

Challenges and opportunities of forming sustainable triple helix model in regions of Russia

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Abstract—The problem of the possibility of developing the triple helix model in regions of Russia is discussed. Specifics of this process is explained. Barriers immanently inherent to network interaction subjects (university-business-government) as well as the current conditions are analyzed. It is pointed out that readiness for role modification of the regional university, business and authority in the triple helix model discourse does not correspond to the requirements of the economic system transformations

Keywords—triple helix model, industrial partners, regions of Russia, universities as triple helix initiators, regional authority

I. INTRODUCTION

The challenges of the contemporary postindustrial society affect all regions of the world that have reached certain levels of development or just have desire and at least some opportunities to respond to them. According to I. Wallerstine, the contemporary world economy is experiencing a serious crisis, that requires restructuring and creating the new social order of the global integrated system [1], which is the essence of the challenges. The questions posed from the outside refer to the regions of Russia which are looking for new ways of socio-economic development considering their own resources, the world global processes and the national regionalization policy. Since the problem of creating knowledge-based innovative economy is raised in the given conditions, universities start playing a special role in the region's life. Meanwhile, the hard and complicated situation of the Russian universities should be emphasized. On one hand, their role in the region's life implies some degree of freedom, on the other hand – this freedom is limited by the frames specified by the reforms, fiscal policy and reinforced social control institutions.

If the bets placed on universities in the current situation are high, the regions (the regional authority) should understand the importance of creating mechanisms of interaction and support for universities. However, even a superficial analysis reveals absence of the required mechanisms of interaction between the regional governments and universities: attention is paid exclusively to pre-school, secondary school and secondary vocational education (as a result of regional jurisdiction); support mechanisms are either absent or lack efficiency; there are real estate disputes etc. In most cases the main

reason of universities' dissatisfaction with the regional support is not only Federal jurisdiction, but also the lack of strategy and vision of the universities' place and role in the regional development from the part of the regional power structures. At the same time, the supporting university status sets this task for a number of universities [2]. The indicated trends demonstrate the beginning of movement towards the formation of "triple helix" practices (H. Etzkowitz, L. Leydesdorff), based on the interaction of science (university science, in the given situation), authorities and business on the territory of the region [3]. However, even at the initial stage, the processes predetermined by the challenges collide with serious barriers which slow them considerably.

II. METHODS

The method of analysis that uses the triple helix model allows one to consider the behavior of all the three participants of the process. The popularity of the triple helix model, despite its appearance in the middle of 1990-s, is connected, as N. Smorodinskaya rightly notes, with its capability "to provide self-development of complex net systems" [4, p. 66]. It is assumed that the power-business-science (universities) interaction is based on the new networking way of coordinating relations, which can revitalize the universities' potential.

III. RESULTS

The results of the conducted analysis have revealed the organizational behavior specifics of all partners, identifying their drawbacks as well as their potential. Thus, one of the problems creating the dead end situation and making universities passive is that the largest part of extra-budgetary income is received through grants and state orders, while contractual relations with partners fail to produce the desired effect. In most cases organizing contractual activity in universities is not systematic, and agreements are formed as a result of suitable circumstances or due to personal contacts. A number of university units live on very small orders, besides, there is a model of withdrawing projects from universities (to somebody's organization, for example). This generates the desire to find a big industrial partner that would solve the problem of the contractual activity volumes.

H. Etzkowitz described the advantages of universities as the potential partners of the triangle, pointing out the connection of university's scientific work with its direct responsibility for training highly skilled professionals [5]. In triple helix conditions special value is attributed to engineering specialists whose training requires qualitative change [6]. The university, which is trying to find the way out of its own deadlock situation, is ready to initiate partnership projects, but the initiative is blocked by the necessity to look for industrial partners as well as for authority structures' support. Besides, there are concerns that "the growing social burden on universities is to result in the decline of either training or scientific work quality; a fail in developing innovative activity is another possible result" [7, p. 15]. To control the situation and have stable volumes of contractual activity, it is necessary to create specific conditions and a system of resultative cooperation with partners. The required conditions include: 1) creating a venture fund to support experiments and pilot projects; 2) favourable treatment and "single window" mode in project service; 3) appearance of internal structures providing continuous dialogue with industrial partners (alumni association, business incubator etc.); 4) information and PR support of project development; 5) formation of organizational culture corresponding to the triple helix strategy; 6) active participation in regional politics using the institute of lobbying.

