cognition. It is more convenient for reason to show its abilities "here and now", to separate objects and subjects forever, to emphasize the finiteness of their reality. Perspective thinking, recognizing dialectical transitions, the unity of subjects and objects in development, aggravates the analytical ability of the mind. The modern rationality of thinking is therefore conditional and can only be recognized as an evolutionary stage with a necessity preceding the actual rationality of a "prudent person". Intelligence must open up and become the dominant state of consciousness. The history of rationality moves in the direction of its dialectical essence. Dialectical ability is embedded in the mind. It is necessary to improve the dialectics of thinking - the achievement in dialectical thinking of the unity of the form of thoughts, their actual content and expression in the will, which ensures the process of objectification of true knowledge, combining the understanding of existing reality in the context of systemic changes. In single terms, this unity has already been achieved. What is relevant now is not theoretical evidence, but the need to transform individual manifestations of the reality of rationality into universal achievements. A modern rational person will have to transition to thinking that subordinates the solution of development problems in a historical perspective. Then what seems utopian to us today will appear realistically possible, because the understanding of development will change. Thinking within the limits of the ultimate reality of objects will be replaced by an awareness of the change in the final states of things as a regularity of the dialectic of development. Thinking at the level of prudence creates real grounds for the identity of thinking and being. Apparently, the most effective social tool for the next evolution of a person from homo sapiens to a prudent person should be education, the effectiveness of which is directly dependent on the quality of politics and the will of politicians.

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Article



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KARAKALPAK BAKHSHIS AND SCHOOLS OF BAKHSHI ART

Abstract: This article talks about the life and work of Karakalpak bakhshis, as well as the schools of Karakalpak bakhshis, the Karakalpak school, and the epics performed by Karakalpak bakhshis.

Key words: Jiraw, bakhshi, misagan, note order, ashug, singar.

Language: English

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Introduction

In the field of arts of the Karakalpak people, the bakhshis are the people who have gained special respect for their rich music, singing, and performing arts, and they are the developers and spreaders of the art of bakhshi.

Main part

Among Karakalpak people, one of the masters of playing the dutar and singing is called "bakhshi". Bakhshi's performance of lyrical epics is widespread in the countries of Central Asia and Transcaucasia. In Karakalpak language the word "bakhshi", in Uzbeks and Turkmen "bakhshi", "singer" in Kazakh "singer", in Azerbaijan "ashug", in Georgian "misagan", "husan" in Armenian "husan" not only explain the similarity of the music in terms of character, but also show their closeness in performance art. Such affinities of the art of bakhshi give evidence of the wide spread of the deep roots of their multi-century economic and cultural ties. In Karakalpak music, the art of bakhshi is divided into several schools according to their ways of performance.

Doctors of philological sciences N.Daukaraev, K.Aimbetov divided the school of bakhshi into two groups: Musa and Suyeu schools. We have to say that there were bakhshis before them, but the names of most of them are not known. Eshbai, a legendary bakhshi from "Chagatay", whose name is mentioned

in the songs, lived in Khorezm long ago before Musa and Suyeu. He became widely known in the whole Khorezm region and the Uzbek, Karakalpak, and Turkmen people call him as their national bakhshi [1].

Eshbay sang together with Nurzhan and Atash...
Garipniyaz continued this after his death...

The fact that Eshbay was a contemporaneity with Nurzhan and Atash in the same period of time and their friendship can be reflected in the lines of the song called "Eshbay". According to the line "After his death, Garipniyaz continued singing" the tutor of Suyeu bakhshi Garipniyaz became a disciple of Eshbay and continued his path.

The scientist divided the schools of bakhshi into two groups due to the fact that Musa followed the way of his teacher Aqimbet and Suyeu with his tutor Garipniyaz and they developed the art of bakhshi and national culture with new styles and methods of performance. In fact, they were not only bakhshis, but they were powerful composers and enriched the music of the Karakalpak people. In the repertoires of Musa and Suyeu bakhshi schools, Although the names of songs and music in the repertoires of Musa and Suyeu bakhshi schools have commonalities, they are completely various and differ from each other.

The activity the bakhshi Musa has a different color, which is completely absorbed by the performance methods of a real Karakalpak bakhshi.

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The raised second Phrygian cadence is often intensified in his tunes. And in the music of the bakhshi Suyeu, the number of seconds does not increase significantly. The fact is that it depends on the individuality of each bakhshi. Even if there are bakhshis from the same school, it should not be interpreted that they do not change the details of that school and say whatever their teacher says. Even if a bakhshi himself recites one melody in the same way, it is certain that he repeats the same melody in the second place in different way than before.

In this situation, each bakhshi's performance skill, composition, taste, mastery of the repertoire, excellent mastery of playing the sounds depends on his improvisational approach.

One thing that stands out here is that each performer creates his repertoire based on the environment, looking at the demands of the majority of listeners, and adjusts them accordingly. For example, the bakhshi Shernazar lived near about Shimbay and recited in the Karakalpak style, while the bakhshi Zhuman did in Beruni and Turtkul and added their own style to the music, even if both of them recited the same school of art by the bakhshi Musa.

One of the last generations of Musa school Eszhan bakhshi and Shaniyaz bakhshi have big differences between the songs. The reason is that, despite the fact that they graduated from the school of Musa, Eszhan bakhshi sang like Musa bakhshi, while Shaniyaz bakhshi's singing was close to the way of Arzy bakhshi. Also, there are big differences in the performance of Zhapak bakhshi, Orinbay and Zhanabay bakhshis who descended from the school of Suyeu bakhshi. If Zhapak bakhshi sang in the real style of Suyeu bakhshi, it can be seen that the way of singing of Orinbay and Zhanabay bakhshi has been influenced by the local people, that is, the Aral region Uzbeks. In addition, in the repertoires of the Orinbay bakhshi had tunes in his repertoires, which we cannot in the repertoires of Japak bakhshi.

For example there are many melodies titled as: "Shirwani Qatar", "Shaiki shiwar", "Zerletme", "Molla Arman", "Saikal", etc. (It would be appropriate to mention that Orinbay and Zhanabay are famous bakhshis from Kungrat, they originated from Aral Uzbek people. Performance art, which has continued throughout the ages in Karakalpak music, has strengthened the connection between epic and drama.

Bakhshis do not tell the basic content of the epics, they make their narrations in music. In Karakalpak music, the tunes in singing epics play great role. That's why bakhshis performed "Garip lover", "Sayathan-Khamra", "Hurlika-Hamra", "Najep lover", "Yusup-Akhmed", etc. Lyrical epics of Nawayi, Makhtimkuli, Ajiniyaz, Berdak, Utesh, Omar and others are given to the additions of classical resins in terms of their artistic richness.

