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## Ensuring Innovative Safety of Russia in the Context of“Break”in the Sixth Technological Way

To cite this article: E V Romanov *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **272** 032132

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# Ensuring Innovative Safety of Russia in the Context of "Break" in the Sixth Technological Way

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**Abstract.** Gaining the leading positions by Russia in creation and development of technologies of the sixth technological way staticizes the researches devoted to safety problems in the innovative sphere. External threats of innovative safety are defined by pressure technologies on Russia as a result of which "brain drain" of both mature, and young scientists will be provided. Internal threats are caused by the realized economic policy. Increase in a share of the state in those sectors of economy which are crucial for creation of technologies of the sixth technological way is necessary. At the same time it is necessary to increase the cost of "live work" for stimulation of investments into production. Decrease in social differentiation and level of corruption is considered in the context of increase in efficiency of expenditure of budgetary funds. Backbone threats of innovative safety are connected with the realized policy in education and sciences. The realization of the priorities of development of the higher education defined in the new state program "Development of education", considered in the context of the formed trend on considerable reduction of the budgetary places for training in a magistracy in the directions of preparation which are the key from the point of view of "break" in the sixth technological way – continuation of strategy for decrease in innovative capacity of state universities.

## 1. Introduction

In the Message to Federal Assembly on March 1, 2018 [1] Russian President V.V. Putin formulated a task of system transition of economy of Russia to the sixth technological way, having pointed that "technological lag, the dependence is meant by decrease in safety and economic opportunities of the country, and as a result – sovereignty loss ... Lag inevitably leads to easing, washing out of human potential ... Today the major competitive advantage is knowledge, technologies, competences. It is a key to the real break, to improvement of quality of life".

According to the experts, positive influence of the next cycle of Kondratyev will be shown after 2018, at the same time the potential of growth is put in the first 15-20 years of a new wave. The country which has passed a stage of preparation of a wave can pass and a cycle, at best entering the mode of the catching-up development [2, p. 30]. Taking it into account the strategy of implementation of the Decree of the Russian President "About the national purposes and strategic problems of development of the Russian Federation until 2024" [3], assuming gaining of leader positions by Russia in creation and development new medical, biogene and nanotechnologies, composite materials and quantum computers is based on. It staticizes the researches devoted to safety problems in the innovative sphere.

At the same time the concept "innovative safety" of Russia (and the world in general) is properly not institutionalized. As the worker we offer the following definition: "innovative safety" is a condi-



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tion of security of the state institutes which provide stability of their functioning and development under the influence of external and internal factors during the developing, introduction and use of the innovations generating significant changes in social practice and yielding positive result at satisfaction of human wants both on internal, and on international markets.

The systemically important social institute providing a solution of the problem of innovative safety is the sphere of the higher education which has to provide training of specialists, capable to create "breakthrough" scientific and technological results. It is necessary to realize the strategy of development for the human capital in Russia assuming preparation by the advancing rates of the experts capable to perform analytical, creative work, to improvise, to independently make decisions (experts of category "Knowledge"), stimulation of inflow of talents to education and transferring of focus of educational programs from development of subject knowledge and storing of information on development of personal and metasubject competences [4].

The purpose of article consists in identification of external and internal threats of innovative safety in general and concerning the sphere of the higher education as "intellectual kernel" of innovative economy in particular.

## **2. External and internal threats of innovative safety**

It is represented to us that backbone external threats are defined by pressure technologies on Russia as a result of which "brain drain" of both mature, and young scientists will be provided. Events in Ukraine should be considered in this context: besides obvious (geopolitical and economic) the aims which were pursued (and are pursued) by the USA there is, in our opinion, an implicit purpose caused by the global competition for the human capital and connected with exhaustion in the USA of resources of the fifth technological way. Creation of technologies of the sixth way demands the new ideas and people capable to generate these ideas. And the country which has the appropriate human resource is Russia. Destabilization, deterioration in an economic situation in our country against the background of doubtful reforms in education and sciences have to become conditions for outflow of talented youth to the west [5, p.92].

