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**FACTORS OF HIGHER EDUCATION DEVELOPMENT IN THE  
INFORMATION AGE**

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*Abstract*

The main tendencies of modern higher education development in the information society are characterized in the article. The globalization of education strengthens the competition on the market of educational services. Russian universities will have to find themselves and take their own niche in the world market. Political risks are an important factor affecting universities, but a partnership with the BRIC countries and the Latin American region will allow Russian universities to continue developing educational products and research. The need to find additional resources remains an important problem that enhances greatly by the processes of globalization. Another factor affecting the development of higher education in the information epoch is the imbalance between the center and the periphery. Increasing the share of bureaucratization is the cost of extrapolating the mechanisms of organization and management within the framework of industrial companies to universities. Strategic processes of higher education modernization are considered from the perspective of the comparative approach that enables to carry out comparative and contrastive research of relevant processes in the world system of higher education (especially substantively taking the example of Germany) and the national higher education.

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## **1. Introduction**

The modern information society has a number of distinctive features. Among them the following can be mentioned: a high degree of people involvement in the information environment of the network, changing of forms and ways of obtaining information, virtual reduction of distances between states, etc. Modern society is changing, and the social order for higher education is changing either. Universities are increasingly reminiscent of complex research and business complexes that now participate not only in the life of a single local community, but also influence the process of culture development, economics, and politics far beyond their range (Wende van der, 2010).

## **2. Problem Statement**

Higher education in the modern world, when the society is plunged deeper into the information environment, begins to be determined by various factors, both internal (actually the life activity of the university within itself) and external (the region conditions, state policy). Among the external factors that influence universities and higher education, those factors that lie far beyond the usual boundaries of a single local community or region are becoming more and more evident. Information technologies, increasing transparency and openness reveal new levels of mutual influence between the university and society.

We can identify the following leading modern trends in the development of the Russian higher education: the creation of large and super-large universities; the growing entry of elite Russian universities into prestigious international ratings in the higher education sphere and their dynamic promotion upwards in these ratings; formation of the hierarchy of universities with the allocation of a cluster of privileged universities (national, federal and research universities) in it; a trend towards the return of research activities to the field of universities; productive attempts of creating techno-parks, business incubators and other forms of education, science, business and production connections, that are successfully approved in the world, within the Russian university infrastructure; attracting famous foreign specialists to teach in Russian universities; encouragement of international integration of Russian and foreign universities, implementation of internship programs for lecturers and students, conducting and participation in international conferences, research programs; significant growth of publications of Russian scientists and faculty in international information bases.

## **3. Research Questions**

The modern system of Russian higher education is also aimed at finding its own place in the world educational environment. The appearance of Russian universities in the ratings of THE, QS and ARWU, gradually attracts the attention of foreign partners. In this connection we observe the establishment of relations with other countries. Only in 2015, for example, 680 programs of «double diplomas» were opened together with foreign universities (Beckle, 2016). However, the question of the degree of information environment impact on the development of Russian universities and the extent of their integration into the global information environment remains open. Therefore, it seems important to identify key factors that influence universities and higher education.

#### **4. Purpose of the Study**

The aim of the research, undertaken by the authors, was to identify factors in the development of higher education in the information epoch. In modern conditions, this study seems to be essential, since new levels of mutual influence between the university and society are revealed.

Higher education in Russia has its own cultural value, but it is almost unknown outside the country (except for the universities of Moscow and St. Petersburg), because the educational products of Russian universities and the results of their scientific researches are not sufficiently represented in English yet. The information age also aggravates a number of contradictions that exist not only outside the university area, but also within it. It is important to take into account this factor when building educational policies.

#### **5. Research Methods**

The process of identifying factors that determine the development of higher education in the information epoch is directly related to external sources and expert evaluation. To carry out the research, the authors analyzed the corpus of scientific literature on the research problem, as well as websites of universities and various international organizations that provide qualitative or quantitative assessment of university activities and the quality of higher education. Series of expert consultations were held on the development of a modern university and higher education, as well as the specifics of its functioning in the modern world. Among the experts were colleagues from Russian universities and research institutes, and colleagues from German universities either, who kindly agreed to discuss the problem.

#### **6. Findings**

Among the most significant factors for the development of the Russian system of higher education the following ones can be distinguished:

##### **6.1. Globalization of education.**

The phenomenon of globalization is becoming increasingly a trigger (start) of changes in social, economic, political and cultural aspects of the society life. The processes, arising in the economic globalization format, extrapolate on the operations in the system of higher education objectively. Free Trade liberalization stimulates the globalization of education, when the national education, in its turn, is transformed into a transnational one. As for universities, they borrow business operation principles, and try to win their share of the global education market by all means (Bianco, 2010; Marginson, 2010; Mok, 2010). In recent decades one can distinctly notice a division of education into two types: national and supranational.

