

## Factors to ensure sustainable innovation development in the context of rational environmental management

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### Abstract

*Complex self-governing socio-economic systems (civil groups of territories) have been developing on the basis of their natural resources and therefore have a pronounced production orientation linked to the peculiarities of the mineral and raw material base of the territories, the corresponding structuredness of the production structures elements and location in certain space boundaries, community and consumer facilities. On the contrary, social and consumption spheres are tending to the unification of consumption standards no matter where they are located and which industry they are formed around. Geographical, climatic, national and other features have an effect on the latter, but in the conditions of a developing civilization, the degree of the above features' influence on individual consumption standard decreases: in any place a person needs to be provided with good housing, energy, information, transportation, etc.*

*Forming awareness of a new consumption standard allows designing a new production structure, finding the possibility of balancing consumption volumes between structures competing in their own interests that form the elemental basis of socio-economic model which disposes its elements within larger space boundaries. The equilibrium between consumption standards and production volumes of the structures that consume them is one of the factors for sustainable functioning of socio-economic models.*

*There exist a number of models for assessing sustainable development, but their analysis shows that most of them focus primarily on one or two of three aspects of sustainability, and every subsequent model appears to be a supplement or a derivative of the previous one. At the same time, sustainable development is always considered as something more than a simple aggregation of its main parts; these are also interrelations that arise between them.*

*The goal of the article is to find a measuring apparatus for assessing the sustainable development of the world community countries, which would be relevant to the modern paradigm of human development and new view of sustainability.*

**Key words:** *socio-economic systems, energy efficiency, environmental management, development strategy, efficiency.*

## **2. Problem statement: the object of research and its technological audit.**

The object of research is complex self-regulating socio-economic systems of mesolevel as a complex multi-level and multifaceted phenomenon in which elements of social, economic, legal and psychological space are organically interwoven.

Today, the development of socio-economic systems is increasingly dependent on the quality of human capital, the state of the national innovation system as well as on the degree of high technologies application in manufacturing. The newly created value is determined not so much by physical but by intellectual resources, knowledge put into new products, services and forms of interaction with consumers.

Changes that occurred in the development of productive forces, management systems, production processes, the spiritual life of society, have been influencing the development of entrepreneurship and its reflection in the minds of people.

It is necessary to consider what socio-economic and socio-cultural factors have determined entrepreneurship development and its motivation in Ukraine. Analysis of the socio-cultural characteristics and peculiarities of our mentality is likely to throw light on the causes of so difficult revival of domestic entrepreneurship.

At present, it is reasonable to talk about economic, cultural, historical, spiritual-rational and individual-personal prerequisites of entrepreneurship. It is necessary to dwell upon the spiritual-rational and individual-personal factors.

Speaking about spiritual and rational prerequisites of entrepreneurship, first of all, it should be mentioned that entrepreneurship as a social institution and form of activity is based on the rational-capitalist way of managing inherent to industrial society. The main spiritual prerequisite of activity is rational attitude to reality oriented to deriving one or another benefit.

Any resource used by an organization must be in the state that provides its greatest payoff for business. With regard to tangible assets - the quantitative composition and qualitative state of the elements of the company's basic and working capital - this statement is taken for granted. Unfortunately, human resources are often treated differently. It is believed that in order to maintain staff performance efficiency it is sufficient to use various forms of incentive and properly assess performance results. Personnel interested in work will independently maintain their workforce at the level required by the business. However, now with good reason we can say that this is not enough. With a dynamically changing external and internal environment of the company, the task of constant adaptation to rapidly changing conditions and requirements for maintaining business competitiveness is increasingly coming to the forefront when working with personnel.

By personnel adaptation, we mean a process that ensures maximum disclosure and bringing the level of employee competence to the corporate standard, as well as maintaining it at the required level under changing conditions.

In essence, we are speaking about a large-scale project of cause-and-effect studies that can bring to a new qualitative level, the result of which should be the construction, on the basis of innovative developments, of a new intensive socio-economic development of society that ensures competitive stability in the global information world.

Naturally, this will require overcoming the passive trends in innovation and investment sphere that are observed in the national economy: the share of own funds in investments, including used profit, is below 7%, without long-term investments in fixed capital, and the absolute absence of scientific research investments.

There arise almost a thousand of "why?" questions: what triggered the search for new information? Are these searches and their support possible? What guarantees the manufacturing application of new developments?

