“Assessment of global trends impact on development of higher education system”

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ASSESSMENT OF GLOBAL TRENDS IMPACT ON DEVELOPMENT OF HIGHER EDUCATION SYSTEM

Abstract

The article deals with research of global regularities in the global system of higher education. The interrelation of information, Internet and educational environments, branding and marketing are investigated as a qualitative basis for sustainable development of universities. The government strategies stimulating development of international experience for students are explored and analyzed. This experience resulted in mass opening of international branch campuses and popularity of educational centers ("education hubs"). World tendencies in the field of human capital development in the sphere of higher education are revealed. Special attention is given to development of international institutional and industrial partnership. At present, the challenges facing the modern system of higher education in Russia are related to the need to ensure its competitiveness in the international arena and create centers for the innovative development within the Russian Federation. In the sphere of higher education of Russia, a number of priority projects of the higher education system can be identified, which were approved at the end of 2016: "Universities as Centers of Innovation Development"; the project of "Modern Digital Educational Environment" and the model of the export potential development of the "Russian education system", which increases the attractiveness and competitiveness of the international educational services market in order to increase the volume of revenues from the export of educational services.

Keywords trends, higher education system, sustainable development, growth drivers of knowledge economy

JEL Classification D8, I23, Q01

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INTRODUCTION

Universities around the world face the necessity of adaptation to rapidly changing educational and social landscape. "Talent war", globalization, innovative technologies (virtualization, gamification), "arms race" between higher education institutions, internationalization, and also economic events served as the leading prerequisites for global changes in this sphere. Nowadays many countries are in search of effective economic growth strategy that can be provided by higher education institutions as integrators of entrepreneurial development and suppliers of innovations.

The countries, which are at the highest stage of development of post-industrial and innovative economies, actively develop "economy of knowledge" (the USA, Great Britain, Germany, Japan, China). The programming director of the Russian Venture Company (RVC), Kuznetsov (2016) noted: "Economic domination of the industrial production sector recedes into the past. Nowadays the capacity of economy to intellectual property production and management is becoming the main growth driver, and universities act as the key link of this new reality. They have become a platform of economy of knowledge".

The developed countries began to invest into the human capital long time ago. Higher education institutions around the world unite the flows of human and financial capital. A new development concept of universities was created. It sets a task for creation of "the integrated business ecosystem", where higher education institutions are key suppliers of innovations (Kuznetsov, 2016).

Today the problems of ensuring effective cooperation of authority, education and business are urgent. It creates a set of the barriers (institutional, human and resource impediment to implementation of synergy between the industry and academic institutions (Indicator. "Unsuccessful people work in the specialty", 2017). Modern business should switch to the mechanism of "open innovations", at which a company doesn't develop new products by itself; it searches for them in the market of independent developers and startups. Modern higher education institutions become those "centers, where the products advancing reality for decades are created". Considering the fact that the main technological breakthrough arises in campuses of the world leading universities, the key problem of economies of the leading countries is a "system reintegration" of the higher education system, development of campuses and ensuring continuous cooperation of business spheres, authorities, society, and also broadcasting of competences to students, which will allow commercializing new developments and creating new values, which will be accepted in the economy.

1. LITERATURE REVIEW

In scientific works of Tankiso Moloi they examined in details the features of functioning of higher educational institutions. In their work the authors also examined the peculiarities of governing risk within higher education institution (Tankiso Moloi, 2016); Viktoriia Muliavka (2017), Ndlovu Wiseman, Hlanganipai Ngirande and Sam Tlou Setati (2017) also considered in their work the aspects of functioning of HEIs. Authors showed that financial difficulties limit private higher education from balancing their budget and try to keep a balance between a quality education and maximization the wealth of shareholders.

Tsimbalenko and Tarasenko (2016) have identified and systematized the main factors in development of HEIs in Ukraine. The dynamics of the corresponding indicators is considered, namely the number of people studying in preschool, secondary, vocational and HEIs of Ukraine; number of cultural institutions and their visitors during the year; GDP; inflation; level and structure of income, expenditure and savings. In the article of Espinosa et al. (2012) was presented a short contextualization of the characteristics that describe knowledge societies, the of ICT in their development some examples of decisions taken from public and private universities to incorporate ICT in their educational processes, and finally as a study case the Autonomous University of Baja California (UABC).

