



## ROLE OF INTELLECTUAL POTENTIAL OF A COUNTRY IN THE CONTEXT OF STRATEGIC AND GEOPOLITICAL DEVELOPMENT OF RUSSIA

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### ABSTRACT

Russia's strategic development today is realized in complex macroeconomic and foreign policy conditions, burdened by sanctions measures against the Russian economy. The obvious relevance is topics of the scientific and technological development. The high importance of these issues for Russia is the aspects of the stated problems debatable and uncovered in the scientific literature determined our choice for research. This paper analyzes the main conceptual vectors in the strategic course of scientific and technological development of the Russian Federation. Existing problems are analyzed and solutions are presented. Prioritized tasks have been systemized; principal directions of state policy in the scientific and technological sphere, defining the upper profile of the state strategic planning system are systematized. The factors preventing sustainable development in the context of the "science-business" model are revealed. The tools promoting the support of national scientific interests in the global market, mechanisms of interaction and strengthening of the ties between science, business and the state based on their interdependence, are presented. The role of science and innovations in providing an effective system of building and using intellectual potential as a condition for a sustainable future of the nation is considered. The importance of the popularization of science, the prestige of scientists in the creation and enhancement of the country's intellectual potential is emphasized.

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## 1. INTRODUCTION

Today, it is necessary to change the model of the research and development sector functioning; science can no longer remain in the state of a sector isolated from the economy; its task is to become a supra-sectoral source of economic growth. In addition, this process is impossible without close interaction with the state, business, and society as a whole. The intellectual potential of a nation depends on many factors. One of the most important is the quality of higher education.

A special role in its formation is played by Higher Education Institutions (HEIs), which are the "producers" of the scientific knowledge bearers which are potential innovators.

In turn, the status of fundamental science depends on the interest of business in strategic development. At the same time, the state of business in a strategic perspective depends on the current state of domestic fundamental science. Consequently, business interested in its development cannot but interact with fundamental science. Such interaction can contribute to the promotion of a scientific career in Russian society, popularizing the achievements of science and technology. Only "working" science can change society helping to change its values from "resource" to "intellectual."

## 2. METHODS

The analysis made by us has revealed that the search for opportunities to achieve the strategic goals of the scientific and technological development of the country should be directed, in our opinion, to solving of the following tasks.

It is impossible to consider the scientific and technological and innovative development of the country as successful if the contribution of business community to the financing of research and development is significantly inferior to the contribution of the state.

Obviously, due to the specifics of both business and fundamental science, the business community cannot take upon itself full resource provision of scientific research. In this regard, it is necessary to develop mechanisms for public-private partnership that ensures a balance between the interests of the state and business community and determines the degree and mechanisms of participation in scientific and technological development.

The current situation calls for the need for effective tools to stimulate and promote large-scale interaction of science with business and the state in order to ensure sustainable development of the Russian Federation.

An effective policy that determines the actions of state authorities in the field of science and technology should be focused on supporting research and technological development.

Tools that promote the support of national scientific interests in the global market and increase the attractiveness and security of investments in research and development can be:

- intervention through public procurements what stimulate the market outlet for science-intensive products, and create a demand for innovation.
- focusing on international scientific collaborations, especially in the light of the tense political situation, proceeding from the fact that science has always been and will be out of politics.

The main directions of the state's activity on increasing the innovative culture in the society are the creation of the necessary support programs, namely:

- development of effective measures and incentives, notably not only financial; popularization of both science and research activities;
- creation of specialized training centers or the financing of training in Russian or foreign educational institutions within the framework of optimizing the implemented state training programs;

- it is necessary to carry out a full-fledged work on training and development of personnel using, for example, international internships, etc., taking into account the best foreign practices (in our opinion, it is useful to learn from the experience of the UK).

Factors hampering solution of this task today are bureaucratization of the sphere of research, lack of innovative entrepreneurship, and high administrative barriers that must be eliminated.

### 3. 3 RESULTS AND DISCUSSION

In accordance with the requirements of the Strategy for the scientific and technological revolution of Russia, all aspects of the most significant tendencies affecting the national scientific and technological policy must be taken into account in the guidelines of its scientific and technological development.