If we talk about the melodies of Karakalpak bakhshis, it is appropriate to mention the music of

bakhshis of neighboring people contributed to its development. Among Karakalpak bakhshis Japak bakhshi continued the style of the famous Turkmen bakhshi Suyeu, Musa and Esjan folloed the way of Aqimbet bakhshi. Edenbay bakhshi also had his progenies. One of the modern Karakalpak melodies known as "Kungrat" came from the melodies of the ancient Aral Uzbeks [2]. Karakalpak bakhshis had relations with neighboring Uzbek, Turkmen bakhshis, they helped each other, exchanged repertoires, celebrated weddings together. It is also worth noting the close connection with the bakhshis of Khorezm Uzbeks called "Aral" at the end of Amu Darya [2]. Most of the Uzbek bakhshis of Aral were tutored by the Turkmen chief Suyeu bakhshi. Adilbay, Kutim, Alliyar, Avez, Gurbek, Zhanabay, Orinbay were the most popular among the disciples of Suyeu bakhshi. These were the bakhshis who continued the art of Suyeu bakhshi.

Suyeu bakhshi, whose talent spread to the Khorezm valley, was the most famous bakhshi of the Turkmen people. He was also recognized as a famous bakhshi of other nations who lived in Khorezm. Suyev bakhshi came from the Bozachi region of the Shaudir clan of the Turkmens in the present-day Porsy region of the Tashavuz region. Suyeu bakhshi used to practice his art talent among the Karakalpak people. It was a tradition to call Suieu bakhshi to big weddings among the Karakalpak.

He lived during the period of Musa, the national bakhshi of Karakalpak people, and was in good relations with him. Together, they celebrated many weddings, respected each other, and exchanged repertoires. Another thing to be mentioned here is that our scientists Tazhigul Adambaeva, Kirikbai Bayniyazov, Asen Alimovlar confirm that Suyeu bakhshi was a disciple of karakalpak bakhshi Garipniyaz. Also, it is clearly stated that the melody and text of famous songs "Eshbay" and "My eyes" were written by Garipniyaz bakhshi.

The folk bakhshi of Karakalpak people Zhapak Shamuratov says that even in the last years of his life (1913-1914), Suyeu bakhshi came to Karakalpakstan and held big feasts in Iyshan city (Khalkabad) and Khozheli.

Academician A. N. Samoilovich also reported that in 1908, he listened to the songs of 58-year-old Suyeu bakhshi in Persian language. (A.N. Samoilovich. Report on a trip to Tashkent, Bukhara and Khiva in 1908). Suyeu bakhshi was also a teacher of Amet and Atazhan, famous bakhshis of Karakalpak people in Mangit. The famous bakhshi Zhapak Shamuratov was a disciple of Amet and Atazhan bakhshis, who learned from Suyeu bakhshi, so he fully learned the songs of Suyeu bakhshi from their teachers, mastered them, and became our famous bakhshi who contributed to Karakalpak music.

Suyeu bakhshi recited 12 chapter of the "Gorugli" epic by heart. In the legends of the Turkmen

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people, it is told that “When the Khan of Hiva called Suyeu bakhshi and made him to recite the Gorugli epic, comparing it to the published book of the epic, Suyeu bakhshi sang it correctly in front of the Khan.” There are many legends about Suyeu bakhshi among Karakalpak people. At one wedding, one of Karakalpak bakhshis asked Musa bakhshi to compete with Suyeu bakhshi. At the end of the wedding, when the question appeared, “Which shaman sang better?”, Suyeu bakhshi stood up and said, “Musa bakhshi did better than me, because he recited words only with dutar, and I gave the people the power of the sound not only with dutar, but also assistants with girjek and balaman, that's why Musa bakhshi sang well than me.”

Karakalpak bakhshis not only learned the art of bakhshi from the neighboring peoples, but also reworked and adapted their own repertoires, and additions to them. It was a tradition for bakhshis to train apprentices and pass on their art to future generation. They started to teach the student after

trying and choosing each method, and after the student started to learn how to sing, they followed him to parties. When the sorcerer clicked the words together, the disciple was next to his teacher, clicking the words on the floor and adding his words to the teacher. This is a big school in itself. The student tried to memorize the tune, to complete the melody with the dutar and to memorize it in the compound lines told by the teacher. The future bakhshi followed his master's footsteps for a long time, years passed, he learned words and music, got blessing from the master, became a bakhshi himself, and attained the rank of a bakhshi.

Conclusion

The disciple received a blessing from the teacher and passed the test in front of a large crowd. Only when the teacher considered that the disciple had fully learned his art, he allowed his disciple to practice witchcraft in front of the people. This tradition is preserved among our bakhshis even today.

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STUDYING THE STRUCTURE AND PROPERTIES OF CEMENT STONE WITH A COMPLEX OF MODIFYING ADDITIVES

Abstract: The article presents the results of studies on the influence of various additives on the water resistance of concrete, optimization was carried out, optimal values of additives were found, the microstructure of filled cement stone was also studied using X-ray phase analysis and electron microscopy. It follows from the X-ray phase study that the introduction of the superplasticizer additive reduces the content of portlandite in cement stone, which correlates with the results of thermal analysis, the results of the microstructure of cement stone modified by the introduction of polycarboxylate superplasticizer are represented by gel-like highly basic hydrosilicate phases, which is confirmed by the data of the X-ray microanalyzer.

Key words: cement, silica, polycarboxylate, superplasticizer, hydrophobizer, cement stone, modifying hydrophobizer, concrete, X-ray phase analysis, microstructure.

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Introduction

Waterproof concrete is used to build structures, most of which are exposed to moisture. This can be a screed in the bathroom, the facade of a building, a foundation or a hydraulic structure. In each case, different compositions are used, the main difference here is water resistance. Under adverse conditions of hardening and operation of the Republic of Karakalpakstan, the water resistance of the concrete mixture plays a key role in its further physical, mechanical and operational performance [1].

The purpose of the study is to study the structure and properties of cement stone with a complex of modifying additives.

This article presents the results of studies of the structure and properties of cement stone. Cement stone with microsilica and polycarboxylate additives.

Samples of cement stone, without aggregates, were made for the subsequent study of their structure using physicochemical methods of analysis. To conduct research on the influence of modifiers, a three-factor experimental plan was implemented, in which the following were taken as significant factors: X_1 - dosage of polycarboxylate superplasticizer, variable in quantity from 0 to 1,2%, and X_2 - dosage of micro silica, in an amount from 0 to 12%, based on the mass of cement. X_3 - modifying water repellent from 0,01-0,1.

During the experiment, the following characteristics of the cement paste were evaluated:

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W/A (water/astringent) (the ratio of the mass of water to the mass of cement with micro silica) and setting time. Cement stone samples were tested for compressive strength and water absorption.

