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**A Model for Ecosystem-Based Collaboration Among Healthcare
Organizations in the Digital Era**

5.2.3. – Regional and Sectoral Economics

ANNOTATION

of the dissertation for the degree of Candidate of Economic Sciences

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Relevance of the research topic. A fundamental paradigm shift in socio-economic relations, driven by the growing importance of information, knowledge, and new technologies for data collection, storage, and processing, has created an urgent need for new, scientifically-grounded concepts for management and development in various fields of activity. Consequently, building ecosystems powered by modern digital tools has become a global trend in the societal development, reshaping various areas of human socio-economic activities, and represents, first and foremost, a rethinking of the principles of organizational management through the implementation of innovative digital solutions.

At this stage of society's development, the Russian healthcare sector is a field of activity that addresses complexly organized, socially vital, and high-risk tasks. The healthcare system currently faces an insufficient number of medical personnel, logistical and pharmaceutical supply chain issues amidst sanctions and geopolitical instability, shifting disease patterns, and a demographic crisis. These challenges demand new, scientifically-grounded approaches and tools to managing both the industry as a whole and individual medical organizations.

The ecosystem approach, unlike many others, allows for a multi-faceted view of the system, particularly from the standpoint of improving management efficiency and the development of each ecosystem participant while simultaneously aligning them toward a common goal. Given the avalanche-like growth of data in the healthcare sector, this concept is only viable when powered by modern digitalization tools.

A review of the existing literature presented in this work reveals a significant gap in scientific, methodological, and practice-oriented research on the formation and development of effective, ecosystem-based collaboration among healthcare organizations. This is particularly true concerning solutions for the most pressing and socially significant tasks.

These factors, combined with the profound social importance of the research, determined the relevance, choice of topic, object, subject, goals, and objectives of this dissertation.

Degree of scientific elaboration of the problem. The issues addressed in this work, related to the formation of ecosystem-based collaboration of organizations in the healthcare sector, are both scientifically timely and practically significant. However, existing research works by Russian scholars do not fully articulate a scientifically-grounded framework for such collaboration, nor do they offer practical recommendations specifically adapted for healthcare organizations in the context of digitalization.

Issues of organization and management in the healthcare sector, as well as the challenges and problems currently facing the industry, are covered by A. G. Aganbegyan, S. V. Shishkin, G. E. Ulumbekova, N. G. Shamshurina, V. Yu. Kulkova, T. V. Chubarova, L. P. Khrapylina, E. M. Vavilova, M. V. Demchenko, D. S. Dallakyan, L. A. Gabueva, M. N. Dudin, S. E. Ermakova, O. B. Chertukhina, D. I. Kich, S. O. Ivanyuta, I. S. Brikoshina, and M. A. Kreimer [39, 42, 51, 56–58, 64, 82].

The basic principles and forms of organizing the interaction of associations in the socio-economic field, including clusters, network structures, and ecosystems, along with the main factors influencing the improvement of the work of healthcare organizations, have been explored in the works of Yu. N. Lapygin, N. A. Simchenko, O. V. Avilov, V. V. Akberdina, I. O. Blinkov, Yu. V. Mashninova, T. A. Naidenova, D. V. Belyshev, and Ya. I. Guliev [22, 24, 35, 94, 108].

Despite this broad coverage in the scientific literature, the ecosystem-based collaboration within healthcare organizations and their affiliates has not been sufficiently studied. The existing literature does not address how such ecosystems – comprising entities directly and indirectly involved in public

health, regulation, and coordination – can be structured to meet the specific goals and objectives of each participant.

The theoretical and methodological aspects of managing medical organizations in a digital society are the focus of works by N. V. Alikperova, I. V. Baltutite, G. M. Barashkov, E. S. Bogomyagkova, D. V. Voshev, O. V. Sertakova, O. K. Korobkova, and V. A. Shemyakin [27, 29, 30, 36, 41].

While digitalization and digital transformation in healthcare is one of the most relevant topics with a vast body of published scientific works, the research still lacks a systematic approach, and the precise role and application of technologies within medical organizations remain ill-defined.

However, despite the valuable contributions of the aforementioned scientists to the disclosure of certain provisions presented in this work, there is a clear lack of scientific-methodological and practice-oriented research on building and developing effective ecosystem-based collaboration in healthcare organizations to solve the most pressing challenges society faces.

These factors, combined with the high social orientation of the research, determined its relevance, the choice of topic, object, subject, goals, and objectives of the presented dissertation work.

The object of the research is the healthcare ecosystem established at the Federal State Budgetary Institution of Health “Clinical Hospital No. 85” of the Federal Medical-Biological Agency of Russia in Moscow (FSBIH “CH No. 85” FMBA of Russia), operating within the context of healthcare digitalization.

The subject of the research is the managerial relationships that emerge from the ecosystem-based collaboration of healthcare organizations, which in turn influence the resolution of socially significant challenges within a digital environment.

The goal of this dissertation research is to develop theoretical and methodological frameworks for creating a model of effective, ecosystem-based collaboration among healthcare organizations in an era of digitalization.

