National Research University

Higher School of Economics

Rector

_____ Nikita Anisimov

seal

Development Programme (Draft Programme) of National Research University Higher School of Economics for 2021-2030

Moscow, 2021

The program (draft program) of HSE University is presented as part of the application to participate in the selection of universities within the “Priority 2030” program (hereinafter – selection).

The program (draft program) is aimed at assistance to HSE University in achieving the national goals of development of the Russian Federation in the period to 2030, at the balanced spatial development of the country, at availability of good-quality higher education in the regions of the Russian Federation, within the “Priority 2030” program.

The program (draft program) may be revised and improved based on the recommendations of the selection committee of the Ministry of science and higher education of the Russian Federation, and of the Council of support to development programs of universities within the “Priority 2030” program.

Оглавление

1. HSE University's Development from 2010 to 2020: Current Standing and Results. Target Model and its Defining Characteristics

1.1. Key Results of Development in the Previous Period and the Existing Potential

National Research University Higher School of Economics was founded in 1992 as a start-up university and was the first in Russia to begin training specialists in a wide range of professions required by the market economy in line with global trends; these professions included economists, sociologists, corporate finance professionals, marketing specialists, corporate lawyers and managers, business IT professionals, etc.

Due to the rapid development, leading countries need flagship universities that act as catalysts for innovation (e.g., MIT in the United States, Tsinghua University in China, and the University of Warwick in Britain), provide technological and socio-economic forecasting for the public sector and businesses, and offer appropriate solutions. Such universities create new R&D areas and new professions. For 1990s Russia's economy which lacked dozens of professions, this was especially important. From the very beginning, HSE University has been proactively developing and putting into practice new learning contents and methodologies, administrative techniques and organizational instruments. In so doing, the University has not repeated the innovative practices of the others; rather, it has been offering brand new solutions, which reflect Russia's both historical specifics and developmental objectives. Since 1999, a unique characteristic of the University has been its direct participation in developing national socio-economic programmes and driving key state policy changes.

HSE University completed implementing the goals of its 2020 development programme ahead of schedule in 2018, exceeding the overwhelming majority of its targets, and in 2020 completed the Russian Academic Excellence Project (Project 5-100). When implementing Project 5-100, HSE University maintained its leadership every year and received the highest rating from the programme's International Advisory Committee. Participation in national development projects has allowed HSE University to become one of Russia's largest universities that is able to compete both domestically and internationally.

By 2020, HSE University has turned into one of Russia's largest modern multidisciplinary universities that teaches humanities, socio-economic, STEM disciplines, natural sciences, applied arts and engineering. Over the past 10 years, physics, chemistry, biology and biotechnology, geography, electronics and communications, computer science and computing, software engineering, computer and information security, media, communications, linguistics, cognitive sciences, education, and design have emerged as the new fields offered at HSE University. In most of these areas, HSE University is not only a national leader but is also highly ranked internationally. From the very start, the University has been designed as both multi-program and interdisciplinary institution. All educational programmes at HSE University include significant interdisciplinary content in the form of special subjects that are adapted to their particular focus (including the work with Big Data, economics, law, and soft skills), minors (must be selected by students as two-year additional specializations outside of their main subject area) and electives. One third of Bachelor's graduates select Master's programmes in fields that are new to them. Nearly 40% of HSE University's research projects have interdisciplinary teams.

Between 2010 and 2020, HSE University transformed into a global research university and gained global recognition; currently, it is listed in the Top-40 global subject and industry rankings (QS, THE, ARWU). It is ranked in the Top-100 best universities in the world in 10 subjects, and in 22 subjects it is the only Russian academic institution to make it to the top rankings. In the QS Top 50 Under 50 ranking of young universities, HSE University is ranked 31st, and it is ranked 57th in THE Young University Rankings. HSE University is the only academic institution from Russia to make the Top-10 participants in Coursera, a global online education platform, both in terms of the number of courses and the number of learners.

Throughout its existence, HSE University has laid the significant groundwork in multiple areas (further information about this is provided in the respective subsections of Section 2 below).

1.2. Mission and Strategic Goal

HSE University's mission is to advance the global competitiveness of Russian science and education across a wide range of its activities, create and distribute new intellectual and educational products and technologies that can ensure Russia's sustainability and evolution in a rapidly changing world, and provide the environment for the new talents to develop and realize their potential.

HSE University's mission is informed by the provisions of the Strategy for Scientific and Technological Development of the Russian Federation, the National Security Strategy of the Russian Federation, the Strategy for the Spatial Development of the Russian Federation Through 2025, as well as the State Programmes of the Russian Federation (e.g., Education Development, Scientific and Technological Development of the Russian Federation, Information Society), the Digital Economy national programme, the national projects (e.g., Science and Universities, Demography, Healthcare, Ecology, Culture, Housing and Urban Environment) and other national programme documents.

HSE University's Strategic and Internal Goals

The strategic goal of HSE University is to strengthen Russia's position amidst heightened global competition for intellectual capital, achievements in science and technology, and economic and social efficiency and sustainability.

To achieve this goal, the University must reach a position that allows it to compete on an equal footing with the best universities in the West and rapidly rising universities in Asia, led by China. This implies:

– the forward-looking development of fundamentally new solutions in the field of organizing scientific research and education (including the solutions provided by the science and technology (hereinafter "S&T") and socio-economic-based forecasting), which will allow to outpace better funded foreign universities that have invested their resources in traditional tools and areas;

– introducing methodological and digital tools that provide better feedback from each student, thus increasing the success rate of mastering educational programmes (completion rates) up to 80-85%;

– building new networks of academic exchange and centres for academic excellence, starting new academic journals and conducting conferences with the countries with rapidly growing universities (“expanded BRICS”);

– maximizing the potential of digital solutions and remote-access solutions;

– participating in the most significant international collaborations;

– proactive investment in comparative research in social and economic sciences, including the research on the basis of applied problems that have been solved;

– expanding HSE University’s cadre potential through new mechanisms for recruiting practitioners and young academics, on the one hand, and distinguished young researchers from the global market on the other (by streamlining formats of international competitions, winter and summer schools, seed recruitment technologies).

HSE University’s internal strategic goal is its transformation from a research university into a global project and research university, which implies:

– transitioning to a predominantly project-based student education, with a high degree of individualization of their educational tracks;

– integrating up-to-date applied project-based approaches and involving respective distinguished practitioners from “non-academic” fields (e.g., business management, public administration, engineering, developers of digital solutions and resources, design, communication and media, applied arts, social NGOs) into University’s practices;

– consistently raising the effectiveness of basic and exploratory research and its share in transformational work (that expands the horizons and leads to new directions) and translational research (quick transfer to commercial application or other forms of social appropriation of research results);

– designing integrated S&T programmes and “big projects” aimed at producing results that can be used for capitalization purposes or substantiating and developing state and corporate policies, as well as educational models; cultivating a global “public domain of scientists”: academic toolsets in the form of original equipment bases, new research methods, knowledge and databases, and digital libraries;

– “seamless” convergence of scientific, educational, project and consulting activities; an active policy of forming educational and consulting markets, outpacing effective demand (“investments in markets” through a free and subsidized supply of new products and tools);

– implementation of models to transfer social and humanities’ technologies to the economic, political and public life; new forms for those technologies’ commercialization and social appropriation, including those based on digital solutions.

Many of the specified tasks will be performed for the first time not only in the history of Russian, but also global higher education. As HSE University pursues this goal, it will transition from trying to catch up to becoming a leader and making a notable contribution to Russia’s S&T development and global competitiveness.

1.3. Key Characteristics of HSE University’s Target Development Model, Comparative Benchmark Analysis of the University’s Target Model

HSE University is a young, dynamic university that plays a leading role in Russian higher education. In a number of subject areas, it is ranked among the top universities in the world. The University is focused on research leadership and moving up in the hierarchy of the global higher education space. At its new stage of development, HSE University compares itself with global leading universities, which, in their characteristics and development tools, align with HSE University’s target model and their understanding of their own development trajectory. The academic institutions selected and their characteristics are presented in Figure 1 below.

Figure 1. Global universities with characteristics and development tools that can serve as useful reference points for HSE University’s target development model

At the same time, HSE University cannot focus exclusively on external examples. Its development model should be original, not only from the perspective of Russia's specific challenges, but, above all, from the standpoint of its own innovative potential.

As we can see, the leading global universities are developing areas that are either the key ones to HSE University, or are those that are being identified today as the most important areas of its development. Direct copying of their experience and their institutions would be an attempt to repeat the successful policies of the past decade in the next decade; however, with significant differences in resources and existing institutions. To catch up with and overtake the leaders, HSE University will study their experience and develop its own original solutions and mechanisms.

New Conditions for HSE University's Development: Vision-2030

By 2030, the University will be operating under fundamentally new conditions.

Sustainability, both environmental and economic (resource limitation) and social (pressure limitation) will become the top public and government priority. This will not only place new restrictions on economic growth, but will also put forward completely new parameters (areas) for the desired changes.

Along with basic economic and legal knowledge, both digital culture and culture of "soft skills" will become core components of any education and a requirement on labour markets. For the vast majority of professionals with high qualifications (corresponding to higher education) the job market will become global, which will result in a shortage of staff in countries that lag behind in terms of income and quality of life.

For Russia, traditional sources of export revenue will have been largely exhausted, and the task of "nurturing growth" will arise in all sectors of the economy without any priorities and exceptions.

The options of budgetary stimulation (co-financing) of the economy will have been almost completely exhausted, which will require a new market organization. In particular, markets will need to be de-monopolized, with ensured protection of property and business. Production and the labour market will be largely re-oriented towards private demands; the demand for innovation will shift from the public to the private sector.

Social policy will become strictly targeted in nature, and programmes for demographic stimulation and "universal" social support will be partially curtailed.

The public higher education system will be largely weakened by competition from both commercial providers of specific qualifications and short programmes and from global universities offering effective online degree programmes.

Progress in machine-aided translation will completely remove the barrier of foreign languages in education and professional activity. As a result of this, large foreign providers will be rapidly branching out into the national education markets (the "Microsoft effect of the 1990s") and elimination of the weakest participants in the domestic educational market. Efforts made by the state are likely to focus on preserving the national model for basic general schooling and the national cultural tradition. Not only tertiary and secondary vocational education, but even high school will be subject to strong competitive pressure (usually in the form of online programmes).

As a result of the digital revolution, the effectiveness of general education will increase significantly. Educational success will go up from 75% to 85-90%, which can

reduce the demographic deficit of young people in the labour market and, above all, drive a significant increase in demand for educational programmes.

It is possible to foresee the rapid development of blended education that includes significant elements of online and digital learning along with practical and project-based activities (internships) held in-person, and development of "composite" academic degrees and network formats of instruction. Leading universities will start offering a large number of online programmes and individual courses, and their educational markets will be both providers and recipients of such products. There will be a diffusion of universities (along with commercial providers) into high schools, where they will take on specialized and pre-professional training.

New digital services for educational coaching and consulting, design of educational programmes, customization of educational trajectories, and independent assessment of analytical and professional competencies will be emerging on educational markets. The adult education market itself will grow significantly due to an increase in the share of learners aged 25-45 to 65% and aged 45-65 to 30% (compared to the current Russian level of 20%). Another new segment is training programmes for narrow professional qualifications (i.e., "micro-degrees"), which will both complement the core degree programmes and become elements of those programmes.

Research and project work will be developing much faster in large companies, and less intensely in universities. At the same time, the system of state-financed scientific research (pretty much as the private one) will likely focus on the most promising areas with transformational and translational potential: a system of S&T information and forecasting will be created to identify such areas. Due to the continuing rise in the cost of experimental science and experimental manufacturing, there will be rapid growth in international collaboration, with ensuring access thereto for national science becoming a new foreign policy objective. In addition, computer simulations of experiments and prototypes will be accelerated, which will trigger a "supercomputer race".

It is possible to see a trend towards more rapid development of interdisciplinary research areas, including, among others, social sciences and humanities' research and art projects, which can be translated into integrated technologies that are aimed at prompt commercialization.

With regard to specific technologies and professions, however, a certain forecast will only be relevant for 5 years since 10-year forecast has proven to be highly unreliable as the experience of 2010-2020 has demonstrated.

Key Characteristics of the HSE University's Target Model

A rather high level of uncertainty of development for the period of 10 years or more sets an orientation towards basic and exploratory research with a good transformational or translational potential, deep analytical training of students and creating a flexible system for organizing science and education that is capable of quick restructuring.

HSE University will direct its efforts and resources on implementing an advanced interdisciplinary research agenda in the context of global challenges and national interests in line with the country's national development goals, the priorities of the Science and Technology Development Strategy of the Russian Federation, and the National Security Strategy of the Russian Federation.

HSE University will use its strategic advantages in the area of scientific and technological analysis and forecasting, not only to advance this area but to build the forecasting capability for environmental, economic and social processes by 2025, both in the interests of the state and corporations and society at large. Effective tools will be created for S&T policy, environmental and socio-economic forecasting based on AI and qualitative (semantic) analysis of databases and knowledge bases. In turn, analysis and forecasting of the subject field will become a required element of all new scientific and educational projects at HSE University.

HSE University's strategic and institutional projects will reflect the institution's comparative advantages: a very high level of cadre potential, interdisciplinary focus, connection with economic practice and policy, and opportunities to concentrate resources (reinvesting the University's revenue).

In its strategic projects, the University will focus on developing its "points of growth", where, first, HSE University has the most academic advantages in Russia, second, its R&D work is in high demand both by the state and by the business community, and, third, where it largely meets the today's global agenda of S&T frontiers. In addition to forecasting activities, the following areas will also be pursued:

– modelling sustainable growth and inclusion of the majority of the citizens in social policy development;

– evidence-based urban development combining transport, environmental, economic and social modelling;

– "human enhancement", i.e. development of the individual's personal abilities and talents with a focus on digital, cognitive, biological, medical, engineering, cultural and educational technologies;

– key digital technologies (AI, IoT, CPS, CV); their technological, social, economic and environmental effects, as well as researching the effectiveness of respective investment therein.

A key improvement achieved by strategic projects will be possible thanks to the activities at the intersection of academic disciplines, a seamless translation of results into educational programmes, start-ups, economic and social practices.

In certain areas, including strategic projects, HSE University will create its own centres of excellence – frameworks for distinguished academics, the most promising graduate students and postdocs, as well as regular research Olympiads and schools for talented learners from around the world. A key feature of these centres shall be the development of conditions for high-quality researchers, who, in their respective fields, will be able to collaborate with each other. The first of these centres of excellence will be based at the University's Faculty of Mathematics in Moscow (further information about this can be found in Appendix No. 9 "Creation of International Centres of Excellence at HSE University (the example of the Faculty of Mathematics)".

Apart from strategic research projects, a "Big Projects" portfolio, which commenced in 2020, will continue to operate, implemented on an interdisciplinary (inter-faculty) basis and engaged in solving socio-economic and technological tasks

that are crucial for clients from outside of the University. A significant part of the Big Projects will be focused on the development of new academic tools, including new original equipment base, new research methods, knowledge bases and databases, and digital libraries that can be used by academics from other institutions. A key feature of the University's Big Projects is the "seamless" inclusion of the results into the real-life educational process through students' project work and the development of special courses. By 2030, at least 25 such projects will be implemented, involving at least 20% of researchers and doctoral learners, as well as 5% of the University's students.

Strengthening positions in the R&D market and increasing revenue from this activity will occur through the development of full-cycle projects, ranging from fundamental ideas to the creation of high-demand products and services (including the development and justification of state, regional and corporate policies). By 2030, the volume of R&D will be 10 billion rubles, nearly double of 2020 R&D.

An increase in the transformational and translational potential of research developments by HSE University's scientists will lead to the increase in their global recognition. By 2030, the number of publications indexed in quartiles 1 and 2 of Scopus and WoS will exceed 2,000 units, and the share of HSE University academic staff who have such publications will come close to the share of those who have any publications in these international databases in 2020 (60% and 65%, respectively).

The result will be an increase in HSE University's involvement in addressing global research agenda in partnership with leading global and Russian universities and research centres. University's entry into global and regional (interstate) academic collaborations, including initiation of such collaborations by HSE University itself will be particularly important.

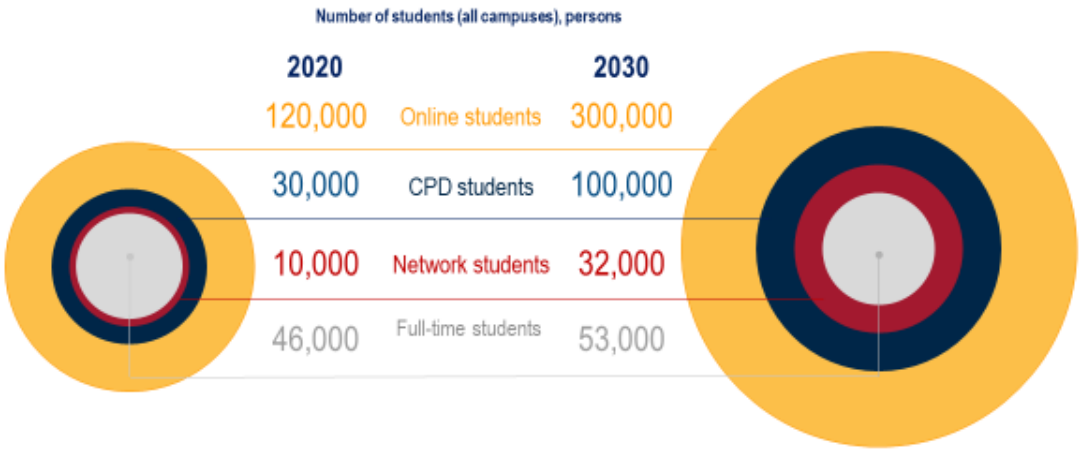
The University's translational policy will be underpinned by the development of science-intensive and social entrepreneurship, expansion of commercialization and social appropriation of the results of innovative activities in all areas of the University's R&D work. By 2030, HSE University's direct commercial revenue alone from traditional intellectual property in engineering and natural sciences will amount to at least 100 million roubles. At the same time, in new fields, such as computer and

cognitive technologies, the items of intellectual property have not been formalized in a traditional sense due to the short life of technological solutions, while social and humanities' technologies, as a rule, have an alternative to the commercialization form of social appropriation. By 2023, HSE University will develop, in 2024 it will reach an agreement with the founder and key partners, and starting from 2025, it will introduce a form of recognition and fixation of intellectual property in the areas not related to traditional regulation of intellectual rights.

HSE University's research community will grow relatively modestly - by 20-25% - in its 'core' population (full-time staff), but it will more than triple due to the research-track Master's and doctoral students, foreign researchers from partner laboratories and colleagues from Russian universities and research organizations.

HSE University's educational model will change significantly by 2030. The main driver of this change will be the digital revolution, which brings radical changes both to the labour market (at least, its upper segments, which are targeted by HSE University) and the content of the programmes of the full secondary education, higher education and continuing professional education (hereinafter "CPD programmes"), as well as educational resources and teaching methods, linked thereto.

Figure 2 - Changes in the HSE University student enrolment in 2020-2030



HSE University is not interested in rapidly increasing the number of students in core degree programmes (see fig. 2) given both personnel and infrastructure constraints, and not willing to lower the quality of admitted students (for Bachelor's programmes in Moscow and St. Petersburg they currently score 95 out of 100 points for government-funded admissions and 85 out of 100 points for the students who pay their tuition). Growth in the student population will be due to: (a) continuing education programmes; (b) network programmes, including HSE University's micro-degree programmes with other Russian and foreign institutions; and (c) students from online programmes around the world. This policy will prevent dilution of the HSE University brand, strengthen the educational influence of the University, and increase revenue.

A specific feature of the University's target model is the formation of a single distributed campus, which will ensure a uniform selection of educational products and services, accessible at all geographical locations of HSE University, while retaining its own identity at every location thanks to developed specializations and existing research teams.

The key priority of HSE University's open data policy includes a single open educational and scientific space that is equally accessible to all potential target audiences and that provides all participants in the University's digital ecosystem with resources and services of digital infrastructure, open data and open interfaces. HSE University will form a shared open data portal on the University's website based on the standards adopted by the University and taking into account relevant international practices.

HSE University's key priorities in the development of its financial model are:

– making sure the University maintains its position as a provider of quality education, expert analysis and consulting services, while generating products with high margins; maintaining a "reputational limit" (i.e., making sure only high-quality applicants are admitted);

– capitalization of accumulated intellectual capital through entry into new markets for education, science and technology; creation of highly profitable educational and consulting products;

– preserving a model for revenue distribution, with at least 25% of the University's cumulative revenue going to development project implementation; at the same time, redistribution of revenues generated by earning subdivisions shall be regulated by their capacity to invest in their own respective development;

– boosting internal productivity and efficiency, through optimizing the University's programme portfolio, modernizing its administrative processes through IT application, and introducing a new accommodation model for international and non-Moscow-resident students.

HSE University's revenues will increase at an even faster rate thanks to its new digital products and services, e.g., offered on the global market, as well as new types of continuing education programmes, provided in a package along with consulting services. In turn, the University will consider the possibility of offering tuition-based programmes for high Lyceum-type schools, taking into account that such programmes are highly profitable. At the same time, it appears impossible to forecast, with certainty, a stable growth in revenue from the export of higher education in traditional formats.

By 2030, the cumulative gains on the University's annual revenue (excluding Capex) shall be at least 80%; the University will be allocating at least 25% of its total revenue each year to implement the development projects.

1.4. Unique Characteristics of the University's Strategic Positioning and Development Areas

Cross-curricular Connections. At the new stage, HSE University will develop as a comprehensive academic institution with a high level of interdisciplinarity where social sciences and humanities, natural sciences and engineering, mathematics and computer science develop, enrich and complement each other. A priority shall be given to the projects at the intersection of academic disciplines and the inclusion of a mandatory "going beyond one's career path" approach in degree programmes.

While maintaining its leadership as a national research and methodological centre for the development of economic and social policies, HSE University will expand its analytical toolset thanks to research in computer and natural sciences,

cognitive sciences, humanities and arts. At the same time, the University will invest in comparative studies of policy and international collaboration in statistics and sociology.

The global presence of HSE University, representing Russia in 40 global subject ratings, allows the University to take the lead in recruiting high-quality international students, doctoral students and postdocs, e.g., from the countries with mature university systems.

As one of the global leaders in online education, HSE University creates the potential for a qualitative expansion of educational opportunities of each instructor and student, thus transforming the University into an open educational space, which will make the majority of HSE University educational products and services available to a wider audience outside the institution's physical premises.

In the University's Orbit. Individual educational trajectories of students at HSE University are not restricted to student time. The point at which students enter the University is not rigidly tied to their life trajectory, and the exit from the University, taking into account continuing education programmes and the involvement of graduates in research, project and educational activities, can be delayed for a long time.

Having significant potential as a research and project university, HSE University will implement a fundamentally new educational model based on the rapidly growing capabilities of digital technologies (where the University is now a leader) and on the existing potential of socio-economic areas closely related to practice. The University's global competitiveness and reputation will allow it to quickly advance in the regional and global higher education markets, opening new educational products and formats. The network educational products conceived by HSE University in partnership with regional universities will be key to bridging the gap in education quality in the capital cities and regions, while also building a general high-quality educational space throughout Russia.

The University will continue relying on cumulative potential and maintain proven **tools for identifying and developing talent**: Olympiads, subject schools, lecture sessions for applicants to Bachelor's and Master's programmes, HSE Lyceum

educational programmes. HSE will expand the geography of its presence through partner schools in most Russian regions and internationally using flexible approaches to selecting and recruiting applicants – primarily through a variety of forms of intellectual competitions – and introducing online and blended formats of communication with both school students and applicants. Strengthening interaction with professional communities of subject instructors and increasing the number of centres for identifying talent abroad will contribute to an increase in the level of training of international applicants.

Recruiting the **strongest and most motivated students**, HSE University is focused on nurturing conditions for the success of each of them, fostering professional and civic ethics, understanding and supporting national and corporate interests and values and mutual assistance. The University will put in place conditions to involve students in research, educational and extracurricular projects, develop a system of mentoring and student volunteering, and expand opportunities for alumni to participate in the life of the University, in mentoring and loyalty programmes.

Having proposed a number of approved **HR policy tools** for the Russian higher education system, HSE University is prepared to develop and implement new forms and mechanisms for organizing and developing employees, including the transition to a differentiated and flexible system of professional trajectories for academic staff and raising the professional requirements for employees through providing new opportunities to develop competencies, increasing the University's social responsibility as an employer, and improving the social protection of staff.

HSE University provides **systemic support for regional academic institutions** by implementing a wide range of tools. Its innovative approaches are open to regional education systems. The University Partnership project, which was launched in 2020, includes activities aimed at developing cadre of partner universities; internships for instructors, researchers and administrators; Russian postdoc programmes; "mirror" research laboratories; joint research projects; and supporting the research output and network educational programmes. The presence of stable partnerships will allow HSE

University to develop these tools and other new ones, thereby narrowing the existing gap in the quality of education in the capital cities and regions.

1.5. Major Constraints and Challenges

At this stage of development, the University faces a number of internal and external challenges, including:

– growing competition for the best researchers in both the domestic and international academic markets due to demand from leading Russian universities and the targeted policy pursued by a number of states to create world-class universities;

– uncertainty in the creation and development of the world-class research teams and ensuring the University's presence in the top lists of international ratings in an unstable geopolitical situation;

– limitations of the tools to transfer knowledge and technologies that have been developed in the academic market and the related problems of the translational potential of research (mostly in the humanities and partly in the social sciences, but also in computer technology);

– high cost of equipment and supercomputer clusters to ensure global competitiveness; the phenomenon of constant functional depreciation of the IT infrastructure in relation to the current levels of digital services;

– significant infrastructure restrictions (only 50% of the need of Russian universities in classroom and laboratory spaces and dormitories is currently covered), which create obstacles to developing continuing education programmes and recruiting international students. In 2020, the estimated lost income of HSE University in these two areas amounted to approximately three billion roubles; extrapolating the restrictions for 2030, it is likely to amount to seven to eight billion roubles per year;

– significant uncertainty driven by the COVID-19 pandemic in the global education market and stringent restrictions on educational migration that undermine the options for academic institutions focused on the global (i.e., going beyond the Russian-speaking) student market, including HSE University. This factor will be felt until at least 2023 and, because of that, the University will likely see a significant drop in its traditional higher education export numbers compared with the baseline values

for 2019. Restoration of sustainable growth (taking into account psychological factors) may occur only from 2024.

2. Plans for Meeting the Target Model: HSE University's Policies in Key Areas of its Activities

2.1. Educational Policy

In terms of educational policy, HSE University was the first Russian academic institution to implement the "Bachelor's + Master's" model. This came alongside a number of other educational innovations that ensured a consistently high level of mastery of analytical and professional competencies on the part of graduates, as well as a strong reputation among both applicants and employers. In particular, these innovations included majors and minors, a modular system for learning with continuous feedback and cumulative assessment, an "Antiplagiat" system (counter-plagiarism software), foreign language instruction with external testing (certification), and a significant number of subjects taught in English (100% of students speak English for professional communication). Furthermore, HSE University aims to develop students' economic and legal literacy, and was the first Russian university to introduce the Data Culture module into its Bachelor's programmes (100% of Bachelor's students are currently covered by the programme's courses).

In 2020, more than 47,500 undergraduate and graduate students were enrolled in degree programmes. Of these, 27.8% are Master's and doctoral students, and 12% are international students from 122 countries. More than 300 Bachelor's and Master's programmes are offered, and approximately 40 of these are available for doctoral studies in a wide range of subject areas, six English-taught Bachelor's programmes and 36 Master's programmes that are delivered in English. More than 60 double-degree programmes are offered in cooperation with leading foreign universities. There are 227 online courses provided via the Coursera platform and the National Open Education Platform, with 10 specializations (pursued by over five million learners from 195 countries); in addition, nine Master's and two Bachelor's online programmes are taught in English and Russian on the Coursera and online.hse.ru platforms.

In the natural sciences, HSE University has developed stable partner relations with research institutes of the Russian Academy of Sciences (hereinafter “RAS”), utilizing the natural sciences faculties at HSE University and pursuing a “learning through participating in research” approach, whereby partner institutions oversee the entire design of programmes and involve selected highly motivated students in activities at their respective laboratories.

HSE University’s stable brand, attracting the strongest applicants both domestically and internationally, has emerged on the global education market. The University ranks first in Russia by the quality of students admitted to both government-funded and fee-paying places (among academic institutions with the enrolment exceeding 1,000 people): the average USE score of the government-funded enrollees was 95.2 points out of 100, while admitted tuition-paying students received an average USE score of 84.8 points out of 100 at the Moscow campus. The University also ranks first in the country by the number of admitted Olympiad winners and runners-up (in 2020, 563 winners and prize-winners of the All-Russian Olympiad for School Students were enrolled in all HSE University’s campuses).

The University runs degree programmes on the basis of talent concentration platforms, as well as "resource centres" for young people abroad (in 2020, these covered five countries). Over the past 10 years, the admission of foreign students has seen a 40-time increase. A bilingual environment has been created (85% of programme managers speak English, there is an English-language website, and the University services and campus navigation operate in two languages).

In partnership with Russian and foreign institutions of higher learning, HSE University undertakes transfers to Russian universities (over 50 institutions) of proven practices and original educational programmes and their modules (including e-courses) under franchise agreements, along with independent student assessments, double-degree programmes. The total number of international student exchange agreements increased 8.4 times, from 34 in 2013 to 284 in 2020, and the total number of partnership agreements increased 3.6 times from 215 in 2013 to 780 in 2020.

HSE University is a national leader in continuing education: the revenue generated on the open market in 2020 amounted to 1.2 billion roubles. Furthermore, the University possesses a multi-product portfolio of CPD programmes with a block-modular structure (Lego-style) offered in full-time, online and blended formats (it occupies approximately 1% of the Russian market for continuing education and CPD programmes, approximately 5.4% for MBA programmes, 3.2% for programmes in digital skills and technology, 1.4% for design and creative industries, and 1.2% for instructor education and social sciences). However, HSE University's potential in this regard has not been fully realized: the University is still not sufficiently represented in the highly profitable corporate segment, and niches have not been found in the markets for online programmes, which would allow for high-margin programmes, while the humanities and natural sciences have practically no commercially oriented programmes. In addition, unjustified duplication of core and continuing education persists. To overcome these issues, a unified Graduate School of Business and the Graduate School of Law and Administration were created in 2020, which brought together all programmes in management and legal areas.

Key areas of HSE University's development in educational policy:

1. Providing support for talented school students and Bachelor's learners capable of continuing their studies at the next degree level at top Russian universities:

– creating an online platform for intellectual contests and teamwork among participants, developing academic knowledge and practical skills, project thinking, independent grading of papers, etc.;

– digital transformation of the HSE University's Lyceum; dissemination of its model and experience among regional education systems and HSE University campuses (average USE score for admission to a government-funded applicants in Moscow should come to at least 90 points and for the applicants who pay tuition – at least 80 points);

– at least 20% of Olympiad diploma holders among freshmen in Bachelor's and Specialist programmes by 2030 – in Moscow and 8% at regional campuses; at least 30% in Moscow, and 13% at regional campuses in Master's programmes;

2. Launching special projects to attract international students and University's participation in major intellectual student competitions at the international level;

3. Providing electives and options for the customization and individualization of educational tracks, the rapid adjustment of educational programmes in order to address new objectives. The share of Bachelor's students, who have mastered supplementary qualifications, and have been issued certificates, shall come to 75% by 2030; the share of graduates (with at least five educational outcomes according to the degree requirements) that have undergone independent assessment at the University shall come to 50% in 2024 and 100% in 2030;

4. "Seamless" integration of student project and research activities into educational processes. By 2030, 100% students after Year 1 will take part in relevant projects; at least 85% of them will be involved in research and applied projects with a focus on future professional activities; the share of students involved in current research and project tasks commissioned by external clients will come to 30% by 2030;

5. Improving doctoral education should include the inclusion of doctoral students in large-scale S&T projects, increasing their pay to a level at or above the average in their region; supporting academic mobility, developing partnerships with regional universities through training researchers (by 2030, the share of Master's research track students will be 30%, while doctoral schools' effectiveness will come to at least 30%);

6. The extensive use of online technologies in order to

– expand student access to courses and research supervision;

– create teaching teams with the goal of supporting common courses or projects;

– provide e-learning resources (e.g., AI-driven ones) for replacing duplicating elements of core lectures;

– provide individual adjustment for ongoing assessment elements;

– conduct resource-intensive role and strategic learning games for honing professional evaluation and professional decision-making skills.

By 2030, online technologies will be utilized in 60% of courses; 25% of courses will be held completely online, including seminars and consultations/tutorials, at least 200 specialized digital resources will be created, with at least 300 digital resources of

external providers being used, which will free up at least 15% of faculty's workload, and 30% of that for teaching assistants);

7. The use of digital and online technologies will also facilitate the creation and promotion of globally-oriented educational products and the consistent presence of HSE University among world-class universities that are leaders in online education market (by 2030, total enrolments in online courses will reach 5 million persons a year, recipients of certificates upon the completion of studies – 100,000 persons a year; 30 specializations will be available via global online education platforms; a total of 2,000 e-courses and similar digital resources will be made accessible);

8. Creating an environment for attracting international students under new global market conditions by the timely development of educational programmes taught fully online and bridging programmes, in addition to international intellectual contests for applicants (by 2030, over 50% of those will be held in Russian and English; by 2030, the share of international students in overall student population will come to 15% at Moscow campus, e.g., at least 3% due to online programmes (only to the high volatility of today's global situation, any robust forecasting for a higher growth appears unfeasible));

9. HSE University Master's programmes will be split (at present, the University is the largest provider of Master's instruction in Russia) into two key types: Master's programmes offering core subject competencies for Bachelor's graduates seeking to change the focus of their studies, which are equivalent to Master of Arts at most world's universities; and Master's programmes offering advanced subject-specific competencies, drawing upon previously completed Bachelor's studies with a similar concentration, which are the equivalent of Master of Science at major international universities. For graduates who have completed educational programmes different from those offered by HSE University (i.e., with fewer required professional competencies), a bridging CPD course will be designed, which will also be available in an online format. This will remove current problem of "dissatisfaction on both sides", that is, when certain applicants have to face overly difficult subjects, while the other applicants, who have previously graduated from HSE University or several other

top universities, are concerned that they have to repeat many subjects they have already mastered as part of their Bachelor's studies;

10. Creating a model of supplementary qualifications (Microdegree), with the option for learners to acquire new professional qualifications while studying under the main programme; they will enjoy digital access to course selection, learning and final certification along with record in the public register of qualifications and certificates by the National Council for Professional Qualifications, confirming students' qualifications;

11. Developing a portfolio of HSE University network programmes, offered jointly with Russian and foreign universities in three main formats: double degree programmes, microdegrees and the inclusion of HSE University's MOOCs in the curricula of its partner universities (by 2030, the network projects will involve 32,000 Russian and international students);

12. Transforming CPD programmes into one of the key areas of the University's operations:

– by 2030, revenue from CPD programmes will reach six billion roubles, accounting for at least 20% of additional revenue from education at the University with more than 60,000 CPD graduates;

– consolidating business education programmes at large subdivisions, which can implement large-scale programmes for the corporate sector, while also providing them with consulting and analytical services;

– developing additional education as an element of student and applicant learning at HSE University, which would coherently complement core degree programmes;

– continuing education programmes will build upon existing educational outreach activities in the natural and exact sciences, humanities and art & design;

– forward-looking development of groundbreaking new services that can supplement educational programmes;

– independent assessment of high school students'/ post-secondary students' / adults' competencies;

– educational consulting and coaching; and,

– psychological support.