*National education* meets specific needs of individual countries and traditional national values. Here there are legitimate reasons to state about the localization of the higher education system – strengthening the traditions, defining clearly the area of its socio-cultural originality.

*Supranational education* expresses the human needs for the implementation of possibilities to use the global educational space, and corresponds to the value orientations formed in the world in the present socio-cultural situation (Boguslavskii, Neborskii, 2016).

In the given conditions a modern university obtains qualitatively new characteristics and its criteria are as follows: an international educational program, a global curriculum, an extraterritorial faculty, a virtual chair, international education standards, the international validation and accreditation, the international certification, the international mobility of students and lecturers, the international language of instruction.

The increased competition on the world market implies the creation of attractive educational products for applicants from other countries. A lot of European and US universities are developing so called MOOCs courses («Massive Open Online Courses»), free distance learning LMS-platforms (Hennessy, 2012).

In this context it is important for Russian universities to hold its own niche in the transnational educational environment, taking into consideration the factor of education globalization as an external challenge of the environment. Russian universities are obviously underrepresented in the global education market. In the Russian practice network programs, issuing «joint diplomas» with the participation of European and Asian universities, are not fully implemented. The academic mobility of faculty and students is not so well developed, and the proportion of subjects taught in English is still low. These are modern challenges that we must respond effectively, since a large percentage of scientific discoveries, and, consequently, the quality of educational programs, supported by the results of such achievements, are presented in English.

One more important factor of the university education development, caused by globalization and the information revolution, is *the intensification of all educational processes without exception*. The information generated by today, becomes out-of-date after a few hours, but even not tomorrow (Robertson, 2017).

In this respect the Russian system of higher education requires a constant regeneration and renewal in terms of the content and technologies. It is necessary to pay more attention to the content of education, rather than its broadcast technology, in particular the competence approach. This is because in the context of globalization there has been a substitution of the value «knowledge» into the notion «useful knowledge». In the educational process it seems more productive to formulate such questions as: «Why is this necessary for a student?», «What product will a student obtain / or create?»; instead of the question, for example: «What competences will the student be formed?». The same situation is with the teacher's role: due to the increasing individualization of education the emphasis is gradually shifting to the tutoring.

The modern Russian system of higher education requires not a mechanical reproduction of the western forms of higher education, but the informative content and creating its own unique educational products. This is in conformity with the change in the strategy of the Russian education development: the transition from the liberal western model to the traditionally conservative one (Boguslavsky, 2010, 2014; Lechitsky et al., 2015; Boguslavsky, Neborsky, 2016; Boguslavskii, Lechitskii, 2016).

## **6.2. Political risks.**

Political risks are always an integral part of the educational policy. On the one hand, there is an objective demand for the international activity development and the inclusion of Russian professors and students into the world educational environment. On the other hand, the intervention of western politicians in the education has a destructive factor, an educational segregation; as a result a constructive

scientific and educational polylogue is practically impossible. In recent years western countries have been realizing the policy of double standards towards Russia. A lot of international funds and programs, for example, Erasmus and Aurora, have limited, but in fact closed the access to the participation of Russian universities, faculty members and students in these programs.

In the current political situation, some Russian universities are included in the international programs to meet education globalization processes: they implement «joint diplomas» programs, conduct courses taught by foreign expert professors, organize centres of international certification. Moreover, they even include educational EU modules, but, unfortunately, it is not widespread.

In the given system of political coordinates the Russian higher education system has got **two scenarios for international interaction**. The first one is the establishment of close relations with the BRICS countries. In this respect, the most attractive partners are Chinese universities, which much faster succeeded in adjusting to the new principles and mechanisms in the design of the higher education system rather than the domestic universities.

The second scenario is the creation of an attractive image of Russian universities to attract students from the Eastern Europe, the Balkans, the BRICS countries, Egypt, Iran and some other countries and regions. If the Russian higher education is able to design a competitive, and more importantly, attractive educational product in the eyes of the applicants, it will be able to pretend for an increase in the share of foreign students from the above mentioned countries and regions.

In this respect the experience of the United States is demonstrative: to enter the international market American universities establish joint national institutions, schools and training centers to prepare students for their programs (Boguslavsky, Neborsky, 2016).

