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Contents

HSE Institute for Statistical Studies and Economics of Knowledge (ISSEK) continues to monitor public science, technology and innovation policy. The fourth issue presents an overview of recent Russian and international initiatives to fight the coronavirus pandemic and to facilitate economic recovery, as well as a number of relevant OECD and European Commission recommendations.

Russia

Winners of the "Leaders of Russia" competition in the Science nomination announced

In September 2020, the results of the "Leaders of Russia" competition in the Science nomination were announced (these all-Russian national management competitions are held since 2018 by the autonomous non-profit organisation "Russia, the Land of Opportunities"). More than 200 thousand people took part in the recent one. 9 winners were selected in the Science nomination, among them gifted young professionals specialising in new materials, physics, mathematics, ICT, ecology, public administration, law, etc.

27.6 billion roubles will be allocated to build research vessels

One of the activities in the framework of the National Project "Science" is the construction of two research vessels with unlimited navigation range, designed to conduct a broad spectrum of basic and applied research. For these purposes, the RF Government has allocated 27.6 billion roubles (ca. 362 mln US Dollars) (Regulation of 23 September 2020 No. 1533). The vessels will be equipped with laboratories for analysing water samples, suspended matter and bottom sediments. The construction is scheduled to be completed in 2024; the vessels will be commissioned in 2025. This will help solve the problem of the aging research fleet, improve Russian scientists' working conditions and provide additional orders for the Far Eastern shipyards.

State customer to build SKIF synchrotron determined

The Russian Ministry of Science and Higher Education will act as the state customer to build the unique shared-use equipment centre "Siberian Circular Photon Source" (SKIF) in the science city of Koltsovo (Novosibirsk Region) in the framework of the National Project "Science" (RF Government Regulation of 29 September 2020 No. 1565). This will raise the project's S&T support to a new level and help attract experienced professionals to work with advanced equipment. The Institute of Catalysis of the Siberian Branch of the Russian Academy of Sciences will remain the developer of the complex.

The SKIF shared-use equipment centre is designed to conduct research using synchrotron radiation beams. The experiments will allow to obtain new knowledge about the structure and properties of matter at the micro- and nanoscale, which will help solve important problems in biology, medicine, chemistry, and energy industry of the future.

More than 37 billion roubles (ca. 486 mln US Dollars) will be allocated until 2024 to design and build the complex. The first stage is scheduled to be completed in 2024.

Tech valleys will be supported with subsidies

Science and Technology Innovation Centres (STICs, or "tech valleys") have been created in Russia since 2017 in line with the Federal Law No. 216-FZ. Their main objectives are to facilitate the commercialisation of R&D results, to involve students and researchers in the development of technologies in demand in the market, and to support technology companies and start-ups. A special legal regime for research and innovation applies on the STIC territory.

It was decided to support companies involved in establishing STICs with subsidies in 2020-2024 (RF Government Regulation of 15 September 2020 No. 1443). The beneficiary companies will be able to use the money to cover part of the customs duties on imported products required for the establishment of STICs, to conduct R&D, and pay VAT.

Ministry of Economic Development will create a register of start-ups

Russia continues to improve the legal framework for innovation. The next series of amendments to Federal Law No. 127-FZ "On Science and State Science and Technology Policy" concern Article 16.3, and are aimed at creating an information system to promote and support innovation, including a register of end beneficiaries of support measures. The Russian Ministry of Economic Development, jointly with federal and regional innovation development institutions, will be responsible for the collection, processing, storage, publication, and use of relevant information.

The register will accumulate various data on start-ups, which can be used to make decisions on providing them with public support. Among other things, this will help to streamline the grant allocation process, facilitate the transition to "seamless" innovation management, and launch continuous monitoring and evaluation of the current toolkit. The need for such changes is due to the fact that the RF Government plans to allocate 46.3 billion roubles (ca. 608 mln US Dollars) to developers of "cross-cutting" technologies until 2024, and 12 billion roubles (ca. 157,6 mln US Dollars) to start-ups specialising in artificial intelligence.

Rosselkhozbank and Skolkovo launch an accelerator

Rosselkhozbank (RusAg) and the Skolkovo Foundation are launching a joint project "RusAg Accelerator" to identify promising high-tech start-ups in the financial and agri-industrial sectors. The winners of the competition who proposed interesting technological solutions and were able to prove their effectiveness, will be granted an opportunity to implement pilot projects and to subsequently become part of the RusAg overall digital ecosystem.