Internal threats of innovative safety should be considered in the context of the realized economic policy which has to undergo cardinal revision. Not reduction of a share of public sector in economy, but her increase, especially in those sectors which are crucial for creation of technologies of the sixth technological way has to become "cornerstone" of the new economic policy ("new industrialization"). Increase in presence of the state at economy is provided by means of nationalization of command heights. As S.S. Gubanov truly notes, nationalization is necessary not for the sake of nationalization. It is necessary for creation of vertically integrated structure (property) which will provide increasing domestic production of production with a high share of value added, on the basis of strong and indissoluble communication between production and industrial processing of raw materials, primary resources [6, p. 39].

Increase in presence of the state at economy is a condition of permission of the contradiction between need of innovative development of the Russian economy and low demand for innovations from the industrial enterprises which are caused by low cost of labor: in the presence of cheap labor of costs of technological updating of production are economically inexpedient [7, p. 42]. Until for the businessmen of expenses on introduction of the new equipment and technology is higher than costs of work, he will introduce nothing. Therefore underestimated "live work" is a natural barrier of innovative development of the Russian economy and as a result threat of innovative safety.

Not resolved (not smoothed in a due measure) the contradiction between "work" and "capital" is a source of the amplifying social differentiation in Russia. Polarization of income causes social tension and corruption: the comparative analysis of 129 countries shows [8] that the inequality of incomes increases corruption level at the expense of material and standard mechanisms. The rich has also a big motivation, and more opportunities to participate in corruption while the poor is more vulnerable to extortion.

Fight against corruption and decrease in a difference in income between "rich" and "poor" should be considered in the context of increase in efficiency of the public and corporate management. Results of audit of Audit Chamber of the Russian Federation demonstrate inefficient expenditure of budgetary funds: following the results of a half-year 2017 it is revealed violations for 1,13 trillion rubles – more, than for all 2016 [9]; in 2015 violations for 516,5 billion rubles, in 2016 the total amount of the means used inefficiently, not to destination with abuse of authority and abuse are revealed, I have made 965,8 billion rubles. Return of the stolen means and elimination of the tendency – a resource for "technological breakthrough".

### **3. Backbone threat of innovative safety**

In the context of our research we see essential threat of innovative safety in the realized policy in education and sciences. In our work [10] we have analysed the threats connected with transition to standard per capita financing and two-level education. It has been shown that the strategy realized the Ministry of Education by the Russian Federation has led to the fact that the patent activity in higher education institutions has sharply decreased, the volume of income from use of results of intellectual activity at most higher education institutions is equal to zero. In Russia decrease of the activity of the universities on development, introduction and use of innovations is in many respects caused by the changed approaches to assessment of efficiency of activity of the teacher of the higher school against the background of essential reduction of number of the faculty of state universities.

As specifies M.V. Kurbatova with coauthors, "in logic of designers and operators of reforms only one circumstance can surprise: they consider destruction of the human and social capital of modern academic community absolutely reasonable price of transition to "new education" [11, p. 111]. It also is backbone internal threat of innovative safety of Russia, the factor capable to slow down "break" of Russia in the sixth technological way.

As confirmation that the strategy of the Ministry of Education and Science of the Russian Federation doesn't change serves the analysis of the new state program "Development of education" and the strategy of establishment of target figures of reception for training in programs of the higher education.

The new version of the state program "Development of education" is approved by the resolution of the Government of the Russian Federation of December 26, 2017 [12]. The declared purpose of the program is creation of conditions for system improvement of quality and expansion of opportunities of continuous education for all categories of citizens due to development of the Russian digital educational space: the number of the students who have mastered online courses about 11 million people by 2025 have to increase. The number of the studying educational organizations which were trained on online courses has to be: 2018 – 1520 thousand people; 2019 – 3050 thousand people; 2020 – 6010 thousand people. Including students of the professional educational organizations and educational organizations of the higher education: 2018 – 920 thousand people; 2019 – 1550 thousand people; 2020 – 3010 thousand people.

