Creative potential in the development of national ecosystems

O V Brizhak¹ and I I Romanets²
¹Department of Institutional Economics, State University of Management, Moscow, Russia
²Department of Finance Kuban State Technological University, Krasnodar, Russia
E-mail: brizhak71@mail.ru

Abstract. The scientific problem of involving creative potential in development of national ecosystems in current conditions of deep technological transformations is becoming more and more relevant and in demand. The creative potential of ecosystems is a powerful intellectual force that transforms and cognizes modern ecosystems, generates qualitatively new ideas to meet the challenges of the new economic reality and is capable of creating effective capital combinations based on these ideas. The authors focus on conceptual representation of the ecosystem as one of the progressive ways to organize economic activity and its components, formation and use of creative potential within national ecosystems, the value of intellectual capital as a capitalized value of the human creative potential, and creation of adequate mechanisms to involve creative people in self-development of national ecosystems. Through the prism of the pursuit of strategy for incorporation of a high-quality human creative potential into the Russian economy, the authors consider the key challenges and contradictions of modern transformations on the path to innovative ecosystem development, assess vectors of productive cooperation, experience exchange between Russian and foreign creative industries and recognition of significance of the creative sector in economic, social and institutional processes of local ecosystem development, and offer practical tools for problem solution at different levels of socio-economic transformations.

1. Introduction

In recent years, the global interest in the concept of ecosystems as one of the progressive ways of economy organization has noticeably increased. The number of studies addressing ecosystem investigation tends to increase against rapid growth of the digital economy and intellectual content of ecosystems. Development of innovations, growth of labor productivity and competitiveness, active involvement of the human creative potential require a systematic approach, including both engagement and retention of the best minds, and provision of conditions for sustainable and progressive economic growth. One of the crucial tasks faced by the ecosystem is to create new highly skilled jobs characteristic of a high-tech diversified creative economy – the knowledge economy [1–3]. The search for ways to combine a high-quality human creative potential with the Russian economy is the path to innovative development.

Russia is a country with a vast territory, material base, natural resources, rich history, culture, traditions, systemic structure, and a unique path of development and role in the world. However, Russia is not only a storehouse of natural resources and territory, it is primarily the people inhabiting this territory, with their potential and capabilities, desire to actively participate in social and economic processes.
An increased pace of modern transformations brings to the fore the creative potential of the people and the national ecosystem as a whole. This ensures meaningful progress in ongoing transformations, as well as within the framework of expanding boundaries of ecosystems interaction, since self-esteem of the national economic culture increases within these interactions, it acquires its expression form, and certain goals and objectives set out for development [4, 5] are realized.

Each country and city, corporations, financial institutions, economic sectors, clusters and individual startups form their own ecosystems.

2. Objects and methods
Ecosystem can be defined as a kind of technocratic concept that implies the formation of a synthetic system that encompasses the economy, nature protection, social interaction, culture, creative potential of the people, and information and communication technologies. Interaction of ecosystems qualitatively and quantitatively transforms the social system, and the potential of the people and their creative abilities change as well.

In recent years, the idea of the content and status structure of collective forms has greatly transformed [6]. The relevance of the owners of creative potential who are capable of generating and promoting qualitatively new ideas to meet the challenges of modern development, as well as creating effective capital combinations based on these ideas, has significantly increased [7, 8]. Information, intellectual capital and innovation have become the key resources of the new economic reality, and individuals with creative potential who play a key role in business development and in Russian economic transformation have become the partners of large corporations.

Modern transformations should focus on creation and reproduction of intellectual capital as a form of capitalized value of the human creative potential in the market economy. It is necessary to build partnership relationships with the owners of intellectual capital based not on an employment contract concluded with the owner of the labor force, but on participation in the profit from implementation of the proposed capital combinations. Intellectual capital ensures the adaptability of the economic system under deep and dynamic transformations.

Generation of intellectual capital, as a form of capitalized value of human creative potential, is based on aggregate investments of society in creative potential development, on the one hand, and on elaboration of special mechanisms by society for generation and use of creative potential and its subsequent successful capitalization, on the other hand.

One of the main tasks of modern ecosystems is to create an intellectual core of the economy system based on attraction of the owners of high-quality competencies to put forward new ideas for development and to develop non-standard solutions [9, 10]. However, this beautiful matter also conceals dialectical contradictions between the external and the internal. In modern conditions, it is critical to learn how to integrate into the ‘new pace of life’, constantly incorporate new knowledge and intellect and ‘make capital dance to talent’s tune’, to find common ground with special people, and create conditions and opportunities for them to realize their talents, breakthrough ideas, unique species products [11, 12]. However, quite an opposite situation can be observed in some organizations, when instead of a war for talents, there is a war with talents, when they are pushed out rather than attracted, their creative abilities are underestimated, and their freedom is limited by bureaucracy and organizations.