Most innovations and their essence appear to fit into the innovation process, which over time becomes an integral part of reproduction, because all this does not become or is not limited to a local change in the conditions and results of production when introducing primary innovations. This process penetrates deep into the entire economic space.

Thus, based on the structure of the modern innovation process and its functional role in the complex production and economic system of innovative development, even of a single socio-economic system (such as a region, industry, corporation) the process involved turns out to be the

dynamics of the totality of reproductive forms and their relationships, the development of their reproduction. This phenomenon is exclusively multifaceted and organically connected with the functioning of the whole innovation process, and not of just individual innovations.

Historically, scientists have proved that the resource base (natural or created by man as a bioenergy-informational entity) of complex self-governing socio-economic systems is represented by four of their types [5, 6]:

- firstly, these are natural material and energy resources, which constitute a material basis of the models constructed by man;
- secondly, the second resource of socio-economic models is a technological resource represented by tools;
- the third resource is represented by reflected in the human mind information base on the properties of the environment, the amount of man's knowledge;
- the fourth resource is the resource of needs, the driving force of human interaction with the environment.

When interacting with the environment, a person creates spheres of protection that shield him from the effects of this environment, which are structures of man-made negentropes. The volume of these negentropes is constantly increasing. Their growth is the result of the process of human labor it is customary in economic theory to call it a surplus product, and its assessment is carried out with the help of value, the amount of labor in the products of labor, and finds its expression in monetary form. But what labor is without using the knowledge of physics is impossible to explain, which economics just does not want to do, having isolated itself from the exact sciences, having gone into subjective abstractions. And since it is impossible to explain labor from the standpoint of physical laws, then it is impossible to measure its quantity using physical meters.

One example of people interaction in this direction is the exchange of the results of their work, which are a manifestation of their knowledge of the environment. The exchange of knowledge about the properties of the environment between people living at one point on the planet, with those living at another point on the planet, increases the individual amount of knowledge of people who come into contact with each other, and hence the qualitative properties of human energy mass, thanks to information impulses, sharply increase without material energy cost, the energy mass being expended to change the quality of production facilities.

To organize physical interaction of man with nature, the information set (matrix) should contain four blocks: on the structuredness of space qualities, their finiteness, discontinuity; on the volume of energy resource contained in a unit volume of one substance and the energy content of the volume of another substance: on the qualitative and quantitative composition of resources needed to organize their interaction (internal reaction to each other); about the results of the process of substances interaction, their internal properties and form in relation to the environment and the impact of this quality on the environment. To organize social forms of interaction, the structure must have an information matrix consisting of three blocks: receiving and radiating (generating) information impulses, creating a virtual matrix of the surrounding world; transmitting information impulses; formalizing the signals of information impulses into reality when interacting with the environment, materializing those impulses - all this should be implemented using a single code system provided by the corresponding signal system, language model.

There is much evidence that the main reason for the current state of society is the incomplete awareness of the crucial nature of our era, which has put global human problems in the forefront, in the hopeless stagnation of all branches and directions of our science completely disconnected from man and his higher spiritual needs.

### **3. The purpose and objectives of research**

The purpose of the research is to investigate the interpretation of approaches and criteria for assessing energy efficiency of the development strategy of large self-governing socio-economic systems.

In ancient times, people lived according to the seven divine Canons: the foundations of the Universe, the role of man in it, the past, present and future of man. For some reason, we traditionally do not live beyond the Canons.

The objectives of the research were set as follows:

- causal relationships of vital processes and events;

- processes of creativity and balance, harmony and constructive endeavour as criteria for energy efficiency;
- the role of production technology and industrial relations increasing energy efficiency.

Violation of causal relationships of processes and events has brought terrestrial civilization to the brink of bankruptcy. As studies have shown, violations of these relationships lie in the legal, scientific, intellectual, technical, technological and religious ignorance of the world elite.

Unfortunately, all our disasters and troubles are formed by trial and error of our life-sustaining activity, violation of cause-effect relationships of various processes or events.