Forecast impact of the educational policy:

– a system of new intellectual competitions will attract over 200,000 high school students, thus ensuring early career guidance and talent development;

– a new model for the organization of student instruction can promptly react to the objectives for S&T development of the Russian Federation and its regions, sectors of the economy and social area;

– network programmes in combination with independent tools for measuring educational outcomes will help to improve the quality of higher learning in Russia's regions;

– positive influence on students' readiness to master e-courses, using various platforms, e.g., for continuing studies after graduating university;

– developing a system of independent measurements at the national level to compare the quality of degree programme offerings in various regions;

– shorten the professional adaptation time for graduates after initial employment; also, there will be more graduates finding work related to their major;

– HSE University will be a recognized lifelong learning centre, thus facilitating the further development of adults for professional or personal purposes by providing formal and informal learning solutions, as well as recommendations concerning development and self-education tools;

– joining geographically new markets, introducing online recruitment tools, a system for digital marketing and personalized communication with Russian and international applicants will enhance the competitiveness of the University and the reputation of Russian education overseas, as well as the provision of support to the overall development of Russian education exports;

– positioning of the University's educational programmes and research schools at the open market shall contribute to the sustainability of HSE University's global brand online.

2.1.1. Establishing the necessary conditions for the formation of digital competencies and skills of using digital technologies among the students, including students of IT

HSE University has several years of experience (since 2017) using the Data Culture (https://www.hse.ru/en/docs/430297536.html) module to develop digital skills among all of its undergraduate students. In turn, this experience builds upon the federal project "Personnel for the Digital Economy" of the national programme "Digital Economy of the Russian Federation". It includes courses that teach digital skills for the creation of algorithms and programmes for practical use, as well as mastering new digital technologies as part of core degree programmes with non-IT majors. For a definition of digital skills and their relation to respective fields of study, refer to Appendix No. 7 "Information on establishing the necessary conditions for formation of digital competencies and skills of using digital technologies among students, including students of IT".

The courses of the Data Culture module aims to provide students with knowledge about data science and the ability to methods and tools for analysing Big Data when dealing with professional tasks (further information on the integration of courses into curricula is provided in Appendix No. 7 "Information on establishing the necessary conditions for formation of digital competencies and skills of using digital technologies among students, including students of IT".

The results of how the University students master digital skills are subject to mandatory independent assessments, which involve representatives of digital companies (Yandex, Sberbank, Kaspersky Lab, SAS, JetBrains, Tinkoff, etc.) and are separate from the interim assessment process, which is conducted within a module's courses. Independent assessments verify the extent to which end-to-end digital skills have been instilled at a particular level, regardless of the field of study. The levels are described in the Data Culture model under the founding concept of HSE University.

The module is supported with advanced training and professional retraining programmes for instructors in non-IT subjects, which aim to develop digital competencies and skills that can be used to transform core and elective courses. This

result will serve as resource for expanding the lists of professional activities of future graduates (further information on this is provided in Appendix No. 7 “Information on establishing the necessary conditions for formation of digital competencies and skills of using digital technologies among students, including students of IT”.

Along with the mandatory module on end-to-end digital skills, students have an opportunity to enhance their individual educational trajectory with elective courses, optional courses, minors, and research seminars, as well as project or research work. Elective elements that aim to develop digital skills made up less than 15% of students’ individual curricula in 2020, but this figure is expected to reach 25% by 2024, as all undergraduates will be able to independently shape the trajectory of how they develop their digital skills.

By 2024, the Data Culture module may be transferred to other universities as a package solution, which would contribute to academic mobility in non-IT fields of study. Students from other institutions will receive HSE University certificates following their completion of the module and the results of an independent assessment of their digital skills (further information on academic mobility is provided in Appendix No. 7 “Information on establishing the necessary conditions for formation of digital competencies and skills of using digital technologies among students, including students of IT”). The module’s package solution would enable universities to independently choose the pace at which its elements are mastered. The module may be supplemented with various measures to accelerate the instilment of digital skills. For more information on measures to accelerate the development of digital skills, please see Appendix No. 7 “Information on establishing the necessary conditions for formation of digital competencies and skills of using digital technologies among students, including students of IT”.

The University counts student projects prepared using their digital skills, including start-ups, as their theses.

The provision of the Data Culture module requires special equipment and continuously updated software applications (further information about this is provided in Appendix No. 7 “Information on establishing the necessary conditions for formation

of digital competencies and skills of using digital technologies among students, including students of IT").

Specialists' planning and training are based on personnel and skills-based data analysis, in conjunction with monitoring using specialized platforms. The University contributes to the training of specialists for the digital economy and preparation of instructors for both itself and other Russian universities.

2.2. Research Policy and Policy for Innovation and R&D Commercialization

In terms of research and innovation policy, as well as in the commercialization of inventions, HSE University has evolved into a global research university: world-renowned scientists work at the University, including Nobel and Fields Prize winners; almost 70% of academic staff have globally acknowledged research results, and, as of 2020, 48 international laboratories operate with a focus on global scientific frontiers and headed by the world-class scientists; each fundamental research project is carried out with international participation. In the natural sciences, HSE University has developed stable partnerships with 19 academic institutes under auspices of the Russian Academy of Sciences (hereinafter "RAS") in the unique format of natural sciences faculties at the University. HSE University has the right to award its own academic degrees (there are 18 dissertation councils). In 2020, following a competitive selection as part of the national Science project at HSE University in collaboration with the Russian Presidential Academy of National Economy and Public Administration, the Moscow State Institute of International Relations, and the N.N. Miklouho-Maklay Institute of Ethnography and Anthropology (RAS), a world-class research centre called the Centre for Multidisciplinary Research on Human Potential was set up, which focuses on priority areas of S&T development in the Russian Federation, the only world-class research centre selected by the Russian Government to conduct research in social sciences and humanities.

Total research and development activities (hereinafter "R&D") funding stood at 5.19 billion roubles in 2020 (for this indicator, HSE University ranks 2nd among Russian academic institutions). Based on the total number of grants from the Russian Science Foundation, HSE University ranks 1st in social sciences and humanities and 4th

in mathematics and information science. The University also received 11 mega-grants between 2010 and 2020.

The number of Web of Science (hereinafter "WoS") publications has increased more than tenfold since 2010 (in 2020, there were 2,705 publications). In Scopus, the increase was even higher – 16 times (3,406 publications in 2020). The number of articles in Quartile 1 (according to SNIP) increased 35 times (920 articles in 2020). The number of publications in the one percent top articles by the number of citations for respective subject areas stood at 133 (for 2016-2020), with the total volume of citations being at 88,372 (2016-2020). A total of 37.6% of publications (Incites, ESCI) were co-authored by researchers from top global universities. A total of 15 HSE University journals were indexed in international databases in 2020: 13 in Scopus, and two in both WoS and Scopus.

The volume of applied R&D works carried out at HSE University (excluding the funds commissioned by the government) has tripled since 2010, standing at 2.8 billion roubles in 2020. In 2020, the total amount of received revenue, including that received from Russian organizations, amounted to more than 1 billion roubles. At the same time, works commissioned by federal agencies over the past years was balanced out by an increase in requests from enterprises, cities and regions of Russia.

Among the priority R&D policies at HSE University is the development of systemic long-term partnerships with market-leading companies, federal and regional authorities, state corporations, leading universities and research organizations, and global firms. The University also prioritizes the creation of consortiums to carry out significant projects for Sberbank, Yandex, VTB, Sistema, Transneft, Russian Post, MTS, Mail.ru, Severstal, Russian Railways, Russian Helicopters, Aeroflot, Huawei, etc. HSE University is also the flagship university for Gazprom and a member of Gazprom Neft's League of Universities.

A special aspect of applied R&D at HSE University is its interdisciplinary nature coupled with application of the results generated by its own fundamental research. The University takes advantage of opportunities for organizing joint research in economics, sociology, law, administration, on the one hand, and in computer, cognitive sciences,

engineering and natural sciences, on the other. Over recent years, the University has started to develop new interdisciplinary fields, utilizing research results in natural sciences, including those produced by HSE University's partners in RAS institutes.

The University is a nationally recognized centre for providing expert analysis. At present, approximately 50 projects are being carried out on behalf of the Russian Government and the Russian Presidential Administration, the Accounts Chamber and the Federal Assembly of the Russian Federation to further the country's socio-economic development, state administration, social policy, education and science, foreign trade and foreign policy, etc. In turn, a total of 16 large-scale monitoring studies are being conducted with respect to social and economic development.

HSE University represents Russia in expert groups within major international organizations and associations (e.g., OECD, Eurasian Economic Commission, World Bank, WTO, etc.); in 2020, the University had 780 cooperation agreements with global organizations.

The University has developed Russia's most complete support system for fundamental science. Its key elements include a system of academic merit bonuses, which support individual research achievements with an ever-increasing requirement for international validation of results (in 2020, 700 instructors and researchers received 860 million roubles, thus increasing their core salary by 1.5 – 2 times). Furthermore, the University operates the Programme for Fundamental Research, with a budget of 1.6 billion roubles, in 2020; approximately 2,000 researchers were involved in 123 projects of the Programme; international laboratories are headed by world-leading scientists and carry out research with a focus on global scientific frontiers; over 100 research laboratories and groups operate with early student involvement in R&D activities. In addition, the HSE Academic Fund programme and the research budgets at faculties and subdivisions finance initiative research and international academic staff mobility.

The University has created a number of excellent research facilities. The Joint Economic and Social Data Archive (hereinafter "JESDA") is a unique archival collection that provides open access to empirical research data in social sciences. The

Russia Longitudinal Monitoring Survey (RLMS-HSE) is a unique longitudinal household survey, which has been ongoing since 1994. The iFORA Big Data mining system (based on HSE University's own supercomputer and data cluster) was singled out by the OECD as a significant example of scientific digitalization. A unique research installation, the HSE Synchronous Eye-tracking, Brain Signal Recording and Non-Invasive Brain Stimulation System, was the 2021 winner of a support programme run by Russia's Ministry of Science and Higher Education.

The University operates a business incubator was ranked first among the world's best university accelerators according to UBI Global. In turn, the University has been implementing the Foundation for Support of Innovative Entrepreneurship (since 2010) via competitions for the HSE {Tech} Cup (S&T business projects) and the HSE {Business} Cup (student projects).

HSE University is one of the largest research, educational and innovation centres in Russia. It has completed its transition from the model of a socio-economic university to that of a comprehensive university, whereby it engages in the fields of the social sciences and humanities, mathematics and computer, natural and technical sciences that all complement and enrich one another. Jointly with leading RAS institutes, the University is exploring fundamentally new fields for itself, in such areas as physics, chemistry and new materials, life sciences (in particular, biology and biotechnology), geography and geoinformation technologies. Moreover, R&D in natural sciences and engineering ensures synergy with areas of knowledge that are traditional for HSE University and caters to the development of high-tech industries, healthcare, the digital economy, the energy sector, agro-industrial complex and the sustainable use of natural resources.

Detailed information about the current situation and available resources can be seen in the Appendix No. 8 "Extended Information on the Existing Groundwork at HSE University in Research Policy and Policy for Innovation and R&D Commercialization".

Key Priorities and Areas of Research Policy and Policy for Innovation and R&D Commercialization and Planned Results of their Implementation

Building on the existing groundwork and following Russia's national development goals, the University is identifying key measures for the development of its research policy and R&D innovation and commercialization policy for the period until 2030.

1. Development and implementation of breakthrough R&D works, including intellectual property generated through applied academic research and/or experimental developments and protected in accordance with the Civil Code of the Russian Federation.

Over the mid-term, priority focus of R&D will include the following:

– an individual's success and independence in a changing world ("human enhancement"), the development of their capabilities (human potential) and their implementation in the form of personal human capital and improvements in terms of quality of life;

– social policy for sustainable development and a reduction in inequality including new forms of inequality;

– educational theory, sociology and economics of education and evidence-based educational policy;

– S&T and socio-economic forecasting, including the one on the basis of foresight technologies;

– effects and efficiency of the digital transformation of the economy and society;

– economics, statistics and policy in science, technology and innovation;

– measurement and analysis in socio-economic sciences;

– macroeconomic modelling and short-term forecasting;

– economic, historical and sociological analysis of institutions;

– experimental economics;

– economics and organization of healthcare;

– analysis of labour markets;

– competition and antimonopoly regulation in new market environment; effective models of state and corporate procurements;

– multi-criteria assessment of the effectiveness of government and corporate projects (investments), considering their contribution to economic growth, social sustainability, technological frontiers and geopolitical positions, as well as the ESG contribution;

– effective government and public consensus;

– the technological and social security of individuals, society and the state in the context of globalization and digital transformation;

– evidence-based urban studies, urban and transport planning; place-making and management of megacities;

– Big Data, machine learning and AI;

– engineering of the Internet of Things and cyber-physical systems;

– methods and means of ensuring the security of systems of critical information infrastructure and cyber-physical systems;

– computational methods of supercomputer modelling and the design of new materials;

– digital law;

– ethical issues concerning AI and Bid Data; regulation of digital ecosystems and digital space;

– bio-law and bio-ethics; right to a healthy environment;

– development of combinatorial and topological methods that are clearly in demand in applied fields;

– neuroscience, biotechnology and high-tech healthcare;

– photonics and bio-photonics;

– biology and sociology of aging;

– Russia’s international policy and foreign trade in the new geopolitical and economic conditions;

– Russian and Soviet humanitarian and cultural traditions;

– art design and art marketing, etc.

These priorities will be implemented based on strategic projects, as specified in this Programme, and other integrated interdisciplinary programmes that combine full-cycle projects funded from various sources (e.g., commissioned by the government, clients' funds, HSE University's own funds) within the framework of priority topics: basic and applied R&D that is not tied to specific subdivisions and courses and integrates researchers from various fields concerning the goal of solving pressing fundamental and applied research problems. An important tool for implementing such priorities as part of comprehensive programmes will be big projects, such as large-scale R&D, which will effectively find solutions to socio-economic and technological problems on an interdisciplinary basis. A key feature of such comprehensive programmes and big projects will be their orientation towards solving external (non-academic) tasks in the interests of the state, business or society at large (i.e., developing the public good).

In addition, HSE University is continuing to develop its research policy tools, which have demonstrated their effectiveness and aim to support proactive research at a acceptable scientific level. This, above all, includes competitive instruments (the establishment of international and research laboratories, support for the academic core of research subdivisions, empirical research, the dedicated "scientific funds" of faculties, departments and schools, etc.), as well as a system of academic bonuses for prominent validated research results as part of funding earmarked for proactive research by HSE University's researchers.

The University has prioritized the creation of its own world-class academic schools and will continue developing globally significant centres of excellence (advanced research), which are designed to ensure its leadership in the global scientific and educational community. The international laboratories programme works towards creating natural science clusters and interdisciplinary centres of competence in order to take part in international research and joint projects with Russian universities and research centres.

To evaluate the productivity of research subdivisions, project teams and individual researchers, internationally recognized tools will be used, which combine

an analysis of official indicators of academic activity and expert assessments. Competitive instruments will be developed to support project groups, involve young researchers in major projects, and ensure mobility in research. The University will continue to provide support at its own expense for proactive research and development projects, as well as projects of young academics and research start-ups under the Science Foundation and the Applied Research Development Fund.

The University will continue to develop its own set of devices and clusters of high-tech equipment and high-speed processing of Big Data (e.g., economic, Scientometric, natural science and cognitive research and forecasting), which will ensure that R&D is carried out, based on an advanced research agenda with high potential for implementation and commercialization, and become a focal point for the coordination of international collaboration. By 2030, all research teams will be provided with the computational capacity of HSE University's supercomputer cluster.

In terms of socio-economic sciences and humanities, priority development will be given to international comparative projects as per the "mega-science" model based on empirical research, monitoring (including longitudinal), the iFORA system and specialized statistical and sociological surveys, which provide a foundation for the information and analytical support of evidence-based socio-economic, S&T, innovation and cultural policies. The University will become one of the leading institutions in continental Europe and the post-Soviet space in terms of applying the latest tools for statistical, sociological and Big Data analysis, e.g., with the IT environment and social media.

These changes will result in the following internal and external effects (including quantitative results):

– the transformation of the University into a major world-class integrated academic and educational institution, which establishes, tests and disseminates best practices, which can achieve the country's national development goals associated with ensuring the sustainability of social and economic growth, scientific and technological leadership, preventing technological isolation and strengthening Russia's geopolitical position;

– the country's expanding intellectual influence on global processes by bolstering ties with the world's leading universities and research centres and the intellectual elites of competing and partner countries for the purposes of increasing the competitiveness of Russian science and education, as well as strengthening their international prestige;

– increase in the total number of leading scientists and promising young researchers, both home-grown and those attracted to Russia from abroad, who work within an advanced research agenda and fundamentally enhance the interest on the part of other countries in intensifying S&T cooperation;

– strengthening the ties between basic, applied R&D work and developments in priority areas of focus;

– the formation of an open type of research and educational environment, which serves as the basis of HSE University's new model as a project institution and a tool for collaboration with external partners;

– the implementation of an interdisciplinary project approach for specialists in different fields to solve urgent research problems, including the developing comprehensive programmes;

– the establishment of effective platform-based project interaction among students, doctoral students and young and leading researchers;

– narrowing the gap between scientific achievements as part of the advanced agenda and their incorporation into educational activities, including the formation of interdisciplinary professional skills among undergrads and doctoral students of all degree levels;

– significant expansion of the R&D agenda in accordance with the requirements of the Russian Presidential Administration and the Russian Government (e.g., digital transformation of the economy and society, public administration; S&T and socio-economic forecasting and project evaluation; defence and security; international relations, transport and urban design; challenges to social and regional development, etc.); the provision of systematic and operational expert support on emerging problems, preparation of initial solutions and the provisions of regulatory legal acts and

supplementing research with operational assessments of current and projected reactions of various social groups to the proposals that are being drafted;

– an almost two-fold increase by 2030 in the number of publications indexed in the Scopus database that falls within quartiles 1 and 2;

– an almost two-fold increase of income from research and R&D work by 2030.

2. The introduction of advanced technologies into the economy and social sectors, commercialization of intellectual property and technology transfer, coupled with the creation of student technology parks and business incubators.

The introduction of advanced technologies into the economy and social sector involves:

– expanding R&D focuses, including computer and technical sciences;

– implementing major applied projects commissioned by companies in the real sector of the economy;

– increasing the number of business orders for top technological developments;

– creating a system of scientific and technological expertise in end-to-end digital technologies in order to support HSE University's own initiatives and provide services to external clients;

– establishing a system of standardization and certification in the field of AI;

– creating software libraries and search engine services for research competitions and project support;

– intensifying independent pre-project and project work by researchers in R&D and commercialization;

– two-fold increase of revenue from R&D by 2030 (excluding funds allocated for the projects commissioned by the government).

Commercialization of the intellectual property and technology transfer implies:

– developing a framework for interaction with industrial partners that are market leaders and mechanisms to involve those partners as clients in the creation of start-ups along with their products and the commercialization of technologies (including social sciences and humanities) under the "market pull" start-up model and as investors;

– monitoring potential demand in emerging technological areas (as per the iFORA system);

– creating technological testing sites to designing new products, testing and rapidly piloting them and supporting developers with legal support and attracting grants, projects and venture funding;

– creating Russia's first ecosystem for the transfer of social sciences and humanities' technologies, which provides a set of management tools for the intellectual property with a socio-humanities content (e.g., advanced methodological, organizational and technological models and tools) that ensure their fullest coverage, reliable identification and proactive communication to interested consumers, while also ensuring the protection of copyrights and property rights; providing universities, research organizations, development institutions and companies with open access to the ecosystem and its tools;

– assessing the commercial significance of intellectual property items when making decisions regarding registration of intellectual property;

– developing innovative infrastructure at the University (establishing a Centre for the Commercialization of Developments and Technology Transfer, engineering centres, project offices, start-up studios, service structures, etc.);

– establishing a community of industry experts, mentors and business angels;

– creating a belt of innovative companies around the University based on partnerships and consortiums;

– incubation and acceleration programmes involving students as part of applied project training ("market pull" model based on the HSE Business Incubator);

– promoting innovation activities at the University sponsored by the Foundation for Support of Innovative Entrepreneurship programme (competitions for scientific and technical business projects HSE{Tech}Cup and student projects HSE{Business}Cup);

– establishing a university-wide system for the development of entrepreneurial culture, as well as competencies and innovative skills among students and staff and developing incentives for the transfer of knowledge and technology.

The changes implemented will achieve the following internal and external effects (including quantitative results):

– the implementation of the research university model that can successfully transform the achievements of fundamental and applied science into practical solutions for the economy and social sector; improves the quality of training of specialists by integrating the latest R&D achievements into the educational process and expands the range of applied problems solved at the request of the Russian Presidential Administration, the Russian Government, the federal and regional authorities and corporate clients;

– establishing in Russia a new social sciences and humanities' segment of the national market for intellectual rights (based on the Free Analytic Network (FAN) specialized digital platform within IPChain) and the replication of the approaches proposed by the University to commercializing the results of social sciences and humanities R&D at other scientific and academic organizations;

– creating methodologies to assess the effects of the non-commercial appropriation (social capitalization) of the results of intellectual activity in various fields of the social sciences and humanities and the development of tools to assess the effectiveness of scientific and creative projects based on the social effects of such developments;

– introduction of new intellectual property into circulation, including scientific, methodological and analytical designs, complex three-dimensional data models, AI-driven algorithms, etc.;

– creation and commercialization of intellectual property, based on advanced R&D in all areas of the University's scientific activities by building partnerships with leading companies and intensifying the rate of patent applications along with the total number of tech start-ups in priority areas;

– increasing the academic staff's financial interest in commercializing their designs and inventions, including those in the social sciences and humanities;

– accelerating the transfer of knowledge, technology and best practices to education, research, public administration and business institutions;

– strengthening HSE University's role as a centre for scientific, methodological, information, analytical, educational and coordination support for the national network of technology transfer centres;

– boosting income from intellectual property by more than 20 times (up to 100 million roubles) by 2030.

3. Promoting R&D and Experimental Design Work Results.

Promoting the results of R&D and experimental design involves:

– organizing academic conferences, seminars and informational events at HSE University with the participation of leading Russian and foreign scientists and representatives of business and government;

– presenting the results at major Russian and foreign academic conferences;

– publishing the results in leading Russian and foreign journals;

– disseminating the results by publishing monographs and academic journals of HSE University and promoting them in citation databases (Scopus, WoS, etc.);

– providing competitive support for the best Russian-language publications based on the results of successful R&D projects;

– improving the marketing system and models for disseminating R&D results;

– developing a portfolio of branded intellectual products for replication, customization and promotion to the new markets;

– developing and promoting package proposals that combine R&D, expert and analytical work, engineering and CPD programmes;

– upgrading the Joint Economic and Social Data Archive (JESDA): enhancing data collection, digital services, communication with users and data providers and international promotion;

– encouraging competition among research teams and individual employees in promoting R&D results;

– participating in academic collaborations and comparative studies;

– providing scientific and methodological support to regional universities (further information is provided in subsection 2.12 "The University's Contributions to

Development of the Education System in Russia; Cooperation between the University and Public ”);

– creating an open information space, piloting new digital technologies and disseminating best practices.

The implemented changes will achieve the following internal and external effects:

– the implementation of the University’s mission to be a conductor of advanced knowledge, technologies and innovative practices in research and education; securing academic and methodological support to Russian universities and research organizations through partnership programmes;

– assisting the transition of the Russian news and advertising information space to the ‘knowledge space’ (within the framework with the Russian Academy of Sciences);

– accelerating the transfer of knowledge, technology and best practices to education, research, public administration and business;

– introduction of digital innovations in science and higher education;

– development of international academic cooperation.

The development of key areas of focus in research, innovation and commercialization will contribute to the achievement of the national goal “Opportunities for Self-fulfilment and Talent Development” and will help to meet the targets of “Ensuring the Russian Federation is among the 10 leading countries in the world in terms of the volume of research and innovation based on effective higher education system”, “Incorporating the results of domestic R&D in the economy and social sector” of the National Science and Universities Project of the National Digital Economy Programme and the state programme “Scientific and technological development of the Russian Federation,” and implement measures specified by the S&T Development Strategy of the Russian Federation.

2.3. Youth Policy

In terms of youth policy, the University conducts targeted activities with students and alumni. HSE University students are among the most talented, ambitious and

creative people of their generation. They show initiative, lead an active social life, transform the urban environment through social entrepreneurship and volunteering, and get involved in applied and academic research, as well as technological projects aimed at improving the quality of life in cities, regions and the country as a whole.

At HSE University, there are more than 120 grassroots student clubs. Student volunteer initiatives (e.g., digital volunteers, online children's camp, and help for schoolchildren) develop emotional intelligence, expand social capital and create conditions for self-realization. In addition, projects are replicated by other universities and the local community. A significant number of non-academic student initiatives are carried out in partnership with charity foundations, museums and non-governmental organizations (NGOs), and that help to raise learners' professional level. In 2020, the University's student organizations held more than 1,000 offline and online events for students, alumni, prospective students and residents in the cities where HSE University has a presence. Volunteer students take part in educational work with retirees as part of the Moscow City Government's Moscow Longevity project and provide consultations on legal and psychological matters (100 consultations in 2020 in Moscow).

The University has a programme for early student involvement in research. In 2020, a total of 951 research assistant positions were opened, 3,188 positions for teaching assistants, 163 for study consultants, and 99 for academic assistants; there is a network of research-based and project-based learning laboratories. For students with high research achievement, the Republic of Scientists project (182 participants in 2020), the HSE Science Battles project (more than 1,000 participants in 2020), the Zoomer Science Festival (1,647 participants in 2020) are regularly held. The Student Scientific Research Paper Competition serves as a tool for independent reviews of student research (1,924 applications in 2020).

Key areas of development for youth policy:

– student involvement in academic research and popularization of academic career prospects; development of tools for the development of student academic and research skills (by 2030, all graduates will have research experience and skills);

– project-based learning and service-focused learning development: involvement of HSE University faculties and campuses in the implementation of faculty joint applied research with students, development of a unique (for Russian academic practices) project for regional student field trips – “Rediscovering Russia”;

– student involvement in entrepreneurship through the HSE University Business Incubator’s acceleration and incubation programmes, competitions in partnership with development institutes, venture funds, business angels and industrial partners; (by 2030, doubling the total number of business projects created by students, e.g., ensuring the integration of student business projects into a network of partners and funds, along with participation in development programmes for technological and social entrepreneurship; with 15% of students pursuing individual business trajectories);

– development of student intellectual volunteering: involvement of students in providing aid to various social groups in partnership with key NGOs (by 2025, total external clients commissioning projects with students will include at least 75% of charitable NGOs from the RAEX rating and at least 40% of regional administrations of the regions of the Russian Federation, with at least 50% of students taking part in service-learning projects);

– developing a system for supporting student initiatives aimed at achieving sustainable growth and social responsibility (e.g., support for student research organizations and associations, further development of interdisciplinary academic communication between students through projects and intellectual contests);

– developing an HSE University alumnus ecosystem; active involvement of graduates as invited lecturers-practitioners, corporate partners-employers, engaging graduates in financing students projects;

– cultivating students’ informed approach to building career tracks through a system of educational events with industry representatives, employers-HSE University graduates and special career guidance course;

– providing support for students’ physical and mental health, helping them maintain psychological stability, resilience and mindfulness.

Expected results of youth policy:

– boosting student research performance and output; building research and teaching cadre for HSE University;

– ensuring the transfer of knowledge and technology through the implementation of student business initiatives;

– boosting the share of young researchers and instructors by popularizing academic career track.

2.4. Human Capital Management

In terms of human capital management policy, HSE University has shaped globally competitive teams of experienced and junior Russian and international researchers and instructors. The University has been the first in the country to develop and widely apply a system of cadre development tools that help ensure the academic quality of R&D work, increased salaries for academic staff, ensured the accelerated development of young people inclined to have a career in science, along with the implementation of proactive research projects using the tools of the HSE Academic Fund programmes, etc. An effective contract with academic staff model relies upon a developed system of academic material and non-material incentives: the average monthly salary of a full-time faculty member has doubled since 2013 and amounted to 196,900 roubles in 2020.

The University's system builds upon a long-running (at least a year-long), transparent for staff and fair toolset (e.g., academic bonuses for research results, instructor bonuses for high teaching quality assessment by students). These tools effectively raised the basic salary of instructor by two or even three times. The key parameters of the system are as follows:

– it is clear for each staff member that their remuneration reflects their efforts and what they have to do to increase their remuneration;

– indicators providing for the receipt of bonuses show steady increase as the research potential of the staff is growing;

– this is a mass system, covering over 50% of in-house academic staff at the University.

All baseline result values are discussed by University divisions and approved by the HSE University's Academic Council one or two years before they are put into practice. This system has proved itself efficient: the share of academic staff who have publications in Scopus and WoS has increased from 11% to 70% over the past 10 years.

In 2020, the University employed 8,297 people, of whom 6,655 were full-time, with 1,642 being external part-time employees. There are 3,283 academic staff members (full-time and external part-time employees), of whom 45% hold a Candidate of Sciences degree, 18% with a Doctor of Sciences (Doctor Habilitatus) degree, and 10% with PhD degrees from foreign universities. The average age of academic staff is 45 years; 30% of them are under 35 years old, and 25% are between 36 and 45 years old.

The baseline professional criteria for academic staff are consistently increasing. In 2013, the system for competitive selection of academic staff was aligned with international standards. In 2016, a "unified contract" for academic staff (research and administrative work, teaching) was implemented, and in 2018, requirements were raised for the research productivity of academic staff based on an automated assessment system. In 2020, academic hiring transitioned to three professional tracks (academic, teaching and practice-oriented) with differentiated requirements.

An international postdoc programme has been in operation since 2013 in order to attract promising researchers with PhD degrees from global leading universities; 50 postdocs take part in this programme each year. By 2020, the number of academic staff with a PhD degree had grown 5.2 times. New solutions for the Russian educational system were implemented in order to recruit leading foreign professors: digital professors and affiliated academics. In 2020, the number of international staff members stood at 196 individuals.

The involvement of talented young academics takes place within the framework of the Young Faculty Development Programme (187 participants in 2020) and the Advanced Doctoral Programme.

Staff members have access to a social benefits package, including medical insurance, educational discounts for employees' children, preferential meals, financial

assistance in exceptional cases, corporate discounts from partners, and free psychological counselling.

HR policy at HSE University is based on principles, whereby human capital is a core asset at the University, and it evolves within the context of the provision of maximum options for the self-realization and talent development of the University's staff, as well as stimulation of their respectable and effective work with due consideration of the need to ensure staff's health and well-being, while also aiming at setting up an efficient system for identification, support and cultivation of youth's capabilities and talents in line with the national development objectives "Respectable, Efficient Work and Successful Entrepreneurship" and "Options for Self-realization and Talent Development".

The acceleration of the globalization of academic labour markets sets a challenging task for the University to secure its competitiveness as an employer. In 2020, the share of scholars at HSE University who potentially could have received competitive job offers at the global level was around 25%, and in 2030, this figure shall reach 50% (with demand from Arab and Asian universities factored in). The objective shall be achieved with the application of the following tools:

– ensuring access to unique databases and knowledge bases, supercomputing facilities, unique lab equipment both at the University and its partner organizations; HSE University's membership in international collaborations; for scholars in socio-economic sciences – participation in policy analysis and development;

– boosting the density of professional and academic community at the University as well as its global reputation; by 2030, HSE University will appear in international subject and industry ratings for the entire selection of its fields, with at least 75% of the fields steadily ranking among Top-100 global universities and at least 25% - among the Top-50;

– offering competitive remuneration at the level of at least 75% of the median value of academic institutions deemed competitors (subject to the applicability of a low personal income tax rate) and attractive contract terms (extension of academic merit bonus terms for research results up to two, three and five years; sabbatical leave;

limiting or complete abandonment of the routine teaching load by the employment of teaching assistants and digital assessment systems);

– early involvement in research activities and retention of those students who express special ambitions and aptitudes (by 2030, at least 80% of students who have academic publications and conference reports will be invited to pursue the Master's research track affiliated with a doctoral school, with remuneration of at least 65% of the average pay for the respective region; at least 75% of the doctoral student population at the University will be from this cohort); a complete move to a model for advanced doctoral studies with remuneration equal to the average pay in the respective region; by 2030, the share of young researchers up to 39 years of age will account for 52.7% of the total researchers at the University);

– expanding the HSE University research teams using remote contracts and network partnerships with scientists from other academic institutions and Russian organizations and with foreign researchers; the total number of international and external Russian members in “small” research partnerships within the framework of the University’s research projects will double or triple; the number of “mirror” laboratories will also go up (further information on this is provided in subsection 2.12 “The University’s Contributions to Development of the Education System in Russia; Cooperation between the University and Public”).

Key areas for developing human capital management:

– building a differentiated and flexible system of professional trajectories; a complete move, by 2030, to three professional tracks for academic staff (academic, teaching and practice-oriented) with special mechanisms for selection, incentivizing and reviews, institutional options for professional and career development, as well as streamlining movements between those three career options and opportunity to combine them;

– gradual alignment of criteria for Russian and international recruits; expanding academic staff mobility options: providing lengthy sabbatical leaves (once every five years by 2030), international internships, traineeships at external organizations,

participation in international conferences (no less than once a year by 2030), and travel budgets for leading academic staff members;

– moving to unified competitions for faculty members and researchers;

– continuous staff professional development based on individual plans: new opportunities for professional growth based on a core standard for professional competencies and continuous upgrading of qualifications as per personal plans;

– increasing professional criteria for stabilizing contractual terms for leading specialists; the standard timeframe for employment agreements will be extended to three to five years by 2025 and five years by 2030; the share of academic staff working under long-term renewable contracts with pay raises and reduced teaching load will increase from 7% in 2020 to 15% in 2025, and then to 25% in 2030;

– ensuring competitive remuneration for full-time academic staff – at least 300% of the average salary in the region by 2030;

– recruiting young personnel and providing retirement for distinguished staff in a manner beneficial for both the University and its staff: providing funding for young professionals, implementation of a programme for recruiting international and Russian postdocs; ensuring comfortable retirement for distinguished academics by awarding special statuses (e.g., Tenured and Distinguished Professor, Research Professor / Associate Researcher and Consulting Professor / Associate Consultant) with reduced teaching load thereupon, and for outstanding administrative staff – a status of Distinguished Staff Member with a long-term contract and salary raise;

– reducing labour inputs in the administrative processes through the use of contemporary digital tools; the share of administrative staff decline from 30% in 2020 to 25% in 2025, and then to 20% in 2030, due to the reduction of non-automated routine processes, accompanied by increase in the quality of work;

– incentivizing administrative staff, depending on their performance; the average administrative staff salary shall go up from 85% in 2020 to 100% in 2025, and then to 110% in 2030 compared to the median market value;

– enhancing the social responsibility of HSE University as an employer and expanding the social package for various staff categories: free/subsidized education for

employees' children, medical services, aid to low-income families and families with many children, assistance to staff experiencing hardships, disabled staff, psychological counselling and legal support programmes, smooth retirement, loyalty fitness programmes, learning, etc.

Forecast effects of the HR policy:

– flexibility of professional tracks within the University, improved staff performance, improved options for staff's professional and career growth;

– increased attractiveness of the University for recruiting young staff from the global and regional academic markets;

– new professions on the academic market and options to train personnel for other universities.

