

Dynamic Approach to Strategic Analysis of the Innovative Environment of the Regional Socio-Economic System

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Abstract

Background/Objectives: Decision scientific and methodological support promising selection of innovative development of the region through a dynamic strategic analysis of its innovation environment. **Methods/Statistical Analysis:** Analysis of the content; peer reviews; a comparative analysis of approaches to strategic analysis of regional socio-economic system; dialectical method of predetermining the study of the innovation environment in constant development, and the relationship of its components. **Findings:** The main result of the study is the conclusion that the most important issue to inform management decisions for the development of geographically due to lack of innovation processes in favor holistic methodological framework of the strategic analysis of the innovation environment in the region, different variety and rapid dynamics of internal and external communications. In this article the enlarged model of strategic analysis of the innovation environment in the region, integrating the idea of resource, market, evolutionary approach to the strategic development of the socio-economic system and uses a dynamic modification of analytical tools, taking into account the requirements of adaptation to global innovation processes. Its practical use has allowed to identify the structure-innovation environment of the North Caucasus Federal District. **Application/Improvements:** Regional management, strategic management and planning of innovative development of the region.

Keywords: A Model of Dynamic Strategic Analysis of Innovative Environment, Innovative Development of the Region, Innovative Climate, Innovative Potential, Regional Innovative System

1. Introduction

Modern economic practice in Russia shows a significant increase in the contribution of regional Socio-Economic Systems (SES) into the innovative development of the country. Administrative-territorial jurisdictions, in their quest to create the best conditions for human capital, are the active participants of competitive struggle on markets of goods, services and resources, demonstrating an entrepreneurial spirit and focusing regional policy on new knowledge and innovations. At that, an important condition of innovative development efficiency of the region and the country as a whole is the development of an environment, which should be favorable for the initiation of

innovations, creation and commercialization of innovations, and continuous implementation of innovative activities. Here the important points in terms of practice are the identification and evaluation of structure-forming elements, description of the nature of connections and the relationships between them as well as the identification of exogenous factors that determine some or other changes in the status of the regional innovation system.

The complexity of building the innovative development strategy of the regions consists in the necessity of continuous search, selection and careful justification of strategic alternatives that reveal the patterns of many complex, interconnected processes, occurring on their territory in the course of creation, commercialization and

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diffusion of innovations under the influence of macro-level tasks and by linking local enterprises activities with the achievement of the regional innovation purposes. The achievement of the required strategic concordance with global innovation processes depends, in our opinion, on the quality of strategic analyses of the innovation environment generated at different levels, since the identification of the conditions, patterns and trends of interaction between the subjects of innovative environment, the assessment of its determining factors in the long term allows designing, implementing and managing the implementation of the programs on transition to knowledge based economy.

2. Materials and Methods

The emergence of techniques, procedures and tools of strategic analysis and their implementation in strategic management practice is due to increased animosity and variability of the external environment, the need to consider the impact of its components in the formation and implementation of the strategy of social-economic system¹⁻¹¹.

In general, the strategic analysis consists of the following logically consistent and interrelated procedures: 1. Clarifying the goals, tasks, object, subject and trends of analysis. 2. Selecting information sources, gathering the necessary data. 3. Interpreting directly the data obtained and estimating indicators adjusted for the strategic orientation of the analysis. 4. Formulating general conclusions and applying them in the strategic management processes (for making strategic decisions, strategic choices, ensuring strategy implementation, strategic controlling etc.). 5. Assessing the use of strategic analysis findings. At that, the major focus of the analyst should be directed on identifying the most sustainable patterns and trends in the environment, able to play a decisive role in the future, and using them to forecast the development pathways of the object. The most important tasks of strategic analysis are determination of the competitiveness level and advantages of the object, multi-level study of a broad range of factors and conditions influencing its operation, providing information to support strategic choices, strategies, and objective assessment of their performance. Overall it allows increasing significantly the validity of strategic decisions. The main functions of strategic analysis are descriptive, explanatory and predictive functions². We consider it necessary to supplement this list with the

functions such as rational-organizing function, consisting in the compilation of accounting and analytical experience and the development of an optimal system models of the analyzed object and its environment, their structures as well as interaction and functioning processes; substantiation of decisions on the implementation of development strategies; the evaluation function involving a comprehensive assessment of strategy implementation and reasoning the necessity of its correction.

