A New Higher Education Policy In Russia : Enhancing Meaning-Centered Education via its Realization

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ABSTRACT

Social and economic changes in the world, along with changes in the culture of government and structural changes in the relationship between the state, the market and higher education institutions, have resulted in new approaches pursued by states towards higher education (Konstantinov & Philonovich, 2007; Peterka, 2011). Higher education institutions, in its turn, enjoy more freedom in choosing to focus on various tasks and goals to their academic activities. This contributes to the diversity of expectations when it comes to the various roles modern academic institutions take on with regard to their development. Among many existing concepts in the current academic environment, the concept of "entrepreneurial university" is becoming a critically important concept in Russia.

In this article, we consider the concept of the Entrepreneurial University as developed in Clark and Etzkowitz's theories, and the ways the concept is being adjusted in the higher education system in Russia. We analyze comparatively both contemporary and prior historical [1990s-mid2000s] state policies pertaining to higher-education institutions in Russia in order to provide an insight into how the national market of knowledge intensive production is being established in the country. As a consequence of these analyses, we present a new model of how universities can take a more systemic and meaningful approach to creating research-based innovation entrepreneurial activities. This approach is also viewed as making universities' innovation activities more sustainable and thus less dependent on the state support.

KEYWORDS

Higher Education • Entrepreneurial University • Realization • Meaning-Centered Education • Knowledge Intensive Production

1. INTRODUCTION

The key issue in the process of creating a national market of knowledge - intensive production is creating an entrepreneurial sector in scientific and technical spheres. The basis of this sector includes specialized small and medium-sized enterprises, which produce scientific and technical products, resulting from market-oriented research. In Russia, small and medium–sized enterprises currently are not productive, but potentially can produce goods on a large scale. In Finland and Singapore, for example, there is a multi-level system of support for small and medium sized innovative enterprises. These provide financial, infrastructural, informational, as well as consultancy and career oriented support.

In Russia, a similar model of support emerged in the beginning of the 1990s, to facilitate the implementation of federal, institutional and regional programs and to provide funding for innovative projects and infrastructure. The Entrepreneurial University is an important element of such programs. It provides regional and national development through intensive academic interaction with the business community, which contributes to a more open meaning-making process within academic institutions.

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Higher education institutions in Russia were pioneers in developing innovative infrastructure for small and medium-sized high-tech companies in various regions of the country in the early 1990s. Such processes were conducted by federal and regional policies, like Regional Development Agencies RDSs in the UK. This paper describes contemporary state policies applied to higher education institutions in Russia that seek to provide systemic and meaningful connections between science, industry, and the state.

In the following sections, we will explore the role of the university in contemporary society, its emerging context and meaning in current social transformations to lay the foundation for the analysis of state policies towards higher education institutions in Russia during the period from the end of the 1990s until the middle 2000s, and the specifics of contemporary state policy. In the conclusion, authors discuss positive and negative effects of the state policy towards universities in Russia, and present a new model of research-based infrastructure for universities. This new model is viewed as enabling universities to multiply the positive effect of their innovative entrepreneurial activities, thus making the academic process more meaningful and transformative by nature.

2. REVIEW OF LITERATURE

2.1. CONCEPTS OF UNIVERSITIES

The concepts of "Academic Capitalism", the "Entrepreneurial University", and the "Service University" have become well known in the current academic environment (Blenker, Dreisler, & Kjeldsen, 2006). Some universities are also referred to as knowledge corporations (Hagen, 2002). The concepts of "Academic Capitalism" and the "Entrepreneurial University" represent the major ideas of "New Managerism" theory (Deem, 2001), which applies methods characteristic of the private sector to education[1].

We consider various concepts that focus on aspects of a newly transformed university. The major concept of the innovative university is broad and does not necessarily carry the additional pejorative connotations of entrepreneurial activity, such as expressed in pejorative spoof cynicism by the University of Bums on seats[2].

The concept of the "Service University" highlights the task of satisfying customer needs (Cummings, 1990). The concept of "Academic Capitalism" entails extending financial resources to the institution's development, by turning the institution activity to the market-oriented model (Slaughter and Leslie, 1997). The concept of the McUniversity (McDonalds-style university) highlights such aspects as efficiency, direct costing, predictability and control (Rinne, 1991; Ritzer, 2002). The concept of the "Corporate University" views the university as an organization focused on getting profits and the mass production of academic "goods" (Nowotny, Scott, & Gibbons, 2001).

We will describe the concept of the "Entrepreneurial University" in more detail, because this model can drive economic development of a region and country (Blenker, Dreisler, & Kjeldsen, 2006). Entrepreneurial Universities play a significant role in raising degrees of "social capital and "cultural capital", as they explore innovative research methods and apply them to practice via interaction with the business environment (Hagen, 2002).

The concept of the "Entrepreneurial University", for these reasons, has become a critically important concept in Russia. The activity of such a university can foster regional and national economic development as well as contribute to improving the financial well-being of the university's personnel. The Entrepreneurial University demonstrates the increasing role of knowledge in the economic and technical development of contemporary society, and supports the assumption that universities are worthy of investment in order to drive the transfer of innovative knowledge and technologies (Peterka, 2011).

