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System Paradigm as a Theoretical Basis for Strategic Economic Management in Modern Conditions

G.B. Kleiner
RAS Central Economic-Mathematical Institute, Financial University, Moscow, Russia

ABSTRACT

In the context of the turbulence of the global and national economy and the growing complexity of the interaction of the Russian economy with the Western world, it is necessary to expand the scope and improve the efficiency of organizations' strategic management at all levels of the economy. Theoretical substantiation of strategic management, its connection with the theory of organization, the theory of the firm, the theory of industrial development and other theories also taking into account the specifics of the Russian economy are not sufficiently developed. In this regard, the formation of a theoretical and methodological basis for the development and implementation of strategic management of the domestic economy is of particular relevance. The article substantiates the expediency of using the system paradigm as a theoretical and ideological basis for developing goals, methods and means of strategic management of organizations. The essence of the system paradigm is revealed as a set of systemic methods of perception, cognition and transformation of the economy, including economic theory, economic practice, economic policy and economic management. The role of strategic management as a foundation and source of co-evolutionary development of the economic planning system, including strategic, calendar and operational management, is shown. The necessity and development of new types of strategic management based on the subject area's non-quantitative (qualitative) target characteristics and focused on managing the organization's value, spiritual and intellectual spheres are substantiated. As a new component of the theoretical basis of strategic management, the theory of systems' spiral evolution is put forward, synthesizing the concept of linear sequential development of the system. According to this approach, the system is viewed as a change in the dominant value orientations and the concept of cyclic development of the system as the alternation of four phases of the dominance of the object, environment, process and project system's complexes. The **theoretical significance** of the presented developments is associated with the evolution and deepening of a systems approach in economic research. The **practical value** lies in substantiating the feasibility of expanding the scope of strategic management using systemic tools to improve the efficiency and coordination of management at all levels of the economy.

Keywords: system paradigm; system worldview; strategic management; planning; theory of spiral evolution; systems analysis; social leadership; economic system

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INTRODUCTION

The term "systems paradigm" emerged in the economic literature during the 1990s, a time characterized by the transformation of economic structures in socialist countries and shifts in the geopolitical structure of the world economy [1, 2]. The initiation of the new concept had three main objectives. Firstly, it aimed to capture the complexity and heterogeneity of emerging economic phenomena during that period. Secondly, it sought to bring clarity and structure to the concepts of descriptive economic theories. Lastly, it aimed to systematize a set of economic regulatory tools suitable for managing turbulent conditions. The application of the systems paradigm also provided resolution to classical antitheses such as "part-whole," "element-system," "individual-collective," and more. The foundational principles of the systems paradigm, initially mentioned in J. Kornai's groundbreaking publication [1], have been extensively discussed, refined, and expanded upon in subsequent works [3–8].

Currently, there is an active development of the theoretical basis of the systems paradigm and

its expanding application in various management fields such as strategic planning, management, systems engineering, enterprise restructuring, ecosystem formation, and more [9, 10]. However, it is crucial to address key challenges related to improving the adequacy of the systems paradigm as a theoretical framework and enhancing the effectiveness of systems regulation methods, as discussed in [11]. Since the publication of that work, both the domestic and global economy have undergone significant changes, characterized by radical shifts. The world is once again facing turbulence and uncertainty. Given this context, a valid question arises: Is it appropriate to apply the systems paradigm in economic research, economic policy formulation, and decision-making in such a period of instability?

This article provides a clear and affirmative answer to the question, demonstrating that the utilization of recently developed systemic concepts, combined with practical experience in solving economic regulation challenges, establishes a robust and reliable foundation for extending the systems paradigm beyond the realm of economic theory. This extension encompasses economic policy, economic management, and economic practice. The integration of the systems worldview into various sectors of the economy, coupled with the principles of strategic management, has the potential to enhance efficiency, reduce unproductive costs, and proactively prevent or mitigate the impact of crises on the country's socio-economic development in the medium and long term. The system paradigm, in turn, draws upon the systemic economic worldview and system economic theory, which serve as integrators of diverse trends such as neoclassical economics, institutionalism, and evolutionary theory. Together, this scientific and methodological framework, comprising the systems worldview, the systems paradigm, and system strategic management, should form the cornerstone for economic regulation in modern conditions.

THE SYSTEM PARADIGM IN ECONOMIC THEORY, MANAGEMENT, AND ECONOMIC PRACTICE

It is widely recognized that the economy is a complex and multifaceted phenomenon, encompassing various layers and dimensions. Every participant engaged in economic activities, whether directly or indirectly, interacts with specific economic entities. They acquire information regarding prices, attributes of goods and services, economic conditions, management strategies for different projects, and more. These economic agents also hold certain, albeit sometimes ambiguous, notions about the interdependent effects of certain economic processes or decisions on others. Nevertheless, a considerable portion of the economy eludes an agent's direct sensory, informational, or analytical perception, regardless of whether they are individuals, legal entities, or government institutions. Through a synthesis of the information accessible regarding the visible aspects of economic functioning and contemplative interpretations of the invisible facets, agents construct their worldview. It is within this framework that they make behavioral or managerial decisions, engage in transactions, formulate plans, and develop assessments. It is important to note that agents' social and economic experiences, psychological profiles, personal preferences, and perspectives on various aspects of economic reality are inherently distinct and individualistic.

In addition to the subjective nature of perceiving the economy, it is essential to consider the beliefs regarding the regularity or uniqueness of certain developmental processes within it [12, 13]. The reliance on regularity corresponds to the perspective that the economy evolves continuously, both as a whole and in relatively autonomous fragments. Conversely,

the concept of singularity emphasizes discrete disruptions in time and/or space. Depending on the chosen worldview, favoring either regularity or singularity, economic agents formulate plans and engage in activities, defining their goals and time horizons. As decision-makers or principals, they also shape the managerial attitudes of individuals under their administrative supervision. Achieving reconciliation and harmonization among the aforementioned individual characteristics of economic perceptions is a complex socio-psychological objective, often addressed by specialists in fields such as information, communication, socio-political technologies, and more. The adequacy and balance of individual elements within the economic worldview are crucial factors for societal governability and the purposefulness of its progress. The activation of this factor depends on numerous components, with economic theory playing a significant role in it. As highlighted by J. Keynes, familiarity with economic theory is prevalent among nearly every participant in economic activities, regardless of whether they are subjects or objects of management. He noted that even those who claim to be immune to intellectual influences are typically influenced by the ideas of past economists [14].The list of relatively independent fragments of the space of economic theory is very broad due to differences in the subject area, underlying assumptions and prerequisites, goals and results of application. The grouping of these theories by premises and methodology leads to the notion of a paradigm and a paradigmatic structure of economic theory [15–20].

The principles of the system paradigm were initially formulated in [1, 3]. The key principles are as follows:

1) The study of the system as a whole, focusing on the relationships between the system and its constituent parts;

2) The research conducted within the system paradigm is comprehensive and does not confine itself to any specific discipline such as economics, sociology, or political science;

3) attention of researchers is focused on permanent institutions (whose functioning period is not limited) rather than on individual events and processes;

4) a researcher gives historical explanation to events and processes (establishment of their cause-and-effect relations);

5) individual preferences are considered as products of the system (when system changes — preferences change as well);

6) researchers focus their attention on meaningful changes occurring in systems, deep transformations of one system into another;

7) each system has its own specific and unique internal defects;

8) a property of one system is explained by comparing it with a similar property of another system. Thus, comparison is the most typical method used within the system paradigm.

The systemic approach is motivated by the necessity for:

- a higher level of generalization (abstraction) compared toneoclassical economics;
- a system of categories, satisfying the additivity requirements concerning the main objects of analysis with respect to the operation of alliance (combination). Traditional economic theory does not consider an alliance of agents as an agent, a combination of prices as a price, a combination of shares as a share, and so on. However, in systems economics, the union of systems is regarded as a system, the combination of objects as an object, the combination of projects as a project, the combination of processes as a process, and the combination of communities as a community.;
- A unified theory that transcends the limitations of traditional schools such as neoclassical, institutional, and evolutionary economics. This implies overcoming the "splitting" between macro- and micro-levels observed in neoclassical economics, addressing

the absence of a widely accepted theory of institutional dynamics in the institutional school (with a predominant focus on horizontal interactions at the expense of vertical ones in time); and balancing the emphasis on vertical inter-periodic interactions over horizontal spatial linkages in evolutionary economics.

In the systems paradigm, the subject area of research and management is conceptualized as a population of interacting and evolving socio-economic systems.

Currently, In orthodox economic theory, three primary paradigms are widely recognized, each offering distinct perspectives on the underlying driving forces of economic development:: *Neoclassical Paradigm* posits that the driving forces behind economic development are the behaviors of individual economic agents striving to enhance their well-being.; *Institutional Paradigm*, according to it, social and economic institutions play a pivotal role in shaping economic activity and development.; *Evolutionary paradigm*, stating that, the driving force behind economic development is attributed to the process of adaptation by the population of economic agents to changing economic conditions, while retaining genetic invariants of its behavioral decision-making mechanisms.

n the last quarter of the century, the system paradigm has gained prominence and is now considered on par with the neoclassical, institutional, and evolutionary paradigms in economic theory. Within the system paradigm, economic objects, socio-economic processes, economic environments (including institutions), and innovative projects (such as technological advancements and production organization) are all viewed as different types of economic systems. These economic systems are recognized as the fundamental units of analysis. The economic system is defined as a relatively stable grouping of economic objects, processes, projects, and environments, exhibiting characteristics of both external integrity and internal diversity. Dynamics here arises as a result of interaction, transformation and reorganization of such systems. Thus, the system paradigm integrates the main features of neoclassical (object), institutional (environment) and evolutionary (process-genetic) paradigms.

The paradigms in economics differ significantly in terms of their understanding of the "regularity-singularity" relationship. In the neoclassical framework, singularity can arise from the combination of trajectories of multiple functioning agents. Just as the simultaneous accumulation of passengers on one side of a boat can cause it to capsize, the accidental combination of unfavorable developments among autonomous agents can lead to economic collapse and disrupt regularity. In institutional economics, the chances of spontaneous disruptions to regularity are considered low due to the tightly interwoven structure of institutions in society. Changes in specific elements are damped by their interrelation with others. However, the growth of contradictions within the institutional sphere can bring about revolutionary shifts, the dominance of certain institutions, and the disavowal or repudiation of others. Under the evolutionary paradigm, singularity is unlikely to occur due to the law of conservation of genetic foundations underlying the decision-making of economic agents. In the systems paradigm, the concept of a "singularity point" is incorporated within a system, where it automatically reemerges as a "regularity point." This paradigm emphasizes the interconnectedness of planning settings in both space and time. In economic policy, it means that regional economic decisions should be linked by a common strategic framework throughout a country. Temporally, the application of the system paradigm entails the continuity of decisions and the ability to access information about those ones that made in medium- and long- term. . The system paradigm emphasizes the need for coordination in various aspects

of economic management. Firstly, in relation to specific management methods, there is a requirement for the coordination of decisions over the short- and medium-term periods. Additionally, coordination is necessary across different spheres of socio-economic space. At the level of economic practice, the system paradigm calls for the coordination of norms, standards, regulations, and prescriptions. These guidelines serve as the framework for economic activities and ensure that they contribute to the development of the country's economy as a single national economic complex (see figure). In general, the implementation of this paradigm involves a high degree of coordination of all four basic types of economic systems: objects, projects, processes and environments.

One of the key objectives of management when employing the systems paradigm is to identify and classify systems within the subject area as relatively stable and holistic entities that can be effectively managed using systematic methods. It is important to differentiate these entities from non-systems, which are unstable groups of objects and processes, as well as from pre-systems, which are temporary groups that have the potential for purposeful transformation into systems.

The extension and application of the system paradigm to the entire domestic economy necessitates comprehensive solutions and entails a fundamental restructuring of the four key national subsystems: the innovation system, the standards system, the statistical system, and the planning system. This process requires a delicate balance between market mechanisms, administrative mechanisms, and cognitive functioning mechanisms to prevent conflicts of interest among individual, group, regional, and departmental stakeholders. Within these subsystems, the national planning system, with the strategic planning system as its core, should assume a central role in coordinating and guiding the overall economic direction.

A SYSTEMS WORLDVIEW AND STRATEGIC MANAGEMENT

According to classical concepts, originating from A. Fayol, management encompasses planning, organizing, directing, coordination, and control [21]. Strategic management, on the other hand, distinguishes itself from general management by focusing on making strategic decisions of high importance, both in the present and the future, which are irreversible in nature within the aforementioned areas. Consequently, the necessary components of strategic management include the following: strategic planning, structural organization of the management subject area, formulation and implementation of strategic directives, and a system of coordinating and interacting mechanisms among independent management objects. A specific aspect of strategic management is strategic control, which involves analyzing the implementation of strategic plans, as well as making organizational and functional strategic decisions.

Within the structure of general management, strategic management serves as the foundation upon which other types of planning are built, including tactical, operational, and calendar planning. These various planning types are integrated into a cohesive system. The construction of this system would not be possible without the dissemination and coordination among participants in economic and managerial activities, guided by a systems worldview that emerges from the organic synthesis of the general economic worldview and the system paradigm. Through the lens of such a worldview, which is applied to theory, policy, management, and economic practice, a unified understanding of the economy as a holistic subsystem of society is formed. In this context, the strategic approach closely aligns with the systems approach, as it takes into account all significant aggregate factors of both spatial and temporal nature. The systems worldview is implemented by conceptualizing

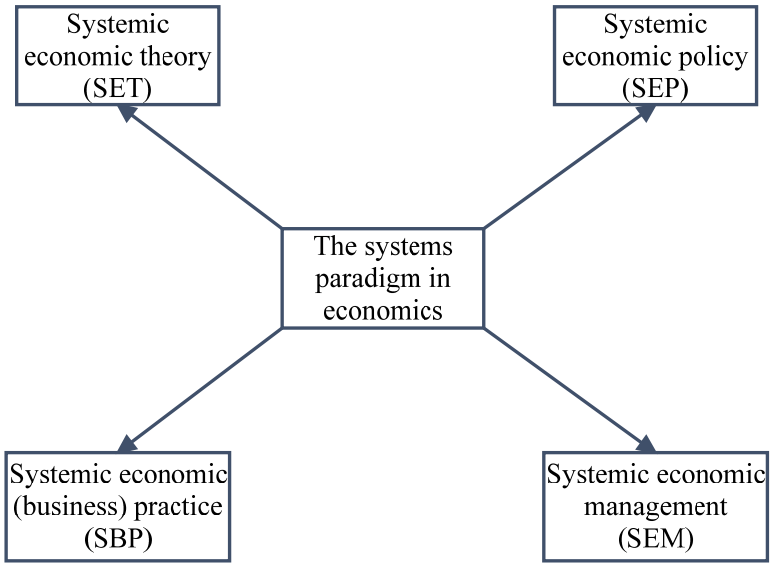

Fig. **The impact of the systems paradigm on the basic components of the economy**

Source: compiled by the author.

economics as a population of economic systems that vary in scale, structure and functions and are deployed and interact within different areas of the space-time continuum. In this case the properties and the features of socio-economic space are determined by the characteristics of these economic systems and, in turn, determine the characteristics of the systems placed in it. In the systems worldview, the hierarchy of scales of economic strata, ranging from macro- to meso-, micro-, and nano-levels, does not imply a unidirectional influence of the upper levels on the lower ones. Unlike traditional hierarchical perspectives, the systems worldview treats these strata as being somewhat equal in significance. Consequently, there is a combined influence that occurs both from the "top down" and from the "bottom up". Socio-economic space is assumed to be isotropic both vertically and horizontally. This property can be described as "the principle of spatial isotropy". Within the framework of the systems worldview, it is necessary to note another principle — the anthropic principle. According to this principle, the study of economic phenomena is conducted from the perspective of an observer. In the context of socio-humanitarian studies, this observer is often referred to as the social observer. The social observer is capable of perceiving the system's internal state as well as its external position. The anthropic principle, within the systems worldview, allows for the reconciliation of the objective content of the surrounding reality with subjective perception, thus ensuring the unity of an individual's internal spiritual realm. of an individual [22, 23]. The combination of isotropic and anthropic principles brings us close to Vernadsky's concept of the biosphere. Vernadsky proposed that the properties of socio-economic space are not only determined by non-living elements such as economic goods but also by social elements (organizations) and living beings (humans). In the context of the economy, *nanoeconomics* is highlighted as a crucial layer that is significantly influenced by human actions. The systemic worldview allows us to encompass all the components and aspects of economic space that are essential for economic activities.

The role of strategic management extends beyond its foundational functions. It serves as the fundamental framework that establishes the organic connection between all types of planning and the strategic management derived

from such planning. In the current turbulent socio-economic environment, both at the global and national levels, strategic directions rooted in systemic strategic planning should permeate all levels and directions of an organization, becoming its distinctive ideology.

In reality, a strategic systems worldview should be expanded to encompass all participants and organizers of economic activity at the national level. This requires a significant reconstruction of the existing economic mindset held by the population, which was developed in response to the transition towards a market economy in the late 1980s. The prevailing economic outlook was characterized by a short-term planning horizon and a narrow spatial focus limited to the well-being of a small group consisting of individuals and their immediate relatives or friends. This localized worldview was typical of an "economy of individuals" mindset [24]. As time progressed, the scope of an individual's economic worldview, particularly its peripheral aspects, expanded to include the managers of the company where they were employed. However, it was relatively uncommon for this circle to encompass the entire enterprise to which the individual was closely affiliated. In contrast, a systemic worldview emphasizes an orientation towards achieving success not only for a specific company but also for an entire network of interconnected enterprises and economic systems and a strategic systemic worldview goes a step further by extending this orientation beyond immediate considerations and encompassing the medium and long-term objectives.

In the context of strategic management, the focus shifts from an individual organization to a relatively stable group of organizations known as a bounded ecosystem. This concept differs from a conventional ecosystem in that the composition of the latter is typically uncertain and unstable, while a bounded ecosystem consists of organizations with a defined membership and a deliberate delegation of strategic management responsibilities to a specialized management center.

FEATURES AND DIRECTIONS OF STRATEGIC MANAGEMENT DEVELOPMENT

A characteristic feature of strategic management is the perception of an organization as a holistic system that develops in time and space. This approach to management integrates the space-time, program-targeted, and forecast-analytical perspectives. Strategic planning distinguishes itself from long-term and medium-term planning by employing a scenario-based approach to understand and describe both the internal and external environment of the organization.

A scenario in strategic management provides a comprehensive view of how an economic system functions within a specific context. It aims to capture the key factors and dynamics that influence the organization's operations without considering the involvement of new factors or unknown elements that may emerge during the scenario's timeframe. The strategic plan, based on the scenario, is designed to be "closed" in the sense that it encompasses a complete list and hierarchy of factors that affect the company's operations within the planning period. This requirement imposes limits on the planning horizon, aligning it with the time span covered by the scenario. It's important to note that the strategic development horizon is not predetermined by a fixed planning period (e.g., three years, five years, etc.), but rather by the occurrence of "strategic events", i.e. significant changes in the external circumstances or internal environment of the organization that go beyond what was considered in the initial scenario and requires an adjustment in the organization's strategy. Overall, the strategy of an enterprise consolidates the influence of its diverse internal and external forces, the initial and final conditions of the planning period; the target setting; resource capabilities and capacities.

Strategic management, in contrast to general management, follows a phased approach due to the limited validity period of an organization's strategy. The strategy of an organization is not meant to be static and requires periodic review and adjustments. While the revision of the strategy may disrupt the continuity of strategic management, it does maintain continuity of the underlying principles of general management.

A complete shift in the management paradigm is possible when there is a significant disruption to the identity of the organization. This can occur when there are substantial changes in the organization's mission in market conditions, corporate environment, or regulatory environment. In such cases, a fundamental change in the management approach may be warranted to address the new challenges and opportunities. Strategic planning, as part of strategic management, differs from adaptive planning, which is based on reactive behavior of the organization.

Strategic management, based on strategic planning and forecasting, is expected to play a crucial role in the 21st century. This shift is driven by a combination of objective and subjective factors that have significant implications for the business landscape.

Objective factors contributing to the prominence of strategic management include the development of the network economy, the production of complex knowledge-intensive products with long lead times, increased density and transparency of the economic environment, the development of ICT (information and communications technology), acceleration of STP (scientific and technological progress), etc. On the subjective side, the emergence of a new generation of managers who have been exposed to strategic management as part of their higher education programs, the adoption of legislation and regulations mandating the development of strategies, the decentralization of strategic decision-making centers outside the traditional boundaries of the enterprise have contributed to the prominence of strategic management.

It is expected that the spatial and temporal boundaries of strategic management will expand beyond the traditional scope of individual companies and firms. . Instead, a broader concept of an ecosystem will emerge as the focal point. This ecosystem can be defined as a spatially localized complex comprising a diverse range of organizations, interconnected business processes, innovation projects, and supporting infrastructure systems, that interact dynamically to create and circulate both tangible and intangible goods and values and possess the ability to operate independently over the long term, sustained by the continuous circulation of these goods and systems [25]. The primary objective of ecosystem strategic management is to achieve an optimal balance between the influence of individual participants, investment projects, and logistical processes within a favorable intercompany environment. This entails making decisions that aim to "equalize" the opportunities of different components within the ecosystem to influence the overall ecosystem strategy. To accomplish this, a substantial portion of management efforts will be focused on developing cooperative relationships both within individual firms and across the ecosystem [26].

The adoption of the systems paradigm within modern strategic management necessitates the expansion of its conceptual tools. Among them are:

1. *Reference management*. This type of management is based on qualitative characteristics or references/benchmarks of the organization's future state, market position, and business environment. Reference management involves the formulation and implementation of a reference-oriented strategy for the organization. The development of reference-oriented management aligns with the broader expansion of the strategic management toolkit, particularly in incorporating resources with a

qualitative dimension. These resources include human, social, institutional, and intellectual capitals, among others [27].

In the context of reference-oriented management, an inspirational leader within the organization takes responsibility for organizing and implementing this approach.

2. *Animalistic management*, as an extension of the systems paradigm and strategic management, acknowledges the presence of an integrating component within the managed entity. This component serves as a coordination mechanism for various areas of activity. By conceptualizing the organization as a sphere where material, spiritual, cognitive, and creative processes interact (ontology, ideology, gnoseology, praxeology), we refer to the "soul" of the economic system. This "soul" acts as the driving force that aligns intentions, actions, and the corresponding reactions of both the internal and external environment [28–30]. Depending on the characteristics of the enterprise, it may exhibit varying degrees of ambition in its market behavior, coherence between intentions and actions, and reasonable expectations regarding market reactions to its activities. These characteristics reflect the resonance or vibrance of the "soul" of the organization and the soul of its manager. The presence or absence of interaction between these elements can provide insights for predicting the effectiveness of the company under the leadership of a particular individual.

The main body of management literature offers numerous recommendations for managing various aspects of organizations. However, the topic of a single driving force that ensures the integrity and identity of a company is not widely explored within the managerial mainstream. Yet, in turbulent market and intra-company environments, there is a growing need to focus on managing the "soul" of the organization, often referred to as "animalistic management."

In this context, strategic management should place significant emphasis on understanding and nurturing the "soul" of the organization. Animalistic management involves not only recognizing the influence of the "soul" on the coordinated behavior of the enterprise, its units, and participants, but also fostering its development as a concentrated expression of the organization's aggregated objectives and capabilities. The implementation of animalistic management is the responsibility of the spiritual leader of the organization.

3. *Intelligent management.*

The intelligent management style is built upon the recognition of the significant role played by intelligent workers in the modern economy. This approach suggests a new way of structuring the social space within a company, consisting of four distinct social fields: the field of influence of an intelligent leader, an inspirational leader, a cultural leader, and a spiritual leader [31]. The first social field, the field of influence of an intelligent leader, focuses on implementing the organization's mission and defining the overall benefits it aims to produce.; the intelligent leader manages the distribution of the tasks within the organization; the cultural leader oversees the third social field and is responsible for determining the technology and methods employed in the production and implementation of benefits within the organization;; the spiritual leader plays a vital role in defining the higher purpose and values of the organization, guiding its ethical and moral compass in socio-economic space. The advancement of information and computer technologies, along with the digitalization of the economy and the increasing emphasis on science and intelligence in production, has elevated the role of intelligent leadership within organizations. . It makes it possible to provide management reflection, i.e., to capture and to analyze data about the mutual dependence of the actions taken by thethe controlling and managed subsystems in the organization. The lack of such reflexivity could lead to stratification

of the workforce and ultimately reduces its effectiveness. As the overall intellectualization of economics progresses in the 21st century, the degree and depth of reflexivity in management will increase [32, 33]. This is especially important for strategic management which is highly sensitive to the gap between decisions being made and their implementation.

The main actor in the development of intellectual management of the organization should be its intelligent leader.

THE THEORY OF SPIRAL EVOLUTION OF ECONOMIC SYSTEMS AND STRATEGIC MANAGEMENT

The complex characteristics of the object of strategic management can be divided into two components: the internal state and the external position. The internal state refers to the organization's internal capabilities, resources, processes, and overall health. The external position, on the other hand, relates to the organization's position in the socio-economic space, including its market standing, competitive advantage, and relationships with other entities. While strategic management often tends to focus on the organization's external position, such as rankings, market share, or value chain positioning, the primary objective should be the qualitative improvement of the internal state. The internal state of an organization is fundamental to its long-term competitiveness,, sustainable functioning in time and in space. (The choice between focusing on improving the internal state or improving the external position of an organization can be likened to the choice between "to be" and "to appear." Strategic management, as a comprehensive and long-term approach, should primarily be focused on "to be", while other types of planning should be focused on "to appear").

The internal form of the managerial object and its position in the external socio-economic environment are indeed closely interconnected. Their relationship can be characterized as dual, as mentioned in [34]. While the external position of the object is influenced by numerous external factors that are difficult to control, the primary focus of strategic management should be on enhancing the internal content. Therefore, the transition to strategic management at all levels of the nation economy will not only improve the current economic performance but it will also — and this is the main goal — transfer enterprises to a higher level of functioning organization.

According to the spiral dynamics theory proposed by C. Graves, D. Beck, and C. Cowan [35–37], the development of a socio-economic system follows a pattern of directed change in the dominant value system within the object which shapes the perspectives, goals, and behaviors of the members within the organization, and this change occurs unidirectionally in an ascending line, leading from relatively simple systems to more complex ones. In [37, 38], the spiral dynamics theory describes eight value levels that represent the overall directional evolution of socio-economic systems. . Development of these systems bears the imprint of the general dynamics of value stages: at a certain period of time, the managed object, having passed the preceding ones, stabilizes at a particular value level. A layering of parts (layers) reflecting the gradation of values from the simplest to the most acceptable is thus formed in the inner space of each system.

The aim of strategic management in developing an object or organization is indeed to guide it towards a better level of the value system compared to previous stages. However, it is important to consider the law of duality between the internal filling of the object and its external environment: as the object progresses to a higher value level, it is likely to experience corresponding changes in its external environment. However, the reverse influence also exists.

Traditionally, the different levels of the value system described in the spiral dynamics theory

are assigned specific colors to represent them. These colors serve as symbolic representations and aid in understanding the progression from lower levels to higher levels. The color scheme typically starts with beige, representing the lowest level, and ends with turquoise, representing the highest level [37, 38].

Each value level is associated with distinct characteristics and organizational models for managing the object or organization. These models can be analyzed in terms of the presence or absence of hierarchy in the organizational and managerial structure. Additionally, specific features of hierarchies, such as toughness and softness, rigidity and flexibility, stability and lability, can be used to meaningfully characterize the organizational model at each level.

According to the analysis presented in [39], the understanding of value systems and organizational functioning has evolved, leading to the identification of a new model called «pearlescent.» The pearlescent model is characterized by its ability to leverage additional resources necessary for improving a company's competitiveness and efficiency. In pearlescent enterprises, a high level of coordination is achieved through a combination of formal structures and informal institutions. These organizations exhibit a humanistic orientation in their management approach and effectively utilize digitalization in their production processes. The management style combines elements of hierarchical structures with participative democracy, promoting collaboration and engagement [40].

With the inclusion of the pearlescent model, the sequence of stages in the formation of socio-economic systems now encompasses nine levels, starting from beige and progressing to pearlescent. According to [41, 42], the development of the object and its transition from one value system to another is not a linear process but rather a cyclical one. This cyclical development is associated with changes in leadership within a group of four fundamental subsystems: objective, environmental, process, and project.