Shegelman, Shchukin and Vasilev (2015) showed that joint work of HEIs and industrial enterprises not only significantly increases the professional level of scientists, developers, pedagogues, postgraduate students of the university but also contributes to the improvement of the quality and demand for specialists who are ready for effective work in high-tech organizations of the real sector of the economy.

The role of research universities and how they can interact with key actors and institutions involved in innovative ecosystems are showed in the work of Brodhag (2013). Taking into account different approaches to the development of innovation and institutional analysis (IAD), he suggests an institutional model of innovation where different authorities create rules and knowledge that can be mobilized or changed in their respective action arenas.

Bulajeva and Targamadze (2006) discussed different educational organization management preconditions, necessary for successful implementation and development of e-learning at university settings, are discussed. Shovakar and Bernhard (2014) discussed the factors of change in the Austrian University Sector (implications

for quality management). For example, the EU bases its 2020 strategy on «smart growth through more effective investments in education, research and innovation».

The increased level of international contacts has led education systems around the world to further create a common international educational space. The Russian system of higher education continues to provide foreign students with opportunities to study in Russia in accordance with current trends. The modern ways of improving the quality of education of foreign students studying in Russia are searched in the new conditions. The pre-session stage of higher education is considered as one of the most important aspects in creating the basis for further social adaptation of foreigners in Russian society. The key instrument of such adjustment and implied international cooperation is the use of the Russian language at a sufficient level (Sheveleva, Frantsuzskaya and Sivitskaya, 2014).

2. RESULTS

2.1. Information technologies become more and more important for education around the world

Today there are essential changes in forms and technologies of reception, transfer and systematization of information. Changes in transformation technologies of information resources predetermine changes in the systems of its use, including universities, activity of which is directly related to information resources.

In 2011, the second generation project – Massive Open Online Courses, or MOOC entered the market. In 2011, Stanford University made its first MOOCs online, free and open for students from around the world. This practice was followed by universities of "Ivy League", including the Massachusetts Institute of Technology, Harvard and Princeton. Thus, the second generation of online projects became a real innovation in education. For example, in 2011, the course "Artificial intelligence" of the Professor of Computer Science of Stanford University S. Thrun brought together more than 150 thousand online students from around the world. The annual gain of online education market makes about 27% and traditional education makes only 5%.

2.2. Quick development rates of the Internet and educational environment of higher education institutions

Currently, the prevailing majority of universities and employers consider online education yet as an addition to traditional curricula, and not as a substitute for it. At the same time, many prestigious universities (Oxford and Cambridge) do not plan to make a big accent on the mass online courses MOOC (The Economist, 2014).

2.3. Strengthening the influence of brands and marketing strategies on sustainability of university development

Currently, universities are giving more attention to both marketing and branding than in previous years. Many universities hire marketing specialists; spend money and time to create strong institutional brands. In recent years, branding, marketing and recruiting in universities crossed over to online and digital strategies. A recent study at the Dartmouth University (Massachusetts) showed that almost all interviewed institutions use certain forms of social media in their marketing. Moreover, universities use social media, mobile marketing and other digital strategies more often not just to recruit students, but also to find the most promising of them.

One of the most important marketing tools in higher education (at the moment) is an effective and at the same time intuitive website, which is often the "final approval of the brand" for universities. Therefore, today, universities should focus on personalization and optimization of

websites in order to attract more students. Each visit to the university's website can develop the user's profile of the student in future. This allows the content to become more and more focused, encouraging future students to study.

2.4."Gamification" and individualization of educational processes

Changes in requirements for the quality and individualization of education on the part of consumers of educational services lead to changes in the infrastructure and the order of formation of educational courses at universities. There are new methods of interactive and technological delivery of courses, such as "flipped classrooms" and "gamification", which demonstrate promising results of students. It should be noted that the models of "flipped classrooms" and "gamification" are associated with greater involvement of students. At the present time, the companies like Fujitsu, MIT and Apollo Group show considerable interest in these adaptive learning technologies (they also develop and modify them).

2.5. Globalization and growing competition

The globalization processes, which penetrated all socioeconomic processes, fully define changes in the system of global education. Let's consider the experience of the USA, which acted as a leader in formation and establishment of universities of new generation along with the countries of the European Union (EU). According to Professor of Business Administration of Harvard University K. Christensen, "Harvard created DNA of the American higher education by means of constant improvement, search of the best academic programs, the best conditions, the best professors and students. As throughout the next centuries, this "DNA" was reproduced in colleges and universities in the whole USA, it created a business model, which Professor K. Christensen called "massive on its scope". For the purpose of successful competition of a university with others, it should participate in a so-called "arms race"… If New York University is going to invest in a global campus in Abu Dhabi, then Yale should follow the example, building a campus in Singapore, said K. Christensen (Rossi, 2014).

