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**NIKITINS ILJA**

# IMPROVING THE METHODOLOGY OF BUSINESS STRATEGIC PLANNING BASED ON EVOLUTIONARY-CONTEXTUAL SCENARIOS

Specialty: 5.2.6 – «Management»

**ABSTRACT**

of the dissertation for the degree of
Candidate of Economic Sciences

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**Relevance of the research topic.** The volatility, uncertainty, complexity, and ambiguity (VUCA) of contemporary political and socio-economic conditions necessitate fundamentally new approaches to strategic goal setting, positioning, planning, and governance in business. In the modern world, the reality no longer exists where evaluations of prospective business decisions could rely solely on accumulated experience and common sense, where the principle of rational action was seen as the sole foundation for assessing their effectiveness, and where the entire strategy development process was structured as the formulation of a concrete plan with specific actions, timelines, resources, and measurable outcomes.

In today's business environment any development of events is possible, despite existing regulatory rules and constraints, and failure to account for this variability results in significant economic and reputational losses. McKinsey research estimates that annual losses from errors in business planning, unforeseen events and political decisions amount to \$1.1 trillion in global supply chains. In Russia alone the COVID-19 pandemic triggered the closure of 1.16 million SMEs in 2020, which is 2.3 times more than in 2019 with a third of companies incurring losses totaling 1.65 trillion rubles. Western sanctions and the erosion of fundamental WTO principles have caused severe economic damage not only to Russian companies but also to U.S. and Western European businesses. Estimates suggest that U.S. losses from anti-Russia sanctions have already reached \$300 billion, while the European Union has suffered losses of at least \$1.5 trillion.

A primary source of strategic planning failures lies in the incompleteness, unrealistic assumptions and static nature of the worldview underpinning baseline scenarios. By advancing scenario planning approaches and methods that eliminate the likelihood of such errors, the strategic planning process can be elevated to a qualitatively new level. Equipping decision-makers with tools to anticipate business conditions shaped by both past and present events enables the concentration of efforts on managing these events, thereby shaping the desired strategic context for sustainable business. Consequently, developing theoretical frameworks and methodological tools for such dynamic scenario construction carries not merely academic value but urgent practical significance.

**The degree of scientific development of the research topic.** Originally, scenario analysis, like strategic planning, was designed to describe and investigate possible future outcomes in military affairs. It was only adapted for business planning purposes in the 1970s. Among the researchers and experts who made significant contributions to developing this scenario-based approach in business, the most notable include H. Kahn, P. Shoemaker, M. Godet, A. Khakee, D.H. Mason, D.G. Simpson, G. Wright, P. Schwartz, K. Van Der Heijden, G. Ringland, R. Bradfield, S.P. Schnaars, A.A. Akaev. In the Russian academic sphere notable contributions to scenario analysis have been made by scholars such as V.A. Sadovnichiy, A.V. Korotayev, S.Y. Malkov, J.V. Bogevolnov, G.G. Malinetskiy.

A review of available Russian and English-language literature related to scenario analysis and planning reveals several serious theoretical and methodological issues such as fundamental questions concerning scenario definition, their representativeness, plausibility and feasibility under contemporary conditions characterized by unprecedented levels of volatility, uncertainty, complexity and ambiguity. Addressing these questions would not only clarify the conceptual framework of scenario analysis and elevate the quality and effectiveness of its methodological foundations but would also enhance the quality of strategic decision-making.

**The object of the research** is the strategic planning process, including goal setting, forecasting, positioning, and strategy justification.

**The subject of the research** is the system of principles, approaches, and methods employed in the strategic planning process for constructing and analyzing scenarios.

**The purpose of the research** is to develop an approach and corresponding system of principles and methods for scenario analysis that enables effective business strategic planning processes even under conditions of volatility, uncertainty, complexity and ambiguity at both macro and micro levels. The working hypothesis posits that the quality of strategic planning can be significantly improved if scenario development moves beyond merely accounting for event probabilities and relying on regression models, and instead adopts a comprehensive examination of contextual evolution to generate and identify potential future business landscapes.

**Research Tasks:**

- Clarify the concept of a scenario based on its role and place in modern strategic process;
- Justify the instrumental role of scenario analysis in resolving the main problem of strategic planning—the strategic paradox;
- Propose justified principles for scenario planning in VUCA-driven business environment;
- Highlight the inadequacy of traditional forecasting methods in ensuring reliable scenario boundaries under contemporary business conditions;
- Justify the need to account for the heredity and variability of socio-economic trends in scenario development due to the limitations of modern causal analysis;
- Develop conceptual foundations and methodological framework for an evolutionary-contextual approach to scenario analysis in strategic planning.

**The field of research** corresponds to the following points of the passport of the scientific specialty 5.2.6 «Management»:

– «4. Management of economic systems, principles, forms, and its implementation methods. Theory and methodology of change management in economic systems»;

– «5. Development of decision-making theory and methods in economic and social systems. Artificial intelligence systems for managerial decision-making support»;

– «14. Strategic management, methods and forms of its implementation. Business models of the organization. Corporate strategies. Strategic resources and organizational abilities of the company»;

– «27. Data management in organizations. Application of artificial intelligence and big data methods in management».

**The theoretical and methodological basis of the research** comprises scientific works by Russian and foreign scholars developing the principles of scenario analysis theory and practice within the process of formulating and making strategic decisions in socio-economic systems.