To achieve the above goal, it is important to obtain scientific results, recommendations, the development of which should not begin with consideration of the existing forms and methods of management for they are derived from the nature of social production and will yield practically nothing to clarify the causes of stagnation in the economy, but with the state of social production itself and, first of all, the productive forces as its basis as well as the level of its development. It should be remembered that such an analysis will give an objectively correct result only under one essential condition: when the sources, causes and driving forces of national production are specified and cognized. A comprehensive study of the historical laws of the current state and level of production development will allow us to design a model of production current state and to develop a reliable way to its further progress. It is this way of developing concrete actions derived from the internal logic of development that can guarantee effective forward movement.

#### **4. Research of known scientific developments**

The role of knowledge in economic development has been noted at different times by various scientists. A. Smith emphasized the importance of professions related to the production of economically useful knowledge. K. Marx's thesis on science transformation into the direct productive power of society is also known. It was he who first revealed the dependence of "the creation of real wealth ... on the general level of science and on the technology progress and the application of this science to production. A. Marshall, in turn, considered knowledge as a necessary factor in doing business providing acceleration of changes "constructively maturing in society". In more recent studies of such authors as H. Takeuchi, T. Davenport and T. Stuart, it is stated that knowledge, as the main source of firm competitive advantage, is of great concern in a post-industrial society [8].

Of greatest importance are the fundamental theories of direct knowledge, which appeared in the XVII century. V.F. Asmus connects their appearance with the successes of scientific and practical activities. Recognition of mathematics as a universal tool of science put R. Descartes, followed by G.W. Leibniz and B. Spinoza, on studying the philosophical foundations generality and universality of mathematical knowledge [3]. Later G.W.F. Hegel showed a close connection of the dialectics of direct and indirect knowledge with the practical activities of man [4]. This affirms a prominent place of studying intuition, not only as a purely theoretical issue, but also as a problem of great relevance to practice. We also set the task to show how, in modern conditions, the problem of intuition acquires a new significance in the practical activity of man.

It's not deniable that these business cultures which form the national types of economic mentality have very different effects on the processes of market modernization - some accelerate it and others slow it down. Even within Christianity a definite hierarchy is clearly traced: if Protestantism is most favorable for the development of capitalist relations, then Catholicism abates their extremes, and Orthodoxy, on the contrary, hampers their growth.

Confucian economic culture has become the first (and so far the only) real alternative to the economic culture of "Western" capitalism. Confucianism is a worldview that strictly subordinates a person to the interests of the collective (state, community, clan, family), preaching the sacrifice of the personal in favor of the public. To follow the directions of the elders; to improve constantly; to honor high morality, putting it above the base lucre - these are the commandments of the Confucian way of life. Confucianism was an excellent foundation for a pre-industrial command economy (the Asian mode of production), but paradoxically, it was perfect for a modern society undergoing scientific and technological revolution. High labor disciplines sanctioned by Confucian (corporate) ethics and harmonious collective labor have become the basis of the post-industrial economy in the countries of the Far East.

Thus, from an economic point of view, the most “viable” economic cultures are currently Protestant (American), Catholic-Protestant (Western European) and Confucian (Far Eastern).

For Ukraine, perhaps more than for any other country, the sociocultural aspects of a resurgent entrepreneurial initiative are important. An analysis of the phenomenon of entrepreneurship as a special type of personal being is impossible outside and beyond our Orthodox spirit [1].

The emergence of a particular phenomenon in a culture is always due to the interaction of certain factors determining its originality. Mutually complementing each other, these factors form a kind of sociocultural integrity - civilization. Any form of civilization is based on certain vital meanings and values that determine one or another content of production, management, lifestyle, type of thinking. At present, we can talk about two types of civilization: traditional and technogenic. The latter type began to take shape in the XV-XVII centuries and currently takes the lead. Within the framework of the first type, a person is inseparable from the community; simple, unproductive forms of labor prevail, forms of communication are simple and limited. Social innovations are random, unplanned [2]. The modern, technogenic, type of development is industrial-innovative, generated by scientific and technical progress, where complex coordinated labor is approved as the leading type of activity, a new, innovative business culture is being formed. The propensity for innovation inherent in industrial society is expressed in entrepreneurial motivations and types of behavior. Thus, entrepreneurship arises as a kind of general innovation culture.

As a rule, modern industrial innovative development is considered from the point of view of realizing the direct functional role of innovation. It is understood as the development of conditions and results of production based on the implementation of the results of scientific research and development (R&D). Naturally, this approach to innovative development is objective, necessary, but far from exhaustive essence of innovative development.