Fragments were taken from these samples for physicochemical studies of the structure of hydrated phases. The results of the conducted studies are presented in table 1 [2].

Table 1. Variable factors and properties of cement paste and stone

№	X ₁ Content SP, %	X ₂ Content MS, %	X ₃ Content MH, %	W/A	Setting time, min.		Compressive strength, R _{str} , MPa
					beg.	end	28-days
1	+1	+1	+1	0,25	50	120	38,5
2	-1	+1	+1		75	165	40,5
3	+1	-1	+1		85	190	40,0
4	-1	-1	+1		72	165	35,0
5	+1	+1	-1		120	161	34,0
6	-1	+1	-1		125	175	50,5
7	+1	-1	-1		75	205	45,0
8	-1	-1	-1		84	185	40,0
9	0	0	-1		72	190	51,5
10	0	0	+1		65	180	50,5
11	0	-1	0		55	135	49,5
12	0	+1	0		50	125	47,5
13	+1	0	0		60	130	45,5
14	-1	0	0		65	130	48,5
15	0	0	0		50	130	52,0

Parameters of the regression equation, adequacy and equal accuracy of the obtained mathematical model, at a significance level of 0.05.

Since micro silica (MS) has pozzolanic properties and interacts with secondary calcium hydroxide released during C₃S hydration, it was taken as a binder component and the water demand was estimated not by water-cement, but by water-binding ratio.

The initial water demand of a cement paste without additives does not change or decreases with the proportional introduction of modifier additives, which balances the multidirectional change in water demand. The optimal content of MS at a dosage of 8-10% by weight of cement increases the value of C/MS, which is compensated by the introduction of polycarboxylate in an amount of 0.5-0.75% by weight of cement, and with a higher content of superplasticizer (SP), water demand decreases with C/MS = 0.25 to C/MS = 0.23 [3].

The polycarboxylate superplasticizer, having surface-active properties, slows down the onset of setting of the cement paste, while microsilica does not affect this characteristic. The joint introduction of additives in optimal amounts causes a more intense delay in the onset of setting, compared with individual modifiers. The end of setting of the cement paste, with the joint introduction of the optimal amount of additives, slows down by 25–30% of the duration of the end of setting of the composition without

additives. This indicator should be taken into account in the heat and moisture treatment of modified concrete, since with an increase in setting time, it is necessary to lengthen the preliminary holding of reinforced concrete products.

Slowing down the start of setting of the cement paste for the concrete mixture is a positive thing - this increases the persistence of its workability and increases the range of transportation.

The maximum value of compressive strength after a day of normal hardening of samples of cubes with an edge of 20 mm was established at a content of SP within 0.6%, MS 8%, modified water repellent (MH) - 0.05%. The increased content of modifier additives slows down the set of daily strength, despite water reduction, that is, at the daily age, the set of strength is inhibited mainly due to the presence of a surface-active additive in the composition of the samples.

At the age of three days, the set of strength is determined by water reduction - the greater the dosage of the joint venture, the greater the compressive strength. The addition of microsilica increases the water demand of the mixture during the manufacture of samples, which causes a decrease in strength with the introduction of a complex additive.

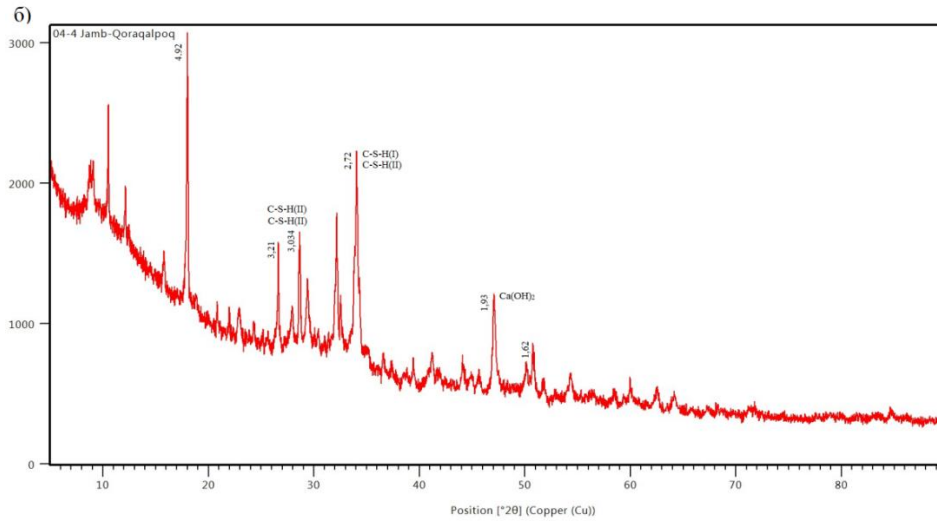
At 28 days of normal hardening, the pozzolanic microsilica additive contributes more actively to the increase in strength, both due to the greater degree of alite hydration and due to the formation of gel-like

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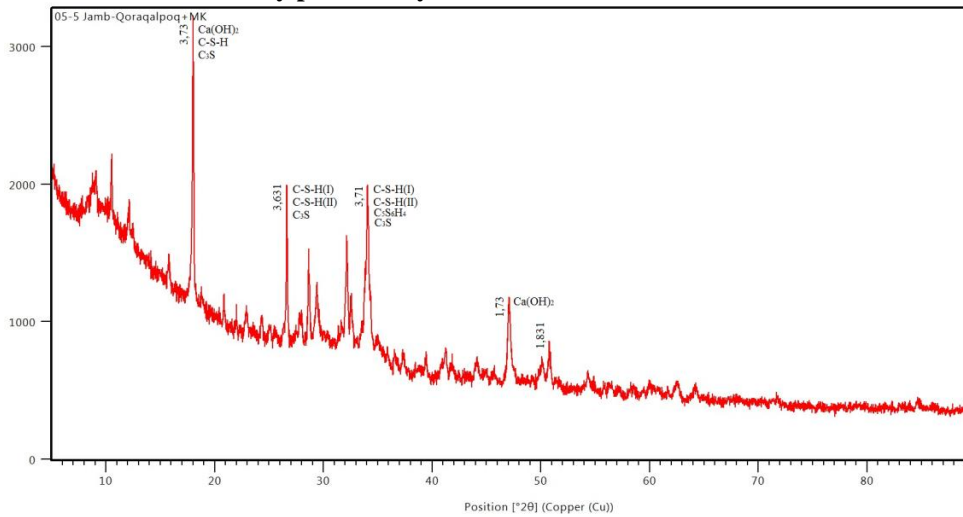
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hydrosilicates, of the C-S-H(I) type. Such an effect of microsilica is especially characteristic at the optimal content of modifier additives, in which the