To achieve this goal, the following **research tasks** were set:

1. To analyze, generalize, and systematize the contemporary theoretical and methodological aspects of various forms of organizational collaboration, including networks, clusters, and ecosystems.
2. To design a model for ecosystem-based collaboration among healthcare organizations in the context of digitalization.
3. To formulate a step-by-step algorithm guiding ecosystem-based collaboration among healthcare organizations in addressing the industry's key social challenges.
4. To develop a methodological framework for assessing the digital maturity of ecosystem-based collaboration among healthcare organizations in a digital society.
5. To propose scientific and methodological recommendations for implementing the ecosystem collaboration model and to evaluate its socio-economic impact.

The methodological basis of the research includes scientific works of Russian and international scholars in the fields of economics, management, healthcare, and demography. It draws on theories of the ecosystem approach as applied to organizational management, with a focus on Russian and international medical organizations undergoing digital transformation to improve their performance. The study employs a range of research methods, including general scientific methods (observation, analysis, synthesis), specialized methods (comparative analysis, economic-statistical analysis, dynamic modeling via network diagrams, SWOT analysis), as well as methods of surveying and expert assessments.

The study's information and empirical base comprises a wide array of sources: current legislation of the Russian Federation and local governments; resolutions of the Government of the Russian Federation; statistical and analytical reports from the Federal State Statistics Service, the Ministry of Economic

Development, and the Ministry of Health; published data from the World Health Organization (WHO), the International Monetary Fund (IMF), and the United Nations Population Fund (UNFPA); reports and reviews from healthcare organizations and institutes; primary data from surveys of employees at Russian healthcare and industrial organizations conducted by the author; data cited in scientific sources, results of scientific research presented in the form of abstracts and dissertations, as well as materials from scientific and practical conferences and seminars.

Correspondence of the dissertation to the passport of the scientific specialty. This dissertation aligns with **the official passport for the scientific specialty 5.2.3 “Regional and Sectoral Economics”, as defined by the Higher Attestation Commission of the Russian Federation.** Specifically, it corresponds to the following clauses: 4.1 “Theoretical and methodological foundations for analyzing development problems in service industries”; 4.2 “Issues in assessing and enhancing the efficiency of economic activity in service sector enterprises and industries”; 4.4 “Resource potential of service industries and the efficiency of its utilization”; and 4.12 “Health Economics”.

The scientific novelty of the results of the dissertation research lies in advancing the concept of ecosystem-based collaboration within the healthcare sector. This is achieved through the development and analysis of an ecosystem centered on a large, state-run, multidisciplinary medical organization for the implementation of a socially significant study, aimed at achieving priority national goals with maximum efficiency, minimal risks, and in the shortest possible timeframe.

Elements of scientific novelty submitted for defense:

1. The definition of the concept of “digitalization in healthcare” has been clarified and supplemented. It is defined as a comprehensive transformation of core medical and managerial business processes within a digital environment. It involves new management models, strategies, and technologies aimed at

optimizing and increasing efficiency and developing of processes in the development of innovative solutions that reshape the interaction between organizations and consumers of medical services. The author presents a novel definition of “*ecosystem-based collaboration in healthcare*” as a digitally-native association of diverse organizations (differing in profile, ownership, scale, and industry) with a medical organization at its core. This association functions as a single organism to effectively solve high-priority industry tasks through mutually beneficial and complementary collaboration, with the ultimate strategic goal of preserving public health through human-centric management approaches.

2. The author's model for ecosystem-based collaboration in healthcare is formed. Unlike models from other economic sectors, this model is specifically designed to execute a socially significant research project centered on a large, state-run multidisciplinary medical organization that carries out managerial and organizational actions, determines strategy, and performs coordination and control functions. The model's interaction processes between partner organizations take into account the specifics and features of the medical field, leveraging synergy and integration to maximize shared resources (human and informational) and accelerate the achievement of priority goals and objectives.

3. A step-by-step algorithm for building ecosystem-based collaboration in healthcare during digitalization has been scientifically grounded and empirically tested. This algorithm is unique in that it:

- Defines the necessary and sufficient number of participants to achieve project goals, clarifying their specific roles and resource contributions provided for the implementation of joint activities to achieve common goals.

- Outlines the scope and timeline of collaborative activities, leveraging digital tools to ensure that tasks set for the industry are completed with maximum efficiency and effectiveness.

- Provides a quantitative basis for comparing management decisions by calculating the benefits of enhanced collaboration within the ecosystem, driven

by the application of modern digital technologies to research socially significant areas of industry development.

4. A methodological approach to assessing the level of digital maturity of ecosystem interaction of organizations in healthcare has been developed. In contrast to existing methods, this approach assumes the possibility of determining the degree of compliance of communication processes, information and data processing methods used in carrying out research to solve socially significant industry tasks, with the current level of development of digital technologies, taking into account the specifics of the medical sphere. This allows for a comparison between the technological, infrastructural, and informational readiness of partner organizations and the resource requirements of the ecosystem.