Nevertheless, the analysis of social dynamics reveals many characteristic features that indicate the need for a differentiated approach to the issue of innovative development, the need to take into account the features of its course in individual historical epochs of different civilizations. So, in the Middle Ages, innovative development differed greatly from innovative development today. This makes it necessary to single out “modern innovative development” as a special category and to isolate its specific features.

Innovative development is not just an internal need of a country, region, association, corporation or unions. It follows, first of all, from the fact that we live in a global world and the world of those problems for which the necessary need has ripened, as well as in the world of the obstacles that arise in the transition to an innovative path, linking all this with globalization and environmental requirements.

Moreover, at the forefront, the need for internal structural transformations, avoiding raw material specialization and imports should be considered (in terms of the crisis situation and the opportunities that the crisis opens up for the country to take the innovative path of development).

Summarizing the above, it should be concluded that various sociocultural systems at different times imposed various socio-economic restrictions on the manifestation of individual entrepreneurial abilities. The awakening to life of a personality, an individual on a mass scale is a process inextricably linked with the development of entrepreneurship, the formation of new spiritual, legal, political and economic relations. It is entrepreneurship that should become the economic form for the realization of this creative essence of man.

Understanding the role of entrepreneurship in the national economy requires a clear idea of what place it occupies in the economy and what are its distinctive features. The formation and development of market relations involves free and equal coexistence and development of various forms of ownership and various sectors within each form of ownership. Considering the private sector of the economy we can talk about three groups of enterprises, which, according to generally accepted terminology, are defined as large, medium and small enterprises, depending on their size. The owners of these enterprises are united by a common corporate interest - the preservation, development and protection of private property, which determines the common features in their behavior in all respects related to property. At the same time, entrepreneurship as a whole is very heterogeneous, each of these three groups has its own internal interests that determine the strategy of their economic behavior, their attitude to the state, towards socio-economic, political problems.

Of particular importance in this regard are the models of economic growth proposed by P. Romer, which, along with production factors, consider the purely non-competitive factor of production relations - the knowledge. N.Y. Rogoza also adds to this intellectual potential. In accordance with this, the rate of economic growth, with the stability of technological potential, depends only on the amount of human capital accumulated in the field of obtaining new knowledge. Hence, it is the research sector and creative capital that acquire the significance of the main factor in economic progress.

### **5. Research methods.**

Based on the research results, it can be concluded that modern factors of the external economic environment catalyze the negative impact of retro-causes on the development of domestic entrepreneurship and significantly exceed them in their deforming effect. Among these factors, the following ones dominate.

The first is the absence (during the initial period of the revival of the national economy) of a consistent market policy of the state, a real market rate supported by the power of governmental authorities. The absence of civilized shifts towards a civilized market led to the corresponding quality and image of domestic entrepreneurship.

Entrepreneurship is vulnerable and depends on many factors, among which the most important role is played by territorial conditions (economic potential, availability of resources, traditions and psychology of the population of a given region, attitude of local authorities to entrepreneurship). But these factors are almost not taken into account when deciding on the spread of entrepreneurial activity.

The atmosphere of political and legal instability and the lack of an economic and legal environment that meets market standards are the second important factor hindering the formation of entrepreneurship.

Successful economic reforms require at least three iterations. First of all, it is necessary to assess the current state of the economy; then, to determine the goals to be achieved; and, finally, to propose a system of actions to achieve the goals - both priority and long-term ones.

Such a rapid destruction of the country's economic potential and the impoverishment of the broad masses of the population were the result of major mistakes made by the government in carrying out the so-called economic reform. In fact, it never received a base in the form of a coherent program of actions; everything essentially came to a declaration of intent.

The goal, we repeat, is to stop the decline in production and the impoverishment of the people. For this, it is necessary to concentrate efforts on restoring the process of expanded reproduction and changing the structure of the national economy by increasing the share of group B of industry and the entire second unit from the current 1/4 to 3/4, i.e. to the level available in developed industrial countries. It is still difficult to conclusively judge the goals pursued by the renewed government, but it seems that it also considers the tasks of stabilizing public finances, eliminating the state budget deficit, stabilizing the hryvnia exchange rate and meeting the requirements of the International Monetary Fund to receive foreign aid.