During different periods, one of these subsystems may dominate, shaping the economic worldview of the organization's participants. The objective subsystem focuses on the role and position of the enterprise within the corporate community. The environmental subsystem emphasizes the internal climate and infrastructure of the organization. The process subsystem is concerned with the internal organizational procedures, including information, logistics, and regulations. The project worldview places emphasis on innovation and driving change within the organization. The cycle of changing leadership within an organization typically follows a sequence of phases: object — environment — process — project — object At any given point in time, the dominant phase of the management cycle can serve as a powerful tool for aligning and mobilizing the enterprise staff to effectively address the current strategic management tasks.: The implementation of target management guidelines is greatly facilitated when they are built with consideration for the dominant worldview of the team in a given period. . Failure to consider and address the dominant worldview of the team in the target management guidelines can lead to resistance from participants, which can impede the successful implementation of the strategy.

In general, adopting a systemic paradigm that views the management object as an evolving economic system, progressing from basic value perceptions to complex value constructs, and experiencing cyclical changes in worldview types, enables the identification of realistic goals and appropriate means to address strategic management tasks.

CONCLUSION

1. Since the mid-2010s, there has been a growing trend in Russia to address the issue of

enhancing strategic management at all levels. This need becomes particularly pronounced on macro level during periods of crisis when effective management mechanisms are crucial but often found lacking. Therefore, ensuring the continuous preparedness of strategic management institutions has become a vital component of the country's economic security system..

2. The transition to strategic management of the economy would not be possible without a significant shift in the economic mindset of both participants and organizers of activities, i.e., the reorientation of its success criteria: from individualistic perspectives (focused on autonomous social and economic agents) towards more collective and holistic one (focused on local ecosystems representing relatively stable groups of functionally dependent and co-evolutionarily developing socio-economic units).

3. The systemic economic outlook, which is necessary for the comprehensive and multi-level implementation of strategic management, should be synthesized based on a system paradigm that encompasses economic theory, policy, management, and practice. Individualism, which was prominent as an ideology in the 1990s and early 2000s, needs to give way to collectivism in order to foster sustainable spatial and temporal development rooted in the principles of Environmental, Social, and Governance (ESG).

The arsenal of strategic management needs to be expanded by incorporating models of strategic regulation, namely orienting, animalistic, and intellectual management. Expanding and deepening the theoretical and methodological base of strategic management will also require changes in the structure and content of educational programs and courses for students and graduate students in economic specialties.

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ABOUT THE AUTHOR

George B. Kleiner — Dr. Sci. (Econ.), Professor, Corresponding Member of RAS, Head of the Scientific Direction "Mesoeconomics, Microeconomics, Corporate Economics" of the Central Economics and Mathematical Institute of the RAS; Chairman of the Department of System Analysis in Economics, Financial University, Moscow, Russia
https://orcid.org/0000-0003-2747-6159
george.kleiner@inbox.ru

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The Russian Economy: Challenges and Ways for Leveling and Mitigation of Their Negative Impact

A.N. Ryakhovskaya
Financial University, Moscow, Russia

ABSTRACT

The article examines the problems of the development of the domestic economy in non-standard conditions for the formation of market relations, when the implementation of market mechanisms is limited by the total non-market behavior of hostile countries, that is why the tasks of further scientific developments aimed at developing new anti-crisis approaches to the development of the Russian economy are updated and focused on ensuring national economic security in response to new challenges and threats in accordance with highly prioritized strategic national interests. The purpose of the study is to analyze the measures taken by the Government of the Russian Federation to ensure sustainable economic development and to substantiate new anti-crisis mobilizational approaches to regulating the Russian economy in the context of blocking total sanctions of the collective West. The research process was based on a set of general scientific methods, including analysis and synthesis, induction and deduction, generalization and analogy, methods of comparison, matching, historical and logical method, interpretation, and others. It is concluded that it is possible and necessary to strengthen anti-crisis state regulation of the economy with its reorientation to a mobilization economic model and the formation of a balanced mechanism for the interaction of production and consumption in key sectors of the real sector of the Russian economy, taking into account Russia's strategic priorities in modern business conditions. The practical significance of the results of the study lies in the possibility of their use in the field of state anti-crisis management and the development of strategies for the development of the national economy.

Keywords: national economy; sanctions; economic security; anti-crisis approaches to state regulation; strategic planning; mobilization economic model

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INTRODUCTION

During the recent years the Russian economy has been facing unprecedented negative impact caused by the financial crisis of 2007–2009, sectorial sanctions after 2014, the adverse impact of the COVID 19 pandemic in 2020–2022, and the confrontation between Russia and unfriendly Western countries. Large-scale changes in the international economic system, the growing risks of instability in world development have caused new challenges, increased the vulnerability of the domestic economy. They have set the task of shaping Russia's economic policy basing on the principles of sovereignization and placing an emphasis on cooperation with new regions. The role of the state in the development of the market is currently increasing, which is manifested in the regulation of the market with the use of stimuli that help eliminate systemic shortcomings and level the threats to national security.

New problems and challenges, which the Russian economy is facing, are now reflected in scientific works: the authors update the information on the issue, revealing the general principles of systemic transformation and transition of the country's economy to the path of sustainable evolutionary development [1]; they consider Russia's opportunities for building a new industrial society [2], study the influence of the world order transformation processes on economic relations [3], consider the formation of a mobilization economy as a response to total sanctions [4], rethink the importance of the resources orientation in economy in ensuring its sustainability [5], determine the key anti-crisis functions of the state to ensure its sustainable development [6]. In recent years, a more specific research topic has been popular among scholars — economic policy during the COVID-19 crisis [7, 8] and its prospects in the context of digitalization [9, 10]. A review of the works of reputable economists shows that modern theory and practice need research and development, the purpose of which is to develop new anti-crisis approaches in order to support the development of the Russian economy, these approaches should be focused on ensuring national economic security and socio-economic growth in the conditions of non-market behavior of the unfriendly countries. The author of the article analyzes the main measures of the Russian Federation Government which are aimed at ensuring sustainable economic development; the crisis-forming factors of the Russian economy during the current situation were studied, the dynamics of its key indicators during the period of a special military operation was analyzed; proposals have been developed regarding new anti-crisis approaches to its regulation in response to new economic and political situations; the possibilities of applying the experience of China's development to improve economic processes under the sanction restrictions of the "collective West" are also analyzed.

In this study such general scientific methods as analysis and synthesis, induction and deduction, generalization and analogy, comparison, comparison, historical-logical method, statistical, interpretation, etc. were used; strategic plan documents of the Government of the Russian Federation, modern scientific publications of economists, references and analytical materials of Russian, foreign and international organizations, as well as the results of empirical studies carried out with the participation of the author were also employed.

RESEARCH RESULTS

Analysis of the Russian economy's current state

In 2022 the Russian Federation faced unprecedented sanctions pressure from unfriendly countries that activated political non-market instruments in an effort to destroy the sovereignty of Russia's national economic space. External threats because of their systemic nature generate the danger of internal ones, as

a result new challenges related to the economic security of the country have emerged; the range of problems and the intensity of their impact on various sectors and industries have changed. This has created imbalances that cannot be redressed by the market without governmental intervention.

The results of the analysis of the Russian economy's state and the influence of various factors on the low efficiency of its functioning indicate that in recent years "a real economic war has been unleashed against us»,[1] during which unfriendly countries are trying to push Russia out of international economic relations by "launching the processes of degradation and disintegration of our economic system" through a global blockade of financial, technological, economic, political, trade, transport, humanitarian and other important spheres".[2]

At the same time it should be noted that the stagnation of the Russian economy has been going on for more than 10 years, during which we have been lagging behind the global average in most socio-economic parameters and this lag has been growing. In 2021 Russia was ranked 45th in the Global Innovation Index and placed between Indonesia and Vietnam.[3]

The situation is aggravated by the fact that the functioning of our country's economy is based on the import of machinery, equipment and modern technologies; an imperfect monetary system based on the financial dominance of the US dollar and other unfavourable factors contribute to the exacerbation of the socio-economic situation.

A significant negative impact on the state of the economy is exerted by a tight linking to external capital markets and oil prices, low competitiveness, law insecurity of small and medium-sized businesses, weak efficiency of state-owned enterprises and institutions, stagnant incomes and demand, high inflation, a significant increase in consumer prices and, as a result, an increase in poverty and in the number of loans and credits taken by the citizens, which leads to a decrease in solvent demand.

The phenomena mentioned above are aggravated by the decrease in import and export volumes (due to the imposed anti-Russian sanctions), the rupture of the supply chains, the loss of sources of components and sales markets, as the basis of the anti-Russian policy of Western countries forces the accelerated escape from everything that is Russian.

STATE ANTI-CRISIS MEASURES TO SUPPORT THE RUSSIAN ECONOMY

Taking into account the destructive influence of these factors, it should be taken into consideration that they still appear to be somewhat positive, as an increased focus on exports is very likely to lead to a significant increase in number of export-oriented enterprises and industries, then to their stagnation and, as a result, to liquidation. In this regard, the most important task of the Government of the Russian Federation is currently to activate the Russian market, increase domestic demand, these measures could include increasing the solvency of the country's population ensuring a fair basic income. Recently the Government Commission on Increasing the Stability of the Russian Economy under sanctions has adopted a number of systemic anti-crisis measures, such as protection of the domestic food market, subsidizing of Russian Railways, airlines (at the expense of the Russian National Wealth Fund), regional industrial development funds; legalization of parallel

[1] Transcript: Mikhail Mishustin's report to the State Duma on the work of the government. Rossiyskaya Gazeta. 07.04.2022. URL: https://rg.ru/2022/04/07/stenogramma-otchet-mihaila-mishustina-v-gosdume-o-rabote-pravitelstva.html- (accessed on 01.10.2022).

[2] Belousov announced the failure of the West's plans for a global blockade of the Russian economy. Interfax. URL: https://www.interfax.ru/business/834715 (Access date: 26.09.2022).

[3] Russia has risen to 45th place in the global innovation ranking. TASS. 20.09.2021. URL: https://tass.ru/ekonomika/12456101 (accessed on 26.09.2022).

Table

The main economic indicators of the Russian Federation relative to the corresponding period (month, quarter) of 2021

Index	2022						
	March	April	May	June	July	August	September
1. Industrial production index	102.3	97.4	97.6	97.6	99.5	99.9	96.9
Mining and quarrying	106.6	97.2	97.8	101.4	100.9	101.0	98.2
Manufacturing	99.3	97.0	96.5	95.3	98.9	99.2	96.0
2. Agricultural production index at enterprises of all types	103.0	103.2	102.2	102.1	100.8	109.1	106.7
3. Consumer price index, %	116.7	117.8	117.1	115.9	115.1	114.3	113.7
4. Unemployment rate, %	4.1	4.0	3.9	3.9	3.9	3.8	3.9
5. real disposable income (quarterly, percent of corresponding period of previous year)	98.8	x	x	99.2	x	x	96.6

Source: compiled by the authors based on the data of the Federal State Statistics Service "Short-term economic indicators — 2022".

imports, monitoring lending programs for preferential business, restrictions on export of goods and equipment, additional support to the regions during the period of external sanctions, etc.[4] These steps contribute to the successful solution of current tasks and support the economy, which is confirmed by statistical data indicating the preservation of its relative stability when facing a sanctions attack by Western countries during a special military operation (see *Table 1*).

It should be noted that the implementation of the global import substitution process in Russia since 2012 (taking into account the imposed set of anti–Russian sanctions in subsequent years) has brought some positive results, but they were not enough, and it lead to the adoption of a short-term and forced measure — the organization of parallel imports. The reasons for its necessity are the insufficiency of the components required for the development of enterprises' own production and the impossibility of direct supplies from unfriendly countries. Parallel imports are inevitable and imply an increase in the cost of imported goods in some sectors at the initial stage of implementation. However, in the future, there will be a decrease in prices for many consumer demand products as well when they are replaced by domestic or Asian analogues — some of them that previously had no access to the highly competitive saturated niches (occupied by European manufacturers) have already managed to enter the Russian market and appeared on the shelves of the stores and on marketplaces.

The Ministry of Science and Higher Education and the Ministry of Education should at the

[4] Government measures to increase the stability of the economy and support citizens in the face of sanctions. Official website of the Government of the Russian Federation. URL: http://government.ru/sanctions_measures/ (accessed on 02.10.2022).

same time be the flagships of Russia's import substitution policy, their specialists together with the university and scientific community face the task of clarifying the need for human resource potential of market economy entities, they should also develop new and make appropriate adjustments to the already implemented programms for their training.

While analyzing the parameters of anti-Russian sanctions and directions of leveling or minimizing their negative impact on the economy of the state, it is necessary to take into account the lack of elaboration and relevance of the latter. The reason for that is the fact that most government departments and key market participants do not publish statistics of the industry functioning results, manufacturing and other sectors of the economy, as well as negative parameters of their activities, including a list of missing components, inability to employ previously used technologies, etc. At the same time understanding the real capabilities of business entities, the availability of the missing components, which are necessary for the production of final products, will help the scientific and university community to focus their work on these problems and become the basis of strategic planning and active industrial policy within the modern market system.

PECULIARITIES OF STRATEGIC PLANNING AT THE PRESENT STAGE

The reason for the implemention of strategic planning into the Russian economic system is the need to determine long-term goals, calculate the amount of financial and other resources allocated by the state and make a specific list of state agencies and persons responsible for the implementation of the plan and setting mandatory tasks.

Special attention within the framework of the application of the strategic planning system should be paid to private businesses establishing clear laws and rules that encourage them to develop their activities: to provide for a reduction in the tax burden, to introduce affordable loans, public investment, state order (with a corresponding reduction in the level of bureaucratization, reduction in the number of inspections and reports), to assisst in getting staff with appropriate qualifications, vehicles, to promote the increase of social responsibility of private businesses, the development of social partnership with the participation of their employees.

As for the availability of borrowed financial resources for the needs of real sectors of the economy, it should be taken into consideration that bank loans are issued mainly to cover business operating expenses. Real import substitution requires the organization and development of own production, which is possible with the help of state financing through corresponding development institutions.

In order to increase the effectiveness of anti-crisis measures taken by the state and the effectiveness of strategic planning, it seems reasonable to create a coordination center based on the idea of Gosplan[5] and modern principles of digital development. This proposal is especially relevant considering the context of anti–Russian sanctions, as the updated Gosplan model can solve several issues which include:

- determining the general need of the state (current and prospective) for specific components, various products and materials;
- ensuring the maintenance of production long-term relations between the subjects of market relations;
- to guarantee the existence of a certain perspective for the sale of products (provision of planned services);
- to form possible and expand existing logistics channels in the South and East, which requires not only significant financial

[5] Russkikh proposed to introduce a "digital gosplan" in Russia. IA Ulpressa. 14.08.2022. URL: https://ulpressa.ru/2022/08/14/русских-предложил-внедрить-в-россии/ (accessed on 23.11.2022).

investments, but also political support, as well as management support with appropriate coordination and planning.

It should be noted that the idea of Gosplan regarding current situation is designed to combine all the best in the functioning of this Soviet powerful state institution with the achievements of digitalization, i.e. it is not just a revival of Gosplan, but the creation of a strategic agency on a modern technical basis with the capabilities of a proven intersectoral balance to form a "virtual economic reality" [11]. Therefore it will be easy to avoid those flaws for which Gosplan was once criticized by the scientific community (in the presence of a shortage of a number of goods, the production of those which are not in demand was increased). In this case, the example of China is noteworthy, where the role of the digital Gosplan is currently performed by the National Development and Reform Commission, as well as the domestic experience of the Eastern State Planning Center (Vostokgosplan) subordinate to the Ministry for the Development of the Russian Far East and Arctic.

The Gosplan, the creation of which is proposed, can be characterized as digital: modern technologies such as artificial intelligence, blockchain and bigdata allow creation of complex models, plans and forecasts based on a significant amount of data based on a real-time digital platform: it receives primary information about all transactions, capital movements, goods, labor forces, services, which allows us to collect all the necessary information about everything in the country's economy, technological solutions, used capacities; to transform the goals set at the state level into particular sectoral or regional plans. At the same time the exsisting commercial component of the economic relation remains, it is possible in the context of state planning, which, when using digital tools, makes business deliveries reasonable and transparent.

The condition for the revival of the Gosplan in a new manifistation is an appropriate political decision, in particular, announced as the suggestion of the Governor of the Ulyanovsk region A. Russian at the plenary session of the Interregional Forum on the Implementation of the Regional Investment Standard in August 2022: the introduction of the "Digital Gosplan", according to the head of the region, "will help the industry to respond promptly to modern economic challenges, will give specific figures considering the import substitution needs, it will eliminate the risks of burning investment resources and duplication of products".[6]

Improvement of the mechanism of state regulation is also required considering state corporations. The orientation of their activities should be changed to fulfill the interests of the state and society, to increase the level of socialization and to use the resource rent received from nationalized natural resources in the interests of Russian society.

It is important to clearly define the goals of long-term strategic planning with a decrease in the importance of gross value results, including the GDP, profit received, since, according to the world and Russian scientific community, the main goal of the state is to ensure the development of its economy, solving environmental and social problems paying special attention to the population of the country in terms of stimulating the growth of its income, strengthening control over the growth of the consumer prices. Solving these urgent problems requires not only significant financial resources, but also innovative management solutions.

MOBILIZATION ECONOMIC MODEL: ITS FEATURES AND PECULIARITIES

The current sanctions attack on the political and economic system and financial potential of Russia in the situation of the macroeconomic

[6] Russkikh proposed to introduce a "digital gosplan" in Russia. IA Ulpressa. 14.08.2022. URL: https://ulpressa.ru/2022/08/14/русских-предложил-внедрить-в-россии/ (accessed on 23.11.2022).

crisis and the destruction of the Western unipolar Anglo-Saxon economic model of ultra-globalist world dominance pursues the goal of isolating the Russian economy from the world system, destroying its sovereignty. Therefore, counting on market self-organization on the principles of classical economic theory in these conditions is not only frivolous, but also extremely dangerous. In this regard, it seems appropriate to agree with the proposals of scientists who indicate the need to switch to a mobilization economic model based on the use of internal resources in the defense, socio-economic, ideological and foreign policy spheres, which under certain circumstances can be urgently used to improve the national security [12]. As an economic category, the mobilization model is not new (conceptually) for the scientific community and economic practice,[7] but in relation to the specifics of the current Russian situation, it requires, nevertheless, clarification of the conceptual apparatus, analysis of statistical data, generalization of the world experience and adaptation to current reality and priority strategic tasks.

Thus, the need to ensure the national security in the face of attempts of economic blockade by the "collective West" and the emergence of new issues connected with the needs of a special military operation that began on February 24, 2022, entails the implementation of modern anti-crisis mobilization approaches to public administration:

1) in the field of domestic economic policy:

- strengthening the role of state regulation in ensuring the sovereignization of the national economy by partial nationalization of enterprises — leaders of scientific and technological progress in Russia;
- implementation of the state balanced planning system based on modern digital technologies (using the updated Gosplan model);
- increasing the role of the state in preventing bankruptcy, implementing judicial organizational and legal procedures for the bankruptcy of defense industry enterprises; preventing the bankruptcy of defense industry enterprises, increasing the amount of rehabilitation procedures and their promotion, introducing external management in organizations that have given up business in Russia;
- development of national innovative technologies, allocation of material and financial resources in areas that ensure national security;
- acceleration of deoffshorization of the economy, primarily strategic industries and livelihood of the population, prevention of capital outflow from the country;
- improving the systems of personnel reserve formation and state control over performance discipline at all levels of management and increasing the level of openness of budget expenditures to ensure the work of the federal state bodies;
- activization of the scientific research in the form of applied research aimed at improving the efficiency of the economy, of the scientific and technical potential of Russia;
- introduction of the principle of extraterritoriality for the laws of the Russian Federation;
- building up the domestic production potential to ensure the functioning of the state under the new circumstances: from satellite groupings, electronic warfare systems to clothing and hygiene items;
- ensuring a steady excess of the citizens' income growth dynamics over the inflation, reducing economic inequality of the population, keeping social priorities of Russia unchanged: family, children, health and education;

2) in the field of foreign economic policy:

- reorientation of the foreign trade relations vector to the development of mutually beneficial cooperation with countries outside the group of the unfriendly states;

[7] Russia needs a mobilization economy with market tools. URL: https://glazev.ru/articles/165-interv-ju/105820-rossii-nuzhna-mobilizatsionnaja-jekonomika-s-rynochnym-instrumentariem (accessed on 20.11.2022).

• further forcing unfriendly countries out of their former colonies (Mali, CAR, Burkina Faso) and involving them in integration associations (BRICS+);

• active promotion of export-technical cooperation with the states of Latin America, the Middle East, Africa, and Southeast Asia;

• introduction of new units of account in international trade and systems for transferring interbank information within the BRICS countries, the Eurasian Economic Union, etc.;

• suspension of Russia's WTO membership, its cooperation with the IMF and the World Bank;

• freezing of foreign assets on the territory of the Russian Federation until the moment the Russian assets in foreign jurisdictions are unfrozen (confiscation of the foreign assets in case the Russian ones are confiscated);

• the introduction of a ban on the protection of intellectual property and copyrights of products from unfriendly states, the introduction of a preferential regime and a stimulating mechanism for the import of high-tech and investment goods from friendly countries into the Russian Federation.

The necessity and reasonableness of a radical change in Russia's anti-crisis policy, its reorientation to a mobilization model of development, the peculiarity of which (*in conditions of concentration of external crisis-forming factors outside the contour of market relations*) is to solve a two-pronged economic task: to ensure the country's defense capability and socio-economic stability while switching the production to the domestic market. The formation of the balanced mechanism for the interaction of production and consumption in key sectors of the real sector, while taking into account the strategic priorities of the country in modern economic conditions, will ensure sustainable economic growth over a long period of time.

Taking into account the importance of all aspects of the issue to ensure the state security, the basic role is assigned to its economic component, since the production, distribution and consumption of goods and services is primary for all spheres of public life, guaranteeing the viability of society; the mobilization type of economic development (as a special form of anti-crisis state regulation) acts as a compensatory mechanism for the destructive anti-market influence of negative trends in the economy. Legislative, economic and administrative anti-crisis regulators of the mobilization type will neutralize or minimize the impact of a complex set of external threats to Russia's economic security, increase the stability of the functioning of all sectors of the national economy, the integrity of the country's internal economic space, preserve socio-economic and political stability, and contribute to the growth of the quality of life of Russian citizens.

Successful implementation of the mobilization type of economz is possible only if the sustainable income growth of the population is ensured. The Russian government is taking some steps in this direction to support citizens, these steps include increasing the amount of unemployment benefits, maternity capital, one-time support for low-income families, and indexation of pensions of unemployed pensioners. However, these are temporary measures which in fact show low efficiency, as evidenced by the increase in the number of poor people in the country.

Considering the consequences of the sanctions policy of the West, it should be noted that its implementation against the Russian Federation serves as an excuse to abandon the EU market — our main trade and economic partner. At the same time, dozens of countries of the world whose economies are characterized as growing experience the need for not only energy carriers, mineral fertilizers, food, etc., but for technologies and logistics solutions.

In this regard, as already noted, the most important prospect for us is the effective development of the EAEU market.

However, solving a set of tasks connected with import substitution, stabilization of the Russian economy, ensuring its sustainable functioning and development, it is necessary to develop the financial support, including using the funds of the National Wealth Fund, as well as the instrument of targeted emission, providing targeted release of monetary resources for the implementation of specific projects, support of certain industries and industries based on the already mentioned Gosplan. Stating the neccessity of ensuring the economic growth, we note that in this case we are talking not only about achieving the planned indicators, but also about Russia's interaction with the rest of the world, the economies of friendly countries.

When studying the foreign experience of stabilization and development of national economies, the experience of the People's Republic of China seems to be the most illustartive, its distinctive features at the end of the 80s of the last century were:

- poverty and of the majority of the population;
- historical lagging of the economy;
- being far from the first place in world geopolitics, which is unworthy of the country with such a long history.

When analyzing the anti-crisis measures taken by the Chinese government, it should be mentioned that their main task was to eradicate reasons of poverty adopting some social programs "Seven-year plan for getting rid of poverty of 80 million people (1994–2000)[8]", "Program for the development of the Chinese village and getting rid of poverty (2001–2010)"[9] with its prolongation for 2011–2020. Their effective implementation made it possible to officially announce the overcoming of poverty in the country in 2021.

The main focus of the fight against poverty in the PRC was made on increasing the income of the population by solving the following tasks:

- the introduction of a progressive income tax rate and a tax-free minimum;
- ensuring free access to mandatory mass education and medical care;
- creation of additional jobs (60 million were created within 5 years), which provided employment for the population;
- providing all villages in poor areas with an electricity supply system, telephone, high-speed Internet, cable TV, paved roads;
- reconstruction of old and dilapidated housing.

This set of measures allowed to significantly increase domestic demand, which contributed to the development of the state's economy.

In recent years, the PRC has been creating a high-level socialist market economy system by implementing the principle of "public ownership as a basis for the joint development of economy of many forms of ownership" [13, 14]. At the same time, if China's previous national strategy was based on the use of external resources and markets, in recent years, in the context of the deglobalization trend and increased protectionism, China adheres to the concept of "two circuits", which sets the priority of the internal reproduction circuit over the external one [15, 16].

Russia's use of the PRC's experience is highly reasonable, since China has demonstrated an unprecedented example of catching up and advancing development in all sectors of the economy during the recent decades. Over the past 20 years, its gross domestic product has increased 13 times,[10] the average annual GDP

[8] Full text of the White Paper "Actions g poverty and progress in the Field of human rights of China". Russian.news.cn. URL: http://russian.news.cn/china/2016–11/08/c_135814199.htm (accessed on 02.10.2022).

[9] China: new progress in rural development and getting rid of poverty. URL: http://www.kitaichina.com/se/txt/2012–01/05/content_418639.htm (accessed on 02.10.2022).

[10] Full text of the White Paper "Actions g poverty and progress in the Field of human rights of China". Russian.news.cn. URL: http://russian.news.cn/china/2016–11/08/c_135814199.htm (accessed on 02.10.2022).

growth was 8.68%.[11] These figures look especially impressive compared to the "lost decades" of zero and near-zero growth and stagnation of the Japanese economy,[12] which became one of the world economic leaders in the 80s (after the United States), and by now it is outperformed by China, India. Japan has fallen to 4th place in GDP (taking into account purchasing power parity), and what is more Russia and Geramny are already catching up. Many economists complain that by doing so China became what the USSR could have become if its collapse had not been allowed, and the subsequent trophy looting and absorption by the "hyenas" of the Western globalist project, who declared themselves winners in the Cold War, did not follow.

To take into account China's experience in certain areas of socio-economic policy development can be useful for domestic science and practice in the context of the mobilization of the economy — for example, measures of combatting corruption and implementing of the "two circuits" concept, the activity of the State Reform Committee (as an analogue of the digital Gosplan), steps taken to transform high-tech industries into the leading sectors of the national economy.

Another important area of stabilization of the domestic economy is to ensure territorial development, taking into account the real possibilities of various regions. However, the rule introduced by liberal "economists" must be excluded, as this rule promotes the residence of the population of Russia in the XXI century in large cities, and requires, according to them, urgent development of agglomerations. Persuing this policy has led to the fact that at present the urban population in this country makes up more than 75% of the total (with a corresponding growth of the cities where more than one million people live).

As part of the implementation of this rule, the creation of such new agglomerations as "Kazan-Nizhny Novgorod" and "Yekaterinburg-Perm" has been planned in recent years. At the same time, it seems obvious that the increase in the number of large cities enhances the possibility to ensure a decent quality of life for the population, as these cities attract the economically active part of it to the agglomerations. This can be explained by the concentration of financial, technical, industrial, social and other resources there.

As a result, large territories are totally depopulated: over the past 25 years, about 30 thousand villages have disappeared in Russia, currently 75 thousand villages are populated by only a few people (from 1 to 25).

These extremely negative factors, which significantly reduce the strategic stability of the Russian economy's development, its social orientation, destroying human relations, lead to the primitivization of economic parameters. Immediate harmonious territorial development of the Russian Federation is required, the capabilities of particular territories must be takien into account. This development can be conducted on the basis of effective use of modern information technologies and digital Gosplan. This is a possible way to solve targeted problems of the development of industries, infrasctructural objects, the movement of labor and financial resources, cargo, and other problems in regions and cities.