It is supposed that the more universities a region has and the stronger they are, the stronger is their influence as the key determining factor on the intellectual potential quality, the volume and content of the social capital and information flow, as well as the complex of the normative-value regulators of the socio-economic system subjects' behavior, such as norms, values, social and economic behavior stereotypes. The duality of the university community's mentality that makes it possible for the conservative and innovative viewpoints to coexist facilitates moving on with stability and integrity being maintained, which is important for any region looking for integration mechanisms in the conditions of constant urban differentiation and increasing social mobility. According to the idea of the triple helix regional space (H. Etzkowitz) that includes knowledge space, agreement space and innovation space [8] – universities can be attractive for the region as the already formed mechanism of constructing all the three spaces. This is enough to make universities change and become more open structures with wider functions.

To understand the prospects of forming a sustainable and efficient triple helix model it is important to analyze the current conditions of the region, as well as the condition of the regional business and authority. As for the regional authority, being not ready for collaboration or lacking the required resources they hinder project activity or lose interest towards it. In this case there can be a drift to the double helix. Limitations of the double helix are obvious to the researchers [7], however, regression to double helix results in the ruined expectations of both businesses and universities and becomes a threat for the promising triple helix model development. This

may shake trust to the authority whose function and prerogative is to form "agreement space" (regional venture funds, mechanisms for information etc.). Without this space it is impossible to create conditions even for attempting partnership models on particular occasions. Western type collaborations are reproduced in regions without much success. Thus, consortium format (associations of educational and business organizations) proved ineffective, but it demonstrated the authorities' vision for the problem. In triple helix, clusters should not just have a network character, but they should be engaged in innovative activity throughout a project/ projects [9].

There are also problems connected with the state of regional business, its willingness to innovate and form partnerships with universities. It is obvious that the higher innovative development index a Federal subject has, the higher is the readiness of the regional business to look for innovative development partners, and the more chances universities have to find a suitable partner. Quite often universities have to look for strategic partners outside the region or they have to focus on medium business. Besides, problems of the openness of the business to innovations [10] along with its unwillingness to invest into long-term projects [11] hinder the development of any forms of network cooperation and impede the formation of community platforms. Researchers consider business to be the weakest link in the Russian triple helix model [12], since it is developing in the discourse of reindustrialization with the complicated deindustrialization content [13, 14].

Apparently, the idea of the triple helix urban space deserves special attention, since this is the main territory of partnership projects. The space should be suitable for innovative activity. It is well known that universities (or one big university) may become a city-forming structure in cases when a city is quite small due to socio-economic reasons, while universities are self-sufficient in their development (for example, university towns of England like Cambridge and Eton; Stanford and Harvard in the USA; Tomsk in Russia etc.) The triple helix urban space of a university city and the one of a big city with a system of universities will be different. Thus, knowledge space (required for developing innovations) will be formed much faster in a university city, as it has a stable platform formed historically; in a big city the formation of knowledge space can be complicated, since in large social space both information flows and knowledge transmission channels are inhibited; a lot of poor quality communications irrelevant for knowledge transfer form a chaotic space and aggravate the problem of choice; there is no social basis for knowledge transfer. Besides, in contrast to university city, a big city's information-communicative space is physically dispersed, but not concentrated in one territory, which weakens the effect of knowledge perception. A big city with a population of more than 1 million people can be called university city, if its universities ensure triple helix functioning.

IV. CONCLUSION

Summing up, a university city image gives advantages to a region focusing on the triple helix model, since it attracts social capital and creates the required organizational culture for all partners. The university turns from a closed system tuned to produce knowledge and store it inside its structure into an open structure oriented to active participation in the social life of the city, region and country. For the triple helix model to become possible, the partners should take on the corresponding roles: universities should form the agenda, businesses should set the goals and the authorities should form the order and coordinate. However, institutionalization of practices gets complicated in the situation of high level uncertainty for all partners [7, p. 11], which requires restructuring and changes in the economic system at the same time. Recommendations emphasize the following points of attention: universities should focus on the policy of looking for industrial partners and creating conditions for project initiative teams (venture foundation and single window); the business should focus on the possibility of acquiring high quality human resources, as well as on the importance of innovations in the crisis situation. Since the regional authorities, as it was mentioned above, turned out to be the weakest link of the spiral, it is important for the model to be supported on the level of program documents. Mapping the territories could be a good start for discovering the required resources.