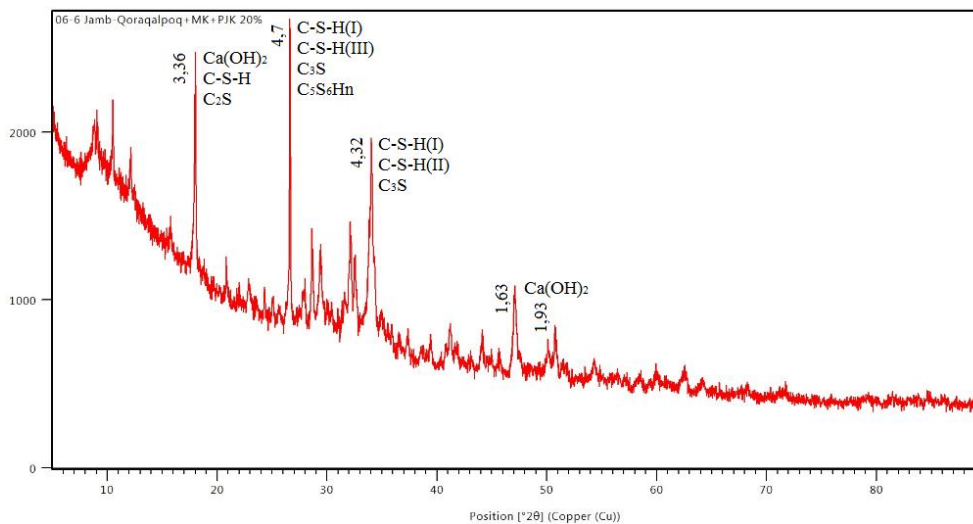
introduction of MS to a lesser extent affects the strength of the cement stone.



Data of X-ray phase analysis of cement stone without additives.



Data of X-ray phase analysis of cement stone +MS

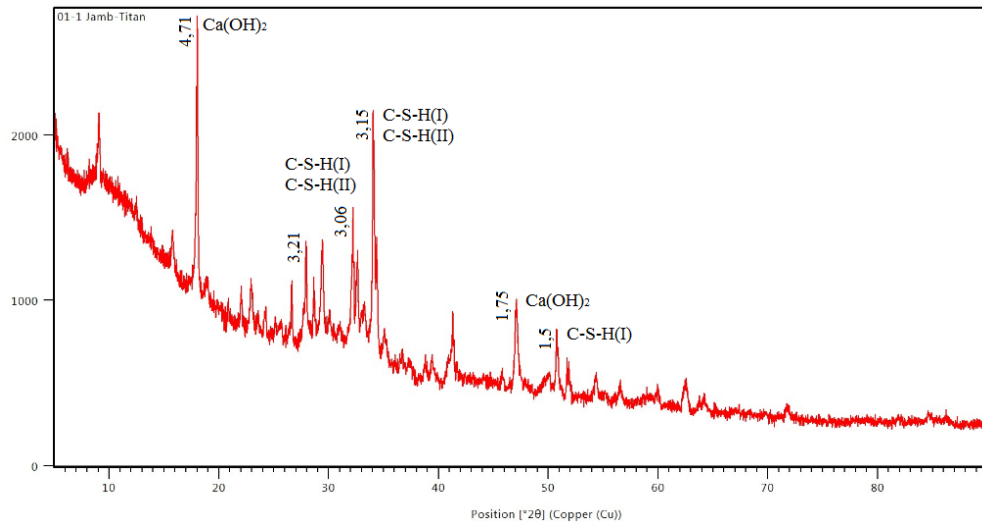


Data of X-ray phase analysis of cement stone SP+ MS + MH

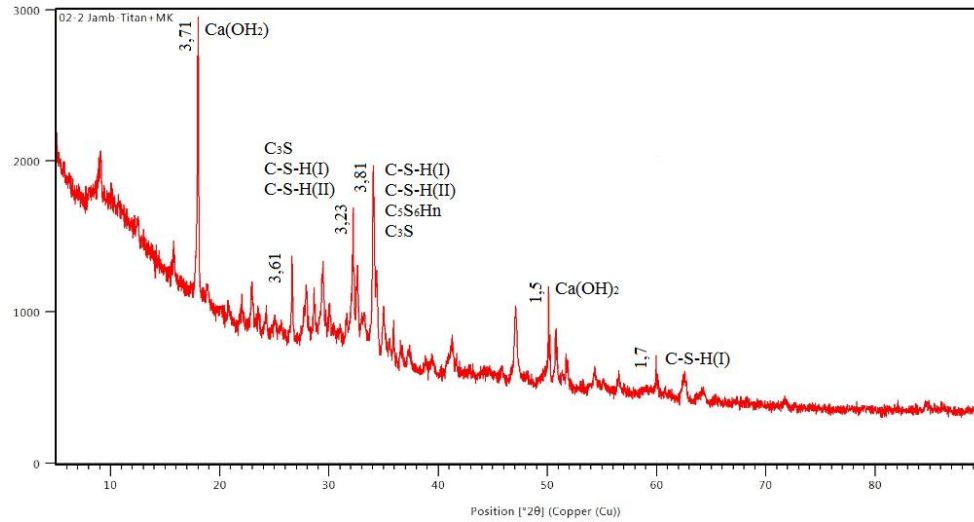
Fig.1. Data of X-ray phase analysis of Portland cement produced at the Karakalpak plant.

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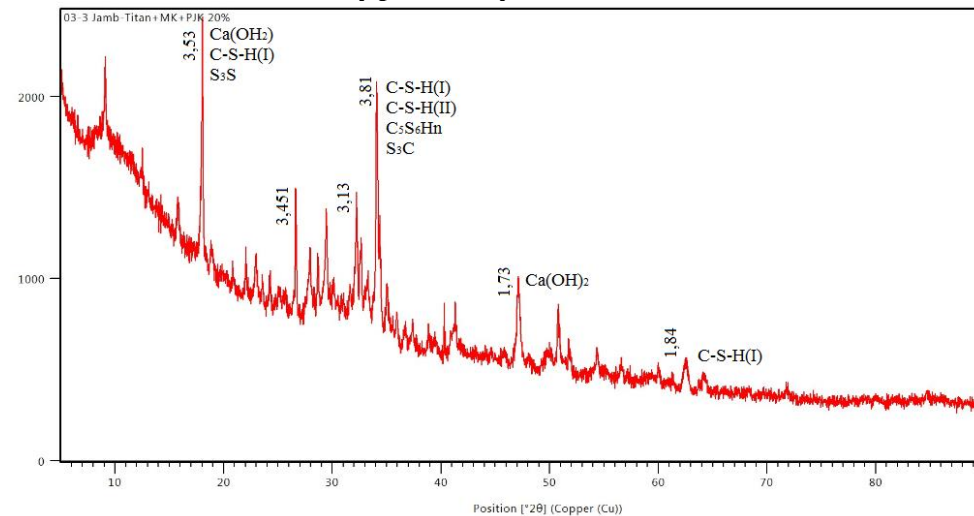
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JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350



Data of X-ray phase analysis of cement stone without additives.