In this regard, the most important task of the state economic policy at present is to develop a set of measures to improve the life quality in Russia through economic growth and the creation of various industries and solving other issues with an appropriate mechanism for monitoring the achievement of results. At the same time, the

[11] National Bureau of Statistics of China. URL: http://www.stats.gov.cn/was5/web/search?channelid=250710&andsen=Communiqu%C3%A9+on+the+Fourth+National+Economic+Census&x=9&y=11 (accessed on 20.11.2022).

[12] Japan's GDP by year: 1980–2022. URL: http://global-finances.ru/vvp-yaponii-po-godam/?frp=aHR 0cDovL2dsb2JhbC 1maW5h-bmNlcy5ydS 92dnAteWFwb25paS 1wby1nb2RhbS 8-&instream= (accessed on 20.11.2022).

development of rural areas will largely ensure an increase in industrial production (due to the growing demand for specific cars, tractors and other agricultural machinery and equipment). It will also promote the creation of appropriate plants for processing agricultural products and its packaging.

CONCLUSIONS

The study showed that the issues of the development of the domestic economy in non-standard circumstances of the market relations formation, when the implementation of economic mechanisms is limited by the total non-market behavior of hostile countries, are relevant and significant for designing a response to new challenges and threats to Russia's economic security. The author states the reasonableness of implementing the mobilization economic model as a technology of anti-crisis state regulation under unsual circumsatnes.

The study identifies the priority measures of the anti-crisis mobilization model of public administration in the field of domestic and foreign economic policy.

Modern challenges and crisises in the global and Russian economy and total sanctions pressure associated with the geopolitical interests of Western countries dictate the need to modify the country's economic policy, the implementation of which becomes a crucial condition for preserving the sovereignty of the Russian economy.

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ABOUT THE AUTHOR

Antonina N. Ryakhovskaya — Dr. Sci. (Econ.), Professor, Scientific Director of the Institute of Economics and Crisis Management, Professor, Department of Management and Innovation, Financial University, Moscow, Russia
https://orcid.org/0000-0001-9731-4759
rectorat_ieay@mail.ru

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Improving the Methodology for Assessing the Digital Maturity Index of Russian Regions, Taking into Account Aspects of the Second and Third Stages of Digital Transformation of PMA Based on Foreign Experience

V.I. Abramov, V.D. Andreev
National Research Nuclear University MEPhI, Moscow, Russia

ABSTRACT

The purpose of the study is to identify and determine the directions and accounting factors included in the algorithm for assessing the digital maturity index of Russian regions to improve this methodology, taking into account aspects of the second and third stages of digital transformation of public and municipal administration (PMA). In the course of the work, **methods** of analysis, generalization and systematization were applied. The authors noted the problem of inconsistency of the target directions of the PMA digital transformation with the actual activities, indicated the expediency of taking into account the indicators in the proposed directions when assessing the digital maturity index in the regions of Russia. The paper defines digital ecosystems, reflects the relationship between their features and the methodology for assessing the digital transformation of public and municipal administration, the stages of which are characterized and specified by the example of foreign experience. **The relevance** of the research lies in the strategic need to find growth points to increase the efficiency and effectiveness of PMA in the context of digital realities.

The practical significance of the results lies in the possibility of using the proposed directions and accounting factors in the methodology for assessing digital maturity in the constituent entities of the Russian Federation by public authorities while they are being modernized.

Keywords: digitalization; digital transformation; digital ecosystem; stages of digital transformation of state and municipal government; digital maturity

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INTRODUCTION

In the times of the establishment of the sixth technological paradigm and the emergence of "Industry 4.0", which are characterised by massive processes of digitalisation and digital transformation of the institutions of vital life sustenance of the citizens, businesses and governments taking into account the multiplier effects [1], in a BANI world,[1] analysing, evaluating and systematising aspects of the digital economy is a strategically relevant and useful practice for identifying points of growth and sustainable functioning in an unstable environment. Digital transformation is nowadays a key aspect in building the productive power of life support institutions [2].

Evaluation methodologies are the effective tools to improve the quality of management decisions and, consequently, policy making, taking into account the sanctions pressure and the focus of domestic state and municipal structures on achieving results [3] in the context of the need for information support of the management process with relevant data through the tools of digital economy [4] and the need to build a global distributed management system [5]. This tool contributes to the reduction of the cost of resources that are necessary to maintain the digital macro environment [6]. Synchronization and standardization of digital transformation in the development of different spheres of regional activities is a highly effective tool for the sustainable development of the constituent subjects of the Russian Federation [7].

The feasibility of upgrading digital transformation assessment methodologies lies in the need for greater flexibility and adaptability in the assessment of management decisions made using it in the context of rapidly changing realities, for all public and municipal administration (PMA) institutions [8]. To this should be added the tasks of eliminating the inconsistency between the indicators used to determine the digital maturity index,[2] and achieving the goals set for the data management centres in the Russian regions.

The scientific novelty of the work consists in proposing ways to improve the above methodologies at the level of the constituent entities of the Russian Federation based on the analysis of similar successfully implemented tools in Australia, Singapore, Estonia, the USA, and the DESI index.[3] The choice of countries is conditioned by the presence of successfully implemented cases, which are the examples of confirming the rationality of taking the directions into account for building digital ecosystems in the second and third stages of digital transformation.

STATEMENT OF THE PROBLEM

The need to consider relevant indicators when assessing the digital maturity index in Russian regions is due to such factors as:

The discrepancy between the target areas of the digital transformation of the PMA and the actual measures [9] specified in the Strategies of Digital Transformation of Key Sectors of the Economy, Social Sphere and Public Administration of the Constituent Entities of the Russian Federation (hereinafter, Digital Transformation Strategies),[4] the implementation of which

[1] The BANI world is a fragile, unsettling, non-linear, incomprehensible world characterised by the variability of systems' functioning. The name is suggested by a futurologist Jamais Kashio.

[2] Digital Maturity Index — a tool to assess and improve PMA's digital transformation policies.

[3] Daily Economic Stress Index — DESI.

[4] Strategies for digital transformation. Ministry of Digital Development, Communications and Mass Media of the Russian Federation. URL: https://digital.gov.ru/ru/activity/directions/1064 (accessed on 17.02.2023).

is planned until 2030. In particular, they identify the need to create regional data management centres, which imply organizing a mechanism for collecting and working with data at the RF subject level in real time, which corresponds to the second stage of PMA digital transformation, while the indicators used to assess digital maturity and the planned activities correspond to the first [10].

Table 1 characterises the stages of PMA digital transformation and the respective effects of implementing each of them.

The evidence it contains suggests that each stage of digital transformation has a number of strategic benefits, and when implemented, it provides additional opportunities for the state (all other things being equal).

The methodology for assessing the digital maturity index in Russia's regions after adjusting the order of the Russian Ministry of Digital Development, Communications and Mass Media,[5] allowing regions to incorporate *additional areas and directions* in addition to the five key sectors and indicators if they so wish. This methodology is part of a set of measures to assess governors' performance and is a tool to improve the effectiveness of their policies in the digital transformation of sectors such as education, healthcare, urban transport, urban economy and state and municipal administration. Separately, it is worth noting that a qualified analysis of the authorities' performance makes it possible to form meaningful priorities, goals, activities, and strategies in the field of regional development [12].

Building digital ecosystems in the second and third stages of digital transformation. Such experiences are inherent in technologically and economically developed countries, and there is a trend today at the international level to create such ecosystems — digital macro environments for citizens, businesses, and governments, capable of influencing the real world through the digital one with the corresponding strategic effects, allowing the state to position itself on the world stage [13].

RESEARCH METHODS AND RESULTS

PMA Digital Transformation Assessment Methodologies are the effective tools for conducting a competent policy in the field of digital development, enabling Russian regions and the entire state to create conditions for increasing the reproduction of social and economic benefits through digitalization and digital transformation tools.

The methodology for assessing the digital maturity index of Russian regions involves finding the arithmetic average of indicators (*Table 2*) in each of the five sectors: education, healthcare, urban economy, public transport, and public administration.

The data in *Table 2* shows that the indicators in each sector reflect the share of electronic processes in the different activities.

[5] Order of the Ministry of Digital Development of Russia No. 600 dated 18.11.2020 (revised on 14.01.2021) "On Approval of the Methods for Calculating the Target Indicators of the Russian Federation National Development Target "Digital Transformation" (together with the Methodology for Calculating the Indicator "Achieving "Digital Maturity" in Key Economic and Social Sectors, Including Health and Education as well as Public Administration", Methodology for calculating the indicator "Achieving digital maturity in key sectors of the economy and social sphere, including healthcare and education, as well as public administration» for the constituent entity of the Russian Federation", Methodology for calculating the indicator "Increasing the share of mass socially important services available in electronic form to 95%", "Methodology for calculating the indicator «Share of households provided with broadband Internet access", Methodology for calculating the indicator «Increasing investment in domestic information solutions", Methodology for Calculation of the Indicator "Increased Investment in Domestic Information Technology Solutions" at the Level of Constituent Entities of the Russian Federation"). URL: https://www.consultant.ru/document/cons_doc_LAW_372437/e486e5c863f60c7faf76a471a7ea0b957b1772b8/?ysclid=le5et4173x603409804

Table 1

Characteristics of the stages of digital transformation of public and municipal administration

Stage	Characteristics	Examples of indicators	Examples of effects
The architecture of electronic government	Transfer of state and municipal processes into electronic format with the provision of electronic services	Share of electronic communications; share of data openness in electronic resources	Reduced costs for citizens, businesses, authorities as a result of electronic communications
PMA based on the data	Move towards and transition to information sharing based on a mechanism for automated data collection from the state's infrastructure through digital devices, systems, solutions	Proportion of data available in real time for analysis; proportion of data that is generated automatically	Increasing the speed and quality of management decisions
Digital PMA	The emergence of the possibility of influencing the real world through the digital environment with digital devices, systems, solutions	Proportion of automation of government infrastructure processes; proportion of data that can be managed in real time (online) in a digital environment	Optimisation of budgets, increased objectivity of management based on up-to-date data

Source: compiled by the authors based on [11].

The Digital Transformation Strategies adopted by 82 Russian regions[6] (data for Moscow, Khanty-Mansiysk Autonomous District and Chukotka Autonomous District are not available) reflect target indicators for assessing the digital maturity index of industries until 2024 (in the long-term prospect until 2030); these documents provide for measures aimed at forming an e-government architecture in each constituent entity of the Russian Federation, which corresponds to the first stage of PMA digital transformation, while also noting the need to build a regional data management system with a real-time data collection mechanism across all sectors of government, which refers to the second phase of PMA digital transformation and implies the organisation of data-driven public administration, which may be difficult, however, as the actual indicators aim to assess the construction of the established e-government architecture, and hence to assess electronic communications in key sectors.

This paper presents an analysis of methodologies for assessing the digital transformation of PMA in those countries where the second (or third) phase has been formed, and provides examples of its effectiveness. On the basis of the research conducted, it proposes areas and aspects that should be taken into account in order

[6] Strategies for digital transformation. Ministry of Digital Development, Communications and Mass Media of the Russian Federation. URL: https://digital.gov.ru/ru/activity/directions/1064 (accessed on 17.02.2023).

Table 2

List of indicators for determining the digital maturity index

Industry/ Sector	Indicators
Healthcare	Proportion of doctor's appointments made by citizens remotely; proportion of citizens who have integrated electronic medical records available on the CPPS (consolidated portal of public services and functions); proportion of citizens under dispensary care who are provided with remote health monitoring; proportion of medical organisations that centrally process and electronically store diagnostic test results; proportion of medical consultations and conciliums conducted by constituent entities of the Russian Federation using video conferencing; proportion of consultations held by a doctor with a patient, including on the CPPS, using video-conferencing; share of citizens who have access to medical prescriptions in the form of an electronic document, including on the CPPS; share of medicines and drugs purchased for budget funds, for which centralised accounting of their distribution and use is ensured; share of emergency medical aid stations (departments) connected to the unified electronic dispatching system
Education	Proportion of students for whom a digital profile is maintained; proportion of students who are offered recommendations on improving the quality of learning and shaping individual trajectories using data from the student's digital portfolio; proportion of teaching staff who have been able to use verified digital learning content and digital learning services; proportion of students who have free access to verified digital learning content and services for self-study; proportion of electronic assignments for students who are monitored and checked using automated checking technologies
Urban economy	Share of general meetings of premises owners in apartment buildings held through electronic voting in the total number of general meetings of owners held; share of apartment building management and common property maintenance services paid online; share of utilities services paid online; share of management organisations disclosing information in full to the state information system of housing and communal services; share of resource supplying organisations disclosing information in full to the state information system of housing and communal services; share of emergency housing stock entered into the digital register of emergency housing; share of city residents over 14 years of age registered on specialised information resources on urban development issues
Public transport	Share of buses providing regular urban, suburban and intercity (within the constituent entity of the Russian Federation) passenger transportation equipped with non-cash fare payment systems; share of buses providing regular urban, suburban and intercity (within the constituent entity of the Russian Federation) passenger transportation for which information on their actual route traffic is publicly available; share of buses providing regular urban, suburban and intercity passenger transportation (within the constituent entity of the Russian Federation) that are equipped with video cabin surveillance systems (with recording function) that meet personal data protection requirements
Public administration	Share of types of information in state or regional information systems available in electronic form required for the provision of mass socially significant services; share of electronic legally significant document turnover between executive authorities, local authorities and their subordinate institutions and in the constituent entity of the Russian Federation; share of state and municipal services provided without violating the regulatory deadline when providing services electronically on the CPPS and/or regional public services portal; share of inspections as part of control and oversight activities carried out remotely, including using checklists in electronic form; share of applications for mass socially important state and municipal services in electronic form using CPPS, without the need to personally visit government bodies, local authorities and multifunctional centres for state and municipal services, in the total number of such services; share of mass socially important state and municipal services, that are electronically accessible and are provided through CPPS in the total number of such services provided electronically

Source: compiled by the authors based on the Resolution of the Government of the Russian Federation of 03.04.2021 No. 542 (ed. of 30.11.2022) "On Approval of methods for calculating indicators for evaluating the effectiveness of the Activities of Senior Officials (Heads of Supreme Executive Bodies of State Power) of the Subjects of the Russian Federation and the Activities of Executive Authorities of the Subjects of the Russian Federation, as well as on Invalidation of Certain Provisions of the Decree of the Government of the Russian Federation of 17.07.2019 No. 915". URL: http://www.consultant.ru/document/cons_doc_LAW_382080 (accessed on 08.09.2022).

to assess the effectiveness of the established requirement and to adjust the course in this area. The identified trends should be taken into account when improving the calculation of the Digital Maturity Index in Russian regions under sanctions pressure, when it is necessary to meet their own needs through domestic resources.

The indicators presented in *Table 2*, reflect the peculiarities of the current digital PMA transformation (*Table 1*) both at the level of the region and the state as a whole, as this process is evaluated on the basis of their values, and further activities in this direction until 2030 will be aimed at achieving the target values [14].

Let us present the PMA digital transformation assessment methodologies in several foreign states (based on indicators) and in the European Union (DESI) (*Table 2*); for each of them the stages of digital transformation are defined, and examples of their effectiveness are considered.

Australia is chosen because it is one of the leaders in digital transformation [15]. The country has developed a digital ecosystem (with aspects of PMA Phase 2 digital transformation), which is expressed by the availability of tools to gather information through the Internet of Things into a single macro environment in which AI structures, depending on their functionality, typify, instantiate and distribute data. The second phase of PMA's digital transformation has a number of strategically significant benefits, expressed in social and economic terms. In particular, in Australia, thanks to an investment by the authorities (of $ 30 million) to establish the National Digital Agriculture, the implemented digital solutions are planned to automate infrastructure processes in the industry in order to implement a remote management system via digital twins, which will contribute to the goal of becoming a $ 100 billion sector by 2030. The use of blockchain technology in the National Digital Agriculture will (through digital supply chain traceability) reduce food losses by 30 million tonnes by 2030. It is also estimated that in the country over the next decade, innovations in the digital transformation of the state will collectively add about $ 315 billion to GDP.[7] Australia's examples demonstrate the effectiveness of the PMA's digital transformation and the country's medium-term transition to its third phase, with the corresponding effects and implementation of real-world impact mechanisms through the digital world.

The choice of Singapore is due to the fact that it is the first subject of implementation of the *digital twin* city-state (the third stage of PMA digital transformation), which allows: modelling the state functions; organising data integration from its infrastructure; reflecting infrastructure processes (for example, work of aggregates for rubbish collection); realising planning and forecasting of various procedures and phenomena; influencing the real world with management decisions of authorities, business and citizens (Internet of things). The functioning of the digital twin generates effects of social and economic nature[8] [16]: reduction of the continuous topographical survey for authorities from 35 to 6 million Singapore dollars, by 2030 a 20% reduction of pollutant emissions in school construction; possibility for 96% of citizens to receive a number of socially important service packages, formed by the AI system on the basis of the previous requests (from 2021).

The choice of Estonia is due to the fact that in the UN e-government development ranking and in the international digital

[7] National Agricultural Innovation Agenda. Digital Foundations for Agriculture Strategy. URL: https://www.agriculture.gov.au.

[8] Singapore Green Plan 2030. URL: https://www.greenplan.gov.sg/key-focus-areas/overview#resilient-future

Table 3

Directions and indicators for assessing the digital transformation of public and municipal administration in Australia, Singapore, Estonia, USA and DESI methodology

Methodology in Australia [a]		
Direction	**Characteristics**	**Indicators**
Research expenditure	Evaluation of ICT (information and communications technology) investments in public administration and municipal governance	Expenditure on ICT (information and communications technology) research and development by public authorities; expenditure on research and development by non-profit organisations; assessment of investments in human resource development in the digital economy
Assessment of business development in the IT sector	Evaluating the activities of individuals involved in the development of the state's digital macro-environment	Proportion of organisations involved in IT innovation activities; proportion of private organisations using artificial intelligence (AI) to generate data; proportion of organisations with digital data collection tools; proportion of private organisations using digital devices, systems, solutions in their activities; proportion of organisations using data processing centres; proportion of organisations using internet of things to generate data; proportion of electronic commerce
Use of the internet	Assessment of internet accessibility for citizens	Share of broadband subscribers (DSL, ITTH, GPON); data volume; share of cellular subscribers; share of citizens with internet access (wired or wireless); share of households with internet access
Use of data	Assessment of data flows in state and municipal authorities	Specific weight of government databases integrated into a single system; volume of data integrated from digital devices into a single digital government system; specific weight of state and municipal entities, businesses and citizens who have access to real-time data via individual and single digital systems; specific weight of government entities that use internet of things devices to generate infrastructure data; specific weight of data generated by internet of things devices in the overall structure of the data received
Methodology in Singapore [b]		
Direction	Characteristics of the direction	Direction indicators
Performance assessment	Evaluating the effectiveness of digital transformation activities	Citizens' satisfaction with digital services, in %; business satisfaction with digital services, in %
Assessment of cross-cutting (end-to-end) digital technologies	Assessment of the accessibility of the authorities' electronic systems for various operations	Proportion of digital public services offering electronic payment options, in %; proportion of digital public services that are generated by data obtained by the government using the internet of things and artificial intelligence (AI), in %; proportion of digital public services offering digital signatures, in %
Evaluating digital transactions	Assessing the capacity of digital government systems to carry out digital transactions	Authorities' digital transactions from the total number, in %; share of incoming and outgoing transactions through digital systems by authorities, in %

Table 3 (continued)

Methodology in Australia [a]		
The capacity of the authorities	Assessment of human resources capable of mastering the tools of the digital economy	Proportion of civil servants able to master digital economy tools, %; number of civil servants able to master digital economy tools, pcs.
Digital projects	Accounting for (Mainstreaming) digital transformation projects	Number of digital transformation projects, pcs.; share of digital transformation projects of all, %
Evaluation of the data	Evaluation of data flow, evaluation of AI and data processing systems	Proportion of civil servants using AI to develop and deliver services and policies, in %; number of high-impact data generation projects; main data fields in machine-readable format that can be transmitted by AI, in %; time required to exchange data for inter-agency projects, in seconds, in minutes, in hours, in days; proportion of data generated by internet of things devices; proportion of data processed by AI
Assessing the extent of migration to the digital cloud	Assessment of the overall integration of all digital systems in a single system	Proportion of digital systems in the digital cloud, integrated into a single digital space for data generation, exchange and transformation (public and private information systems), in %; proportion of digital devices managed through the digital cloud; number and proportion of citizens with access to information in the cloud
Methodology in Estonia [d]		
The stage of digital transformation of PMA	**Indicators**	
Building the architecture of e-government	Structural units with Internet access, in%; employees with Internet access, in%; maximum contractual upload, download and maximum average upload and download speeds; structural units satisfied with the quality of the Internet connection, in%; Internet connection speed which does not provide the structural units with their needs (up to 30 Mb/sec; 30 to 100 Mbps; 100 to 500 Mbps; 500 Mbps to 1 Gbps; over 1 Gbps); structural units with a website, in %; structural units placing online orders, service catalogue, providing customisation, distributing information about other structural units, in%; structural units using social networks, using Wikipedia, using blogs, in %; share of interactions with citizens and businesses through electronic document management system, in %; structural units having their own applications, in %; share of structural units having EDM (e-document management), in %; share of structural units interacting with other administrations of other countries through EDM (e-document management), in %; share of structural units having ERP and CRM systems, in %; share of citizens and businesses using electronic public services, in%; share of officials with mobile communication and access to mobile phones, in%; share of domestic software, in %; reduction of paper used; reduction of energy consumption of ICT architecture; share of officials using electronic communications; structural units with remote access to email systems, in%; accessibility to citizens and businesses of all government systems, in %; staff with knowledge of ICT use, in%; structural units with cyber-attack protection systems, in %	
PMA based on the data	Structural units with cloud computing (for all government activities), in %; structural units integrated into a single database, in %; structural units with their own digital platform for data management, in %; problems with data access, in %; data chaos, in %; proportion of staff able to work with data collection and management tools, in %; structural units holding electronic accounts with automatic processing using AI tools, in %; share of open source software, in %; probability of cyber-attacks when using data, in %; structural units using biometric data, in %; structural units using VPN, in %	

Table 3 (continued)

Methodology in Australia [a]	
Fully digital PMA	Use of RFID by authorities, in % (including for identification of individuals, for production purposes, for product or service identification); organisational units analysing their own big data from IoT devices (including: geolocation data, social media data, data from devices with AI), in %; organisational units analysing their own big data with AI systems (including: social media data, data from other sources, data in natural language processing), in %; structural units using 3D printing in data analysis, in%; structural units using robots (including: for service needs; for surveillance and security; for transporting people and goods; for scavenging and refuse collection; for warehouse management; for assembly work; for construction), in %; organisational units using internet of things devices (including: smart lights, smart thermostats; smart meters; RFID or IP-based sensors; internet-controlled cameras; motion or maintenance sensors for vehicle tracking; sensors for monitoring or automating production processes; room security devices; other internet of things devices), in %; organisational units using AI (including: for speech; for identifying objects or persons; for machine learning; for process automation; for moving machines; for personnel management), in %
Methodology in the USA [e]	
Direction	**Indicators**
Telephony and broadband internet access and penetration estimates	Broadband penetration rate, in%; fixed network penetration rate, access speed, in %
Assessment of mobile internet penetration	Share of population able to use 3G, 4G, 5G mobile network, in %; network access speed
Assessment of electronic communications	Share of electronic communications in total for a certain type of activity, in %
Assessment of the digital divide	Share of male and female population with internet access, %; share of population of different age categories using the internet, %
Evaluating data flow	Share of organisational units with access to real-time data, in %; amount of data available for real-time processing, in %; share of data that can be processed by several organisational units, in%; share of digital platforms that can provide real-time data management; share of data available to citizens, in different directions
Assessment of the use of AI systems	Share of data processed and automated, in %; share of structural units using AI, in %; share of public services provided using AI, in %
Evaluating the use of internet of things devices	Number of IoT devices, pcs; share of operations performed to transform infrastructure using IoT devices; share of organisational units using the IoT, %
5G penetration assessment	Share of IoT devices running on 5G, in %; share of wireless network subscribers using 5G, in %; share of business units with access to 5G network, in%; share of AI solutions running on 5G, in %

Table 3 (continued)

Methodology in Australia [a]	
Satellite communication penetration assessment	Share of US territory covered by satellite communications, in%; share of business units using satellite communications, in %; share of operations performed via Internet of Things using satellite communications, in %; number of devices, systems using satellite communications, pcs.
Assessment of cloud computing and data centres	Number of data processing centres (DPCs), pcs.; share of business unit operations processed in DPCs, %
Assessment of blockchain technology	Share of business unit transactions processed using blockchain technology in databases, in %
DESI methodology [e] (EU)	
Direction	Characteristics of indicators
Assessment of human capital	Determination of the number and percentage of people with basic or specific digital skills in data management, communications, software issues; determination the number and percentage of people hired, graduates (including women and men), businesses providing training on digital economy tools
Communication assessment	Determination of the percentage of households with wired internet access up to 100 Mbit/s, in%; determination of the percentage of households with wired internet access from 100 Mbit/s, in%; determination of the percentage of 3G, 4G, 5G wireless coverage, in %; determination of the percentage of wired internet use and wireless penetration, in %
Assessment of digital inclusion	Determination of the share of electronic communications and processes, in %; determination of the share of information used as big data, in %; determination of the share of processes and actions processed by AI, in %; determination of the share of digital systems, devices, solutions that function for environmental sustainability, in %
Evaluation of digital public and municipal digital services	Share of civil servants participating in electronic communications, in %; share of electronic services for citizens and businesses, in %; share of government data generated using digital big data devices available to businesses and citizens, in %

Source: compiled by the authors.

Note: a — based on data of Australian Bureau of Statistics. URL: https://www.abs.gov.au/statistics; b– based on data of Digital government blueprint. URL: https://www.tech.gov.sg/files/media/corporate-publications/dgb-public-document_30dec20.pdf /; c — based on data of Statistics Estonia. URL: https://www.stat.ee/en /; d — based on data of Digital economy report 2021. United Nations. URL: https://unctad.org/system/files/official-document/der2021_en.pdf /; e — based on data of The Digital Economy and Society Index (DESI). European Commission. URL: https://digital-strategy.ec.europa.eu/en/policies/desi/.

economic indicator it is the leader in many aspects [17]. Due to the fact that the country does not have separate assessment areas, each indicator is correlated with a particular stage of digital transformation. Estonia has implemented aspects of the three stages of PMA digital transformation, as evidenced by the respective effects of each stage. The country has developed a digital ecosystem with a mechanism for data collection and transformation; the PMA digital transformation assessment methodology includes indicators for digital penetration and use of the internet of things for three-way

communication and assessment of AI systems and the degree of robotisation.

As a result of the second and third phases of digital transformation in Estonia:

• the "digID" smart card was introduced, allowing citizens and companies to integrate into the digital ecosystem of public services (where future services are improved on the basis of previous requests and their package is automatically generated). The card is used via smart devices and is projected to reach around 76% of the country's population by 2025, i.e., the proportion of citizens using an additional source of social security, all other things being equal, will be high [18]. The authorities, based on the mass use of certain services, the data of which are formed in a single digital space, modernise the mechanisms and specifics of providing further services.

• Digital devices in the state provide around 99% of the authorities' needs: around 20 vehicles are identified every day and around seven people are apprehended or detained by Interpol using video surveillance cameras, information from which is processed and transmitted to a single data centre using AI, and the total number of requests to security structures is around 20,000. This effect is achieved through the operation of IoT devices in the state's infrastructure [19].

• As a result of government investment (cumulative investment of around $ 3.5 billion between 2021 and 2027[9]) in the robotisation of the companies that produce goods from waste, the output increases by 3% annually without increasing costs and production expenses — the green economy is stimulated through digital transformation in the public interest.

These examples confirm that for Estonia, the PMA digital transformation assessment methodology with the second and third stage aspects is an effective tool for improving policy in this area. Qualitative improvement occurs by objectifying information on the penetration and the use of digital tools with an assessment of the results of the formation and functioning of the digital ecosystem.

The USA were chosen because they were among the first ones to implement a digital ecosystem with aspects of PMA Phase II and Phase III digital transformation. It was born and developed simultaneously with the growth of companies: Facebook, Amazon, Apple, Microsoft, and Alphabet, which developed and implemented the tools of digital transformation at the level of the whole state. Today, the authorities are direct participants in it [20]. In general, the third stage of PMA digital transformation is presented in the United States. This fact is confirmed by the presence in its methodology of indicators of the degree of data penetration, real-time aspects of data collection and transformation, the degree of implementation of the Internet of Things, AI systems and blockchain technology in the digital ecosystem of citizens, businesses, and governments.