2.5. Campus and Infrastructure Policy

HSE University is continuing to expand its campuses and infrastructure, surpassing its current capacity. The University currently allocates 8 square metres of classroom and laboratory space per student in Moscow, 6 square metres in St. Petersburg and Nizhny Novgorod, and 9 square metres in Perm, which is approximately 2 times less than the average allocation for Russian universities. The HSE University's dormitories include 11,000 bedspaces short, of those, about 8,500 beds in Moscow. This significantly limits the opportunities for continuing education and international students, but at the same time, it has cultivated increased efficiency in the use of property by HSE University. The University was the first in Russia to begin transitioning to a new format of university space and infrastructure that is adapted for independent (project) work of students and the support for remote work (e.g., in an inter-campus and inter-university format). Traditional classrooms are gradually reformatted into spaces for individual and group project work and hybrid spaces. All the University buildings are equipped with facilities for people with disabilities.

The University's library was the first to transition to digital resources. HSE University currently provides all students and staff members with remote access to all global library databases that are aligned with the areas of research and study. In this respect, the University can compete with leading global institutions. At the same time,

library spaces support co-working and self-study with open access to sources and advice. The central library at the complex on Pokrovsky Boulevard is open 24/7.

HSE University operates the high-performance computing cluster "cHARISMa" (ranking 6th in the Top-50 supercomputers in the CIS and the winner of the award for efficient use of advanced technology “Priority-2020”). It has created its own equipment base along with clusters of high-tech equipment. At the same time, HSE University makes extensive use of instruments and equipment from partner organizations, including for laboratory practicums and the project work of students in the natural science faculties.

Key areas for campus and infrastructure policy development:

– opening new academic and lab spaces, dormitories, sports facilities and rental houses for ensuring the global competitiveness of the University in terms of its infrastructure; achieving, by 2030, the baseline values for academic/laboratory spaces of 15 square metres per full-time student and 100% access to dormitory and rental accommodation; moving student housing facilities closer to academic building/labs in order to reduce the commuting time;

– developing a standard for supporting individual work formats for academic staff with consideration of three work formats, as selected by staff members in agreement with their supervisors: on-campus (with an individual workplace), blended (on- and off-campus work and availability of co-working spaces and hot desks) and remote (supported by the University through continuous virtual access);

– improving student lodging quality (access to academic and educational information resources, co-working spaces, gyms and sports facilities), developing rental houses with upgraded comfort suites, offered to the students who can afford those;

– transferring from traditional classroom and library spaces to up-to-date project, research and educational spaces, e.g., blended-learning classrooms, co-working and recreational rooms;

– developing digital libraries (expanding available digital resources, creating a system for recommendation and consultation services, remote access mode) and

converting parts of library spaces into digital co-working spaces and individual workplaces;

– ensuring equitable access to interaction and the University's services for staff and students working or studying remotely;

– developing studios for producing digital educational materials, providing free access to such services for HSE University instructors;

– introducing a single standard for administration, information and infrastructure services at the University;

– building a competitive social infrastructure by outsourcing some services (medical, fitness and sports, catering and shopping);

– ensuring access to the University's infrastructure for persons with disabilities and health issues;

– developing digital services for access to the infrastructure;

– creating bilingual environment throughout the entire University framework (e.g., navigation, English-speaking administrative and technical staff, etc.);

– providing researchers and project developers at HSE University with access to supercomputing modelling of laboratory and social experiments, theoretical and forecasting models based on Big Data.

Expected results from the implementation of the policy:

– provision to academic staff (with the exception of those working remotely) of workspaces will reach 60% in 2024 and 100% in 2030;

– by 2024, a total of 30% of classrooms will be converted into blended-learning classrooms, 20% of classrooms – into co-working spaces; by 2030, all classrooms will support blended learning;

– the share of academic/laboratory complexes, provided with services under a single standard, will come to at least 50% in 2024 and 100% in 2030;

– the share of academic and laboratory buildings (complexes) with spaces to realize intellectual and creative potential (co-working and recreational areas) for staff and students will come to at least 50% in 2024 and 85% in 2030;

– the share of academic complexes, equipped with “smart labs” for classes, seminars and conferences in various formats will be 30% in 2024 and 70% in 2030;

– the infrastructure for delivering CPD programmes in classroom-based, blended and online formats with the use of interactive studios has been created;

– undergraduate and graduate students and staff at HSE University in Moscow will be provided with the option to pursue any of at least 50 sports activities; at least 25 creative arts; in St. Petersburg - at least 20 sports and 10 arts activities; at HSE University in Nizhny Novgorod and Perm – at least 10 sports and five arts activities;

– completed transfer to a new model for student rental market accommodation in co-living facilities;

– equitable access to the participation in the University’s community life for international staff and students, providing all services in English;

– the University’s campuses will transform into urban centres for social and cultural activities implemented as part of HSE University’s third mission in the regions where they are located; an “open-university” concept will be implemented along with necessary security measures.

2.6. HSE University Administration System

In terms of the University administration system, HSE University has completed its structural transformation that began in 2014. This has involved the transition to large mega-faculties, uniting relevant groups of sciences and including research and project departments. It has also resulted in a transition of administration from the level of faculties to the management of educational programmes (i.e., a departure from the “monopoly of departments”).

University governance is based on a combination of the principles of combined control and collegiality. According to the University’s Charter, the governing bodies are the Supervisory Board, the Conference of HSE Employees and Students, the Academic Council and the Presidium of the Academic Council, the Rector’s Office and the Board of Trustees.

In turn, the University operates a collegiate governance system that ensures the principles of academic self-governance and the involvement of representatives from

external organizations and students. There are over 100 existing collegiate advisory bodies. The wide involvement of employees in managing departments, schools, faculties, and the University itself is ensured through academic councils, commissions, working and expert groups.

The KPI system is tied to resources, which can be placed at the disposal of HSE University research and teaching teams. The application of institutional mechanisms for regulating and managing incentives to achieve the goals and initiate changes by creating transparent and sustainable internal rules and regulations allows departments and staff to build individual strategies for achieving personal and collective results in solving University-wide tasks.

The development of student government is coordinated by the HSE Student Council in Moscow and regional campuses, as well as Council's representatives at faculties and in dormitories.

The development management mechanism rests upon a set of major strategic initiatives and projects and covers the activities of the entire University (development projects). The Rector acts as the head of the portfolio of development projects. New projects must be endorsed by the Academic Council. The expert body providing external assessment of HSE University's development programme is the International Advisory Committee. Direct management of the University development projects is carried out by the Vice Rectors and directors overseeing respective areas. Overall coordination shall be achieved via operational meetings with the Rector that involve heads of subdivisions and regional campuses. Ongoing coordination of issues related to implementing the University's development programme, including appropriate external communication, is provided by the Senior Director for Strategic Planning and the Strategic Development Programme Office. Daily reporting is provided by the HSE Analysis Centre.

The University maintains an extensive system of tools for feedback, including the HSE University-wide portal, a system of targeted communication with staff and students about the University's activities, regular publication of intra-university periodicals (*Okna Rosta*, *That's so HSE, The HSE Look, HSE University Review*, etc.);

forums involving representatives of the HSE University's administration, and the Feedback hotline. Feedback from employees and students is also gathered via regular research and surveys conducted by the Centre for Institutional Studies.

The basic units of the University's organizational structure are faculties that implement all types of activities within their subject areas and integrate departments, schools, research laboratories, and centres. The majority of research is concentrated in large scientific institutions that enjoy a high degree of autonomy. Research and expert teams are united by a narrower topic and a specific task (a network of international laboratories under the leadership of leading global scientists, academic and project laboratories). The University delegates some authority and resources to faculties and departments along with accountability for the results and the rational use of resources.

Key areas for developing the University's governance system:

– expanding governance through stimuli based on common rules, delegation of authority, and resources to mega-faculties and primary academic groups; preliminary discussion of solutions at academic and professional committees and partial delegation of decision-making (shared governance);

– maintaining high operational performance at the University;

– retaining the level of the University's income centralization, thus ensuring the concentration of resources for HSE University's further development, in combination with sufficient stimuli for the activities of revenue-generating subdivisions;

– concentrating resources on carrying out major integrated and interdisciplinary tasks with respect to socio-economic and technological development, ensuring the integration of research teams of various sizes and subject fields;

– building integral research platforms and new project work formats, creating a system for project-based self-governance with a complete set of tools; introducing a multi-step venture support project model , as well as broad collegiate discussions of interim and final results;

– creating an integrated digital platform (IDP) (further information about this is provided in subsection 2.8 "Digital Transformation Policy") at the University, modernizing its administrative system by promoting its internal integration and further

customization of the University's services and products; boosting the efficiency of the administrating of educational processes and academic teams; training all categories of HSE University's staff to work in corporate digital service environment; the IDP at the University shall be harmonized with public digital platforms (services);

– removing excessive administrative layers by automating and optimizing business processes and delegating power and resources to mega-faculties and primary academic teams (departments, schools, laboratories, project and research institutes);

– reducing bureaucratic administrative and managerial operations by introduction of digital regulations (administrative services) as long as staff, students and partners of the University feel satisfied with the service quality;

– expanding the administrative staff development programme;

– professional development and raises for managerial staff to make it compatible with the corporate sector.

Expected results of HSE University administration policy:

– enhancing operational performance; reducing administrative costs; boosting procurements' efficiency;

– improving staff and students' satisfaction with University's services from 60% in 2020 to 85% by 2030;

– reducing timeframes for filing administrative requests by staff and students to the best practices in the corporate sector (including online processing of requests);

– the average remuneration of managerial staff and operations staff shall reach 90% and 110%, respectively, of the average market rate; the variable component of the remuneration of both managerial staff and operations staff shall account for 15% and 25%, respectively; HSE University will have the opportunity to hire administrative and several technical staff with a basic knowledge of English; reducing turnover of administrative and technical staff at HSE University; boosting staff motivation and inclusion;

– by 2025 corporate digital services shall be supported by all University's staff;

– the development of the University's IDP shall be completed by 2025; by 2027, it will be harmonized with adjacent state digital platforms/services;

– at least 50% of academic staff will play an active role in shared academic governance by 2030; at least 25% of staff will have taken part in the administrative development programme by 2030, or completed traineeships in a post superior to their own.

2.7. HSE University's Financial Model

The University's financial model is based on the principles of advanced investments in development, combining the resources of various programmes, and taking a proactive position at all levels of administration. HSE University is the largest non-financial non-profit organization in Russia in terms of earnings from the market - over 12 billion roubles in 2020 - and is included in the Top-3 largest Russian universities. It ranks 2nd in terms of cumulative revenue, and 3rd in terms of additional income in absolute terms. The resource management system developed at HSE University is characterized by a high degree of centralization of additional revenue ranging from 25% to 60% depending on the area of activity. This allows for allocating significant funds to financing change. The University's development budget is 27% of its total revenue; 85% of this provides support for the initiatives of researchers, staff and students, and competitive selection of the best proposals based on the standards previously approved by the Academic Council.

The increase of the University's size took place while generally maintaining the structure of revenue sources due to the expansion of traditional forms of providing services and undertaking work, consistently expanding the University's subject portfolio. Their share in education and science exceeds 75%.

The HSE Board of Trustees members include representatives of Russia's largest businesses, which regularly provide financial support to the University. The HSE Endowment Fund has a total value exceeding 1 billion roubles.

Key areas for the financial model development:

– international market – a substantial expansion of the admission of international students, e.g., through promotion of English-taught educational products, both in the traditional (classroom-based) and online formats (further information about this is provided in subsection 2.1 "Educational Policy");

– digital educational technologies – HSE University will expand its line of online products, virtual educational programmes across degree levels and loads, etc. (further information about this is provided in subsections 2.1 “Educational Policy” and 2.8 “Digital Transformation Policy”);

– developing network learning formats in partnership with other universities (further information about this is provided in subsection 2.1 “Educational Policy”);

– moving into new markets for CPD programmes and business programmes in the corporate sector (further information about this is provided in subsection 2.1 “Educational Policy”);

– additional options for generating income from R&D activities rely on the expansion of the University’s grant support system, enhancing the academic reputation of HSE University in new topical fields, growth of applied assignments, etc.; the total research grants, received by research centres and scholars at the University on a competitive basis, will double by 2024 and will be growing at this pace up until 2030.

HSE University will rely on its comparative advantage in its core activities: an exclusively high brand value on the national market and high visibility on the global market; it will continue to offer high-end and best-quality educational programmes and services in Russia, while also implementing products with the most favourable quality-to-price ratio on the global market for educational and consulting services.

To find additional developmental resources, the University will enhance its internal productivity by optimizing its portfolio of educational programmes and exclusion of duplication, by digitizing administrative and educational processes, transferring select staff to remote or blended work formats and transferring an ever-increasing part of the University’s educational programmes, courses and products to digital, remote and blended formats, improving flexibility of price policy, cutting down “fringe” costs and outsourcing several of its back-office and even core services (e.g., a new model for student accommodation – further information about this is provided in subsection 2.5 “Campus and Infrastructure Policy”).

Funds for the development programme will be secured from all types of the University's revenue in line with its business plan. The key parameters of the HSE University's financial model by 2030 are the following:

– the cumulative gains on the University's annual income (without Capex) are at least 80% (over 50 billion roubles);

– the share of additional (apart from main services) income in total income will come to 55% (e.g., income from budgetary sources following open competitions);

– total funds generated by the University every year from the Endowment and donations from trustees, business communities and alumni will double;

– every year, HSE University will earmark at least 25% of its cumulative income for the implementation of development projects; the strategic projects will be funded separately under the University's financial plan, using the resources allocated for HSE University's programmes and funds; that will allow for a comprehensive analysis of achieved results and expended resources;

– improving the University's operational performance will guarantee income estimated at over 9.5 million roubles per academic staff member; the funds generated from R&D (excluding the funds coming for the project commissioned by the government) per one academic staff member will go up to 1.8 million roubles by 2030; and a share of administrators' salaries will not exceed 14% of the total income;

– the University's digital transformation (further information about this is provided in subsection 2.8 "Digital Transformation Policy") will be an item of its advanced investments - by 2030, it will come to at least 10 billion roubles (up to 7% of the University's annual revenue).

The financial parameters and values of the programme's indicators shall be adjusted according to the current conditions for the operations of Russian state institutions. Should the regulatory impact become more intensive and thus possibly curtail the economic autonomy of institutions, there may be risks of a slowdown in resource mobility, whereby the University will perhaps have to make respective amendments to the programme's parameters.

2.8. Digital Transformation Policy

HSE University's policy in the area of digital transformation is carried out under the Digital University model and aims to improve the quality of research and educational activities, as well as optimize management processes through the implementation and development of integrated digital solutions.

Today, over 70% of the processes of organizational, administrative, managerial, economic, financial and operational activities at the University are supported by information systems, including the new-generation educational support system (SmartLMS), the "One-stop Shop" that features over 90 administrative services (SmartPoint), an accounting and analytical platform (SmartReg), a research productivity monitoring system, a back-office support system (SmartBOSS), and a platform for collecting and analyzing data from HSE University and external information sources (SmartData). An information security system (SmartSecurity) is currently under development.

HSE University deploys digital infrastructure that includes data storage systems (956 servers and six data storage systems with a volume of 1.2PB), a mainline network infrastructure (61 locations, eight proprietary optical communication channels and 57 leased ones, 116 switching rooms and six main server rooms), and online channels with a bandwidth of up to 19 Gbps. Personal workplaces are equipped with computers for administrative employees. There are 147 computer labs, 762 classrooms with multimedia equipment, and 162 classrooms for blended learning.

HSE University's digital transformation is aligned with the "Digital University" model and aims at boosting the quality of research and educational activities, while also optimizing administration processes through the introduction and development of integrated digital solutions.

The current situation and available resources in digital transformation processes are described in subsection 1.1 "Key results of development in the previous period and the existing potential".

Key areas for digital transformation under the Digital University model:

– monitoring the achievement of Russia's national developmental target "Digital Transformation" and the indicators of the Digital Economy of the Russian Federation national programme (within the scope of its responsibility for the respective outcomes of the "Digital State Administration" federal project);

– introducing digital end-to-end technologies in the educational, research and administrative/managerial activities at the University;

– launching digital services for all target groups: prospective students, undergraduate and graduate students, alumni, academic and administrative staff, and University's partners;

– enhancing the accessibility of University's services through the application of digital technologies and online tools, including remote access;

– upgrading University's digital infrastructure: servers, switching, multimedia and data terminal equipment, supercomputing centre; ensuring University information security;

– proposing new Big Data-based solutions for interested parties as a basis for decision-making processes and development under the data-driven administration paradigm (Data-Driven University).

As part of the Digital University model, the following areas of digital transformation will be completed by 2024:

– introducing intelligent system for University administration; creating a framework to support replicable solutions for digital resources and their subsequent adjustment in order to reduce labour intensity required for their development;

– introducing fully functional mobile apps for all target user groups;

– building a contemporary virtual learning environment, which includes innovative platforms, educational marketplace services, management of individual educational trajectories, etc.;

– ensuring an optimal load of supercomputing facilities at the University with an ever-growing number of users, by continuously expanding and renewing supercomputing capacity;

– upgrading digital infrastructure at HSE University and reengineering of the user support service.

By 2030, the efficient use of the end-to-end technologies is ensured, including the following:

– markup services for all categories of educational content for an integrated environment for working with all learners, along with life-long-learning services, services for virtual mentors and robot assistants;

– commercialization of inventions and innovations, marketing processes for the HSE-designed digital solutions and services;

– AI-driven technologies for managing the digital footprint, storing and safekeeping data;

– centralized management and monitoring of the infrastructure at all campuses and dormitories;

– effectiveness of administrative and back-office processes through their digitization.

Digital transformation facilitates the qualitative change of the University's business processes and the emergence of important socio-economic effects with respect to education, science, knowledge and technology transfer, commercialization of inventions and innovations, as well as youth policy, including the following:

– monitoring digital transformation in economics and the social sphere, including the development of methods for calculating "digital maturity" indicators for economic sectors and the social sphere, as well as indicators for the Digital Economy of the Russian Federation national programme;

– contributing to the accessibility of life-long learning, elimination of digital inequality through the development of e-learning technologies;

– popularization of student research by creating digital platforms for project proposals, job finding and career services;

– enhancing the University's competitiveness on both international and Russian markets by developing the world-class research infrastructure, thus ensuring high-speed processing and analysis of large data sets;

– boosting research teams' motivation for the commercialization of inventions and innovations by enhancing practice-oriented research competencies, by directing their research designs towards real market demands, commercialization of their work in the most promising sectors (digital technology, neuro-technology, bio- and quantum technology, etc.);

– building the University's image as a champion of digital innovation in science, general and higher learning through assistance in replicating its experience;

– training qualified personnel for the digital economy through the inclusion of all educational programmes modules developing supra-professional digital skills and competencies.

2.9. Open Data Policy

As part of the digital transformation process, the University will create a unified open educational and research environment, with equal access for all potential target groups while also allowing for the provision of digital resources and services, open data and interfaces to all members of the University digital ecosystem.

HSE University operations result in primary research data presented in a form of databases generated by researchers while carrying out academic projects and data emerging during the University's own institutional studies and preparation of statistical and analytical reports. The University's activities with open data are informed by the provisions of part 4 art. 7 of the Federal Law No. 149-FZ "On Information, Information Technology and Protection", dated July 27, 2006.

The key goal for releasing information in an open-data format is to create the conditions for generating maximum international, political, economic and social effects from their application by all interested parties: the state, business structures, society and other educational organizations.

Key areas in open data policy development:

– ensuring the storage and accessibility of the results of empirical research by the academic community;

– providing access to information bases to be used by research, educational and business organizations and citizens to benefit their activities;

– creating additional opportunities for information exchange between market participants; developing services based on information in an open data format.

In its operations with open data, HSE University will rely on the following principles:

– the University's compliance with state policy on digitization, informatization and data protection;

– openness of information posted as open data, its non-restricted availability;

– responsibility for the quality of the posted open data (timely updates, safety, accuracy, authenticity);

– usability due to posting of primary (disaggregated) data in machine-readable non-proprietary formats;

– determining priorities on the basis of users' feedback, thus improving the data sets' framework;

– exchange and mutual data enrichment from leading research and state platforms;

– open data reuse and enrichment by students and staff as part of research activities.

Thanks to its open data policy, the University will determine criteria for attributing data sets to open data and standardize formats for their placement; creating an open data portal on the official HSE University website; setting up framework for open data administration and regulating operations with such data; automatizing the verification and update processes for posted data.

Expected effects from the University open data policy:

– with respect to education policy, closer integration with research and innovation, the use of research results by academic staff in order to improve and raise the quality of educational contents;

– with respect to research policy, systematization of information sources, enhancing the quality of empirical data, research, the citation index for academic publications, and authenticity of research;

– with respect to youth policy, increasing student involvement in research and projects; introduction of creative initiatives to develop useful digital services and tools, which utilize the information in an open data format;

– with respect to the transfer of knowledge and technology, commercialization of intellectual property – expansion of cooperation with various organizations to form new partnerships.

2.10. An Ecosystem for the Transfer of Social Sciences and Humanities Technologies

Contemporary academic tools in economics and law, as well as statistical and investment practice, lack commonly accepted models for evaluating the efficiency of "soft" technologies, thus impeding the proper evaluation of its contributions and creation of venture mechanisms.

HSE University's policy in this field aims at forming up a transfer ecosystem for social sciences and humanities knowledge and technology, with an option for its further dissemination thanks to the establishment of a fundamentally new market for intellectual property, including the following:

– developing normative, organizational/methodological and technical tools for the timely identification of intellectual property in social sciences and the humanities, acknowledging authorship and assigning respective copyrights, for its transfer, commercialization and effective introduction in economics turnover;

– creating methods for gauging effects from non-commercial appropriation (social capitalization) of intellectual property and piloting the application thereof in the evaluation of research and creative projects' performance by respective federal agencies (Russia's Ministry of Science and Higher Education, Ministry of Economic Development, Accounts Chamber, and Ministry of Finance, respectively);

– devising methodology for the evaluation of projects and current expenditures of the budget of the Russian Federation, of the municipal and corporate budgets, based on the premise of both conventional (input into GDP, contribution into state/corporate revenues) and non-conventional performance indicators (enhancing socio-economic

and socio-political stability, guaranteeing Russia's presence on global and S&T frontiers; improving Russia's geopolitical positions).

Key areas for developing policy for the creation of an ecosystem for the transfer of social sciences and humanities technology:

– developing a platform for accountability and management of intellectual property in social sciences and humanities, on the basis of HSE University's information infrastructure (JESDA), a system for depositing and circulating intellectual property in social sciences and humanities FAN relying on a block-chain platform (IPChain, etc.), allowing for the publication of intellectual property with open and commercial access; testing platform development both at the University and in created consortiums;

– developing normative and organizational/methodological foundations for the operation of a platform for accountability and management of social sciences and humanities intellectual property, regular contribution to the published collections (e.g., strategies and mechanisms for assigning copyrights and commercialization for various types of intellectual property, creation of a system for monetary and non-monetary stimuli for using the platform for individual researchers and subdivisions, etc.);

– developing models for the evaluation of the non-commercial effects from the social sciences and humanities, e.g., inputs in economic growth, ensuring social stability and technological independence, strengthening of Russia's geopolitical position;

– devising models for the evaluation of projects and current expenditures from the budget of the Russian Federation, municipal and corporate budgets, based on both conventional and non-conventional performance criteria;

– instilling business and innovation culture in participants through the transfer ecosystem for the social sciences and humanities knowledge and technology (staff, students and doctoral students at HSE University, organizations/members in network partnerships and formed consortiums, etc.) through the launch of an integrated system for popularization and educational events;

– forming organizational infrastructure and algorithms for evaluating the commercial potential of a given intellectual property, selecting the implementation strategies, market push and market pull processes, by constructing an interdisciplinary expert clusters (expert community) in various fields in social sciences and humanities and other creative activities;

– designing incubation and acceleration programmes to commercialize social sciences and humanities knowledge and technology for industrial partners.

As a result of policy implementation to create an ecosystem for the transfer of social science and humanities technologies:

– a total commercialization revenue of intellectual property will increase 20 times by 2030;

– HSE University's image of entrepreneurial university shall be shaped (a double income increase from license payments and return on investment in affiliated start-ups by 2030);

– transaction costs on internal administration will be cut thanks to a decision-making base supporting specific topics, types of research and teams relying on the data on their demand and prospects;

– HSE University will become a leader in the overall total of social sciences and humanities intellectual property, published on the transfer platform for a newly created market sector for technology.

Expected results from the policy to create an ecosystem for the transfer of social and humanities technologies:

– an instrument (accountability and management platform) and practices will be put in place for assigning and using rights to intellectual property in social sciences and humanities;

– a new segment of the national market for technologies in social sciences and humanities will be shaped by providing external users with access to publishing and acquiring (on a commercial basis) social sciences and humanities intellectual property;

– models and methods will be developed for evaluating economic and social effects from social sciences and humanities technology;

– business activities in the R&D field will improve, including its university domain (funds raised through affiliated start-ups have increased by 50%);

– instruments for developing interdisciplinary and integrated research have been put in place by providing access to earlier R&D work carried out in the social sciences and humanities;

– social and economic impact of R&D projects is enhanced due to bringing intellectual property on the market;

– instruments will be devised for stimulating HSE staff research and innovation undertaken by the University's staff using financial remuneration and social promotion for the creation of intellectual property in social sciences and humanities;

– methodological and empirical bases for student education and research will be developed by relying on access to materials and results of relevant R&D works in the social sciences and humanities;

– instruments for stimulating active and productive student creative activities will be designed by setting up a platform for presenting and promoting their results (students and doctoral students are granted rights to deposit and disseminate intellectual property created during their studies).

2.11. Distributed University at Four Geographic Locations

HSE University has tested a model for the development of its (regional) campuses, located in Moscow, St. Petersburg, Nizhny Novgorod and Perm, as a single distributed campus, which would include, along with a single organizational and legal framework shared administrative bodies, normative/legal framework, shared key services (inter-campus e-courses/minors, intra-HSE academic mobility programme, "mirror" educational programmes, joint CPD programmes, distributed research subdivisions, streamlined instruments and standards for recruiting, evaluating and training academic staff across the University's campuses, etc.)

This model has been a driving force behind a significant convergence of parameters for development and operational activities at the regional campuses and the head campus of the University: in 2020, the average faculty member salary in Moscow constituted 259% of the average Moscow salary; in St. Petersburg - 256% of the

average salary in St. Petersburg; in Perm - 267% of the average Perm salary and in Nizhny Novgorod - 273; 10% of Moscow, 6% of Nizhniy Novgorod, 13% of Perm and 14% of St. Petersburg academic staff hold PhD degrees conferred by foreign universities.

For a number of key operational indicators, a significant difference among campuses still exists: in 2020, the average USE score of government-funded applicants was 95.2 points in Moscow; 92.8 points in St. Petersburg; 85.6 points in Perm; 88.0 points in Nizhny Novgorod; the total value of completed R&D per one academic staff member in Moscow was 2,031,600 roubles, in Nizhny Novgorod – 444,000 roubles, in St. Petersburg – 364,000 roubles, in Perm – 187,600 roubles.

At the latest stage of its development, HSE University will develop into a single distributed campus through the implementation of a network of geographically spaced academic excellence (leadership) centres, characterized by a significant body of earlier completed world-class research projects, a broad range of partnerships with international and Russian scientific and educational centres, and by embracing a single culture and standards for personnel development, research, education, expert and analytical and project work for making a major contribution of the University to the innovative development of Russia's territories, as well as its competitiveness at the global level.

Key areas of policy implementation include:

– effective participation in the global academic agenda in line with the objectives for Russia's socio-economic development through the geographic representation of the University in various regions;

– ensuring the synergy of locally distributed university teams (academic excellence centres) for their interaction with local resources and assets in the various regions of Russia;

– ensuring equitable access to high-quality academic products for all geographically distributed stakeholders and consumers.

Expected results from the policy implementation:

– platform solutions will be introduced for creating inter-campus educational programmes, with a single administration centre;

– at the Bachelor's level, the 2+2 learning model will be implemented, whereby students in their first and second years of study pursue inter-campus courses from the same pool of disciplines by using blended and remote learning modes; during their third and fourth years of study, professional and sectoral training will be provided to students. Master's programmes will either replicate the aforementioned model for Bachelor's studies or offered as an extension of an inter-campus Bachelor's programme following the 2+2+2 model;

– inter-campus world-class research centres will be created to operate as the network of research teams at various campuses using "mirror" or distributed laboratory formats;

– instruments and mechanisms for interacting with partners through distributed centres for strategic corporate partnership will be consolidated as a "single point of contact" model;

– a distributed system of centres to engage in social partnerships with regional stakeholders shall be established, along with the implementation of volunteering programmes, cultural and outreach events, projects with NGOs, interactions with socially vulnerable groups and social entrepreneurship projects.

Expected policy results:

– testing and replicating the distributed university model throughout the Russian higher education system;

– increasing the concentration of the University's resources in line with specialization, reducing transaction costs between university local sites;

– enhancing the research teams' potential and readiness to respond to the challenges of Russia's socio-economic development by conducting joint and complementary research;

– improved reputation of the sites of the distributed university as the points of attraction for leading Russian and international scholars, along with highly qualified specialists;

– increasing the quality of educational products through collaborations and inter-campus partnerships;

– intensifying students' focus on their careers in those regions where the University's campuses are located;

– building a sustainable system for interaction with local communities, providing strong contributions to the development of Russia's regions.

2.12. The University's Contributions to Development of the Education System in Russia; Cooperation between the University and Public

To support the University's contribution to the development of Russia's education system, as well as interaction between the University and public at large, HSE University strives to be a socially responsible university, implementing and supporting large-scale initiatives and projects to address social problems and promote national academic environment.

HSE University has the most developed system of collaboration with primary and secondary schools in Russia with the aim of developing specialized and pre-professional education in high school. The programmes include the HSE Lyceum in Moscow (nearly 2,000 pupils), 27 schools with "distributed lyceum" classes, and a network of 427 partner schools in 57 Russian regions. The programme is being implemented to support schools working in difficult conditions, the "Social Elevator" project for disadvantaged applicants which, in 2020, helped admit to the University 97 individuals from 48 Russian regions.

A total of 3,000 school and university staff were trained in 2020 in various CPD programmes. As part of the University Partnership programme, staff and doctoral students from Russian universities have internships at HSE University. In 2020, more than 400 employees from 107 Russian universities and research organizations from 56 Russian regions completed internships at HSE University in face-to-face and digital formats. In 2020, a total of 53 postdocs from 25 Russian cities participated in joint research projects with HSE researchers. A total of 13 "mirror" laboratories with regional universities and an e-course for Russian universities on the digitization of

education have been developed. Network programmes are being offered in partnership with 72 Russian universities.

As part of its third mission, HSE University carries out various activities to develop urban areas, educational projects, and social projects and popularize science and higher education, it also creates platforms for discussion. Since 2012, the "University Open to the City" project has been carrying out the University's potential as the largest cultural actor in the regions of its presence. "The Active Life of the Older Generation" project, and the HSE Volunteer Centre have been created. In 2020, the University's educational events reached 50,000 people. In 2020, the University championed a systemic approach to its third mission in the academic environment. The University has implemented organizational framework for the third mission to be integrated with education and research. In addition, HSE University is a key partner of the "Knowledge" Society, the Agency for Strategic Initiatives, the "Russia - Land of Opportunities" Foundation, and it actively cooperates with "Sirius" (Russian organization for early support of the talented children).

The University's goal is to drive positive social change through its contribution to the development of Russia's education system, along with the implementation of its third mission.

Key areas for the University's contributions to Russia's educational system and its own third mission:

– supporting the development of regional education systems through the implementation of joint educational programmes, network partnerships with Russian universities (further information about this is provided in subsection 2.1 "Educational Policy"), along with the transfer of educational technology, including the development of digital skills;

– academic cooperation with Russian universities by creating "mirror" laboratories (the creation of 35 labs by 2030);

– training highly qualified instructors, researchers and administrators for Russian universities by organizing internships and Russian postdoc programmes at the

University, financed by HSE (over 1,200 internships by 2030, over 100 postdocs every year);

– enhancing academic culture and the quality of publications by Russian researchers through systemic work with regional authors (150 articles of regional authors in the University's journals by 2030);

– developing new instruments for assessing subject-based and universal educational achievements;

– disseminating educational innovation through an international competition for innovation in education;

– developing a network of lyceums (math and science high schools) incorporated in HSE University, a network of base schools with classes under a distributed lyceum system, programmes for methodological support of schools operating in disadvantaged areas;

– organizing a system of intellectual competitions for young people, including the development of content and formats for events; conduct international research on intellectual contests by opening a distributed system among HSE University faculties and laboratories for intellectual contests;

– providing research which can benefits federal educational policy, regional and municipal authorities educational organizations, as well as instructors, parents, and learners;

– achieving objectives of sustainable development through the integration of socially important topics into educational process and using project-based learning;

– developing inter-campus network interaction during the implementation of the University's third mission;

– developing a system for stimulating and supporting student and staff participation in the third-mission projects;

– expanding social projects' partnerships with regional universities, NGOs, real-sector organizations, authorities and federally-funded organizations;

– developing digital infrastructure for the third mission.

Expected policy results:

– lack of horizontal ties will be overcome in the Russian academic community through the formation of institutional partnerships with regional universities;

– various sustainable intra-university academic collaborations will be started, thus producing new research results;

– academic mobility among Russian universities will increase significantly;

– the quality of education provided by regional universities will improve significantly, along with the accessibility of best educational programmes and teaching methodologies disseminated by HSE University via digital and online tools;

– tools for monitoring and analytical support for transformation of educational systems will be introduced (monitoring of education economics, longitudinal studies, monitoring of digital transformation and market for educational technologies, etc.);

– the University, jointly with experts and practitioners from relevant countries, will host a unique platform for analyzing education development in post-Soviet countries;

– tools for assessing the effectiveness of educational innovations will be developed;

– replicable competencies and skills assessment tools will be designed;

– jointly with partner organizations and development institutions, HSE University will take a lead in the analysis of best practices for university participation in socio-economic development of regions;

– HSE University's experience with the third mission will be replicated by other academic institutions through HSE's free digital internships and by organizing events for sharing experience at regional academic institutions;

– 1.5x growth (by 2030) in the number of students and employees, engaged in socially oriented and socially impactful projects for Russia's regions and organizations.

3. Strategic Projects Aimed at Meeting the Target Model

3.1. Description of the Strategic Project No. 1 "Success and Self-Sustainability of the Individual in a Changing World"

The shortage of cadre for employers and income shortage for consumers emphasize the significance of more years of employment, which may be supported by

medicine, a healthy environment and a holistic lifestyle. The digital revolution is transforming the labour market, demanding that participants who want to succeed possess digital and soft skills, as well as economic and legal knowledge. With this in mind, a "new inequality" is now emerging – the drastic differences in earnings and social opportunities due to having such skills. On the one hand, the pressure of today's information society on the individual has resulted in a type of "digital oppression", negatively impacting people's independent and rational choices, as well as affecting human behaviour and judgement. This demands not only the development of effective approaches to individual autonomy, but also the formulation of a complex attitude to those approaches.