Data of X-ray phase analysis of cement stone +MS



Data of X-ray phase analysis of cement stone SP + MS + MH

Fig.2. Data of X-ray phase analysis of Portland cement produced at the plant "Titan".

Micro silica additive interacts with portlandite in the cement stone structure, promoting the formation

of the C-S-H(I) phase; this reaction proceeds most intensively without the addition of SP. The

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polycarboxylate additive also reduces the content of portlandite in the cement stone due to complexation with calcium ions, but at the same time reduces the W/A and slows down the degree of cement hydration [4-6]. The maximum decrease in portlandite in cement stone, with the joint introduction of the optimal amount of SP and MS, MH is due to the fact that such a decrease in the amount of $\text{Ca}(\text{OH})_2$ does not lead to a deterioration in the protective properties of concrete in relation to steel reinforcement. It is known from literary sources that until all the portlandite in the cement stone has reacted, concrete does not lose its protective properties in relation to steel reinforcement [5-6]. The obtained data on the amount of $\text{Ca}(\text{OH})_2$ in the cement stone are confirmed by H. Taylor, who studied the structure of the cement stone modified with micro silica at low C/MS values at different ages [7].

According to the authors, micro silica, interacting with portlandite, contributes to the hydration of alite, which leads to an increase in the degree of hydration from 67% to 92%. With the introduction of a superplasticizer additive, the hydration of alit slows down to 63%, and the joint introduction of SP with active pozzolana levels this effect and increases the degree of hydration to 84%. That is, this complex of additives exhibits the properties of a cement hardening accelerator.

The kinetics of cement stone strength increase and strength at a certain age are a function of the phase composition of cement hydrate neoplasms.

Radiographs of cement stone modified with various additives at the age of 28 days are shown in Figures 1-2.

It follows from the X-ray phase study that the introduction of the SP additive reduces the content of portlandite in the cement stone, which correlates with the results of thermal analysis. The predominant hydrosilicate phase of cement stone with SP is a highly basic weakly crystallized phase of the C-S-H(II) type. The remaining hydrate phases are amorphous.

Modified with the addition of silica, cement stone is formed mainly from low-base hydrosilicates.

Joint introduction of plasticizing and pozzolan additives –0.8– 1% SP and 8-12% MK, and MG-0.05% contribute to the formation of a small amount of $\text{Ca}(\text{OH})_2$ in cement stone, and hydrosilicates are mainly represented by the C-S-H(I) phase, reflections of calcium hydroaluminates, calcium hydrosulfoaluminates and non-hydrated residues of

clinker minerals are also recorded. Complex additive SP+MS+MH contributes to the formation of gel-like hydrosilicate phases, of varying degrees of basicity, and the degree of their amorphization is higher than with the separate use of additives.

To clarify the available data, using a scanning electron microscope with an X-ray microanalyzer, studies of the structure of cement stone with various additives were carried out.

A photo of the microstructure of cement stone is shown in Figure 3-4.

Well-formed $\text{Ca}(\text{OH})_2$ crystals, weakly crystallized masses of calcium hydrosilicates, type C-S-H(II), which, according to the X-ray microanalyzer, have increased basicity - $C/S \geq 1.5$, and areas of gel-like fine crystalline mass are visible on the chip surface.

Cement stone modified with the addition of MS (see Figure 1-2) is characterized by a dense surface with a cancerous-splintery fracture, a free calcium hydroxide content of 6.5% and consists mainly of low-base calcium hydrosilicates – C-S-H(I) phase.

The microstructure of the cement stone modified by the introduction of a polycarboxylate superplasticizer is represented by gel-like highly basic hydrosilicate phases of type C-S-H(II) with $C/S \geq 1.5$, which is confirmed by the data of an X-ray microanalyzer.

Calcium hydroxide is distributed in cement stone in the form of small areas, in most cases, located between the hydrosilicate components.

Areas of weakly crystallized gel-like C-S-H(I) phase with a ratio of $C/S = 1.1- 1.3$ are visible on the surface of the cement stone chip (see Figure 14) modified with additives of SP, MS, MH, and individual inclusions of calcium hydroxide are observed, with a total content of no more than 5%.

With the introduction of additives SP + MS +MH the structure of cement stone is formed mainly from weakly crystallized hydrate phases of lamellar form, type C-S-H(I), which leads to an increase in its density and strength.

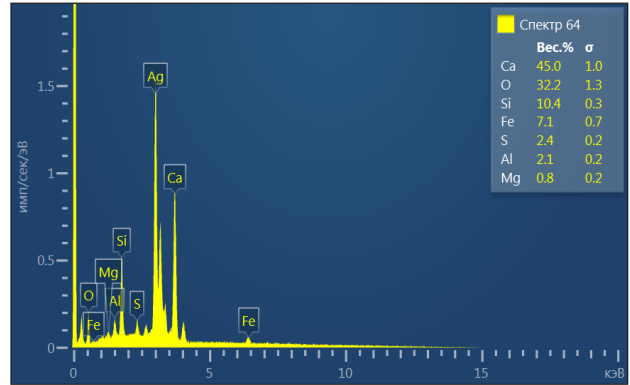
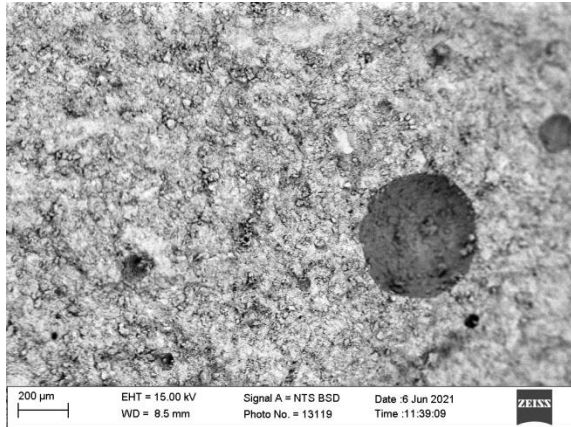
The specific surface area of cement stone samples (see Figure 3-4) was tested at the age of 28 days using the Brunauer-Emmett-Teller method. It is established that the additives SP + MS+MH contribute to an increase in the specific surface area of hydration products, respectively, a greater degree of amorphization of the structure.