Examples of the effectiveness of the third phase of PMA's digital transformation in the country include:

• Around 100 million US citizens were informed of vaccination points during the pandemic, based on geolocation data through Apple's services in the nation's digital ecosystem [21].

• Rhode Island has increased the number of simultaneous claims processed from 75 to 2,000 as a result of moving the unemployment insurance claim flow to the cloud computing infrastructure, which has accelerated the social security processes for the unemployed many times over [22].

These examples show that operating a digital ecosystem with aspects of the third phase of digital transformation provides PMA activities with relevant strategic advantages,

[9] Tree of Truth. URL: https://tamm.stat.ee

Table 4

Areas of accounting for improving the methodology for assessing digital maturity in Russian regions

Direction	Justification of expediency and specificity of indicators
Data flows	Evaluation of data flows generated by end-to-end digital technologies allows information to be accumulated, systematized and classified in a single digital source. Direction indicators should assess the proportion of data generated and accessible in real time in relation to all information flows in the digital environment
Penetration of end-to-end digital technologies for each type	In analysing the penetration of end-to-end digital technologies, the devices of the internet of things, AI systems, blockchain systems, cloud computing, etc. in the PMA system in shaping data flows should be taken into account. Indicators should assess the share of penetration and provision of needs by end-to-end digital technologies
Integration of individual digital systems in a single digital environment	The assessment includes the proportion of all state and municipal digital systems integrated in a single digital space, which the indicators should reflect

all else being equal, ensuring long-term success and efficiency of a social and economic nature.

In the European Union, the DESI methodology is applied, which is generalised and touches upon the basic indicators for assessing the digital transformation. Its peculiarity is to take into account the share of the use and implementation of big data and AI systems as end-to-end technologies that provide a mechanism for data processing in the second stage of PMA digital transformation, in particular in the direction of assessing the integration of digital public and municipal services. Despite the fact that the methodology is generalised, on the basis of the indicators presented in it, we can conclude that European countries have established a mechanism for collecting and transforming information through big data, which indicates the second stage of digital transformation of state and municipal administration with its positive social and economic effects.

It is worth noting that EU countries define internal methodologies individually, apart from the presented index. Such experience should be taken into account in domestic practice and as a result we should include the aspects related to the assessment of data flows and their penetration into information collection and handling mechanisms in the methodology for determining the digital maturity index of Russian regions.

Based on the analysis of various methods for assessing PMA digital transformation and the above success stories in this area, suggestions (*Table 4*) were formulated and substantiated on the areas to be considered in eliminating the mismatch between PMA digital transformation targets in Russian regions for the actual activities specified in 82 Digital Transformation Strategies,[10] whose implementation is planned in perspective until 2030.

When integrating the above areas of accounting into the methodology, the specifics of inconsistency in the digital transformation document formation process in Russia must be taken into account [23]. Registration of information flows is necessary to assess the

[10] Strategies for digital transformation. Ministry of Digital Development, Communications and Mass Media of the Russian Federation. URL: https://digital.gov.ru/ru/activity/directions/1064 (accessed on 17.02.2023).

performance of the real-time data collection mechanism in PMA, and understanding the degree of penetration of end-to-end digital technologies (Internet of Things, blockchain, AI), each of which is responsible for a specific process (data collection, analysis and transformation) in the digital environment, and makes it possible to assess it as a whole. The assessment of the formation of the digital macro environment is driven by the need to systematise and cluster information transformed into big data.

CONCLUSIONS

The analysis of PMA digital transformation assessment methodologies, life institutions, and the study of the experience of successful implementation of digital ecosystems with second- and third-stage aspects on the example of foreign states that are leaders in this area are related to the need to solve the problem of inconsistency between the PMA digital transformation target areas in Russian regions and the actual activities specified in the 82 Digital Transformation Strategies. It can be argued that the expediency of introducing the areas and aspects of consideration indicated in the article into the methodology for assessing the digital maturity of Russian regions is that this methodology is an important and serious tool for shaping effective policies in the field of PMA digital transformation. Objective quantitative information on non-compliance with the legislative requirements for building regional data management centres will become a catalyst for launching processes related to their relevant formation, and will enable amendments to be made to regional digital development measures. The creation of such centres, as elements of a digital regional ecosystem, will accelerate the transition to the second stage of PMA digital transformation and provide the constituent entity of the Russian Federation with strategic advantages in the creation and reproduction of social and economic benefits through digital transformation tools.

These transformations in the context of sanctions pressure will have a positive impact on the stimulating development of the regions and Russia as a whole.

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ABOUT THE AUTHORS

Viktor I. Abramov — Dr. Sci. (Econ.), Associate Professor, Professor of the Department "Business Project Management" of the Business Informatics and Integrated Systems Management Department, National Research Nuclear University MEPhI, Moscow, Russia
https://orcid.org/0000-0002-9471-9408
viabramov@mephi.ru

Vitaly D. Andreev — a master's student in the field of training "Public and Municipal Administration" (profile: "Digital technologies in Public and Municipal Administration"), National Research Nuclear University MEPhI, Moscow, Russia
https://orcid.org/0000-0001-7259-9348
andreeev.1999@mail.ru

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Legal Justification for the Prevention of Corruption Risks Associated with the Participation of State Civil Servants in The Management of Commercial Organizations

S.G. Eremin
Financial University, Moscow, Russia

ABSTRACT

The **purpose** of the article is to investigate the problem of preventing corruption risks associated with the participation of state civil servants on a gratuitous basis in the management of organizations and enterprises of various forms of ownership.

The **objectives** of the article are to study the cases of participation of persons holding public positions in the management of a commercial or non-profit organization allowed by the legislator. To consider the external and internal corruption risks associated with the participation of state civil servants on a gratuitous basis in the management of organizations and enterprises of various forms of ownership, to clarify the causes of their occurrence.

The **practical result of the study** is that, based on the provisions of Russian and international legal acts, in particular ISO 26000, ISO 37000, ISO 37001 and ISO 37002 standards, a list of measures and conditions for preventing corruption risks associated with the participation of state civil servants on a gratuitous basis in the management of organizations and enterprises of various forms of ownership has been developed.

Keywords: prevention of corruption risks; public civil servant; non-reimbursable (gratuitous) basis; organization management; collegial body

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In the national legislation, for persons holding state (municipal) positions, there is an almost absolute ban on holding other positions in state (local self-government) bodies, as stated in the Federal Law of 25.12.2008 № 273-FL "On Counteracting Corruption"[1]; these bans, as E.A. Sumina and A.A. Kasatkina note, are mostly focused on excluding a conflict of interest [1]. At the same time, for example, "the ban on participation in the management of a commercial or non-profit organization" is characterized by a wide range of exceptions, the abundance and openness of the list of which still raises many questions. According to S.N. Sheverdyaev, "in this part, the Russian legislation is motivated by an applied, causal logic and is waiting for some phase of practical stabilisation to formulate rules of conduct of a more general nature". [2].

In general, the overall logic of these exemptions to date is as follows: public officials, with a few exceptions, may not participate in the management of a for-profit or non-profit organisation (see *figure* below).

For example, state civil servants may be elected to the boards of directors of companies where the Russian Federation or its constituent entity is a founder (shareholder, participant). As an example, take Rosimushchestvo/Federal Agency for State Property Management (the body exercising the powers of the owner of shares) or other state structures, such as the Russian Ministry of Defence, the Russian Presidential Affairs Department, the Russian Ministry of Finance, the Russian Government.[2]

In order to become a member of a collegial management body of a commercial company which is an organisation of a state corporation, state-owned company or public-law company holding more than 50% of its shares (interest), a civil servant must comply with the requirements of the Regulation approved by Resolution No. 1602 of the Government of the Russian Federation of 05.10.2020 (hereinafter the Regulation).[3] Pursuant to this document, the civil servant must submit a petition and, having received permission from the representative of the employer, participate in the management of the organisation on a non-repayable basis and outside of official time.[4]

A civil servant may also participate in the management of other legal entities on a non-repayable basis and on the basis of an act of the President or the Government of Russia. For example, members of the supervisory board of "Rostechnologies" State Corporation are appointed by the President of the Russian Federation.[5]

A public civil servant has the opportunity to be elected to the bodies of a legal entity

[1] Federal Law "On Combating Corruption" dated December 25, 2008 No. 273-FL (last edition). URL: https://www.consultant.ru/document/cons_doc_LAW_82959/?ysclid=lemrlgxsft683178828

[2] Federal Law No. 79-FL of 27.07.2004 "On Public Civil Service of the Russian Federation" (revised on 30.12.2021). Collected Legislation of the Russian Federation. 2004. № 31. Article 3215; Resolution of the Government of the Russian Federation of 03.12.2004 No. 738 "On Management of Federally Owned Shares in Open Joint-Stock Companies and Use of Special Right to Participation of the Russian Federation in Management of Open Joint-Stock Companies ("golden share")". Clauses. 2–5, 8, 12. URL: https://www.consultant.ru/document/cons_doc_LAW_50597/125721a1ce03a80be141051120f4a5fd8cd8f9f3/?ysclid=lemvg49z90772829093

[3] Decree of the Government of the Russian Federation of 05.10.2020 No. 1602 "On Approval of the Regulations on the Procedure of Participation of a Federal Public Civil Servant on a Non-Governmental Basis in the Management of a Commercial Organization, which is an Organization of a State Corporation, State Company or Public-Law Company, with Over 50 Percent of Shares (Stakes) Owned by a State Corporation, State Company or Public-Law Company, as a Member of its Collegial Management Body". URL: https://ipbd.ru/doc/00012020100800 03/?ysclid=lemvt59xgb177004508

[4] Ibidem. Clauses 2–3.

[5] Federal Law of 23.11.2007 No. 270-FL «On the State Corporation for Promotion of Development, Production and Export of High-Tech Industrial Products "Rostech" (revised on 31.07.2020). Collected Legislation of the Russian Federation. 2007:48(5814). Art. 11, para. 3.

— First, participation free of charge in the management of a political party, trade union body or general meeting of another public organisation

— Second, participation on a pro bono basis in the management of a non-profit organisation - with prior notification to the relevant higher authority

— Thirdly, participation, free of charge, in the activities of a collegial body of the organisation under special authorisation from the relevant highest authority of that territorial level

— Fourthly, representation on a non-repayable basis of public interests in the governing bodies and auditing commission of an organisation whose founder is the Russian Federation, a constituent entity of the Russian Federation or a municipality

Fig. **Exemptions when civil (municipal) servants are entitled to run a commercial or non-profit organisation**

Source: compiled by the author based on Federal Law "On Combating Corruption" dated December 25, 2008 No. 273-FZ (last edition).

by non-profit organisations such as housing, housing and construction cooperatives, garage cooperatives, associations of property owners. In order to do this he must obtain the permission of the representative of the employer in accordance with the procedure established by the regulatory legal act of the state body.[6]

It should be noted that the election of a public civil servant who is included in the specified list as a member of the Board of Directors,[7] and failure to notify the company in accordance with Federal Law No. 273-FL[8] may serve as grounds for bringing the company to administrative liability under the Administrative Violations Code of the Russian Federation,[9] since the relationship between the company and a member of the Board of Directors is defined by civil law (as per the Civil Code[10] and the Presidium of the Supreme Arbitration Court of the Russian Federation Information Letter No. 106 of 14.03.2006[11]).

Legislation of the Russian Federation stipulates that participation of the above-mentioned employee in the management of a commercial organization is not permitted

[6] Federal Law No. 79-FL of 27.07.2004 "On Public Civil Service of the Russian Federation" (revised on 30.12.2021). Collected Legislation of the Russian Federation. 2004:31(3215). Art. 17, p. 1, p. 3, par. "a".

[7] Presidential Decree No. 925 of 21.07.2010 "On Measures to Implement Certain Provisions of the Federal Law "On Countering Corruption". Collected Legislation of the Russian Federation. 2010:30(4070).

[8] Ibidem. Art. 4 para. 12.

[9] Code of Administrative Offences of the Russian Federation of 30.12.2001, No. 195-FL (ed. as of 17.02.2023). Art. 19.29. URL: https://www.consultant.ru/document/cons_doc_LAW_34661/56fc8b160d7d4acf2ee8ed080d3a4632e6caeec2/?ysclid=lemxgljm12462536911/

[10] Civil Code of the Russian Federation (CCRF). para. 4, Article 53(4). URL: https://www.consultant.ru/document/cons_doc_LAW_5142/?ysclid=lemxk32o37554973176

[11] Information letter of the Presidium of the Supreme Arbitration Court of the Russian Federation of 14.03.2006 No 106 "Review of the practice of arbitration courts in cases relating to the recovery of the unified social tax". Para. 2. URL: https://www.garant.ru/products/ipo/prime/doc/12046420/?ysclid=lemxpp4bdl905948302

if it leads or may lead to a conflict of interest in the performance of official duties or if it violates other restrictions and prohibitions laid down by federal laws.

From A. V. Konov's point of view, the movement of employees between state bodies and other institutions in general involves a certain array of corruption risks [3], both internal and external. The former include an increase in manifestations of corporate fraud and malfeasance; the threat of direct losses to the organisation from such actions of employees for personal gain rather than in the interests of the institution; an increase in the costs of activities, reduction of efficiency of business processes, increase in the cost of products (works, services); formation of an atmosphere of permissiveness and immorality in the organisation; possible weakening of its competitiveness, etc.; the latter include a decrease in stability of functioning of the institution, increased risk of raider attacks, vulnerability exploitation by competitors or other stakeholders; risk of being placed on rosters of unreliable organisations; vicarious liability on claims of the state or third parties; increased reputational risks; difficulties in building relationships with partners; difficulties in passing inspections (particularly those of official nature), etc.

The Russian Ministry of Labour agrees with this finding of high risk-taking. Thus, its Methodological Recommendations state that persons with a high degree of involvement in remedial risk functions are recommended to include those whose job duties include: decisive signatory powers; preparation and endorsement of draft decisions; participation in collegial decision-making bodies; drawing up an inspection report; issuing an order to eliminate violations and monitoring this process, direct maintenance of registers, databases containing commercially sensitive information.[12]

The occurrence of these risks is provoked by a breach of prohibitions and restrictions established by Russian law — in particular, about owning one's own business, acquiring securities on which income can be generated, if this may cause a conflict of interest.

Accordingly, the prevention of corruption risks associated with the participation of civil servants on a pro bono basis in the management of organisations and enterprises of various forms of ownership is a priority task for the employer of such employees. The ISO standards provide a solution to this problem.[13] For example, ISO 2600:2012 "Guidance on Social Responsibility"[14] places emphasis, aside from the obvious points (such as identifying corruption risks and counteracting the occurrence of preconditions for corruption), on improving good business practice by raising awareness of corruption issues among employees and key stakeholders, encouraging reporting violations of corporate policies, unethical and unfair treatment, setting examples of anti-corruption conduct, etc. In turn, the authors of ISO 37001:2016 "Corruption Countering Management Systems — Requirements and Guidelines for Implementation" offer a full-fledged mechanism of corruption risk management and preventative measures (routine maintenance) of relevant manifestations

[12] Letter No. 18–0/10/B-8980 of the Ministry of Labour of the Russian Federation dated 25.12.2014 "On Corruption Risk Assessment by Federal State Bodies" (together with "Methodological Recommendations on Corruption Risk Assessment Arising in the Performance of Functions"). Section 2. URL: https://www.consultant.ru/document/cons_doc_LAW_178382/?ysclid=lemya4fhrt155596722

[13] ISO standards are internationally recognised specifications for products, services and systems. They are created by the International Organization for Standardization (ISO) ISO to ensure quality, safety and efficiency.

[14] ISO 2600:2012 "The Social Responsibility Handbook." URL: https://www.iso.org/ru/iso-26000-social-responsibility.html

that is also adaptable for public sector organisations. This standard should draw attention to the provision on documenting the anti-corruption policy, which should, firstly, be adequately documented, secondly, communicated to employees and business partners with whom corruption risks exceeding the minimum level are associated, and thirdly, made available to relevant stakeholders to the extent possible.[15]

Last year, the International Organisation for Standardisation produced and published two new documents, — ISO 37000:2021, "Organisation Management. Guidance" [16] and ISO 37002:2021 "Corruption or Illegal Activity Reporting Management Systems. Guidelines".[17] The former is based on the so-called concept of "Good Governance"; the authors of the document believe that governing an organisation, regardless of its form of ownership, provides an opportunity to build trust with both internal and external participants in the corporate ecosystem, acting ethically and responsibly in its interactions with them, moving governance beyond pursuit of personal interests and complying with legal obligations, thereby reducing the likelihood of corruption risks and other such issues.

As for the second document (ISO 37002:2021), similarly to ISO 37001:2016, it is focused on the integration into the organisational management practice of the corruption offence reporting *management system* as a separate business process, whose main purpose is to develop a mechanism for targeted information exchange (with provision of appropriate communication tools) about suspected or actual manifestations of such offences by employees. In spite of the rigidity of such measure, in our opinion, given the incompleteness of the mechanism of regulation of the institute of prevention of corruption risks associated with the participation of civil servants on a pro bono basis in the management of organisations and enterprises of various forms of ownership, the tools proposed by the developers of ISO 37002:2021 will be useful.

Taking the provisions of the international standards ISO 2600:2012, ISO 37001:2016, ISO 37000:2021, ISO 37002:2021 and the Methodological Recommendations of the Russian Ministry of Labour as a basis, the following measures should be implemented in order to minimise or eliminate the aforementioned risks:

- the redistribution of functions between structural subdivisions within the organisation (or enterprise) run by the civil servant:
- the use of information technology as a priority for business activities (official/business correspondence);
- integration into the management system of the organisation (or enterprise) in which the civil servant participates on a pro bono basis, of the business processes for whistleblowing management of corruption offences;
- eliminating the need for a public civil servant to personally interact with persons with whom property, corporate or close relationships may arise that could lead to a conflict of interest [1];
- improving the selection mechanism for civil servants applying for management positions in organisations of various forms of ownership;
- reduction in the number of civil servants with the power of casting

[15] ISO 37001:2016 "Anti-Corruption Management Systems — Requirements and Guidelines for Implementation". Art. 5.2. ULR: https://iso-management.com/wp-content/uploads/2019/10/ISO-37001–2016.pdf

[16] ISO 37000:2021 "Managing Organisations. Handbook". URL: https://committee.iso.org/ISO_37000_Governance

[17] ISO 37002:2021 "Corruption or Illegal Activities Reporting Management Systems. Guidelines".URL: https://www.iso.org/ru/standard/65035.html

signatures, preparing and approving draft decisions, participating in collegial decision-making bodies, drawing up inspection reports, issuing orders to rectify violations and monitoring the rectification of detected violations, directly maintaining registers, databases containing commercially sensitive information;

• reducing the time taken to make management decisions;

• establishing clear regulation of the manner and timing for a public civil servant to act in the exercise of a corruptly dangerous function(s);

• establishment of additional forms of reporting by officials managing organisations and enterprises of various forms of ownership on the results of decisions taken;

• additional activities aimed at identifying corruption risks associated with public civil servants' pro bono participation in the management of organisations and enterprises of various forms of ownership, integrating and maintaining policies and practices that counteract such risks.

These measures should be implemented on an ongoing basis through:

• firstly, organisation of internal control based on the mechanism of verification activities (anti-corruption compliance [4–11]) over the performance of duties by civil servants involved in the management of enterprises and organisations of various forms of ownership. These actions should be carried out both within the framework of verification of reliability and completeness of information about income, property and property obligations and on the basis of information received about corrupt practices, including publications about such activities in the media, complaints and appeals of citizens and organisations, notifications about conflicts of interest;

• secondly, the use of video surveillance and audio recording in the reception areas of businesses or organisations;

• thirdly, conducting outreach, explanatory, and other work to reduce the potential for corrupt behaviour by civil servants in the performance of corruptly dangerous functions.

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ABOUT THE AUTHOR

Sergey G. Eremin — Cand. Sci. (Law.), Associate Professor, Associate Professor of the Department of State and Municipal Management, Finance University, Moscow, Russia
https://orcid.org/0000-0002-1599-391X
eremin_100@mail.ru

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The Ontogenesis of Human Capital of an Enterprise

D.A. Zhdanov
Central Economics and Mathematics Institute, Russian Academy of Sciences, Moscow, Russia

ABSTRACT

The management of the company traditionally faces the task of increasing the effectiveness of human capital (HC), its timely transformation, and the early accumulation of the necessary human resources. In this regard, the purpose of this work was to establish a rational set of transformations that HC goes through from its inception to the end of its existence. The human capital of an enterprise in the work is understood as a combination of the corporate human capital of the organization and the individual human capital of its employees. The methodological basis of the study was the four-component system economic theory, the evolutionary theory of the firm, in particular, the features of the life cycles of organizations (LCO) and, finally, the theory of human capital. The involvement of these scientific approaches made it possible to demonstrate that the evolution of human capital in the correct version (during the transition from one stage of the life cycle to another) occurs synchronously with the change in the management tasks of the enterprise that arise at each stage of the life cycle of the organization. They determine the priority requests to the elements of the human capital, leading to the rotation of the latter and the selection of the most demanded among them for the corresponding stage of the life cycle. From a scientific point of view, the main result of the work was the identification of unified key stages that make up a consistent cycle of development of the human capital of an enterprise (determining its evolution), as well as the establishment of the positions of corporate and individual human capital, the most focused on solving the problems of the corresponding stage. Verification of the results obtained was carried out on the example of the evolution of the basic elements of the enterprise's human capital — corporate culture and management style. The conclusions drawn are intended to help the management of companies to determine the components of human capital, which are mainly in demand at the corresponding stages of the life of the organization, and to choose in a timely manner the ways to increase the potential and efficiency of personnel.

Keywords: systemic economic theory; life cycle of the organization (LCO); company management; human resources; corporate culture; leadership

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Praemonitus, praemunitus
(from Latin — forewarned is forearmed)

INTRODUCTION

The effectiveness of any enterprise depends to a large extent on its workforce, the skills, knowledge, activity of its employees and the efficient use of human resources. Therefore, management usually pays so much attention to personnel development and improvement. In this regard, it would be useful to predict the demand for certain components of human capital (HC), to understand what competencies and abilities will be relevant, what requirements to employees are urgent at different stages of the company's existence, what the management should pay attention to when selecting and training their employees.

This study seeks to answer these questions. The author aimed to establish the sequence of appropriate transformations that a company's human capital undergoes from inception to the end of existence, i.e., its ontogenesis. The object of the study is HC of organizations engaged in productive activities. Let us note that the period of its existence, obviously, is similar to the period of life of the corresponding enterprise.

In order to achieve and implement this objective, the following tasks are to be carried out:

a) identify the trends of changes in HC, the reasons for the transformations and the demand for the individual elements of capital during the "life" of the company;

b) assess the degree of universality of such transformations in relation to different enterprises;

c) if a commonality of changes is found, to identify the key phases of change and demonstrate the main features of each phase.

Given the multidimensional nature of the questions posed, the article uses a number of theoretical approaches to help justify the proposed solutions, namely four-component systems economic theory, evolutionary theory of the firm, in particular the concept of the organisational life cycle (LCO) and human capital theory.

In economic research, the relatively recent debate on HC is linked to the desire to explain the role of intangible and inseparable human assets in the creation of social product. The concept of HC is primarily associated with the Nobel laureates Th. Schultz and G. Becker. The latter, in particular, moved the discussion of HC from the individual sphere to the enterprise level. His works gave rise to a justification for investing in people — in their health, education and well-being. Today, there is a well-established view that human capital is one of the main resources for increasing a company's competitiveness and efficiency [1–3].

Another topic to which scholars, including the proponents of the evolutionary theory of the firm, frequently refer is the concept of the life cycle. It is used when analysing the developmental phenomena of various social entities, such as individuals or individual organisations. The metaphors and analogies used in this approach help simplify the representation of complex social phenomena and create comprehensible patterns and images in scientific thinking. The application of this theory to the solution of practical problems is often criticized [4], but its basic postulates are accepted by most economists.

One of the challenges of this study has been to bring together different perspectives on the issue under study. In this regard, the following research logic is used (*Fig. 1*). First, taking into account the positions of the systemic economic theory, the functional complexes that implement the basic tasks of the enterprise are identified. Then, based on the views on the ontogenesis of the enterprise as the passage of typical stages in the process of life cycle,[1] the tasks of each phase are detailed and the management tools (functional complexes) that ensure their solution are determined. After that, the elements that make up the corporate HC of an enterprise and the individual HC of its employees are highlighted, and the positions of human capital that are most in demand when solving the tasks of the noted complexes are identified. This allowed us to compare the problems of the individual stages of LCO, the tools (functional complexes) that implement them, and the HC elements that provide their solution, and thus record the changes that the HC of the enterprise undergoes during its "life", the key features of each of the evolutionary stages, as well as the factors that determine them.

THE ENTERPRISE IN THE SYSTEMS ECONOMIC THEORY

Let us begin by detailing the main production and economic objectives of the enterprise, for which we will use the provisions of systems economic theory. In its framework,

[1] We will use the term 'life cycle' (LCO) to refer to the period of an organisation's existence.

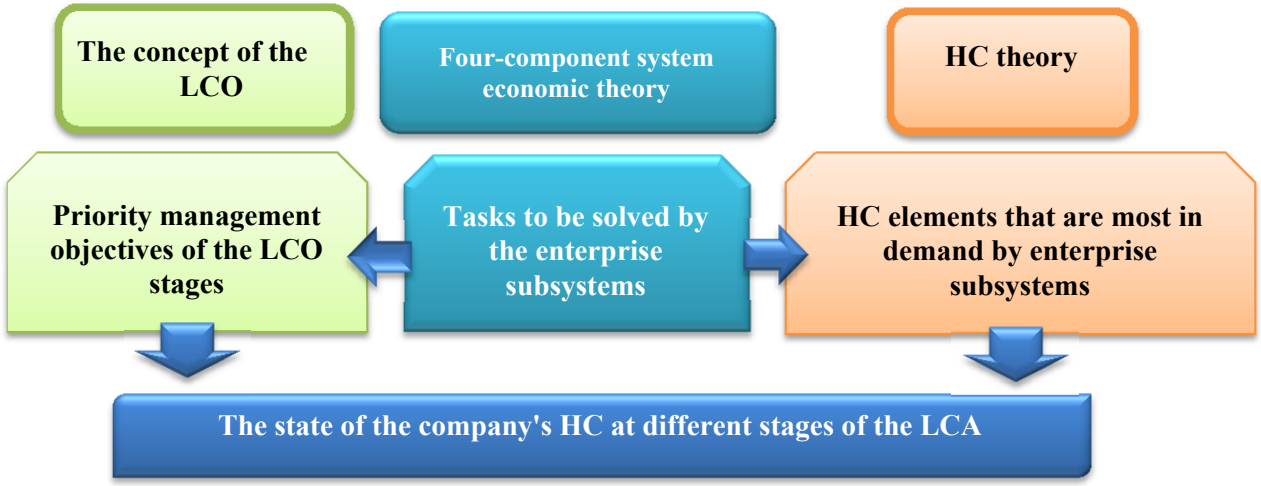

Fig. 1. **Research algorithm**

Source: compiled by the author.

the activity of economic actors (including the enterprise) is seen as the operation of a universal underlying structure consisting of four elements (systems) that differ from each other by the presence of boundaries in space and/or time.

The typology of economic systems at the upper level of the classification includes the following 4 basic categories, which differ in their spatial and temporal characteristics [5]. The enterprise can be perceived as a whole:

- *an object system* operating in a limited space within an unbounded time frame;
- *an environmental system* operating in an unbounded time span and without intrinsic spatial boundaries;
- *a process system* consisting of individual processes operating within a limited time span across the entire available space;
- *a project system* consisting of individual projects, each of which operates within a limited timeframe in a limited space.

A prerequisite for the sustainable operation of the company is a balanced internal structure, as well as balanced systems of all the above types that ensure its sustainability and reproduction cycle [6] and endowed with sufficient resources for its proper functioning.

In line with the concept under consideration, the basic system structure of an enterprise is a configuration that includes the following four elements: entrepreneurial, social, administrative and technical-economic spheres. The first refers to the domain of the entrepreneur who directs the development and position of the company in the surrounding world. The second includes the behaviour and evolution of employees and the relations between them. The third includes the processes, rituals and tools of production and business management. The latter includes intra-company projects necessary for the implementation of production and business processes [6].