The programme is open to young companies offering projects in the following areas:

- new digital financial products and services, including banking products and services for individuals and legal entities, e-commerce, brokerage services, payment services, insurance, investment and wealth management services;
- management of banking processes, including improved customer service tools, electronic document management, information security, HR, solutions for collecting and structuring customer data, neurotechnology and artificial intelligence, machine learning, big data management, blockchain solutions, biometrics, digital marketing (SMM, messengers, social networks);
- new digital farm management solutions and services, including those for farm employees, start-up entrepreneurs, agricultural producers, and developers of agricultural technologies.

10 best technology start-ups will be selected on the basis of the competition results. All of them will receive financial and mentoring support for their projects, and will be given access to the RusAg digital ecosystems.

Procedure for monitoring experimental legal regime for digital innovation drafted

On 28 September 2020, the Russian Ministry of Economic Development presented draft Government Regulation "On Approval of the Procedure for Monitoring Experimental Legal Regime (ELR) for Digital Innovation, Evaluating the Efficiency and Effectiveness of Its Implementation, and Holding Public Debates on its Efficiency and Effectiveness".

The document defines the sources of, and procedures for obtaining information required to monitor indicators such as progress in accomplishing ELR objectives, total output of products made/sold by companies operating under ELR, their net profits, etc.

Officials responsible for digital transformation will be appointed in Russian regions

At a meeting with members of the Russian Government on 9 September, the RF President supported the initiative of Deputy Prime Minister Dmitry Chernyshenko to instruct the heads of Russian regional administrations to appoint deputy heads of each regional executive authority responsible for digital transformation, similar to the federal level.

Development of information technology will be supported with new grants

By the end of 2020, the Russian Ministry of Digital Development, Communications and Mass Media will allocate new grants for developers of Russian digital solutions and business digitalisation services. In total, 7.1 billion roubles (ca. 93 mln US Dollars) is earmarked for grant support. Competitions will be held by:

- Skolkovo Foundation: grants up to 80 million roubles (ca. 1 mln US Dollars) for companies planning pilot application of domestic products, services, and platform solutions; public funding can cover up to 80% of the project cost;
- Russian Information Technology Development Fund: grants up to 300 million roubles (ca. 4 mln US Dollars) for companies – developers of new software, remote work services, online education or healthcare platforms, and other digital solutions, and for companies willing to digitalize their production and management processes using Russian solutions;
- Foundation for Assistance to Small Innovative Enterprises: grants in the amount of 20 million roubles (ca. 263 thousand USD Dollars) for at least 30 companies specialising in artificial intelligence, the Internet of things, blockchain, new production technologies, and other areas.

The government will establish an ICT import substitution competence centre

The Russian Ministry of Economic Development prepared a draft RF Government Regulation "On Information and Communication Technology Import Substitution Competence Centre". The initiative is associated with adopting new approaches to the digital transformation of public authorities and state-owned companies, and increasing their efficiency based on information technologies.

The centre will assess digital maturity of state-owned companies, advise on the development and implementation of digital transformation strategies; maintain a databank of best digital transformation practices; and annually submit to the government analytical reports on the state of affairs regarding ICT import substitution in the Russian Federation. In the framework of the Federal Programme "Digital Technologies", the centre will receive 90 million roubles (ca. 1,2 mln US Dollars) to fund its activities in 2020, and 250 million roubles (ca. 3,3 mln US Dollars) annually in 2021-2024.

Simplified certification procedures for domestic electronics

The communication equipment market in Russia is estimated at $4 billion a year, with domestic manufacturers' share at about 20% ($750 million). To promote its growth, the Russian Ministry of Digital Development intends to simplify the certification process for domestic electronics (amendments to Regulation No. 241 of 13.04.2005 "On Approval of the Rules for Mandatory Confirmation of Compliance for Communication Equipment").

It's proposed to exempt telecom equipment manufacturers included in the Russian Ministry of Industry and Trade's register from inspections at production facilities, and, following repeated declaration, from laboratory tests, too. These measures will make it easier for the manufacturers to enter the market by eliminating duplicate administrative procedures. At the same time, it is proposed to tighten the mandatory certification requirements for the rest of the market players, by reducing the timeframe from three to two months, and for complex communication equipment – from six to three months.

Procedures for information modelling in construction approved

The RF Government signed Regulation of 15 September 2020 No. 1431 establishing the "Rules for Developing and Maintaining Information Models of Capital Construction Objects''. It's one of the aspects of digitalising the Russian construction industry based on the Building Information Model. The relevant standard was included in the City Planning Code in 2019. Application of this technology will allow to monitor the state of construction facilities throughout their entire life cycle, improve construction quality, and reduce the risks of serious errors and losses during the implementation of large-scale projects.