It is important to note that the transition to an entrepreneurial type of activity does not imply that the university faculty will conduct less research. On the contrary, research remains a key function of the entrepreneurial university because it constitutes the basis for further explorations and business interactions between the university and business communities, which yield benefits to both sides.

To conclude, the entrepreneurial university is a public university, which fosters regional and national development through intensive interaction within society. It is a higher education institution capable of attracting additional finances in support of its own activities. It applies innovative teaching and learning methods and develops business relationships with the community to implement the research projects of university researchers. The emergence of such a university manifests the increasing role of knowledge as well as of knowledge – based innovations in contemporary society.

In the next section, we will describe B. Clark's theory of the Entrepreneurial University and H. Etzkowitz's concept of the "Triple Helix". The theory of the entrepreneurial university serves as a methodological basis of this field, and helps one understand the role of such a university in contemporary society. The concept of the "Triple Helix" is related to the concept of the entrepreneurial university and adds to its content with reference to the efficiency of interaction between the state, business community, and university.

2.2. THE ENTREPRENEURIAL UNIVERSITY

Berton Clark is one of the best known and most recognized authors when it comes to theories of the entrepreneurial university. He wrote two books to develop and describe the concept. They are: "Creating entrepreneurial universities: organizational pathways of transformation" (1998), and "Sustaining change in universities. Continuities in case studies and concepts" (2004).

As Clark argues in these books, the major attribute for the entrepreneurial university is being fearless in generating, disseminating, and commercializing knowledge. He is of the view that professionals working for entrepreneurial universities do not view commercialization as a threat to academic tradition and high quality education. This attitude implicitly entails diversification of financial resources for university activities. Clark (ibid) also notes that one of the critical conditions for the efficiency of entrepreneurial universities is leadership, which should be flexible and capable of providing strategic interaction between the university and the community and business environments.

As Clark writes in the first of the books, supporting collective entrepreneurial activity at the initial stage may become an important condition for the success of the university transformation process. He further explains that people tend to collaborate in order to pursue the transformations within an organization. According to Clark, incorporating such elements as a strengthened steering core, an enhanced development periphery, a discretionary funding base, stimulated academic heartland and an integrated entrepreneurial culture enables a university to become more entrepreneurial in terms of its strategic development. This also helps to bring the university more in line with the business community, which broadens the new perspectives and opens new opportunities, including a means to improve the quality of education.

We will now proceed to the theory of the "Triple Helix" developed by H. Etzkowitz. This theory has the potential to help better understand the concept of the entrepreneurial university.

2.3.THE CONCEPT OF THE "TRIPLE HELIX"

The core idea of this concept concerns the increasing role of knowledge in contemporary society, and thus the increasing role of universities in existing economic systems. The concept illustrates the benefits of close interaction between the state, universities and business communities. These three elements of the spiral are relatively autonomous, but they do overlap in performing certain functions. The university takes a leading part within this triple spiral as it plays the proactive role of a producer. The university can also be defined as an independent economic agent, because its major mission is the "capitalization" of knowledge. This mission itself reveals the reciprocal relation between universities and knowledge users.

Etzkowitz (2008) holds that the attitudes of researchers towards their research projects may change if they recognize the possibility to commercialize knowledge. This may serve the transformation of the university's new identity. As a university gets involved in technology transfer and the formation of spin-offs, it necessarily acquires a new entrepreneurial identity. The forms of transfer and interactions between universities and business communities may take a number of different forms: patenting technologies and licensing, consultancy agreements, the formation of spin-offs, entrepreneurial education, or providing exceptional equipment for research projects.

According to Etzkowitz (2008), formal interaction between the state, the university, and the business community does not necessarily lead to the effect of the triple spiral, when each of the elements strengthens and supports the others. There may be different reasons for this, one of the most common of which is that not every university can acquire an entrepreneurial model. There are universities, which primarily focus on education and research and are not interested in the commercialization of scholarly inventions. They may not be interested in the applications of their research for the benefit of the society either.

However, the prevailing tendency in the development of universities in the current global society is their transformation into the entrepreneurial type of university. This tendency is especially prominent in the case of research and polytechnic universities.

Regrettably, according to world statistics two thirds of partnerships between the state, university and business communities fail to reach their targets due to differences in business culture, products and work methods (Hagen, 2002). On the other hand, if the partnership succeeds, in most cases it leads to a well-pronounced synergistic effect within the frame of the triple helix.

3. ANALYSIS OF HIGHER EDUCATION INSTITUTIONS IN RUSSIA

3.1. SPECIFICS OF THE STATE POLICY TOWARDS HIGHER EDUCATION FROM THE LATE 1990S TO THE MIDDLE OF THE 2000S

The policies of the state with regard to innovation that the Ministry of Education in Russia implemented in the period of the late 1990s up to the mid-2000s was translated into the formation of inter-academic innovative research

and technical programs. Such programs as "Techno parks and innovations", "Support to small entrepreneurship and new economic structures in science and research in higher education", "Small entrepreneurship in science and research in higher education", "Innovations of higher education institutions and introduction of intellectual property in economics" played an important role in the development of innovation activity in the academic environment.