REFERENCES

- [1] I. Vallerstain Konets znakomogo mira: Sotsiologiya XXI veka [The end of the world as we know it: Social Science for the XXI century] / Per. s ang. Pod red. B.L. Inozemtseva Tsentri issledovaniy postindustrial'nogo obshchestva. M.: Logos, 2003. 368 s.
- [2] Metodicheskoe posobie po vzaimodeistviyu vuzov i promyshlennykh predpriyatii [Ehlektronnyi resurs] [Methodical manual on interaction of universities and industrial organisations] // URL: <http://irdclub.ru/wp-content/uploads/2017/04/UI-collaboration-toolkit.pdf> (data obrashcheniya 10.04.2019).
- [3] H. Etzkowitz, L. Leydesdorff, 1995. The Triple Helix of University-Industry-Government Relations: A Laboratory for Knowledge – Based Economic Development // EASST Review 14. №1.
- [4] N.V. Smorodinskaya Troinaya spiral' kak novaya matritsa ehkonomicheskikh sistem. [Triple helix as a new matrix of economic systems] / Innovatsii. № 4 (150), 2011. S. 66 – 78.
- [5] G. Itskovits Model' troinoy spirali. [Triple helix model] / Innovatsii. № 4 (150), 2011. S. 5-10.
- [6] A.I. Chuchalin Inzhenernoe obrazovanie v ehpokhu industrial'noi revolyutsii i tsifrovoi ehkonomiki. [Engineering education in the era of industrial revolution and digital economy] // Vyshee obrazovanie v Rossii. 2018. № 10. S. 47-62.
- [7] I.G. Dezhina, V.V. Kiseleva Gosudarstvo, nauka i biznes v innovatsionnoi sisteme Rossii [State, science and business in the innovation system of Russia] / Dezhina I.G., Kiseleva V.V. M.: IEHPP, 2008. 227 s.
- [8] H. Etzkowitz, 2008. The Triple Helix: University-Industry-Government Innovation in Action. London. Routledge.
- [9] M.E. Porter, 2003 Clusters and Competition: New Agendas for Companies, Governments, and Institutions/ In: On Competition (new edition). HBS Press, Boston: October, 2008.
- [10] N.N. Bek, L.R. Gadzhaeva Otkrytye innovatsionnye biznes modeli i strategii: osobennosti, problemy, perspektivy razvitiya [Open innovation business models and strategies: specifics, problems, prospects of development] // Vestnik Moskovskogo universiteta. Seriya 6. Ehkonomika 2018, №1. S. 140 -159.
- [11] J. Lin New Structural Economics: A Framework for Rethinking Development and Policy. — Washington DC: World Bank, 2012. — 386 p. [Lin, 2012, p. 287–289].
- [12] I. Yu. Pakhomova Model' «Troinoy spirali» kak mekhanizm innovatsionnogo razvitiya regiona [Triple helix model as a mechanism of innovative development of the region] / Nauchnye vedomosti Belgorodskogo gosudarstvennogo universiteta. Seriya: Ehkonomika. Informatika №7 (126) 2012, Vypusk 22/1. S. 50 – 55.
- [13] A. K. Rassadina Reindustrializatsiya na osnove innovatsionnogo razvitiya: zarubezhnyi opyt i rossiiskie realii [Reindustrialization on the basis of innovative development: international experience and Russian realities] / Vestnik Moskovskogo universiteta. Seriya 6. Ehkonomika 2016, №3. S.15 – 34.
- [14] V. I. Cherenkov, V. P. Mar'yanenko, N. I. Cherenkova Razvitie teorii innovatsii: nekotorye problemy [The development of the theory of innovations: some problems] / Vestnik Moskovskogo universiteta. Seriya 6. Ehkonomika 2019 № 1. Yavar'-fevral' S.3-29.
- [15] P. F. Drucker, 2001 The Next Society: a survey of the near future // The Economist. Vol.361. No. 8246, 3-9 Novembe