An international medical cluster will be established in Moscow

In accordance with the Moscow Government Regulation of 6 October 2020 No. 1683-PP, a new cluster will be created in the Skolkovo innovation centre, with an area of about 58 hectares.

The project will be implemented in 2 stages: in 2023, the construction of the engineering infrastructure will be completed, and by 2028, medical, oncological, logistic, experimental production, and engineering centres will be built, along with a medical university comprising biology and human anatomy institutes and other facilities, with a total area of almost 868 thousand sq.m.

Interactive platform for rehabilitation of COVID-19 patients launched

The COVID REHAB cloud service is developed in Russia, designed for online group sessions for patients with complications after the coronavirus infection (such as persistent cough and shortness of breath even with light exertion, muscle hypo- or atrophy, functional, psychological, and other disorders).

The platform was developed jointly by the TelePat company and the Russian Ministry of Health's National Medical Research Centre for Rehabilitation and Balneology. Online sessions on the new platform will allow to involve uniquely skilled professionals, which would shorten the recovery period and make it possible for residents of remote or hard-to-reach regions, and townships where rehabilitation specialists and equipment are unavailable, to receive professional advice and access to relevant services.

The COVID REHAB platform allows a doctor to remotely examine medical records and assign patients to relevant rehabilitation groups. Specialists can conduct remote group physical therapy sessions, psychotherapy sessions, creative and occupational therapy to correct the identified disorders, and monitor patients' recovery.

A new air disinfection device will become available in Russia

The Automatika Concern of the Russian Technologies State Corporation developed an ultraviolet germicidal recirculator for air disinfection (for use at residential, public and production premises) and prevention of infectious agents' proliferation, including the coronavirus. The new device allows to treat the air with ultraviolet germicidal lamps. This technology will ensure that a large number of people would remain relatively safe indoors. The testing phase of a pilot batch of the product is currently being completed.

Global agenda

OECD: innovative trends in public administration

The OECD Observatory of Public Sector Innovation has presented a new overview of key innovation trends in public administration, Seamless Public Governance, which analyses three emerging trends in government-citizen interaction:

1. "invisible" government: proactive and automated digital services that do not require people's presence to receive government services;
2. "matrix" government: promoting innovation through close collaboration of the government, businesses and civil society organisations, creating cross-sectoral ecosystems;
3. proactive government: extended policymaking potential due to the emergence of new digital analytics tools, including big data analytics.

European Commission publishes its first-ever Strategic Foresight Report

In September, the European Commission adopted its first-ever Strategic Foresight Report, which should become the basis for important EU policy initiatives taking into account new challenges, emerging trends and windows of opportunity. It presents the European Commission's strategy for integrating foresight studies' findings into EU policy. The document provides an overview of the first lessons learned in containing the COVID-19 pandemic and combating its consequences, presents the resilience concept as a new benchmark for European policy, and discusses the role of strategic foresight in ensuring sustainable progress both for the EU as a whole and for individual member states.

The crisis caused by the COVID-19 pandemic has clearly demonstrated that Europe needs to build up resilience, which is the ability not only to withstand and cope with challenges, but also to undergo

transitions in a sustainable, fair and democratic manner. The report analyses resilience along four interrelated dimensions – socio-economic, geopolitical, digital, and environmental (transition to green economy). Special attention is paid to the role of foresight in shaping forward-looking policies to accomplish relevant objectives in each of these four areas.

The document will be published annually. The topic of the 2021 report will be discussed at the annual conference of the European Strategy and Policy Analysis System (ESPAS) in November 2020. The Commission also plans to use the ESPAS conference to launch a pan-European Foresight Network with member state public foresight capabilities, think tanks, academia, industry stakeholders and civil society.

European Green Deal Call is open – €1 billion investment in green and digital transition

On 17 September, the European Commission launched a call for research and innovation projects relating to the European Green Deal, a new flagship initiative aimed at making Europe climate-neutral by 2050. The call has a total budget of one billion euros; it is funded under the EU's Horizon 2020 Research and Innovation Framework Programme. In line with the Horizon 2020 principle of openness, the call is open for participation to non-EU researchers, including from the Russian Federation.

In terms of its principles and structure, the new initiative is somewhat different from other Horizon 2020 calls. Given the urgency of the objectives to be accomplished, the competition is aimed at finding specific, practical solutions for acute environmental problems, which would at the same time contribute to major long-term transformation. Applications in ten priority areas of the European Green Deal are accepted, including mitigating climate change; clean, safe, and affordable energy; transition to green circular economy; energy- and resource-efficient construction; intelligent mobile systems; preservation of biodiversity; reduction of pollution, etc.