### **6.3. The problem of additional resources for the higher education system.**

One of the key problems of the Russian higher education system is the problem of financial resources. Investments in research and development in Russia constitute 1.12% of GDP. While this figure reaches 2.79% in the US. Among the BRICS countries Russia is not a leader on this indicator. In China, this share is 1.98%, in Brazil - 1.21%, and only India spends less - 0.81%. The highest rate in the world belongs to Israel - 3.93% (Altbach, 2013).

Insufficiency in funding of higher education results in decreasing the quality of teaching (because of the teachers workload), the limited access to higher education, and a high percentage of students who have left university prematurely. Foreign professors are often invited for the implementation of major projects, for enhancing the university attractiveness, and for the inclusion universities in the global educational environment. However, the limited financial resources of the universities for the invitation of foreign professors, and offering them appropriate guarantees impact on the quantity and quality of the invited lecturers inevitably. Besides financial difficulties, there are additional problems: the pay gap between a foreign and a Russian professor, the conflict in academic standards.

The continuing recession makes the government reduce the cost of maintaining the university and implement **the search of supplementary sources of resources that becomes a necessary element of the university management**. For the humanities these can be creative products and their commercial implementation. For social professions we can mention the contracts with the companies and government

agencies dealing with the solution of social tasks. For natural science and accurate specialties there may be the elaboration of new technologies and their implementation.

Universities should expand the network of business incubators, establish close cooperation with employers and fulfill the realization of their orders; they can also open technology fairs to sell their ideas to the specific needs of the regions (Kaplan, Pucciarelli, 2016). Additional sources of income can be the following: grant activities of the faculty and university administration, sponsorship, advertising, souvenirs, paid shows and concerts, the opening of training centres and additional education (Lelchitsky, Yershov, Shcherbakova, 2014; Boguslavsky, Neborsky, 2016).

#### **6.4. The imbalance between the center and province.**

The information phase of social development determines the necessity of creation and implementation the economic development models based on the knowledge (Altbach, Salmi, 2011). In the conditions of the knowledge economy, as a civilizational challenge of the modern education system, the problem of its orientation on the tendencies and trends of the regional economy development has got qualitatively different meanings. This problem influences the possibilities of universities, operating in almost every subject of the federation, that fulfil the mission of research and education centers, to optimally meet the demands of the regional labor market.

However, in recent years, one can notice a significant imbalance between the large universities in the centres, operating productively and being included in various lists of international rankings, and universities of the regions, lagging behind the central universities seriously. This situation is due to the fact that the reproduction of scientific and administrative staff is concentrated in the same university. This inevitably results in provincialization of scientific and educational activities, the emergence of local subjects, that have no interest outside the region, and finally reduce the mobility of lecturers, as well as strengthening the clan system.

As a result the inbreeding is growing - a phenomenon when the university becomes isolated on itself and on the needs of its region, minimizing external contacts (Horta, Yudkevich, 2016). There are several reasons of inbreeding development. First, it is the state policy in the field of higher education, when in order to achieve the strategic objectives of increasing the international ratings of leading universities, regional universities have virtually no funding. Secondly, the absence of mechanisms to regulate conflict of interests in the administration activities of the specifically taken university. Thirdly, the lack of demand of the given university outside the region due to the poor quality of its educational product, or minimum financial and social conditions of the educational activities (Horta, Veloso, Grediaga, 2010).

#### **6.5. The bureaucratization and the lack of effective management.**

One of the most important challenges for the Russian universities is the bureaucratization of the educational, research and administrative processes. On the one hand, this phenomenon is caused by the objective reason: if the university takes over the mechanisms of the business, it begins to «play by the rules», one of which is accountability. On the other hand, Russian universities turned to be in the «double reality»: the state regulation does not allow them to make fully independent operations and require reporting, while the educational market in the face of the students, their parents and employers require completely different records including the socially subjective and address-professional orientation.

In particular, the main factor preventing from research activities, according to lecturers opinion, is the lack of time, due to a large teaching load – 34.5%, and only after that they call the low pay for research activities – 31.5%, then goes the lack of money for trips – 25.7%. The excessive workload of lecturers is one of the most important problems. Lecturers can have a maximum load rate of 900 academic hours, but the administration of the universities does not tend to reduce the number of hours but increase it as much as possible. As a rule, the workload includes classroom hours, namely: lectures, seminars, laboratory work, tests, and exams.

By the way, extracurricular work, such as doing research, preparation for lectures and seminars, development of training programs and plans are a mandatory unpaid part of the teacher's work. As a result, a high school teacher load includes 1,500 hours per year, i.e. 40 hours per week, if we subtract a vacation. In such circumstances the quality of educational programs and research is greatly reducing.

To increase the prestige and quality of higher education it is necessary to enhance the effectiveness of university management together with overcoming the above problems. This concerns regional universities in particular (Boguslavsky, Neborsky, 2015).