3. Results

3.1 Ontological basis of the Strategic Analysis of Innovative Environment of the Region

Determination of the nature, content and fundamental components of the strategic analysis of innovative environment of the region is one of the issues that are unexplored up to now. This concerns theory and methodology of both analysis and regional, innovation, and strategic management issues associated with the subject area.

Carrying out the research of the “strategic analysis” concept in the context of the formation and development of innovative environment of the region, we come to the conclusion that the contemporary management literature lacks this concept as such. In the organizations management theory and practice, the strategic analysis is considered as a tool for substantiation of organization’s strategy; means for assessing strategy implementation and the organization activities taking into account its development strategy; a systematic study of the factors of external and internal environment of the organization, carried out at the stages of design, implementation and strategy evaluation¹².

During the analysis of the concepts of foreign and domestic authors concerning the essence of strategic analysis¹⁶, highlighting the most important aspects of the studied subject area of the development of innovative environment of the region, we came up to the following vision. Strategic analysis of innovative environment of the region is a complex dynamic process of information-analytical support of the procedures for making and implementing strategic decisions to achieve innovative vectors of regional development through the study of the components of Innovative Environment of the Region (IER) and institutional aspects of their interaction, pursuing analytical and predictive purposes.

Building a research pathways from future to the present, strategic analysis gives the clear view on the probable development of the regional innovation system and its external environment in the long term, reduces the uncertainty regarding available alternatives in achieving innovativeness in the given region. At that, the arising accounting and analytical problems must be considered and addressed from different theoretical perspectives: economic, administrative, behavioral, ethical, balanced, structural, systemic, process, multifaceted, integration, and situational approaches to ensure the integrity, comprehensiveness, analyticity, flexibility, and adaptability of the conducted research. In terms of overarching transformational phenomena caused by globalization and increasing dynamism of innovation processes, the strategic analysis of the innovation environment of the region must be strengthened by dynamic component that would take into account the time factor when considering the changes in innovation environment status.

3.2 Strategic Analysis Principles of Innovative Environment of the Region

The application of the strategic analysis methodology in the development of innovative environment of the region should be based on general methodological principles of dialectical theory of knowledge (development, universal relationship, and unity); the principles of general systems theory and system analysis (consistency; hierarchy; optimality; the disparity of phenomena, formalization, and complexity)³; the principles of strategic analysis in its traditional form (progressiveness, consistency, comprehensiveness, focusing, bifurcation, integrity, the adequacy of information provision, the optimality of methodological support, the consideration of time factor, monitoring, objectivity, effectiveness, creativity, and efficiency), as well as taking into account a dynamic approach (the principles of polyresponsiveness and economic genetic analysis); regional strategic management (focus on future, flexibility, use of positive synergies, a clear organizational tasks division, the principle of individualization/uniqueness in the regional development, learning principle, feasibility and attainability, balance and harmonization of interests, historicism (unity of time and space), innovativeness, openness and information accessibility, competitive growth of different rank regions and their management systems, the institutionalization, scientific rigor and evidence-based practice, partnership

and social responsibility, social dominance, subsidiarity and integrity)¹⁷; innovative activities/strategies (predicting the future; identifying and selecting key business processes; developing new processes; early diagnostics of current processes and gap analysis; planning for the transition to future version; and the implementation of change programs¹⁸; concentration of resources on areas of strategic development; respect for freedom of creativity and access to scientific and technical information; promotion of innovative ideas and developments¹⁹; providing the economic, social and technological efficiency; preliminary multi-criteria selection of innovative ideas and projects; implementation of a multilevel system of innovative alternatives evaluation; search and implementation of new effective tools and forms of integrative partnership; providing continuous development of infrastructure for knowledge acquiring and absorption, harmonious increasing of the intellectual potential of the enterprise; customer-oriented approach of innovations; the use of information and communication systems and new network business models emerging on their basis).

The main purpose of strategic analysis is to increase the validity of used strategic decisions on regional innovation development. The specificity of the subject area of the strategic analysis of regional innovative environment causes a broad range of tasks and key directions for strategic analysis conduction.