The deadline for submissions is 26 January 2021, with selected projects expected to start in autumn 2021.

BRICS: Fifth Young Scientist Forum

On 21 September, the Fifth BRICS Young Scientist Forum opened in the video-conference mode at South Ural State University. The Forum is one of the key science, technology and innovation events organised under Russia's BRICS presidency in 2020. The forum's major topic was "Partnership of Young Scientists and Innovators for Science Progress and Innovative Growth". 20 outstanding young (under 40) representatives of each member country's research and innovation community were invited.

The Forum's 5-day programme comprised plenary sessions, seminars, round table discussions, and other types of scientific communication. To encourage the best research and innovation projects, the Forum annually holds the "Young BRICS Countries Innovators" competition in three areas – ecology, materials science and application of artificial intelligence in ecology and materials science.

The results of the Russian-German Year of Scientific and Educational Partnerships summed up

On 15 September, the results of the Russian-German Year of Scientific and Educational Partnerships (2018–2020) were summed up. The Cross Year's events were aimed at strengthening the dialogue between the two countries' academic and university communities, promoting programmes to support young scientists, implementing joint Russian-German R&D projects, and developing new partnership formats for research and educational communities.

25 joint projects in the field of biomedicine, agrotechnology, education, economics, law, linguistics, etc. were among the winners of the "Russia and Germany: Research and Educational Bridges" competition.

To hold the competition and to support other forms of partnerships, a dedicated information portal has been launched, enabling a dialogue between representatives of universities and academia in two languages. A total of 154 organisations (67 Russian and 87 German) used the portal to communicate with each other.

New international internship opportunities for talented young people

At the beginning of 2021, the German-Russian Interdisciplinary Science Centre plans to organise a call to fund research internships for graduate and post-graduate students and young scientists from the two countries. Financial support will be provided to conduct applied and basic interdisciplinary research in natural and environmental sciences, life sciences, and materials science, and to organise conferences and seminars.

South Korea: digital technology as the basis of long-term prosperity

On 26 August, the South Korean Ministry of Science and ICT approved the Strategy for Science and Technology Development until 2045. The document outlines the main approaches to shaping the country's future technological image. In particular, innovations and digital technologies will become the key to meeting long-term sustainable development and climate change related challenges, fighting epidemics, etc. Artificial intelligence is mentioned among the most important technology areas which help solve social problems and increase the effectiveness of biomedical technologies. Blockchain technologies will ensure online security, while smart production technologies provide for the uninterrupted (24/365) operation of modern factories by automating them and minimising human involvement.

In parallel, the Advanced 6G Telecommunication Technology Development Strategy was drafted. At phase I (from 2021), the South Korean government plans to invest 200 billion won (ca. 168 mln US Dollars) over 5 years to ensure 6G networks' technological security. At phase II (from 2026), a pilot project to upgrade the existing infrastructure to the 6G level is planned. Five main areas have been selected for the pilot project: digital health, immersive content, self-driving cars, smart cities, and smart factories. Commercial exploitation of 6G networks is expected to commence in 2028-2030.

France: rebooting the economy after the pandemic

On 3 September, the French government announced a plan to reboot the economy to address the consequences of the COVID-19 pandemic (France Relance) with a budget of 100 billion euros. About a third of the total budget (34 billion euros) will be invested in strengthening the country's competitiveness, including 6.9 billion euros to maintain technological independence and sustainability. Of these, 2.6 billion euros will be channelled to support digital technology development (cloud and quantum technologies, artificial intelligence, etc.), and about 2 billion euros – to support innovative projects in strategic industries (including healthcare and education).

Slovakia: crowdfunding to promote science

The non-governmental organisation for the promotion of scientific research in Slovakia, SOVVA, organises annual night science festivals in the country's 5 cities. State-supported crowdfunding is used to help finance them. Individuals and organisations willing to help the festival, which among other events includes practical experiments, demonstrations, scientific shows, debates, lectures, exhibitions, competitions, etc., can send 2% (3% for volunteers) of the amount of their income tax to SOVVA, as a charity donation.

Initiated by the European Commission in the framework of the Horizon 2020 programme, the project to promote such events in the EU countries is aimed at creating a network of interaction platforms for representatives of science, business and society, and at raising awareness of the most important research results.