By the end of the 2000s a number of high-tech branch clusters had formed. These clusters included groups of small enterprises characterized by their high tech potential, and operating within certain infrastructures. For example, in Tomsk and Zelenogradsk, universities became centers for the development of science and technologies. Research results have been successfully applied in practice. A number of higher education institutions have also become key players within state initiated programs aimed at supporting innovative entrepreneurship, such as "Start", "Launch", and others.

The National Project "Education", launched by the Government in 2005, increased the motivation for higher education institutions to participate in innovative programs. Although the major focus of the National Project was to improve the quality of education, educational institutions managed to improve innovation activity, connected with commercialization of research and technological innovations. This became affordable due to financial support from the State. In 2006-2007, 57 universities received grants within the frame of the National Project, which translated into additional state funding to these universities. Each successful university received funds from the state budget of between 200.000.000 rubles and 1.000.000.000 rubles (that is, between 6.000.000 euro and 27.000.000 euro). These universities, however, had to guarantee extra budgetary expenses of not less than 20% of the state funds allocated to them so as to cover the cost of the projects concerned.

An analysis of innovation activity in higher education institutions in 2008 revealed that in spite of all the efforts exerted; only 15-20% of state universities in Russia were engaged in innovations. The major reasons were: lack of funds, dependency on the state support, problems in developing partnerships with business communities, and controversies attached to the legal aspects attached to the process.

3.2. SPECIFICS OF CONTEMPORARY STATE POLICY TOWARDS HIGHER EDUCATION INSTITUTIONS IN RUSSIA

The state policy towards higher education institutions in the period 2008-2012 has been directed to increasing motivation and creating conditions that would allow universities to engage in meaningful innovation activities. Innovative institutions were expected to foster economic and social development as a direct result of their entrepreneurial activities in the regions where they are located. The key task that remains is to develop partnerships between institutions, industry, and research organizations such as the Russian Academy of Science, in order to facilitate research projects and to develop appropriate infrastructure in higher education.

The Russian government has recognized that in order to achieve this task, and to develop sustainable innovative universities, the modernization of the entire higher education system is needed. Among other tasks, the modernization of higher education is aimed at renewing research infrastructure and investing funds into its development. The new model of the relationship between institutions, industry, and research organization is being called "the market model"; it defines certain responsibilities for industry (in particular, so as to clearly propose needs and requests) as well as the solutions to be offered by institutions and research organizations. The latter are to be funded by the state and industry together to work out these solutions. The old model, called "research urge", was not effective and sustainable in terms of the research projects applications to industry. The results of research project applications were not effective either because the research did not meet the demands of industry or could be applied in practice only if the technological capacity of the industry allowed production.

The new proposed model appears to be more attractive to business corporations because it entails meaningful relations and partnerships between institutions and industrial enterprises in their efforts to conduct joint fundamental research projects. Emerging corporate universities, aimed at educating business professionals, were badly needed by industry. One of the first steps the Government made to bring this model to life was to rank and classify Russian universities in accordance with the goals they set and results they achieved. Classification of Universities of State Importance included three categories: Unique Scientific Educational Complexes, such as Moscow State University, St. Petersburg State University, nine Federal State Universities (The Southern, The Siberian, The Northern, The Ural, The Caucuses, The Far Eastern, The North-Eastern, The Baltic, The North Caucasus), and twenty-nine National Research Universities.

Then the Government adopted the following nine major state policies for innovation in Russian higher education institutions within the period from 2006 to the current time.

Due to these policies, many higher education institutions in Russia became "points of growth" for the scientific and economic development of the country, as they succeeded in applying research into their innovative entrepreneurial activities.

1	To institutionalize the category of National Research University
2	To fund Federal Universities
3	To introduce the opportunity for higher education institutions to create business units aimed at the application of research projects
4	To provide state support for the cooperation between higher education institutions and organizations, aimed at high tech production
5	To support higher education institutions' innovation infrastructure
6	To award grants from the Government to support research projects, implemented under the leadership of famous scholars in higher education institutions
7	To create technological platforms
8	To create state foundations and finance innovation activity of strong innovation centers such as at Skolkovo
9	To create programs of innovation development for the companies with the state share.

The authors of this paper made a research of innovative entrepreneurial activities in higher education institutions (581 state universities and 410 private universities) in Russia to estimate the efficiency of measures taken by the State to support these activities.

Firstly, the findings of the research revealed that state universities (72.3%) proved to be much more efficient in developing research based innovative entrepreneurial activities than private universities (0.7%). The other finding relates to the proportions among the state universities, involved in the research –based innovative activities, by specialization (Fig.1).

This Figure was composed by authors on the basis of the mini- surveys they conducted in 420 state universities (72.3% of all state universities). Authors also used the websites of these universities, in addition.