The key directions of the strategic analysis of innovative environment of the region include study on innovative climate and innovative potential of the region, analysis of strategic problems/gaps of its innovative development, assessment of opportunities to improve the competitiveness of the region, and the rationale for regional vectors of innovative development.

3.3 Framework Components of Strategic Analysis of Innovative Environment of the Region

Considering the strategic analysis of innovative environment of the region as a system, we have identified its main objects, subjects, and processes. The objects may include the following: The objects of the external innovative macro- and micro-environment; the objects of the internal macro-environment, including innovative climate of the region, as well as the micro-environment, including the innovative potential of the region; the objects and processes of regional strategizing of innovative develop-

ment (strategy, alternatives, attitude, strategic decisions and indicators, the processes of their formulation, implementation and adjustment).

The subjects of the strategic analysis of the innovative environment of the region include the following: Analysts, bodies of regional and state power, representatives of scientific communities and innovative infrastructure, financial and strategic managers of innovation generators, consultancies, external and internal auditors and stakeholders.

The system of strategic analysis of innovative environment of the region cannot be copied. It should be adapted to the regional features, the specifics of a particular innovation culture, spatially localized within the production and technological systems – generators of innovations. In this regard, the solution of the noted problems is the

primary scientific and methodological task, which consists in formation of effective system of strategic analysis of innovative environment of the Russian regions.

4. Discussion

The importance of strategic analysis and its capabilities in terms of investigating innovation environment of the region predetermines the need for creation of a methodology that would take into account the specifics of the regional development in the context of knowledge economy formation in Russia and the requirements for its efficient interaction with the global innovation system.

In general, the strategic analysis methodology is the organic unity of the following components:

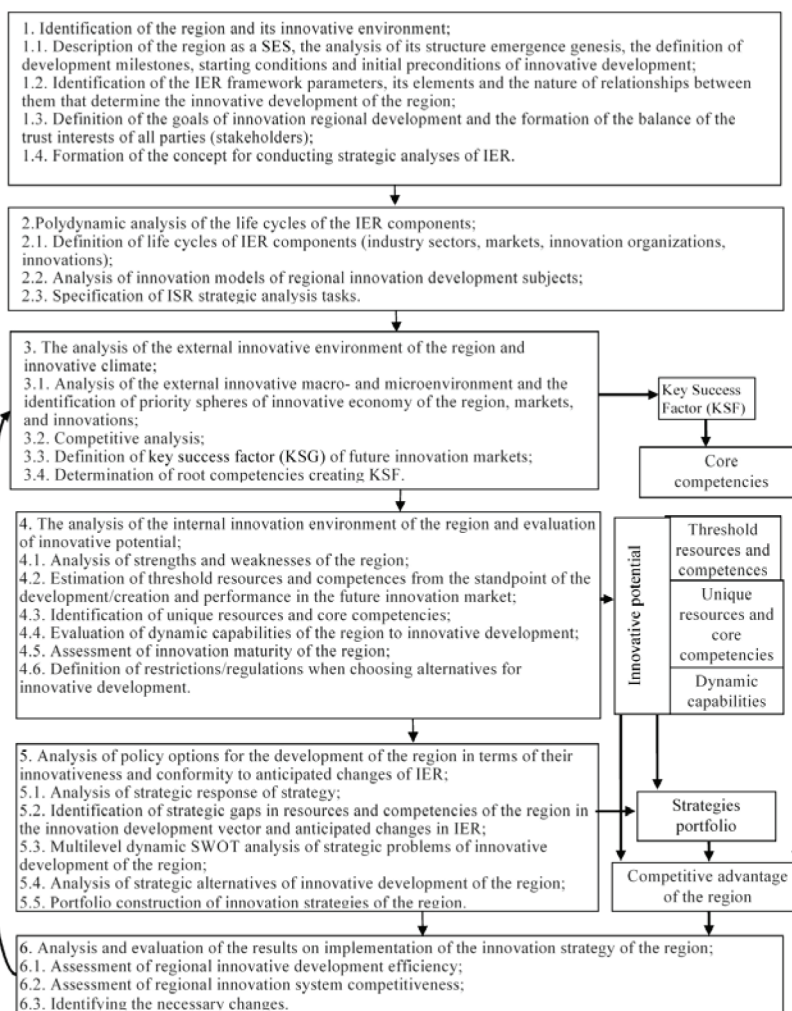


Figure 1. Model of dynamic strategic analysis of innovative environment of the region.