When developing key approaches to the study of the stated subject, the authors employ the dialectical approach, and methods of system analysis, expert assessments, the method of comparable analysis and the institutional approach. To obtain the evidence of conceptual provisions and theoretical and applied results, the authors refer to studies by domestic and foreign economists in the field of social-economic transformations, competence-based approaches, theories of the creative economy and the knowledge economy, heuristic possibilities of ecosystem theory. Cognitive potential of a number of modern scientific theories is employed: cognitive economics, institutional theory, the theory of human and intellectual capital, evolutionary theory, and an interdisciplinary approach.
3. Results and discussion
In modern Russia, the share of education and health expenditures is an order of magnitude lower as compared with the most developed countries, which does not meet the needs for intensive development of human capital, and creation of special mechanisms for expanded reproduction of intellectual capital is stated among the strategic goals of the national economy. The state supports individual projects, such as Sirius in Sochi, which provide point short-term results and do not focus on systematic generation of creative potential on the national ecosystem scale.

According to the Federal State Statistics Service of the Russian Federation with regard to the ILO methodology, the labor market in Russia remains unattractive for the owners of intellectual capital, for systematic generation of creative potential on the national ecosystem scale.

Development of human capital, and creation of special mechanisms for expanded reproduction compared with the most developed countries, which does not meet the needs for intensive intellectual capital is stated among the strategic goals of the national economy. The state supports individual projects, such as Sirius in Sochi, which provide point short-term results and do not focus on systematic generation of creative potential on the national ecosystem scale.

In modern Russia, the share of education and health expenditures is an order of magnitude lower as compared to 2019 [14] (Table 1). Of the 132 countries participating in the rating, Russia takes 48th place in the Global Talent Competitiveness Index (GTCI) in 2020, Russia’s positions have hardly changed compared to 2019 [14] (Table 1). Of the 132 countries participating in the rating, Russia takes 48th place in attracting talents (Germany holds 11th place). According to the ‘Attractiveness’ criterion, the country takes only 86th place, and in terms of creating opportunities for talents, it holds 65th place.

Table 1. Global Talent Competitiveness Index of Countries in 2020.

| Country   | Rank | Country   | Rank | Country   | Rank | Country   | Rank | Country   | Rank | Country   | Rank |
|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| Switzerland | 1    | Portugal | 28   | Bulgaria | 55   | Ecuador   | 82   | Nicaragua | 109  |
| USA       | 2    | Qatar    | 29   | Argentina | 56   | Sri Lanka | 83   | Salvador  | 110  |
| Singapore | 3    | Cyprus   | 30   | Jamaica  | 57   | Tajikistan | 84   | Tanzania  | 111  |
| Sweden    | 4    | Slovenia | 31   | Serbia   | 58   | Gambia    | 85   | Nigeria   | 112  |
| Denmark   | 5    | Spain    | 32   | Croatia  | 59   | Moldavia  | 86   | Uganda    | 113  |
| Netherlands | 6    | Latvia   | 33   | Armenia  | 60   | Ghana     | 87   | Venezuela | 114  |
| Finland   | 7    | Chile    | 34   | Jordan   | 61   | Kenya     | 88   | Ethiopia  | 115  |
| Luxembourg | 8    | Lithuania | 35  | Panama   | 62   | Macedonia | 89   | Cameroon  | 116  |
| Norway    | 9    | Italy    | 36   | Kuwait   | 63   | Cape Verde | 90   | Cambodia  | 117  |
| Australia | 10   | Costa Rica | 37  | Romania  | 64   | Kyrgyzstan | 91   | Liberia   | 118  |
| Germany   | 11   | Brunei-Darussalam | 38  | Indonesia | 65   | Butane    | 92   | Lesotho   | 119  |
| United Kingdom | 12  | Slovakia | 39   | Ukraine  | 66   | Rwanda    | 93   | Malawi    | 120  |
| Canada    | 13   | Saudi Arabia | 40  | Thailand | 67   | Honduras  | 94   | Nepal     | 121  |
| Iceland   | 14   | Bahrain  | 41   | Georgia  | 68   | Guatemala | 95   | Burkina-Faso | 122  |
| Ireland   | 15   | China    | 42   | Mexico   | 69   | Vietnam   | 96   | Ethiopia  | 123  |
| New Zealand | 16  | Oman     | 43   | South Africa | 70  | Egypt     | 97   | Bangladesh | 124  |
| Austria   | 17   | Poland   | 44   | Botswana | 71   | Laos      | 98   | Mali      | 125  |
| Belgium   | 18   | Azerbaijan | 45  | India    | 72   | Paraguay  | 99   | Madagascar | 126  |
| Japan     | 19   | Philippines | 46  | Namibia  | 73   | Morocco   | 100  | Zimbabwe  | 127  |
| Israel    | 20   | Greece   | 47   | Colombia | 74   | Bosnia and Herzegovina | 101  | Mozambique | 128  |
| France    | 21   | Russia   | 48   | Mongolia | 75   | Iran      | 102  | Burundi   | 129  |
| UAE       | 22   | Mauritius | 49  | Albania  | 76   | Zambia    | 103  | Congo     | 130  |
| Malta     | 23   | Trinidad, Tobago | 50  | Peru     | 77   | Senegal   | 104  | Angola    | 131  |
| Estonia   | 24   | Uruguay  | 51   | Turkey   | 78   | Algeria   | 105  | Yemen     | 132  |
| Czech     | 25   | Hungary  | 52   | Tunisia  | 79   | Pakistan  | 106  |         |      |
| Malaysia  | 26   | Montenegro | 53  | Brazil   | 80   | Bolivia   | 107  |         |      |
| South     | 27   | Kazakhstan | 54  | Dominican Republic | 81  | Cote d'Ivoire | 108  |         |      |