5. Scientific-methodological and practice-oriented recommendations for the implementation and development of the model of ecosystem interaction of organizations in healthcare are proposed, as a specific form of partnership when conducting a socially significant study, tested within the ecosystem of FSBIH “CH No. 85” FMBA of Russia. Based on the results of the approbation, an assessment of the economic, social, and managerial effects obtained from the implementation of ecosystem interaction was carried out. The development of the model of ecosystem interaction of organizations in healthcare, unlike previously proposed, includes the development and implementation of certain measures and actions in such interconnected areas as “Strategy and Coordination” (setting goals and objectives, forming a unified strategy and creating a coordination center for interaction management); “Data Integration and Digitalization” (implementing a unified information space, standardizing interfaces for data exchange, using analytical data and achievements of the IT industry); “Organization and Business Processes” (training personnel in the principles of the ecosystem approach, increasing digital literacy, forming a team approach); “Development and Scaling” (using the practical experience of implemented projects, scaling at the horizontal

(organization-organization) and vertical (regional-federal) levels, extrapolating best practices to other organizations regardless of their departmental and industry affiliation, as well as form of ownership).

Degree of reliability of the provisions and results of the conducted research. The scientific reliability and validity of this research are grounded in a comprehensive review of a broad spectrum of fundamental scientific works of a theoretical and methodological nature by Russian and international scholars on organizational management, including organizational management in healthcare, ecosystem-based collaboration, and the use of digitalization tools in healthcare. The author's conclusions are built upon an extensive theoretical foundation and a detailed analysis of various collaborative structures (networks, clusters, and ecosystems). The study's theoretical findings and practical recommendations are substantiated with calculations, tables, and figures that directly support the research goals and objectives.

The theoretical and practical significance of the results obtained from the research are determined by the main theoretical and methodological approaches, as well as the presented conclusions, and can allow for the implementation of:

- The formation of a theoretical-methodological base, tools, and models for ecosystem-based collaboration aimed at preserving public health in the Russian Federation's modern socio-economic conditions and at the current stage of digital society development.

- The development of methodological foundations for various forms of ecosystem-based collaboration that enable healthcare organizations to solve key industry challenges.

- The further development of scientific approaches to improving models for ecosystem-based collaboration among healthcare organizations in the context of digitalization.

The approaches proposed herein can be implemented as one of the

directions for the development of healthcare organizations as part of Russia's national programs and strategic initiatives. They also offer a framework for integrating artificial intelligence and machine learning technologies under the national digital transformation program to foster more effective organizational collaboration.

Furthermore, the recommendations presented in this work can be incorporated in the process of preparing educational and methodological materials for “Healthcare Management” programs in higher education institutions.

Approbation of the dissertation results. The findings of this dissertation were presented at various stages at scientific seminars and round tables at the RANEPA Higher School of Corporate Governance, the BRICS Civil Forum, and a meeting of the State Duma's Expert Council on Maternity and Childhood. This research provided the basis for recommendations on organizing ecosystem-based collaboration for Clinical Hospital No. 85 of the Federal Medical-Biological Agency of Russia (CH No. 85 FMBA of Russia) and its partners.

The study's practical results and main conclusions were validated at national and international scientific and practical conferences and forums of various levels and scales, including: the All-Russian Congress “Mother and Child” (Moscow, Sep 2023); the All-Russian Congress of Radiology organized by Russian Society of Radiologists and Radiographers (Moscow, Oct 2023); the Third Therapeutic Conference of the FMBA (Nizhny Novgorod, Oct 2023); the All-Russian Forum of the Russian Guild of Marketers (Moscow, Oct 2023); the All-Russian Forum “Zdravnitsa” (Yaroslavl, June 2024); the BRICS Civil Forum (Moscow, July 3-4, 2024); the First International Scientific Conference of the Presidential Academy and the St. Petersburg Federal Research Center “Science for Public Administration in Russia” (October 24-25, 2024); as well as the All-Russian Forum “Zdravnitsa” (June 9-11, 2025) and the BRICS Civil Forum (Rio de Janeiro, July 4-5, 2025).

The scientific and practical recommendations proposed in this dissertation have been implemented in the practical operations of Clinical Hospital No. 85 of the FMBA of Russia (certificate of implementation attached).

Select findings from this research have been integrated into the scientific and methodological materials for executive training programs in healthcare, specifically within the Master's programs “Healthcare Management and PPP” and “Healthcare Management and Digitalization” at the RANEPA Higher School of Corporate Governance. They are also used in the course “Economics of Effective Healthcare” and in program at the Institute of Sectoral Management of Faculty of Management in Medicine and Healthcare, RANEPA (certificate of implementation attached).

Publications. The main provisions of this dissertation have been published in 10 scientific works, totaling 4.32 author's sheets (with the author's personal contribution being 3.9 sheets). This includes 9 articles in journals approved by the Higher Attestation Commission (VAK), 2 of which are in journals specifically recommended by the RANEPA academic council, and 1 article in other peer-reviewed scientific journals and international conference proceedings.

Structure and volume of the dissertation. The dissertation is composed of an introduction, 3 chapters, a conclusion, a bibliography, and 3 appendices. The main body of the text spans 205 pages and includes 34 figures and 17 tables. The bibliography lists 211 Russian and international sources.