The solution of the set of tasks of each of the mentioned spheres is carried out primarily by the profile functional complexes, which include: business model (BMC), social and labour (SLC), institutional and organisational (IOC) and property and technology (PTC). BMC covers the sphere of interactions of the enterprise with the outside world. SLC looks at the behaviour and evolution of employees, the relationship between them as well as the managers and owners. IOC includes intra-company institutions, organisational

Table 1

Tasks of the functional complexes of the enterprise

The system aspect of the enterprise	The scope of the company's activities	Functional complex	Tasks to be solved
The object system	Entrepreneurial (development, ensuring long-term competitiveness)	Business Model (BMC)	Preparation and implementation of enterprise development projects, entry into new markets, rationalisation of relationships with partners, other investment and innovation solutions
The environmental system	Social (employee interaction)	Social and Labour (SLC)	Ensuring the functioning of the workforce, establishing social relations in the units, maintaining an adequate corporate culture, establishing a psychological climate in the team, etc.
The process system	Administrative (business management)	Institutional and organisational (IOC)	Management of company activities, administrative and managerial interaction between departments and employees, formation of regulations and norms for employees' actions, etc.
The project system	Technical and economic (production and economic activities)	Property and Technology (PTC)	Enterprise asset management, implementation of production, distribution and exchange processes on the basis of available equipment

Source: compiled by the author.

structures that ensure the implementation of production and business processes. PTC allows the implementation of production projects on the basis of existing equipment using mastered technologies.

Let us compare the marked positions with each other and with the tasks solved within the framework of the functional complexes within the framework of *Table 1*. At the same time, other subsystems are involved in solving the problems of each sphere, in addition to those noted, but the dominant role remains with those given in *Table 1*.

SYSTEMS ECONOMIC THEORY AND THE BUSINESS LIFE CYCLE

Every business strives to be efficient and effective in the short term as well as the long term, and to do so it needs the four basic systems to work together smoothly. But the company's priorities change significantly as it develops, and its managerial, commercial and other traits change over time. This leads to the fact that as its scope of activity, hierarchy and age change, the rational interaction of these systems, their correlation and relevance are transformed.

Many aspects of growth are common to different organisations, which allows us to identify typical stages of their evolution and use the life cycle metaphor to explain the changes in their development. In management theory the view of enterprise ontogenesis (as the passage of life stages) was formed in the 70s of the previous century and is associated with such names as A. Downs, L. Greiner, K. Cameron, P. Quinn, I. Adizes and others. The main idea of this approach, supported by the majority of scientists, is that any company in its development passes through a number of common stages, one following the other: they are characterized by their own problems, organizational characteristics and

management methods [4, 7]. The validity of this theory has been confirmed by numerous empirical studies [8].

Summarising the views on LCO stages, we identify the four most characteristic ones: *Formation, Development, Maturity, Aging*. At the end of this list *Resurgence* is sometimes added, which is linked to the possibility of making decisions that prevent the company from disappearing, such as spinning off new organisations, and returning to one of the initial stages. This sequence is inherent in most approaches, although there are other views both on the definition of the stages of enterprise evolution (L. Greiner, I. Adizes, B. Z. Milner, which is reflected in detail in [4]) and on the classification of features that characterise the presence of a company at a particular stage [9] or on the mechanisms of its transition from one to another [10]. It should also be noted that all authors emphasise the difficulty of fixing the duration of the stages noted — they can take a very significant period of the life of the organisation.

Thus, the increase in the volume of activities, levels of management hierarchy, and age of the company leads to traditional management development problems. Their solution requires changes in relevant competencies, activation of marked profile subsystems, otherwise business disintegration occurs. For example, at the initial stage of development *the Object System* determining initial requirements to the company is the key one; with the growth of business the attention is shifted to the administrative sphere and it is replaced by *the Process System*.

A company cannot make significant progress unless it has the necessary maturity and balance in its systems, which is why it is so important to anticipate necessary changes and respond to them in a timely and appropriate manner.

CHANGING OBJECTIVES OF THE ENTERPRISE AS IT EVOLVES

Each of the above-mentioned stages of the LCO has its own operational, managerial and other tasks that define the organisation's current agenda. Let us briefly note the key ones.

Formation. At this stage, the initial commercial ideas are turned into a product. The main task is to produce a niche product and sell it, which would allow the organisation to earn the initial money needed to survive. The management dominants are to establish production, increase sales, and occupy a local niche. The enterprise tries to ensure short-term efficiency, it is flexible and adaptive. Its development is based on creativity.

Development. As production is established, output is expanded, loyal customers are found and revenues stabilise, market niche growth and the search for the new directions and customers comes to the fore. The number of employees increases, processes are developed and modernised, and internal integration and adaptation to the environment takes place. The expansion of activities leads to more complex management and the need to regulate relationships, budgeting, and control, which necessitates the normalisation of administrative work, the formation of rules and regulations and the institutionalisation of relations. The focus shifts from generating new ideas and products to organising the effective operation of what has already been created. The dominant focus is on streamlining management, increasing sales, expanding the market niche, and improving operational efficiency.

Maturity. As long as the company's sales and profits are stable, it does not take active decisions to change course. The main objective is multi-faceted growth, centralisation of management with autonomy of individual business areas. The dominant goal is to

increase sales, expand the market, consolidate, and generate profits. The strengthening of the administrative and regulatory components leads to a situation where the entrepreneurial spirit is at odds with the administrative one. To remedy the situation, it is necessary to reorient the motivation system towards the development of creativity, use new work styles and culture, retrain personnel, carry out decentralisation, and launch new projects.

Aging. At the beginning of this stage the enterprise is successful and viable, its obligations and ambitions are fulfilled, there is an opportunity to pay attention to social issues, corporate values, and culture. But gradually, due to shrinking traditional markets, changing needs and the arrival of competitors, familiar areas are shrinking, and profits are falling. At the same time, the company is no longer ready for new positions, active and risky entrepreneurial actions, and the search for fresh behavioural guidelines and values which it has already become unaccustomed to. Decisions are becoming increasingly conservative, processes are rigidly regulated, the company loses flexibility and has no time to adapt. *The how* becomes more important than *the what*. The dominant goal — is return on investment, maintaining the status quo, regulation, balance of interests.

Resurgence. To prevent the effects noted and to move towards renewal at this stage, various means are used, in one way or another associated with the activation of the entrepreneurial component. It is necessary to return to finding a place in the market, redefining strategy, launching in-demand products, reorganising the business, renewing technology and the management team. It is important to reduce overregulation in management, give entrepreneurial and managerial freedom, and change the corporate culture. The dominant goal of management is to introduce new products to the market and rejuvenating the management team.

More details on the contents of the mentioned stages can be found in [4, 7, 11].

Thus, it can be concluded that each LCO stage has its own unique tasks, set of management tools and priority solutions. The latter are implemented primarily within the relevant functional complex (profile subsystem), as reflected in *Table 2*.

Simultaneously with the dominant tasks at each of the LCO stages, there is a wide range of current problems, in the solution of which other enterprise complexes, noted in *Table 2*, are also involved, such as social and labour complex (SLC): the more actively the environment component (*environment subsystem*) is present at all the stages of company development, the more sustainable and productive business will be, and the later the *Ageing* stage will come. With the help of this subsystem the company activates its "secret weapon" — the interconnection and integration of employees, which enables the latter to become aware of the semantic component of their activity, to define behavioral guidelines and values; it unites employees in achieving a goal, which is perhaps even more important than making a profit, shifts attention from what they do to what they are.

SYSTEMS ECONOMIC THEORY AND THE HUMAN CAPITAL OF THE ENTERPRISE

We have identified and grouped together the main problems faced by the company within each of the four basic subsystems and for which the profile functional complexes (business model, social and labour, institutional and organisational, and property and technology) are responsible for solving. Now we will consider which components of enterprise HC are most task-oriented within these complexes, as their implementation is primarily driven by the core components of individual and corporate HC.

Table 2

Priority management tasks of individual stages of the LCO

LCO stage	Dominant tasks	Responsible Complex
Formation	Establishing production and sales	Property and Technology (PTC)
Development	Launching new projects, entering markets, increasing the number of partners, implementing other organisational and commercial innovations	Business model (BMC)
	Setting up the administrative management of the company, the management interaction of departments and employees, the establishment of work rules and regulations	Institutional and organisational (IOC)
Maturity	The company's innovative development is intensified, new projects are launched, and new markets are entered. In contrast to the Development stage, these actions are not personalised, but institutionalised, embedded in the organisational structure and culture of the company	Business model (BMC)
Ageing	Attention to employee behaviour, social relations in divisions, maintaining the corporate culture and psychological climate	Social and Labour (SLC)
Resurgence	Finding a new market place, launching new products in demand, updating technology and management staff, reorganising the business	Business model (BMC)

Source: compiled by the author.

In this regard, let us comment on the attributes of human capital of the enterprise used in this paper. To date, there is no consensus on which characteristics can be rightly attributed to HC: whether it is only knowledge, skills and competencies used by a person in production processes, or also a set of social, psychological, attitudinal (ideological) and cultural properties of a person? Is it possible to consider as human capital the whole combination of acquired and natural attributes and abilities or only those that are able to produce returns? In this study, HC is seen as a set of personal qualities, social competencies, and values that can influence the performance of productive activities. This position is most closely reflected by the following definition: "Human capital is the knowledge, competencies and attributes embodied in individuals that contribute to personal, social and economic well-being". [12, p. 18].

In turn, the term "corporate human capital" is used in this article to refer to the total HC of a company's employees used to achieve its goals, bringing return. Moreover, corporate HC is not just the sum of employees' HC (their knowledge, experience, behaviour, attitude towards the company and colleagues), but also a manifestation of synergy (as well as dyssynergy) of sharing their individual abilities, additional rules and values that ensure the functioning and development of the company, such as corporate culture, intellectual property, relationships with partners. Their bearer is the collective HC of the firm.[2] Corporate HC, on the other hand, affects the individual employee capital, reinforcing its existing components

[2] It should be made clear that the HC of an enterprise does not exist outside the individual HC of the employees. It is an accumulated resource, inalienable from its bearers (people). Functioning in the system of institutions of the enterprise, it produces the effects of interpersonal interactions leading to a change in the productivity of workers. The company is entitled to these effects but not to the HC of the employees.

Table 3

The components of the enterprises' HC that are most in demand within the framework of functional complexes

Complex	Types of corporate HC	Types of individual HC
Property and Technology (PTC)	Production capital; Relationship capital (market capital, partnership capital)	Education capital; health capital; vocational capital
Institutional and organisational (IOC)	Structural (organisational) capital	Organisational capital
Business model (BMC)	Innovative and intellectual capital	Entrepreneurial capital; intellectual and creative capital
Social and Labour (SLC)	Social capital	Social and psychological capital; cultural and moral capital

Source: compiled by the author using [13].

and putting in place the missing components. Thus, by acquiring new equipment and fulfilling production tasks, employees improve their skills, acquire professional competences, and expand their social and intellectual capabilities.

According to the grouping given in [13, p. 28, 30], let us distinguish the following components within *individual HC*: educational capital; health capital; socio-psychological capital; cultural and moral capital; professional capital; intellectual and creative capital; organisational capital; entrepreneurial capital.

In turn, corporate HC will include: organisational (structural) capital; social capital; production capital; intellectual capital (knowledge accumulated by the company as a non-physical resource for creating added value [14, pp. 103–115; 15, pp. 313–321; 16–18]), innovation capital; relationship capital (market, partnership).

Looking at the HC of an enterprise as a whole, let us consider its three defining components:

- individual employee activity;
- he behaviour of the manager (as the leader who determines the company's actions);
- group (team) activities of employees.

Taking into account the introduced gradation, let us compare the elements of corporate and individual HC and the tasks solved with their help within each of the previously mentioned functional complexes, which will make it possible to assess the demand for individual components of human capital (*Table 3*). It is worth noting that the enterprise, of course, uses other HC components as well, but the priority impact is on those that are directly focused on a specific range of tasks.

THE EVOLUTION OF A COMPANY'S HUMAN CAPITAL

It can therefore be stated that the requirements to a company's HC are constantly changing, which generally leads to a reassessment of the weight and sometimes even the composition of its individual parts, as well as its overall growth.[3] In particular, as a company grows, it usually

[3] When we talk about the growth of a company's HC over time, we are referring to its normal progressive development. But even then, changes in the individual elements of HC can have their own dynamics. For example, shifts in technology lead to a depreciation of obsolete manufacturing knowledge and an increase in in-demand knowledge, or market share expansion increases competition, which can have a negative effect on relationship capital.

Table 4

The components of the HC of an enterprise, that are the most in demand at certain stages of the LCO*

LCO stage	Types of corporate HC	Types of individual HC
Formation	Production capital: a set of problem-solving methods, knowledge, skills and abilities of employees used to carry out production activities; Relationship capital (market, partnership capital): a system of mutually beneficial and trustful relationships with partners (customers, suppliers, competitors, authorities, etc.), business reputation, external conflict resolution practices	Professional capital: qualifications, general and special skills, experience; Education capital: an amalgamation of knowledge, skills; Health capital: analysis and support for health
Development	Innovation and intellectual capital: knowledge and competencies required for entrepreneurial success, intellectual assets, patents, know-how, licences	Entrepreneurial capital: the ability to set goals, to think outside the box, to be innovative, to seek innovative approaches, to take reasonable risks; Intellectual and creative capital: creativity, research and development, invention, rationalisation, problem-solving
	Structural (organisational) capital: the organisational capacity of a company in the form of its management system and technology, organisational structure, the aggregate mindset of its staff and its intra-company relationships	Organisational capital: capacity for creative work, motivation for economic activity, ability to achieve results, responsibility, initiative
Maturity	Innovation and intellectual capital: knowledge and competencies required for entrepreneurial success, intellectual assets, patents, know-how, licences	Entrepreneurial capital: the ability to set goals, to think outside the box, to be innovative, to seek innovative approaches, to take reasonable risks; Intellectual and creative capital: creativity, research and development, invention, rationalisation, problem-solving
Ageing	Social capital: interpersonal interactions in an organisation, expressed in social ties, shared values, norms, trust and responsibility, corporate culture	Socio-psychological capital: psychological stability, volitional and willpower qualities, the ability to establish relationships with other people and social institutions, and to engage in socially useful activities; Cultural and moral capital: mentality, upbringing, ethics, empathy
Resurgence	Innovation and intellectual capital: the knowledge and competencies required for entrepreneurial success, intellectual assets, patents, know-how, licences	Entrepreneurial capital: the ability to set goals, to think outside the box, to be innovative, to seek innovative approaches, to take reasonable risks; Intellectual and creative capital: creativity, research and development, invention, rationalisation, problem-solving

Source: compiled by the author.

Note: * — *Table 4* uses data from *Tables 2* and *3*.

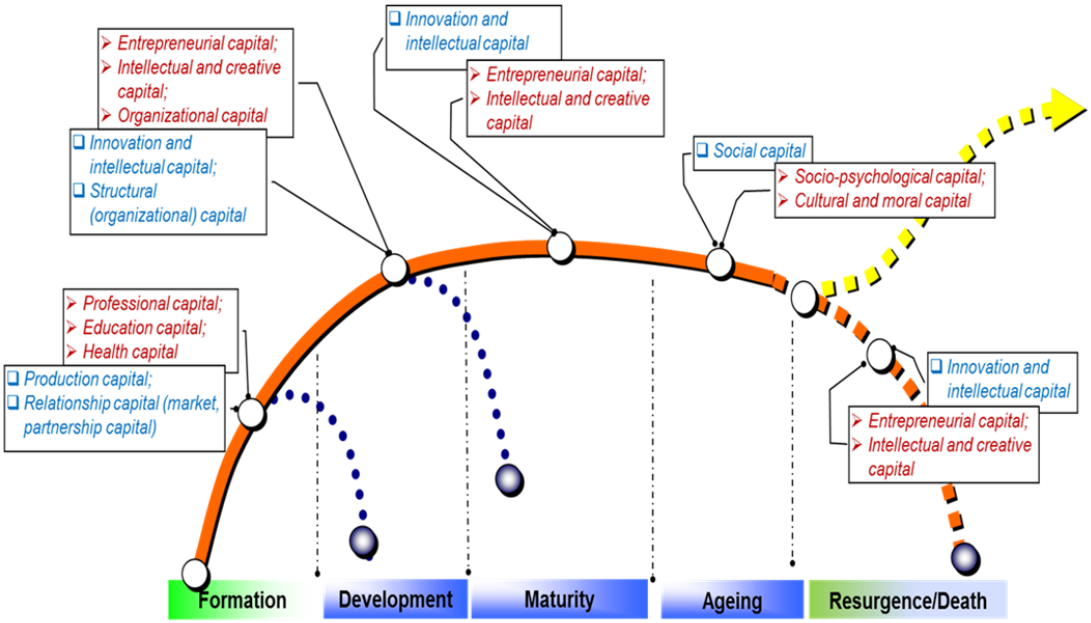

Fig. 2. **Stages of evolution of the enterprise's HC**

Source: developed by the author using [11].

invests in the training of its employees, the improvement of work quality and conditions and the prevention of health problems [19, 20]. Over time, its experience and knowledge, managerial traditions grow, its circle of partners is formed, all of this leads to the growth of corporate HC [21].

At the same time, in response to changing demands, human capital undergoes a certain sequence of transformations, its actual content is changing with the growth of the enterprise, with the increasing composition and nature of the tasks to be solved. And this series of changes is common to all companies because it is shaped by the challenges they face in their respective stages of the life cycle.

Table 4 provides a list of the enterprise HC components which are primarily engaged in solving the management tasks of the respective stages of business development.[4] The types of corporate and individual HC that are in demand may reoccur at different stages, but their substantive content will depend on the composition of the relevant tasks of the particular stage.

As a result of considering the evolution of the enterprise as a sequence of transformations, where at each stage there is a different composition of key tasks which require certain HC elements and competencies, the following conclusion can be made — the change of HC must correlate with the stages of LCO; as the demand for relevant components of human capital increases, their importance and requirements for the personnel possessing the required competencies increase. Hence (taking into account the determining importance of the task composition of the enterprise at certain stages of its life), it follows that HC in its development passes through stages: *Formation, Development, Maturity, Ageing, Resurgence*, the duration of which coincides with the duration of the LCO stages, since it is the problems of the individual LCO stages that determine the requirements for HC.

[4] In detailing the HC elements that make up the individual types of corporate and individual HC, the material is based on [13].

Let us illustrate the sequence of human capital evolution in *Table 4* and the composition of corporate and individual HC elements that are most in demand at certain stages of development (*Fig. 2*). The steps of HC formation are combined in the figure with a graph showing the dynamics of the company's revenue (*Y axis*) with the change of time (*X axis*), the LCO stages are also plotted on the *X* axis.

If the change of HC does not keep pace with the evolution of the company's objectives, the lack of necessary knowledge and competencies is manifested, which becomes the cause of various management problems that hinder business development. Such situations are illustrated, in particular, by L. Greiner [22], I. Adizes [11] and B.Z. Milner [16]. In its turn, timely formation of the above-mentioned human resources allows to overcome the mentioned development difficulties faster: forewarned is forearmed.

TRANSFORMATION OF INDIVIDUAL ELEMENTS OF ENTERPRISE HUMAN CAPITAL AND MANAGEMENT DOMINANTS

Having identified the main changes inherent in the basic types of HC, let us consider the dynamics of its separate positions, in particular, corporate culture (included in the social component of corporate HC), and managerial style (formed taking into account individual HC), as well as the features of management of these elements. The key factors that determine the behaviour of the mentioned positions are outlined point by point in keywords, their detailed description can be found in the mentioned sources.

CORPORATE CULTURE

The dynamics of corporate (organisational) culture[5] (CC) is a major component of a company's social capital. This example can also be used to trace the formation of other elements of corporate HC.

CC defines norms of behaviour and morality, standards of interaction in the enterprise; it accumulates successful practices of the firm (but can also manage them), is related to the accepted management style, characterises the involvement of employees in the organisation's activities. With this in mind, we will understand CC as "a model of behavioural norms shared by all, ... recognised as correct and transmitted to the members of the organisation as a correct way of perception, presentation, and attitude" [23, p. 231]. The source of behavioural norms is the experience and knowledge of the organisation, that are formed: a) in the social interaction of workforce members and b) in adapting to changes in the external environment.

CC usually evolves with the enterprise. It transforms from the individual experience and knowledge of employees through group to corporate behaviour, as noted in [24]. In this regard, the role of CC, as well as the entire socio-labor complex (SLC), increases at the stages of *Maturity* and especially *Ageing*.

A rational variant of CC evolution can be considered when each LCO stage corresponds to its own, most appropriate type (*Table 5*).

Let us use [9, 23, 24] materials and note briefly the procedures that help to generate relevant CC at individual stages of LCO, bearing in mind that the main mechanism of CC formation and management is the transformation of formalised and informalised knowledge, the extension of individual employees' personal perceptions to other team members and their "embedding" into the shared knowledge system of the enterprise.

Formation stage. The main problem at this stage is incoherence between the workers and the lack of a CC framework. Mechanisms of knowledge externalisation

[5] Corporate culture is understood in this paper as analogous to organisational culture, since both terms speak of the culture of the organisation.

Table 5

Changing the corporate culture at various stages of the LCO

LCO stage	Features of corporate culture
Formation	If we follow E. Schein [23], CC is absent at this stage. But there are individual value systems, perceptions and skills that came with the workers. Socialisation[a] of informal knowledge dominates, experience is being accumulated
Development	Own CC, group perceptions and values are formed. Experiences of successes and failures are accumulated at the individual, group, and corporate levels. The externalisation[b] and combination[c] of knowledge moves from the individual level to the group and corporate level: individual workers' values are transformed into group values, intra-corporate communication rules are developed, as well as the relationships with the external environment
Maturity	There is an awareness of existing experience, an internalisation[d] of knowledge acquired and processed by the company. These are expressed in proclaimed values and are individually understood. As the experience of integration and interaction has proven successful, it forms the basis of the CC framework
Ageing	The dogmatic nature of inherited CC leads to a contradiction between real and proclaimed values. CC exists but reflects past perceptions, while real understanding is present at an informalised level. New knowledge and experiences are not embedded in the existing system of beliefs, and the underlying assumptions and values do not reflect real events

Source: compiled by the author using [9].

Note: a — socialization — the transition of informalized knowledge into formalized knowledge through the transfer of experience from one worker to another [23]; b — externalisation — transition of unformalized knowledge into formalized knowledge by formalizing and verbalizing it in the form of analogies, concepts, provisions; c — combination — transformation of unformalized knowledge into formalized knowledge by incorporating externalized ideas into the existing knowledge system; d — internalisation — the dissemination of formalized knowledge and its processing at the level of the individual worker.

and accumulation are used to form it. As the leaders of the company have a special influence on CC during this period, it is important to pay attention to the content of the cultural paradigms being implemented in the company.

Development. This is the phase of building the foundation of CC, so it is necessary for the leader and the subordinates to cross-enrich ideas and establish teamwork. To develop the company in a versatile and fast way, it is necessary to pay special attention to the combination and internalisation of knowledge already at the enterprise level to ensure the distribution of CC elements among the staff.

Maturity. The perception of knowledge acquired and processed by the company requires its distribution and exchange, its translation into proclaimed values, baseline statements and individual attitudes. Since there is already a successful experience of interaction at this stage, it is necessary to reinforce it with appropriate artefacts (symbols, rules, language).

Ageing. At this stage, the role of CC is particularly significant; the main task becomes the elimination of existing contradictions in CC, the adoption of new cultural paradigms, ensuring coherent group perceptions of the surrounding reality, the restoration of mechanisms of externalising knowledge and its subsequent internalisation.

EVOLUTION OF LEADERSHIP SKILLS AND SOCIO-PSYCHOLOGICAL REQUIREMENTS FOR COMPANY MANAGEMENT

Let us further consider the transformation of individual HC. As an example of such dynamics, let us take the change in the

Table 6

Dominant requirements for individual capital and psychological characteristics of the top managers at different stages of the organization life cycle

LCO stage	Priority management tasks *	Demanded elements of individual HC	Demanded psychological qualities
Formation	Generating relevant business ideas	— Entrepreneurial capital; — Intellectual and creative capital	Combination of creativity and willingness to take risks, ability to transform ideas into achievable results, creativity
	Establishing production and sales	— Professional capital; — Educational capital	Determination, focus on success, willingness to see the task accomplished
Development	Launching new projects, entering new markets, implementing innovative solutions	— Entrepreneurial capital; — Intellectual and creative capital	Combination of creativity and willingness to take risks, ability to transform ideas into achievable results, creativity
	Establishing administrative management, norms and regulations	— Organisational capital	Aiming to streamline and control the situation
Maturity	Enhancing innovative development, launching new projects, and institutionalising them.	— Entrepreneurial capital; — Intellectual and creative capital	Combination of creativity and willingness to take risks, ability to transform ideas into achievable results, creativity
	Building employee integration, creating a team environment	— Social and psychological capital; — Cultural and moral capital	Perseverance, empathy, attention to relationships between people, desire to be a team player
Ageing	Ensuring production and sales	— Professional capital; — Educational capital	Determination, focus on success, willingness to see the task accomplished
	Finding a new market place, launching in-demand products, management renewal, reorganisation	— Entrepreneurial capital; — Intellectual and creative capital	Combination of creativity and willingness to take risks, ability to transform ideas into achievable results, creativity

Source: compiled by the author.

Note: * — the control tasks are given with regard to the data in *Table 2*.

managerial style[6] of the manager [25, 26], which to a significant extent determines the success of the enterprise. As the latter moves through the stages of the LCO, both a transformation in leadership style and the ability to move the organisation from one stage to the next one, from one level of consciousness to another, are usually required. However, individuals typically have a predisposition to a particular style, so running a business can be likened to a relay race: one manager runs his stride as long as he can cope with the tasks at hand, then passes it on to the next, who moves on (solving problems in a changed environment).

A company in the *Formation* stage needs leaders who are both entrepreneurs with relevant ideas and good producers who are able to create a relevant product. The same

[6] When considering types of leadership style, we will base our discussion on [25; 26].

Table 7

The Evolution of Key Performance Indicators for the Executives

Stage	Dominants of control	Objects of control /	KPI
Formation	Operational efficiency, product development and launching	Sales, market share	Remuneration on sales volumes
Development	Efficiency of operations, costs, regulations, functional plans, innovation, cost centres	Organisational processes, current plans, compliance with standards and norms	Remuneration from functional outcomes
Maturity	Market expansion, strategy, reports, profit centres and investment centres	Organisational processes, strategic plans, innovation	Remuneration from product results
Ageing	Integration, adaptation, integrated goal setting	Return on investments, integration processes	Remuneration from group results

Source: compiled by the author.

style will help the organisation reach the *Development* stage, but it is not so much an entrepreneur, or a generator of ideas that is needed, but a good administrator and organiser. It is now necessary to establish effective work and management, to form an organisational structure: the questions of *'what'* and *'when'* are joined by the question of *'how'*.

Then, in the *Maturity* stage, the entrepreneur-oriented manager re-emerges; the focus shifts from current production tasks to development. There is an increasing emphasis on the integration and social interaction of workforce members, which makes it easier to manage the company in the current environment. The movement towards *Ageing* stage is usually associated with a weakening of entrepreneurial energy, complacency and a lack of desire to achieve more. The manager at this time needs to slow down organisational ageing, offer new ideas, focus on the *'what'* and the *'why'* rather than the *'how'*. This role is usually assigned to production managers with a strong entrepreneurial management style.

Let's compare in *Table 6* the LCO stages and the characteristics of the in-demand management style based on the manager's HC features and psychological traits.[7]

It is clear that management needs all the knowledge and competences, but each stage puts forward its own specific requirements for current capabilities. Usually the manager, given his/her own HC and psychological peculiarities, adheres to his/her own management style, possibly no longer corresponding to the needs of the enterprise at the current stage, which suggests the need to replace him/her and select a manager with the qualities sought.

Finally, let us consider the evolution of requirements for managers of the company, the evaluation of their performance, which key performance indicators (KPIs) will dominate the individual stages of LCO and highlight the reward criteria (target KPIs) for each stage, taking into account the evolution of the company's objectives and the current areas of managerial effort (*Table 7*).