Having subjected them to analysis, it is possible to identify priority tasks, principles of state policy in the scientific and technological sphere that determine the upper profile of the state strategic planning system.

We emphasize that the most notable areas identified by experts, drafters of the Strategy, and identified by our analysis are listed there. The list does not pretend to be complete, but rather aims to demonstrate the direction vector - something was given with more attention, and some directions were finally chosen.

Creating an "opportunity to identify talented youth and build a successful career in science, technology and innovation by them" (Decree of the President of the Russian Federation of December, 2016).

1. Ensuring the attractiveness of a scientist's career, popularizing science, strengthening the influence of science on society.
2. Institutional transformation of the research system based on current trends and taking into account our best traditions.
3. Assistance in the active interaction between scientists and business community, between society and the state through the use of modern digital and transport infrastructure.
4. Creation of high-quality service maximally favorable to conducting effective scientific and technical activities.
5. A focus on the desire to occupy an exclusive position at the world level in the important areas of research relevant to the Russian agenda.
6. Ensuring the accessibility for researchers of all types of resources for the implementation of ideas for "full cycle" projects.
7. Formation of new tools to protect investment capital in scientific research, and the sources of their funding.
8. Support of the interests of national scientific organizations and innovative insiders in a foreign domain when entering international collaborations.

9. Ensuring a balance between the possibility of freedom in scientific creativity and at the same time solving strategically important research problems.

Let's analyze the main, in our opinion, directions of building up and using the intellectual potential of the Russian nation.

In our country, human capital is traditionally well developed. One of the dimensions of this layer is the data on the performance of 15-year-old youth obtained by the OECD within the framework of the international PISA program. The study assesses the knowledge and skills of students aged 15 years in functional reading, mathematical literacy and the natural sciences.

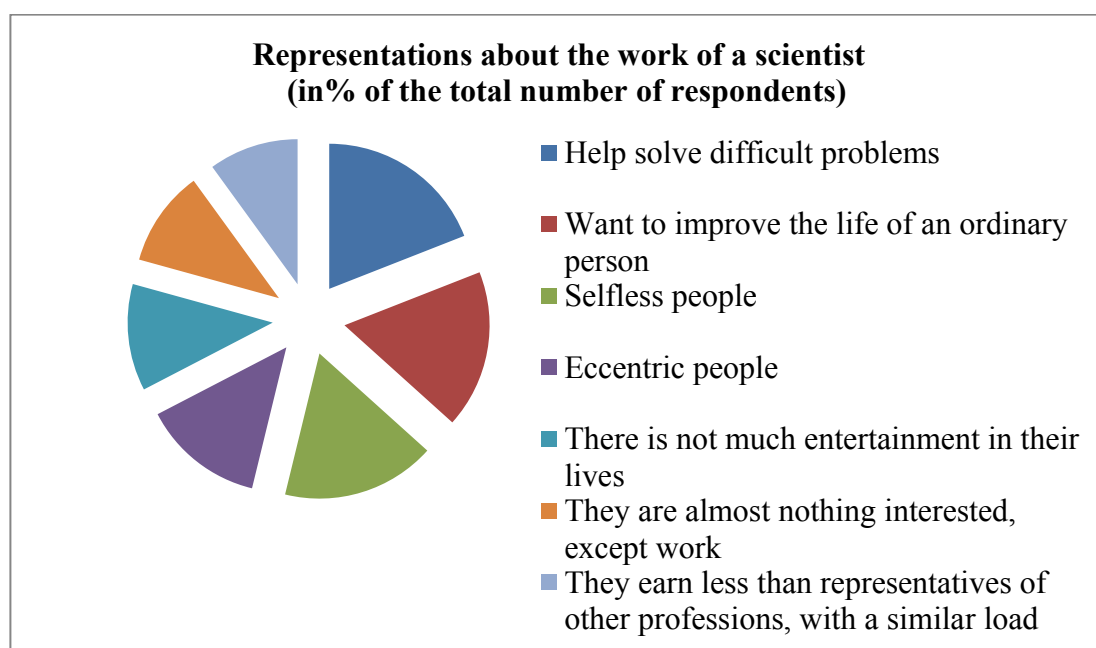
Based on the results of the last published assessment cycle (2015 ) Russia has 494 points in mathematical literacy, taking 23rd place out of 70 countries that participated in the assessment cycle. The positive trends are also preserved in other areas of functional literacy (PISA 2015 Results).