This race for prestige strengthened more due to emergence of numerous ratings of universities. The international ratings, which appeared in the 2000s: Times Higher Education, Academic Ranking of World Universities, QS World University Rankings, University Ranking by Academic Performance, and others gave an opportunity to compare higher education institutions of different countries. This was an impetus to formation of an era of the global competition. These ratings turned on new mechanisms of redistribution of resources in education, resulted in rapid differentiation of higher education institutions, which at the same time are aimed at formation of such change control system, which would provide the strategy of sustainable development.

2.6. Increased student mobility

The universities involved in competition for the best students develop long-term support programs of export of enrollees, turning from the strategy with international selection of students to development of more mature internationalization programs, which include personnel recruitment, joint research collaboration (associations) for accumulation of scientific and educational potential. Presence of foreign students is a basis of modern student's community of the leading world universities. According to the forecast of the Organization for Economic Cooperation and Development (OECD), by 2025, the international student mobility can reach about 8 million students a year. Today the most popular countries for foreign students are the USA, Great Britain, Germany, France and Australia.

As well as within the last several years, most of "mobile" students have come from Asia. At the same time, the main flow of foreign students comes from China, India and South Korea. Almost every sixth foreign student is from China. Asian students account for 53% of all students who study abroad ("Summing up international student mobility", 2014). However, not all students come from far away. For example, in Japan and Korea, a large number of foreign students are from neighboring countries, namely: 81% of foreign students in Japan and 75% in Korea – from other countries of East Asia (MacGregor, 2014).

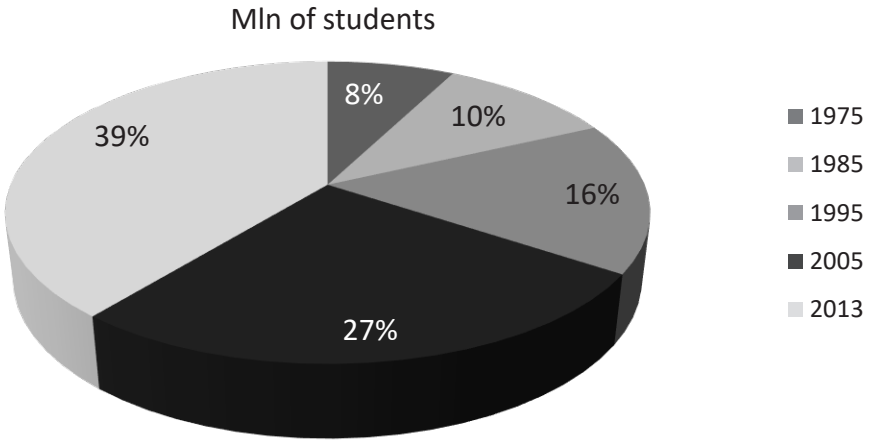

Figure 1. Mobility patterns of foreign and international students (2015)

More than 226,000 foreign students are enrolled in tertiary education in the Russian Federation, which corresponds to 3% of the country's tertiary students. However, only 0.8% of Russian tertiary students study abroad, compared to an average of 6% across OECD countries. This imbalance suggests that the country benefits from "brain gain" among tertiary students. Most of the foreign students in the Russian Federation are concentrated at the bachelor's and master's levels, where they represent over 11% of students.

The statistics shows that in 2014 the total number of students, moving to another country for studying, reached nearly 5 million (Figure 1), and their quantity continues to increase.

2.7. The government strategies stimulating development of the international experience for students

This program aims to increase a number of the international teachers at universities of Russia to 10%, and foreign students - to 15% by 2020 as part of a wider plan of increasing the competitiveness

Source: OECD (2017).