According to the data presented in Figure 1, classic state universities, and technical state universities with humanities, as well as economics and law, medical and agricultural universities develop research-based innovative entrepreneurial activities more efficiently than other universities. For example, 305 of these universities have created their

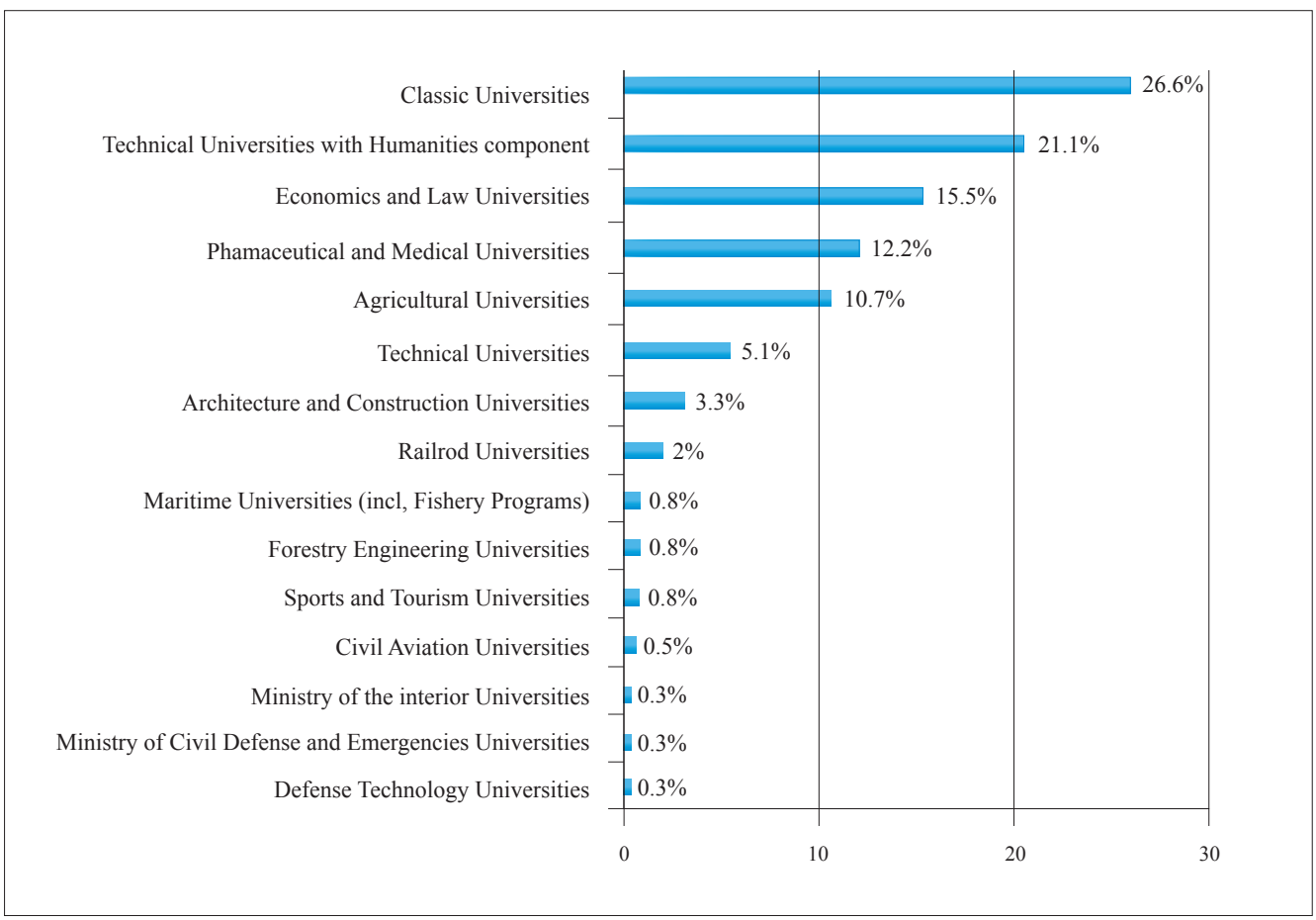

FIGURE 1: State universities involved in the research-based innovative and entrepreneurial activity, by specialization

own business units. Other universities, such as Railroad, Maritime, Forestry Engineering, Tourism and Sport, along with Civil Aviation and Civil Defense Universities, fell far behind. This finding has yet to be attended to explore the reasons and to take measures to improve the situation.

The Russian Government undertook a few measures to create supportive conditions to research based innovative entrepreneurial activities of higher education institutions. One of the most effective was institutionalizing the categories of the National Research Universities and Federal State Universities. We will discuss this move in the next section.

3.3. THE NATIONAL RESEARCH UNIVERSITIES AND FEDERAL STATE UNIVERSITIES

The Presidential Law sanctioned the formation of National Research Universities on May 7, 2008 (http://elementy.ru/Library9/niu.htm). Since then this status can be granted to Russian Universities that provide effective undergraduate and graduate professional education along with fundamental research within a wide spectrum of sciences. In terms of the concept of creating a network of National Research Universities, published on the Ministry of Education website, the National Research University can be defined as an institution that integrates education and research activities. It is characterized by the following distinctive attributes: the capacity to generate knowledge and effectively transfer it to the economy; a wide spectrum of fundamental and applied research; preparation of highly qualified specialists up to and including master's level; and graduate and retraining programs.

The major intention of the state support to such Universities is to help them scale up to the level of world-class institutions in terms of science and technologies development and to improve the professional training system. National Research Universities were meant to take the lead in the development and commercialization of hi-tech industries in the country. To identify the leading Research Universities in Russia, the first National Contest was launched in 2010. Twelve universities won the contest and, as a consequence, received the grants from the state to pursue the task to commercialize the hi-tech industries. The Government then declared a second contest, in which 128 universities competed, and 15 Universities won grants. As a result, 27 Universities have proved to be capable of taking the lead in research activities. They were granted the status of National Research University. Each of the 27 Universities will receive up to 1.8 billion rubles from the state budget during the first five years to pursue the development of the research programs. Each of them is expected to co-finance their own programs from the institution's extra budgetary funds during those five years.