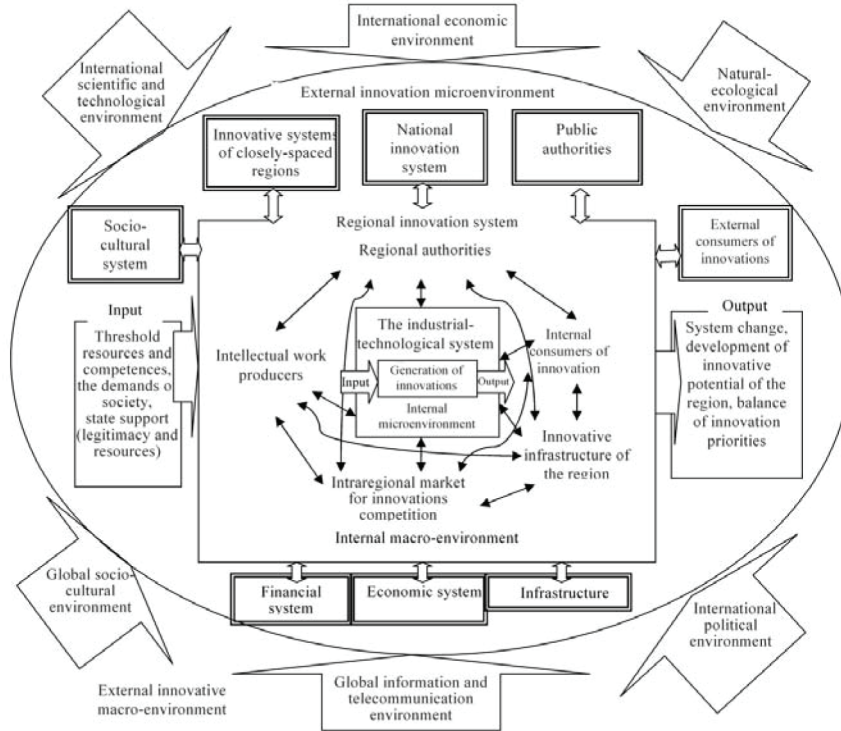


Figure 2. System dynamics and process representation of the innovation environment of the North-Caucasian Federal District.

Methodological tools for strategic analysis; stages of strategic analysis; directions of strategic analysis; and indicators of strategic analysis. Taking the classic model of strategic analysis, as a basis as well as the methodology of dynamic strategic analysis²⁰, and supplementing them with the peculiarities of the regional development and innovation²¹⁻²³, we suggest the following model of dynamic strategic analysis of the innovative environment of the region (Figure 1).

The resulting effect of using the proposed model on dynamic strategic analysis of innovative environment of the region is the achievement of adequacy between the requirements of the external environment and the opportunities of the regional innovation system. At that, the analytical information, formed at the given administrative-territorial level, will have high value over all other levels in terms of generating macroeconomic generalizations, developing forecasts, evaluating potential, climate and development prospects of economic sectors, industries, clusters, regions, municipalities and the state as a whole. Key customers for strategic analysis of innovative environment of the region are regional and state authorities, representatives

of scientific communities and innovative infrastructure, strategic managers of innovation generators, and stakeholders.

Using the developed model, we have conducted a strategic rapid analysis of innovative environment of the North-Caucasian Federal District as a set of interrelated exogenous and endogenous conditions and factors, which influence both together and separately the innovation dynamics in the region and change to a certain extent under the influence of the innovation creation, commercialization and diffusion processes occurring in concerned region.

Structuring of the innovation environment in the given region allowed us to identify its main components, which being in a complex dynamic relationships concentrated in close spatial proximity, form a network basis underlying the innovative environment of the North-Caucasian Federal District (Figure 2).

The complexity and hypermobility of the regional innovation environment, characterizing by diversity and rapid dynamics of internal and external relations, often implemented through the network and design technologies, predetermine the features of a methodological

framework for conducting strategic analysis and define its functionality and tools.