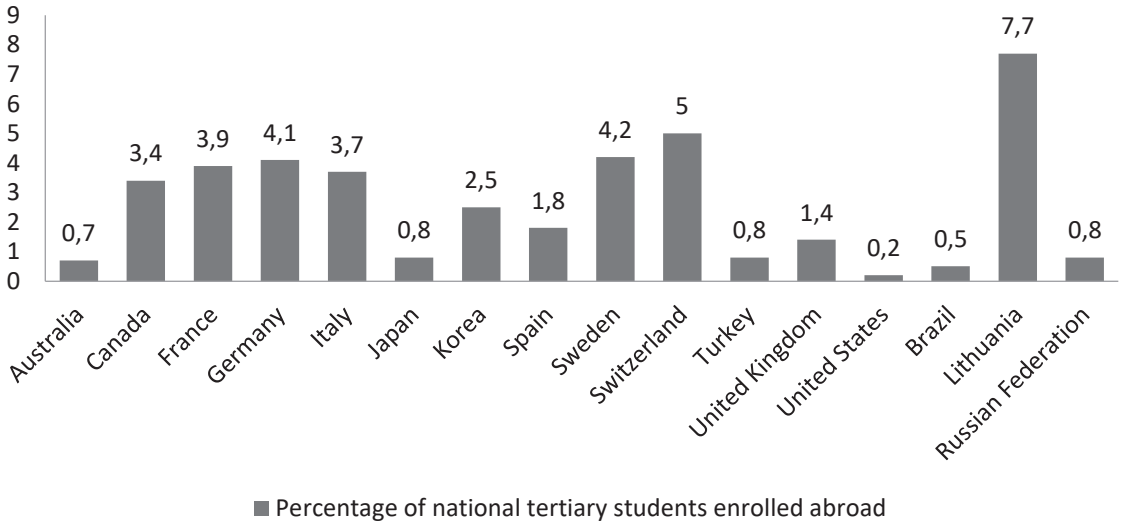

Figure 2. Percentage of national students enrolled abroad, balance on mobility and cross-border mobility in total tertiary education

of the Russian research and higher education at the world level (The Ministry of Education and Science of the Russian Federation, 2013). This project gets considerable financial support for two main objectives realization:

1) to stimulate foreign students to undergo training in Russia;

2) by 2020 to have at least 5 Russian universities among the top 100 in the world.

In 2013, 15 universities that successfully applied for grants in an open competition received about $ 253 million. Nowadays Russia successfully competes with foreign universities: The Moscow State University (MSU) was the only Russian higher education institution, which got on the list of 250 best in the world in 2013-2014 («The Moscow Times», 2014).

Germany also promotes study abroad for their students at universities with a new program. Its aim is to have nearly a half of the total number of students by 2020, getting educational experience abroad. Nowadays nearly a third of all German students spend a certain time in universities outside of Germany, but the German Government and Academic Exchange Service (DAAD) are striving to increase this figure to 50% (Grove, 2014). Financing allows annually to train abroad about 118 thousand German students. Germany intends to increase the number of foreign students enrolled in German universities by 17% over the next few years.

Unlike the programs of Russia and Asia, aimed at prevention of «brain drain», in Germany the main incentive is increase in their competitive advantages in the sphere of business, science and industry, and also «receiving long-term friendly relations around the world».

In the United States, the Institute for International Education launched a new program, the "Generation of Students Abroad" for five years, in order to double the number of students who receive international experience while studying, from the current 295,000 (10% of the students) to 600 by 2019 («The Study Abroad Survey: Did Study Abroad Help Get You A Job?»).

2.8. World tendencies in the field of human capital development in the sphere of higher education

First of all, the human capital development is determined by a scientific component of modern universities formation. One of the most important trends of their development is an increase in the number of researchers. Nowadays about 7.8 million scientists around the world are engaged in scientific research (Table 1). Since 2011, the number of researchers increased by 21%. This significant growth has also found reflection in sharp increase in scientific publications number.

EU remains the world leader in the number of researchers (22.2%). China, since 2011 (19.1%), began to overtake the USA (16.7%). The share of Japan in the world reduced from 10.7% (2007) to 8.5% (2013), and the share of the Russian Federation from 7.3% to 5.7%. Thus, 72% of the total number of researchers accounts for 5 leading countries of the world, even though their corresponding shares have changed (Table 1).

2.9. Opening of international branch campuses

For the last decade, a number of leading universities opened branches abroad (in total about 220 campuses worldwide). The most famous among them are: a Nottingham campus in Ningbo (China) and a branch of the New York University in Abu Dhabi (the United Arab Emirates). This trend continues to develop. In May 2009, Lancaster University and the University of Strathclyde signed the agreement on creation of campuses in the first "Knowledge Park" in Pakistan (Lahore city). Besides, Lancaster University has a branch campus in the Republic of Ghana in the city of Accra (Ghana, the Western Africa) (Lancaster University, Ghana).