The Federal Universities were formed to optimize regional higher education systems and to strengthen the links between universities and the economies of the federal regions. The concept of Federal University involves a number of key strategic issues. A Federal University is defined as an autonomous institution that provides education, research and innovation activity in a wide spectrum of directions, and seeks to provide integrated professional training of the personnel to be employed in highly scaled federal and regional projects. The priority for such a Uni-

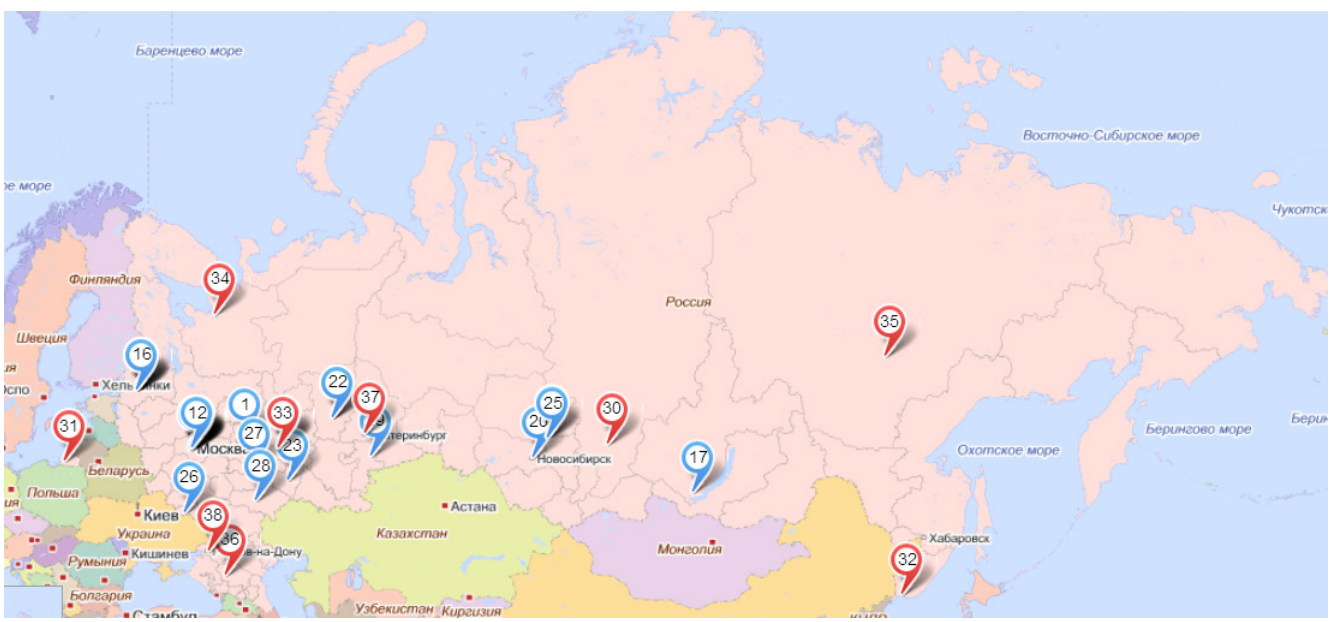

FIGURE 2: NRU and FSU on the map of Russia.

versity is training and retraining of professionals, and conducting research to foster the innovation development of the region and the country.

Authors used yandex.ru resources to map the location of National Research Universities and Federal State Universities on the territory of Russia.

The map clearly demonstrates that most of these institutions are located in the European part of the country, thus we cannot say the university resources are equally available in all regions of Russia.

Additional analyses of the innovation infrastructure of National Research Universities and Federal State Universities, made by authors, revealed that the institutions often lack systemic approach in constructing the models of innovation infrastructure, which decreases the efficiency of research based innovations.

In order to facilitate the systemic approach to constructing and operating the models of innovation infrastructure, the Russian Government adopted a law (August, 2, 2009) that allows the formation of business affiliations as part of university infrastructure. According to the law, the rights to own the products of such activities should belong to the institutions. This was meant to scale up the formation of business units within and by universities. However, only one third of all the existing business units in the country have been created by the National Research Universities and Federal State Universities. This indicates there still remain obstacles and limitations pertaining to the business units' activities, although many of them have been removed within the last three years.