In short, these are the marked formation of a social market economy mechanism and active state policy. The movement towards the goal can, of course, involve certain stages. However, the tools of a market economy mechanism should be put in place at the same time. An absolute mistake of the government was that, having focused on some mechanisms, it postponed for a year or more the introduction of the other, no less important tools, without which the market mechanism cannot develop and function.

The hypertrophied concentration of forces on eliminating the state budget deficit to the detriment of other, equally important national economic problems caused serious consequences.

Firstly, excessive taxes have led to the destruction of the reproduction process in enterprises and industries. It is known from the world practice: the total amount of tax deductions should not exceed 50, maximum 60% of the enterprises income. The government, on the other hand, brought their tax and other contributions to the state budget to a level exceeding 80–85% of revenues, which caused a reduction in investment and curtailment of production. There was an urgent need to immediately change the tax policy so that exemptions from the income of enterprises did not exceed 50%. This will give an impetus to the investment process and stop the decline in production.

Secondly, the government sharply reduced military orders, which put many enterprises in a difficult situation, led to a halt in production and the dismissal of a significant portion of workers and employees. Enterprises, not even switching to the production of peaceful products, lost about 70% of military orders. In the West, the latter are carried out by concerns, at which, as a rule, dominate the production of peaceful products; therefore, the curtailment of military orders affects only an insignificant part of the total volume of production. It is urgent to develop specific programs financed from a state budget for a certain period of time to transfer military production to peaceful rails and turn military enterprises into diversified concerns.

Thirdly, negatives of government policy are associated with price liberalization. Being an important market tool, free prices played a negative role in our country, because they began to operate in the absence of other, equally important market tools. The government believed that rising prices would entail additional production of scarce goods and, at the same time, prices should stabilize under the influence of narrow solvent demand.

The miscalculation of the government was that the opportunity to make a profit while reducing production by increasing price inflation went unnoticed. It is possible, and it so happened in reality, to increase profits even with a decrease in production of scarce goods.

Even having agreed that the huge surge in inflation was a surprise for the government, one cannot help but notice that its consequences, which turned out to be very beneficial for the treasury's income, were not liquidated by the government. No-announced inflation tax has been widely used as an additional source of government revenue. Inflation has devalued the savings of the population and all assets of state enterprises. The internal debt, which the state has written off for itself, has also depreciated. The financial policy pursued by the government turned into a distortion of the processes of generating incomes and funds associated with the structural elements of value during reproduction, and the destruction of the country's production potential.

The revaluation of fixed assets occurred only after nine months from the beginning of the reforms. Under-accrued amortization during this time amounted to about 1 trillion UAH.

But the biggest harm is done by entrepreneurs and bribe-takers who evade taxes. In pursuit of huge and fast profits, huge amounts of money are pumped from bloodless state structures to private service systems for underworld and black markets, drug trafficking and many other crimes, with the gradual involvement of legal, judicial and legislative systems for serving the same criminal activity.

It would seem that it is enough to increase the value of each product and the balance of commodity-money relations will equalize. But it was not to be! At the very beginning, we determined that human society is the moving mechanism in the crisis system. People, spurred in a panic by vicious desires to capture the full benefits for themselves out of a dying monetary unit, fasten the noose around their necks themselves. With a huge cash overage of the population, state structures, exhausted by the lack of money, cease to exist.

So how can we end the economic crisis? There are two ways to do this.

In the first case you do nothing, will shed tears and silently or with cries wait for many years when the economy completely collapses. The main tool on which the economy rested is money. If there is no money, then the crisis has come to an end and the period of commodity exchange has come, which is even worse than the crisis. But now it's possible to introduce new money and for decades to restore a ruined economy and gradually instill people's confidence in banking operations.

There is a second way that is more efficient, but also more laborious: to give the reins of government to decent and professional people; to make urgently new money with a higher face value.

In no case repeat mistakes of the past years and freeze bank accounts and deposits. Announce that the replacement of money will be made according to bank deposits and the availability of identification code.

You can also develop a reduction factor for the proportional withdrawal of surplus money supply at the moment of exchange.

You can update a monetary instrument with a proportional withdrawal of excess money. But this is just an instrument, but the main driving force is the person and what he has in his head. Therefore, in order to kill the dragon, it is necessary to kill his lustful, greedy desires emanating from within us. Only by overcoming our own vices, we will be ready to successfully deal with any crisis. Brought up on human vices and weaknesses, perceiving the concept of democracy as permissiveness, each of us and all together will not be able to build a highly moral intellectual happy society.