Many of these campuses were specially developed for involvement of foreign students who have no opportunity to arrive in Europe or the USA for studying. This is a planned stage in expansion of the number of students entering the universities in Asia and Africa.

Table 1. Dynamics of the number of researchers in the world

Source: the table is compiled by authors with the materials from "World Development Indicators". Retrieved from http://databank.worldbank.org/data/reports.aspx?source=2&series=GB.XPD.RSDV.GD.ZS&country=#

Name of the indicator	Researchers in R&D (per million people)				Researchers and development expenditure (% of GDP)			
	2012	2013	2014	2015	2012	2013	2014	2015
World	–	–	–	–	2.1	2.1	2.2	2.2
European Union	3,343.7	3,435.8	3,487.3	3,485.4	2.0	2.0	2.0	2.0
North America	4,077.5	4,157.8	4,232.0	–	2.6	2.6	2.6	2.8
Europe & Central Asia	2,813.5	2,842.2	2,914.7	3,067.0	1.8	1.8	1.9	1.9
Central Europe and the Baltics	1,919.6	1,996.4	2,103.3	2,142.8	1.1	1.1	1.1	1.2
Australia	–	–	–	–	–	2.2	–	–
Euro area	3,522.4	3,561.2	3,572.7	3,513.5	2.1	2.1	2.1	2.1
India	–	–	–	215.9	–	–	–	0.6
Brazil	–	–	–	–	1.1	1.2	1.2	–
Canada	4,634.3	4,518.5	–	–	1.8	1.7	1.6	–
South Africa	404.7	437.1	–	–	0.7	0.7	–	–
United Kingdom	4,029.3	4,185.7	4,299.4	4,470.8	1.6	1.7	1.7	1.7
France	4,073.4	4,169.8	4,168.8	–	2.2	2.2	2.2	2.2
Korea	6,361.6	6,456.6	6,899.0	7,087.4	4.0	4.1	4.3	4.2
Germany	4,379.1	4,399.7	4,363.8	4,431.1	2.9	2.8	2.9	2.9
Russian Federation	3,093.6	3,073.1	3,101.6	3,131.1	1.0	1.1	1.1	1.1
Japan	5,083.7	5,201.3	5,386.2	5,230.7	3.2	3.3	3.4	3.3
United States	4,015.9	4,117.7	4,232.0	–	2.7	2.7	2.8	2.8
China	1,035.9	1,089.2	1,113.1	1,176.6	1.9	2.0	2.0	2.1

Branch campuses remain a popular aspect of institutional international strategies; however, a number of closings were carried out. For the last 6-7 years, a number of well-known international university campuses of America, Australia and Great Britain stopped their activity. In most cases, closings were connected with economic and political changes or with drop in quantity of the studying students. Others were influenced by the change of government policy, and also the cessation of financial support from the government of the host country.

2.10. Growth of appeal growth of educational centers ("education hubs")

Since 2014, educational centers have become even more popular in many countries (especially in East Asia and the Middle East). While existing host countries continue to focus on the development of their training centers, there is evidence that Governments are currently using a broader approach. For example, the Government of Qatar fully covers rental and operating costs, Malaysia provides 50% of financing, Dubai provides land and infrastructure. A new approach applies to those developing global campuses in the US, where partner universities cover most of the initial costs and current funding, but do not receive government support.

The Californian University (Berkeley) aims to develop the form of "global centers" by organizing a new campus in Richmond, California, but not abroad (UC Berkeley, Berkeley Global Campus, 2014). At the initial stage, Berkeley plans to take about 4 or 5 universities from Asia and Europe in its new town.

2.11. Development of institutional and industrial partnership abroad

This is partly a response to the recent decline in funding from governments. It can also be partially viewed as a response to aspiration to show influence, partnership between institu-

tions abroad, which are growing and diversifying. In many spheres, these relations are clearly encouraged and supported by government initiatives, for example, the "Horizon 2020" program in Europe; this is the largest multinational research program in the world. As it was mentioned earlier, the EU will invest about 80 billion euros in research and innovation projects between 2014 and 2020. Many of them require participation of large, multidisciplinary interdisciplinary research groups from among the EU countries and the whole world.

