Consistently moving forward

What science will be like in the near future and how to increase the introduction of Belarusian innovations in production

In recent years, the importance of the scientific sphere in Belarus has increased significantly. Today, scientists are expected not only to carry out fundamental research but also to ensure a close connection with production. On the one hand, this suggests an excellent incentive for an action; on the other hand, it comes with huge responsibility entrusted to scientific organisations. Yelena Presnyakova, Head of the Centre for Innovation and Investment Policy at the Institute of Economics under Belarus' National Academy of Sciences (NAS), has shared her opinion on what science will be like in the near future, how to improve its practical orientation, and what tasks need to be solved.


Aleksandr Gorbash


Yuriy Bakerenko


Aleksandr Kulevsky

The President of Belarus, Aleksandr Lukashenko,

"The main thing is that domestic science should boost the country's economy. That is, there must be a concrete result, tangible for the state and for the people."

At a meeting with the working group to analyse the activities of Belarus' National Academy of Sciences, on July 30th, 2024

By Vera Arteaga

Advantages of the Soviet heritage

The largest number of scientific organisations — 78 — is currently concentrated in Belarus' National Academy of Sciences. The second place on this list — 23 organisations — is occupied by the Industry Ministry. More than seven thousand people are engaged in research and development in each of these departments. Incidentally, the NAS compares favourably with the academies of sciences in Eastern European countries, including Poland, Latvia, Lithuania, Slovakia, and Hungary, in terms of the number of scientific developments and the co-operation with sectors of the economy, as noted by the scientist.

"Currently, the National Academy of Sciences operates like a scientific and production corporation that unites both science and production," Yelena Presnyakova pointed out. "It is important to note that within the framework of state sectoral and regional scientific and technical programmes and events, 392 innovations were developed last year alone, including 35 items of equipment, 48 technologies, 282 medicines and much more."

According to the scientist, the principle of the scientific and production corporation behind the NAS is an absolute advantage of the socio-economic model of our country. The Russian Academy of Sciences is also moving along this path.

Yelena Presnyakova has recounted that there is a lot of debate in academic circles today as to which path our Belarusian science should follow. Should we form our own scientific schools, or can we follow the path of our closest neighbours? "In my opinion, our experience is of great value and is a priority for Belarus," our interlocutor is convinced. "The most important thing that we ensure is the preservation and continuity of scientific schools. Several very large scientific schools in various branches of science — including physics, economics, and chemistry of new materials — have been preserved in Belarus, which allows us to occupy leading positions on the global stage as a whole, as well as in certain branches of science."


Tatiana Stolyarova

Developments are in demand

The specialist is sure that the latest developments made by scientists of Belarus' NAS are in the top of the world trends. These include new materials, artificial intelligence, robotics, microelectronics, and electric transport. Thus, the B.I. Stepanov Institute of Physics is developing an optical system that is successfully supplied outside the country. The Institute of Chemistry of New Materials under the NAS has developed nanocatalysts that belong to the sixth technological order and can be in demand by enterprises of the chemical and pharmaceutical industries to accelerate various chemical reactions. The United Institute of Informatics Problems (UIIP) is creating an artificial intelligence platform that is in line with international-level platforms in terms of quality. Belarus' National Academy of Sciences is involved in the creation of an electric vehicle, and is also working to develop a sodium-graphene battery.

Notably, today the gap between developments and their introduction into production has shortened — many novelties are in demand by industrial organisations and have been successfully implemented.

Joining efforts

Taking into account that Belarus is not a big country, it is better to develop science in collaboration — first of all, with the Russian Federation and the People's Republic of China. Fortunately, such interaction has been established. In particular, this refers to the adoption of a unified industrial policy with Russia. Within the framework of the Union State, the Republic of Belarus and the Russian Federation are united by a number of agreements, including the Strategy for Scientific and Technological Development of the Union State, which was approved in January 2024. During the recent visit of the Premier of the State Council of the People's Republic of China, Li Qiang, Belarus and China agreed on the wide co-operation, including in the field of science and technology. Admittedly, scientists from the two countries had done a lot together before, and the Great Stone Industrial Park features a number of joint Chinese-Belarusian structures, such as the China-Belarus Innovation Centre for Industrial Technologies.

The question of the future of the Belarusian science is actively discussed in the scientific community today. Is it necessary to strengthen the National Academy of Sciences or to focus on the formation of state corporations within the framework of sectoral science, where manufacturing enterprises will be the centres?

Indeed, the major enterprises of the country nowadays have powerful research and practical centres that carry out a significant amount of specialised research and development. Such structures exist at JSC Minsk Automobile Plant — Managing Company of BELAVTOMAZ Holding, OJSC Minsk Tractor Works, BELAZ JSC — Management Company of BELAZ-HOLDING, Amkodor JSC — Holding Managing Company, and more. Thus, Gomselmash JSC — Belarusian manufacturer of agricultural machinery — boasts its own research and technical centre of combine harvester manufacture. Certain industrial giants even have the status of scientific organisations. The Belarusian Steel Works (BMZ) — Management Company of BMK Holding houses a research centre and an industry laboratory for pathology and steel wire production technologies. In addition, the enterprise has signed co-operation agreements with the Academy of Sciences, with a joint industry laboratory put in place. Also, research and technical centres operate on the basis of JSC Holding Managing Company Minsk Motor Plant (MMZ), Mogilevliftmash JSC, Minsk Electrotechnical Plant named after V. I. Kozlov, INTEGRAL JSC, Horizont Holding, and Planar JSC. "As we can see, research structures are integrated into the system of industrial enterprises that make up the core of mechanical engineering today," underscored Yelena Presnyakova. "Thanks to their work, the enterprises' products are competitive both in Belarus and abroad."

Quantum leap

According to Yelena Presnyakova, in order to make the quantum leap expected from the Belarusian science, it is necessary to take into account the value of the competencies possessed by all scientific organisations in the country. However, it is primarily required to determine priorities, focusing on strategic complex projects that could become landmark for Belarus, so as to make a breakthrough in technology.

The interlocutor has observed that the lack of the right to take risk when conducting research in new fields of knowledge, which are among the world's top promising areas, remains a sore subject for scientific organisations. "We have only started to build up our competencies on this topic, which encompasses genetics, microelectronics, new materials. Therefore, in order for scientists to make bolder scientific experiments, conduct more ambitious research, they must be fully protected by the state from possible failures," Yelena Presnyakova is convinced. "In this regard, we see the formation of a technological venture financing system as a promising measure for the development of top technologies."

Yelizaveta Kobeleskaya