A retrospective analysis of the provisions of economic theory clearly outlines the permanent process of having diametrically opposed views on economic development. In our opinion, such an approach based on the reality of the social life dialectics and economic approaches is quite objective. Historically, from era to era, under the influence of internal contradictions, changes in attitudes and approaches to their resolution have accumulated. In this case, we took responsibility, which is justified by the results of the research, to put forward a hypothesis of tendencies for simultaneous reductions in the intervals between changes in economic doctrines and social requirements (factors) of economic development. These heuristic methods for forming a forecast strategy should be supported by economic and mathematical methods for substantiating the subjective beginning.

Today, the subject of economic theory should not be an objective dialectic of the form and the content of production as such, but the dialectic mediated by the public consciousness, and first of all, by the level of thinking. It is necessary to clearly realize that any theory can be a metatheory only when among its objects, (the regular relations of which it establishes, along with productive forces, production relations, etc.), the forms and methods (theories) that reflect the active role of public consciousness will be featured on an absolutely equal footing.

Without destroying the existing scientific potential, preserving the achieved technological level, it is necessary to make a careful selection of progressive technologies that correspond to the technical level of those industries to which they are transferred according to the conversion program, to transmit with minor author support.

In this regard, institutions of critical technologies arose and developed rapidly in the developed countries. National programs of critical technologies have appeared that solve a whole range of issues.

Modern highly intellectual production, unlike that of previous formations, can and should be formed only on the basis of known economic laws.

The scientific conceptual vision of the main provisions of this approach in the formation of the future society can be represented in the form of a series of interrelated and interdependent provisions characterizing the most important features of future national production.

This is, firstly, the association of free equal workers, united within the framework of labor by the unity of purpose and the need for social and individual development;

secondly, the union of workers who, within the framework of labor cooperation and collectivist principles, on the basis of everyone's exclusive right to own, dispose and use intellectual property, achieve the highest productivity of social production;

thirdly, it is such a direct social relation between workers, which assumes fundamentally technical systems based on high technologies coupled informationally and interacting in the framework of international labor cooperation;

fourthly, a new structuring of social production on the basis of a network of productive and consumer associations, regardless of ownership, ensuring an increase in the well-being of all subjects of public structure;

fifthly, the direct participation of all workers in the management of social production, which is an urgent need and generates completely new, previously impossible methods of managing and involving people in socially necessary work;

sixthly, international cooperation and integration of civilized producers with various forms of ownership, seeking effective, economical use of natural resources and the preservation of an economically clean environment;

seventhly, the state legal public infrastructure based on the equality of subjects, contributing to the constant growth of intellectual, scientific and physical potentials, the main components of the cultural level of society as a whole and of each individual.

It is also necessary to admit that the philosophy of the development of social production is not just a certain unity of views, not just a system, the integrity of ideas, but a contradictory, developing, changing, mobile integrity, means to acknowledge that with the emergence of new ideas at higher stages of this development, there occurs alienation, obsolescence, denial, rejection of previous ideas that reveal their own, as it were to put it mildly, incomplete verity, inaccuracy, incapacity or, what is more usual for us, a historical insufficiency.

Today, thanks to the outstanding achievements of the exact and natural sciences, the prerequisites are being formed for the mutual penetration of knowledge accumulated by mankind in



various spheres of social development, including knowledge acquired through an intuitive way of cognition, and data of the so-called “materialistic sciences”.

It is our belief that now we need, first of all, responsibility. We need both decisiveness and balance, which have become so deficient. We are also in need of trust and goodwill, constructiveness and obligatoriness. Public consent is needed too.

Society is a living organism, and social processes - like blood vessels in it - are of a technological nature.

The paradox of the current situation in society, the increasingly noticeable inconsistency of what is happening, the growth of contradictions within social forces that sincerely consider themselves to be supporters of the new - all these phenomena require close attention, in-depth analysis, and cognition. Of particular concern is the dissonance of two closely related social spheres. On the one hand, serious progress in the political field is obvious, on the other, the almost complete invariance of the economic system. In recent publications, different points of view are expressed on the reasons for this lopsidedness. However, in our opinion, the considerations presented in them, as a rule, concern the consequences rather than the causes. The reasons must be sought in the nature of economic power in our country, in the technological basis of the economic system.