The research employed **scientific and specialized methods**, including formalization, induction, deduction, synthesis, analysis, economic mathematical modeling, machine learning, scenario analysis and recurrent neural network models.

**The information basis of the research** is composed of publications by Russian and foreign academics; Russian Federation legislative documents; official data from Russia's Federal State Statistics Service, Central Bank, and Ministry of Finance, as well as the US Federal Reserve; reports from major international analytical and consulting firms; conference proceedings; periodical and online publications; the author's own research findings and calculations.

**The scientific novelty of dissertation** lies in substantiating the necessity and feasibility of developing a methodological framework for scenario analysis and planning that simultaneously accounts for both the evolution of the planning domain and its current context.

**The main scientific results of the research**, which have signs of scientific novelty, are as follows:

1) Refined definition of «scenario». We propose defining scenarios as alternative future development pathways designed to enhance strategy quality by reducing uncertainty. These are based on: 1. analysis of their evolution across the historical planning horizon, 2. interpretation of their contemporary context, 3. identification of interdependencies between events reflecting environmental change vectors (p. 18)

2) Justified instrumental role of strategic scenarios in resolving the strategy paradox - the necessity to make commitments about a largely unknown future. The study argues that strategic scenarios enable and necessitate the analysis

of both event evolution and their contextual dynamics, thereby providing a foundation for formulating appropriate strategic intentions. (§ 1.2)

3) Proposed principles for scenario development under conditions of business environment volatility, uncertainty, complexity, and ambiguity. It demonstrates that scenario construction in such contexts must organically integrate both the historical trajectory of processes as precursors to future events and the influence of the current strategic business context within which events are designed. (§1.3; 2.1)

4) Determined the necessity and feasibility of incorporating heredity and variability of socio-economic trends in scenario development due to limitations of traditional causal analysis methods. The concept of scenario development based on the implementation of the principle «our future is determined by the action of factors in the present» entails: 1. dividing all parameters of the future picture into dependent and independent variables; 2. understanding the cause-and-effect relationships between independent and dependent variables; 3. the observability of independent variables and the mutability of dependent variables. Under stable conditions with predictable socioeconomic dynamics, such factor-based models of reality allowed for accurate forecasts and plausible scenarios. However, today, this concept no longer seems flawless. What was once considered a consequence may now well turn out to be a cause. (§ 2.3)

5) Proposed methodological framework for evolutionary-contextual scenario analysis and planning. Artificial neural networks can be trained to recognize both simple contextual patterns (preceding events) and complex dynamics of background factors. This enables identification of multiple future scenarios, significantly improving strategy quality. (§ 3.3)

**The practical significance of dissertation** lies in the universal applicability of the developed methodology, which can be adopted by various organizations in strategic planning process. The evolutionary-contextual scenario analysis using long short-term memory (LSTM) artificial neural networks enhances the quality of developed strategies. The proposed method increases strategy resilience to environmental changes and external shocks characteristic of contemporary business conditions in Russia. This approach holds particular relevance for the development of strategies for small and medium-sized business development in the Russian Federation for the period until 2030 (Russian Government Directive No. 1083-r dated June 2, 2016) and socio-economic development strategies for Russian regions (Federal Law No. 172-FZ "On Strategic Planning in the Russian Federation" dated June 28, 2014).

**The theoretical significance of dissertation** lies in developed evolutionary-contextual approach and corresponding system of principles and methods for scenario-based strategic business planning under emerging conditions, which advances several scientific disciplines including strategic management theory, managerial decision-making theory, econometrics. The enhanced methodology for strategic business planning based on evolutionary-contextual scenarios enriches the toolkit of strategic analysis by integrating evolutionary dynamics of business environment contextual factors, expands forecasting methods by incorporating nonlinear trend analysis and contextual dynamics in scenario development.

**Approbation of research results.** The study findings were validated at various stages through publications in peer-reviewed journals, presentations at international and national conferences, including: International Scientific Conference «New Trends and Challenges in Management Theory and Practice», Moscow, RUDN University, 2019; Research Conference «Manager vs. Artificial Intelligence: Replacement or Partnership?», Moscow, RUDN University, 2020; XXIX All-Russian Readings of Students, Postgraduates, and Young Scientists with International Participation «The 21st Century: Humanities and Socio-Economic Sciences», Tula, April 15–16, 2020; Scientific Conference «Global Trends and Prospects for the Development of Innovative Economy», (video conference on MS Teams), 2021; «Eurasian Analytical Forum», Moscow, RUDN University, November 9, 2021, International Forum «Emerging Markets Economy», Moscow, RUDN University, November 17-18, 2021; 6th International Conference «Business Management in Digital Economy» Saint Petersburg, SPbU, March 23-24, 2023. The dissertation results have been incorporated into the Research Report of the Management Department at RUDN University's Faculty of Economics.

The main results conclusions and provisions of the dissertation research are reflected in 8 scientific papers published by author (total volume: 4.5 author's sheets), including: 5 publications in peer-reviewed journals approved by the Higher Attestation Commission under the Ministry of Science and Higher Education of the Russian Federation.

**The structure of the dissertation.** The dissertation consists of an introduction, three chapters, a conclusion, a bibliography and appendices. The total volume is 170 pages, including 44 illustrations (38 figures and 6 tables).