The situation with the 23rd place out of the 70 countries being evaluated is not so bad: for example, Sweden is on the 24th place, and Israel is 15 points lower. Proceeding from the fact that these countries are recognized as innovative leaders, our positions are better than they may seem at first glance.

But only the identification of talented youth for the popularization of science is not enough.

Surveys conducted by the Institute for Economic Cooperation and Collaboration together with the Higher School of Economics showed that only 17% of respondents have a prestigious profession in Russia. By comparison, in the US and the EU half the respondents have such opinion (Global Competitiveness Report, 2016).

At the same time, despite the given data on the low prestige of a scientist profession in our country, the population as a whole is not against science or scientists as such.



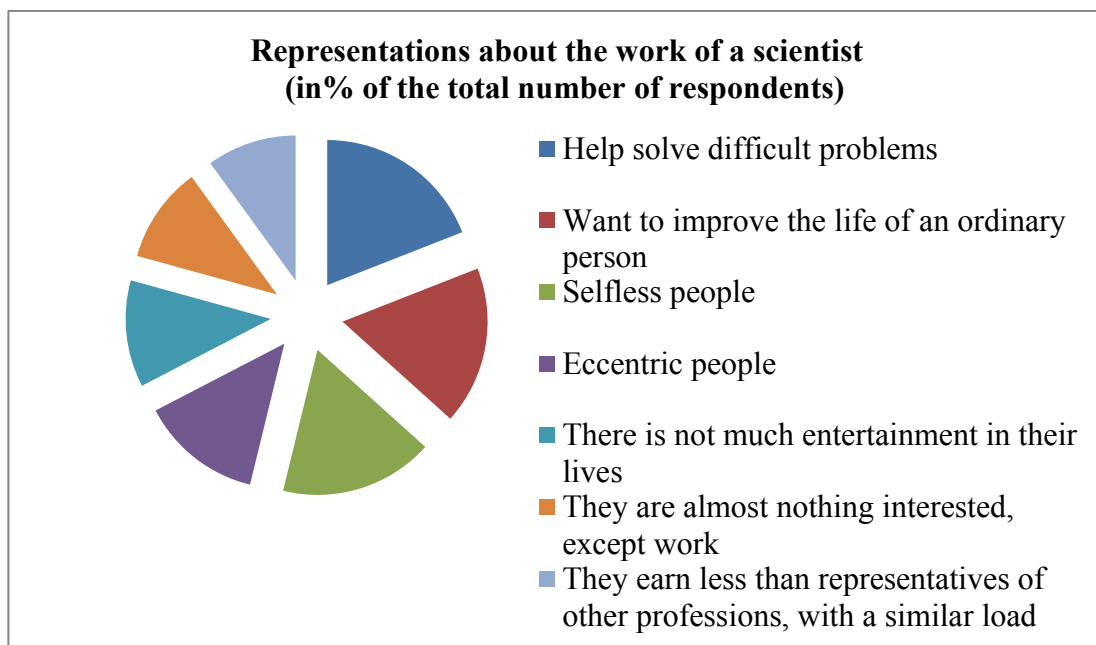
**Figure 1:** Representations about the work of a scientist.

The basis for this conclusion is as follows.

According to the same series of polls, 75% of respondents believe that "science and technology make our life more healthy, easy and comfortable" (Innovative behavior of the population, 2015).

And 70-80% of respondents believe that scientists and engineers "help solve difficult tasks" and "improve people's lives ". However, at the same time, 40-50% believe that "the work of a scientist is boring" and that it is "dangerous", "there are not enough entertainments in the life of scientists", they "are not very interested" and "earn less than representatives of other professions". And in general, half of those surveyed believe that most scientists are "a bit cranks". (Figure 1).

However, such respect for scientists, unfortunately, is only declarative, since only about a third of respondents would be happy with the decision of their children to "pass on science". More of them preferred the "high-status" of legal professions (Figure 2) to the public.