5. Conclusion

Thus, the research on methodology of the strategic analysis of innovative environment of the region should be continued in a number of areas, primarily with regard to dynamic modification of the analytical processing tool including polystructure, multiple level, multi-component and multi-purpose nature of the research object development. This will improve the quality of the made strategic decisions related to innovative development of the region and to adjust the innovation policy. Considered methodical aspects of dynamic strategic analysis of innovative environment of the region will help to develop a scientifically proved platform for strategic management of innovative development of the territory, which will allow expanding the horizons of predicting innovative prospects, create opportunities for timely and adequate response of the regional innovation system to changes occurring in its environment. Besides, it will allow ensuring reliable instrumentation for proving managerial decisions on the acquisition of resources and abilities, the development of unique competencies, required for the innovation markets of the future, better preparation of strategic plans, programs and development scenarios of geographically justified innovative processes under the conditions of high uncertainty and risk.

6. References

1. Flyaysher K, Bensussan B. Strategic and competitive analysis. Methods and means of the competitive analysis in business. BINOMIAL. Moscow: Laboratory of knowledge; 2005.
2. Novikova NI. Application of methodology of the strategic analysis to management of transformational processes. KRSU Bulletin. 2008; 8(3):71–5.
3. Fomchenkova LV. Dynamic concept of the strategic analysis of organizational and economic development of the industrial enterprise [PhD thesis]. Orel; 2014.
4. Kastels M. Information era: Economy, society and culture. Moscow; 2000.
5. Camagni R. Introduction: from the local milieu to innovation through cooperation networks. Innovation Networks: Spatial perspectives. London: Bedhaven Press; 1991. p. 1–9.
6. Vyakina IV. Formation of the innovative environment of the region on the basis of modernization of investment policy [PhD thesis]. Bryansk; 2011.
7. Zhikharev KL. Regional innovative systems and institutional conditions of innovative development society. Moscow; 2010.
8. Shabaltina LV. Formation of the innovative environment of the region. UGATU Bulletin; 2013. p. 170–6.
9. Malinen P, Simula H. A conceptual platform for developing local and regional innovation environment. The 6th CINet Conference; Brighton, UK. 2005. p. 38–42.
10. Saarinen J. Innovation environment today and tomorrow. Finland: VTT Technical Research Centre of Finland; 2006.
11. Trofimov VM. To a question of the concepts innovative environment and innovative climate of modern economic science. News of Irkutsk State Economic Academy; 2011.
12. Zenkina IV. Development of methodology of the strategic analysis of economic activity of the commercial organizations. Moscow: Plekhanov Russian University of Economics; 2013.
13. Kuvaldina TB, Metelev IS. Strategic analysis in modern registration and analytical system. Russian Business. 2012; 7(79):81–7.
14. Romanova SV. Development of the theory and methodology of the strategic analysis in construction branch. Stavropol: Stavrolit; 2012.
15. Tsvetkov VV. Strategic analysis and forecasting of development of branches: Regional aspect: On the example of Altai region [PhD thesis]. Barnaul; 2007.
16. Yashina NM. Bases of ensuring financial stability of insurance company. Reference Book of the Economist; 2008. p. 126–35.
17. Islamova SV, Shelkoplyasov GS, Padalka OV. Formation of strategy of the balanced development of regional social and economic system. Stavropol: Fabula; 2012.
18. Marinets IN. Innovative policy of the enterprise: Essence, contents, formation problems. Bulletin of the North Caucasian State Technical University. 2010; 1(22):161–6.
19. Mikhurinskaya EA. Innovative environment of socially oriented economy of the region. Economy and Management; 2010. p. 29–33.
20. Beck NN, Sarychev AE. Dynamic strategic analysis: orientation to stability of competitive advantage of the company in the conditions of dynamism and globalization of the markets. Modernization of Economy And Globalization: Materials IX of the International Scientific Conference; 2008.
21. Parakhina VN. Evaluation of innovative regional development Russia. Asian Social Science. 2015 Feb; 11(5):201–8.
22. Chakravarthi S, Nagaraja HS, Judson JP. An exploration of the strategic challenges of Problem Based Learning (PBL) in medical education environment: A paradigm shift from traditional lectures. Indian Journal of Science and Technology. 2010 Feb; 3(2):1–6.
23. Pradnyas V. Strategic HR for sustainable business in technology driven 21st C. Indian Journal of Science and Technology. 2015 Feb; 8(S4):69–75.