The law adopted on April 9, 2010, aimed at removing the obstacles to providing additional support to the universities engaged in creating innovative infrastructure. According to the official statistics of the Research and Statistic Center, applied by authors in Figure 3, the National Research Universities and Federal Universities have created the following objects of innovation infrastructure within the last 2 years, as a result of the state support:

According to this data, research laboratories have become the most common objects of innovative infrastructure created by the National Research Universities and Federal State Universities (66.6% of all the existing objects of innovative infrastructure), while certification centers (0.6%) and consulting centers (1.3%) are significantly underrepre-

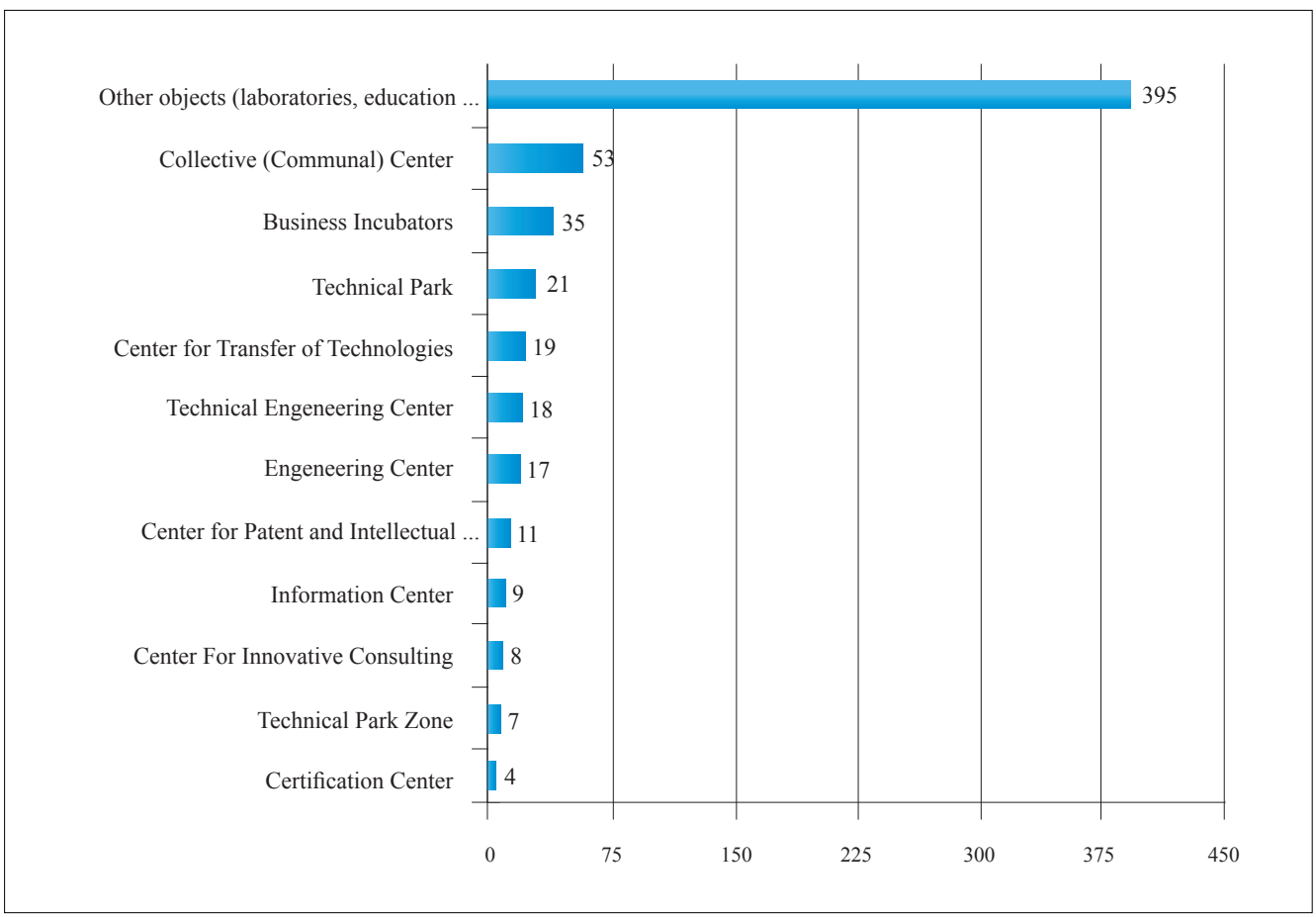

FIGURE 3: Objects of Innovation Infrastructure of National Research Universities and Federal State Universities

sented. Additionally, only 5 out of 38 Universities of State Importance have created a spectrum of various objects of innovative infrastructure, such as Business Incubators, Techno Park, Centers for Technologies Transfer, and Centers for Collective Application of Equipment. This is a serious indicator to consider in order facilitating the diversification of the universities' innovation infrastructure. Updated legal system, pertaining to the objects of innovation infrastructure activities remains urgent.

The same law of April 9, 2010, defined the rules for subsidizing the cooperative work of institutions and companies producing high-tech production. This law supports higher education institutions in their efforts to cooperate with business organizations in order to effectively apply research projects in practice. As a result of the public contest, 77 institutions and 108 companies were granted state subsidies to design 112 joint projects. Some of the institutions and companies work on a few projects simultaneously. The Bauman Moscow State Technical University, for example, concluded three contracts on 1600,000,000 rubles and became a national leader. Other leaders are National Technical Research University (3 contracts), and Moscow State University (3 contracts). The Government is to provide 50,000,000 rubles a year to support this collaborative work for 3 years, starting in 2010.