To summarise, the results of the study indicate that the basic types of HC, as well as their constituent elements, should change

[7] On the basis of the above characteristics, it is possible, for example, to identify management styles close to the types of managers proposed by I. Adizes [26]: P (production manager), A (administrator), E (entrepreneur), I (integrator)).

their meaning and actual characteristics (composition of the elements demanded) as they move from the initial stage to the final stage. The best case scenario is when this happens synchronously with the change of LCO tasks. This allows us to present the ontogenesis of an enterprise HC as its passing through a number of stages: *Formation, Development, Maturity, Ageing, Resurgence*, characterising the sequence of transformation of HC parameters in the process of evolution.

CONCLUSIONS

Based on the provisions of various economic and management schools, the author has shown a coherent sequence of changes in the HC of the enterprise and the factors that determine their dynamics. Thus, the systemic economic theory allowed identifying the elements of corporate and individual HC involved in the entrepreneurial, social, administrative and technical-economic spheres of enterprise activity. The concept of HC helped to detail the key components that form human capital, and the evolutionary theory of the firm helped to detail the priority managerial tasks of individual stages of company development.

The HC of an enterprise undergoes a series of transformations in its formation: an increase in size (both its corporate HC and the aggregate HC of its employees grow along with its seniority), a change in attention to the individual components of corporate and individual HC. We find that the main drivers of such transformations are the reassessment of the governance challenges that the firm faces at different stages of its life cycle: it is these challenges that determine the actual requirements for the human capital components of its workforce. And since such transformations are common to all companies, the above causes are manifested in each organisation. This, in turn, makes it possible to talk about the uniformity of such changes and the possibility of typifying them.

Thus, the need for enterprise HC transformation is a consequence of the evolution of tasks at different stages of LCO, i.e., the causes of HC changes are the peculiarities of enterprise development at the respective stages. This made it possible to identify five stages with the same name as the LCO stages as the key phases of HC evolution, which was the main scientific outcome of the work. Another outcome is the identification of the types of corporate and individual HC whose significance prevails in the five identified development stages. Each successive stage uses more and more HC (which does not mean, however, that its productive use is automatically increased). In case of failure to provide timely human resources support to the highlighted development problems, the company's rate of establishment slows down; and vice versa, availability of the highlighted human resources helps to overcome objective difficulties in business development at the relevant stages. The results are verified by examining the evolution of key elements of a company's HC, such as corporate culture and management style.

Determination of human capital evolution trends also makes it easier to solve a number of traditional management problems: establishing a motivation system and personnel interaction style that corresponds to the specifics of the current LCO stage and expected trends; updating requirements for hired employees; conducting training taking into account projected professional competencies, etc.

The author sees as the further task of the study the operationalisation of the above trends, the measurement of the HC condition in the enterprise, taking into account the difficulties associated with its solution, because knowledge and abilities

are hardly tangible (e.g., how to correctly assess employee capabilities?) — they do not directly depend on the investments made and are of inertial nature (difficult to determine the value and timing of the investment return).[8] The author considers the study of the relationship between the general (useful for any organisation) and special (demanded at a specific enterprise) HC of employees as another direction of work (these views go back to [28, p. 56–79; 29, p. 112–142]). A comparison of the return on investment in the mentioned types of training will make it possible to compare their efficiency, as well as to determine the target ratio of general and special HC investments at different stages of LCO.

[8] Thus, in [27, p. 48], which provides an overview of HC assessment methods for a company, it concludes by noting: "none of the above approaches, in our opinion, can claim to be a sufficiently accurate ...method for assessing HC of an organisation".

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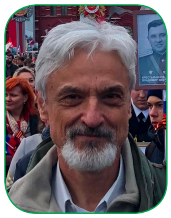
ABOUT THE AUTHOR



Dmitry A. Zhdanov — Dr. Sci. (Econ.), Associate Professor, Leading Researcher, Central Economics and Mathematics Institute, Russian Academy of Sciences, Moscow, Russia
https://orcid.org/0000-0001-9372-2931
djhdanov@mail.ru

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State Regulation of the Oil and Gas Complex in the Conditions of Digitalization of the World Economic System

S.E. Trofimov
Academy of Military Sciences; Council for the Development of the Digital Economy
Federation Council Federation Council of the Federal Assembly of the Russian Federation, Moscow, Russia

ABSTRACT

The **purpose** of article is to study the issues of state regulation of the oil and gas complex, including current areas of its improvement, environmental factors, in the context of the digitalization of the global economic system and the global energy market. The author investigated the importance of increasing the efficiency of state regulation of foreign economic activity in the context of ensuring national and energy sustainability, developing forecasts of strategic development. It was concluded that it is necessary to reflect long-term goals and tactical tasks in program-targeted documents, expand co-operational interactions with various sectors of the economy and industries, and promote technological innovations at the state level that allow expanding industrial and production potential and ensuring faster development of the oil and gas complex. The article was carried out using such **scientific methods** as synthesis, analysis, generalization and comparison, as well as from the standpoint of system-functional and complex or integrated approaches. The practical significance of the results lies in the theoretical justification of the need for state regulation of the oil and gas complex in the context of digital technological changes. It is aimed at promoting domestic industry and sectoral development, stimulating the integrated introduction of innovations, and reaching outstripping economic growth rates that are ahead of the pace.

Keywords: state regulation; oil and gas complex; fuel and energy complex; fuel and energy balance; digitalization; digital economy; economic policy; technological structure and paradigm; renewable energy sources; energy sustainability; energy efficiency

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INTRODUCTION

Government regulation (GR) of foreign economic activity involves the interaction with foreign states and oil and gas companies, aimed at achieving a common strategic goal. The measures taken by OPEC can serve as such an example: in particular, the 1973 oil embargo had a significant impact on the entire world economy and changed the structure of the global fuel and energy balance (FEB) [1]. For the countries — importers of hydrocarbons energy security is expressed, among other things, in long-term supplies of energy carriers in accordance with the schedule at prices that allow to create internal profitability of economic production while minimizing all kinds of risks.

The oil and gas complex (OGC) contributes to strategic priorities implementation through its huge mineral resource base (MRB), developed industry, relatively high sectoral productivity rates and effective implementation of social support measures, as well as public acceptance of government actions.

Ensuring of national foreign economic interests is an integral part of the GR OGC mechanism through the interaction of state authorities and fuel and energy companies in various directions, taking into account industry specifics and studying the prospects for oil and gas projects, which are critical for socio-economic development. It is also necessary to highlight political risks, inappropriateness of sanction policy on the part of foreign countries, which is unlawful and destructive in nature.

The state may own oil and gas companies, create joint ventures with them, or promote, on a governmental or cross-national level, the coming together of several organisations, for example for a major investment project, such as the development of the Shtokman field. Such ventures are also intended to share professional experience, increase planning horizons, and improve the quality of industry interactions.

GR OGC implies a long-term strategy, development of target indicators for all areas of production processes, means and technologies to achieve them. Implementation mechanisms involving the study of accumulated regulatory impact practices may be open to businesses and the public, or they may be of classified nature with closed operational or tactical information.

External economic aspects of GR OGC are also related to the ways of hydrocarbon supply, selection of optimal routes, taking into account transit through the territory of foreign countries, bringing the legislative aspects of different countries under a single platform reflected in the agreements and contracts concluded between them. Issues of national and energy security may conflict with the interests of foreign partners in terms of their under-receipt of certain benefits. The Russian Federation has a reputation of a reliable supplier of energy resources and advanced processing products to international markets, it has sufficient political and military-industrial potential to defend its own positions based on strategic priorities in OGC development.

The oil and gas complex is significantly influenced by many root causes that form its structural elements and external factors. Accordingly, the task of the GR mechanism as a set of methods, forms and instruments of influence is reduced to maintaining the dynamic equilibrium in the OGC by creating favourable conditions for its economically sustainable development. Thus, the current role of the cartel form of interaction between the states (as compared with the 20th century) is gradually decreasing. At present, oil and gas fields are usually developed either after a competitive bidding procedure, or within the framework of a concession agreement.

Economically sustainable development of the OGC is based on the balance of supply

and demand: developing countries, primarily from East Asia, forming the core of the new world economic order and increasing their own economic and technological potential, are the key consumers in the global fuel and energy market; this can be judged from the dynamics of global hydrocarbon consumption. Russia's participation in the development of global OGC has undergone adjustments as a result of geo-economic and geopolitical factors. This is due to supplies to the European market, pipeline sabotage in September 2022, a significant discount on Russian oil exports.

In this context, the external economic direction of the GR OGC is based on the conclusion and implementation of strategic international contracts, in particular, with East Asian countries, development of fields in foreign countries, participation in joint projects, acquisition of oil and gas infrastructure facilities. It is directly linked with the level of socio-economic development and implies changes in the structure of the GR OGC exploration mechanism that comprehensively covers all stages of the production cycle, ensuring national security, long-term demand for hydrocarbon products, rational use of MRB, and environmental conservation in the areas of OGC operations. Transparent and stable legislation that takes into account the interests of both the state and investors, provides clear rules for access to hydrocarbon deposits, promotes the development of Russian oil and gas enterprises and improves the energy efficiency of production.

STRATEGIC DEVELOPMENT OF RUSSIA'S OIL AND GAS SECTOR IN THE CONTEXT OF THE DIGITALISATION OF THE GLOBAL ENERGY MARKET

Forecasts of global energy development are usually based on several components: the structure of fuel and energy balance, the level of supply and demand for hydrocarbons, the amount of proven reserves, oil prices, etc., but they do not always take political factors fully into account [2–9]. In particular, they foresee gradual use of technologies of the Fourth Industrial Revolution, such as artificial intelligence and the Internet of things (aimed at energy and resource saving), blockchain, big data, additive, quantum technologies, etc. Gradual depletion of reserves will mean more expensive production technologies and, eventually, higher oil prices and the need for products of higher redistribution. The costs required to discover new fields may be partly compensated by higher recovery of hydrocarbons (compared to existing technologies) at the already producing fields, which is a factor counteracting the rise in oil prices.

Numerous factors influence the sustainable development of national OGC: GDP growth in Russia and leading world economies, their socio-economic situation, levels of hydrocarbon demand and consumption that correlate significantly with each other, state of the global financial sector, major banking organisations and hedge funds, key performance indicators of leading oil and gas corporations, level of reserves and MRB status, technological development, infrastructure and institutional components, pragmatism in governmental decision-making at national level and at various stages of production processes, etc. In this aspect, GR is based on development of relevant fiscal and environmental policies; it has direct or indirect impact on consumption of energy resources, number of vehicles, etc.

The development of national oil and gas reserves must be based on pragmatic principles, based on rational and economically viable use. Digital technologies make it possible to develop previously unprofitable fields and significantly reduce the cost of exploration, production and refining

of hydrocarbons. Energy efficiency and energy security of the economy are the most important criteria for improving the quality of GR, its comparative evaluation in relation to other countries and individual economic regions, which generally affects the state of national industries, sectors and complexes. Measures to improve these quality indicators ultimately help to substantially reduce consumption of both primary hydrocarbons and refined products, with the resulting savings channelled into the development of other promising areas.

It should be taken into account that different phases of the economic cycle affect the level of fuel and energy resource (FER) consumption, in particular there is a significant reduction during recessions and depressions. The development of transport infrastructure also has a qualitative impact on the OGC, especially in the upstream and downstream segments due to stricter environmental regulations. The technology component in this aspect implies improvements in energy efficiency.

Pragmatism in the development of hydrocarbon reserves lies in the safe development of the most profitable provinces and deposits with maximum return on invested capital and a shorter payback period of projects, as well as limited access of foreign oil and gas corporations to the Russian market, which allows a responsible approach to economic and energy security and provides for the further processing and transportation of recoverable raw materials. Research and development and additional exploration works contribute to the discovery of new fields, and consequently to the reproduction of MRB, to the organic integration of extracted resources into the production processes, because today oil and natural gas have practically no substitutes for the needs of the industry.

With respect to the development of discovered fields, it is important to create a transparent ownership structure, to secure investment and to strengthen the potential of the Russian economy in world stock markets, including with respect to the level of capitalisation of domestic energy companies. This is necessary because a significant proportion of hydrocarbon supplies are traded on futures and spot capital markets, and in the long term this may only increase in real terms, mainly due to growing demand and consumption of oil and gas in East Asia and certain developing regions.

Oil is a relatively cheap way of producing energy. The efficient use of oil as a source of energy was mentioned by D.I. Mendeleev.

D. I. Mendeleev who compared oil combustion instead of coal with the fact that "one can heat up with banknotes" [10, p. 42]. The cost of hydrocarbon production in the continental part of the Russian Federation is much lower than in most other countries (except for the Persian Gulf countries). For example, in the wells that have been in commercial production for a long time, at the design capacity level this figure is $ 3–7 dollars per barrel, at the stage of intensive development — $ 15–20 dollars per barrel.[1] In particular, PJSC Oil Company Rosneft's production operating costs are comparable to those of Saudi Aramco — $ 3.1 and $ 2.8 dollars per barrel, respectively.

The gradual increase of shale, extra-heavy and bituminous oil in the production structure indicates a general deterioration of the latter (in terms of global reserves) and a gradual shift towards types of hydrocarbon recovery that were relatively recently considered unconventional: "oil production

[1] A. Novak: "Russian oil producers have a sufficiently diversified infrastructure". Ministry of Energy of the Russian Federation (official website). URL: https://minenergo.gov.ru/node/17497 (accessed on 17.07.2021).

from conventional sources is close to reaching its peak, has growth potential only due to increased production in Iraq, offshore (in the shelf area), but also due to increased production of gas condensate liquids and increased oil production from oil sands" [11, p. 54].

Oil production in Russia has increased from 326.7 million tonnes in 2000 to 524.4 million tonnes in 2020 and natural gas production — from 537.1 to 638.5 billion Cubic metres. In terms of total oil production, the share of our country has changed: from 9.08% in 2000 to 12.59% in 2020 and of natural gas — from 22.37% to 16.57% over the same period.[2] The main reason for this significant growth in global natural gas production is the development of new cheaper technologies, as well as its liquefaction and transportation. Global oil consumption grew from 3568.8 to 4006.7 million tonnes and natural gas consumption grew from 2399.5 to 3822.8 billion Cubic metres during the same period[3] because of the expansion of industrial applications and a significant increase in demand in developing countries. Proven oil reserves in Russia are estimated at 14.8 billion tonnes, natural gas — at 37.4 trillion Cubic metres.[4]

The digital transformation of the global economy and the fuel and energy complex (FEC) makes it possible to clarify the reserves of MRB and the prospects for their use, to make long-term forecasts of the development of the global and Russian energy sector, and to generally pursue a more balanced government policy in the OGC. Digitalisation and technologisation of all the stages of the production processes result in the prospects of hydrocarbon recovery at formerly unprofitable fields, pragmatism in supplying hydrocarbons to external customers, and developing related industries, concluding mutually beneficial agreements in the related sectors of economy and the military-industrial sector. This is of key geostrategic importance for the Russian economy, hence one of the tasks of GR is to control the quality and volume of exported oil and gas.

For example, in April 2019, tens of times the permissible values of chlorine were exceeded in the pipeline system of PJSC Transneft, which supplies oil to Belarus. A relevant commission was set up to investigate the incident which resulted in a signed protocol on compensation from the Russian company in the amount of USD 61.6 million for processing 563 thousand tonnes, based on a price of USD 15/barrel. This makes it important to take preventive measures and avoid similar situations in the future. [12].

At government level, particular attention is paid to the development of the world's major oil and gas centres, which have an increasing influence on the global economy and politics, the growing trend towards gas production, clarification of the key parameters of existing energy supply contracts, and the development of offshore and Arctic fields, including the necessary legal framework and creation of the infrastructure in hard-to-reach or inaccessible areas.

Natural gas, due to its environmental friendliness, is gradually replacing part of the power segment, which implies rational and efficient use of associated petroleum gas and the development of the liquefied natural gas sector. The quality of natural gas output depends on both pipelines and supply routes. The transmission system requires large-scale, long-term investments. Natural gas supply contracts therefore specify in detail the terms of financing, responsibility for default or postponement, provisions for termination of

[2] BP Statistical Review of World Energy. 2021. P. 19, 36. URL: https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html

[3] Ibidem. P. 23, 38.

[4] Ibidem. P. 16, 34.

agreements to offset potential financial losses and, in some cases, directions for expansion of the oil and gas transmission system and diversification of transport flows.

Stabilisation of market conditions is possible as a result of pragmatic and transparent oil and gas contracts. A number of producing states are taking joint action to meet these targets, including by challenging individual countries and economic actors.

Increasing global consumption of hydrocarbons in various economic, industrial and social sectors makes it possible in the long term to increase own production capacities, to use available resources, investment and technological potential. The objectives of the OGC GR are to improve the environmental situation at existing projects and fields, to stimulate the construction and increase the efficiency of enterprises with high added value, to develop deep refining, oil and gas chemistry and export directions.

With the transformation of the global fuel and energy sector and the energy transition, some oil and gas consumers are actively conducting research and development in the field of renewable energy sources (RES). Accordingly, the emphasis in oil and gas supply should be placed on industrialised nations with high levels of energy consumption. The growth of hydrocarbon reserves in the near term should outstrip their consumption, which is also a factor in the economically sustainable development of the OGC.

ENSURING NATIONAL AND ENERGY SECURITY OF THE STATE

The economic aspect of national security involves the formation and intertwining of certain global economic, information and technological links between states, virtually none of which can implement a comprehensive state policy in this area without some support from other countries, their alliances, various institutions, international organisations or the global community.

Identifying and exploring global OGC issues allows for successful resolution of many internal issues of economically sustainable sector development, taking into account the views and positions of various parties and, above all, the state and oil and gas companies. (see *Fig.*).

Not only main socio-economic indicators of the state, but also the issues of national, including energy security, depend on the state of OGC and efficiency of GR. Sensitivity of domestic economy to price fluctuations, its high dependence on hydrocarbon export, considerable specific weight of both industrial production and external supplies in its structure indicate the need to improve the mechanism of GR OGC in the transition to a new technological way. The task of GR in this aspect is to control compliance with the necessary environmental requirements, filling the oil and gas revenues of the state budget, which does not undermine the investment opportunities of OGC.

The energy component of state security implies uninterrupted functioning of both the oil and gas complex (its main enterprises) and other energy sectors. This is predetermined by the provision of raw materials on long-term mutually beneficial terms, taking into account environmental factors, uninterrupted cycle of OGC and its components (manifested in an increase in the final manufactured products) and achieved through the prevention of anthropogenic situations, counter-terrorism, creating a high degree of reliability and protection of key facilities.[5] Consequently,

[5] Presidential Decree No. 400 of 02.07.2021 on the National Security Strategy of the Russian Federation. URL: http://www.consultant.ru/document/cons_doc_LAW_389271/; Presidential Decree No. 645 of 26.10.2020 "On the Strategy for Development of the Arctic Zone of the Russian Federation and Ensuring

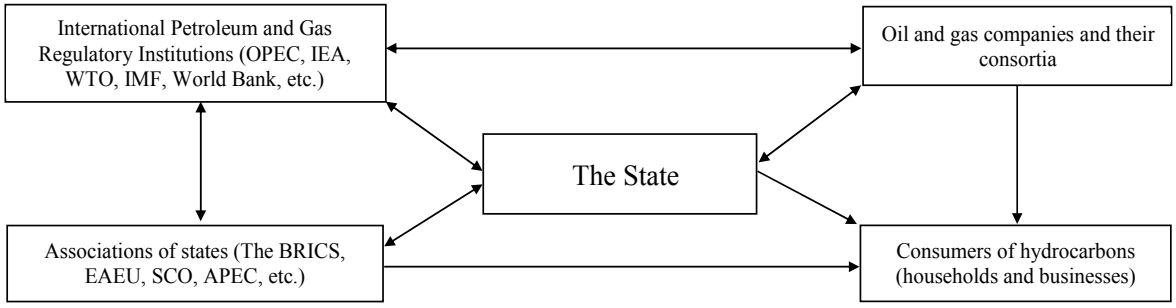

Fig. **Interaction between the state, oil and gas companies, international petroleum industry regulatory institutions and hydrocarbon consumers**

Source: compiled by the author.

consumers — at both national and company level — prefer to have several suppliers of raw materials or sources of financing, in order to avoid artificial shortages, monopolistically high prices, martial law or hostile takeovers.

In some cases, foreign supply may be available, but only in the short term, otherwise the state's energy security may be undermined by overdependence on the external environment. Some oil and gas projects are implemented in cooperation with foreign countries or international organisations (e.g., exporter and consumer) and require understanding of the interests of the economic operators involved. The state policy pursued takes into account the tendencies in the world energy markets, and provides for elimination of destructive factors.

For Russia, energy security implies the ability of the state to own, use and dispose of its own natural resources, to use them for the benefit of its own economy and industry, to ensure long-term sustainable rent from their exploitation, maximum oil and gas budget revenues over a long-time horizon. At the same time, GR should not limit the opportunities of OGC, but promote its economically sustainable development and get the greatest benefits from the export of natural resources for the needs of the national economy. For countries that are Russia's foreign economic partners in hydrocarbon supply, energy security allows preventing or mitigating possible risks, including through diversification of suppliers, or strengthening security measures on oil and gas pipeline routes.

National and energy security is the most important aspect of the state's foreign economic policy, which is fully reflected in the economic and military power of the state, its position in addressing international issues, defending its own interests, taking into account key international trends and profiting from inefficiencies in the global economy. Volatility of oil prices in stock markets creates opportunities to gain additional competitive advantage expressed, among others, in strengthening of state impact on the key international energy processes, active opposition to political threats, conclusion of oil and gas export contracts with long-term economic effect, assertion of the rights to sovereignty over the natural resources in

National Security for the Period to 2035". URL: http://www.consultant.ru/document/cons_doc_LAW_366065/; Presidential Decree No. 213 of 13.05.2019 "On the Approval of the Energy Security Doctrine of the Russian Federation". URL: http://www.consultant.ru/document/cons_doc_LAW_324378/; Presidential Decree No. 327 of 20.07.2017 "On Approval of the Principles of State Policy of the Russian Federation in the Field of Naval Activities for the Period to 2030". URL: http://www.consultant.ru/document/cons_doc_LAW_220574/

some provinces and regions. On a number of issues — Russia is to be an international arbiter over ownership of individual projects or hydrocarbon reservoirs.

Energy security implies guarantees of stable supplies to foreign and domestic markets and the stability of existing political regimes. The state's geographical position allows it to perform a very important bridging function and to expand cooperation with producers and consumers of hydrocarbons, key partners in the most strategically important regions of the world, their associations, and international organisations to solve current economic and energy issues. [13–18].

Competition in international economic and energy markets and their state are directly linked to energy security, which is regulated directly by the state and is subject to possible influence from foreign countries, oil and gas corporations and supranational organisations. Consequently, it is advisable to strengthen institutional support in key areas of cooperation. State energy security takes into account the political situation and may adjust the course of certain government decisions; for example, certain government actions affect the OGC through economic and administrative methods. This aspect is also related to defence of state interests in different geographical regions of the world, protection of national assets located in other countries from change of political regimes, sanctions, or raiding of enterprises — in accordance with the norms of international law.

GR contributes to the improvement of economic and technological direction, including through timely changes in legislation, measures aimed at improving energy efficiency and reducing domestic consumption of hydrocarbons (in accordance with certain regulations and quality standards), expansion of external and internal economic interactions between the state and enterprises in OGC. Developed MRB reserves, together with the established production and institutional infrastructure, a clear and stable legal and tax environment, ensure economically sustainable development of OGC and the national industry.

ENVIRONMENTAL FACTORS

Energy security of the state is connected with environmental issues, both in terms of harmful emissions into the atmosphere and their impact on climate change, and in terms of proven reserves and hydrocarbon production levels in general and for specific provinces, industrial development of promising areas, expansion of foreign economic activities through the creation of unrelated areas of hydrocarbon exports. State measures aimed at additional exploration, discovery of new fields, construction of an extensive network of oil and gas pipelines, and new processing plants that would meet the demand and improve the quality of hydrocarbon products are of great importance.

The environmental factor of pollution and climate change, mainly through excessive carbon dioxide emissions, will continue to play a key role in the economically sustainable development of the OGC. Despite the 1992 UN Climate Change Convention and its 1997 Kyoto Protocol,[6] the environment is under increasing pressure, partly because the main source of emissions, the USA, has not ratified it, and key developing nations, including China and India, have no legal obligations to abide by the Kyoto Protocol.

The environmental component is the main reason for the importance of reducing the

[6] The United Nations Framework Convention on Climate Change. URL: https://www.un.org/ru/documents/decl_conv/conventions/climate_framework_conv.shtml; The Kyoto Protocol to the United Nations Framework Convention on Climate Change. URL: https://www.un.org/ru/documents/decl_conv/conventions/kyoto.shtml

level of global energy consumption, growth of industrial use of natural gas and multiple increase in the use of renewables, deeper processing of feedstock (raw material input) and, consequently, less air pollution as a result of setting higher quality standards. In the future, OGC will continue to be a key economic and energy sector, which implies further negative impact of the greenhouse effect on the environment, the need for environmental control in the areas where oil and gas enterprises operate [19–22].

TOPICAL DIRECTIONS FOR IMPROVING STATE REGULATION OF THE OIL AND GAS SECTOR

Oil and gas projects take into account the geographical location of hydrocarbon-producing and consuming countries and their influence on global economic and energy processes, which is manifested, in particular, in the fierce competition for access to deposits and the shortest routes to deliver final products. OGC economic sustainability does not always coincide with pragmatic resolution of current issues (such as environmental direction or the stability of political and legal regimes in producing countries), the economic or forceful impact of which provides strategic competitive advantages, both for the long term and for use in pursuit of self-interest.

For example, significant areas of development include increasing exports, expanding oil and gas services, and implementing digital solutions that enable the refinement of logistics and other parameters during field development. Reduction of production and transportation costs allows for additional profit and, consequently, serves as a source of oil and gas budget revenues. Expansion of production activity is associated with construction of necessary transport infrastructure, including access to sea and river waters, and conclusion of long-term foreign economic contracts. For states — consumers of hydrocarbons it is important to reduce risks associated with a single supplier.

Special attention is paid to the issues of safety on the supply routes, the identification of the most important aspects (means, technologies) of their resolution, including in terms of compliance of the current situation with the strategic governmental guidelines. This complex coordination of goals and tasks of OGC and the economy as a whole, allows to exclude essential components, e.g., the ecological factor, at certain stages. For example, in order to obtain long-term benefits, it is possible to reduce current profits, reduce consumption levels.

States and oil and gas companies are interested in access to locations in the world's most important geostrategic areas, which offer significant economic and political opportunities. Individual countries with no direct access to this or that region may be keen to control its transport component, which implies increased profitability of domestic production, prospects for national projects, diversification of hydrocarbon supply routes, and reduction of competitors' influence. Transit of oil and gas through territories offers certain countries prospects of monopoly dictation of transportation conditions, ensuring energy security, expansion of oil and gas infrastructure and construction of plants. The activities of major corporations and international institutions can also influence the foreign economic policy of states, for example in terms of the political and legal regimes of prospective oil and gas provinces.

Integrated field development implies state control over supplies to domestic and foreign markets. This particularly applies to the most significant projects with international participation, their investment, technological and infrastructural support, as well as environmental protection. The balance of

supply and demand for hydrocarbons is possible as a result of many different factors and diverse interests of economic agents, first and foremost the state and oil and gas companies, which makes it possible to identify key areas of OGC sustainable development. Joint development of technologies with foreign countries and foreign corporations provides for primary protection of national and energy interests.

CONCLUSIONS AND RECOMMENDATIONS

GR implies strategic objectives and tactical tasks for economically sustainable development of OGC, which are reflected in the economic mechanism in theoretical and applied aspects, taking into account internal and external priorities of the state. Improvement of technologies, improvement of the environmental component, including through reduction of general risks, is necessary at all stages of production processes and requires joint actions of the state and enterprises to achieve the set targets, implementation of projects, increase in the depth of product processing and expansion of supply routes.

One of the trends in the global economic marketplace is for governments to routinely support their leading fuel and energy companies, resulting in a simultaneous monopolisation of the industry within oil and gas producing regions in the global OGC. Globalisation and internationalisation are also taking place, leading to the formation of new international institutions and the concentration of key decision-making in certain centres. Continuing growth in demand for oil and gas products is driving the emergence of new organisations, their entry into various segments of the energy market, including oil and gas services, and increasing competition for hydrocarbon extraction, refining and shipping rights. As a result the positions of major corporations may be significantly adjusted, which is mainly predetermined by the dynamics of oil prices, export volumes on the key supply routes, development of related businesses and productions.