The extent of this challenge requires the creation of a new interdisciplinary framework, with in-depth consideration of the development of individual's self-sustainability and independence and other related characteristics, as well as their enhancement through technology. With this in mind, a major component in this process has already been provided with the launch of the Consortium "World-class Research Centre for Multidisciplinary Research of Human Potential", which is charged with identifying the structure of human potential and social instruments capable of developing it further. Nevertheless, the research objectives of this institute do not cover the entire spectrum of human attributes, nor do they focus on conceptualization and development of the technology for supporting individual's self-sustainability in achieving success. Within this strategic project, there is a new emphasis on R&D directly relating to human development, thereby significantly widening the range of opportunities for collaboration among sociologists, economists, psychologists, biologists, physicians, engineers, and specialists in digital technologies. As a result, new approaches and technologies for enhancing human experience will be developed and interlinked, along with the creation of relevant policies and institutional solutions.

The initial framework for designing a project for "human enhancement" may be drawn from human capital theory and the concept of social capital, which would allow us to specify the following areas of human enhancement: physical and mental health, life and career skills, iself-sustainability and social relations. As such, this strategic

project is organized around six core areas, one of which (Area 1) concerns fundamental research into the possibilities and limitations of boosting human potential with due consideration of changes in the environment, including emerging challenges and demands. The remaining areas are focused on developing applicable technological and institutional solutions: in the medical/biological sphere – for human health; in the psychological sphere – for the cognitive development and psychological well-being; in skills development – for professional and personal self-realization; and also developing human self-sustainability and building social connections.

3.1.1. Goal of the Strategic Project No. 1 "Success and Self-Sustainability of the Individual in a Changing World"

One of the fundamental issues in socio-economic development in recent decades, something that is actively discussed at both the political level and within academia, is how modern life sets expectations to individuals that grow ever more demanding. Stable structures for organizing one's life, upon which one might have relied, are now part of the past, while self-sustainability, instead of being a privilege, is now a necessary factor in contemporary living. The economic value of any individual, both as a productive participant in the economy and an active, conscious member of the society and a consumer, is on the rise. However, not everybody is able to independently and responsibly (without any outside oversight) navigate towards successful, healthy and positive wellbeing. Social institutions, digital transformation, the revolution in biomedicine and education are not sufficiently focused on developing relevant skills. "Enhancement" (strengthening) of independent and successful human activity, with a particular focus on the emerging digital, social, biological and cognitive technologies, is now the challenge humanity must face. This strategic project can meet the challenge by relying on emerging technological opportunities and putting them together into a whole complex with technological and institutional instruments.

This start-up project is focused on expanding the supply and distribution of instruments for encouraging self-sustainable human activity, ensuring career success, health and social wellbeing, under conditions of constantly changing environment.

The outcomes of this project are in line with the national objective "Creating conditions for self-realization and development of talents".

3.1.2. Objectives of the Strategic Project No. 1 "Success and Self-Sustainability of the Individual in a Changing World"

1. Identifying significant risks to health, welfare and success because of particular problems, population groups and life spheres that require special support for self-sustaining activities (enhancement) and unlocking of individuals potential.

2. Identifying key instruments (including engineering, medical, digital, social, educational, technological, etc.) to develop individuals' abilities and expand opportunities for self-sustainable actions in response to new opportunities and requirements set by society.

3. Developing technologies for boosting individuals' decision-making concerning their health and cognitive functions, including new biomedical, digital and cognitive technologies, the development of portable electronic devices.

4. Developing digital and educational technologies for:

– identification and assistance in self-development of talents, including those that education systems traditionally fail (social, artisanal and engineering skills);

– individualization of educational trajectories during an individual's entire lifespan;

– establishing sustainable social ties among individuals;

– encouraging self-sustainability and self-regulation skills.

5. Development of the models for socio-economic assessment of the effects from individual and combination of technologies of "human enhancement".

6. Designing tools for social and humanitarian policy with a focus on tasks of the expansion of opportunities for an individual.

7. Developing sociological and statistical instruments for the analysis of consumption and consumer choice and models and instruments for processing Big Data in this area.

8. Developing new educational programmes and modules, aimed at training specialists in “human enhancement”; developing independent life skills and self-care competencies (health and welfare).

The strategic project’s implementation will centre around six areas:

Area 1. Human development in a rapidly changing world: opportunities, risks and institutional aspects:

1.1. challenges and demands for human enhancement in response to social, economic, technological and cultural changes;

1.2. acceptance and rejection of technologies;

1.3. economics of human enhancement.

Area 2. Technologies for improving human health:

2.1. bio-printing;

2.2. wearable electronics for healthcare needs;

2.3. digital technologies and health;

2.4. bio-technologies and improving people’s health.

Area 3. Neurobiological and psychological technologies for improving brain functions and expanding cognitive abilities:

3.1. neurotechnologies for the optimization of human brain function;

3.2. digital possibilities for improving human mental functions.

Area 4 (a single project). Skills and experience for independent success, including the identification of capabilities and points of individual talent; modelling a national system of qualifications and digital ecosystem of qualifications.

Area 5 (a single project). Cultivation of independence and self-sustainability, including digital instruments for intellectual searches, which stimulate independent choice.

Area 6 (a single project). Instruments for enhancing social connections for individual achievement, while boosting public solidarity (support).

3.1.3. Expected Results of the Strategic Project No. 1 “Success and Self-Sustainability of the Individual in a Changing World”

At the global level:

A world-class polydisciplinary (sociology, economics, psychology, pedagogy, biology, medicine, engineering, computer and cognitive sciences) academic community will conduct research in “human enhancement”, including at least four consortiums of academic institutions and corporate firms, with at least 50 researchers, and half of them would be under 39 years old.

By 2030, HSE University will be ranked among Top-50 global leaders (as per the Times Higher Education (THE) and/or Quacquarelli Symonds (QS) ratings) in at least three subject areas related to human enhancement (social, engineering/technical, medical-biological sciences).

A pool of support methodologies for self-sustainable selection, health, social inclusion and goals achievement will be developed, including the following:

– intellectual search models, capable of accelerating human cognitive functions and individual selection options, as well as neurotechnology to enhance protection from false information;

– online instruments to assess individual quality of life and health;

– digital technologies to analyze the functional condition and self-diagnostics with the application of portable devices;

– digital technologies for monitoring recovery processes and operational adjustments in treatment with the application of AI, e.g., interactive support for patients and health care professions;

– a digital platform offering services for the development of independent support instruments for the purpose of extending active lifestyles and managing one’s own health needs;

– new protocols to stimulate the brain for the purpose of expanding cognitive abilities: memory, attention, cognitive control, and language abilities;

– digital interfaces, used to ensure the best execution of problem-solving, learning and cognitive abilities.

Informational, consulting and educational practices and technologies will be developed, capable of identifying individual talents and support for successful educational and professional trajectories, including:

– digital instruments to identify individual abilities and individual areas of excellence;

– digital instruments for self-assessment of the development of competencies and contemporary literacy;

– digital platform for building academic trajectories and digital services to obtain recommendations on self-instruction;

– instruments for independent composition of skills and ongoing competencies profile, as well as professional self-realization on the job market.

Sociological and statistical instruments and models will be developed, capable of processing Big Data in order to analyze areas of consumption and consumer choice, as an important area for encouraging human independence.

At the national level:

A new academic field will be implemented in Russia - “Humanitarian Information Science”.

The development of economic and normative model for a system of professional qualifications and a model of the digital platform for professional qualifications, thus increasing opportunities for effective career building.

The development of recommendations for state policy to promote instruments for supporting self-sustainable living in formal and informal institutions of human development and new digital environments.

Creation of a market of brand new consulting products and services for the state and private sectors of the economy, focused on providing support to independent individuals: by 2030, innovations and inventions shall be worth at least two billion roubles.

At the level of HSE University:

For boosting research activities at HSE University and the country:

Building of Russia’s most complete collection of empirical data related to human self-sustainability and available for researchers, experts and practitioners in human development (health care, culture, educational and social policy, etc.)

For the development of education at HSE University and throughout Russia:

Creation and launch of at least 15 new educational products (academic courses, modules, CPD programmes, e-courses, etc.), for analyzing the development and/or implementation and/or use of technologies for human enhancement. Training of a cohort of researchers and professionals to engage in the development of priority economic sectors with respect to human potential in line with sector-focused strategic planning.

3.2. Description of the Strategic Project No. 2 "Social Policy for Sustainable Development and Inclusive Economic Growth"

Global challenges of poverty and inequality, which have intensified owing to rapid technological and socio-demographic changes, have put social policy instruments in the foreground for efforts to ensure sustainable development. During the Covid-19 pandemic, they served not only as the cause of social stability, but also economic resilience. In light of rising demand for sustainability, many countries have experienced a slowdown in economic growth, which, in turn, become a driver behind the transition to the development trend, based on increasing investment in the development of human potential and obtaining returns on its capitalization, which has shaped into the concept of inclusive economic growth. These substantial challenges determine the relevance of this project, which aims to achieve national objectives in protecting the population, including the health and wellbeing of individuals, as well as creating conditions for respectable and high-performance work opportunities and successful entrepreneurial activities.

HSE University is a globally recognized national leader in the development of social policy (by Institute for Social Policy), job market research, health care and education, as well as statistical and sociological research. The University's experts carry out research and applied analytical projects when developing and helping to implement a whole range of social policies in Russia.

3.2.1. Goals of the Strategic Project No. 2 "Social Policy for Sustainable Development and Inclusive Economic Growth"

1. Ensuring national leadership and boosting global competitiveness of HSE University in the development of scientific instruments for social policy, aimed at maintaining social stability and fostering conditions for inclusive economic growth.

2. Developing methodology and preparing justification for transferring from inertial and reactive social policy to an evidence-based policy, which will help enhance the stability of the Russian state, ensure balanced development of national economy, and maintain socio-political stability in the country.

3.2.2. Objectives of the Strategic Project No. 2 "Social Policy for Sustainable Development and Inclusive Economic Growth"

1. Assessing the effectiveness of the current and developing new approaches to social adaptation policy (primarily at the level of the family) with respect to changes in wellbeing, driven by the accelerating rate of global technological and socio-cultural transformation, as well as the need for environmental social governance (ESG).

2. Creating an open databank of scientific instruments for evidence-based social policy in the social sphere, and policy measures, aimed at increasing the inclusiveness of economic growth (maximum involvement of each citizen in its development).

3. Developing a national scientific school for monitoring and forecasting the job market.

4. Creating an open databank of new policy instruments to support sustainable development and increase the inclusiveness of economic growth.

5. Developing scientific instruments for validating ecosystems of life choices, capable of enhancing social stability.

6. The strategic project centres around five research areas, aimed at solving the specified tasks.

Area 1. "Instruments for citizens' support and adaptation to new possibilities". This area is aimed at the identification and scientific systematization of access limitations to resources for shaping the appropriate level and quality of a healthy life; creation of a specific system of social policy measures, bringing down inequality

in access to essential services and resources, while also reducing risks of poverty and lack of success. Projects include: 1.1. providing support to failing learners; 1.2. new social aspects in the improvement of the people's health; 1.3. hiring policy and access to professional education for persons with health issues/disabilities.

Area 2. "Developing a national school for monitoring and forecasting the job market" – this area is aimed at devising tools for forecasting labour markets for the purpose of adjusting national project measures and state programmes. Projects include: 2.1. monitoring spatial and structural changes of the job market; 2.2. impact of labour migration on the job market.

Area 3. "'Smarteka' of instruments for evidence-based social policy" – this area is focused on the creation and introduction of academic instruments for evidence-based social policy into administration decision-making with a view to the adjustment of national projects and state programmes, thereby contributing to an increase of social stability and stimulating the economic growth. Projects include: 3.1. theoretical and methodological aspects in the development of instruments for evidence-based social policy; 3.2. evidence-based social policy and economic growth; 3.3. application of the evidence-based policy for strategic planning in social sphere.

Area 4. "New policy instruments and support for stable development and enhancing the inclusiveness of economic growth" – this area seeks to develop and introduce new socio-economic policy measures, aimed at contributing to social stability and boosting inclusive economic growth, including corporate policy on the basis of ESG criteria, which can effectively combine financial results and social and environmental well-being in proximity to an area where a given company is located. Projects include: 4.1. concept of a national model for boosting productivity and inclusivity of economic growth; 4.2. expanding corporate management instruments for stable development; 4.3 Smarteka for the effects from transformation and economic growth in investment in human potential.

Area 5. "Ecosystems for life choices" – this area is committed to researching life choices as a socio-psychological phenomenon and creating a bank of solutions to enhance social stability with the application of instruments for the ecosystem of life

choices. Projects include: 5.1. choice as a complex socio-psychological phenomenon; 5.2. development of a core theoretical model of choice-making; 5.3. choice in various life spheres throughout the individual's entire life.

3.2.3. Expected Results of the Strategic Project No. 2 "Social Policy for Sustainable Development and Inclusive Economic Growth"

Global outcome: Improvement of the University's global competitiveness with respect to the development of scientific instruments for social policy, confirmed by HSE University's entry, by 2030, into the Top-50 of global leaders in the reputable THE and/or QS ratings in three subject areas relating to social stability and economic growth.

National results: Creation of an open bank of new evidence-based instruments of social policy, focused on maintaining social stability and measures to support the improvement of inclusivity of economic growth, ensuring the transfer (translation) of academic and expert/analytical inventions and innovations in administrative decisions' practice.

Expansion of social policy through the inclusion of ESG instruments, accompanied by the integrated monitoring of labour and social rehabilitation for needy and economically vulnerable citizens.

Research/academic outcome will include the creation of the university-based academic schools in five fields: social information science, inclusive economic growth, social stability, monitoring and forecasting trends of the job markets, new mechanisms for the adaptation of citizens and families to rapidly changing development conditions.

By 2030, doctoral students, research assistants and young researchers (under 39 years of age) will account for 50% of teams at such schools.

The applied academic outcomes will include two launched information and analytical bases: instruments for evidence-based social policy and new solutions in the policy for supporting sustainable development and increasing the inclusivity of economic growth.

3.3. Description of the Strategic Project No. 3 "National Centre of S&T and Socio-Economic Forecasting"

A key characteristic of the last decade was the rapid increase in global challenges: climate change, deepening inequality, demographic shifts, migration, transformation of social institutions, digitalization in every corner of life, changes at the workplace due to new technologies and AI, shifts in the system of human values, people's behaviour and preferences, and abilities for finding solutions and making decisions. The reduction in technological life cycles and acceleration of their dynamics, are expanding the field of opportunities on the one hand while driving more uncertainty with respect to the mid- and long-term future on the other. The occurrence of unpredictable shocks (such as the Covid-19 crisis), has resulted in volatility in our world, while the absence of information on the nature and future dynamics of such transformative processes makes it even harder to pinpoint and effectively react to today's multiple challenges.

This strategic project is aimed at the identification and practical application of new and more effective approaches to predicting the future in light of dynamic changes and expanding technological opportunities. The range of quantitative and qualitative methods will be expanded for various types of data, on the basis of multidisciplinary approach, bringing together the latest achievements in social and computer sciences, cultural studies and psychology, as well as the application of models to analyze complex systems with a specific focus on the various factors linking them together. Those new methods and models will be tested on practical forecasting projects, which will be applied to various areas of human life, economy and society.

HSE University is the acknowledged leader in forecast research and foresight methodology with a truly global reputation as an expert institution. The University has carried over 100 projects in S&T and socio-economic forecasting, development of technological roadmaps, and state policy recommendations in various sectors of the economy and society. HSE also publishes the journal *Foresight and STI Governance* (WoS and Scopus Q1), a series of monographs with forecasts and S&T policy concepts through the Springer-Nature publishing house. The University sponsors annual

international conference “Foresight and STI policy”, while also maintaining partnerships with top foresight centres around the world. The already developed niches for forecasting methods, models and practices, as well as the University’s advanced analytical infrastructure (Big Data iFORA analysis system, supercomputers, etc.) helped to build a unique resource foundation for the successful realization of this strategic project. In addition, the widespread distribution of the project’s results throughout the global academic and professional world will help to encourage Russia’s active involvement in the long-term global agenda for S&T and socio-economic development.

3.3.1. Goal of the Strategic Project No. 3 “National Centre of S&T and Socio-Economic Forecasting”

1. Development, testing and extensive application of effective instruments for long-term forecasting, thus fostering the creation of a new information foundation in order to formulate an evidence-based policy and make administrative decisions in various fields of human activity; analysis of the dynamics of global transformations and possible shocks and assessment of their possible effects.

2. Implementation of this project will contribute to achieving national targets: “Protecting the Population, Health and Wellbeing of People”, “Opportunities for Self-Realization and Development of Talents” and “Comfortable and Safety Environment for Life”, as well as the formation of conditions for Russian society to effectively respond to the major challenges, with due consideration of the correlation of humanity and nature, technology, and social institutions at the current phase of global development, along with the application of humanities and social science methods (Orders of the President of the Russian Federation No. 474, dated July 21, 2020 and No. 642, p. 20j, dated December 1, 2016, respectively).

3. Development of contemporary forecasting methods and models, scaling them up for various fields of application, broad dissemination at other academic institutions through the system of study programmes and respective training will form a culture of strategic forecasting in Russia, with regular assessment of global challenges and trends, along with the selection of promising paths for long-term development.

3.3.2. Objectives of the Strategic Project No. 3 “National Centre of S&T and Socio-Economic Forecasting”

1. Developing advanced methodologies for S&T and socio-economic forecasting; creating information framework and interdisciplinary instruments for new forecasting activities.

2. Creating a continuously working platform for monitoring global challenges and trends in technological and socio-economic development, scientific frontiers, technological breakthroughs, the emerging of new markets and products (in hydrogen energetics, pharmaceuticals, etc.).

3. Developing a series of long-term forecasts, ensuring the construction of a detailed picture of the future; determining mid- to long-term priorities in the development of science and technology, sectors of economy, social innovation and institutions; assessing the extent of upcoming changes and their social, economic, environmental and geopolitical effects.

4. Promoting the wide-scale distribution of the studies and research of the future in Russia and the world.

This strategic project is a combination of four interlinked projects, which, taken together, can achieve a common goal:

– Observation of the foresight research methods;

– Platform for monitoring trends in science, technology, economy and society;

– System of forecasting future trends in science, technology, economy and society;

– Promoting culture and best practices of studies of the future.

3.3.3. Expected Results of the Strategic Project No. 3 “National Centre of S&T and Socio-Economic Forecasting

At the global level:

– developing and implementing original forecasting methods and models, which are globally competitive;

– HSE University’s inclusion, by 2030, in the Top-20 academic institutions of the world in terms of total articles on foresight in Scopus/WoS Q1-Q2 journals.

At the national level:

– list of the priority areas of development for science and technology and critical technologies for the Russian Federation will be compiled;

– “Forecast for Russia’s S&T Development up until 2040” based on newly created methodological and analytical platform, will be made to support the development of long-term technological and innovation policies;

– a series of forecasts will be prepared on socio-economic development for the purpose of supporting the formation of long-term economic and social policy;

– recommendations will be developed proposing the improvement of state policy on collection and initial analysis of data, state statistical monitoring instruments and sociological surveys;

– new foundation for the development of national S&T and innovative policy and instruments for strategic planning will be put in place due to the application of forecast results and integrated monitoring of global S&T frontiers;

– national competencies centre will be created, a world-class school in S&T and socio-economic forecasting;

– export of scientific, educational and consulting services for the development of national and corporate forecasting models will be organised, as well as specialized forecasting – at least five projects for foreign clients;

– Russian market for consulting products and services in technological and socio-economic forecasts will be developed and by 2030, the total value of services should come to at least two billion roubles.

At the institutional level:

– an Observatory for foresight research methods will be developed, covering at least 40 quantitative and qualitative methods and models used in practice, e.g., digital, cultural studies, psychological, etc.;

– a methodology for determining global frontiers in science and technology will be developed, along with annual monitoring based on qualitative (semantic) analysis of the Big Data with due consideration of the specifics of science, technology, as well as social and economic processes;

– HSE University will initiate a global network for future studies that will include at least 15 specialized universities and research centres.

For the development of research activities at HSE University and in Russia:

– creation of a national standard for foresight research;

– original methodology for determining global frontiers of science and technologies on the basis of qualitative (semantic) analysis of Big Data with due consideration of the specific aspects of science, technology, social and economic processes will be developed;

– at least 15 new original methods for forecasting and modelling will be used in HSE University projects;

– at least 20 leading foreign experts in forecasting will take part in the University's forecasting projects;

– development of national and international expert panels on at least 10 subject areas;

– at least two books published by reputable international publishers, and at least 30 articles in top international journals on the subject of forecasting and foresight.

For the development of education at HSE University and in Russia:

– educational modules for studies of the future will be included into at least 10 HSE University educational programmes;

– an e-course in research methods of the future will be developed and implemented at HSE University, as well as other Russian and foreign academic institutions.

3.4. Description of the Strategic Project No. 4 "Digital Transformation: Technologies, Effects and Performance"

Intensive distribution of digital technologies completely transforms the economy and social life. The development of those technologies is quite rapid and often unpredictable; as such, it is next to impossible to truly forecast its consequences. It would be a mistake to view digital transformation only from the perspective of technology – new operational models of activities will come into being, while economic and social institutions will undergo major changes, along with people's

lifestyles. In addition, a “worldwide data space” is emerging, thus helping to form the basis for machine-to-machine communication, as the globalization of the economy and personalization of goods and services intensifies. However, there is growing concern on the part of people about keeping their personal data secure, as well as privacy and security in the world of the “Internet of things”. Perhaps the biggest challenge is the progressing limitations in terms of people’s informed choices with respect to digital ecosystem solutions. The euphoria from improvement in the quality of life at the start of the digital age has faded, while a more agitated and worrisome mood has come forward.

Thus, it is necessary to create a new model for developing and implementing digital technologies, foreseeing not only assessments of technological and market perspectives, but also predicting long-term economic, cultural, and social consequences, still unforeseen on the part of society and regulators, as well as the risks and effects from promotion and distribution of those technologies. This is a pressing issue and affects all of Russia, since digital transformation is a national target for the development by 2030 (as per Regulation of the President of the Russian Federation No. 474, from July 21, 2020). To achieve this, it is important to consider multiple complex and interrelated factors beyond science and technology to ensure that the decisions that have been made were reasonable.

HSE University is a globally recognized centre of computer technology development in such key areas as Big Data, AI, cyber-physical systems and computer vision. All of these technologies lie at the core of digital transformation and generate the effects that change the entire sectors of the economy and social life. Thus, determining and carrying out specific tasks involving scientific teams in these spheres depends largely on having a clear vision of such effects.

The University has already put together research teams, reputable both in Russia and abroad. Those teams specialize in studying the trends, risks and effects of digital transformation in economy as a whole and in individual disciplines (ISSEK, Institute of Education, School of Sociology, Centre for Language and Brain Studies, etc.). This strategic project designs the organization of joint activities of those key teams in order

to develop basic and applied computer and social technologies to help further foster digital transformation.

3.4.1. Goal of the Strategic Project No. 4 "Digital Transformation: Technologies, Effects and Performance"

Creation of the world-class interdisciplinary research centre, engaged in full-cycle development and implementation of advanced machine-learning technologies, AI and cyber-physical systems, as well as research into the effects, risks and effectiveness of the digital transformations.

3.4.2. Objectives of the Strategic Project No. 4 "Digital Transformation: Technologies, Effects and Performance"

1. Creation of an international centre for competencies to develop and apply machine-learning methods and AI technologies. The Centre will be engaged in interdisciplinary R&D work in cooperation with leading universities, academic centres and industrial partners.

2. Conducting fundamental and applied research in the promising basic technologies for cyber-physical systems.

3. Identification and comprehensive assessment of the effects and risks of digital transformation, relying on integrated interdisciplinary R&D work. Validation of the introduction of digital technologies in specific economic sectors and social spheres.

4. Researching promising areas for the application of digital technologies; scientifically proven design of new institutions and regulations on the basis of evidence-based policy methods in order to increase the effectiveness of digital transformation.

The strategic project will be implemented in the framework of the following projects: International Competence Centre for Developing and Applying Machine-learning and AI-driven Methods; cyber-physical systems: new-generation technologies, global opportunities and challenges; research into digital transformation and its effects; efficiency of digital transformation.

3.4.3. Expected Results of the Strategic Project No. 4 “Digital Transformation: Technologies, Effects and Performance”

At the global level:

– development and implementation of the world-class, competitive technologies in machine-learning and AI, as well as technologies and devices for cyber-physical systems;

– improved positions of HSE University in computer science and IT in such reputable subject ratings as THE and/or QS.

At the national level:

– on a regular basis (at least once a year), conduct the analysis of key government documents for the policy in the development of digital economy (including the areas specified for achieving Russia’s development goals in digital transformation by 2030;

– conduct regular assessments of socio-economic outcomes, the effects and risks expected from the variety of planned activities on digital transformation; develop recommendations to increase the efficiency of policies aimed at developing digital economy, and achieving the national objectives for 2030 under the national goal of Digital Transformation;

– regularly develop proposals on behalf of the Russian Federation with respect to the formulation of international standards and regulations in the sphere of the digital economy (under the auspices of important international organizations, such as the World Bank, OECD, IMF, etc.);

– regularly publish analytical reports and other information bulletins dealing with the problems of digital transformation, its consequences, risks and effects, for the purpose of increasing citizens, businesses, social organisations and the state’s preparedness for the “digital future”.

– At the institutional level:

– a significant increase in the total number of IP outcomes in AI and cyber-physical systems, along with major improvement in the University’s position among Russian and international universities in the total number of IP items in these fields;

– a significant increase to the total number of HSE University publications on AI and cyber-physical systems in journals indexed in WoS and/or Scopus, as well as a bigger share of publications in Q1-Q2 journals. Positions of HSE University among Russian and world's academic institutions will improve significantly in terms of a number of publications in these fields;

– development and testing of an effective model for HSE University units to work together and develop integrated market offers for digital products and services;

– significant increase in additional revenue from licensing technologies and applied R&D contracts.

For the development of research at HSE University and in Russia in general:

– creation of an international centre of competencies for the development and application of machine-learning methods and AI technologies;

– creation of leading research teams in Russia, including the top experts in AI and cyber-physical systems (in terms of total publications, created IPs, total contribution to the international open-source projects);

– creation of an interdisciplinary competence centre for cybersecurity and preventing cybercrime;

– creation of a unique platform for developing, testing and implementing AI models, supported by the latest computational instruments;

– world-class research skills and competencies, methodologies for assessing effects, risks and outcomes in digital transformation will be formulated.

For the development of educational activities at HSE University and in Russia in general:

– development and implementation of new educational programmes (higher and CPD training) in AI, cyber-physical systems including the programmes taught in English and provided in a network format;

– development of digital services, databases, learning management systems and other IP, ensuring the digital transformation of HSE University; the services will be tested at HSE University and its partner institutions;

– creation and implementation of digital project management at HSE University and an automated assessment (grading) system for learners pursuing studies in engineering, mathematics and computer science (the service will be disseminated among other Russian academic institutions);

– creation and implementation, relying on the SaaS format, of a virtual project learning environment for an engineering university, including a selection of open-source services with modular architecture;

– development of online labs providing remote instruction to engineering specialists (based on the HSE MIEM laboratories);

– significant increase in the number of specialists with research and practical training in digital transformation and commercialization of technologies;

– significant increase in the total number of students pursuing research-based Master's programmes with their participation in research projects involving businesses with a focus on AI and cyber-physical systems.

3.5. Description of the Strategic Project No. 5 "Evidence-based Urban Development"

The opportunity to make quality decisions in spatial development, urban planning and management, and city design is currently limited due to the deficit in systematic knowledge and appropriate methodological instrumentation. Thus, a new urban development policy, announced as a government initiative, will require:

– an up-to-date systematized knowledge about the concept of the city (as an object of management, planning and development);

– an up-to-date systematized knowledge about legal applications, concept of vertical logic in legal regulations regarding land utilisation and real-estate development;

– contemporary methods for planning and assessing economic, environmental, social, cultural, and other effects of urban policy in construction and transportation planning;

– up-to-date competencies for the job market in city and transportation planning, including competencies required by state and municipal administration.

HSE University, as an academic and educational centre, already is in possession of all necessary prerequisites to become a leader in evidence-based urban studies. Nevertheless, this could be further enhanced thanks to the synergy from the implementation of three interrelated projects, each of them serving as both an information base for other projects and a consumer of the results.

The specifics of post-Soviet urban transformation and the challenges presented to the community of specialists working in the post-Soviet cities, determine the areas where the University can become a leader not only in Russia but also globally.

3.5.1. Goal of the Strategic Project No. 5 "Evidence-based Urban Development"

Creation of the world-class research centre for evidence-based urban development by providing the scientific and applied bases for urban research, including analytical support for the government-directed initiatives "New Urban Development Policy" and "Cities of Big Possibilities".

3.5.2. Objectives of the Strategic Project No. 5 "Evidence-based Urban Development"

1. Create legal foundation for urban development under ever-changing environment: provide methodological support for urban legislation so that territorial planning documentation and rules for the land use/construction development can be properly drawn up.

2. Propose a system for monitoring the regulatory impact of the aforementioned documents and create of a centre of competencies in detecting, describing and comparative analysis of the spatial and social effects of urban development (construction, housing, transportation, ecology assessment) in Russian cities, as well as the application of this methodology in administrative practices at the federal, regional and municipal levels.

3. Become a centre of competencies to initiate a new discourse in Russia, necessary for modelling both transport behaviour and results of housing policy in such areas as residential mobility, flexibility in selecting workplaces, and transforming the structures' functionality.

4. Designing new instruments for transport modelling (new approaches to urban space use and split transportation demand; transformation of construction formats; growth in residential mobility and flexibility in selecting workplaces; technological innovation in transport means, as well as managing traffic and transport flows). Initiating the implementation of new-generation transportation models at federal, regional and municipal levels.

5. Stimulating new quality of administrative solutions in urban planning and administration by training qualified personnel, publications in academic and expert journals, public service, expert presentations and presenting papers at academic conferences and professional forums.

3.5.3. Expected Results of the Strategic Project No. 5 "Evidence-based Urban Development"

At global level:

– unique methods will be developed and tested, including the improvement of urban development legislation and municipal regulation; increasing the effectiveness of urban development administrative systems; reforming national housing policy; calculating availability and affordability of housing with a particular focus on the impact of changing market features on the housing/mortgage market and providing professional support in making housing affordable to various social groups; forecasting population flow within and between urban areas to justify and correct plans for capital infrastructure development; and transportation planning;

– a new transportation modelling toolset capable of competing with analogous products currently being designed and/or subject to pilot testing will be developed;

– a set of urban development practices, which are currently absent in global academic discourse, will be designed for Russian cities as well as the patterns of post-Soviet urban transformation;

– new educational technologies will be developed, covering the latest niches in educational services;

– open databanks and a platform to display an index of successful cities, including visualizations, geographic maps and analytical materials will be made available to a wide audience;

– growth in global competitiveness of HSE University – by 2030 improving in QS ratings for at least in two subjects, related to Geography and Development Studies.

At national level:

– comparative analytical methods will be prepared to measure the performance of urban policy at the municipal level in Russia (the majority of global approaches are focused on regional levels and the data reflects this);

– legal novellas will be prepared that will increase efficiency of the city planning and urban development in Russia;

– extensive addition of new personnel thanks to the recruitment of new specialists and training and retraining of the current ones; supplying personnel for urban development and planning activities and public administration bodies.

– At institutional level:

– creation of new interdisciplinary research groups, with specialists in urban planning, spatial data analysts, geographers, sociologists and legal experts;

– introduction of new types of data on cities and urban areas in research; new open access databases with those data (e.g., new mobility), will be developed at HSE University;

– new working programmes for various degree programmes and open professional development programmes (see “At the educational level”);

– export of education: at least eight international students will be enrolled in Bachelor’s and Master’s programmes, in particular, students from the post-Soviet space and countries where such processes are underway.

At research level:

– in the framework of each direction, new world-class interdisciplinary research teams will be formed, including specialists in urban planning, spatial data analysts, geographers, sociologists and lawyers;

– an open database and archive of analytical materials will be created;

– doctoral (at least one) and candidate of sciences (at least four) dissertations will be defended on topics covered by the strategic projects in various fields (law, national economy, state administration, etc.)

At applied level:

– creating new methodologies for project-based research;

– developing proposals to improve the system of collection and analysis of statistical data;

– creating an atlas of creative specializations in Russian cities;

– regularly publishing analytical materials (quarterly – on housing and utilities; annually – on land use and construction legislation and regulation in Russia);

– organizing expert support for central and federal authorities, administration of the municipalities and regional bodies.

At educational level:

– at least five new CPD programmes will be launched;

– the line of open educational programmes (at least three new working curricula), minors (at least two) and CPD programmes (at least five) will be taught;

– the degree and CPD programmes will be enriched by the evidence-based urban studies;

– more students will be taking part in research and project work.

4. Key Characteristics of HSE University's Inter-institutional Network Relations and Cooperation

4.1. Structure of Key Partnerships

HSE University has been successfully developing sustainable partnerships with Russian academic institutions to implement joint educational programmes, support competencies, and disseminate best practices. Since 2010, the University has carried out projects requested by more than 20 universities, including federal (Ural Federal University, Far Eastern Federal University, Siberian Federal University, etc.), national research (Moscow Institute of Physics and Technology, Moscow Engineering Physics Institute, Peter the Great St. Petersburg Polytechnic University, etc.), regional flagship universities (Ulyanovsk State University, Togliatti State University, etc.) the Russian

Presidential Academy of National Economy and Public Administration and many others.

Partners in joint undergraduate and graduate programmes included specialized RAS institutes, the Skolkovo Institute of Science and Technology, New Economic School, the London School of Economics and Political Science, Kyung Hee University (South Korea) and some others. Cooperation with RAS institutes, which aims to improve the level of education in natural sciences, contributed to the creation of new faculties with advanced research agenda (faculties of physics, chemistry, biology and biotechnology, geography and geoinformation technology). Over 70 joint departments with partner organizations currently operate at the faculties of HSE University, including major companies (SAS, 1C, Otkrytie Group, JetBrains, Accenture, Oracle, Lanit, Freight One, Vega Concern, RSC Energia and others), government bodies (e.g., the Federal Antimonopoly Service), public organizations and non-profit organizations (Russian Union of Industrialists and Entrepreneurs, OPORA RUSSIA, the Russian Public Opinion Research Centre, the Public Opinion Foundation, etc.)

HSE University attracts specialized partners to regularly conduct high-profile intellectual competitions. In addition to HSE University, 13 other universities, the Russian Chamber of Commerce and Industry, the Russian Ministry of Finance, the Russian Ministry of Economic Development, the Russian Academy of Sciences, the Russian Union of Industrialists and Entrepreneurs and a number of companies and NGOs take part in organizing Olympiads and competitions for school students (e.g., the 'Vysshaya Proba' All-Russian Olympiad, the 'Vysshiy Pilotazh' All-Russian Competition for Research and Project Work of School Students, the All-Russian Case Study Championship in Economics and Entrepreneurship, and the 'In Your Own Words' All-Russian Essay Championship). Each year, HSE University and its partners in host countries organize the International Economics Olympiad (IEO).

More than 20 academic institutions from various regions of Russia, research organizations (including the Russian Quantum Centre), major employers (VTB and Sberbank) and other organizations (Moscow Exchange, RBC, TV-Novosti (Russia

Today), Rightech, etc.) serve as organizational partners for Olympiads for university students and graduates ("Higher League" and "I'm a Professional").

HSE University provides organizational and methodological support to a network of partner schools called "The University Educational District" and based on cooperation agreements with schools aligned with the Partner School, Base School and Distributed Lyceum formats.