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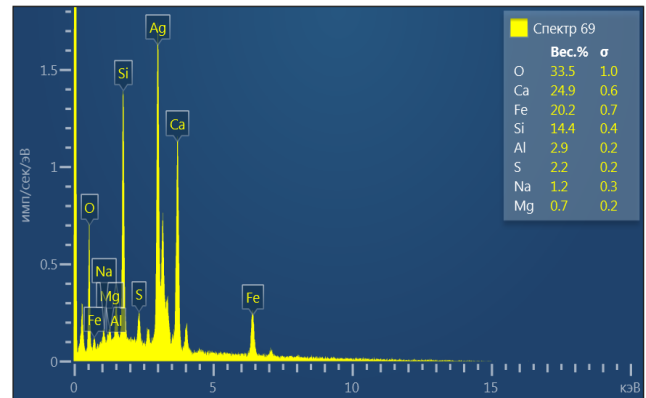
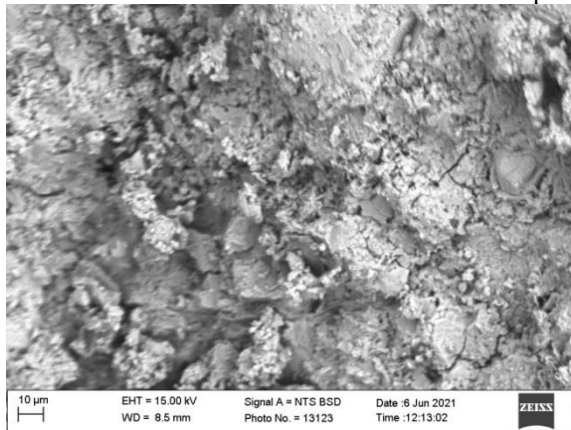
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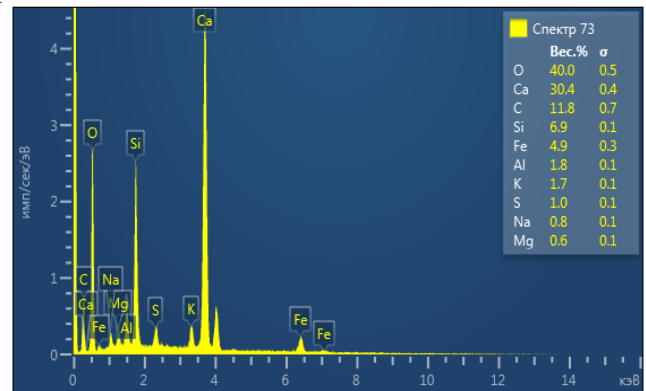
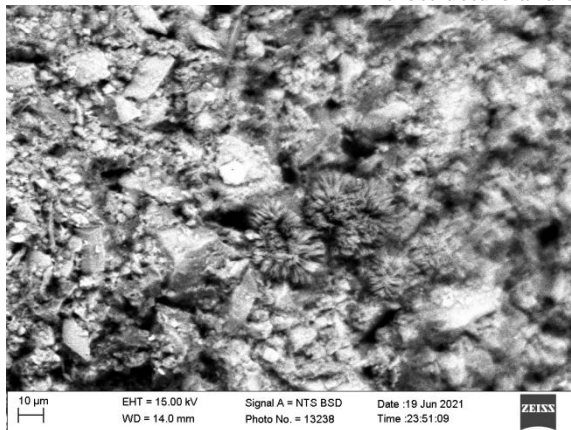
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Microstructure and composition of cement stone without additives.



Microstructure and composition of cement stone MS



Microstructure and composition of cement stone SP+MS+MH

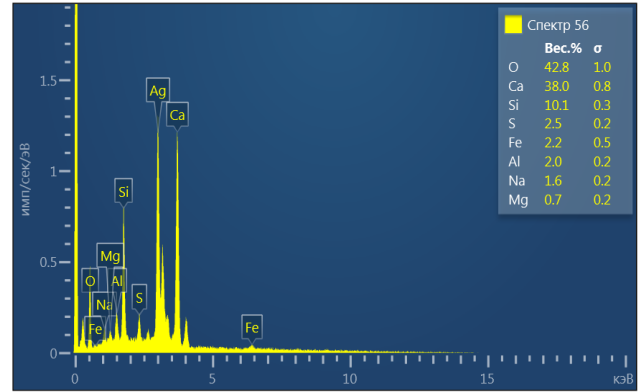
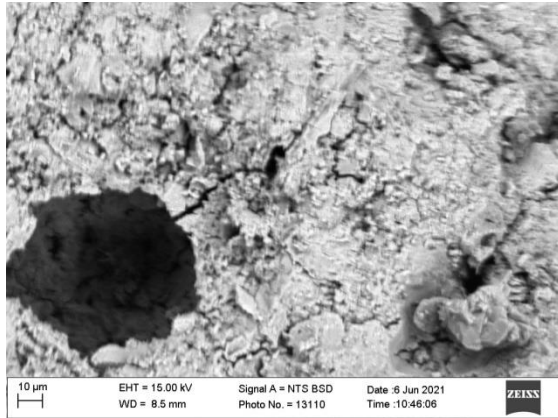
Fig.3. Data on the microstructure and composition of Portland cement produced at the Karakalpak plant.