In addition to these supportive measures, the Russian Government has awarded grants of 150,000,000 rubles to the universities to attract and employ leading scholars for education and research in such strategic areas as telecommunications, space technologies, medical technologies, and energy efficiency. The Russian Ministry of Economic Development has made a significant strategic decision to

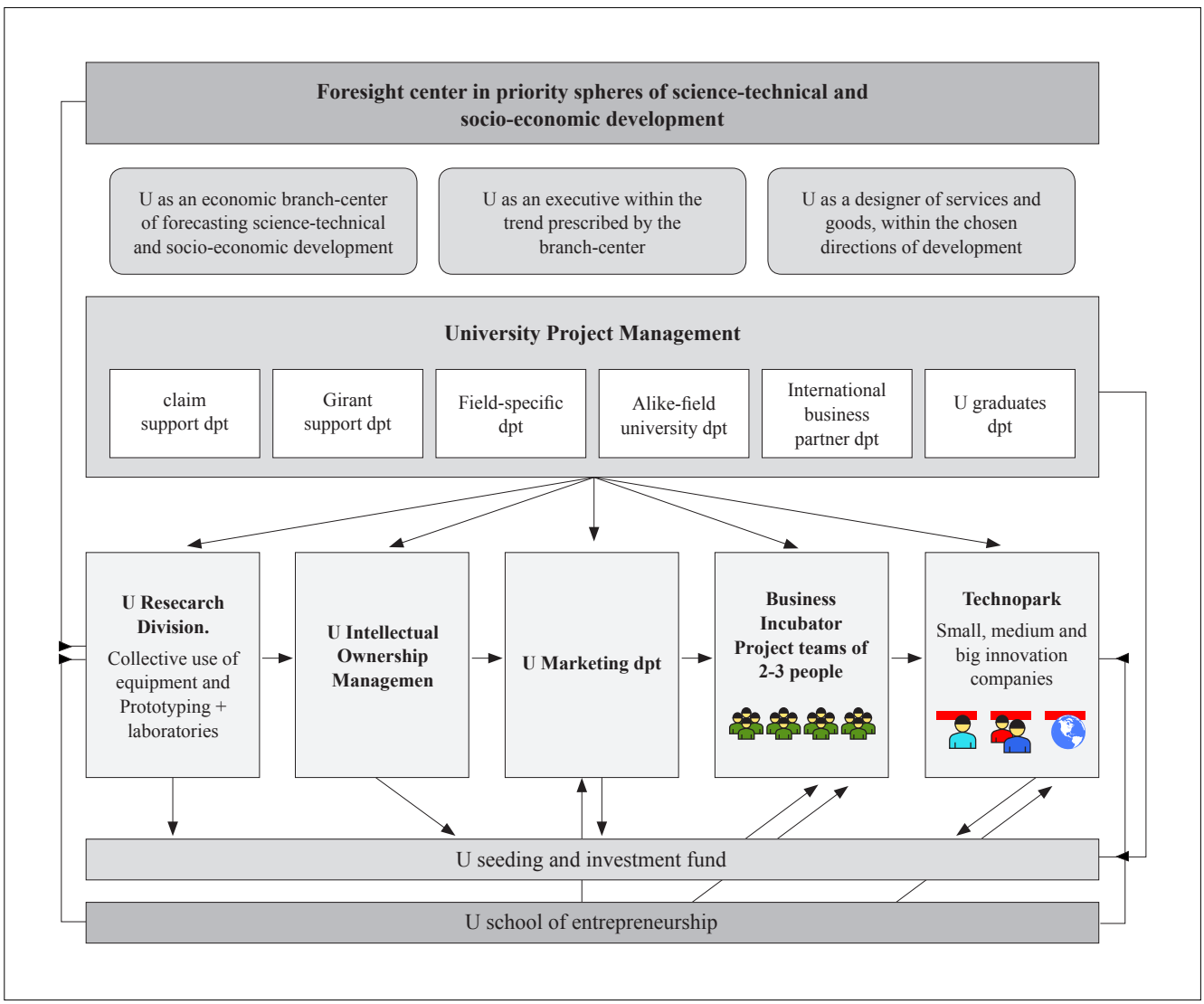

FIGURE 4: Synergetic Model of University Innovative Infrastructure

foster long-term technical research projects by creating institutes of Technological Platforms (TP). These Technological Platforms bring together higher education institutions to collaborate on research projects, which facilitate new production, services and technologies. As of today 150 institutions have joined Technical Platforms, and a third of these institutions take the leading part in coordinating the entire work of these platforms.

To summarize, there is a positive tendency among Russian Universities to develop research based innovative activities and practical application of research in education and business. However, a number of universities lack a systemic approach in constructing objects of innovative infrastructure, which decreases their quality and sustainability.

The authors propose a synergetic approach to modeling the innovative infrastructure of universities, represented in figure 4, which is viewed as enabling universities to construct sustainable entrepreneurial activities and thus to become less dependent on state support.

Key objects of this synergetic model of university innovative infrastructure model are:

The Foresight center promotes and serves the conduct of research in the fields of long-term forecasts. It determines priorities in science, technical, and socio-economic spheres of development for the university. It also defines promising fields for the development, as well as the elaboration of perspectives, and plans the realization of the projects.

University Project Management comprises 6 first line departments and 5-second line departments and divisions. The first line departments have been common for most of the universities, while the second line departments emerged recently and constitute the basis for the university innovative infrastructure. We will describe each line department to clarify the integrity of each within the whole university system.