HSE University considers it one of the crucial objectives to nurture partnerships in research, R&D commercialization and innovation policy, while also playing an active role in shaping and implementing a promising agenda for the country's socio-economic development that takes into account global trends and national specifics, as well as promotion of forecasting and foresight research on key issues of socio-economic policy. HSE University provides regular expert and analytical support to Russian State Duma and the Russian Accounts Chamber. HSE University also cooperates with the federal executive authorities (e.g., the Russian Ministry of Economic Development, the Russian Ministry of Digital Development, Communications and Mass Media, the Russian Ministry of Industry and Trade, the Russian Ministry of Energy, the Russian Ministry of Transport, the Russian Ministry of Agriculture, the Russian Ministry of Education, the Russian Federal State Statistics Service, the Russian Federal Technical Regulation and Metrology Agency, etc.), through the participation of its representatives in public and expert councils and working groups and in R&D projects.

Since 2015, HSE University has carried out over 230 projects on socio-economic, S&T and spatial development, education, health care, public administration, agriculture, energy, transport, etc., on behalf of more than 60 regions of the Russian Federation. HSE University is a partner of the Agency for Strategic Initiatives (ASI) in the Smarteka project (complying with p. 6 of the List of Instructions No. Pr-1186 of the Russian President from July 2, 2019), which aims to create a single platform to replicate successful practices and new solutions for economic development to Russia's regions.

Drawing on the potential of interdisciplinary teams, HSE University initiated the 'University as a Think Tank of the Region' project, which is being implemented by a consortium with the involvement of HSE University and academic institutions representing various federal districts of Russia (Kazan Federal University, Ural Federal University, North-Caucasus Federal University, Baltic Federal University, Far Eastern Federal University and Tomsk State University). The scope of cooperation with regional authorities, development institutions and businesses includes drafting development projects and programmes to train management teams in the regions.

HSE University conducts R&D in cognitive neuroscience, neurocomputer interfaces and technologies for the passive mapping of the cerebral cortex and the post-stroke rehabilitation, which open new horizons for the diagnosis and treatment of many diseases, in partnership with leading medical universities, as well as research and clinical centres.

In cooperation with Yandex, HSE University is carrying out R&D and educational programmes in computer science. It is also implementing an AI-driven roadmap with Sberbank that includes scientific, educational and popularization projects. As Gazprom's flagship university, HSE University has conducted a number of important R&D projects and drafted methodological, informational and analytical materials to provide professional development for the company's specialists. In 2020, following a competitive selection, HSE University was included in the League of Universities of Gazprom Oil (Gazprom Neft) and was granted the status of a permanent partner, which allows the University to take part in handling both the company's day-to-day issues and tasks involving the strategic development of the company and the whole oil and gas sector. As part of an agreement with Russian Energy network "Rosseti", HSE University provides assistance with the development of digital energy, government regulations, energy efficiency and energy conservation.

HSE University's innovation partners include major companies and venture funds, such as Sberbank, MTS, Rostelecom, Yandex, Rostec, Megafon, Metalloinvest, TaxCom and others. Such collaboration ensures a connection with the market and helps to further develop start-ups.

HSE University actively participates in shaping and implementation of global agenda of international cooperation, which is facilitated by partnerships with reputable international organizations (OECD, Eurasian Economic Commission, UNESCO, UNIDO, the United Nations Human Settlements Programme (UN-Habitat), the World Bank, the World Intellectual Property Organization, Eurostat, the International Telecommunication Union, the World Trade Organization, etc.) and international development institutions (International Bank for Reconstruction and Development, the Eurasian Development Bank and the BRICS New Development Bank). In 2020, the BRICS Competition Law and Policy Centre was established at HSE University based on the Russian Government and the BRICS antimonopoly authorities' initiative.

HSE University is involved in cross-country network projects that have been initiated at the interstate level (e.g., SCO University, BRICS Network University, BRICS University League, etc.) and is an institutional member of international associations, alliances and networks that unite the world's leading universities in priority areas for HSE University, including the European University Association (EUA), the Network of Universities from the Capitals of Europe (UNICA), the Institute of International Education (IIE), the European Foundation for Management Development (EFMD Global Network), the European Association for Comparative Economic Studies (EACES), the Inter-university Consortium for Political and Social Research (ICPSR), the Law Schools Global League, the International Communication Association (ICA), the Cumulus International Association of Universities and Colleges of Art, Design and Media, the International Association for Research in Income and Wealth (IARIW), etc.

HSE University has signed 390 agreements on cooperation and student and academic staff mobility with such leading universities as: Technical University of Berlin (Germany); Kyoto University (Japan), Fudan University (China), University of Campinas (Brazil), University of Bergen (Norway), University of Helsinki (Finland) and Maastricht University (Netherlands); the Paris Institute of Political Studies and Ecole Polytechnique (France); Nanyang Technological University (Singapore); and

Indiana University, George Mason University and the University of Michigan (USA), among others.

More than 7,000 instructors and researchers and over 5,000 students from more than 100 countries work and study at HSE University's faculties and conduct research at the University's international laboratories and research centres in Moscow and campuses in St. Petersburg, Nizhny Novgorod and Perm. HSE University holds over 20 international summer schools every year.

As it bolsters its position and reputation in global research, HSE University is expanding its network of partners in advanced basic and applied R&D. In social sciences and humanities, HSE University conducts joint R&D activities and holds events with leading research centres from around the world, including: the Institute for Social Anthropology and Institute of Social Geography (Germany); the International Institute of Social Studies (Netherlands); the Institute of Sociology at the Chinese Academy of Social Sciences; the Institute of Economic Research at Kyoto University (Japan); the National Institute for Statistics and Economic Studies (Luxembourg); the Institute for Future Studies (Sweden); the Statistical, Economic and Social Research and Training Centre for Islamic Countries (Turkey); the World Values Survey Association (Sweden), etc. R&D partners in S&T and innovation policy include the Joanneum Research Centre and the Centre for Social Innovation (Austria), the University of Manchester (UK), the National Institute of Science and Technology Policy (Japan), the Centre for Strategic Studies and Management of Brazil, the Chinese Academy of Science and Technology for Development, the Institute for Research in Technology (Spain), the Fraunhofer Institute for System and Innovation Research (ISI), etc.

Further information about HSE University's key partners is provided in Appendix No. 10 "Key Partners of HSE University".

4.2. Description of Consortiums, that have been created or planned to be created under the Development Programme

HSE University is a leader and member of various consortiums, which implement joint projects in education, research, R&D commercialization, and

innovation. These consortiums operate in various forms and rely on different funding sources for their activities (budgetary, non-budgetary, from the University's own funds, other members' funds, etc.) and bring together research, educational, innovative, production, finance, service and non-profit organizations. A consortium's activities may encompass several stages in the life cycles of developed solutions. As such, the objective of its members may be to ensure the integrity and continuity of the results generated at every stage.

With this in mind, HSE University hosts both closed and open consortiums, which allow for the inclusion of new members within the set timeframes. In each specific case, a model for consortium administration is developed with a view to maximize its performance, while ensuring commitment to delivering expected results. The consortium organization and meeting respective objectives are governed by internal bylaws and programme documentation (regulations for respective consortiums, consortiums' action plans, joinder agreements, etc.). In turn, the results of consortiums' operations (including rights to intellectual property and revenue) are distributed between their members in accordance with individual agreements and contracts. The operational administration of consortiums is carried out by the relevant unit of the respective lead organization. For strategic decision-making, assessment of the results, reporting, changing membership and other issues, a supervisory council or another governing unit (board of directors or authorized representatives) of a consortium's partner organizations shall be formed.

As part of the Strategic Projects, the consortiums have been created (or are yet to be created) that drive the attainment of objectives and strategic developmental tasks at HSE University through the joint efforts of their members. The basic principle behind the creation of consortiums is that their members possess the necessary complementary competencies, S&T development, qualified cadre, technological and information bases, thus allowing for the achievement of their common objectives and the generation of results, which would most likely not be achieved by consortium members individually.

Existing and planned consortiums will play a key role in the implementation of the Strategic Projects:

– “Success and Self-Sustainability of the Individual in a Changing World”, an ongoing Consortium on development of digital literacy and digital economy competencies; the following consortiums are planned to be created: “Educational Success”, “Translational Technologies for Improving Human Health”, “Neurocentre: Cognitive Neurosciences”, and “Individual Trajectories in School Education”.

– “Social Policy for Sustainable Development and Inclusive Economic Growth”, an acting consortium “Human Capital Multidisciplinary Research Centre”;

– “National Centre of S&T and Socio-Economic Forecasting” consortiums planned to be created include “The Centre of Chemical Engineering and Contemporary Educational Technologies for Hydrogen Energy”; “Translational Research in Medicine and Pharmacology”, and “UNESCO Futures Literacy Network”.

– “Digital Transformation: Technology, Effects and Performance” planned consortiums include “Unmanned Air Mobility”, “Standards of Digital Technology” and “AI Standards”;

– “Evidence-based Urban Development” planned consortiums are “Master of Public Administration (MAP) for 100 Cities”, “Eco Transport”.

Building an ecosystem for the transfer of social sciences and humanities technologies includes the Consortium between HSE University and IPChain, which is already in operation, and planned consortium “Transfer Platform for Creative and Research Outputs in Social Sciences and Humanities for the Development of Creative Industries”.

Further information about goals, members and expected results of consortiums’ activities is provided in Appendix No. 6 “Information about consortium(s) established or expected in the process of implementing strategic projects of the program (draft program) of development”.

Key effects from the development of consortiums:

– generating groundbreaking results from R&D work and innovative activities, thus ensuring solutions to significant socio-economic and S&T problems thanks to the synergy of skills and resources of respective consortium members;

– involvement of academic staff, undergrads and graduate students in R&D work with a focus on commercialization, networks and collaboration in innovative S&T areas;

– promotion of the research, educational and innovative results on reputable Russian and international platforms.

Appendix №1. Strategic projects' coverage of the university's policies in the main domains of activity

The university's policy in the main domains of activity	**Success and Self-Sustainability of the Individual in a Changing World**	**Social Policy for Sustainable Development and Inclusive Economic Growth**	**National Centre of S&T and Socio-Economic Forecasting**	**Digital Transformation: Technologies, Effects and Performance**	**Evidence-based Urban Development**
Educational policy	+	+	+	+	+
Policy in science and research and policy in innovation and commercial use of developments	+	+	+	+	+
Youth policy	+	+	+	+	+
Human capital management policy	+	+	+	+	+
Campus and infrastructure policy	+	+	+	+	+
University management system	+	+	+	+	+
University's financial model	+	+	+	+	+
Digital transformation policy	+	+	+	+	+
Open data policy	+	+	+	+	+
Additional routes of development	+	+	+	+	+

Appendix №2. Indicators necessary for achievement of the grant allocation results

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1. Number of persons trained in additional professional programs in the university including online courses	person	Base part of the grant	X	X										
		Special part of the grant	X	X	22036	24864	26775	29772	33841	38369	43733	49852	56644	60877
2. The total number of implemented projects, including projects with the participation of members of the consortium (consortiums), for each of the activities of the development programs specified in paragraph 5 of the Selection Rules	unit	Base part of the grant	X	X	3	3	3	3	3	3	3	3	3	3
		Special part of the grant	X	X	17	26	30	30	35	35	40	40	45	45
2.1. among them, in activity «a», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.1.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.1.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.1.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.1.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.1.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.2. among them, in activity «б», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	3	5	5	5	5	5	5	5	5	5
2.2.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	1	1	1	1	1	1	1	1	1	1
2.2.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.2.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	1	1	1	1	1	1	1	1	1	1

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.2.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	1	1	1	1	1	1	1	1	1	1
2.2.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.3. among them, in activity «в», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.3.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.3.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.3.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.3.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.3.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.4. among them, in activity «г», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	3	5	5	5	5	5	5	5	5	5
2.4.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	1	1	1	1	1	1	1	1	1	1
2.4.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.4.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	1	1	1	1	1	1	1	1	1	1
2.4.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X	1	1	1	1	1	1	1	1	1	1
2.4.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
	unit	Base part of the grant	X	X										

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.5. among them, in activity «д», including:		Special part of the grant	X	X										
2.5.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.5.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.5.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.5.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.5.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.6. among them, in activity «е», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.6.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.6.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.6.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.6.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.6.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.7. among them, in activity «к», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.7.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
	unit	Base part of the grant	X	X										

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.7.2. Social Policy of Sustainable Development and Inclusive Economic Growth		Special part of the grant	X	X										
2.7.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.7.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.7.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.8. among them, in activity «з», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		5	5	5	5	5	5	5	5	5
2.8.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.8.2 Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.8.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.8.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.8.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X		1	1	1	1	1	1	1	1	1
2.9. among them, in activity «и», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.9.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.9.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.9.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
	unit	Base part of the grant	X	X										

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.9.4 Digital transformation: Technologies, Effects, Performance		Special part of the grant	X	X										
2.9.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.10. among them, in activity «к», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.10.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.10.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.10.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.10.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.10.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.11. among them, in activity «л», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.11.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.11.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.11.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.11.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.11.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
	unit	Base part of the grant	X	X										

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.12. among them, in activity «м», including::		Special part of the grant	X	X										
2.12.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.12.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.12.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.12.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.12.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.13. among them, in activity «н», including::	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.13.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.13.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.13.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.13.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.13.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.14. among them, in activity «о», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.14.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
	unit	Base part of the grant	X	X										

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.14.2. Social Policy of Sustainable Development and Inclusive Economic Growth		Special part of the grant	X	X										
2.14.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.14. Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.14.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.15. among them, in activity «п», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.15.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.15.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.15.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.15.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.15.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.16. among them, in activity «р», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.16.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.16.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.16.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
	unit	Base part of the grant	X	X										

Indicator	unit of measurement		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2.16.4 Digital transformation: Technologies, Effects, Performance		Special part of the grant	X	X										
2.16.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.17. among them, in activity «c», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.17.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.17.2. Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.17.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.17.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.17.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.18. among them, in activity «r», including:	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.18.1 Success and Self-Sustainability of the Individual in a Changing World	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.18.2 Social Policy of Sustainable Development and Inclusive Economic Growth	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.18.3 National Center for S&T and Socio-Economic Forecasting	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.18.4 Digital transformation: Technologies, Effects, Performance	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										
2.18.5 Evidence-based Urban Development	unit	Base part of the grant	X	X										
		Special part of the grant	X	X										

Appendix №3. Target indicators of effectiveness of the development program's (the draft program's) implementation

№	Indicator	unit of measurement	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Target indicators of the efficiency of implementation of the university development program for the basic part of the grant													
P1(b)	Scope of scientific work and R&D activity, per one person of academic staff	thousand rubles	2 559,95	2 380,85	2 381,48	2 473,39	2 547,31	2 690,31	2 900,91	3 112,38	3 328,80	3 558,05	3 779,99
P2(b)	Share of employees aged under 39 in the overall number of academic staff	%	34,77	34,79	34,85	34,92	34,95	34,99	35,04	35,10	35,15	35,21	35,27
P3(b)	Share of students in bachelor's, specialist's, and master's full-time programs, who have acquired an additional qualification free of charge, in the overall number of students in bachelor's, specialist's, and master's full-time programs	%	22,9	24,0	27,0	30,0	33,0	36,0	38,9	41,7	45,5	49,2	49,1
P4(b)	University's income from financially profitable activities, per one person of academic staff	thousand rubles	5 680,60	5 666,12	6 552,59	7 239,96	8 017,74	8 146,71	8 484,50	8 821,23	9 161,05	9 511,84	9 853,45
P5(b)	Number of students in programs of secondary professional education and/or higher education,	person	14 021	30 023	30 211	30 572	30 830	31 130	31 130	31 130	31 130	31 130	31 130

№	Indicator	unit of measurement	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	where obtaining professional competencies is related to formation of digital skills of using and mastering new digital technologies, including educational programs developed with consideration of updated basic full-time educational programs with digital component, recommended by central educational center for replication												
P6(b)	Expenses for scientific research and developments from university's own finance, per one person of academic staff	thousand rubles	199,58	211,27	220,62	227,50	244,22	244,28	254,75	265,05	275,21	289,23	303,04
Target indicators of the efficiency of implementation of the university development program for the special part of the grant													
P1(sp1)	Number of publications in scientific journals of quartiles I and II, and scientific journals included in Arts and Humanities Citation Index (A&HCI) and Book Citation Index – Social Sciences &	unit	0,536	0,576	0,613	0,642	0,668	0,696	0,740	0,783	0,826	0,868	0,909

№	Indicator	unit of measurement	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Humanities (BKCI-SSH) presented in Web of Science Core Collection, per one person of academic staff												
P2(sp1)	Number of publications in Scopus and quartiles I and II of SNIP, per one person of academic staff	unit	0,663	0,672	0,706	0,732	0,754	0,778	0,822	0,864	0,907	0,948	0,989
P3(sp1)	Number of highly quoted “article”- and “review”-type publications in Web of Science Core Collection over the last full five years, per one person of academic staff	unit	0,036	0,036	0,035	0,035	0,035	0,035	0,036	0,037	0,038	0,039	0,040
P4(sp1)	Share of researchers aged under 39 in overall number of researchers	%	51,78	51,85	51,93	52,02	52,12	52,22	52,32	52,42	52,52	52,62	52,73
P5(sp1)	Amount of finance for performed scientific and R&D work (excluding finance allocated for state assignment), per one person of academic staff	thousand rubles	1396,11	1294,89	1309,78	1391,76	1473,87	1480,17	1528,48	1580,13	1639,11	1713,26	1782,34
P6(sp1)	Amount of income from exclusive rights to intellectual activity results (from agreement of license or of alienation of exclusive rights), per	thousand rubles	2,10	2,30	2,79	4,01	6,43	8,69	11,50	15,50	21,05	28,92	39,87

№	Indicator	unit of measurement	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	one person of academic staff												
P7(sp1)	Share of students in master's, post-graduate's, medical resident's programs or in probation assistantship in overall number of students in full-time higher education programs	%	27,86	28,35	28,71	28,86	28,89	28,69	28,94	29,19	29,48	29,77	30,00
P8(sp1)	Share of foreign citizens and stateless people in full-time master's, post-graduate's, medical resident's programs or in probation assistantship	%	15,72	14,31	14,84	16,37	17,10	17,21	17,01	16,81	17,45	17,21	18,74

Appendix №4. Impact of strategic projects on target indicators of the efficiency of the implementation of the development program (project)

№	Indicator	Success and Self-Sustainability of the Individual in a Changing World	Social Policy for Sustainable Development and Inclusive Economic Growth	National Centre of S&T and Socio-Economic Forecasting	Digital Transformation: Technologies, Effects and Performance	Evidence-based Urban Development
Target indicators of the efficiency of implementation of the university development program (or draft program's) for the basic part of the grant						
P1(b)	Scope of scientific work and R&D activity, per one person of academic staff	defines the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value	contributes to the achievement of the value
P2(b)	Share of employees aged under 39 in the overall number of academic staff	defines the value	defines the value	defines the value	contributes to the achievement of the value	defines the value
P3(b)	Share of students in bachelor's, specialist's, and master's full-time programs, who have acquired an additional qualification free of charge, in the overall number of students in bachelor's, specialist's, and master's full-time programs	defines the value	defines the value	defines the value	defines the value	contributes to the achievement of the value
P4(b)	University's income from financially profitable activities, per one person of academic staff	contributes to the achievement of the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value	contributes to the achievement of the value
P5(b)	Number of students in programs of secondary professional education and/or higher education, where obtaining professional competencies is related to formation of digital	defines the value	defines the value	defines the value	contributes to the achievement of the value	defines the value

	skills of using and mastering new digital technologies, including educational programs developed with consideration of updated basic full-time educational programs with digital component, recommended by central educational center for replication					
P6(b)	Expenses for scientific research and developments from university's own finance, per one person of academic staff	defines the value	defines the value	defines the value	defines the value	defines the value
Target indicators of the efficiency of implementation of the university development program (or draft program's) for the special part of the grant						
P1(c1)	Number of publications in scientific journals of quartiles I and II, and scientific journals included in Arts and Humanities Citation Index (A&HCI) and Book Citation Index – Social Sciences & Humanities (BKCI-SSH) presented in Web of Science Core Collection, per one person of academic staff	defines the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value	contributes to the achievement of the value
P2(sp1)	Number of publications in Scopus and quartiles I and II of SNIP, per one person of academic staff	defines the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value	contributes to the achievement of the value
P3(sp1)	Number of highly quoted "article"- and "review"-type publications in Web of Science Core Collection over the last full five years, per one person of	defines the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value	contributes to the achievement of the value

	academic staff					
P4(sp1)	Share of researchers aged under 39 in overall number of researchers	contributes to the achievement of the value	contributes to the achievement of the value	defines the value	contributes to the achievement of the value	defines the value
P5(sp1)	Amount of finance for performed scientific and R&D work (excluding finance allocated for state assignment), per one person of academic staff	contributes to the achievement of the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value	contributes to the achievement of the value
P6(sp1)	Amount of income from exclusive rights to intellectual activity results (from agreement of license or of alienation of exclusive rights), per one person of academic staff	contributes to the achievement of the value	defines the value	defines the value	contributes to the achievement of the value	defines the value
P7(sp1)	Share of students in master's, post-graduate's, medical resident's programs or in probation assistantship in overall number of students in full-time higher education programs	contributes to the achievement of the value	contributes to the achievement of the value	defines the value	contributes to the achievement of the value	contributes to the achievement of the value
P8(sp1)	Share of foreign citizens and stateless people in full-time master's, post-graduate's, medical resident's programs or in probation assistantship	contributes to the achievement of the value	contributes to the achievement of the value	defines the value	defines the value	contributes to the achievement of the value

Appendix №5. Financial support of the development program (draft program). Financial support for the program (draft program) from different sources

№ п/п	Source of finance	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1.	Federal budget, base part of the grant, thousand rubles	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000,00
2.	Federal budget, special part of the grant, thousand rubles	1 550 000	1 550 000	1 550 000	1 550 000	1 550 000	1 600 000	1 650 000	1 700 000	1 750 000	1 750 000,00
3.	Federal budget, other sources, thousand rubles	2 600 000	2 650 000	2 700 000	2 800 000	2 900 000	3 000 000	3 200 000	3 350 000	3 600 000	3 800 000,00
4.	Regional budget, thousand rubles	34 000	35 000	36 000	38 000	40 000	42 000	44 000	46 000	48 000	50 000,00
5.	Local budgets, thousand rubles	-	-	-	-	-	-	-	-	-	-
6.	Foreign sources, thousand rubles	-	-	-	-	-	-	-	-	-	-
7.	Foreign sources, thousand rubles	1 100 000	1 200 000	1 225 000	1 270 000	1 320 000	1 400 000	1 475 000	1 550 000	1 600 000	1 700 000,00
TOTAL		**5 384 000**	**5 535 000**	**5 611 000**	**5 758 000**	**5 910 000**	**6 142 000**	**6 469 000**	**6 746 000**	**7 098 000**	**7 400 000**

Appendix №6. Information about consortium(s) established or expected in the process of implementing strategic projects of the program (draft program) of development

Consortium "Educational Success"					
Strategic projects involving the consortium members			**The role of the consortium in the implementation of a given strategic project**		
Success and Self-Sustainability of the Individual in a Changing World			The consortium will contribute to the task of identifying the key tools which can be used for developing one's personal abilities and expanding one's personal capabilities in order to address known problems, challenges, and demands and seek to determine the impact of higher education on personal success.		
Сведения о членах консорциума					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Supporting the consortium's academic activities; Developing and providing support to a unified consortium database; Organizing consortium events; Providing infrastructure for operations.	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results. Implements research programmes in the key focus areas of the strategic project; Design and implementation of educational programmes; Integration of competencies in the field of research into tools for enhancement of capabilities, impact of educational on individual success, sociology of education.
2	National Research Tomsk State University	TSU	7018012970	Implementing R&D works; Supporting the consortium's academic activities; Collecting empirical data through	Draws up the consortium research programme, statements of work for data collection; Integration of competencies in the field of pedagogical design, educational methods.

				research works; Developing and providing support to a single consortium database; Organizing consortium events.	
3	University of the National Technology Initiative "20.35"	20.35 University	7704447849	Organizing consortium events; Providing infrastructure for operations.	Implements research programmes in the key focus areas of the strategic project; Acts as an infrastructure platform for data collection.
Consortium "Translational Technologies for Improving Human Health"					
Strategic projects involving the consortium members			**The role of the consortium in the implementation of a given strategic project**		
Success and Self-Sustainability of the Individual in a Changing World			The consortium will carry out research projects, publish research results, obtain patents for IP, develop and offer educational programmes in its key focus areas		
Information about the consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Organizing consortium events; Supporting the consortium's academic activities; Collection of empirical data from research works.	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; Possesses wide-ranging competencies in molecular biology, development of machine-learning models, educational delivery, and academic events.
2	Far Eastern Federal University	FEFU	2536014538	Carrying out R&D works; Collection of empirical data from	Possesses competencies in terms of development of new models describing pathological conditions based on

				research works; Organizing consortium events; Providing infrastructure for operations.	microfluidic systems.
3	Institute of Bioorganic Chemistry named after academicians M.M.Shemyakin and Yu.A. Ovchinnikov RAS	IBC RAS	7728045419	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	A leader in basic and innovation-focused research in molecular, structural, and cellular biology, bioorganic chemistry, biophysics, bioengineering, cell technology (including T cell reprogramming, vectors for targeted delivery of drug compounds), molecular foundations of lifetime bioimaging, genome editing, bioinformatics, etc.
4	National Medical Research Centre of Radiology of the Ministry of Health of the Russian Federation	National Medical Research Centre of Radiology	7714042070	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	One of the leading cancer centres in Russia. Possesses extensive capabilities in terms of collection and study of biomaterials for patients with malignant neoplasms.
5	National Medical Research Centre for Therapy and Preventive Medicine of the Ministry of Health of the Russian Federation	NMRC TPM	7709024283	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Possesses the intellectual resources and creation of an equipment base required for patient's workup, collection of samples and clinical data for various pathologies, including cardiovascular diseases, and the development of methodological recommendations for disease prevention.
6	Central clinical hospital with a polyclinic of the Administrative Department	Central clinical hospital with a polyclinic	7731082971	Carrying out R&D works; Collection of empirical data from	Implements research programmes; Integration of competencies for

	of the President of the Russian Federation			research works; Organizing consortium events; Providing infrastructure for operations.	developing technological facilities for conducting research.
7	Technische Universität Berlin (The Technical University of Berlin)	TU Berlin (The Technical University of Berlin)		Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	A global leader in the development of microfluidic human-on-a-chip and organ-on-a-chip cell models used in research into various pathological and age-related changes in the human body.
8	Universitätsklinikum Hamburg-Eppendorf (The University Medical Centre Hamburg-Eppendorf)	Universitätsklinikum Hamburg-Eppendorf (The University Medical Centre Hamburg-Eppendorf)		Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events Providing infrastructure for operations.	A European expert centre specializing in pathophysiology.
9	Privolzhsky Research Medical University	PRMU	5260037940	Organizing consortium events	Design and implementation of educational programmes; Integration of competencies in digital medicine.
"Neurocentre: Cognitive Neuroscience"					
Strategic projects involving the consortium members			**The role of the consortium in the implementation of a given strategic project**		
Success and Self-Sustainability of the Individual in a Changing World			The consortium will allow combining HSE University's cognitive neuroscience studies and the capabilities of its unique research facility (URF) designed for brain stimulation with basic and clinical research projects undertaken at IHNA&NPh RAS, and the research potential of MSUMD clinical site and the MSUPE magnetoencephalographic (MEG) unique research facility. As a result, a single neurocognitive research cluster will emerge, which will work to determine the		

			possible uses of cutting-edge technology towards mitigating the risks of cognitive disorders and modifying brain functions		
Information about the consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Collection of empirical data from research works; Supporting the consortium's academic activities; Developing and providing support to a unified consortium database; Organizing consortium events	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; Carries out basic/translational research into cognitive neuroscience, offers educational services, uses its unique research facility to develop and apply brain stimulation methods.
2	Institute of Higher Nervous Activity and Neurophysiology RAS	IHNA RAS	7728073871	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events Providing infrastructure for operations.	Conducts basic psychophysiological research and is engaged in translation of neurocognitive models into biomedicine
3	Moscow State University of Medicine and Dentistry	MSUMD	7707082145	Carrying out R&D works; Collecting empirical data through research works; Organizing consortium events Providing infrastructure for operations.	Serves as the consortium's clinical platform, is responsible for the development of the brain-computer interface.

4	Moscow State University of Psychology and Education	MSUPE	7702181537	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Supporting the consortium's academic activities; Providing infrastructure for operations.	Uses its unique research facility to carry out research projects in magnetoencephalography (MEG), develops educational programmes, including undergraduate, Master's, doctoral programmes, a joint track (Master's + PhD), dual degree programmes, and continuing education programmes.
Consortium "Individual Educational Trajectories in Secondary School"					
Strategic projects involving the consortium members			**The role of the consortium in the implementation of a given strategic project**		
Success and Self-Sustainability of the Individual in a Changing World			The consortium's goal is to develop, test out, and implement specific institutional solutions, projects, and tools designed for honing the students' abilities and expanding their capabilities by using personalized educational trajectories in secondary school.		
Information about the consortium members					
№ п/п	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Supporting the consortium's academic activities; Developing and providing support to a unified consortium database; Collection of empirical data from research works; Organizing consortium events	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; implements research programmes in the key focus areas of the strategic project; Integration of competencies in the field of experimental research methods.

2	Moscow City University	MCU	7717043346	Carrying out R&D works; Supporting the consortium's academic activities; Collection of empirical data from research works; Organizing consortium events.	Implements research programmes in the key focus areas of the strategic project; Integration of competencies in the field of didactics and school education studies.
3	ANO New School Platform	SberClass	7736318236	Supporting the consortium's academic activities; Developing and providing support to a unified consortium database; Organizing consortium events; Providing infrastructure for operations.	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; Integration of competencies in the field of application of developments and testing technological solutions.

Consortium World-class Research Centre "Human Capital Multudisciplinary Research Centre"	
Strategic projects involving the consortium members	**The role of the consortium in the implementation of a given strategic project**
Success and Self-Sustainability of the Individual in a Changing World	Development and delivery of educational programmes in the consortium's key focus areas https://ncmu.hse.ru/en/obrazov_progr/
Social Policy for Sustainable Development and Inclusive Economic Growth	Design and implementation of research programmes in the consortium's key focus areas https://ncmu.hse.ru/en/issled_progr/

Information about the consortium members

No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Supporting the consortium's academic	Acts as the consortium coordinator, implements the Centre's research programme, contributes to the

				activities; Developing and providing support to a unified consortium database; Collecting empirical data through research works; Organizing consortium events; Providing infrastructure for operations.	achievement of the Centre's targets; The consortium's leading institution involved in all its research, infrastructure, and educational projects; Design and implementation of educational programmes; Integration of competencies in the social and humanitarian measurement of human potential, demographic and social factors in active longevity, employment, social activism, formation of key skills and competencies, as well as neurocognitive mechanisms of social behaviour.
2	Russian Presidential Academy of National Economy and Public Administration	RANEPA	7729050901	Carrying out R&D works; Supporting the consortium’s academic activities; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Implements the Centre's Programme, contributes to the achievement of the Centre's targets by undertaking research, infrastructure, and educational projects in the following areas: social and humanitarian aspects of human potential; demographic and social factors of active longevity; employment, social commitment and the development of key skills and competencies; neurocognitive mechanisms of social behaviour.
3	Moscow State Institute of International Relations	MGIMO University	7729134728	Carrying out R&D works; Supporting the consortium’s academic activities; Collection of empirical data from research works; Organizing consortium events	Implements the Centre's Programme, contributes to the achievement of the Centre's targets by undertaking research, infrastructure, and educational projects in the following area: human potential and security in the global world.

				Providing infrastructure for operations.	
4	Institute of Ethnology and Anthropology named after N.N. Miklouho-Maclay RAS	IEA RAS	7736029636	Carrying out R&D works; Supporting the consortium’s academic activities; Collecting empirical data through research works; Organizing consortium events; Providing infrastructure for operations.	Implements the Centre's Programme, contributes to the achievement of the Centre's targets by undertaking research, infrastructure, and educational projects in the following areas: social and humanitarian aspects of human potential; demographic and social factors of active longevity.
Consortium “Development of Digital Literacy and Competencies for the Digital Economy”					
Strategic projects involving the consortium members				**The role of the consortium in the implementation of a given strategic project**	
Success and Self-Sustainability of the Individual in a Changing World				The consortium aims to find the key tools that can be used for developing one's abilities and expanding one's capabilities in order to address known problems, challenges, and demands, develop, test out, and implement specific institutional solutions, projects, and tools towards developing one's abilities and expanding one's capabilities, and put together a set of technological tools to support self-reliance activity.	
Information about the consortium members					
No.	**Member's full name**	**Member's short name**	**Member’s INN (TIN)**	**The member's role in addressing the consortium’s objectives**	**The member's role in addressing the strategic project’s objectives**
1	University of the National Technology Initiative "20.35"	20.35 University	7704447849	Carrying out R&D works; Supporting the consortium’s academic activities; Developing and providing support to a unified consortium database;	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; Develops the marketing strategy for the consortium "Development of Digital Literacy and Competencies for the Digital Economy";

				Collecting empirical data through research works; Organizing consortium events; Providing infrastructure for operations.	Is responsible for creating an online service intended for preparing for the digital economy, capable of supporting a set of educational platforms and solutions to help promote digital literacy and develop the key competencies required for the digital economy (online service); Moderates the content on the consortium's website and online service, monitors compliance of the consortium members with respective agreements
2	National Research University Higher School of Economics	HSE University	7714030726	Supporting the consortium’s academic activities; Carrying out R&D works; Collection of empirical data from research works.	Undertakes projects related to educational offerings for public authorities and educational institutions, provides consulting services; Integration of competencies in research into infocom competencies of graduates, measurements of general digital literacy; Design and implementation of educational programmes.
3	Regional Public Organization "Centre of Internet Technologies"	ROCIT	7705107429	Supporting the consortium’s academic activities; Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Implements the consortium programme, undertakes educational projects in the field of IT and digital literacy, publishes relevant Internet use surveys (analysis of the demand for the Internet services offered and their relevance)
4	NAFI Analytical Centre	NAFI	9725000822	Carrying out R&D works; Collecting empirical data through research works;	Implements the consortium programme, carries out market research projects, and holds opinion polls in Russia

				Organizing consortium events.	
5	Public Joint Stock Company "Sberbank of Russia"	Sberbank	7707083893	Supporting the consortium’s academic activities; Organizing consortium events.	Takes part in educational projects; Is responsible for the introduction of personal digital certificates
6	"Russian Railways" Open Joint Stock Company	Russian Wailways	7708503727	Supporting the consortium’s academic activities; Organizing consortium events	Takes part in implementing educational programmes; Integration of competencies in digital transformation of corporate education.
7	"MegaFon" Public Joint Stock Company	MegaFon	7812014560	Supporting the consortium’s academic activities; Organizing consortium events.	Implements digital career guidance projects
8	Russian Post Joint Stock Company	Russian Post	7724490000	Supporting the consortium’s academic activities; Organizing consortium events.	Takes part in the delivery of educational programmes; Integration of competencies in instilling digital literacy in citizens
9	Rostelecom Public Joint Stock Company	Rostelekom	7707049388	Providing infrastructure for activities.	Is responsible for working out effective and affordable solutions to ensure further development of employees possessing a high level of digital literacy.
10	"Severgroup TT" Limited Liability Company	Severgroup TT	7713444724	Providing infrastructure for operations; Organizing consortium events.	Is in charge of developing digital HR solutions
11	ER-Telecom Holding Joint Stock Company	ER-Telecom Holding	5902202276	Supporting the consortium’s academic activities; Organizing consortium events.	Takes part in designing and implementing educational programmes; Integration of competencies in the introduction of latest achievements in e-learning and remote learning technologies.
12	Association of Educational Organizations "Electronic Education of the Republic of Bashkortostan"	Electronic Education of the Republic of Bashkortostan	0274992692	Carrying out R&D works; Supporting the consortium’s academic activities;	Is responsible for the development and deployment of the latest achievements in the field of e-learning and remote learning technology.