Energy-importing states seek to diversify supply directions, expand their own economic and industrial potential due to their presence on foreign markets, including access to MRB development in other countries, and take into account the interests of transit countries. In some cases, territorial claims, lack of officially approved borders between the states where oil and gas fields are located in disputed areas are the subject of contradictions.

Competition in the OGC is designed to strengthen national security of exporting countries, to improve economic stability of upstream enterprises and reliability of forecasting, to reduce risks with respect to factors affecting the volatility of oil prices and the structure of supply and demand for hydrocarbons. Coordination of actions of various countries and organizations contributes to a more stable situation on the global fuel and energy market, more stable exchange quotations, export and consumption of raw hydrocarbons, development of oil and gas technologies and solving urgent environmental issues. Improvement of energy efficiency implies reduction of overall costs, qualitative improvement of the logistics component and creation of unified OGC development schemes on an interstate and regional scale, including in terms of transit flows.

The economically sustainable development of the OGC necessitates an expansion of cooperative interactions with other sectors of the economy, industrial production segments and businesses, where disruptions should not have disruptive

consequences. This allows to eradicate the existing mistakes and miscalculations of the regulatory policy, to develop the most pragmatic directions of further state actions on the basis of forecasting the global and national fuel and energy security, compliance with energy security, energy efficiency and environmental requirements, integrated social and economic development of specific regions and oil and gas provinces, which are subject to the state, managed and regulated by it.

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ABOUT THE AUTHOR

Sergey E. Trofimov — Cand. Sci. (Econ.), professor of the Academy of Military Sciences, expert of the Council for the Development of the Digital Economy of the Federation Council of the Federal Assembly of the Russian Federation, Moscow, Russia
https://orcid.org/0000-0002-7298-3486
tennisist91@mail.ru

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Application of the Balanced Scorecard and the Cost-Benefit Model to Evaluate Social Projects

I.V. Solntsev
Financial University, Moscow, Russia

ABSTRACT

Social interventions are not always considered in the context of efficiency. The solution of certain tasks often prevails, and unfortunately - without considering investments and results. In the situation, when financial resources is extremely limited, the issue of efficiency is of particular relevance both for the state and for private investors implementing social projects. One of the most common methods in the field is the balanced scorecard and the cost-benefit model. The **purpose** of this work is to study the features of the practical application of these tools for evaluating the effectiveness of social projects, the rationale for specific metrics, approaches to their integration into a single system, as well as consideration of some features of the calculations, for example, the justification of the social discount rate. The work used such scientific methods as analysis, comparison, generalization and modeling. The author adapts the balanced scorecard for the evaluation of social projects, explains its structure and offers a typical model that can be used regardless of the field of application (health, education, sports, etc.). Today the presence of a fair evaluation system is becoming an important competitive advantage that makes this study interesting for government agencies at the federal and regional levels, government corporations and businesses, as well as charitable foundations.

Keywords: social effects; social efficiency; SIA; social discount rate; social management; social entrepreneur; performance management; social project management

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INTRODUCTION

The Balanced Scorecard and the cost-benefit model [1, 2] are widely used in the evaluation of commercial projects. This article discusses the specifics of these methods in relation to social projects, whose performance indicators are rarely discussed in Russian practice. The author gives the structure of the balanced scorecard and proposes a universal model of four blocks: operational activity and internal processes; customers; effective management; financial sustainability. In terms of the cost-benefit method, the article describes the ways of determining the monetary value of intangible benefits of social projects, performance indicators based on the concept of time value of money, and approaches to calculating the social discount rate, including the calculation of specific risk.

THE BALANCED SCORECARD

The concept of balanced scorecard (BSC) was developed in the late twentieth century by R. Kaplan and D. Norton [3]. The main merit of the authors was to create the possibility of integral use of non-financial and economic factors, since it is impossible to assess effectiveness with only one of them. The combination of different criteria makes it possible to obtain complete information about the situation in a company or a project and justify the decision-making process [4]. In addition, a management system is formed based on the results of performance evaluation, taking into account the specifics of the industry or individual organization; one of the main objectives of this system is to balance not only financial and non-financial indicators, but also to find balance between the short-term and long-term development goals. Kaplan and Norton identify four groups of performance factors: 1) financial performance; 2) customer relations; 3) internal business processes; 4) staff training and development.

Despite the importance of balancing these groups, the financial component has always remained at the 'top of the pyramid', since it is financial performance that is the ultimate goal of a commercial enterprise. For social projects, making a profit has never been a priority — social ambition prevails, embedded in their mission, which is usually conceptualised in terms of the individual needs of the beneficiaries, the social conditions created, or the public goods provided. The best way to "measure" such goals is considered to be the number of participants involved or people supported.

At the same time, as M. Moore [5] points out, financial indicators are also important for non-profit organisations (projects) which, while staying within the budget, have to spend available resources efficiently as well as studying the cost structure and looking for ways to minimise the latter without losing quality. The difficulty in this case is that financial indicators themselves do not reflect the main thing — the public (social) value that the project aims to achieve.

Similar to commercial organisations, every social project has 'clients' (consumers). However, they are not clients in the 'classical' sense, since the beneficiaries of most social initiatives do not pay for the products or services they consume. A client in a business is someone who receives a service in exchange for financial resources; but in a non-profit organisation a third party pays for it and the beneficiaries receive it [6]. This is further complicated in the case of a hybrid social enterprise, which receives additional income from clients. Non-profit organisations receive funding from a variety of sources: charitable and governmental, as well as from businesses and individuals. These donors need something more than just

client satisfaction. Their goal is a specific social outcome. For example, the state supports vocational training programmes not only to help individual unemployed citizens get jobs, but also to reduce aggregate unemployment rates and ensure equal economic opportunities for all. Drug rehabilitation programmes are funded not only to help, but also to reduce crime and increase safety in society as a whole. Since donors pay for socially useful results as well as meeting the individual needs of the target audience, they become important "clients" for social entrepreneurs (projects).

For most non-profit projects, competition is also treated and interpreted differently. As a rule, the goal of creating a competitive advantage or increasing market share is irrelevant to them. The aim is to strengthen the cluster as a whole, including through the emergence of new players. There is competition for funding among non-profit organisations, but its nature is very specific.

Based on the above-mentioned features of social projects, M. Moore [5] in 2003 proposed a Public Value Strategy, which is shaped by the three blocks (triangles):

Value, namely focusing on the key issue of any social project, on what meaningful outcome it forms. In the non-profit sector, this usually includes achieving social goals for a specific group of people in need of support or creating certain social conditions to be achieved through the project. A key feature of a value-based measurement system is the pyramid, which allows the extent to which objectives are achieved to be measured by moving from an often-abstract mission (e.g., to promote the well-being of people) to a more specific goal that can be measured. The value creation chain links the desired outcomes on the one hand, and the resources, processes and actions required to achieve these outcomes on the other.

Legitimacy and support — working with clients or "third-party payers" who provide funding for social purposes. This refers to a system of relationships with government agencies, charities, businesses, and individuals. Although there is no profit motive, a non-profit project should aim to diversify its funding. This includes building a convenient system of interaction with private donors (for example, automatic debit of funds every month under the "1 rouble a day" system). Some organisations commercialise their product,— that was originally created as a social good,— and generate additional income. Also, many organisations rely not only on the financial support of individuals, but also on other donations such as volunteer time or material or tangible donations and contributions (things, building materials), etc.

Operational capacity — shows the ability to achieve desired goals and the productivity or efficiency of engagement with partners. The fact is that non-profit organisations often need outside help — they are rarely large enough to carry out important social tasks on their own, and they are often faced with important choices about how much of their resources to spend on themselves and how much to channel to partners. One important way for them to create social value is to 'amplify' their own position at the expense of other organisations that share their goals or have capabilities that they can leverage. Operational capacity can be assessed through the set of assets, the level of staff training, the existence of regulations for operational procedures and the technologies used.

An important component of any evaluation system are performance (or productivity) indicators. Moore [5] refers these indicators to the relationship between the quantity and quality of products and the costs of their

production. These can be complemented by measures aimed at minimising direct or overhead operating costs. For not-for-profit organisations, it will also be important to assess financial integrity, by which we mean the losses due to fraud, waste or abuse. Indicators of operational capacity should also include reports on learning and innovation. Since the long-term effectiveness of the project will depend on the speed of operations, training can focus on ways to improve productivity, to adapt standard operations to new conditions, and to develop entirely new lines of business consistent with the mission.

A. Somers [7] proposed a number of changes to the Balanced Scorecard, adapting it to non-profit organisations and social projects. He developed the Social Enterprise Balanced Scorecard, making the following adjustments to the classic approach: the financial criteria block was expanded to focus on improving sustainability, and the client block was expanded to include a greater number of stakeholders. In the former, it was a matter of modelling potential revenue streams and minimising costs. The following groups were identified as the clients: payers (those who pay for services), beneficiaries (those who use services for a fee and free of charge), employees, suppliers and partners.

The internal processes block looks at information exchange, external and internal communication systems. The author notes that every well-drafted strategy map should be accompanied by a performance measurement schedule. This is an internal management tool in which all objectives from the strategic map are linked to the indicator(s) of success. In turn, the objective requires appropriate activities and an employee who is responsible for achieving this objective.

Finally, the fourth block looks at resources, including information technology and the skills needed. Somers recommends that a 'Balanced Scorecard' should be published on social projects. He notes that this will help gain the trust of investors, sponsors and contributors, clients, and stakeholders, as well as facilitate the sharing of experiences within the industry.

Based on the experience of researchers and a number of foreign social projects,[1] the author has attempted to form a balanced scorecard for social projects (*Table 1*).

As shown in *tab*. 1, the balanced scorecard cannot be recognised as a stand-alone assessment tool. Rather, it requires separate methods within the framework of each block. For example, a different approach is needed to assess the level of satisfaction of beneficiaries and donors; the assessment framework must also be formalised into one or more outcome indicators that will characterise its effectiveness. In addition, a more in-depth analysis of the quality of the elements to be checked (value creation chain, communication systems, etc.) will be required —only their presence ('yes/no') is recorded in the table.

A definite advantage of this method can be seen as the consolidation of metrics that characterise different areas of activity into a single system: aspects of the social project's effectiveness that are necessary to create the required impact are captured. It is a useful tool for improving strategic planning, setting goals, and communicating the effects created both internally and externally. However, the Balanced Scorecard is not recommended for use in the early stages of company development [10]; it is also not appropriate for comparing different projects.

[1] Social Value UK. URL: https://socialvalueuk.org/report-database/

Table 1

Social Balance scorecard

No.	Index	Unit of measure
Operational activities and internal processes		
1	Existence of mission-driven processes described (value creation chain)	Yes/No
2	Existence of an approved system of external and internal communication	Yes/No
3	Number of regions of presence and operation	Pcs.
4	Existence of an approved performance evaluation system and target indicators, including quantitative/monetary social impact assessment	Yes/No
Clients		
1	Number of people supported and their dynamics over 3 years	People.
2	Number of volunteers involved	People.
3	Satisfaction of the beneficiaries	Survey results
4	Satisfaction of donors and contributors (funding providers)	Survey results
Effective management		
1	Number of full-time employees	People.
2	Availability of public reporting and accountability	Yes/No
3	Presence of representatives of all stakeholders on the governing body	Yes/No
4	Established innovation process / number of innovative solutions implemented	Yes/No Pcs.
Financial sustainability		
1	Availability of sources of income / share of earnings in total budget for the year	Yes/No, %
2	Dependence on one funding source (share of the most significant funding source in the total budget,%)	%
3	Cost of support per person (beneficiary)	RUR.
4	Debt burden / share of borrowed funds in total budget	RUR. %

Source: compiled by the author based on [3–9].

Table 2

Cost-benefit matrix

The non-financial costs of the project	The financial costs of the project
– Stress related to dealing with people's personal problems; – pressure of wanting to make a project successful on a very limited budget; – stress due to the feeling that work is undervalued; negative displays of aggression	– Costs of the project initiator (investment, operating and financial costs), RUR; – costs of the project participants (fees, outfit, transportation), RUR.
The non-financial benefits of the project	**The financial benefits of the project**
– Providing new opportunities; – improving the quality of life; – socialisation; – strengthening families; – positive outlook on life and mutual trust	– Number of full-time and part-time jobs, pcs; – number of volunteer hours, hours; – costs of equipment and outfit, RUR.; – infrastructure construction costs, RUR.; – growth of tax deductions,%; – project-related travel costs, RUR.; – proven reduction in morbidity by individual diseases, %; – proven reduction in crime (e.g. in person-days spent in prison)

Source: compiled by the author based on [11].

COST-BENEFIT ANALYSIS

This tool compares the benefits of the project with the costs incurred — a positive assessment can only be made if the former are greater. The analysis can be done ex ante (before implementation) or ex post (afterwards) and allows the economic value to be linked to the impact created [2].

In terms of evaluating social initiatives, the main difficulty is that even the well-documented interconnectedness of the activities in these projects is difficult to monetarily measure and specify or consolidate into a financial forecast. To solve this problem, A. Ziller and P. Phibbs [11] suggest the use of a cost-benefit matrix that maps financial benefits to non-financial benefits and similarly to the cost component (*Table 2*). It cannot be said that any one cell in the matrix is more important than another; nor do formulas apply to compare them. The tool allows us to compare non-financial costs and benefits, which are not easily quantifiable, with financial costs and benefits that we can calculate. The exceptional value of this approach is that it allows competing viewpoints to be represented, and the objectivity of the evaluation is ensured by the equal weighting of each subjective opinion.

This approach allows for a comprehensive conclusion on the social project, but it is hardly applicable for comparative analysis. Another variant of the cost-benefit method, namely the use of the following investment attractiveness indicators, can solve the problem: net present value (*NPV*), internal rate of return (*IRR*) and payback period [2].

Net present value (*NPV*) shows the increase in value that the project under analysis can bring:

$$NPV = -Inv + \sum_{n=0}^{n} \frac{CF_n}{(1+r)^n},$$

where *Inv* — initial investments in the project;

CFn — project cash flows;

r — discount rate;

n — the number of forecast periods.

According to the *NPV* rule, a project is considered profitable if the net present value is greater than zero. One of the main elements of this model is the calculation of cash flows, which are essentially a comparison of costs and benefits, namely outflows and inflows of money.

Since the main challenge for social projects is the monetary valuation of the generated effects, the following approaches are used for these purposes:

1. Stakeholder surveys followed by several methods:

The Revealed Preference Method is the evaluation of priorities derived from the *actual* behaviour of market participants. One form of revealed preference, Hedonic pricing, generates a valuation based on the market price of the constituent parts of the service or commodity in question and is used, among other things, to estimate the environmental effects that influence the value of residential property. For example, this approach can help to estimate the cleanliness of the air (or its pollution) by taking into account a premium (mark-up) on house prices in good environmental areas (or a discount on identical houses in polluted areas). Another example might be the wage differentials that it takes for people to assume and incur certain risks — this can calculate how they value different aspects of their lives.

Another approach assumes that a person is usually willing to travel some distance or sacrifice time to gain access to specific goods and services; this is known as the 'travel cost/time value'; it uses hedonic pricing models and the travel cost method.

The Stated Preference Method is designed for monetary valuation of benefits that do not have a market equivalent, and involves questioning users about hypothetical preferences, which are evaluated in monetary terms as a maximum willingness to pay (Willingness to Pay, WTP) or minimum willingness to accept (Willingness to Accept, WTA) changes in the quantity or quality of services provided or access to resources [12]. These methods include contingent valuation methods and discrete choice experiments (DCE).

Table 3

Social discount rate values

Country/structure	Value of the social discount rate, %
World Bank	10–12
EBRD	10
Australia	7–8
Canada	8–12
China	8
UNITED STATES	2–7
European Commission	3–5

Source: compiled by the author based on [13].

2. Cost savings estimate: applicable if the project leads to a reduction in the cost of another initiative or indirect costs (e.g., introducing prevention measures/prophylaxis to save the cost of treatment).

3. Alternative or cheaper source: replacing one project with another, more expensive project is replaced by a cheaper one.

In defining "proxies", it does not matter whether the money actually changes hands. Nor does it matter whether the stakeholders in question are able to afford to buy something — they can appreciate it anyway. Another important point has to do with the type of costs used as "proxies": they are divided into fixed and variable costs. The former are independent of volume, such as the number of participants. For example, assume that the project being implemented

has enabled 50 people to stay out of prison. This would lead to a reduction in variable costs (per prisoner) but no effect on fixed costs.

Another important feature is discounted cash flows. The point is that the *NPV* is calculated based on data projected for at least 3–5 years. Because the decision to invest is made now, the future cash flows must be discounted to today. This is done using the concept of time value of money, which is based on the premise that, all else being equal, every investor would prefer to receive a certain amount of money now rather than in the future. In other words, money has a different value depending on the period: the further away from today, the lower the value will be. This difference is determined by the interest rate or discount rate, which is formed by taking into account:

- the required rate of return — the minimum rate of return that an investor agrees to receive as compensation for participating in a particular project;
- opportunity cost of capital — the value an investor gives up when choosing a particular project over available alternatives;

The discount rate must take into account the specifics of the project and its inherent risks. The method for calculating it depends on the structure of the capital used — the proportion of equity and debt. For commercial projects, a weighted average cost of capital (WACC) model is most often used; for social projects,— a special Social discount rate (SDR) (*Table* 3), whose value is often not justified at all [14, p. 34], which makes the final result highly questionable.

To calculate the social discount rate for a specific project, several features must be taken into account. First, the sector in which it is being implemented: most studies focus on justifying the social discount rate for environmental projects. Obviously, the rate will be different for sectors such as education, health, or sport. Second, the project implementation period should be taken into account. One popular view is to use social discount rates that decline over time [15]. The most popular argument in favour of this approach stems from the fact that future economic growth is uncertain [16, 17]. Finally, the rate presented in *Table 3* should be adjusted for the level of risk inherent in a particular project and country, as in most cases it is risk-free. Country risk can be taken into account through differences in government bond yields. For example, for Russia, according to Stern, the country risk as of January 2022 was 2.18%.[2]

An individual approach is required to assess the specific risk: each of its factors can be assessed by means of scoring models according to criteria that are expressed by questions with "yes", "no" and "no data" answers. A "yes" answer corresponds to a risk value of 0%, a "no" answer — to 5% (maximum) and a "no data" answer — to 2.5% (average). The value of each risk factor is determined by the ratio of the sum of the criteria values (answers to questions) to the number of criteria (questions). This model is shown in *Table 4*.

Therefore, the overall social discount rate for this hypothetical project would be:

Average rate according to the European Commission (*Table 3*) (4%) + Country risk for Russia (2,18%) + Specific risk (5%) = 11,18%.

The next indicator — *IRR*, is the discount rate at which the present value of future cash flows corresponds to the investment made, or *NPV* = 0. Typically, *IRR* values are found either by selection method or graphically (by plotting the *NPV* against the discount rate), or using specialised software

[2] URL: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

Table 4

An example of a specific risk assessment for a social project

No.	Question	Answer	Risk level
Operational activities and internal processes			
1	Mission-driven processes and the value creation chain are described	N/a*	2,5
2	External and internal communication system approved	Yes	0
3	The project is being implemented in 10 regions	Yes	0
4	Approved performance evaluation system and targets, including quantitative/monetary social impact assessment	No	5
Total risk level for the block			1,875
Clients			
1	The number of people supported is over 100 and has increased by 5% compared to the previous period	Yes	0
2	More than 100 volunteers are involved in the project	Yes	0
3	Satisfaction of beneficiaries is assessed as high	Yes	0
4	Satisfaction of donors and contributors (funding providers) is assessed as high	N/a	2,5
Total risk level for the block			0,625
Effective management			
1	The number of full-time staff is not higher than that of similar projects	Yes	0
2	Availability of public reporting and accountability	Yes	0%
3	Representatives of all stakeholders are present on the governing body	Yes	0%
4	The project uses innovative solutions	No	5%
Total risk level for the block			1,25%
Financial sustainability			
1	The share of commercial revenues in the total budget is at least 20%	Yes	0%
2	The most significant source of funding represents less than 30% of the total budget	No	5%
3	The cost of support per person (beneficiary) is no more than 50,000 roubles per year	Yes	0%
4	The share of borrowed funds in the total budget does not exceed 30%	Yes	0%
Total risk level for the block			1,25%
Total risk level for the project			**5%**

Source: compiled by the author using the *Table 1*.

Note: * no data.

(MS Excel's *IRR* function is used to calculate *IRR*). For each investor, this rate of return will be individual and it will be set based on his or her requests and previous transactions, i.e., there is no single *IRR* target indicator.

In addition to *NPV* and *IRR*, two types of payback periods are usually calculated:

1) *PP* (payback period) — is the number of months (years) in which an investor fully recovers his or her investment in a project. Typically, the payback period is calculated by constructing the cash flow of the project cumulatively, but this does not take into account the value of money over time, and hence the risks of the project. In addition, cash flows in the periods after payback is achieved are not taken into account.

2) *DPP* (discounted payback period) — is a discounted return period. It partly addresses the weaknesses of *PP*, primarily in terms of accounting for the time value of money. However, it also does not cover cash flows in the periods after payback is achieved. It is possible for a project to have a negative *NPV* with a positive accumulated cash balance in the middle of the life cycle.

The limitations of applying *IRR* and payback periods for social project appraisal are similar to those discussed above. It should be noted that monetary valuation of social effects required for cash flow calculation is difficult. A similar disadvantage is inherent to the cost-benefit method in general.

CONCLUSIONS AND RECOMMENDATIONS

The research has found that cost-benefit analysis allows for the comparison of social projects and helps to choose the most effective. This is an extremely useful tool for investors who want to understand the expected results of a project and compare them with different alternatives before proceeding with funding [18]. Cost-benefit analysis is often used to evaluate public initiatives that address complex social problems. It is also used to assess the economic effects generated by sports competitions [19]. This sometimes generates very subjective indicators that are difficult to use in comparisons. An important advantage of this approach is that it can be applied in countries with different socio-political models.

The author has reviewed the practical aspects of applying the two methods for assessing the effectiveness of social projects. To date, they are not widespread in Russia, which (considering the foreign practice) can be recognised as an omission. Their more active implementation in the work of government agencies, charitable foundations and businesses would improve the efficiency of social initiatives implemented, ensure objectivity in the allocation of funding and contribute to the achievement of the stated objectives.

The advantage of the balanced scorecard is that it combines criteria that characterise different aspects of the project into a single model. The article attempts to present an example of such a system of indicators. Individual metrics can be considered in more detail in subsequent studies.

Today, expert models are most often used to analyse social projects, which somewhat reduces objectivity and is often a formal procedure. Based on the results of the research, government agencies and businesses financing social interventions can introduce a balanced scorecard and cost-benefit model, which will facilitate decision-making, eliminate subjectivity in assessment and improve the effectiveness of the projects implemented.

The following topics could be suggested as areas for further research: models for assigning weights to individual metrics and blocks within

the balanced scorecard; justification of the social discount rate for Russian practice; approaches to monetary valuation of intangible benefits generated by social initiatives.

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ABOUT THE AUTHOR

Ilya V. Solntsev — Dr. Sci. (Econ.), Head of Marketing and Sports Business Department, Financial University, Moscow, Russia
https://orcid.org/0000-0001-9562-8535
ilia.solntsev@gmail.com

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History of Management Thought in the Works of Domestic Authors: Essential Characteristics of the Subject of Study in the History of Management Thought

I.V. Dvoluchansky
Lomonosov Moscow State University. M.V. Lomonosov, Moscow, Russia

ABSTRACT

The aim of this work is to identify the essential characteristics of the subject of the history of management thought (HMT) in the works of domestic authors, published in the period from 1985 to 2022. To achieve this task, the following problems were solved: the works of leading scientists on this topic, who formulated their own position on the subject of HMT research, were analyzed. Three essential characteristics of the subject of HMT research were identified; a critical analysis of the essential characteristics of the subject of HMT research was carried out. During the study, such approaches as analysis, synthesis, and comparison were used. The current formulation of the research subject of HMT as a science was critically analyzed, and the identified essential characteristics of the HMT. The subject can be the basis for further development of HMT research in specific areas. This approach to the understanding of the subject of HMT research may serve the further development of historical-management research and consolidation of HMT as a separate scientific discipline.

Keywords: history of management thought; history of management; subject of research of the history of management thought; subject of research of the history of management; methodology of the history of management thought; management; organization management; organization

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INTRODUCTION

This paper analyzes the different points of view of domestic scholars on the subject of the history of management thought (HMT). Between 1985 and 2022, more than two hundred works of various kinds were published in the Russian academic environment directly devoted to HMT. D.N. Bobryshev, S.P. Sementsov [1] and V.I. Marshev [2] were the authors of some of the first publications in which this field of knowledge was specifically studied as a scientific discipline. These works have attracted the attention of the scientific community to the study of the history of management thought, and in 2010 HMT was included in the basic syllabus of the bachelor training program in management as a major.[1]

The accumulated research material illustrates the evolution of HMT from a simple sum of knowledge to an independent science based on one of the basic distinguishing criteria — the presence of its own dedicated subject of study. Therefore, this article examines the views of Russian scholars on this fundamental notion that forms and determines HMT as a science.

The object of this study is the domestic works devoted to HMT from 1985 to 2022. The bulk of the analysis is made up of tutorial works due to their quantitative predominance over works of research nature and their more widespread coverage of the audience. All the works analyse only the author's position on the basics of the scientific discipline being studied — the HMT. For these reasons,

[1] Order of the Ministry of Education and Science of the Russian Federation of 20.05.2010 No. 544 "On Approval and Enactment of the Federal State Educational Standard of Higher Professional Education in the Field of Training 080200 Management (Qualification [Degree] "Bachelor")". URL: https://base.garant.ru/5638395/

tutorials are an important part of the object of this study.

The article analyses the authors' reflection on the essence of what is the history of managerial thought and what exactly it studies, i.e., it examines the process of changing scientific views on the subject of HMT research. Thus, the subject of the research in this paper is the process of changing scientific views on the subject of the history of managerial thought research.

Based on the above, the research question is formulated: what essential characteristics are present in the definition of the subject of HMT research in the works of Russian scientists?

The aim of the work is to identify the essential characteristics in the subject of HMT research in the works of Russian authors. In order to achieve the research goal, the following tasks were solved: the works of leading authors on this topic, who have formulated their own position on the subject of HMT research, were analyzed; the essential characteristics of the subject of HMT research in these works were identified; a critical analysis of the identified essential characteristics of the subject of HMT research was conducted.

WORKS FROM THE LATE 1980S AND EARLY 1990S.

From the very first works devoted to the history of managerial thought, a scientific discussion about the content and formulation of its subject of research of the history of management thought began. Thus, in one of the first works devoted to HMT, namely the 1985 textbook by D.N. Bobryshev and S.P. Sementsov, the authors draw attention to the existence of the HMT's own subject of research [1, p. 6]. At the same time, they do not give a definitive formulation and explain that "the subject of research can be ultimately determined only in the process of a consistent study of the history of managerial thought." [1, p. 6].

D.N. Bobryshev and S.P. Sementsov explain the complexity of this path by the interdisciplinarity of HMT: "Many branches of science have contributed significantly to it: philosophy, political economy, specific economics, cybernetics, mathematics, sociology, psychology, technical sciences". [1, p. 6]. In addition, they note that this problem is also associated with some partial borrowing and use of ideas about management in related disciplines, such as "history of philosophy, history of political economy, history of economic doctrines, history of political and legal doctrines". [1, p. 7].

It should be noted that the mere fixation of having a separate subject of research in the history of management thought without introducing a precise formulation is in itself a contribution to the development of science, as it opens up a problem field for future HMT research.

In 1987, V.I. Marshev's textbook "The History of Managerial Thought" was published. [2]. In the first edition, the author expressed a deep understanding of the essence, structure, and research process of the chosen field of knowledge. In particular, he was the first to define HMT, which became the basic definition: "By the history of the science of management of social production (history of managerial thought), we understand either the process of the emergence, development, struggle, and change of the knowledge system (teachings, concepts, views, ideas, notions and judgments) on the organization of managing social production (in general or specific problems) of representatives of all classes, estates and social strata of different specific-historic social-economic formations or the system of scientific knowledge on these processes". [2, p. 7].