One of the successful examples of management efficiency increasing can be Germany, where the state is gradually moving away from detailed regulation of universities management activities. The analysis of the legal framework in the federal states of Germany reveals **the fixed principles of «new public management»**, despite the differences related to the party affiliation of government members. New public administration provides for the expansion of the institutional autonomy of the higher school, in particular, the reduction of bureaucratic regulations on the budget and personnel management. Besides, representatives of non-governmental organizations (accreditation agencies, university councils) are being involved into the process of university management.

The priority principle of the new public management is the transition to contract management and the refusal of the government from the detailed regulation of universities management. Tools of such changes are the agreements on the concordance of goals and the measurement results of the main university activities on the basis of certain indicators. The German colleagues consider attracting additional funding as one of the principle of new high school management activities.

One of the principles of the «new public management» is to empower middle managers. The changes in legislation, providing an increase in the term of office of departments heads and deans (usually from two to four years versus five years in Russian universities), are connected with the realization of this principle.

The following components are also included in the principles of «new public management»: the reduction of external supervisory functions; the elimination of the cameral approach to budgeting; more flexible staff schedule; granting universities the right to independently select faculty members on a competitive basis (previously it was the prerogative of the Land ministries).

As a result, implementation of the «new public management», used by our German colleagues, expands the powers of middle managers, increases the attraction of the private sector and non-governmental organizations to the management of universities. In accordance with the indicators of success, financing «oriented on the result» is carried out.

At the same time, **new organizational and legal forms of universities operation are being introduced** now in Germany. For example, in Lower Saxony equity universities have proliferated. These

are higher education institutions founded by public or private funds, or that have the legal form of the fund themselves.

The advantage of equity universities is the ability of multichannel financing (from public and fund resources, tax exemptions, greater independence from the state, a high degree of administrative, a financial and academic autonomy, success in attracting private capital). In Federal Land Hessen, for example, Goethe University in Frankfurt am Main has acquired a new form of Equity University. However, in a number of Federal Lands (Berlin, Bremen, Mecklenburg, Western Pomerania) the possibility for the university to choose its organizational and legal form is absent (Boguslavsky et al., 2016).

## **7. Discussion**

The globalizations of education and technological intervention have an increasing impact on the national education system. This is a challenge for Russian universities; their task is to find their own niche in the world market of educational services. Are they able to find themselves among such big players, for example, like Harvard, that common endowment is the entire aggregate budget of the Russian education system? The question of sources of financing remains acute, as Russian universities, being for the most part state institutions, depend more on state funding and are significantly limited in business activities.

Overcoming political risks will be no less a problem for the scientific community. Nevertheless, close cooperation with the BRIC countries and the Latin American region will help Russian universities continue developing science and education. Gradual transition to the principles of «public administration» would stimulate the development of Russian universities in the information epoch, helping to solve not only the problems of local communities, but also to engage in an active dialogue outside its range.

One of the most important tasks for the preservation of cultural identity and an adequate call for globalization will be the support and development of higher pedagogical education within the national education system. A well-established social dialogue will help define common goals and objectives in the development of education as a whole, as a unique socio-cultural institution (Altbach, Salmi, 2011; Altbach, 2013).

## **8. Conclusion**

The development of higher education in the epoch of digital technologies expansion determines a number of factors, including both internal and external. The Russian system of higher education is going through the most difficult period, as it is simultaneously subjected to internal restructuring and has to meet the external challenges.

In particular, the globalization of education, turning education into a product and service, opens up the possibility for Russian universities on the one hand, but, on the other hand, requires a measure of responsibility and careful approach to the competitive content of educational products and their competent presentation in the external environment.

Political risks are an important factor affecting universities, but a partnership with the BRIC countries and the Latin American region will allow Russian universities to continue developing educational products and research. In this issue, it is important to take into account the fact that the steady standardization of educational technologies and ways of assessing educational outcomes can have a significant impact on improving the transparency and accessibility of educational services.

Additional sources of financing for Russian universities remain one of the main problems, that are aggravated by the processes of globalization. Being the state institutions, universities in Russia are more dependent on government funding and are significantly limited in the scope of business activities. The solution of the problem is possible by using the principles of «public administration» and strengthening the role of social dialogue.

Another factor affecting the development of higher education in the information epoch is the imbalance between the center and the periphery. The risk of negativization of inbreeding for regional universities, insularity of the system is increased.

Increasing the share of bureaucratization is the cost of extrapolating the mechanisms of organization and management within the framework of industrial companies to universities. Minimization of costs in this matter is possible with the involvement of «public administration» principles and a social dialogue.

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