				Collecting empirical data from research; Organizing consortium events	
13	Non-profit organization "Association of Certification Specialists"	Association of Certification Specialists	7701350246	Carrying out R&D works; Supporting the consortium's academic activities; Collecting empirical data through research works; Organizing consortium events.	Is responsible for the development and independent assessment of the infocom competencies possessed by instructors, secondary school and university students, and specialists working in various economic sectors.
14	Autonomous non-profit organization "Corporate Networking Academy"	RosTech Academy	7704442505	Supporting the consortium's academic activities; Organizing consortium events.	Is responsible for developing programmes aimed at selecting, assessing, and training the employees with high potential
15	Research Institute of Building Physics of the Russian Academy of Architecture and Building Sciences	University of the Ministry of Construction	7713018998	Supporting the consortium's academic activities; Organizing consortium events.	Offers advanced training and professional retraining programmes, conferences, round tables, and master classes regarding digital competencies for managers and regular staff working in construction.
16	Computer training centre "Specialist"	Computer training centre "Specialist"	7701257303	Supporting the consortium's academic activities; Organizing consortium events.	Takes part in implementing educational programmes; Integration of competencies in remote learning practices.
17	Media group "Action "	Action	7702379103	Supporting the consortium's academic activities; Organizing consortium events.	Takes part in implementing educational programmes; Integration of competencies in training programmes for staff
18	International Academy of Information Technologies IT HUB	IThub Group	9709063913	Supporting the consortium's academic activities; Organizing consortium events.	Takes part in implementing educational programmes; Integration of competencies in the design of educational programmes with IT majors.
19	School of Innovation and	School of	9701028530	Supporting the consortium's academic	Takes part in implementing educational

	Creative Thinking	Innovation and Creative Thinking, ICT		activities; Organizing consortium events.	programmes; Integration of competencies in instructional methods for training innovators and instilling soft skills.

Centre of Chemical Engineering and Contemporary Education Technologies in Hydrogen Energy					
Strategic projects that shall be implemented with consortium participants				**Role of the consortium in implementing the strategic project**	
National Centre of S&T and Socio-Economic Forecasting				Implementation of a full-cycle foresight project from conducting research and developing technologies to producing and transporting hydrogen for the major emerging sector of hydrogen energy, which has outstanding development prospects in Russia. Consortium participants will conduct joint research of mutual interest with the organisational assistance of HSE and the financial support of Sistema Joint-Stock Financial Corporation. HSE and other consortium members will pool their research potential by providing all necessary access to data and equipment, exchanging methodologies and research results, conducting joint training seminars, sending personnel on internships, and developing study programmes that will be subsequently offered by HSE. Research shall be conducted by a joint project team to which young researchers and undergraduate and postgraduate students will be recruited. These projects shall be implemented over a period of 3 years, with the possibility of prolongation.	
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7736057501 99	Carrying out R&D works; Supporting the consortium's academic activities; Developing and supporting a	General coordination of the work of consortium members, as well as the study and forecasting of the hydrogen energy sector in Russia and the world; the identification of promising markets, products

				unified consortium database; Collection of empirical data from research works; Organizing consortium events.	and technologies and the assessment of market demand; the development of study programmes and the preparation of specialists for the hydrogen energy sector; and R&D work on engineering solutions
2	RAS Institute for Problems of Chemical Physics	RAS Chemical Physics Institute	5031007735	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	R&D work on contemporary technologies for producing, storing, transporting and using hydrogen, renewable energy technologies, and hydrogen fuel cells and power systems
3	RAS A.V. Topchiev Institute of Petrochemical Synthesis	RAS Petrochemical Synthesis Institute	7725009733	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	R&D work on contemporary technologies for producing, storing, transporting and using hydrogen, renewable energy technologies, and hydrogen fuel cells and power systems
4	Sistema PJS Financial Corporation	Sistema	7703104630	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Participation in R&D work and commercialization of developed solutions and technologies Integrated competencies in the introduction of solutions with respect to alternative energy sources.
Translational Research in Medicine and Pharmaceutics					

Strategic projects that shall be implemented with consortium participants				**Role of the consortium in implementing the strategic project**	
National Centre of S&T and Socio-Economic Forecasting				The consortium aims to attain the following targets within the strategic project: conducting research on ways of quickly applying the results of fundamental research – here, in the domain of translational medicine; creating full research cycles including the identification of new impact targets, the study of ligand/receptor binding, the implementation of preclinical and clinical trials, the transfer and organisation of production, and market entry and commerce; analysing and forecasting the development of research, technologies, products and markets in the fields of medicine and pharmaceutics in Russia and abroad; and developing study programmes for preparing specialists.	
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	I.M. Sechenov First Moscow State Medical University of the Ministry of Healthcare of the Russian Federation (Sechenovskiy University)	Sechenov University	7704047505	Carrying out R&D works; Developing and supporting a unified consortium database; Collection of empirical data from research works; Organizing consortium events	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; General project management, assessment of healthcare technologies, regulatory assessment, market assessment, and translational research; Takes part in designing and implementing educational programmes.
2	National Research University Higher School of Economics	HSE University	77360575019	Carrying out R&D works; Developing and providing support to a unified consortium database; Collection of empirical data from research works;	S&T forecasting, conducting foresight studies, elaborating technological roadmaps, market analysis, and assessing promising segments of global and national markets, including the impact of global and sectoral trends, barriers, drivers and risks;

				Organizing consortium events; Providing infrastructure for operations.	Takes part in designing and implementing educational programmes.
3	National Research Centre for Epidemiology and Microbiology named after Honorary Academician N.F. Gamaleya of the Ministry of Health of the Russian Federation	The Gamaleya National Centre of Epidemiology and Microbiology	7734013214	Carrying out R&D works; Collecting empirical data through research works; Organizing consortium events; Providing infrastructure for operations.	Conducting screening and effectiveness studies of preclinical trials for creating anti-infective drugs requiring work with pathogens of risk groups 2, 3 and 4
4	RAS Institute of Physiologically Active Substances	RAS Institute for Physiologically Active Substances	5031015687	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Conducting screening and effectiveness studies of different models of neurodegenerative and psychiatric diseases (CNS diseases) that are refractory to modern therapeutic treatment (e.g., Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, and similar neuropsychiatric diseases). Searching for new approaches to the pharmacological correction of CNS diseases and developing the corresponding models.
5	Moscow Institute of Physics and Technology (national research university)	MIPT	5008006211	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Training entrepreneurs for implementing projects for developing medication in the form of tech start-ups. Working on market analysis together with HSE University and identifying promising market niches for developing medication; Takes part in designing and implementing educational programmes.
6	Lomonosov Moscow State University	MSU	7729082090	Carrying out R&D works;	Producing recombinant proteins for creating original drug candidates;

				Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Developing and optimizing technologies for producing recombinant proteins in plants and bacterial protein expression systems that would it make possible to use enzymes for effectuating post-translational modifications of produced proteins.
7	Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry	RAS Institute for Bioorganic Chemistry	7728045419	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Developing and replicating technologies for producing recombinant proteins, including expression and purification; Developing and validating analytic methods for the quality control of the resulting substances.
8	RAS A.M. Frumkin Institue of Physical Chemistry and Electrochemistry	RAS Frumkin Institute	7725046608	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Studying the structural elements of enveloped viruses, peptide antibiotics and other classes of antimicrobial molecules that impact bacterial membranes; studying the developmental mechanisms of neurodegenerative diseases involving damage to neural membranes, the membranes of tumour cells, receptors, the makeup of exosomes and their membranes, and damage to muscle cell membranes in myopathies.
9	RAS Institute of Higher Nervous Activity and Neurophysiology	RAS Institute for Higher Nervous Activity and Neurophysiology	7728073871	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Developing models and conducting screening studies in the field of neurobiology. Creating molecular/genetic structures for identifying new targets and diagnosing CNS diseases.

UNESCO Futures Literacy Chairs Network					
Strategic projects that shall be implemented with consortium participants				**Role of the consortium in implementing the strategic project**	
National Centre of S&T and Socio-Economic Forecasting				The Futures Literacy Chairs Network is a network of chairs organised by UNESCO through bilateral agreements. HSE is one of the leaders of this network. Its responsibilities will include the development and diffusion of methods and best practices of futures literacy: the diffusion of curricular materials, the implementation of joint research projects, the organisation of training programmes and seminars in developing countries, etc. The agreement on creating a Futures Literacy Chair at HSE was coordinated by UNESCO and the Russian Ministry of Foreign Affairs and signed by the UNESCO Director-General.	
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7736057501919	Carrying out R&D works; Supporting the consortium's academic activities; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; Developing and diffusing curricular materials; holding training seminars (in developing countries, among others) and creating open information resources for network participants and a broad range of users; issuing and widely distributing regular informational materials; and holding conferences and seminars for network participants
2	Manchester Institute of Innovation Research of the Manchester University (UK)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
3	Austrian Institute of Technology (Austria)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy

4	Fraunhofer Institute for Systems and Innovation Research ISI (Germany)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
5	International Natural Fiber Organization (Netherlands)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
6	Belarusian Institute of System Analysis and Information Support for Scientific and Technical Sphere (Republic of Belarus)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
7	Chinese Academy of Science and Technology for Development (CASTED, China)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
8	Institute for Sustainable Development and Foresight Studies (India)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
9	Strategic Foresight Group (India)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
10	National Institute of Science and Technology Policy (NISTEP, Japan)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
11	Science and Technology Policy Institute (STEPI, Republic of Korea)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
12	APEC Centre for Technology Foresight (Thailand)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
13	Narhoz University (Kazakhstan)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
14	Distinction and Creativity Agency (Syria)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
15	University of Pretoria (South Africa)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy

16	Tswane University of Technology (South Africa)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
17	University of Ottawa (Canada)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
18	Universidad del Valle (Colombia)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
19	Centre for Strategic Studies and Management in Science, Technology and Innovation (CGEE, Brazil)			Organizing consortium events	Diffusing the knowledge and culture of futures literacy
20	National Council of Science, Technology and Technological Innovation (Perú)			Organizing consortium events.	Diffusing the knowledge and culture of futures literacy

Unmanned Air Mobility					
Strategic projects that shall be implemented with consortium participants			**Role of the consortium in implementing the strategic project**		
Digital Transformation: Technologies, Effects and Performance			The consortium shall organise the development at HSE and introduction of applied digital technologies for unmanned aircraft systems (UAS), including communication systems, the Internet of Things, computer vision, and artificial intelligence		
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Supporting the consortium's academic activities; Developing and supporting a	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; S&T forecasting of the development of unmanned aircraft systems (UAS), analysis and forecasting of markets of UAS and UAS-based services, including

				unified consortium database; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for activities.	shipments, cartography, forestry, etc.; assessment of the socioeconomic effects of the introduction of UAS in different sectors and the study of other socioeconomic, financial and legal issues related to the introduction of UAS into the economy and social sphere; developing digital technologies for UAS, including the Internet of Things, computer vision, artificial intelligence, and communication systems; and drafting recommendations for using digital technologies for introducing UAS
2	Moscow Aviation Institute (national research university)	Moscow Aviation Institute	7712038455	Carrying out R&D works; Supporting the consortium's academic activities; Developing and supporting a unified consortium database; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	S&T forecasting of the development of UAS; supporting R&D on UAS and related technologies, including specialized UAS for shipments, cartography, forestry and other areas of application; developing study programmes in the field of air mobility; drafting standards and technical regulatory frameworks for testing and regulating UAS
3	Ministry of the Industry and Trade of the Russian Federation	Russia's Ministry of Industry and Trade	7705596339	Organizing consortium events; Providing infrastructure for operations.	Drafting recommendations for government policies and norms in the UAS domain; designing and implementing government support measures for UAS development (including specialized UAS for shipments, cartography, forestry and other areas of application) and studying issues relating to UAS

					imports and exports; analysing the impact of UAS introduction on the development of industrial sectors
4	General Aviation Manufacturers Association	General Aviation Manufacturers	7727498600	Organizing consortium events; Providing infrastructure for operations.	Providing expert support and drafting recommendations for UAS technical characteristics and priority technologies and technological areas; attracting industrial partners for developing and manufacturing UAS; and creating a register of UAS suppliers
Consortium "Artificial Intelligence Standards"					
Strategic projects that shall be implemented with consortium participants				**Role of the consortium in implementing the strategic project**	
Digital Transformation: Technologies, Effects and Performance				The consortium shall work closely with the planned Competence Centre for Developing and Applying Machine Learning Methods and AI Technologies. The introduction of AI systems and technologies requires the in-depth expert assessment of risks connected with their use and the elaboration of effective approaches for eliminating these risks. An important activity of the consortium shall be the analysis of sectoral specifics of AI applications: national standards must take into account all the necessary requirements that would permit the use of smart solutions in practice. The consortium shall actively participate in the implementation of the following projects of the strategic project: Project 1. Competence Centre for Developing and Applying Machine Learning Methods and AI Technologies; Project 3. Study of digital transformation and its effects; Project 4. Effectiveness of digital transformation.	
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Developing and supporting a	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results;

				unified consortium database; Collection of empirical data from research works; Organizing consortium events.	Coordinating, controlling the respect of requirements by draft national standards, and organising the public discussion and expert assessment of the draft standards and preparing them for legislative adoption; Coordinating the activities of the consortium for supporting the elaboration of draft international standards in the framework of the SC 42 Artificial Intelligence Committee of the ISO/IEC JTC 1 Information Technology Joint Technical Committee
2	Clinical Centre for Diagnosis and Telemedicine Technology of the Moscow Healthcare Department	Diagnosis and Telemedicine Centre under the Mosgorzdrav	7709064286	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards and providing support for the elaboration of international standards for different AI applications in medicine
3	Geoalert LLC	Geoalert	9731020344	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards and providing support for the elaboration of international standards for different AI applications for solving geoinformation problems
4	Federal Agency of Technical Regulating and Metrology	Rosstandart	7703385195	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards and providing support for the elaboration of international standards for different AI applications in industry
5	LLC “NNK Consulting”	LLC “NNK Consulting”	7708810125	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards and providing support for the elaboration of international standards for different AI applications in navigation systems

6	Artificial Intelligence Agency	AiA	7713478427	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards and providing support for the elaboration of international standards for different AI applications in motor vehicle transport
7	Volgograd State University	Volgograd State University	3446500743	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards and providing support for the elaboration of international standards for different AI applications in education
Consortium "Digital Technology Standards"					
Strategic projects that shall be implemented with consortium participants				**Role of the consortium in implementing the strategic project**	
Digital Transformation: Technologies, Effects and Performance				The consortium's activities shall lay the comprehensive groundwork for creating advanced solutions in the domain of cyber-physical systems and for assessing the effects and risks of digital transformations of different kinds (social, environmental, cultural, etc.) The consortium shall participate in all four main projects of the strategic project	
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Developing and supporting a unified consortium database; Collection of empirical data from research works;	Acts as the consortium coordinator in order to meet objectives of the strategic project; Oversees the achievement of target results; Coordinating, controlling the respect of requirements by draft national standards, and organising the public discussion and expert assessment of draft standards and preparing them for legislative adoption

				Organizing consortium events.	
2	Clinical Centre for Diagnosis and Telemedicine Technology of the Moscow Healthcare Department	Diagnosis and Telemedicine Centre under the Mosgorzdrav	7709064286	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events	Drafting national standards in the field of AI for medical applications
3	GLONASS/GNSS Forum Association of Designers, Manufacturers and Users of Equipment and Applications Based on Global Navigation Satellite Systems	GLONASS/GNSS Forum Association	7714320665	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events	Drafting national standards for the national service telematic platform Autodata
4	Cognitive Robotics LLC	Cognitive Robotics	9718131366	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events	Drafting national standards in the field of AI for agribusiness
5	Research Institute Quantum	Research Institute Quantum	7711000890	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events	Drafting national standards in the field of AI speech technologies
6	Company “Information Technology and Communications Systems”	Infotecs	7710013769	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards in the field of information security technologies
7	Science & Technology Centre of Information Science	S&T Centre for Information Science	7722400353	Carrying out R&D works ; Collection of empirical data	Drafting national standards in the field of digital media and communications

				from research works; Organizing consortium events.	
8	Information/Analytical and Computation Centre, LLC.	Analytics and Computation Centre	7718189700	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards in the field of digital technologies for automated systems and business management systems
9	Institute of the Information Society	Institute of the Information Society	7728177581	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events.	Drafting national standards in the field of Big Data

Master of Public Administration (MPA) for 100 Cities	
Strategic projects that shall be implemented with consortium participants	**Role of the consortium in implementing the strategic project**
Evidence-Based Urban Development	The main goal of the consortium as an educational project is to share the latest urban management knowledge and practices with urban planning teams and to introduce the results obtained during the study (the projects of the strategic project) into urban planning and management practice. The programme aims to cast the foundations of the design of development projects for the urban economy and a comfortable living environment, which should make it possible to apply the learned skills in practice and to bring cities to a new level of development. Such projects would create "qualified clients" for managerial skills. In addition, the programme aims to create a mechanism for cooperation between mayors of Russia's biggest cities and to strengthen intermunicipal ties and partnerships. This should make it possible, in turn, to create a more efficient

				system of decision monitoring, introduce a system for digitizing and unifying municipal and agglomeration statistics, and improve the quality of data in the new databases. The consortium shall actively participate in the implementation of the following projects of the strategic project: Project 1. “Spatial and social effects of urban policies: development of ‘evidence-based urban planning’” Project 2. “Modelling the mobility of the future: casting the instrumental foundations of urban transport planning” Project 3. “Urban regulation on the new urban planning agenda”	
Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member’s INN (TIN)**	**The member's role in addressing the consortium’s objectives**	**The member's role in addressing the strategic project’s objectives**
1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Supporting the consortium’s academic activities; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Pre-consulting support; Offering study units in module subjects and inviting international guest speakers; Designing and creating online modules; Organising and holding foreign internships

2	SKOLKOVO Moscow School of Management	SKOLKOVO Moscow School of Management	5032180980	Carrying out R&D works; Supporting the consortium's academic activities; Developing and providing support to a unified consortium database; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	General project management; Drafting a summary report; Designing a programme curriculum; Offering study units in module subjects; Providing students with study materials, providing technical equipment and assuring its trouble-free operation, and providing places for students; Organising and conducting a monitoring study of the work of management teams for 2 (two) years after the completion of the project
3	Strelka Institute for Media, Architecture, and Design	Strelka Institure	7706470410	Supporting the consortium's academic activities; Organizing consortium events Providing infrastructure for operations.	Offering study units in module subjects; Designing and creating online modules; Organising and holding an internship in Europe
4	The New Economic School (Institute)	New Economic School, NES	7727016888	Supporting the consortium's academic activities; Organizing consortium events Providing infrastructure for operations.	Offering study units in module subjects

Eco-Friendly Transportation	
Strategic projects that shall be implemented with consortium participants	**Role of the consortium in implementing the strategic project**
Evidence-Based Urban Development	While environmental protection is one of the biggest and most complicated areas of the strategic project "Evidence-Based Urban Planning", HSE has experience in the successful implementation of projects for assessing environmental and public health risks with the help of a unique methodology that involves cooperation between all the member organisations of the consortium. Such work helps to assess the environmental risks of implementing different measures of transport policy and propose measures for lowering traffic congestion and solving environmental problems in cities. The work of the consortium should lead to the creation of a system of evidence-based, socially relevant arguments for assessing the impact of transport policies aimed at lowering the share of car rides in the urban transport balance on the traffic and environmental situation and the health risks of urban inhabitants. The consortium shall actively participate in the implementation of the following projects of the strategic project: Project 1. "Spatial and social effects of urban policies: development of 'evidence-based urban planning'" Project 2. "Modelling the mobility of the future: casting the instrumental foundations of urban transport planning"

Information about consortium members					
No.	**Member's full name**	**Member's short name**	**Member's INN (TIN)**	**The member's role in addressing the consortium's objectives**	**The member's role in addressing the strategic project's objectives**

1	National Research University Higher School of Economics	HSE University	7714030726	Carrying out R&D works; Supporting the consortium's academic activities; Developing and providing support to a unified consortium database; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Coordination and quality control of project implementation; Choice of territories for study; Formal description of transport policy measures applied in the selected territories; Review of international transport policy practices that have reduced pollution and health risks; Assessment of the impact of concrete transport policy measures on the size and makeup of car flows in the road network and on the reduction of the share of car trips in the multimodal transport balance of the selected territories (with the use of statistical transport macromodelling measures, among others); Identification of the impact of other aspects of urban car flows (noise, light, vibration, etc.) on public health; Elaboration of recommendations for additional transport policy measures aimed at lowering the share of car trips in the urban transport balance to a level that would correspond to the planned health risk indicators of city inhabitants
2	RAS Space Research Institute	IKI RAS	7728113806	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events;	Use of modelling methods to assess the dispersion of toxic substances from motor vehicle transport in the air over the territory of local residential areas and other places of long-term sojourn of city inhabitants

				Providing infrastructure for operations.	
3	The Institute of Economic Forecasting of the Russian Academy of Sciences	IEF RAS	7727063214	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Assessment of changes in the risks of respiratory and cardiovascular diseases for inhabitants of selected territories that are subject to the regular impact of toxic substances from motor vehicle transport
4	Moscow Automobile and Road Construction State Technical University	MADI	7714029600	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Assessment of changes in the volume of toxic substances emitted by motor vehicles as a result of the implementation of transport policy measures in the given territories
5	I.M. Sechenov First Moscow State Medical University of the Ministry of Healthcare of the Russian Federation (Sechenov University)	Sechenov University	7704047505	Carrying out R&D works; Collection of empirical data from research works; Organizing consortium events; Providing infrastructure for operations.	Assessment of the impact of pollutants in the city air space on children’s health

Appendix №7. Information on establishing the necessary conditions for formation of digital competencies and skills of using digital technologies among students, including students of IT

Digital competencies mean a set of competencies required for working in a virtual environment and with digital products, including operations related to data creation, collection, processing, and analysis, as well as for using computer technologies for the purpose of process automation.

The development of the following digital competencies is inherent to all undergraduate programmes offered by HSE University:

– Digital Literacy, i.e. the use of digital technologies and tools for handling various types of information in order to meet one's personal, educational, and professional needs, collective work in a digital environment, with due regard for security standards, ethical principles, and legal norms;

– Algorithmic Thinking and Programming: various skills ranging from task formalization and the development of algorithms to up-to-date programming tools;

– Data Analysis and AI Methods: various skills ranging from the use of mathematical methods and models for extracting new knowledge to the solution of professional problems and the development of new approaches.

These competencies are regarded as extra-professional cross-curricular skills, which should be mastered by all students, regardless of their field of study, gradually or at a certain point during their training.

The Data Culture model includes five levels of digital proficiency: Elementary, Basic, Advanced, Professional, and Expert levels. Each new level builds upon the previous one and offers an expanded scope of skills, enabling the students to solve a wider range of tasks. The HSE University's educational standard stipulates the minimum required level of digital competencies for all fields of study at the undergraduate level − from Elementary to Advanced. Professional and Expert levels of digital competencies may be superfluous for most students. They are not regarded as minimum requirements and are reserved for individual specializations

or educational tracks. The level of digital proficiency is established for all three components: (1) *Digital Literacy*, (2) *Algorithmic Thinking and Programming*, and (3) *Data Analysis and AI Methods*.

Digital Literacy includes technical and cognitive skills enabling the students to be well-versed about modern information technology and use it for meeting their personal, educational and professional needs. The examples of such skills are provided below:

– ability to work with information in a digital environment;

– ability to build algorithms and optimize one's actions;

– ability to interact with other parties in a digital environment, with due regard for ethical and legal norms that may apply to digital space;

– knowledge of the basic principles of information security at the user level and the ability to protect digital devices and personal data;

– good understanding of the technical capabilities of modern digital devices and web technology and the ability to solve simple technical problems;

– ability to use office applications, etc.

The Digital Literacy programme does not include any levels since all students are expected to acquire digital literacy skills.

Algorithmic Thinking and Programming (hereinafter "Programming").

– at the elementary level, students are expected to acquire algorithmization skills, be able to use the basic functionality of the programming language to write codes, and apply their skills towards automation of simple routine tasks;

– the basic level foresees comprehensive knowledge of programming languages and relevant tools that can be used for data processing;

– the advanced level competencies include the ability to use algorithms and data structures to develop effective code, as well as basic skills in the field of software engineering and development of web applications;

Programming proficiency includes the following levels: Elementary, Basic, Advanced, Professional, and Expert levels.

The choice of programming language depends on the current situation in a relevant segment of the labour market and educational context that may apply at HSE University. In the academic years 2020-2023, the default language for teaching basic programming skills is Python. Other programming languages may be available at the Advanced level.

Data Analysis and AI Methods (hereinafter "Data Analysis").

– at *the elementary level*, students are expected to acquire basic skills in terms of processing quantitative and qualitative data;

– *the basic level* foresees the ability to use applied statistics and simple machine-learning methods for solving practical tasks related to data analytics, as well as fully developed data visualization skills;

– at *the advanced level*, students are expected to be able to apply machine learning and advanced analytics to the full problem-solving cycle, as well as use web applications or other tools for visualizing their models and analytical findings.

Data Analysis proficiency includes the following levels: Elementary, Basic, Advanced, Professional, and Expert levels.

The minimum required level of digital competencies (KLO-2) is stipulated in the profiles of specific fields of studies drawn up in line with the HSE University's educational standard for undergraduate studies. The minimum required level of digital competencies for a given educational programme is established by the programme but may not be lower than corresponding requirements that apply to the field of study attributed to a given programme (see Table 1 below).

Table 1. The Minimum Required Level of Digital Proficiency by Specific Fields of Study

Field of study **(group of fields of study)**	**KLO-2 (Key Learning Outcomes)**
Business Informatics	Advanced

Biology	Basic
Asian and African Studies	Elementary
Geography	Basic
Public Administration	Basic
Urban Development	Basic
Design	Elementary
Journalism	Elementary
International Regional Studies	Basic
Fine Arts	Elementary
Information and Communication Technology and Systems	Basic
Information Science and Computation Technology	Basic
Information Security	Advanced
History	Elementary
History of Art	Elementary
Cultural Studies	Elementary
Linguistics	Elementary
Mathematics	Basic

Media Communications	Elementary
International Relations	Basic
Management	Basic
Political Science	Basic
Applied Mathematics	Advanced
Applied Mathematics and Information Science	Advanced
Software Engineering	Advanced
Psychology	Basic
Public Policy and Social Studies	Basic
Russian Regional Studies	Basic
Advertising and Public Relations	Elementary
Sociology	Basic
Physics	Basic
Philology	Elementary
Philosophy	Elementary
Fundamental and Applied Linguistics	Basic
Chemistry	Basic
Economics	Basic

Law	Elementary

The number of students pursuing the Data Culture programme at HSE University:

2021: 10,000 students

2022: 11,000 students

2023: 11,500 students.

The set of educational elements designed for the development of digital competencies, including its scope and relevant academic credits, is determined by a given educational programme. It may range from a single Data Culture course (worth at least three credits) to a series of educational elements (courses, elective and optional courses, research/project-based research/other seminars, projects, etc., worth 15 to 20 credits in total).

In addition to the cross-curricular digital competencies described above, other types of digital competencies may be taught, including those required for mastering a given subject or a specific professional field. Their development is spelled out in the curriculum and is regulated by the educational programme itself.

Under the same educational programme, different specializations or tracks may have different requirements in terms of digital proficiency, which means that relevant academic units on the curriculum may also vary.

HSE University students also have the option to customize their educational trajectories, provided that they must meet the minimum digital proficiency requirements established for their educational programme (track, specialization). Individual trajectories include the following opportunities:

– taking elective and optional courses;

– adding a data science minor to one's individual curriculum;

– taking online resources (MOOCs);

– taking part in project work, including projects focused on the development of digital skills;

– customizing the choice of digital competency courses to meet one's needs.

Digital proficiency at the undergraduate level is assessed through mandatory testing. Students enrolled in all undergraduate programmes are required to demonstrate digital proficiency in line with the minimum requirements established for their educational programme (according to the list of levels given above) but may also choose to confirm a higher level of digital skills. The University utilizes an independent assessment of digital competencies that is a part of the assessments that make part of the digital competency courses. For each level, what is being tested is the mastery of the most popular digital competencies, regardless of the student's main field of study.

During their studies at HSE University, all undergraduate students must confirm that they have been able to acquire all three cross-curricular digital competencies. Digital Literacy assessment is the same for all educational programmes. Programming and Data Analysis tests require at least a minimum level of relevant competencies and are held after completion of all digital competency courses designed for a specific level under a given educational programme. Educational programmes may at their discretion assign additional mandatory exams for students enrolled in certain specializations/tracks to confirm their higher level of proficiency in one or two competencies.

Students are also entitled to take an additional test to confirm their digital proficiency, should it exceed the minimum requirements established for a given educational programme.

An integrated digital competency grade is assigned based on the results of the three competency tests. Upon successful completion, a corresponding certificate is issued. The tools used for testing digital proficiency have been adapted to meet the needs of students pursuing various fields of study; the list of requirements for the same level of proficiency does not depend on the student's subject area.

As part of the Data Culture model, the following educational and advanced training programmes for HSE University instructors were offered in 2017−2021:

– The Fundamentals of Data Analysis and Artificial Intelligence (20 academic hours, 120 persons);

– Adaptation Seminar for Data Culture Instructors (8 academic hours, 24 persons);

– Modern Machine Learning and Teaching Methodology for Data Analysis (32 academic hours, 45 persons);

– The Fundamentals of Teaching the Course "Digital Literacy" (32 academic hours, 25 persons);

– Python for Researchers (64 academic hours, more than 120 persons).

At least 16 advanced training programmes for instructors are planned until 2024 (in 2022 − 5 programmes, 2023 − 5, 2024 − 6). Starting from 2022, all instructors taking part in the Data Culture programme will need to pass mandatory certification to test their digital competencies.

In 2020, as part of cooperation with partner universities, the following advanced training programmes were offered to instructors from different universities:

– Modern Approaches and Methods for Teaching the Course "Digital Literacy" (32 academic hours);

– Modern Approaches and Methods for Teaching the Course "Python for Data Extraction and Data Mining" (76 academic hours).

In 2020−2021, as part of cooperation with Sakhalin State University, 19 instructors took part in three advanced training programmes:

– Modern Approaches and Methods for Teaching the Course "Python for Data Extraction and Data Mining" (76 academic hours);

– Modern Approaches and Methods for Teaching the Course "Mathematics for Data Science" (152 academic hours);

– Modern Approaches and Methods for Teaching the Course "Machine Learning" (75 academic hours).

In 2021−2022, three more programmes are planned for SSU instructors:

– Modern Approaches and Methods for Teaching the Course "Data Analysis and Applied Statistics" (114 academic hours);

– Modern Approaches and Methods for Teaching the Course "Deep Learning" (76 academic hours);

– Modern Approaches and Methods for Teaching the Course "Machine Learning with Big Data" (114 academic hours).

In 2021, 8 instructors from the Far Eastern Federal University completed the advanced training programme Modern Approaches and Methods for Teaching the Course "Python for Data Extraction and Data Mining".

In the same year, new materials were prepared for the following advanced training courses:

– Modern Approaches and Methods for Teaching the Course "Data Analysis and Applied Statistics" (114 academic hours);

– Modern Approaches and Methods for Teaching the Course "Deep Learning" (76 academic hours);

– Modern Approaches and Methods for Teaching the Course "Mathematics for Data Science" (152 academic hours);

– Modern approaches and methods of teaching the course "Machine Learning" (76 a. h.);

– Modern Approaches and Methods for Teaching the Course "Machine Learning with Big Data" (114 academic hours);

– Programming in C# (4 modules, 24 academic hours each).

In 2021−2022, as part of the preparations for the launch of double degree programmes with North-Eastern Federal University and University of Tyumen, HSE University plans to offer 13 advanced training programmes to instructors taking part in the delivery of courses aimed at developing digital competencies and skills required for engaging in new types of professional activity, including the option of simultaneously obtaining several qualifications.

In 2021-22, as part of cooperation with the Russian State Social University, three advanced training programmes will be offered:

– The Fundamentals of Teaching the Course "Digital Literacy" (32 academic hours);

– The Fundamentals of Teaching the Course "Data Analysis and Statistics" (48 academic hours);

– The Fundamentals of Teaching the Course "Programming in Python" (64 academic hours).

The Data Culture model promotes academic mobility with leading universities in terms of development of digital competencies for students enrolled in degree programmes with non-IT majors and can be replicated at other universities. Starting from 2024, the Data Culture module will be offered as an out-of-the-box solution that can be integrated with any university curriculum. Depending on the desired level of digital proficiency, the module duration will range from 1 to 6 semesters. Since 2021, pilot integration with the RSSU curriculum for all fields of study has been underway (scope: at least 2 semesters). For a full list of fields of study, please see Table 2 below.