[doi:10.1088/1755-1315/689/1/012004]
The raw material component of the Russian economy does not allow Russia to become a key player in the technological sector of global transformations and use large-scale intellectual capital, while import of high technologies and corresponding production means generates new contradictions. Thus, digitalization aimed to improve functioning of the national ecosystem can become a means of total control of the authorities over citizens; Sberbank (Sber), which implements the national program for development of artificial intelligence, seeks to become an ecosystem to monopolize individual markets and sectors and generate databases with personal data of people and society; innovative projects implemented under the state control (RUSNANO, Skolkovo Foundation, etc.) are ineffective and uncompetitive in the world market, and increase the risk of brain drain of those who failed to capitalize and realize their creative potential; polarization between the center saturated with high-tech imports and the periphery of technological transformations, where virtually nothing has changed.

The absence of a powerful technological sector in the national ecosystem increases the risk of brain drain and hinders capitalization and accumulation of intellectual capital in Russian society. Thus, over the past year, brain drain in Russia amounted to 10.6 million people. Highly qualified specialists more often move abroad to improve their career prospects and life quality [15, 16]. This can create difficulties for both companies and the country as a whole, slacken the pace of transformation of the economic system into a new digital model, and result in conditions unattractive for talented people compared to those provided by the leading countries, which attract creative workers [17, 18].

An increasing scale of digitalization and a steady demand for an appropriate level of technical requirements for network infrastructure can be observed in Germany. The main goal of the transition to creative economy in this country is development of creative industries. German creative economy is one of the fastest growing economic sectors. About 250 thousand creative enterprises in Germany include various agencies, design bureaus, galleries, music firms, film companies, etc. This sector employs 1.5 million people, and the demand for new talented people is constantly growing. The creative industry is more flexible than other sectors of the economy. Many employees do not have permanent employment contracts, they often work remotely or as freelancers and are involved in non-stop initiation of new projects. The creative industry is represented by 97% of small and medium-sized enterprises. This industry is young and receives good support, and creative clusters are therefore found in many regions of Germany.

The experience of creative potential in the development of the national ecosystem on Germany is critical for modern Russia. Evaluate this factor through the example of the German company producing agricultural machinery in Russia. The world’s leading manufacturer of agricultural machinery CLAAS has been successfully operating in the Russian Federation since 1992 as a result of the well-developed service and dealer network and active support provided by its office in Moscow. The company provides opportunities for talented, ambitious personnel to achieve their goals through scaled international projects. CLAAS employees have a common understanding of teamwork and they can rely on each other. They are united by a noble goal of meeting the growing needs of the world population for food. Efficient technologies, understanding of the mission and a strong corporate culture have promoted successful operation of the company for more than 100 years.

The main areas of cooperation and management in the company are based on the following principles:

1. Respect. Each employee deserves respect and recognition for the important work that he or she does.
2. Involvement. Joint work in the company involves participation of employees in formation of corporate culture and in decision-making.
3. Reliability. Employees work together with regard to the principles of loyalty and trust.
4. Mobility. Employees are open to positive changes and relevant innovations.

Advanced technological challenges require strengthening of ties between countries and cooperation between Russia and Germany under the principle of ecosystem without borders. This enables exchanging technologies, implementing projects to develop non-resource export-oriented products, conducting research in the field of healthcare, biotechnology, nanotechnology, information and
communication technologies, environmental protection technologies, etc.