In addition, V.I. Marshev singled out a separate scientific field in HMT, namely the history of management (HM) of social production: "By the history of management of social production we mean either the process of emergence, development and change of specific management systems (or their individual elements) and the organization of management of social production in specific historical conditions in the past, or the totality of scientific results (knowledge) about these processes". [2, p. 7]. At the same time, the two

mentioned disciplines are not opposed to each other, but, on the contrary, as the author emphasises: "… the real managerial activity and the development of knowledge about it are interconnected and interdependent". [2, p. 8].

The formulations of HMT and HM implicitly answer the question of *what these disciplines investigate and research*, and it can be argued that they also contain ideas about *what the subjects of the study* in the history of managerial thought are. In this context, this author's definitions will hereafter be regarded as formulations of directly HMT research subjects.

The analysis of V.I. Marshev's definitions of HMT and HM shows the presence in them of an essential characteristic of the subject of research in HMT, which is the basis for the existence of the two subjects of research in one science: the study of changes in management practice and the study of changes in ideas about management.

It is also important to pay attention to the fact that the author's formulations contain a certain kinetic component, i.e., V.I. Marshev refers to the phenomenon under study as a dynamic, rather than statistic object. Not only does he declare the changes in the subject, but he also implements this interpretation throughout the text of the manual, and even formulates his original interpretation of the science of history of management thought, stressing that "the most ancient and traditional subject of the history of science — is the development of scientific knowledge, including the development of knowledge of scientific methods". [2, p. 21].

Thus, in the definitions of V.I. Marshev we have identified the two essential characteristics of the subject of HMT research: the first essential characteristic of the subject of HMT research is associated with the duality of the subject of research, which is expressed in the presence of two areas of knowledge: the study of changes in ideas about management — the history of management thought and the study of changes in management practice — the history of management; the second essential characteristic of the subject of HMT research is associated with the kinetic property of the subject of the research, which is expressed in the dynamic or static nature of the phenomenon under research.

Analysis of the above formulations shows that with regard to the first essential characteristic of the subject of HMT study, the author's position is to separate the phenomenon under study into two subjects of research, and with regard to the second essential characteristic — to consider the dynamics of the change.

DEVELOPMENT OF VIEWS IN THE WORKS OF V.I. MARSHEV

In 2005, a new textbook was published by V.I. Marshev, which is a logical continuation of the 1987 manual. [3]. In it, the author provides basic definitions of the two subjects of HMT and HM research, included in the definitions of the two sciences: the history of management thought and the history of management. "The history of organizational management is understood as either the process of emergence, development, struggle and change of specific organizational management systems (or their individual elements) under specific historical conditions in the past, or the system of scientific knowledge about these processes".

"The history of managerial thought is understood as either a process of emergence, development, struggle and change of doctrines, concepts, theories, views, ideas, perceptions of organization management (in general or in its separate functional areas) in various specific-historical conditions, or a system of scientific knowledge about these processes". [3, p. 20]. Comparing the definitions of sciences in both editions of the textbook, it should be noted that in the latter the author's attitude to the two essential characteristics of the subject of HMT research is preserved.

The socio-political paradigm shift that took place between these publications (1987 and 2005) was reflected in the formulations of HMT and HM. There was a clarification of what should be meant by "the object of managerial influence". The "social

production (as a whole or of individual problems)" and "the representatives of all classes, estates and social strata of various specific-historical socio-economic formations" [2, p. 20] has been replaced by the laconic "management of an organisation (as a whole or in its individual functional areas)" [3, p. 20].

Based on the reinterpretation of the basic definition of the HMT science and the introduction of the new terms, namely "management of organization", V.I. Marshev specifies what is meant by the new definitions and determines the concept of management as an activity and the concept of an organization as an object of managerial influence: "This textbook will deal with the history of ideas of management of any social object. The object of management will be understood as an organisation as a set of two or more people united by common goals, using different kinds of resources, transforming resources into products (goods and services) and exchanging (selling) products for the necessary resources to maintain its existence and development. The management of an organization will be understood as a deliberate purposeful impact on the organization". [3, p. 10].

A new version of the textbook by the same author was published in 2010 [4]. As with the previous edition, the definition of the history of managerial thought remains the same. In the formulation of the term "history of organizational management" there is a clarification that one should observe not only the changes in the management system of an organization, but also management relations in general: "The history of organizational management means either the process of emergence, development, struggle and change of specific management systems (or their individual elements) and management relations in organisations under specific historical conditions in the past, or the system of scientific knowledge about these processes". [4, p. 31].

Although there are no significant changes in the formulations of the terms HMT and HM, V.I. Marshev clarifies the definitions of what he understands by the "organisation" and "organisation management". In particular, he emphasises that the management impact is not only purposeful, but it also has a systemic nature: "...organization management will be understood as a conscious purposeful systemic impact on the organization". [4, p. 13].

The new understanding of the organisation expressed by the author of the textbook (in contrast to the formulation in the 2005 edition) implies its division into two components: organisation in its static form and in its dynamic form. "An organisation in its static form is a collection of at least two individuals who share a common purpose and a formalised structure. The term 'structure' refers to the set of elements and the links between them. In other words, in any particular organisation there is only one group of elements (individuals) with two attributive characteristics — the purpose and its formalised structure". [4, p. 13].

"Organisation in its dynamic form is the purposeful interaction of individuals and/or the performance by individuals of their roles according to the agreed rules (prescribed in the structure). Organisation in its dynamic form is the "life of the organization" manifested in the implementation of the following key roles: Searching for resources; Converting resources into products: Goods/services; Sharing products with other organisations or individuals. These activities require purposeful influence on the members of the organisation, enable the achievement of the goals set, the achievement of the results and, ultimately, the functioning of the organization". [4, p. 27].

In 2021, V.I. Marshev published not only a new version of the textbook "History of Management Thought". (Russian edition) [5], but also its authorised English-language translation "History of Management Thought" [6]. In this textbook, the author continued to develop his ideas related to the development of basic problems of historical-management studies and, for the first time, he directly formulated the subjects of HMT and HM studies. In previous editions, V.I. Marshev did not explicitly highlight them, but the author's

understanding of the subjects of HMT and HM research was implicitly present. Based on the formulations defining the sciences of HMT and HM and the context of the textbook narrative, it was clear how the author understood the subjects of HMT and HM research. Explicitly in the new edition of the textbook, these formulations became the following: "The subject of management history (as a science) is the process of emergence, development, struggle and change of specific management systems of an organisation (or their individual elements) and management relations in organisations under specific historical conditions in the past. <...> the subject of the history of managerial thought (as a science) is a process of emergence, development, struggle and change of doctrines, concepts, theories, views, ideas, perceptions of organisation management (as a whole or its separate functional areas) under different specific-historical conditions". [5, p. 45].

In the same edition, V.I. Marshev formulated eight key terms, among which he introduced the three new ones: "the subject of the history of management thought", "the subject of the history of organizational management" and "the historiography of historical management research"; the terms "organization", "organisation model", "history of organisational management" and "history of management thought" were left unchanged. At the same time, the understanding of "management of the organization" has been supplemented. The new version adds five more characteristics to the basic characteristics of "management impact on the organization" (which are "purposeful" and "systemic"): "conscious", "meaningful", "legitimate", "permanent", "responsible" [5, p. 25].

An analysis of all of Professor Marshev's aforementioned works has shown us a consistent evolution of the scholar's views on the subject of HMT research and the presence of essential characteristics in it.

The first essential characteristic of the subject of HMT research concerns the presence of a duality in the phenomenon under study — the practice of real management and (vs.) ideas about this practice. This duality gives rise to the need for the author to clarify exactly what the history of managerial thought explores. It is difficult to study this phenomenon in its entirety. Therefore, V.I. Marshev solves this problem by dividing HMT into two very close, yet different, subjects of research. The author believes that in the history of managerial thought as a science, there are two subjects of research simultaneously: the subject of research directly into the history of managerial thought–exploring the change in ideas about management, and the subject of research into the history of management–exploring the change in the practice of managerial activity.

The second essential characteristic of the subject of HMT research, which can be traced in V.I. Marshev's formulation, is the emphasis on the dynamic nature of the phenomenon under study. The author proposes to investigate ideas about governance by studying the dynamics of transformation and change of ideas about different elements and aspects of governance. Simultaneously examining not only the current idea, but also what preceded it, what has changed with it in parallel through an understanding of what possible context the idea under study is part of. The author extends a similar approach to the subject of management history research, applying it to changes in specific management systems (or the implementation of management impact) in specific organisations.

THE RESEARCH FRAMEWORK IN THE WORK OF E.B. KORITSKY

Next, let us pay attention to the works of E.B. Koritskiy, which made a significant contribution to the development of historical-management sciences, the history of economic doctrines and the science of management. In the works written in 1989–1990, the author did not specify what exactly the history of managerial thought studies. However, his analysis of the author's term "Soviet managerial thought — SMT" indicates that the latter

contains the essential characteristics of the modern understanding of HMT.

In the 1989 work by Y.A. Lavrikov and E.B. Koritsky "The Problems of the Development of the Management Theory of Socialist Production". [7], the authors formulate the prerequisites for understanding the subject and tasks of SMT research: "Today the task is to thoroughly study the most complicated process of emergence and development of Soviet managerial thought (SMT), a process evolving in stable dependence on the changes taking place in the productive forces, production relations and superstructure, that is subject to its own objective laws and to the unfolding in an acute polemical struggle of ideas, views, concepts and teachings". [7, p. 3]. And in 1990, E.B. Koritskiy, Yu.A. Lavrikov and A.M. Omarov proposed that the subject of SMT research should be "the process of managerial thought movement reflecting the regularities of the formation and development of socialist economic management relations" [8]. [8, p. 5].

In this formulation of SMT there are already the signs of the modern understanding of HMT, which allows us to say that their essential ideas are identical. The analysis reveals that the first essential characteristic of the subject, namely the division into the study of management practices and ideas about management, is missing. At the same time, the second essential characteristic — the kinetic aspect of the phenomenon under study — is presented by E.B. Koritsky and his coauthors explicitly and is characterised by them as having a dynamic character.

It should be noted separately that the definition of the subject of SMT research proposed by E.B. Koritsky and his co-authors in the 1990 paper indicates the presence of the concept of "regularity" (consistency) in it. The assertion of the "regular nature" of the development of this or that phenomenon requires at least a primary scientific justification, which leads to the necessity of choosing a research position on the issue in question. The study of the *change of ideas* and the patterns and regularity of their change are on different levels of cognition, the latter being derived from the former. The theses on the derivative elements of scientific research included in the definition of the subject of HMT research provide a basis for identifying the third essential characteristic of the subject of HMT research.

DEVELOPING A COMPREHENSIVE UNDERSTANDING OF THE SUBJECT OF HMT RESEARCH

The third essential characteristic of the subject of research is nothing more than the author's position on the derivative elements of historical research, and a striking example of the presence of the third essential characteristic in the subject of research is the book by S.I. Smetanin "The History of Entrepreneurship in Russia" published in 2002. [9]. It states that "the history of entrepreneurship is the science of the patterns of development of entrepreneurship." [9, p. 7]. The author argues that the history of entrepreneurship is part of economic history. Therefore, the author considers the regularities of entrepreneurship development in the context of changes in the specific historical conditions of the economic activity [9, p. 7].

The second essential characteristic of S.I. Smetanin's HMT subject of research is evident in his approach to the material under study, namely through his authorial choice towards the study of dynamic processes of entrepreneurship development: "...entrepreneurship is a process, a development, and the current condition is only a moment of the process. If you do not know the course of economic development, it is impossible to see its direction, it is impossible to determine the consequences of certain economic decisions". [9, p. 8].

The first essential characteristic is not explicitly recorded in Smetanin's methodological framework. However, the analysis of the content of this work through the prism of modern understanding of HMT illustrates that it is a study of the practice of managerial activity. Thus, the work is devoted to the study of one of the subjects of the history

of managerial thought, namely the history of management (HM).

In 2004, Lomonosov Moscow State University Press published a textbook by V. G. Fedorov, M.Y. Yakimov, and N.V. Fedorov "From the History of Management (Theory and Practice of Management)". [10]. The authors argue that "the subject of the research and study of the history of management is managerial thought" [10, p. 3]. This formulation reflects a different point of view from the previously discussed works on the second essential characteristic of the subject of HMT research. The authors use a static model when formulating the subject of HMT — "managerial thought"; such a semantic construction lacks the emphasis on the fact that managerial thought is subject to changes in general, and in specific historical conditions in particular.

A.V. Vinogradov expresses a similar idea about the subject of HMT research in his textbook "The History of Management": "The history of management has its own subject of study, it is managerial thought" [11, p. 9] and adds that "the history of management operates with the same categories and concepts as the science of management". [11, p. 9].

The monograph "Joint Stock Companies in Russia: XIX — early XX century" by L.E. Shepelev stands out in some way from the mass of studied works on the subject. [12], in which the subject of the study is defined as "regularities of the development process of joint-stock companies". [12, p. 13]. Based on this short formulation, we can draw a number of conclusions. Firstly, although the author does not explicitly state it, he explores management practices directly, i.e., management history (HM). Secondly, he emphasises changes in management practice, calling it a "process of development…". Thirdly, along with E.B. Koritsky and S.I. Smetanin, L.E. Shepelev's formulation of the subject contains a reference to "regularities of the development process". Taken together, this tells us that the author's view of the three essential characteristics of the subject of HMT is given in his formulation of the subject.

Along with the above-mentioned authors, A.V. Raichenko in his work "History of Management" [13] also includes derivative elements in the subject of HMT research, namely: "historical relations, cause-effect relationships and dependencies of chronologically positioned phenomena and events". [13, p. 9]. In other words, the author understands the subject of research to mean: "…the relevance of identifying, researching, and presenting exactly… the logic of causal transformations of emergence, formation and development of professional organisation management". [13, p. 6].

Attention should be drawn to the works of scholars from the Russian State University for the Humanities (RSUH), created with the participation of RSUH professor N.V. Ovchinnikova. The textbook "The World History of Management Thought" [14] does not explicitly formulate the subject of research in the stated field of knowledge. Analyzing the material presented by the authors, we can conclude that they study the history of public administration, emphasizing the practice of management. Thus, based on the first essential characteristic of the subject matter of HMT (the dualistic nature of this subject matter), it can be argued that this paper is devoted more to the study of HM than to HMT.

The book by I.N. Makashov and N.V. Ovchinnikova "Managerial Thought in Western Europe, the USA and Japan (XIX–XX centuries)" [15] was published in 2011. As in the previous work, it does not define the subject of research in the stated field of knowledge. However, the analysis of the presented material shows the authors' attention drifting from the study of management practices towards the study of management ideas within the territorial and temporal limits they set. In this regard, it can be argued that this paper contains the first essential characteristic of the subject of HMT research.

In addition, in comparison with the previous work, the second essential characteristic of the subject of HMT research began to emerge. The

authors emphasized the dynamic nature of the phenomenon under study: "For modern management as a social institution, it is important to consistently consider the process of origin, formation, development of managerial thought, accumulation of managerial knowledge…". [15, p. 6].

In subsequent works of the representatives of the RSUH academic school, namely in the textbook "History of Managerial Thought" (2013) [16] and the book "Managerial Thought in Russia (IX — early XXI centuries)" (2016) [17] the authors formulate the definition of what is meant by the history of managerial thought [17 p. 9]. At that, the expressed formulations coincide with the definitions of V.I. Marshev [3, p. 20]. Thus, the study of the development of ideas about the essence of HMT within the scientific school of RSUH leads to the conclusion that the understanding of the essential characteristics of the subject of HMT research, formulated by V.I. Marshev, began to be shared by the representatives of the RSUH school in their subsequent works.

The influence of Professor Marshev's ideas can also be seen in the works of other authors. In particular, R.Sh. Zakirov in his textbook "Management Theory. History of managerial thought". [18] gives his own formulation of the subject of HMT research, which has many points of overlap with the definition of V.I. Marshev set out by him in the textbook "History of Managerial Thought" [3]: "The history of managerial thought is understood as a process unfolding in space and time of emergence, development, struggle and change of doctrines, concepts, theories, views, ideas, perceptions of organisation management in various specific-historical conditions and the practical managerial decisions and actions related to them". [18, p. 4].

The search for the subject of HMT research is continued by I.I. Semenova. In her work, the author focuses on the first essential characteristic: the duality of the subject of HMT research. She captures the subject matter of her field of study in her work "The History of Management": "The history of management has its own subject of study — the theory and practice of management". [19, p. 5]. It is important to emphasize that this seemingly insignificant example reflects the presence of scientific debate on the essence of the subject of HMT research. Its duality forces researchers to decide on the author's position on what HMT studies: the practice of management activity, management thought about this practice or all together in the context of historical changes.

There is no less striking controversy about the second essential characteristic of the subject of HMT research — the kinetic properties of the phenomenon under study. The textbook by V.D. Golikov and V.A. Kolesnikov "Theory, Methodology and History of Management" (2011) [20] talks about the dynamic nature of scientific views on management, which allows us to see in it "not just the structure of knowledge in its static form or dynamic form, not just the difference between this knowledge and many others similar or close to it, but the connection, continuity between the knowledge or different schools of knowledge. And then the history of management appears as an organised, systematised self-movement of knowledge, because the sources, driving forces, motives of movement and development are rooted in it. Without this, any historical process is simply the sum of conditions". [20, p. 8–9].

V.D. Golikov and V.A. Kolesnikov emphasise that the history of management should be considered precisely in the context of the development of management ideas, thus fixing their authorial choice. The resulting knowledge, according to the authors, must meet four requirements: "…as an organic totality of structural components, as an internally connected and functioning whole, as a system; …in terms of process, i.e., a set of historical relations and dependencies of its internal components following each other in time; in terms of identifying and fixing qualitative changes in its structure as a whole; in terms of revealing the regularities of its development, laws of transition from a separate historical state of knowledge to

Table

The result of the analysis of the essential characteristics of the subject of the ISM research in the works of domestic authors

The essential characteristics of the subject of the HTM study	Variants of the author's position	Authors
The first essential characteristic of the subject of HMT research: the duality of the subject	Two subjects of research	V.I. Marshev; I.I. Semenova
	One subject of research	E.B. Koritskiy, Yu.A. Lavrikov, A.M. Omarov; S.I. Smetanin; V.G. Fedorov, M. Ya. Yakimov, N.V. Fedorova; A.V. Vinogradova; L.E. Shepelev; N.V. Ovchinnikova, I.N. Makashov, O. Yu. Artemov, K.A. Chistyakova, S.A. Ovchinnikov, A.V. Kozhanov; R. Sh. Zakirov; A.V. Raichenko; A.A. Rudskiy; L.V. Sekretova; E.P. Kostenko; E.V. Mikhalkina
The second essential characteristic of the HMT subject: the kinetic property of the subject	Statics	S.I. Smetanin; V.G. Fedorov, M. Ya. Yakimov, N.V. Fedorova; A.V. Vinogradova; I.I. Semenova; A.V. Raichenko
	Dynamics	V.I. Marshev; E.B. Koritskiy, Yu.A. Lavrikov, A.M. Omarov, A.I. Vasyukov; L.E. Shepelev; N.V. Ovchinnikova, I.N. Makashov, O. Yu. Artemov, K.A. Chistyakova, S.A. Ovchinnikov, A.V. Kozhanov; R. Sh. Zakirov; V.D. Golikov, V.A. Kolesnikov; A.A. Rudskiy, L.V. Sekretov; E.P. Kostenko, E.V. Mikhalkina
The third essential characteristic of HMT's subject of study: the relation to the derivative elements of historical enquiry	Derivative elements	E.B. Koritsky, Yu.A. Lavrikov, A.M. Omarov; S.I. Smetanin; L.E. Shepelev; A.V. Raichenko
	No derivative elements are present	V.I. Marshev; V.G. Fedorov; M. Ya. Yakimov; N.V. Fedorova; A.V. Vinogradova; N.V. Ovchinnikova; I.N. Makashov; O. Yu. Artemov, K.A. Chistyakova, S.A. Ovchinnikov, A.V. Kozhanov; I.I. Semenova; R. Sh. Zakirov; V.D. Golikov; V.A. Kolesnikov; A.A. Rudskiy; L.V. Sekretov; E.P. Kostenko; E.V. Mikhalkina

Source: compiled by the author.

another historical state with new knowledge". [20, p. 10].

It is worth paying attention to A.A. Rudsky's and L.V. Sekretova's vision of the subject of research in "History of Management Thought" (2012): "the subject of the history of management doctrine is the study of the evolution process of management as knowledge in general and as a scientific discipline in particular". [21, p. 4]. Despite the conciseness of the formulation, it captures the presence of two essential characteristics of the subject of HMT research. Scholars do not choose to study the practice of management (the first essential characteristic of HMT), but study management knowledge in a dynamic context (the second essential characteristic of the subject of HMT).

A similar point of view is expressed in the textbook by E.P. Kostenko and E.V. Mikhalkina "The History of Management" (2014) [22]. The authors distinguish the subject of the discipline as follows: "The process of emergence, development, struggle and change of managerial ideas at all stages of historical development". [22, p. 9]. It is important to note that E.P. Kostenko and E.V. Mikhalkina emphasise the need to study the second essence aspect of the subject of study exactly in its dynamics, since "without this, any historical process is a simple sum of conditions" [22, p. 12]. This formulation of the subject of research demonstrates the author's choice in three essential characteristics: the study of ideas about governance, in dynamics, without derivative elements.

CONCLUSIONS

The fact that there is an ongoing accumulation of educational, methodological and research works on the history of managerial thought suggests the need for their theoretical understanding and conceptualisation. The development of methodological problems, the most important of which is the formulation of the subject of research, is the primary task for the further development of this scientific field. The consolidation of the subject matter of the history of managerial thought into a separate field of knowledge is necessary to determine the final status of the discipline.

As a result of the analysis of the works of leading scholars, who set out their positions on the subject of HMT research in the author's texts, the three essential characteristics of the subject of HMT research were identified.

The first intrinsic characteristic of the subject of HMT research — is the duality of the subject. It is revealed either through the division into two subjects of study within the same work — such as ideas about management and management practice in a particular organisation — or by the study of one of these subjects.

The second essential characteristic of the subject of HMT research — is the kinetic property of the phenomenon under study, which is expressed in the dynamic or static nature of the phenomenon under study. The study of changes in management ideas and changes in management practices in a particular organisation can be considered a manifestation of dynamics in the subject of study. In the absence of a focus on these changes, the subject is studied as a static object.

The third essential characteristic of the subject of HMT research — is the author's position with regard to the derivative elements of historical inquiry. To such elements we refer any statements about cause-effect relations, expressed by the authors through "regularities" or any other semantic constructions. Judgements about the regular nature of historical events are derivative conclusions, and in such cases should follow first from an analysis of changing historical events.

The opinions and contributions of the academic authors of the papers reviewed in this study are presented in the *Table*.

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ABOUT THE AUTHOR

Ivan V. Dvoluchansky — Senior Lecturer, Department of Organizational Management, Faculty of Economics, Lomonosov Moscow State University. M.V. Lomonosov, Moscow, Russia
https://orcid.org/0000-0002-5178-8905
dvoluchansky@gmail.com

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XXIII International Conference on the History of Management Thought and Busines "Doctrines of Management: Past, Present, Problems"

It has become a tradition for Russian and foreign management specialists to gather at Lomonosov Moscow State University for international conferences on the history of management thought and business (HMT&B) to discuss topical issues of management.

Since 1996, 22 events have been held on the following topics:

- "Development of Management Concepts" (1996).
- "Enterprise Restructuring in the Transition Economy: Theory and Practice" (1998).
- "The State and Entrepreneurship" (2000).
- "Development of Management Personnel" (2001).
- "Measurement Problems in Organisation Management" (2002, 2003).
- "Scientific Concepts and Real Management" (2004, 2005).
- "The Russian Model of Management" (2008).
- "National Management Models" (2009).
- "Business Models: Yesterday, Today, Tomorrow" (2010).
- "Social Responsibility of Business and Management Ethics" (2011).
- "Ethics of Business and Management: Comparative Analysis of National Models" (2012).
- "From Stratagems to Strategies, from Strategic Planning to Strategic Thinking and Insight" (2013).
- "Problems of Manager Training: Yesterday-Today-Tomorrow" (2014).
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- "Management work and managerial roles: past, present, future" (2018).
- "Management and managerial roles: yesterday, today, tomorrow" (2019).
- "Problems of measurement in the management of social objects: yesterday, today, tomorrow" (2021).
- "Development of views on regional economic management in the countries of the world: history, modernity" (2022).

On June 29–30 and July 1, 2023 the Department of Economics of Moscow State University is planning to hold the next,— XXIII International Conference on the History of Management Thought and Business. It has been a long time since we raised the issues discussed at our first conference in 1996. 27 years have passed since then, and it is time to take stock and evaluate the achievements and formulate the objectives of historical management research. This is why the theme of the forthcoming event is proposed as **"The Doctrines of Organisational Management: Past, Present, Problems"**. In other words, the XXIII conference would like to hear answers to the questions "Where have we been?", "Where are we?", and "What methodological problems do we face today relating to the *three components* of historical-management studies (HMS):

- The History of management thought (HMT).
- The History of Management (HM) and
- Historiography of Historical and Management Studies (HHMS)?"

As always, the **objects** of historical and management research will be various kinds of materials and/or documents: monographs, articles, conference proceedings and legislative acts, letters, memoirs, diaries, archival data, etc. In the context of our future conference, these are materials presenting points of view, ideas, views, thoughts, concepts, theories, scientific schools, reflecting the emergence,

development, struggle and change of ideas and scientific and applied views on economic management (in the broad sense) in different countries and regions of the world in various specific-historical periods. The time range is unlimited, from the manuscripts of the ancient world to the treatises of our contemporaries.

The views and ideas themselves can refer both to the management of the economy as a whole and to the management of its individual aspects and elements — economy, politics, demography, legislation, socio-cultural relations, science, technology, international relations, as well as specific sectors, businesses, organisations and their functions (personnel, marketing, finance, procurement, production, sales, etc.).

It is also obvious that the *subjects of economic management* in different countries of the world in different specific-historical periods were (as management actors) the state and its institutions of all forms of power, public organizations, the church, and representatives of the private economy.

Hence, several questions to which we expect to receive answers during the forthcoming HMT&B-2023 conference:

1. When and in relation to what did economic management originate?
2. When and in what context did management thought emerge?
3. What is the 'legacy' and 'heritage' of the science and practice of economic management?
4. What are the factors and causes of change in economic, organisational and business management systems?
5. What are the factors and reasons for differences in the views on management of economies, organisations and businesses between different countries and regions of the world at different specific historical periods?
6. How and why did the ideas and concepts of system (elemental) and integrated (aspectual) approaches to economic management emerge and develop in the countries of the world?
7. How have the dimensions of governance (economic, political, legal, demographic, etc.) emerged and been addressed in *the four stages of the life cycle of ideas and perspectives on economic governance*?
8. What are the factors, causes and characteristics of crisis management concepts of farms, organisations, businesses?
9. Why and how have the views on the provision of various kinds of resource management processes changed?
10. Why and how have views on the staffing of management processes in farms, organizations, and businesses changed?
11. What was the "engine" of management and managerial thought — the real business, or the logic and intuition of the creator and implementer of ideas?
12. What motivates management researchers to create such scholarly articles as "The Management Theory Jungle" (Koontz H,, 1961)?
13. Can the category of "paradigm" be used in relation to HM and HMT as ideological sciences? Why?
14. Can we agree with the idea: «The Past as a Stochastic Process»? And if so, how should the epistemological process of HMT be constructed?
15. What are the factors behind the emergence of several hundred foreign and domestic treatises and textbooks on HM and HMT in the 20th and 21st centuries alone?
16. How to teach the history of management (HM), the history of management thought (HMT) and the historiography of historical and management studies (HHMS)?
17. What are the epistemological and other problems facing HM, HMT and HHMS researchers?

HMT&B-2023 CONFERENCE ORGANISERS

- Lomonosov Moscow State University.
- Department of Economics, Moscow State University.
- Association of the Graduates of the Department of Economics of Moscow State University.
- International journal "Problems of Management Theory and Practice".
- Journal of Management Sciences.

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ORGANISING COMMITTEE: telephone numbers:
8-495-9392917; 8-495-9392887; 8-916-6735422; 8-985-7277578; 8-926-5572744
E-mail: vmarshev@mail.ru; dvoluchansky@gmail.com
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Papers (up to 20 pages) and abstracts (up to 5 pages) are accepted until **June 20**
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Formatting requirements for the article:
Font: size (body of a letter) — 12.
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Surname, first name, middle name, title, abstract and key words
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