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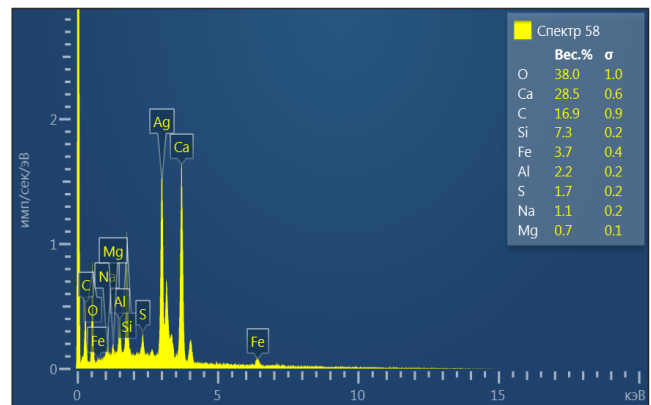
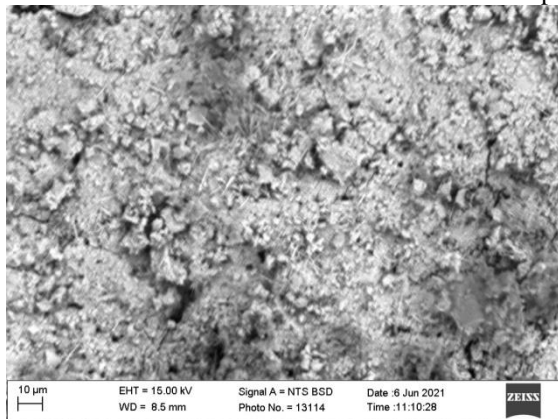
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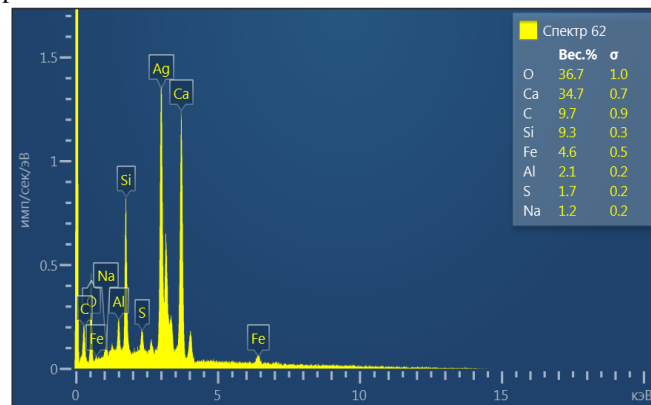
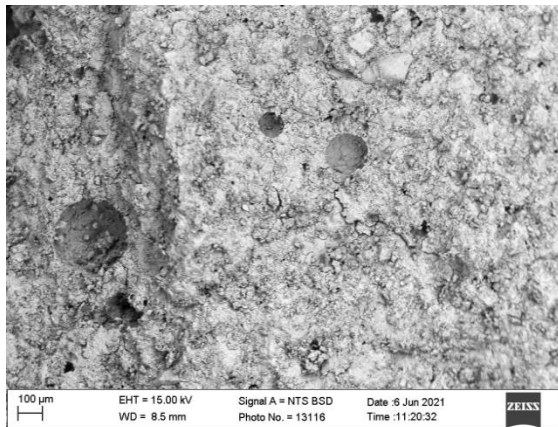
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 OAJI (USA) = 0.350



Microstructure and composition of cement stone without additives



Microstructure and composition of cement stone MS



Microstructure and composition of cement stone SP+MS+MH

Fig.4. Data on the microstructure and composition of Portland cement produced at the Titan plant.

Modifier additives, when co-injected into cement stone, reduce micro- and macroporosity to 16-17% with an increase in dosage, and the joint venture has a greater effect due to water reduction. Thus, according to the totality of all parameters, it was found that the modifying effect of each of the additives separately is not enough. The maximum effect, expressed in the directed formation of weakly crystallized low-base calcium hydrosilicates, with a minimum amount of portlandite of about 5%, is achieved with the combined use of additives at a dosage of 1% SP, 8-12% MS, 0.05% MH [6-8].

Conclusion

Modifier additives, when co-injected into cement stone, reduce micro- and macroporosity to 16-17% with an increase in dosage, and the joint venture has a greater effect due to water reduction. Thus, according to the totality of all parameters, it was found that the modifying effect of each of the additives separately is not enough. The maximum effect, expressed in the directed formation of weakly crystallized low-base calcium hydrosilicates, with a minimum amount of portlandite of about 5%, is achieved with the combined use of additives at a dosage of 1% SP, 8-12% MS, 0.05% MH [7-10].

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Article



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BASICS OF OIL FIELDS DEVELOPMENT

Abstract: The article discusses the basics of complex development of oil fields for which it is necessary to study their geological features, hydrodynamic calculations and economic justification. As well as the analysis of various methods of grid development during the operation of deposits under different operating modes.

The necessary satisfaction of the selected objects for the development of the requirements for the most complete and rational extraction of oil from the reservoir is considered.

This work can be used to develop a field in order to ensure a given level of oil production at minimal costs and high oil recovery, as well as to establish a rational system for developing a deposit by constructing and feasibility analysis of a large number of very different well placement schemes and development options.

Key words: depletion, flooding, development grid, viscosity, baseline horizon, volume coefficient, contour, oil capacity, oil fields, horizon, hydrodynamic method.

Language: English

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Introduction

Under the rational development of an oil field, we mean such a development in which the field is drilled out with the minimum permissible number of wells, ensuring specified rates obtaining of oil production, high final oil recovery with the lowest possible capital investments and the minimum cost of oil.

For the rational development of the field are important right choice and justification of the allocation of production facilities.

Usually, an operational object is called that part of an oil reservoir that is allocated for drilling and operation with an independent grid of production and injection wells.

Allocation of production facilities - an integral part of the design of rational development of oil fields - must be conducted in a comprehensive manner based on the study of geological features of field, hydrodynamic calculations and economic justification. In this case, it is necessary that the selected object meets the requirements of the most

complete and rational extraction of oil from the reservoir.

Geological field conditions for the selection of facilities can be formulated as follows [1].

1. A production facility must contain sufficient oil reserves for its cost-effective extraction with an independent well pattern.

2. A production facility can be one powerful or several smaller oil layers, separated over a large area from the higher and lower sediments by a pack of impermeable rocks.

3. A production facility must have an adequate effective capacity, the value of which is determined by economic profitability.

4. Formations with the same lithological composition and approximately the same permeability and porosity should be combined into one production facility.

5. One object should include formations containing oil, with identical or similar physicochemical properties and oil saturation of about the same area.

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6. Oil-bearing layers combined into one object should be characterized by close values of the reduced reservoir pressure.

When considering operating conditions, it is necessary to take into account the proposed methods of stimulation of the formation [2].

If a geological deposit section contains a large number of oil reservoirs, they can be grouped into several production facilities, among which mark the base horizon and return objects.

Basic horizon necessarily is high-yield, having a primary economic importance, lies at a depth that is available for mass production wells drilling at the present level of technological development [3].

All overlying oil-bearing layers are divided according to their importance:

- 1) for objects of self-development; they can be developed with the reference horizon at the same time;
- 2) to objects of return; these include low-yield layers, the development of which is carried out by returning wells after depletion or watering them in the underlying layers.

Depending on the geological structure of productive layers, the field is drilled out along a uniform grid (according to some correct geometric scheme), in rows (batteries) or unsystematic (from a geometric point of view). A uniform grid can be triangular (or hexagonal at the same time) and square. In oil fields, when using a uniform grid, a triangular grid is used, for which a relation between the conditional recharge area f (in hectares) located per well and the distance between the wells y (in meters) is expressed by the ratio:

$$y=1,0\sqrt{f}.$$

In the US oil fields, a square grid is usually used, which is explained by the convenience of placing wells along the boundaries of individual oil areas, which, as a rule, have a square shape [4].

With a square grid, the dependence of the conditional feeding area of one well f_1 (in hectares) on the distance between the wells y_1 (in meters) can be expressed by the relation

$$y_1=\sqrt{f_1}$$

Uniform solid grid of wells is used in deposits development with a fixed cone of oil-bearing capacity (deposits isolated from the pressure of water are massive "waterfowl" deposits with the pressure of bottom waters.