**Figure 2:** Attitude to the choice of a child of the scientist's career.

We regret to state the fact that broad people is essentially opposed to representatives of science and innovators. "In Russia, there are innovators for society, but there is no society for innovators" (Gorodnikova et al, 2018).

The factor discrediting the profession of a scientist is their low level of wages and, accordingly, low level of life.

For comparison, a relatively recent SalaryExplorer study conducted in the United States, measuring the salaries of scientists translated into dollars shows the following results. The average salary of a scientist in the US is \$ 6,500 per month (Philip et al, 2013). The average salary of a scientist in Russia in 2017 was equal to 49.2 thousand rubles, and this is less than one thousand dollars according to the currency exchange rate.

Such a level of wages is the main factor discrediting the profession of a scientist.

The increase in wages, the so-called "May decrees", turned into an unsightly situation. Scientists in their open letter to the President of the Russian Federation declared that the bureaucratic system creates only the appearance of increasing the salaries of scientists. The lack of financial support for decrees led to a simulation of their implementation (Sagasti, 1973).

Hopes that in such a situation talented university graduates will choose an academic career are unjustified.

Systematic development of mechanisms for popularizing the achievements of science and technology should promote to the rise of the status of researchers and developers.

In recent years, the Russian state has been active in its attempts to solve problems in supporting the interaction between scientists with business.

However, the scientific and technological and innovative development of a country cannot be considered successful if the contribution of business to financing research and development is significantly inferior to the contribution of a state. And the programs of innovative development of state-owned companies do not remain aloof from this process, providing for cooperation with universities (Gershman et al, 2015).

However, the efforts made by the state to develop research activities in universities, in this case, have not yielded the desired result; the educational function of universities was more in demand for state-owned companies.

Based on the results of our comparative analysis (Gershman et al, 2015), the obstacles to mutually beneficial cooperation between profile universities and state-owned companies are noticeably greater than productive ties, they are:

- the absence of necessary competencies, services, material and technical basis for specialized universities to perform R & D by order of companies;
- lack of experience in supporting companies throughout the process of developing high technology products;
- low quality of personnel training and research and design works carried out by universities;
- lack of competent specialists in universities providing interaction with companies;
- lack of interest in interaction between both companies and specialized universities.

But, we must admit, a variety of effective mechanisms of interaction which are well-known from the Soviet times are also used.

It is necessary to carry out a full-fledged work on the training and development of personnel based on the results of analysis of the best foreign practices.

For example, the UK Government advertises internships in private companies to help recent graduates acquire real-life experience. Knowledge Transfer Partnerships projects are based on a partnership between a graduate, an employer and an academic institution to address short-term business problems and are partly funded by the government (Abyzov, 2015).

The Chinese government has launched large-scale companies for return to China from abroad of specialists who can occupy leading positions in the Chinese system of scientific developments and technologies. A Corporate Academy has been established in Saudi Arabia.



## 4. SUMMARY

The current situation necessitated the development of intellectual potential and the interaction between science, business community and the state in achievement of the strategic goals of the country.

The fundamental problem here is the lack of a system of scientific and technological forecasting, what makes it difficult to determine the vector of development of both science and business. Having settled in such conditions, the development of science and business departs from the postulate of interdependence, and proceeds from their own logic and interests. Moreover, in the absence of national projections, the business is forced to use foreign ones, and it is not the leader who has already taken such a place, but the catching up player, what contradicts the country's position in responding to "big challenges".

Along with this, it is advisable to focus on supporting international scientific collaborations. As a rule, "international scientific collaborations are the last thing that is being destroyed" (Trubnikov, 2014). Attempts to preserve them are always persistent, regardless of the degree of tension in the political confrontation. International scientific cooperation is the connecting link in political relations.

## 5. CONCLUSION

The importance of intellectual potential which is the future of any nation requires a comprehensive assessment of the system state, its formation and growth, strengths and weaknesses, existing problems and potential threats, as well as addressing other research tasks that respond to "big challenges".

At the same time, it should be remembered that scientific activity, even under the most favorable conditions of financing and organization, is not capable in itself of producing quick and effective results. And even in the opposite case, today we need not just in effective research, but in the overall impact of Russian science on the innovation of the economy and the stable geopolitical development of the country.

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