Table 2. The List of RSSU Fields of Study for Which the Data Culture Model Is Being Applied

Code	**Field of study**	**Specialization (track)**
38.03.05	Business Informatics (Bachelor's)	Analytics of Control and Organization Systems
43.03.03	Hospitality Management (Bachelor's)	Hospitality Management
38.03.04	Public Administration (Bachelor's)	Public Services and Procurement Management
54.03.01	Design (Bachelor's)	Graphic Design

54.03.01	Design (Bachelor's)	Environment Design
46.03.02	Archive and Records Management (Bachelor's)	HR Records Management
38.03.10	Housing Maintenance and Utilities (Bachelor's)	Management of Housing and Blocks of Flats
42.03.02	Journalism (Bachelor's)	Multimedia Network Journalism
41.03.01	International Regional Studies (Bachelor's)	International Regional Studies (East Asia)
41.03.01	International Regional Studies (Bachelor's)	Political Analysis of World's Regions
09.03.01	Computer Science and Information Technology (Bachelor's)	Software for Computers and Automated Systems
10.03.01	Information Security (Bachelor's)	Information Security Technology
09.03.02	Information Systems and Technology (Bachelor's)	Information Systems and Technology in Economics
46.03.01	History (Bachelor's)	World History
46.03.01	History (Bachelor's)	National History
37.03.02	Conflict Studies (Bachelor's)	Mediation and Out-of-court Settlement
45.03.02	Linguistics (Bachelor's)	Theory and Methods for Teaching Foreign Languages and Cultures

41.03.05	International Relations (Bachelor's)	International Relations
38.03.02	Management (Bachelor's)	Marketing Management
51.03.02	Folk Arts (Bachelor's)	Management of Ethnocultural Centres
39.03.03	Youth Outreach Management (Bachelor's)	Youth Policy
44.03.01	Pedagogy (Bachelor's)	Information Science
44.03.01	Pedagogy (Bachelor's)	Music
44.03.01	Pedagogy (Bachelor's)	Physical Culture
41.03.04	Political Science (Bachelor's)	Political Science
09.03.04	Software Engineering (Bachelor's)	Corporate Information Systems Development
37.03.01	Psychology (Bachelor's)	Coaching and Marketing Psychology
44.03.02	Psychology and Pedagogy (Bachelor's)	Child and Youth Counsellors, Educators, Mediators, Tutors
44.03.02	Psychology and Pedagogy (Bachelor's)	Psychologist in Education
44.03.02	Psychology and Pedagogy (Bachelor's)	Psychologist in Social Sphere
42.03.01	Advertising and Public Relations (Bachelor's)	Marketing Communications
42.03.01	Advertising and Public Relations (Bachelor's)	Modern Social Communications

49.03.03	Recreational and Sports Tourism (Bachelor's)	Sports Recreation and Rehabilitation
34.03.01	Nursing (Bachelor's)	Diagnostics&Treatment
39.03.02	Social Work (Bachelor's)	Social Work in Various Spheres of Life
51.03.03	Social and Cultural Activities (Bachelor's)	Creative Team Leadership
39.03.01	Sociology (Bachelor's)	Sociology of Social Life
44.03.03	Special Education (Defectology) (Bachelor's)	Special Psychology and Special Pedagogy Basics
01.03.05	Statistics (Bachelor's)	Statistics and Data Management
48.03.01	Theology (Bachelor's)	Systematic Theology
20.03.01	Technosphere Safety (Bachelor's)	Health and Safety in Technosphere
43.03.02	Tourism (Bachelor's)	Tourist Services and Tourism Product Development
38.03.03	HR Management (Bachelor's)	HR Management at Organizations
49.03.01	Physical Education (Bachelor's)	Physical Education
49.03.02	Adapted Physical Education (Bachelor's)	Physical Rehabilitation and Recreation
47.03.01	Philosophy (Bachelor's)	Coaching and Business Ethics
05.03.06	Environmental Management (Bachelor's)	Environmental Safety

38.03.01	Economics (Bachelor's)	Foreign Trade Support
38.03.01	Economics (Bachelor's)	Accounting, Analysis, and Audit
38.03.01	Economics (Bachelor's)	Finance & Credit
38.03.01	Economics (Bachelor's)	Enterprise Economics and Management
40.03.01	Law (Bachelor's)	Public Law
40.03.01	Law (Bachelor's)	Private Law
40.03.01	Law (Bachelor's)	Criminal Law
52.05.01	Drama (Specialist)	Stage and Film Actor
37.05.01	Clinical Psychology (Specialist)	Pathopsychological Diagnostics and Psychotherapy
31.05.01	General Medicine (Specialist)	General Medicine
45.05.01	Translation, Interpretation and Translation Studies (Specialist)	Language Support for International Relations
37.05.02	Occupational Psychology (Specialist)	Management Psychology and Occupational Consulting
38.05.02	Customs Affairs (Specialist)	Customs: Charges, Currency Control and Foreign Trade Analytics
33.05.01	Pharmacy (Specialist)	Pharmacy
38.05.01	Economic Security (Specialist)	Banking of Russia's federal state security services

The Data Culture model also includes various events held at HSE University in order to bolster the acquisition of digital competencies related to the development of new algorithms and software suitable for practical use. These network-based events bring together the HSE University community and students and instructors from other academic institutions.

Their duration may vary depending on the level of digital competencies possessed by participants:

– Project-based sessions on Digital Literacy offered to elementary students (36 academic hours);

– Data analysis hackathons (8−16 academic hours) and programming contests (18−24 academic hours) for students possessing Basic or Advanced levels of digital proficiency.

By 2024, the University plans to make the events aimed at fast-tracking the development of digital competencies available to students enrolled at partner universities (UoT, FEFU, etc.) And by 2030, all students enrolled at any educational institution that uses the HSE University digital competency model will be able to join open sessions.

The practical implementation of the Data Culture model requires relevant hardware and software. The list of required hardware and software includes:

– a desktop computer with a camera or a laptop;

– Operating system: Windows 7, Windows 8, Windows 8.1, Windows 10 or Mac OS 10.10 or a newer version;

– Processor: Intel Core 2 DUO or more recent releases supporting SSE2, AMD Athlon x2 or higher; 2 cores or more; 1.8 GHz or higher; RAM: 3 GB or more; Free space on hard disk: 500 MB;

– Office software packages: MS Office version 2007 or a newer version; MS Office for Mac version 2011 or a newer version; LibreOffice version 7 or a newer version;

– Chrome/Yandex or another browser;

– Software packages/programming environments for coding and data mining: Jupyter Notebook, JupyterLab, PyCharm, Thonny, Sublime Text, Wing IDE, IDLE, JetBrains Rider, Visual Studio, VS Code, Clion, Codeblocks, Eclipse, Intellij idea, Atom, RStudio, Stata, SPSS, Excel.

Appendix No. 8. Extended Information on the Existing Groundwork at HSE University in Research Policy and Policy for Innovation and R&D Commercialization

Over the past decade, the scale of research and development (hereinafter "R&D" or "R&D work") at HSE University has dramatically increased. The total amount of R&D funding in 2009—2020 increased from 1.1 billion roubles to 5.19 billion roubles. HSE University consistently ranks 2nd among Russian academic institutions in terms of total R&D volume, including being a leader in the field of social sciences and humanities in the post-Soviet space and among the countries of Central and Eastern Europe. For the number of grants from the Russian Science Foundation, HSE University ranks 1st in the field of social sciences and humanities and 4th in mathematics and information science. It is also one of the leaders in the mega-grants competition: 11 mega-grants (four of which are in mathematics) in 2010-2020. A total of 166 divisions are involved in R&D (below you will find a description of the infrastructure for academic research).

The development of fundamental research has not only led to explosive growth in research output, but also an improvement in the quality of publications. In 2010-2020, the number of publications indexed by the Web of Science (hereinafter "WoS") went up from 259 to 2,705 per year, in Scopus - from 213 to 3,406 per year. At the same time, the number of articles in the first quartile (according to SNIP) increased from 26 to 920. The number of publications in the top 1% of articles by the number of citations for the respective subject areas increased from 40 (2011 – 2015) to 133 (2016–2020). The total volume of citations is also showing a steady rise: from 7,433 publications in 2010–2015 up to 66,411 publications in 2016-2020. A total of 37.6% of publications (Incites, ESCI) were co-authored with researchers from leading global universities.

HSE University is consistently developing its academic journals. In 2020, 15 journals were indexed by international analytical databases: 13 journals in Scopus, and two in WoS and Scopus. In addition, HSE University academic journals are

included in the Emerging Sources Citation Index and Russian Science Citation Index segments on the WoS platform (13 and 16 journals, respectively).

The volume of applied R&D for 2010-2020 increased threefold: from 815 million roubles to 2.8 billion roubles. The number of projects implemented each year has increased from 224 to 496, the number of customers has expanded from 126 to 228.

HSE University's strategic partners include some of the major companies, such as Sberbank, Yandex, Russian Agricultural Bank, VTB, Gazprombank, Sistema, Transneft, Russian Post, MTS, Mail.ru, Rosseti, Inter RAO, Severstal, Russian Railways, Russian Helicopters, Aeroflot, Megafon, Samsung, Huawei and others. HSE University is a member of Gazprom's flagship universities and the Gazpromneft League of Universities.

Diversification of R&D and the portfolio of orders resulted in a reduction in the share of contracts with ministries and agencies (from 74-55% in 2005-2010 to one-third of orders in 2015-2020) and an increase in the share of R&D revenue generated thanks to business interests. In 2020, the volume of R&D revenue on behalf of Russian organizations exceeded 1 billion roubles.

HSE University is recognized as an expert analytical centre under the Russian Government. The University provides expert and analytical support for the activities of the Russian Government, the Russian Presidential Administration, the Federal Assembly, and federal and regional executive authorities by preparing analytical materials on relevant issues concerning socio-economic development of Russia, industries and regions, and participation in expert, advisory and consultation bodies, as well as the implementation of R&D work.

The development of international scientific cooperation has been one of HSE University's key priorities since its inception. HSE University represents Russia in expert groups of major international organizations and associations (e.g., OECD, Eurasian Economic Commission, World Bank, WTO, Global Innovation Index, UNESCO, UNIDO, ITU, APEC, Eurostat, etc.) It secures Russia's participation in

cross-country studies and ratings in science, innovation, education, digital economy, socio-economic development, and public administration. Furthermore, the University acts as a national contact point for the EU R&D Framework Programmes and belongs to international research networks. HSE University's programme for supporting international scientific partnerships provides funds for mobility to participants in international R&D projects on a competitive basis.

In 2020, as part of the Science national project, a world-class research centre was created at HSE University to focus on priority areas for S&T development of the Russian Federation: Centre for Advanced Research on Human Potential (as a consortium of HSE University, RANEPA, MGIMO MFA of Russia and RAS Institute for Ethnography and Anthropology). At the very start of the project, it ranked 19th among the world's organizations by the number of publications in social sciences and humanities in journals indexed in WoS over the past five years.

HSE University has formed a system of support for fundamental research as part of its HSE Fundamental research Programmes. Its budget in 2020 amounted to 1.606 billion roubles; it covers about 2,000 researchers. Since 2010, the International Laboratories project has brought together international level teams with the involvement of foreign scientists. By 2020, there were 48 laboratories, and the number of staff members exceeded 800 people (about 30% are students and doctoral students). The number of international publications exceeded 700 articles in 2020 (more than 70% - in the Q1 and Q2 WoS / Scopus). International laboratories attract approximately 200 million roubles per year for R&D from external sources. The Fundamental research Programme provides support for projects of young scientists. In 2020, 45 research and teaching laboratories with over 500 staff members were in operation (including about 50% students and doctoral students). The number of publications indexed by WoS / Scopus came over 170.

As part of the Fundamental research Programme, an extensive empirical database has been created based on a set of original monitoring studies (economic situation and health of the population, social well-being, education economics,

business climate and entrepreneurial behaviour, production and exports, innovative behaviour of companies and the population, science and technology, digital economy, intellectual services, civil society, freelancing, etc.) The findings of these studies serve both fundamental research (including international comparative studies) and for preparation of regular analytics, forecasts, recommendations for socio-economic policy, sectoral, regional and corporate strategies. The core part of the knowledge base based on the results of HSE University monitoring is in the public domain, open to Russian and foreign researchers, and is used for developing dozens of academic papers outside HSE University.

In 2013, the Foundation for the Development of Applied Research was established, financed from HSE University's own funds. Thanks to the support from the foundation and on the basis of the created premise, research teams are entering the market to raise external funding, new interdisciplinary teams are being formed, and hundreds of undergraduate and doctoral students are involved in R&D. The volume of extra-budgetary revenues on topics of the supported R&D projects by 2020 exceeded the allocated funding by more than three times.

HSE University has created world-class research infrastructure facilities:

– the Joint Economic and Social Data Archive (JESDA) is a unique archival collection that provides open access to the results of empirical research (a member of the International Association for Information Service and Technologies in the Social Sciences).

– the Russian Longitudinal Monitoring Survey (RLMS-HSE) is a unique longitudinal survey of households conducted since 1994 (JESDA and RLMS-HSE are the only social science projects in Russia that received the status of megascience objects under a joint project to develop Russia-EC academic infrastructure (CREMLINplus);

– the iFORA big data mining system (based on the HSE University supercomputer and data cluster), which has no analogues and is noted by the OECD

as a significant example of digitalization of science, and by Nature journal as an effective tool for substantiating management decisions;

– a unique scientific installation, the HSE Synchronous Eye-tracking, Brain Signal Recording and Non-Invasive Brain Stimulation System, was the 2021 winner under a support programme implemented by Russia's Ministry of Science and Higher Education.

HSE University is developing infrastructure to support R&D, commercialization of developments and innovation, covering all stages of the lifecycle – from fundamental research to bringing products and services to market. This process involves specialized administrative subdivisions, innovative structures, and relevant research and educational centres (see below for more details on infrastructure supporting academic research, commercialization of developments and innovation).

Russia's first university Business Incubator has been generating and developing start-ups since 2006. In the last three years alone, more than 800 teams have completed its programmes, and alumni have raised over 1 billion roubles in investment. Start-ups created with the support of the Business Incubator operate in the fields of educational technologies, marketing, advertising, retail, robotics, unmanned aerial vehicles, fintech, information security, e-commerce, voice recognition and synthesis, augmented and virtual reality, etc. The Business Incubator ranked 1st in the rating of the world's best university accelerators according to UBI Global. In order to stimulate innovative activities, since 2010 HSE University has been implementing the Foundation for Support to Innovative Entrepreneurship via competitions for the HSE {Tech} Cup (S&T business projects) and the HSE {Business} Cup (student projects).

Infrastructure for research, R&D commercialization and innovation

– Centre for Fundamental research https://cfi.hse.ru/

Coordinates academic research conducted by HSE University and commissioned by the government. Provides control and monitoring of budget

expenditures on thematic plan research; control and monitoring of HSE University's appointment of staff hired to carry out research projects under the thematic plan, collection and organization of expert reviews of reports.

–Support Centre for International Laboratories https://www.hse.ru/interlabs/about

Contributes to research projects carried out by HSE University's international laboratories. Provides coordination concerning the organizational activities of HSE University's international laboratories; supports integration of international researchers and laboratory personnel into the University's academic environment; undertakes collection, analysis and presentation of analytical information on research projects carried out by international laboratories; organizes performance assessment of international laboratories.

–Scientometrics Centre https://scientometrics.hse.ru/en/

Engaged in monitoring and analysis of HSE University subdivisions' and staff's research productivity; provides analytical support for academic unit activities and HSE University administration as it relates to applied scientometrics; conducts training and consulting on practical issues of research evaluation and the use of scientometrics in science management. Oversees monitoring, analysis and ensuring that the research output of staff is reflected correctly in the international WoS and Scopus citation databases. Conducts expert review of journals, conferences and publishing houses.

–Centre for Development and Integration of Project Activities https://www.hse.ru/cpdi/

Engaged in developing and supporting large interdisciplinary projects of HSE University's faculties, striving to ensure the cohesion of research and educational activities. Contributes to achieving an organic symbiosis between education and conducting basic and applied research and an innovative attitude toward the accumulation of scientific knowledge and the acquisition of competencies dictated by time.

–Office of Academic Research

Coordinates programmes aimed at supporting individual researchers and small research teams, including the campaign for academic merit bonuses, assigned for outstanding findings published in leading academic journals. Supports research and study groups that mainly consist of young scientists, undergraduate and graduate students. These groups serve as the basis for the creation of new research laboratories.

–Office for World-class Research Centre https://ncmu.hse.ru/contacts

Coordinates and monitors implementation of the Programme for the Creation and Development of a World-class Scientific Centre: Human Capital Multidisciplinary Research Centre. Coordinates the consortium members' activities; interacts with Russia's Ministry of Science and Higher Education and centre's administrative bodies (the Supervisory Board, the Management Committees); provides information, methodological and organizational support to the subdivisions involved in implementing the Programme and the formation of consolidated reporting and assistance in the promotion of research findings.

–Research and Development Office https://research.hse.ru/

Organizes analysis work on the applied R&D market and the formation of a portfolio of orders, including by expanding the list of potential clients and scope of work, developing services to support HSE University's subdivisions (monitoring of competitions, etc.) Provides analysis and implements measures to improve the efficiency of HSE University's research departments in the field of applied R&D. Develops mechanisms to promote HSE University's research and analysis, planning, coordination and accounting for applied R&D. Promotes the establishment of HSE University's scientific relations and interaction with government agencies, businesses, and scientific organizations with an interest in R&D.

–Department for R&D Project Monitoring https://www.hse.ru/project-monitoring/

Monitors HSE University's academic research, technical, and innovation activities, as well as experimental developments carried out by HSE University and implementation of other types of project activities involving the use of new knowledge, technology and specialized equipment. Takes part in the digitization of project activities.

–Office for Research Projects https://www.hse.ru/research-projects/

Provides for S&T prioritization, increasing the practical significance and technological integrity of research conducted at the University. Monitors research competencies and specifies HSE University's technological landscape. Organizes work to promote HSE University's S&T groundwork. Interacts with key clients of research projects, including state authorities, state corporations and organizations with state participation, and commercial enterprises. Participates in the creation of a project management system at HSE University as a set of organizational mechanisms to support and implement applied research.

–Director for Regional Government Relations https://region.hse.ru

Creates a project office to replicate best practices for socio-economic development in the regions (jointly with the Agency for Strategic Initiatives). Implements practice-oriented projects within the framework of new business models and in new markets in Russia's regions. Conducts strategic and expert-led sessions in the regions that are aimed at improving management efficiency, including through the use of digital technologies. Works to build a network of HSE University's experts and analytical partners with national universities, as well as national research and sectoral universities, to jointly develop managerial solutions in the area of regional socio-economic development. Maintains information resources on interaction with regions on the HSE University portal (project portfolio, research aimed at regional development, regional ratings, new solutions for regions, etc.)

–Office of Expert Analysis https://www.hse.ru/org/hse/aup/analytics/persons/

Organizes expert analysis and analytical support on issues presented to the University, both within the framework of urgent requests from the Russian

Government and when performing systematic analytical research for the Russian Presidential Administration, the Russian Government, federal and regional authorities and organizations. Supports applied research commissioned by the government at HSE University on behalf of Russia's Deputy Prime Ministers.

–Joint Economic and Social Data Archive (JESDA) and Free Analytical Network (FAN) http://sophist.hse.ru/

Supports depositing in an open-access format of primary research findings, where HSE University is a copyright holder thereto, and maintains FAN, where research findings owned by HSE University are listed.

–HSE Graduate School of Business https://gsb.hse.ru/en/

Carries out research and educational, expert analysis and consulting activities in the areas of general and strategic management, business informatics, marketing, entrepreneurship, operational management, logistics and supply chain management, organizational behaviour and HRM, finance and accounting, business education of all levels, corporate digital transformation, corporate HRM systems and corporate training, corporate social responsibility and sustainable development management. Develops a system of databases and collections of longitudinal case studies.

– International Master's Programme in Governance of Science, Technology and Innovation https://www.hse.ru/en/ma/sti/

Based on many years of advanced Russian and international research and aimed at meeting the growing demand for highly qualified managers, researchers and analysts in the field of science, technology and innovation. Offers educational content that is unique both for Russia and globally and implements modern learning formats in partnership with top-ranked research centres (Joanneum Research, CGEE, STEPI) and universities in Europe (Technical University of Berlin, University of Manchester, University of Maastricht, Turin Polytechnic University), Asia (Seoul National University) and the Americas (George Washington University, Campinas State University).

–Department of Innovation Management https://www.hse.ru/inman/

Aims to develop an entrepreneurial culture at HSE University. Oversees core degree and continuing education programmes in the area of developing innovation management and entrepreneurship for University students, staff and instructors, organizes expert reviews and acceleration of innovation projects of HSE University's partner organizations, as well as conducts various events (seminars, conferences, etc.) jointly with HSE University's partner organizations to promote innovation and entrepreneurship in the expert, educational and business communities.

–Centre for Legal Support in Science, Intellectual Property and Information https://legal.hse.ru/rndip/

Participates in developing and implementing the University's intellectual property policy. Provides legal protection of rights to intellectual property and HSE University's brand identity, including patenting of inventions, utility models, industrial designs, and registration of computer programmes and databases. Administers a system of material incentives for intellectual property at HSE University. Advises researchers on various legal issues in connection with preparing and conducting research, innovation and commercialization of developments. Provides assistance in structuring transactions as it relates to HSE University's research activities and intellectual property and prepares templates for contracts, if required. Participates in developing models of interaction with partners and clients. Conducts expert legal review and approval of draft agreements covering R&D work and intellectual property rights. Oversees the transfer of intellectual property rights from authors to HSE University. Maintains records of HSE University's rights to intellectual property and brand identity (SU-RID database). Maintains in effect HSE University's patents and trademarks.

–HSE Business Incubator https://inc.hse.ru/

Supports entrepreneurs by reviewing ideas, assisting with start-up launches, finding mentors and experts, identifying initial clients and attracting investment.

–Institute for Statistical Studies and Economics of Knowledge (ISSEK) https://issek.hse.ru/en/

Conducts research on measurement, analysis, forecasting and policy issues in science, technology, innovation and the digital economy. ISSEK includes 19 research centres and two international laboratories. More than 250 projects have been completed for the Russian Presidential Administration and the Russian Government, federal and regional executive authorities, large companies and international organizations. The annual Foresight and STI Policy international conference (https://issek.hse.ru/forsconf-2020) has been held since 2010, earning recognition by the OECD as one of the most significant global forums in the field of science policy and forecasting of science and technology. The ISSEK academic journal *Foresight and STI Governance* (https://foresight-journal.hse.ru) is included in WoS and Scopus (Q1). The Institute's International Supervisory Council includes leading researchers from 12 countries. The UNIDO Centre for Technological Forecasting and the UNESCO Future Research Chair were established on the basis of ISSEK.

–Institute of Socio-Economic Design https://www.hse.ru/isep/

Assists in developing and implementing socio-economic development projects and programmes, social and technological innovation, acquisition and dissemination of advanced knowledge and competencies in this area, and organization of project activities at HSE University. Its activity's focus is on problems of implementing change management mechanisms, as well as initiating and implementing social and technological innovation, including the development of social entrepreneurship, charitable and socially focused non-profit organizations, the development of innovation ecosystems, activities of development institutions and objects of innovation infrastructure, and introduction of technological innovations, including in the public sector and companies partially owned by the state. Supports the commercialization of technologies and innovation as it relates to the provision of expert support for the activities of subdivisions that carry out the

transfer and commercialization of technologies, implementation of acceleration programmes, and development of entrepreneurial activity. Provides support to HSE University's subdivisions as it relates to interaction with technology platforms and companies - 'national champions'.

Appendix No. 9. Creation of International Centres of Excellence at HSE University (the example of the Faculty of Mathematics)

Faculty of Mathematics: Current Standing and Analysis of its Competitors

HSE University is the leading research and educational centre in mathematics (placing in the Top-100 in ARWU Mathematics ratings, 82nd in US News Mathematics and 95th in QS Mathematics). The Faculty of Mathematics is the central, although not the sole subdivision at the University, with a key focus on mathematics-based research. The faculty works in cooperation with the Faculty of Computer Science, MIEM, HSE University-Nizhny Novgorod, and other respective subdivisions.

At present in Moscow, the world-class centre the RAS Steklov Mathematical Institute (http://simc.mi-ras.ru/) and the Moscow Centre of Fundamental and Applied Mathematics (MSU, Keldysh Institute of Applied Mathematics and the RAS Marchuk Institute of Numerical Mathematics) engage in operations close to the focuses of the HSE University Faculty of Mathematics.

The **Purpose** of the International Centre of Excellence based out of the HSE University Faculty of Mathematics is to enhance the University's position as the Russian leader in training mathematical researchers, as well as a world leader in offering a high-quality mathematics education.

Core Areas of Development of the Centre of Excellence

Attracting top learners to take part in the Faculty's Bachelor's programmes, as well as their early involvement in the most promising and innovative areas of contemporary mathematics and its application.

Development of the Faculty's Master's and doctoral programmes (e.g., with the creation of a single doctoral school in mathematics with key Moscow-based partners – Skoltech, Kharkevich Institute for Information Transmission Problems, Steklov Mathematical Institute, etc.); key steps at this stage shall include the creation of a competitive financial and infrastructural conditions for Master's and doctoral students, as well as financial support and acceleration of the "cotutelle" programmes, with a view to attracting the best graduates from the top foreign universities.

Attracting promising young and distinguished accomplished academics from different countries to collaborate with the Faculty of Mathematics; the key instrument to achieve this shall be the Faculty's flexible policy for hiring top foreign researchers (e.g., option for short-term contracts to hold topic-focused semester/trimesters for researchers across degree levels, or special contracts with a set period in Moscow for top-ranking mathematicians affiliated with overseas institutions, etc.)

Efforts to provide ongoing support to the busy mathematical life in Moscow, including support to "research in pairs" and small groups applications for several months (e.g., for young academics).

Organization of topic-based trimesters and semesters, including two to three conferences, four to six courses for advanced students and doctoral learners, short-term contracts (four to six months) for small groups of full-time participants (various types of mathematicians – from postdocs to visiting professors), based on the results of which, academic reports shall be written up and satellite seminars will be conducted.

Similar programmes can be found in several key mathematics centres: Fields Institute (Canada), ICERM and MSRI (USA), IHP and CIRM (France), Hausdorff Research Institute (Germany).

These measures shall be implemented along with the University's academic partners, as well as, in specific areas of study, business partners engaged in an analysis of possible application of research outcomes.

Continuous informational and financial support for efforts, aimed at boosting the Faculty's global reputation: competitions involving students' and doctoral students' research works, summer and winter schools (focusing on both a wide range of topics or narrow fields, thereby cultivating interest in mathematics among underrepresented social groups – a similar programme can be found in Princeton's Women in Mathematics programme), academic conferences, student mobility, staff mobility, etc.

The development of a system of international laboratories, financed from outside of HSE University (e.g., from mega-grants) and from the University's own resources.

Forecast Results by 2030

1. The Faculty is recognized as a leader in mathematics education on both the national and global education markets, while also attracting the most talented Russian and international students, e.g., for Bachelor's programmes – foreign winners and prize-winners in international Olympiads in mathematics; to Master's programmes – Bachelor's graduates from the Top-20 universities in mathematics in the world;

2. An ongoing academic centre in mathematics based out of HSE University, including international laboratories, mathematical researchers from the University's subdivisions and affiliated researchers; participation in the Centre of Excellence's programmes is considered prestigious for staff members from leading word's universities;

3. The Centre of Excellence shall regularly recruit strong researchers/instructors from the global job markets. Furthermore, a significant number of HSE University staff will regularly take part in ICM and other such events (at least five invited/plenary speakers at ICM 2030);

4. HSE University steadily holds its place in the Top-75 of all global subject ratings in mathematics (QS, ARWU, US News, etc.); for certain ratings – appears in the Top-50.

Appendix No. 10. Key Partners of HSE University

No.	Partner's name	Area of cooperation	Scale and format of cooperation	Period
Russian universities and organizations of continuing professional education				
1.	Kazan (Volga region) Federal University (KFU)	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	2020-2021
		Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 1,085 instructors. Cooperation agreement and service agreement	2020
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students and venue sharing. Exchange of official letters	2020-2021
2.	Ural Federal University named after the first President of Russia B.N.Yeltsin	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	2020-2021
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Additional agreement to the cooperation agreement in the signing process	

		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Cooperation agreement. Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles	
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad. Exchange of official letters	
		Co-organizer of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions	
3.	National Research Tomsk State University (TSU)	Staff training and joint R&D	Cooperation agreement (in the signing process)	2020-2021
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	
		Co-organizer of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in	

			expert commissions. Cooperation agreement (in the signing process)	
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
4.	North-Caucasus Federal University	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project. Project to establish an interregional expert and analytical centre in the North Caucasus	2020-2021
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement (in the signing process)	

		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Cooperation agreement (in the signing process)	
		Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement (in the signing process)	
5.	Far Eastern Federal University (FEFU)	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	2020-2021
		Joint research	Three projects involving the Faculty of Biology and Biotechnology and the Centre for Language and Brain Studies of HSE University	
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Cooperation agreement	

		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles	
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad. Cooperation agreement	
		Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement (in the signing process)	
6.	Immanuel Kant Baltic Federal University	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	2020-2021
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students and venue sharing. Exchange of official letters	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Cooperation agreement (in the signing process)	

		Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement (in the signing process)	
7.	Sechenov University	Joint R&D	Work on joint scientific projects in biomedicine, artificial intelligence and research of trends in science, technology and markets	2021-2026
8.	Irkutsk National Research Technical University (INRTU)	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project. "Mirror" laboratory	2020-2021
9.	Derzhavin Tambov State University (TSU)	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	2020-2021
10.	Smolensk State University	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	2020-2021
11.	Kazan Cooperative Institute (branch) of Russian University of Cooperation	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	Planned partnership
12.	Ryazan State University named for S. Yesenin	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	Planned partnership

13.	Yaroslav-the-Wise Novgorod State University	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	Planned partnership
14.	Bashkir State University	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	Planned partnership
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
15.	Krasnoyarsk State Agrarian University	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	Planned partnership
16.	Dmitri Hvorostovsky Siberian State Academy of Arts	Staff training and joint R&D	Participation in the 'Universities as a Think Tank of the Regions' project	Planned partnership
17.	Moscow State University of Psychology and Education	Joint R&D	Work on joint research projects	2016-2025
18.	Privolzhsky Research Medical University (PRMU)	Joint research	3 projects involving 15 employees from the Centre for Language and Brain Studies of HSE University	Until present
19.	Schools of HSE Distributed Lyceum	Transfer of the experience of the HSE University Lyceum and educational technologies	As of 2021: 31 schools, 3,998 students and 677 Distributed Lyceum class instructors	2015-until present

20.	National University of Oil and Gas "Gubkin University"	Joint implementation of the 'Future Oil and Gas Industry Engineer' training track of the 'Informatics, Engineering and Mathematics' educational programme of the HSE University Lyceum	In 2021, the first recruitment was held for the 'Future Oil and Gas Industry Engineer' track A curriculum with the same name of 170 hours per year is being offered for students in the track	2020-2025
21.	Arkhangelsk Regional Institute of Open Education	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 510 instructors. Cooperation agreement and service agreement	2021
22.	A.M. Toporov Altai Institute for Educational Development	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 900 instructors. Cooperation agreement and service agreement	2021
23.	Samara Polytech (Flagship) University	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 790 instructors. Cooperation agreement and service agreement	2021
24.	St. Petersburg State University of Economics	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 400 instructors. Cooperation agreement and service agreement	2021
25.	Bashkortostan Republican Institute for Education Development	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 700 instructors. Cooperation agreement and service agreement	2021

26.	Financial University under the Government of the Russian Federation (Chelyabinsk branch)	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 480 instructors. Cooperation agreement and service agreement	2021
27.	Fadeev Finance and Economy College (Yakutia)	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 420 instructors. Cooperation agreement	2021
28.	Krasnoyarsk Krai Institute for Advanced Training and Professional Retraining of Educators	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 600 instructors. Cooperation agreement	2021
29.	Surgut State University	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 330 instructors. Cooperation agreement	2021
		Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in this area of research	Research cooperation agreement	2021-2026
30.	Astrakhan State University	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in	Until present

			methodological and expert commissions. Exchange of official letters	
31.	Novosibirsk State University	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
32.	Altai State University	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	
33.	Vladimir State University (named after Alexander and Nikolay Stoletovs)	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
34.	Voronezh State University	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present

35.	Yuri Gagarin State Technical University Of Saratov	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
36.	University of Tyumen (UTMN)	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
		Partner of the 'Vysshaya Proba' All-Russian Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions. Exchange of official letters	
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad. Exchange of official letters	
37.	Ulyanovsk State University	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
38.	Financial University under the Government of the Russian Federation	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present

39.	Southern Federal University (SFEDU)	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	Until present
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	
40.	Siberian Federal University	Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	In the signing process
		Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement	
41.	Irkutsk State University	Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement	In the signing process
42.	ITMO University	Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement	In the signing process

43.	Moscow City University (MCU)	Co-organizer of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in methodological and expert commissions. Cooperation agreement	In the signing process
44.	National Research Nuclear University MEPhI	Co-organizer of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in methodological and expert commissions. Cooperation agreement	In the signing process
45.	Northern (Arctic) Federal University named after M.V. Lomonosov	Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement	In the signing process
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	
		Development and implementation of joint educational programmes;	General cooperation agreement	2017

		joint fundamental and applied scientific research; exchange of educational, scientific and innovative technologies; academic and scientific events; joint use of opportunities for postgraduate studies, doctoral studies and dissertation councils; organization of internships to exchange experience on university administration		
46.	P.G. Demidov Yaroslavl State University	Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement	In the signing process
47.	M. K. Ammosov North-Eastern Federal University in Yakutsk (NEFU)	Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Provision of additional information for school students, venue sharing and representation in expert commissions. Cooperation agreement	In the signing process
		Co-organizer of different areas of the 'I'm a Professional' Olympiad for students	Provision of additional information for students, venue sharing and representation in methodological and expert commissions. Exchange of official letters	
48.	Belgorod State University	Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee,	Until present

			methodological commissions and panels for Olympiad profiles. Cooperation agreement	
49.	The Southwest State University (SWSU)	Co-organizer of the ‘Vysshaya Proba’ Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	Until present
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	
		Regional venue for head-to-head competitions of the ‘Higher League’ Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the ‘Higher League’ Olympiad. Exchange of official letters	
50.	Peoples' Friendship University of Russia University (RUDN)	Co-organizer of the ‘Vysshaya Proba’ Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions of the ‘Vysshaya Proba’ Olympiad and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Exchange of official letters	Until present

51.	Dostoevsky Omsk State University (OmSU)	Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	Until present
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	
52.	Omsk State Technical University	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	Until present
53.	Penza State University	Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	Until present

		Regional venue for head-to-head competitions of the ‘Higher League’ Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the ‘Higher League’ Olympiad	
54.	Tomsk Polytechnic University	Co-organizer of the ‘Vysshaya Proba’ Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	From 2021
		Regional venue for head-to-head competitions of the ‘Higher League’ Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the ‘Higher League’ Olympiad	
		Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	
55.	Voronezh State Technical University	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	From 2021
56.	Orel State University named after I.S. Turgenev	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and	From 2021

			organizing and holding the regional case study championship	
57.	Don State Technical University (DSTU)	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students and venue sharing. Exchange of official letters and organizing and holding the regional case study championship. Exchange of official letters	From 2021
58.	Ufa State Petroleum Technological University	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Cooperation agreement	From 2021
59.	Novosibirsk State University Of Economics And Management	Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Cooperation agreement	From 2021
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad	
60.	Moscow Institute of Physics and Technology (MIPT)	Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, holding and organizing the final stage of face-to-face competitions and representation in the	From 2021

			organizing committee and methodological commissions for olympiad areas. Exchange of official letters	
61.	Volgograd State Agricultural University	Partner of the 'Vysshaya Proba' All-Russian Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions. Cooperation agreement	From 2021
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad	
62.	Institute for Education Development and Advanced Training (Yakutia)	Partner of the 'Vysshaya Proba' All-Russian Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions. Cooperation agreement	From 2021
		Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates	Venue sharing and participation in organizing head-to-head competitions of the 'Higher League' Olympiad	
63.	Regional Institute for Education Development (Yamal-Nenets Autonomous Area)	Participation in a range of measures that aim to improve the quality of physics, mathematics and IT education as part of the Yamalo-Nenets Autonomous District government's project ' High School Student Educational Certificate' (Resolution No. 1115-P of the Yamalo-Nenets	157 school students (12 study groups in mathematics, physics and informatics) 81 eleventh grade students and 76 tenth grade students	2020-2021

		Autonomous District Government dated 17 July 2020)		
64.	Samara Region Institute for Advanced Training and Retraining of Educators	Partner of the 'Vysshaya Proba' All-Russian Olympiad for school students	Provision of additional information for school students, venue sharing and organization of the final stage of head-to-head competitions. Exchange of official letters	From 2021
65.	Krasnoyarsk Krai Institute for Advanced Training and Retraining of Educators	Regional venue for head-to-head competitions of the 'Vysshaya Proba" Olympiad for school students	Venue sharing and participation in organizing head-to-head competitions of the Olympiad. Cooperation agreement	Until present
66.	Northern State Medical University	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in scientific research	Research cooperation agreement	2021-2026
67.	Central State Medical Academic of the Administrative Department of the President of the Russian Federation	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in scientific research	Research cooperation agreement	2021-2026