The University Research Division serves to provide collective use of equipment and prototyping in research activities, and thus to intensify and advance experiments using a modern technological basis. Another advantage of this structure is that it allows a concentration of high professionals and scholars in one unit.

The Center of Intellectual Ownership supports innovators within the university in terms of licensing their inventions and selling the licenses to companies. The Center also generates the knowledge base of support re: patents, technical knowledge, exclusive/non-exclusive license, etc.

The University Marketing Department serves to integrate the new functions of the university, such as interaction with business environment, competition between universities into its regular/normal academic activities. These structural changes will embellish the image of the university, locally and internationally, thus improving the university's position in different ratings (THE, QS, ARWU), and attracting more attention from high school graduates, companies, and clients. This also helps to position the university as an innovative hub, and its ability to compete with other universities.

The Business Incubator serves to facilitate entrepreneurial activities within the university. It connects young entrepreneurs, experts and potential investors in efforts to fulfill innovative ideas by providing resources and support at the initial stage of business.

The Technopark serves to build a territorial innovative environment. It creates the image of a point of growth due to diversification and deindustrialization of the local economy, facilitation of hi tech business and the development of small and medium business, all of which contribute to the profit growth in local and regional budgets. Regional and federal governments support the development of technoparks. The university can be a sole founder or it can develop a technopark in conjunction with the local administration and/or big business, venture capital fund, or a bank/financial institution.

The University School of Entrepreneurship and University Seeding and Investment Fund will provide training and funds to all the above-described units of university innovative infrastructure.

A University School of Entrepreneurship provides postgraduate studies, which focuses on training practical skills in business. There is no such unit in Russia yet, but there are such schools in Singapore National University, and in Chalmers University of Technology in Sweden, among others. The curriculum in such schools includes accounting, strategic management, finances, human resources management, etc. The faculty includes acting business people and visiting international professors.

The University Seeding and Investment Fund serve to provide funds for promising university projects and small companies at initial (seeding) stages. In order to receive funds, a project or a company should pass the selection process and be legally registered. They also should have teams of qualified employees, business plans and prototypes.

The investment fund is created to invest funds in the development of such areas in the university activities, which are not financed by the state. Today, Research Universities in Russia have to co-finance their activities, and this may become a requirement for other types of universities.

The purpose of creating and developing a university innovative infrastructure is to foster the modernization of higher education. Modernization should be approached with reference to the effective application of results from university intellectual activity, and in accordance with a concept of an entrepreneurial university. The synergetic model we offer serves this very purpose.

This same synergetic model also lays the ground for

universities in their efforts to foster regional and national development of the country via close interaction with the business environment.

4. CONCLUSION

Current state policy towards higher education institutions in Russia is characterized by focusing on the formation of regional and national points of growth based on a system that decides which are the leading universities in the country. Much attention is given to developing meaningful cooperation between universities and business in order to foster research that can be applied to industry. The innovation component of university activity is becoming a priority for the university and the state alike, as it brings more meaning into the relationships between the two. University innovation is viewed as a critical element of the innovation structure of the economy. The Government launched a number of initiatives to support innovative research in universities and to develop faculty entrepreneurial competencies.

This tendency for universities and businesses to cooperate corresponds to the current trends in the academic environment in Japan, the USA, China, Singapore and other countries. World universities that combine educational activity with research and entrepreneurial activities have become key leaders of the national economic systems and drive the economic development of the region and the country. For example, the National University in Singapore is coordinating the innovation developments of the country.

This tendency for a modern university to combine the three functional components (education, research, entrepreneurship) represents the needs of the time. It reveals the growing role of knowledge in national economic and technological fields around the world. It also proves that investing in university development is worthwhile, because the outcomes of the drive for innovative processes and transfer of knowledge and technologies to the society have been successful. The fact that Russia is part of this process of university transformation, and that the state supports it, is one of the most positive indices in the current economic development of the country. According to the Presidential Law on the state policy towards education and science, adopted on May 7, 2012, not less than 5 leading Russian Universities should be ranked among the 100 world leading universities by 2020.

Analyses of selection criteria applied by Academic Ranking of World Universities (http://www.arwu.org), QS World University Ranking (http://www.topuniversities.com/qs-world-university-rankings) and Financial Times Global Master in Management Ranking allows us to conclude that one of the key criteria applied in their ranking are research results and practical constituency of education.

Both of these criteria are being integrated when evaluating the current innovation entrepreneurial activities within the universities in Russia. However, the lack of systemic approach and dependence on the state support restrains the efficiency of the positive tendencies. As a consequence, a number of institutions, especially those specializing in non-humanities, lag behind in terms of innovation research activities. Additionally, remaining barriers in legislation prevent universities from launching and maintaining a variety of research-based entrepreneurial activities. The university resources are not equally available in all regions of Russia, which restrains the regional and thus national development of the country.

To improve the situation, and to reach the set targets, the state has to address all the specifics of the national economic and industry sectors, and to improve the legislation system pertaining to the collaboration between business and higher education institutions. New education has to become one of the main domains of public policy. Universities, in their turn, should consider a more systemic, meaningful and sustainable modeling of research-based innovative infrastructure for their activities. It is not always a matter of well-being and financial success which determine the rank of the university; what matters also is if its activities are meaningful and if they bring meaningful benefits to society.

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