The distance between the wells is chosen depending on the geological and technical conditions and economic considerations.

On oil deposits with pressure regimes (moving oil-bearing contours), wells are arranged in rows parallel to the moving contours: in the gas-driven regime - parallel to the gas-bearing contour, and in the water-driven regime - to the water-bearing contour [5].

Distance between the rows of wells for each individual reservoir may be constant or vary from row to row.

Distance between wells in a row may also be the same for all rows or different for each row. These distances are established when drawing up a reservoir development project.

An important indicator is an oil extraction rate - total oil production from the field for a certain period of time (day, month, year). For a given number of wells drilled for each specific reservoir, their average flow rates, and therefore recurrent production can be very different and depend on the established operating mode of each well. In turn, the operating modes of each well, and the entire field as a whole may vary over time depending on changes in geological and technical factors, and the energy field factors.

Natural conditions that determine the reservoir energy reserve in the reservoir cannot always ensure high rates of oil extraction from it due to the rapid decrease in reservoir pressure. For improvement of reservoir development conditions, as a rule, an artificial pressure regime is created, which is achieved by injecting water or gas into the reservoir to maintain a reservoir pressure at a high level [6, 7, 8].

When developing oil deposits using methods of artificial stimulation of reservoirs, sparse wells are usually used with a drainage area per well of 12-60 hectares or more, depending on the geological and physical conditions of the deposit.

Design system of each oil reservoir can be very different in both: grid placement of wells, the order and pace of drilling area and in terms of fluid extraction. In addition, an oil reservoir can be developed with or without artificial stimulation techniques.

As in nature there are a wide variety of oil deposits in size and power, bedding depth, geological and physical properties of oil-containing rocks and characteristics of the oil, content in gas and water formation, the general recipe for the selection of oil fields development systems can not be given. A purely individual approach should be applied to each deposit so that the development is the most rational and efficient, while observing the rules for the protection of subsoil.

Design development of oil deposits lies in the selection of this option, which would satisfy the requirements described earlier. Therefore, when establishing a rational development system, they are guided by following sequences:

- a) determining the initial geological and physical data;
- b) establishing of technical indicators for a particular reservoir development system by using hydrodynamic calculations;
- c) assessment of the economic efficiency of various development options;

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d) selection of the most rational development option based on a comparison of geological and technical and economic indicators.

Geological exploration of the field begins with the drilling of the first wells on it. General geological characteristics of the field are determined, its stratigraphy and tectonics are established, oil-bearing, gas-bearing and aquifers are identified, a connection is established between them, as well as between individual layers within one stratigraphic horizon, and operational objects are identified.

Characteristics of rocks (porosity, permeability, etc.), their oil and water saturation, gas content in oil, quality of oil and its properties in reservoir conditions (saturation pressure, volumetric coefficient, viscosity, etc.), characteristics of formation waters are determined for each object [9,10].

During a trial operation of exploration wells, reservoir pressure and well productivity are determined, the energy characteristics of the reservoirs and their modes are studied.

During exploration drilling, oil deposits size and configuration, oil-bearing contours, the position of oil-water and gas-oil contacts, the thickness of the layers in different zones are determined.

Based on obtained data, geological reserves of oil and gas are calculated and the commercial recoverable reserves are determined.

After geological and physical data accumulation on a field and determination of oil reserves, a procedure for the individual production facilities development is established and the design of the development of its individual horizons and deposits begins.

The main objectives of the design development oil deposits are as follows:

1) determination of a rational allocation pattern of production and injection wells and the procedure for their commissioning;

2) determination of production rates of wells at various stages of development, as well as the dynamics of changes in the current production of oil and associated water and gas as a whole for the reservoir;

3) determination of the operating time of individual groups of wells, as well as the full development period of the reservoir; identification of characteristic features of the advancement of the oil-water or oil-gas interface.

To solve the problem immediately by direct is not possible, since there is no method to directly determine the number of wells, their solutions scheme, procedure and operation of wells, providing a predetermined level of oil production at minimum cost and a high oil recovery. Therefore, it is possible to establish a rational system for the development of a deposit only through the construction and technical and economic analysis of a large number of very

different well placement schemes and development options.

For each option of allocation wells in the area, hydrodynamic calculations are conducted to determine the current oil production from the reservoir, its change in time due to watering of the wells, the development period, etc.

In order to simplify the design of the development of oil deposits, the following are used:

1) physical parameters averaging of the reservoir according to a limited number of core studies (porosity, permeability, oil or water saturation, etc.);

2) reduction of the problem to the flat problem of filtration theory;

3) reduction of the reservoir configuration to a more correct geometric shape (schematization).

Calculating pressures in formations with large dip angles, reduced pressures are used.

A physical meaning of reduced pressures introduction is that an inclined layer is replaced by a horizontal one, an initial pressure in which is the same everywhere and in which, therefore, liquid and gas movement can arise only after the violation of this pressure constancy.

Hydrodynamic calculation methods basis is to identify a quantitative relation between well flow rates and pressure in them, in determining rates and timing of the formation fluid movement depending on the form of the reservoir, the parameters of the productive layer, oil and water viscosity, the number of relative positions of wells. Calculation formulas for hydrodynamic calculations are based on the basic laws of fluid filtration in porous media, the laws of interaction of individual wells in the process of their joint work [11].

Conducting calculations, resources of natural reservoir energy are taken into account, and, if necessary, a replenishment of this energy from the outside is provided.

In most cases, the natural reservoir energy supplies are limited. Therefore, modern technology for the development of oil fields provides for the use of artificial methods of stimulating the reservoir to replenish reservoir energy consumed in the development of oil reservoirs [12].

At present, processes of artificial influence on oil reservoirs, theoretically developed, are the main element in modern systems for the development of oil fields. Therefore, all hydrodynamic calculations of the main development parameters provide for the use of reservoir pressure maintenance methods.

At the same time, number and system of placement of injection wells, volume and pressure of liquid or gas injected into a layer are established.

Because of hydrodynamic calculations, which are additionally checked on electric reservoir models, a number of options are obtained for reservoir development with different technical indicators: a different number of wells in the area, different rates of

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oil extraction from the reservoir, different development periods, etc.

For each development option, the volume of capital investments and operating costs is determined, the cost of oil is identified, and production per worker

is established. As a result of economic calculations, a relation is determined between labor cost, metal, capital investments, on the one hand, and number of wells in the area and the volume of current and total oil production, on the other.

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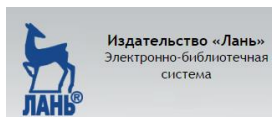
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