To save the country from a national catastrophe means to take a new barrier in the structural and technological sense, that is, to transform all the old structures and synthesize them under the auspices of updating on the basis of higher technologies, thereby re-creating the integrity of the social organism on a new basis (technological balance).

Understanding this hypothesis from the standpoint of the modern level of knowledge, it could be stated as follows. There is a repeatedly established high degree of autonomy of processes occurring in the political sphere, from the laws of economic development and its technological basis. This autonomy is manifested, first of all, in the fact that, being interconnected, moving in approximately the same direction, social processes differ significantly from each other in rate of development. Being less stable and having less inertia, political processes, having received certain impulses from the economic system, often overtake it in development. But in the same way they cause the need of society for a new movement, which can be realized only on the basis of a new technological basis. As a result, political turns, leaps and breaks most often occur even before the economic framework has been established, the expression of which is the technological basis.

Today it seems that we never asked ourselves the questions about when the information society will begin to exist, when it will come to its end, whether we ready for this, etc. Meanwhile, the Japanese as early as the 60s of the 20th century asked themselves these questions, because it was at that time that they began to invest very substantial funds in the development of technological systems based on computer science.

Assessments of the preparedness of our society for informatization, the prospects for its inclusion in the information structure of the world community are very different. What are the integral characteristics of this new socio-economic reality, in which we found ourselves incidentally and which the world community called “the cybernetics society” back in 1974, and which, without too much hesitation, came to be called the “information society” in the 21st century? Do we consider the processes of our society informatization only as the application of the latest achievements of computer technology and informatics in the public sector, social sphere, political and cultural life, or do we connect them with the underlying phenomena of the reorganization of our entire social being, its technological basis? One can hardly find simple answers to these questions. But we should find the answers. We are really dealing with a complex social phenomenon, the arrival of which we deigned to notice only in the early 90's. Speaking all the time about scientific and technological progress, we, at the same time, did not notice the processes, the essence and scope of which go far beyond the “direction of scientific and technological progress”.

Even today not all of us and are not fully aware of these already completed processes. However, time is relentlessly making its significant amendments, which suggest that:

- firstly, informatization is already a reality, and today we need agreement on the ideas about the content of these processes, their technological basis, the optimal forms of their organization, social, political and economic consequences;

- secondly, our ideas and practical policies should take into account that in the future the processes of informatization, whether we like it or not, will occur on a technological basis and in the context of the formation of a completely new society.

This is understandable. The whole history of mankind can be represented in the form of two cycle links between science, technology and society. One cycle begins with a huge breakthrough in the field of scientific knowledge. As a result, new technologies appear, the technological basis of social production is updated. This, in turn, has a huge impact on the entire social life, economic, social, political and cultural spheres of society, causing a general transformation of the whole social arrangement. The second cycle is directed, as it were, towards the first, arising from the needs of society. The urgent need for new technologies causes an urgent need for technical innovations, with the help of which further scientific evolution is stimulated. Thus, science, technology and society are developing cyclically. Changes in one of these areas are either the cause or the consequence of the changes.

The shortcomings of the existing system of managing the Human Factor, its inconsistency with the new social situation determine the inefficient use of the social resources of society and its labor potential, without which the effective use of the technological basis is simply impossible. Sociological studies conducted in industry show that barely a quarter of all workers work in full force. The rest, by their own admission, are working part-time and with a different organization of production could do more and better. Among the paradoxical phenomena of our reality is the work of engineering and technical workers in places of low qualification workers.

Today, contradictions arising in the global socio-economic mega-model, demand their global resolution, since they affect the interests of all submodels (states) united by a single economic system, the density of interaction in which is constantly increasing, and therefore the consequences of crises become tougher. The formation of a global mega-model requires an understanding of the essence of the interaction of socio-economic models, and the cost approach used to calculate their forecast state as real in the future does not give an accurate account, since the monetary value is distorted by subjective factors present in pricing, setting exchange rates, and determining the cost stocks, labor prices, distribution of surplus product, etc.

The transition to the use of physical indicators to assess the results of socio-economic models when considering their interaction on the basis of the energy impulses exchange, both among themselves and with nature, opens up new possibilities in organizing production relations, which are one of the factors for increasing the efficiency of the results of society members' activities. This makes it possible to calculate the balanced ratio of resources used by society to create areas of protection against negative environmental influences and to raise society's quality level as an information subject that reflects the environment in its mind and transforms its form and content.