According to the project of the French government, a new university was created - Paris-Saclay. Its goal is to create a "knowledge center" around Paris, which is similar to the Silicon Valley in California. Initially, a university campus with funding of 7.5 billion euros will be hosted by universities, research institutes, high-tech enterprises and start-ups. At present, 19 institutions have joined in Paris-Saklai, about 10,000 researchers and 70,000 students will take part (Coughlan, 2014).

Also, a new "City of Knowledge" is rapidly developing in Jakaye (Ecuador). The plot of 4000 hectares was opened in early 2014 near Quito. This has become the home of the new Yachai University, as well as for all 13 state research institutes in Ecuador, Technological Park and Industry. Yahai University also strives to follow the Silicon Valley success model and corridor Route 128 outside of Boston, where local universities, high-tech and biotech companies exchange knowledge, ideas, researchers and (in many cases) resources for creating advanced laboratories and conducting innovative research on a larger and innovative level (Holly Else, 2014).

2.12. Economic trend. The effective growth strategy in conditions of crisis

It should be noted that values of indicators in science, education are closely interconnected with socio-economic and geopolitical tendencies. The period from 2009 to 2014 was difficult both for economy, and for science, in particular. This period that started with global financial crisis in 2008 can be also characterized as time of «serious crisis of debt in richer countries, uncertainty concerning stability of subsequent restitution and search for an effective growth strategy» (The report of UNESCO, 2015). It is remarkable that Asia and, in particular, China was the first to recover from crisis. At the same time it raised global investments into R&D on higher levels.

2.13. Proportions of national wealth is spenton educational institutions:

OECD countries in 2014 spent (an average) of 5.2% of their GDP on educational institutions, from 3% in the Russian Federation to 7% in the Great Britain in OECD countries and partner countries. In the period from 2005 to 2014, 21 of the 30 countries increased their share of GDP spent on educational institutions, from primary education to higher education. However, the average expenditure on educational institutions as a percentage of GDP remained largely stable, having increased by only 0,2 percent in 9 years.

From 2008 to 2010, while GDP fell in real terms in 233 out of 41 countries, government spending on educational institutions fell only in 9 of the 33 countries with data available. As a result, government spending on educational institutions as a percentage of GDP declined in only 4 countries during this period. From 2010 to 2014, however, the increase in public spending did not correspond to GDP growth, which led to a reduction in government spending on educational institutions by 2% as a percentage of GDP throughout the OECD.

Nowadays the most part of the countries in the world recognize the importance of STI (Science, Technology and Innovation) from the point of view of ensuring steady growth in long-term prospects. Most countries focus their attention on basic research since they allow generating new knowledge, which finds practical application in commercial activity and other areas.

For example, the U.S. Government supports basic studies and gives priority to the industry concerning applied research and technological development. Europe remains «a pole of advanced technologies and international cooperation» in the field of basic research. The first common-Euro-

pean body for financing of the advanced research – the European Research Council (ERC) was created in 2008. For the period from 2008 to 2013, one third of all recipients of ERC grants were co-authors of articles that made the list of 1% of the most frequently quoted publications around the world. The program of scientific research and innovations «Horizon-2020», which budget is about 80 billion euro, will allow increasing output of scientific products of the European Union.

2.14. Education as a tool for achievement of economic success and development

The connection between investments into further education for national economic development was emphasized in the latest report of UNESCO. It was also shown how these investments influence on politics in the field of education in Southeast Asia. For example, in Malaysia, the national strategic plan of higher education "Vision 2020" was worked out for the purpose of development of Malaysian scientific and research potential both for reduction of national dependence on foreign industrial research, and for attracting international investments.

The experience of China in the field of change management in the system of higher education is of great interest. After reforming the higher school, Chinese institutions were able to achieve the rating of top 100 universities according to Times Higher Education. They also obtained impressive results in the field of innovations. In 2015, the profits of Chinese universities and colleges amounted to 19 billion dollars, and this indicator continues to grow on average by 5% a year (Maslov, 2016).

Let us consider the components of success of carried out higher school reforms. China gave priority to realization of a possibility of foreign education for its students and also to an obligatory work placement abroad. In 2014, expenses on foreign work placement of students account for 4.8 billion dollars. Besides, China is focused on joint universities opening in its territory; this allows their students being in the habitual native environment to get education according to the international standards (for example, British). China completely crossed over to assessment of scientific potential and protection of scientific works on British-American standard. The universities of China spend about 25% of income on scientific research results. At the same time, higher education institutions of China created a category of employees, who are exempted from teaching, and pay them a competitive salary (about 3 thousand dollars). Thus, Chinese "recipe" of successfully functioning HE system in the world space is the following:

- openness of the system;
- competent entry of higher education institutions to the world market.