Some domestic researchers consider that development of distance learning (DL) will significantly influence the educational organizations of the higher education, in particular "crisis of institute of lectures" will promote release of mass of professors [13, p. 92]. According to E.V. Balatsky, wide circulation DL will lead not only to radical reduction of teachers, but also radical reduction of classroom fund of the universities [14, p. 66]. Only then when distance learning will be a system element on preservation, for scientific and technological development of the country it is possible to reproduction and attraction of shots to realize those advantages which it gives. Otherwise, introduction of distance learning will become the next tool on reduction of number of the faculty of state universities.

*The analysis of the target figures of reception (TFR) on specialties and the directions of preparation for 2017/18 and 2019/20 academic years [15, 16] allows to make the assumption that essential reduction of number of the budgetary places in a magistracy is the result of the planned concentration of a magistracy at leading universities. The result of realization of this strategy is quite predictable [10, p.*

97]: concentration of a magistracy in the large university centers makes impossible functioning of a postgraduate study in the majority of regional higher education institutions. It in strategic prospect has to lead to the fact that possibilities of personnel reproduction will be lost.

For 2019/20 the number of the budgetary places is increased by training in programs of a bachelor degree in comparison with 2017/18 academic year on 13441 persons (on 21215 people on full-time courses) and a specialist programme on 6146 people (on 6518 people on full-time courses). The number of the budgetary places was at the same time reduced by training in programs of a magistracy on 76857 people (on 42218 people on full-time courses).

And this reduction is most essential concerning those directions of preparation which are key, from the point of view of "break" in new technological way. On full-time courses in the direction of the information scientist and computer facilities to increase in number of the budgetary places at training in programs of a bachelor degree at 1317 people there corresponds decrease in number of places according to programs of a magistracy on 5164 persons; mechanical engineering – a bachelor degree – increase 93 persons, a magistracy – decrease in 3527 people; the electronic engineer, the radio technician and a communication system – a bachelor degree – increase 741 persons, a magistracy – decrease 2123 persons; mathematics and mechanics – a bachelor degree – increase 351 persons, a magistracy – decrease in 1478 people; physics and astronomy – a bachelor degree – increase in 85 people, a magistracy – decrease in 1430 people; biological sciences – a bachelor degree – increase in 106 people, a magistracy – decrease in 995 people; computer and information sciences – a bachelor degree – increase in 47 people, a magistracy – decrease 794 persons.

The idea of the Minister of Telecom and Mass Communications N. Nikiforov introduced on the Gaidar forum-2016 is represented important to us: "We have about 350-400 thousand programmers today. We need one million programmers. Here then we will also have a structural reform" [17]. It is obvious that the formed trend by determination of target figures of reception doesn't promote the solution of this task.

#### 4. Conclusion

Elimination of the revealed threats of innovative safety is a necessary condition for "break" in the sixth technological way.

Whether Russia will possess generation of the young scientists capable to provide "breakthrough" scientific and technological results, the ability of the country to become one of the leading countries of new way depends. If sufficient personnel potential is created only by the end of the 2030th, that is to an end of trajectory of the latent period of the VI kondratyevsky wave – the wave will be passed.

Development of the forecast concerning structure of training and the strategy of formation of the target figures of reception providing increase in number of students in the directions of preparation which are key from the point of view of "break" in the sixth technological way is necessary. It has to be developed special state programs of support and fixing of talents in higher education institutions taking into account branch specialization and social and demographic specifics of regions of Russia. It can be provided on the basis of grant support of the assistant rates allocated for the talented youth attracted on departments. Decrease in classroom load of professors and release of time for full scientific activity will be result.

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