Further development of society on the basis of increasing its information richness will require the abandonment of many concepts and relations that have formed so far that underlie the organizational principles of social structures that are functioning today. We would like to note one feature of modern civilization in its organization of its relations with the environment. Today, all technologies invented by man make it possible to obtain energy from a substance and there is no a single technology that allows a substance to be obtained from energy. And since the world around us is half composed of the qualities of materialized energy (negentropes), and the second half consists of energy qualities (entropes) and these two halves are in a constant transition from the qualities of one state to another, the level of our knowledge of properties of the environment in the most complete, ideal volume can conditionally make up only 50%, since we know everything about the conversion of "conditional negentropic substances" (entropic energy carriers) into energy (void), but about the transfer of energy (void) into substances- negentropes we know nothing. Upon learning this, we will become gods, attain absolute knowledge.

In this regard, with the further transformation of society from technological to informational, an inevitable transformation of the form of ownership for resources will occur, this form having undergone a number of changes over the history of the civilization development. Depending on what resources and their volume the property of a separate individual extended to, a social structure was formed, which manifests itself in the production relations of the society fixed in the institutional sphere.

Conclusions:

1. The study of the arguments of modern requirements and scientific criteria of complex self-governing socio-economic systems at mesolevel indicates that they have a number of positive properties:

- largely reflect the objective function and territorial distribution (location) of production;
- are based on deep and sufficiently substantiated functional specialization;
- provide an opportunity to resolve high priority problems and regulatory and methodological regulation of the activities of all production units.

Due to the action of a number of objective factors and specific organizational flaws, certain contradictions and negative trends have arisen and continue to escalate.

The most significant of them can be considered the following:

- the imbalance of powers and responsibilities in decision-making and resource management, which leads to a drop in production;
- lack of effectiveness of forms and methods for interaction coordination which results in a violation of the provision and reduce labor productivity;
- in some cases, inadequacy of organizational and economic mechanisms, sharply reducing the effectiveness of economic measures.

2. The methodological foundations for the systems of a targeted approach to the formation of organizational structures of operational management include the following main provisions:

- firstly, the organizational structure of the operational management system is considered as a complex universal characteristic of regulating industrial and economic environment. This, in turn, requires a clear definition of the boundaries of the organization; it requires to define general purpose, specific goals and objectives; to describe and analyze its external environment, information exchange and other interactions; to elucidate relations between production and technological and administrative and management sides of the organization; to identify the distribution of powers and responsibilities between this organization and alternative ones;

- secondly, the initial basis for constructing the organizational structure of operational management is the target orientation of all elements of the system. In this regard, a necessary stage in the analysis and synthesis of organizational structures is the definition and formulation of the goals of the organization in their holistic system, their decomposition according to strictly selected criteria and their structuring. In this way, a balanced distribution of tasks, rights and responsibilities between the levels and links of the management apparatus is achieved, which ensures the effective achievement of the ultimate goals of industrial, economic, scientific, technical and social development;

- thirdly, the analysis and construction of the organizational structure of management cannot be reduced to solving a single-criterion formalized problem using methods of one scientific discipline. They should be considered as a subject of interdisciplinary study, and their solution provides for the mandatory use of a combination of formal and informal methods, including organizational modeling, methods of structuring the goals of “analogies”, expert-logical, etc. Their application requires the development of a special methodological approach and apparatus, which would be used in the design of specific organizational management structures.

3. The proposed in the work as the main (basic) system-target method for designing organizational structures of complex self-governing systems of self-development operational management has its own distinctive features, which are as follows:

- the system of goals of the production and economic organization is determined and their structure is developed;
- management functions are formed in direct accordance with the structure of goals;
- not only technological and informational, but also organizational modeling of management processes is carried out;
- a full organizational mechanism for the implementation of management functions at all levels of the structure is being developed;
- organizational forms of not only linear-functional, but also program-target management are being designed.

This technique has certain advantages over other approaches. In objective reality, these two subsystems (technical-technological and socio-organizational) exist only in organic unity with each other. Any manufacturing enterprise, firm as a complex self-governing system includes as an integral part of its real mechanism complex social formations, forms, phenomena that are an essential factor in

changing the economic substance of production, a complex and diverse range of problems related to the organization of management with only technological systems.

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