The current trend towards interaction of ecosystems without borders must become a reality, not an illusion. However, the modern world sets borders, destroys joint projects, and induces globalization of ecosystems. No doubt, high technologies will not remove all the borders, but it is necessary to strive for this. There is an urgent need to learn to live in conditions of national borders and priorities, and not to embed one culture into another, but to develop national culture and potential, including creative one (manifested in new ideas, technologies, products, non-standard approaches, etc.) with regard to the experience of other countries. The main vector of development should be cooperation and exchange of experience between Russian and foreign representatives of creative industries, as well as recognition of the importance of the creative sector in the economic, social and institutional transformations of local ecosystems. Digital economy is aimed at highly customized goods to meet specific needs of customers with their tastes, traditions, culture, preferences, regional characteristics, etc., which are produced in small amounts, and this requires involvement of intellectual capital.

4. Conclusion

The modern national ecosystem of Russia seeks to integrate into a new reality and must develop conditions for realization and mechanisms for generation of creative potential:

– build up a corporate order for people with in-demand competencies;
– promote the image of a country that can become attractive to talented people;
– form an innovative infrastructure corresponding to the intellectual level of creative workers and use it to create an ecosystem of organizations and start-up projects;
– increase the share of people employed in the field of research and development at the level of the world’s advanced countries and companies, and increase R&D expenditures and their efficiency.

The findings obtained in the study yield the conclusion about the need for systematic generation and use of the intellectual capital of national ecosystems, which makes it possible to take into account qualitatively new conceptual ideas about modern transformations in demand by science and practice. In contrast to the owners of labor force, the owners of this capital are characterized by partnership interaction with the owners of other forms of capital and, therefore, participate in the profits derived from the proposed highly effective capital combinations. This sector provides the creative potential of national ecosystems and their adaptability in the context of deep and dynamic transformations.

Acknowledgment

The study was carried out with the financial support of the Russian Foundation for Basic Research Project No. 20-010-00930 «Generation and use of the creative potential of a corporation in the digital economy».

References

[1] Gokhberg L, Sokolov A, Chulok A 2017 *Foresight* 5 441–456
[2] Brizhak O, Klochkho E, Adamenko A 2020 Neoindustrial paradigm of Russian corporations integration into the economy system under the conditions of transition to the sixth technological order. Vol.111 in Lecture Notes in Networks and Systems (Luxembourg: Springer)
[3] Kleiner G B, Rybachuk M A, Karpinskaya V A 2020 *Upravlenets* 4 2–15
[4] Ryazanov V T 2016 (Ne) Real'nyy kapitalizm. Politekonomiya krizisa i yego posledstviya dlya mirovogo khozyaystva i Rossii (Moscow: Ekonomika)
[5] Jacobs M, Mazzucato M 2016 Rethinking Capitalism: Economics and Policy for Sustainable and Inclusive Growth Wiley-Blackwell (USA:John Wiley & Sons)
[6] Brizhak O V and Ermlenkon A A 2020 *Ekonomicheskaya nauka sovremennoyRossii* 1 22–32
[7] Danilin A G 2008 Proryv v genial'nost' (Moscow: Vershina)
[8] Chamorro-Premuzik T, Iarsli A 2020 Voyna za talanty okonchena: pobediteley net. Available at: https://hr-portal.ru/article
[9] Bodrunov S D 2014 *Ekonomicheskoye vozrozhdeniya Rossii* 2 (40) 5–16
[10] Glaz'yev S YU 2015 Nauchnyye trudy Vol'nogo ekonomicheskogo obshestva Rossii 1 37–45
[11] Kleiner G B 2020 Ekonomika i matematicheskiye metody 1 18–33
[12] Nordstrom K A, Ridderstrale Y A 2003 Biznes v stile fank. Kapital plyashet pod dudku talanta (Moscow: Litres)
[13] Varlamova D and Sudakov D 2020 Atlas novykh professiy 3.0 (Moscow: Alpina Publisher)
[14] Global Talent Competitiveness Index. Available at: https://gtcistudy.com/
[15] Massovaya unikal'nost' - global'nyy vyzov v bor'be za talantly BCG i The Network 2019. Available at: https://rosatom-academy.ru/documents/321/Massovaya_unikal'nost'.pdf
[16] Megapolis dlya talantov Tsifrovyye illyuzii BCG i The Network 2018 Available at: https://image-src.bcg.com/Images/BCG_Review_November-2018_tcm27-208352.pdf
[17] Polyakov R 2019 Proceeding of the 2nd International Scientific conference on New Industrialization: Global, national, regional dimension (SICNI 2018) 404
[18] Polyakov R and Stepanova T 2020 Innovation clusters in the digital economy Advances in Intelligent Systems and Computing 908 200–215