South Africa: space technologies to promote development of the continent's economies

The South African National Space Agency (SANSA) has launched a pan-African competition to identify top 10 geospatial analysis-based innovative solutions for application in agriculture, insurance, retail, and environment protection on the continent. The winners will be given an opportunity to complete an intensive month-long business acceleration programme implemented by the consulting company RIIS with the support of SANSA and Maxar Technologies, one of the leaders in satellite imagery. After that, the participants will present their projects to an assessment panel comprising leading experts and representatives of various industries at the South African Innovation Forum, the

largest event dedicated to the development of technology start-ups. The finalists' investment appeal will be also assessed by Anza Capital venture fund. It is expected that the winners of the competition will be able to attract significant additional funding and to find promising markets around the world.

Cooperation with the OECD

Workshop "Blended finance: New approaches for financing science, technology and innovation for achieving the Sustainable Development Goals"

On 14-16 September 2020, the OECD Committee for Scientific and Technological Policy, jointly with the Wellcome Trust, Oxford University, and the Research Council of Norway, held workshop "Blended finance: New approaches to financing science, technology and innovation for achieving the Sustainable Development Goals".

The programme included five thematic sessions to discuss specific features of blended science, technology, and innovation funding formats in the context of accomplishing Sustainable Development Goals, including various ways to attract private capital; development of public-private partnership tools; and the world's best practices in implementing healthcare and energy projects with blended funding.

Workshop to promote international technology cooperation in the context of digital transformation and the COVID-19 pandemic

On 21-22 September 2020, the OECD Committee for Scientific and Technological Policy held a workshop on international technology cooperation in the context of digital transformation and the COVID-19 pandemic. Its co-organisers and partners were the South Korean Science and Technology Policy Institute (STEPI) and National Research University Higher School of Economics.

Experts noted that the current stage of digitalisation is fundamentally changing the nature of interaction between the state, science, and the private sector. Data is becoming a new driver of technological cooperation and economic development, which requires developing approaches to managing its use, especially rules for cross-border data transfer. Meanwhile, the existing data management models in the EU (common data environment), the United States and China (the Great Firewall) significantly differ from each other, hindering the development of international cooperation and the internationalisation of science. In this context, there is a growing need to develop network partnerships and to simplify the ways of sharing knowledge and research data.

Small and medium-size enterprises (SMEs) face the greatest problems with integrating into international technology partnerships, due to lack of resources, necessary competencies and digital infrastructure. Best practices for promoting SMEs involvement in international R&D networks are associated with establishing specialised platforms to facilitate interaction between SMEs and research institutions, providing financial support, and training technology-literate personnel.

The impact of digital transformation on international R&D cooperation, strengthening the role of knowledge-intensive assets (data, intellectual property, skills, etc.), "measuring" international cooperation, including the development of new indicators based on the analysis of big data arrays, were also discussed at the event.

Commentary

The ongoing global pandemic crisis largely determines both current and long-term actions of national governments. Given the need to channel a significant proportion of the available resources to stimulate the recovery of economic sectors and to support the population, setting funding priorities, and finding new funding sources come to the fore. Against this background, national science, technology and innovation policy patterns are

changing: new mechanisms of international cooperation, public-private partnerships, crowdfunding, etc. emerge.

In Russia, in the context of implementing anti-crisis measures (in the framework of the National Action Plan to restore employment and income of the population, promote economic growth and long-term structural changes in the economy approved at the RF Government meeting on 23 September 2020 (Regulation No. P13-60855 of 2 October 2020), national projects (including "Science", "Education" and "Digital Economy") are being actively adjusted in line with the RF Presidential Decree of 21 July 2020 No. 474 "On the National Development Goals of the Russian Federation until 2030".

The updated National Project "Science and Universities" (its draft was discussed on 30 September 2020 at a meeting of the project committees for the national projects "Education" and "Science") was reconfigured to accomplish the national goal "Opportunities for self-realisation and talent development", including "ensuring the Russian Federation's presence among the world's ten leading countries in terms of research and development, in particular by creating an effective higher education system". The national project will now comprise four federal projects: "Development of Integration Processes in Science, Higher Education and Industry", "Development of Large-scale Research and Science and Technology Projects in Priority Research Areas", "Development of Research and Training Infrastructure", "Development of Human Capital for the Benefit of Regions, Industries and the R&D Sector". The final version of the National Project "Science and Universities" will be ready by November 2020.

Sources: official websites of the RF President, RF Government, Moscow City Government, Ministry of Science and Higher Education, Ministry of Economic Development, Ministry of Digital Development, Rostech, Kommersant newspaper, OECD, European Commission, BRICS; websites of foreign countries' governments, agencies, companies, foundations, etc.

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