CONCLUSION

Against the background of the existing imbalance in the Russian Federation between the demand for labor resources and their supply at different levels of education, the problem of the "educational gap" between the territories worsens, while the outflow of young people (educational migration) in the agglomeration adversely affects their socio-economic development. The trend connected with the decrease in the number of students in educational institutions of higher education is likely to continue (the share of university students in 2016 was 64% as compared to the level of 2013). In these conditions, the amount of funding per student increases: in 2015, it amounted to 201 thousand rubles in state universities (20 thousand rubles more as compared to 2013) and 246 thousand rubles in non-state universities (31 thousand rubles more as compared to the level of 2013).

The indicator of the number of university students will reach the bottom in 2019 under the influence of demographic and socio-economic factors, and the local maximum of the number of university students should be expected only by 2029, which will require a corresponding expansion of the university network.

For the period from 2015 to 2016, the total number of organizations of the higher education system decreased by 8.8% (by 79 units). The number of state and municipal educational organizations in higher education decreased by 5.3% (by 28 units), and the number of active private educational institutions of higher education – by 13.9% (by 51 units).

In connection with the optimization of the university network, paid admission to universities continues to fall: the indicator fell by more than 20% over the period from 2010 to 2017. This increases the importance of budgetary admission as a mechanism for obtaining higher education by young people. However, the trend towards a reduction in budgetary admission to the university started in 2005, and, by 2017, the indicator fell by 14 points, which determined the overall decrease in admission to universities (for the period from 2010 to 2017, the indicator fell by 12%).

The conducted research of key world trends of higher education system allowed us to predict further transformation of the reactions caused by the results of influence of the trends, considered by the author. Forecasts:

- "avalanche of innovations" in the higher education system over the next 20-25 years;
- appearance of new professions (at the intersection of interdisciplinary research);
- rapid increase in educational start-ups;
- loss of income and irresistible technological inferiority of higher educational institutions that failed to use fully the IT potential in education.

The growing rate of change is another sign of a new industrial era. Undoubtedly, the most popular competencies are those that will form at the intersection of traditional spheres and new technologies. The boom of educational start-ups will continue, in which all new countries will take part. "Ten years ago, the world's volume of venture capital investment in educational startups barely reached 100 million USD, and in 2016, it exceeded 3 billion USD, which is comparable to the annual expenditures on education of certain countries" (Konanchuk, 2017).

In addition, the author established a close connection between an economic trend, globalization and development of information technology (IT), which contributed to globalization and fragmentation of production on the so-called "global value chains".

Workers who do not have the necessary cognitive, social or emotional skills are considered as a potential weak unit in global value chains. Currently, a large number of workers simply do not have skills to respond to the challenges of globalization. In OECD countries (Organization for Economic Cooperation and Development), more than 200 million adults have an extremely low literacy rate. In the report "The 2017 OECD Skills Outlook", it is stated that there is a higher quality of work in all countries, where more educated employees work. However, better integration with global supply chains simultaneously resulted in both a significant increase in productivity and increase in the work quality gap between those who have more improved capabilities, and those who have weak skills (OECD Skills Outlook 2017: Skills and Global Value Chains, 2017).

Estonia, Japan, Korea and New Zealand already have a "talent pool" that can capitalize profit from a wide range of specialization opportunities in various technologically advanced sectors. Currently, Austria, the Netherlands, Norway, Slovakia and Slovenia have better opportunities for development in advanced service sectors, while the skills of residents of Canada, Chile and Finland are better combined with high-end manufacturing (Schleicher, 2017). However, some countries (Greece, Belgium) still have not been able to take advantage of global value chains as sources of economic growth.

Therefore, the higher education policy should be carefully reviewed. In addition, migration, labor market and tax policy need reconsideration. A new policy in higher education should ensure integration of

higher education institutions with a private sector, and a specific policy aimed at cooperation between universities, research institutions and a private sector.

Therefore, one of the main objectives of the modern system of higher education is "to equip graduates with reliable qualifications and a solid set of relevant skills". A new trend is being formed. It is aimed at cooperation for the purpose of joint development of educational and training programs.

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