68.	Russian Medical Academy for Continuous Professional Education of the Ministry of Health of the Russian Federation	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in scientific research	Research cooperation agreement	2021-2026
69.	A.M. Toporov Altai Institute for Educational Development	Organization of the 'Vysshiy Pilotazh -Barnaul' regional competition	Organizing and holding the ' Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the ' Vysshiy Pilotazh' competition	2016-until present
70.	Krasnoyarsk Krai Institute for Advanced Training and Professional Retraining of Educators	Organization of the 'Vysshiy Pilotazh-Krasnoyarsk' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the ' Vysshiy Pilotazh' competition	2016-until present
71.	Inter-regional Institute for Education and Development of Qualifications	Implementation of financial literacy programmes to upgrade the skills of instructors in the general and secondary vocational education system	In 2021: 830 instructors Cooperation agreement and service agreement	

Educational Organization of General Education				
72.	Advanced Training Centre "Education without Boundaries" of the National Library n.a. A.Z. Validi (Ufa)	Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates and the 'Vysshaya Proba' Olympiad for school students	Venue sharing and participation in the organization of head-to-head Olympiad competitions. Cooperation agreement	Until present
		Organization of the 'Vysshiy Pilotazh-Ufa' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
73.	Krai Education Centre (Khabarovsk)	Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates and the 'Vysshiy Proba' Olympiad for school students	Venue sharing and participation in the organization of head-to-head Olympiad competitions. Cooperation agreement	Until present
74.	Support Centre for Gifted Children "Strategy" (Lipetsk)	Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates, the 'Vysshaya Proba' Olympiad for school students and the 'Vysshaya Proba for Programming' team-based Olympiad	Venue sharing and participation in the organization of head-to-head Olympiad competitions. Cooperation agreement	Until present
75.	Centre for Development of Gifted Children (Kaliningrad Region)	Regional venue for head-to-head competitions of the 'Higher League' Olympiad for students and graduates and the 'Vysshaya Proba' Olympiad for school students	Venue sharing and participation in the organization of head-to-head Olympiad competitions. Cooperation agreement	Until present

76.	Educational Complex "Algorithm for Success" (Belgorod Region)	Organization of the 'Vysshiy Pilotazh-Belgorod' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
77.	Boarding School for Gifted Children of the Vladivostok State University of Economics and Service	Organization of the 'Vysshiy Pilotazh-Vladivostok' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
78.	Academician N.G. Basov Gymnasium of the Voronezh State University	Organization of the 'Vysshiy Pilotazh-Voronezh' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
79.	Gymnasium No. 14 (Glazov)	Organization of the 'Vysshiy Pilotazh-Glazov' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
80.	Kirov Economics&Law Lyceum	Organization of the 'Vysshiy Pilotazh-Kirov' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present

81.	A.S. Pushkin Lyceum No. 78 of the city of Naberezhnye Chelny of the Republic Tatarstan	Organization of the 'Vysshiy Pilotazh-Naberezhnye Chelny' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
82.	Secondary School No. 162 with advanced studies of French (Novosibirsk)	Organization of the 'Vysshiy Pilotazh-Novosibirsk' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
83.	Lyceum of Contemporary Administration Technologies No. 2 (Penza)	Organization of the 'Vysshiy Pilotazh-Penza' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
84.	Lyceum No. 1 of Petrozavodsk City District	Organization of the 'Vysshiy Pilotazh-Petrozavodsk' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
85.	Information and Methodology Centre for Education (Rostov-on-Don)	Organization of the 'Vysshiy Pilotazh-Rostov-on-Don' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present

86.	Lyceum No. 4 (Ryazan)	Organization of the 'Vysshiy Pilotazh-Ryazan' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
87.	Samara Medical and Technical Lyceum	Organization of the 'Vysshiy Pilotazh-Samara' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
88.	Komi Republican Lyceum of the Syktyvkar State University	Organization of the 'Vysshiy Pilotazh-Syktyvkar' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
89.	Lyceum No. 14 named after Russian Distinguished Instructor A.M. Kuzmin	Organization of the 'Vysshiy Pilotazh-Tambov' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
90.	General Education Centre "School" (Togliatti)	Organization of the 'Vysshiy Pilotazh-Togliatti' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
91.	Lyceum No. 11 (Chelyabinsk)	Organization of the 'Vysshiy Pilotazh-Chelyabinsk' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and	2016-until present

			project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	
92.	Education Development Unit under Municipal Budgetary Institution "Education Administration" (Yakutsk)	Organization of the 'Vysshiy Pilotazh-Yakutsk' regional competition	Organizing and holding the 'Vysshiy Pilotazh-Region' regional competition of research and project works of school students as a qualifying stage of the 'Vysshiy Pilotazh' competition	2016-until present
93.	Moscow International Education Salon	Methodological, expert, informational and technical cooperation. General partner of the 'Instructor's Lesson' Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021
State and Regional Authorities				
94.	Ministry of Finance of the Russian Federation	Implementation of the Strategy for Improving the Financial Literacy of the Population in the Russian Federation for 2017-2023. Partner of the 'Vysshaya Proba' financial literacy Olympiad for school students. Participation in expert councils and working groups	30,600 instructors of the general and secondary vocational education system from 33 regions of Russia. 23,535 students from 83 regions of Russia and 12 countries	2021-2023 From 2017

95.	Ministry of Education of the Russian Federation	Implementation of the Strategy for Improving the Financial Literacy of the Population in the Russian Federation for 2017-2023. Participation in expert councils and working groups	30,600 instructors of the general and secondary vocational education system from 33 regions of Russia	2021-2023
96.	Ministry of Science and Higher Education of the Russian Federation	Implementation of the Strategy for Improving the Financial Literacy of the Population in the Russian Federation for 2017-2023. R&D. Participation in expert councils and working groups	30,600 instructors of the general and secondary vocational education system from 33 regions of Russia. Project 'Establishment and Development of the World-Class Scientific Centre for Interdisciplinary Research of Human Potential'	2021-2023 2020-2025
97.	Central Bank of the Russian Federation	Implementation of the Strategy for Improving the Financial Literacy of the Population in the Russian Federation for 2017-2023. Participation in expert councils and working groups	30,600 instructors of the general and secondary vocational education system from 33 regions of Russia	2021-2023
98.	Federal Antimonopoly Service of the Russian Federation	Joint Department with the Federal Antimonopoly Service at the Faculty of Law. Participation in expert councils and working groups	Cooperation agreement as part of the Joint Department with the Federal Antimonopoly Service.	2016-indefinitely
99.	Ministry of Economic Development	General partner of the All-Russian case study championship in economics and entrepreneurship for school students.	Provision of informational and media support for the event and representation in the organizing	2019-until present

	of the Russian Federation	Participation in expert councils and working groups	committee and panel of the final case study championship. Exchange of official letters	
100.	Federal State Statistics Service	Scientific and methodological support for the development of domestic statistics, including macroeconomic, historical, welfare, education, science, innovation and digital economy statistics.	Roadmap and cooperation agreement	From 2020
		Information interaction. Participation in expert councils and working groups	Cooperation agreement	2017-indefinitely
101.	Chamber of Commerce and Industry of the Russian Federation	General partner of the All-Russian case study championship in economics and entrepreneurship for school students. Participation in expert councils and working groups	Provision of informational, expert and media support for the event and representation in the organizing committee and panel of the final case study championship. Exchange of official letters	From 2021
102.	Ministry of Education and Science of the Udmurt Republic	Organizer of the regional case study championship in economics and entrepreneurship for school students. Participation in expert councils and working groups	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	From 2021
103.	Ministry of Education, Science and Youth Policy of the Komi Republic	Organizer of the 'Vysshiy Pilotazh' regional competition of research and project works of school students in the Republic of Komi.	Provision of additional information for school students and expert and media support for the regional competition	From 2021

		Participation in expert councils and working groups	Joint summer school for gifted school students. Cooperation agreement	
Research Organizations				
104.	RAS Landau Institute for Theoretical Physics	Co-organizer of the 'Vysshiy Proba' Olympiad for school students	Provision of additional information for school students and representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Exchange of official letters	2019-until present
		Scientific and educational activities and the establishment of the Joint Department of Theoretical Physics at the Faculty of Physics	Cooperation agreement	2017-indefinitely
		Implementation of educational programmes	Cooperation agreement	2017-2022
105.	RAS Institute of Problems of Chemical Physics	Joint Department of Physical and Chemical Engineering at the Faculty of Chemistry	Cooperation agreement	From 2021
		R&D for hydrogen production, storage and transportation technologies, renewable energy source technologies, hydrogen fuel cells and power plants that run on them	Cooperation agreement (in the signing process)	Planned partnership
106.	RAS Federal Research Centre for Informatics and Administration	Joint Department of Applied Information and Communication Means and Systems at the Department of Applied Mathematics of MIEM	Cooperation agreement	2013-indefinitely

107.	RAS Institute of Solid State Physics	Scientific and educational activities and the establishment of the Joint Department of Condensed Matter Physics at the Faculty of Physics	Cooperation agreement	2017-indefinitely
		Implementation of educational programmes	Cooperation agreement	2017-2022
108.	RAS Institute of Spectroscopy o (ISAN)	Scientific and educational activities and the establishment of the Joint Department of Quantum Optics and Nanophotonics at the Faculty of Physics	Cooperation agreement	2017-indefinitely
		Implementation of educational programmes	Cooperation agreement	2017-2022
109.	RAS Prokhorov General Physics Institute	Scientific and educational activities and the establishment of the Joint Department of Quantum Technologies at the Faculty of Physics	Cooperation agreement	2017-indefinitely
		Implementation of educational programmes	Cooperation agreement	2017-2022
110.	RAS Space Research Institute	Scientific and educational activities and the establishment of the Joint Department of Space Physics at the Faculty of Physics	Cooperation agreement.	2017-indefinitely
		Implementation of educational programmes	Cooperation agreement	2017-2022
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Exchange of official letters	2019-until present

111.	P.L. Kapitza Institute for Physical Problems (RAS)	Scientific and educational activities and the establishment of the Joint Department of Low Temperature Physics at the Faculty of Physics	Cooperation agreement	2017-indefinitely
		Implementation of educational programmes	Cooperation agreement	2017-2022
112.	RAS Kurnakov Institute of General and Inorganic Chemistry	Scientific and educational cooperation and the Joint Department of Inorganic Chemistry and Materials Science at the Faculty of Chemistry	Cooperation agreement	2019-indefinitely
		Implementation of educational programmes	Cooperation agreement	2019-2024
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Exchange of official letters	2019-until present
113.	RAS N. D. Zelinsky Institute of Organic Chemistry	Scientific and educational cooperation and the establishment of the Joint Department of Organic Chemistry at the Faculty of Chemistry	Cooperation agreement	2019-indefinitely
		Implementation of educational programmes	Cooperation agreement	2019-2024
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Exchange of official letters	2019-until present

114.	RAS V. Topchiev Institute of Petrochemical Synthesis	Scientific and educational cooperation and the Joint Department of Petrochemistry and Polymers at the Faculty of Chemistry	Cooperation agreement	2019-indefinitely
		Implementation of educational programmes	Cooperation agreement	2019-2024
		R&D for hydrogen production, storage and transportation technologies, renewable energy source technologies, hydrogen fuel cells and power plants that run on them	Cooperation agreement (in the signing process)	Planned partnership
115.	RAS Shemyakin-Ovchinnikov Institute of bioorganic chemistry	Scientific and educational cooperation and a Joint Department at the Faculty of Biology and Biotechnology	Cooperation agreement	2019-indefinitely
		Implementation of educational programmes	Cooperation agreement	2019-2024
		Co-organizer of the 'Vysshaya Proba' Olympiad for school students	Provision of additional information for school students, representation in the organizing committee, methodological commissions and panels for Olympiad profiles. Exchange of official letters	2019-until present
116.	A. N. Nesmeyanov Institute of Organoelement Compounds (RAS) (INEOS RAS)	Scientific and educational cooperation and the Joint Department of Organoelement Chemistry at the Faculty of Chemistry	Cooperation agreement	2019-indefinitely
		Implementation of educational programmes	Cooperation agreement	2019-2024

117.	RAS Water Problems Institute	Cooperation in educational, scientific and academic research spheres in matters concerning the economic assessment, protection and use of water resources	Cooperation agreement	From 2013
118.	RAS Energy Research Institute	Cooperation in educational, scientific and academic research spheres in matters concerning the economic and innovative development of energy sectors	Cooperation agreement	From 2013
119.	IBCP RAS Institute of Biochemical Physics	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in academic research	Research cooperation agreement	2021-2026
120.	RAS Institute for Ethnography and Anthropology	Cooperation as part of the activities of the World-Class Scientific Centre for Interdisciplinary Research of Human Potential	Agreement on the establishment of a consortium	From 2020
121.	RAS Institute of Oriental Studies	Joint Department with the RAS Institute of Oriental Studies at the Faculty of World Economy and World Politics	Agreement on the establishment of the Joint Department	2019-2024
122.	RAS Institute of Geography (IGRAS)	Cooperation in enlightenment, educational and research areas	Cooperation agreement	2019-2022

123.	RAS Institute of Far Eastern Studies (IFES RAS)	Joint Department with the RAS Institute of Far Eastern Studies at the Faculty of World Economy and World Politics	Agreement on the establishment of the Joint Department	2019-2024
124.	Central Clinical Hospital and Polyclinic of the Administrative Department of the President of the Russian Federation	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in scientific research	Research cooperation agreement	2021-2026
125.	Khanty-Mansi Autonomous Okrug – Yugra Diagnostics and Cardiovascular Surgery Centre	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization and development of mutually beneficial cooperation in scientific research	Research cooperation agreement	2021-2026
126.	All-Russian Research Institute for Optical-Physical Measurements	Joint Department at the Department of Electronic Engineering of MIEM	Cooperation agreement	2013-indefinitely
		Implementation of educational programmes	Cooperation agreement	
127.	A. I. Yevdokimov Moscow State University of	Joint R&D	Work under a mega grant	2018 - 2022

	Medicine and Dentistry			
128.	National Medical Research Centre for Therapy and Preventive Medicine of the Ministry of Health of the Russian Federation	Joint R&D	Work on a joint research project	2020 - 2025
129.	National Medical and Surgical Centre named after N.I. Pirogov of the Ministry of Health of the Russian Federation	Joint R&D	Work on a joint research project	2020 - 2025
130.	H. Turner National Medical Research Centre for Children's Orthopedics and Trauma Surgery of the Ministry of	Joint R&D	Work on a joint research project (funded by a grant from the Russian Science Foundation)	2017-2022

	Health of the Russian Federation			
131.	Research Centre of Neurology	Joint R&D	Work on a joint research project	2017-2022
132.	National Medical Research Centre "Treatment and Rehabilitation Centre" of the Russian Ministry of Health	Cooperation in research: linguistic support for awake craniotomies; study of cognitive functions in patients with meningiomas	Work on a joint project: 20 patients per year	2015-2021
133.	The Burdenko Main Military Clinical Hospital of the Ministry of Defence of the Russian Federation	Cooperation in research: linguistic support for awake craniotomies	Cooperation agreement Work on a joint project: 5 patients per year	2015-2020 2019-2021
134.	Professor A.L. Polenov Russian Research Neurosurgery Institute	Cooperation in research: linguistic support for awake craniotomies	Work on a joint project: 5 patients per year	2018-2021

135.	Federal Centre for Neurosurgery of the Ministry of Health of the Russian Federation (Tyumen)	Cooperation in research: linguistic support for awake craniotomies; electrocorticography for speech function mapping; MR tractography for changes in the postoperative cognitive status of patients with tumours	Work on a joint project: 20 patients per year	2018-2021
136.	Federal Centre for Neurosurgery of the Ministry of Health of the Russian Federation (Novosibirsk)	Cooperation in research: pixel mapping of postoperative speech disorders in patients with brain tumours	Work on a joint project: 20 patients per year	2016-2021
137.	Federal Centre for Brain and Neurotechnology of Russian FMBA	Cooperation in research: study of post-stroke speech disorders; use of transcranial magnetic stimulation in speech rehabilitation for patients who have suffered strokes	Cooperation agreement Work on a joint project: 20 patients per year	2017-2022 2018-2021
NGOs and Associations				
138.	Agency for Strategic Initiatives (ASI)	R&D. Implementation of projects for regional development	Implementation of the project 'Solutions for the Regions: How the Exchange of Successful Practices Will Help Reboot Management Institutions in the Regions'. Establishment of the Support Centre for the Replication of the Best Practices of HSE University-ASI. Implementation of the	2020-2021

			‘Universities as a Think Tank of the Regions’ project, etc.	
139.	Russian Union of Industrialists and Entrepreneurs	Co-organizer of the ‘Vysshiy Pilotazh’ All-Russian competition of research and project works of school students	Expert and information interaction as part of the ‘Vysshiy Pilotazh’ All-Russian competition of research and project works of school students	From 2020
		Cooperation within the Joint University-wide Department of Theory and Practice of Interaction between Business and Government	Cooperation agreement	2016-indefinitely
140.	OPORA RUSSIA All-Russian Non-Governmental Organization of Small and Medium Business	Cooperation within the Joint University-wide Department of Theory and Practice of Interaction between Business and Government	Cooperation agreement	2017-indefinitely
141.	Sberbank Corporate University Autonomous Non-commercial Organization	Methodological partner of the ‘I’m a Professional’ Olympiad	Serves as a platform for educational forums and provides methodological interaction as well as representation in expert commissions	2017-until present
142.	Public Prgramme “A Instructor for Russia”	Partner of the ‘In Your Own Words’ All-Russian Essay Championship Olympiad	Expert and information interaction	From 2021
		General partner of the ‘Instructor’s Lesson’ Team-based Interdisciplinary Competition Olympiad	Methodological, expert, information and technical interaction	From 2021

143.	Association for Developing Finance Literacy	Implementation of the Strategy for Improving the Financial Literacy of the Population in the Russian Federation for 2017-2023	30,600 instructors of the general and secondary vocational education system from 33 regions of Russia	2021-2023
144.	Association "Guild of Language and Literature Instructors"	Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	Expert and information interaction	From 2021
145.	Zadorin Sociological Workshop	Development of research activities	Expert and analytical interaction. Joint research	2016-indefinitely
146.	Independent Consulting Centre "IN-formatio"	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	From 2021
147.	Non-commercial organization "Foundation for Entrepreneurship Support of the Republic of Crimea"	Organizer of the regional case study championship in economics and entrepreneurship for school students	Provision of additional information for school students and college students, venue sharing and organizing and holding the regional case study championship. Exchange of official letters	From 2021
148.	Association of Russian Specialists	Creation of the 'Cardiovascular Disease Genetics' system of partnerships (consortium). Organization	Research cooperation agreement	2021-2026

	and Experts in Knowledge Management "KM Alliance"	and development of mutually beneficial cooperation in scientific research		
Industrial Partners				
149.	SberBank	General partner of the 'Economics' focus of the 'I'm a Professional' All-Russian Olympiad for students Partner of the HSE University Sber Discussion Club Cooperation in R&D	Serves as a platform for educational forums and provides methodological, expert and information interaction. Implementation of R&D programmes	2017-until present
150.	VTB Bank	General partner and member of the 'I'm a Professional' Association of Student Olympiads. General partner of the 'Business Informatics' and 'Finance and Credit' focuses of the 'I'm a Professional' All-Russian Olympiad for students. Cooperation in R&D	Serves as a platform for educational forums and provides methodological, expert and information interaction. Implementation of R&D programmes	2017-until present
151.	Russian Agricultural Bank	Formation of a leading centre for sectoral expertise of the agro-industrial complex, scientific research and advanced training. Partner of the 'I'm a Professional' All-Russian Olympiad for students	Cooperation agreement. Implementation of R&D programmes	2019-until present

152.	Gazprom	Cooperation in research; training, retraining and advanced training of staff	Cooperation agreement. Implementation of R&D programmes	2012-until present
153.	Gazprom Neft	Cooperation as part of the 'Gazprom Neft League of Universities' project	Cooperation agreement	From 2021
154.	ROSSETI	Cooperation as part of educational, research, scientific and practical activities	Cooperation agreement. Implementation of R&D programmes	2018-indefinitely
155.	Rostelecom	Cooperation as part of educational, research, scientific and practical activities. Support for the All-Russian Festival of University Technology Projects	Cooperation agreement	From 2019
156.	Russian Post	Cooperation in educational, research, scientific and practical areas; joint research in the economic and innovative development of the postal service industry as well as transport and logistics services; professional training, retraining and advanced training of specialists	Cooperation agreement. Implementation of R&D programmes	2021-indefinitely
157.	United Rocket and Space Corporation (URSC JSC)	Cooperation in developing new areas of joint scientific research, the creation of educational and methodological programmes and the training of highly qualified specialists in fundamental and applied physics, microcircuitry and electronic instrumentation	Cooperation agreement	From 2014

158.	Yandex	Establishment of a consortium	Cooperation agreement	2019-indefinitely
		Partner of the ‘Instructor’s Lesson’ Team-based Interdisciplinary Competition Olympiad	Methodological, expert, information and technical interaction	From 2021
159.	Russian Quantum Centre (RQC)	Partner in the methodological component of the ‘Quantum Technologies’ focus of the ‘I’m a Professional’ All-Russian Olympiad for students	Methodological, expert and information interaction	2020-2021
160.	Sistema Public Joint Stock Financial Corporation	Introduction of hydrogen production, storage and transportation technologies, renewable energy source technologies, hydrogen fuel cells and power plants that run on them	Cooperation agreement (in the signing process)	Planned partnership
161.	Uchi.ru	Methodological, expert, informational and technical cooperation. General partner of the ‘Instructor’s Lesson’ Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021
162.	Foxford	Methodological, expert, informational and technical cooperation. General partner of the ‘Instructor’s Lesson’ Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021
163.	Skillbox	Methodological, expert, information and technical interaction. Partner of the ‘Instructor’s Lesson’ Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021

164.	Erich Krause Finland Oy	Expert and information interaction. Partner of the 'Instructor's Lesson' Team-based Interdisciplinary Competition Olympiad. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 1,600 participants	From 2021
165.	Miro Platform	Methodological, expert, information and technical interaction. Partner of the 'Instructor's Lesson' Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021
166.	Alpina Publisher	Expert and information interaction. Partner of the 'Instructor's Lesson' Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021
167.	"Internet Lesson" Platform	Methodological, expert, information and technical interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad. Partner of the 'Instructor's Lesson' Team-based Interdisciplinary Competition Olympiad	One joint project and 1,600 participants	From 2021
168.	McKinsey & Company	General partner of the All-Russian Case Study Championship in Economics and Entrepreneurship for School students	Provision of information, methodological and expert support for the event and representation in the organizing committee, methodological commission and panel of the final case study championship. Exchange of official letters	2019-until present

169.	Financial online university SF Education	Expert and information interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 10,000 participants	From 2021
170.	Educational project Level One	Expert and information interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 10,000 participants	From 2021
171.	E-book service LitRes	Expert and information interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 10,000 participants	From 2021
172.	Scientific and educational journal *Dumai*	Expert and information interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 10,000 participants	From 2021
173.	Online courses "Synchronization"	Expert and information interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 10,000 participants	From 2021
174.	Mel	Expert and information interaction. Partner of the 'In Your Own Words' All-Russian Essay Championship Olympiad	One joint project and 10,000 participants	From 2021
175.	S.P. Korolev RSC Energia	Joint Department with Joint Department with Rocket and Space Corporation Energia at the Electronic Engineering Department of MIEM	Agreement on the establishment of the Joint Department	2013-indefinitely

176.	EC-leasing Co.	Joint Department of Information and Analytical Systems with ES-Leasing at the Department of Computer Engineering of MIEM	Agreement on the establishment of the Joint Department	2013-indefinitely
177.	SCONTEL	Joint Department of Quantum Optics and Telecommunications with Scontel at the Electronic Engineering Department of MIEM	Agreement on the establishment of the Joint Department	2013-indefinitely
178.	IMC Vega	Joint Department with the Engineering and Marketing Centre of the Vega Corporation at the Faculty of Electronics and Telecommunications of MIEM	Agreement on the establishment of the Joint Department	2013-indefinitely
179.	Research Institute of Communication, Command and Control System	Joint Department with Research Institute of Communication Systems and Control Systems at the Department of Electronic Engineering of MIEM	Agreement on the establishment of the Joint Department	2014-indefinitely
180.	Saveliev, Batanov & Partners	Cooperation within the Joint Department of Practical Jurisprudence at the Faculty of Law	Cooperation agreement	2016-indefinitely
181.	GFK-Russia	Cooperation in research and forecasting the results of the implementation of the Russian President's decrees. Cooperation within the Joint Department of Applied Social Research with GFK-Russia at the Department of Sociology of the Faculty of Social Sciences	Cooperation agreement	2016-2021 Indefinitely

182.	Russian Public Opinion Research Centre (JSC VCIOM)	Cooperation within the Joint Department with the Russian Public Opinion Research Centre	Cooperation agreement	2016-indefinitely
183.	McKinsey&Company	Cooperation within the Joint Department with McKinsey & Company Russia	Cooperation agreement	2017-indefinitely
184.	Deloitte & Touche CIS	Joint Department with Deloitte at the School of Finance of the Faculty of Economic Sciences	Agreement on the establishment of the Joint Department	2017-2018 with the right of automatic prolongation
185.	Iris Foundation, Garage Museum of Contemporary Art	University-wide Joint Department with Garage Contemporary Art Museum	Agreement on the establishment of the Joint Department	2017-2025
186.	ECOPSY	Joint Department with ECOPSY Consulting at the Department of Psychology of the Faculty of Social Sciences	Agreement on the establishment of the Joint Department	2019-2024
187.	InfoWatch	Joint Department with InfoWatch at the Department of Electronic Engineering of MIEM	Agreement on the establishment of the Joint Department	2017-2027
		Cooperation in educational and research areas and the on-the-job training and employment of students and graduates	Cooperation agreement	2016-indefinitely
188.	KPMG	Cooperation in educational activities	Cooperation agreement	2018-indefinitely

International Organizations				
189.	European Union Collaborative Programmes	Cooperation in matters concerning higher nervous functions and cognitive sciences as part of the Erasmus+ programme. Establishment of a consortium for joint research between the French state-run institute Ecole Normale Superieure, the University of Northumbria at Newcastle (UK), Aarhus University (Denmark), Saint Petersburg State University (Russia), the Institute of Higher Nervous Activity and Neurophysiology of the RAS (IHNA&NPh) (Russia), the University of Hyderabad (India), the Birla Institute of Technology and Science (India), AF Communication-Fusion Agency (Russia), Neurotrend AF (Russia) and Mitsar Co Ltd. (Russia)	Agreement on the establishment of an international scientific and educational consortium	2013-2020
		Implementation of the international project 'Russia's Accession to the European Research Space: Coordination of Scientific and Technical Programmes of EU Member States and Associated States Aimed at Cooperation with Russia' as part of the Horizon 2020 programme in partnership with EU scientific organizations (ERA.Net RUS	Agreement on participation in an international research project	2017-2022

		Plus), which aims to monitor and evaluate the effects of joint competitions for research projects in Russia and the EU and draft proposals to establish sustainable cooperation		
		Implementation of the international project 'Study of National and Global Actions to Reduce Greenhouse Gas Emissions' (ENGAGE) (counterparty – 'Ecology and Resources' Executive Agency for Small and Medium Enterprises of the European Commission) as part of the Horizon 2020 programme in partnership with EU scientific organizations	Agreement on participation in an international research project	2019-2023
190.	Eurasian Economic Commission (EEC)	Comprehensive cooperation, including joint educational programmes, research and expert support by the ECE and the organization of joint events	Cooperation programme for 2021-2022	2021-2022 (updated twice per year)
191.	Eurasian Development Bank (EDB)	Scientific, educational, project, expert and analytical activities, internships and on-the-job training for students and the organization of joint events	Cooperation agreement	2019-2022
192.	United Nations Educational, Scientific and	UNESCO Chair on Copyright, Neighbouring, Cultural and Information Rights International Research and Education Centre (abbreviated as the	Agreement on the establishment of the UNESCO Chair of HSE University	2020-2024 with possible prolongation

	Cultural Organization (UNESCO)	UNESCO Chair of HSE University) at the Faculty of Law		
		Agreement describing the conditions for the establishment and operation of the UNESCO Chair in Future Studies at the Institute for Statistical Studies and Economics of Knowledge	Agreement on the establishment of the UNESCO Joint Chair (being prepared for signing)	2021-2025 with possible prolongation
193.	United Nations Industrial Development Organization (UNIDO)	Cooperation in science, technology and innovation policy; technological foresight; statistics; organizing and conducting training and educational programmes	Cooperation agreement	2013-indefinitely
194.	United Nations Volunteers (UNV)	Securing long-term cooperation through a memorandum and the further discussion of possible interaction	Memorandum	Indefinite
195.	United Nations Human Settlements Programme (UN-HABITAT)	Cooperation in urban development and establishment of a research centre for the New Urban Development Programme	Establishment of a centre at HSE University for the New Urban Development Programme with the assistance of UN-Habitat	Indefinite
196.	International Bank for Reconstruction and Development (IBRD)	Provision of mutual expert support and the joint implementation of analytical and research work and projects	Memorandum of strategic partnership	Indefinite

197.	Belgian-Luxembourg Chamber of Commerce in the Russian Federation	Mutual exchange of information, assistance with the employment of graduates, research, conferences and vocational guidance for students	Cooperation and interaction agreement	Indefinite
198.	Institute for Eurasian integration (Kazakhstan)	Scientific, educational, project, expert and analytical activities and expert support from the authorities of EAEU countries	Cooperation agreement	2019-2022
199.	Astana International Financial Centre	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Cooperation agreement	2019-2022 and beyond
200.	Global Innovation Index Academic Network	Involvement of instructors and graduate students in breakthrough research in innovation. Main areas of cooperation: joint research; developing cooperation between research teams, staff and students; developing GII as a component of evidence-based policy in science, technology and innovation	Agreement on participation in the GII Academic Network	From 2021
International research centres and universities				
201.	Institute of Energy and Climate Research, the Federal Republic of Germany	Interaction in the following areas: foresight research; methodological developments using big data; joint publications; conferences	Agreement of mutual understanding	2017-2022

202.	Belarusian State University, the Republic of Belarus	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Cooperation agreement	2019-2022 and beyond
203.	National Centre for Education of the Republic of Latvia	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Cooperation agreement	2019-2022 and beyond
204.	Panamerican University, Mexico City	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Cooperation agreement	2019-2022 and beyond
205.	Centre for Management and Strategic Studies, Brazil	Work on joint projects; exchange of information and publications; personnel exchange; organization of joint conferences and seminars	Agreement of mutual understanding	2013-2024
206.	University of Manchester, UK	R&D cooperation	Agreement of mutual understanding	2013-2024
207.	Technical University of Berlin, FRG	Opportunity for TU Berlin and HSE University students to obtain a diploma from both universities	Agreement of mutual understanding on the implementation of an inter-university double degree programme	2015-2022 and beyond
208.	Polytechnic University of Turin, Italy	Agreement on a double degree programme	Double degree programme: 'Management in Science, Technology and Innovation' master's programme at HSE University and 'Engineering and Management' master's programme at PoliTo	2019-2024

209.	Chinese Academy of Sciences, PRC	R&D cooperation	Agreement of mutual understanding	2013-2022
210.	Maastricht University, Netherlands	Joint organization and implementation of a double degree master's programme	Agreement of mutual understanding	2015-2025
			Student exchange	2016-2021
211.	University of Helsinki, Finland	Cooperation as part of PEEX programmes	Cooperation agreement	2016
212.	Science and Technology Policy Institute (STEPI), ROK	Cooperation in science, technology and innovation policy, statistics and foresight	Agreement of mutual understanding	2019-2024
213.	Seoul National University, ROK	Joint organization of a double degree master's programme based on the 'Management in Science, Technology and Innovation' master's programme (HSE University) and the 'Technology Management, Economics and Policy' master's programme (SNU)	Agreement of mutual understanding and on the implementation of an inter-university double degree programme	2018-2023
		Exchange of academic and administrative staff and students. Cooperation in scientific research and the presentation of its results	Agreement of mutual understanding	2017-2022 with possible prolongation

214.	National Graduate Institute for Policy Studies, Japan	Joint research as well as organizing and holding seminars; exchange of researchers	Research cooperation agreement	2017-2024
215.	Korea Institute of S&T Evaluation and Planning, ROK	Cooperation in science and technology	Agreement of mutual understanding	2014-2019
216.	University of Edinburgh, UK	Joint research publications, joint scientific events, joint preparation and holding of training courses and programmes and student exchange	Cooperation agreement	2012-2025 with possible prolongation
217.	University of Manchester, Manchester Institute of Innovation Research, UK	R&D cooperation	Research cooperation agreement	2013-2024 with possible prolongation
218.	Ludwig Maximilian University of Munich, FRG	Educational and scientific cooperation	Cooperation agreement	2013-2024 with possible prolongation
219.	Free University of Berlin, FRG	Joint research and the exchange of instructors, administrative staff and students	Cooperation agreement	2015-2025 with possible prolongation
220.	Humboldt University of Berlin, FRG	Exchange of knowledge and work experience; exchange of students, instructors and researchers; development of joint educational and research	Cooperation agreement	2001-2024 with possible prolongation

		programmes; and joint educational, scientific and cultural events		
221.	Polytechnic University of Milan, Italy	Exchange of scientific information, joint scientific events, joint preparation and holding of training courses and programmes and student exchange	Cooperation agreement	2018-2023 with possible prolongation
222.	University of Bologna, Italy	Exchange of scientific information, joint scientific events, joint preparation and holding of training courses and programmes and student exchange	Cooperation agreement	From 2009 with possible prolongation
223.	Erasmus University Rotterdam, School of Economics, Netherlands	Double master's degree programmes in economics and student exchange	Agreement of mutual understanding	From 2015 with possible prolongation
224.	University of Amsterdam, Faculty of Humanities, Netherlands	Development of an exchange programme for students and instructors and participation of graduate students in research activities	Agreement of mutual understanding	2017-2022 with possible prolongation
225.	University of Groningen, Netherlands	Exchange of staff and students, joint research activities and participation in scientific events	Agreement on scientific and educational cooperation	2012-indefinitely
226.	Leiden University, Netherlands	Organization of bilateral student exchange programmes; scientific cooperation; and organization of joint academic and scientific events	Agreement of mutual understanding	2014-2024 with possible prolongation

227.	University of Bergen, Norway	Academic exchanges; development of joint educational and research programmes; joint educational, scientific and cultural events	Agreement of mutual understanding	From 2011 with possible prolongation
228.	University of Oslo, Norway	Joint research, lectures and conferences and exchange of instructors, researchers and students	Cooperation agreement	2014-indefinitely
229.	University of Tromsø – The Arctic University of Norway	Scientific and educational cooperation in social, humanities and natural science fields	Agreement on academic cooperation	2012-2022 with possible prolongation
230.	University of Helsinki, Finnish Meteorological Institute, Finland	Cooperation as part of the Pan-Eurasian Experiment (PEEX) Programme	Cooperation agreement	2016-indefinitely
231.	Paris Institute of Political Studies, France	Organization of student exchanges, joint scientific research and establishment of contacts between social and political science instructors	Convention on Cooperation in Social and Political Sciences	2001-2025 with possible prolongation
232.	École Polytechnique, France	Joint submission of applications for local grants; development and implementation of joint educational and research programmes; joint research and publications; and educational, scientific and cultural events	Cooperation agreement	2018-2023 with possible prolongation
233.	Paris 1 Panthéon-Sorbonne University, France	Scientific and educational cooperation	Memorandum of understanding	2001-2025 with possible prolongation

234.	French National Centre for Scientific Research, France	Scientific cooperation as part of the Poncelet International Interdisciplinary Scientific Centre. Other participants: Independent University of Moscow, Skoltech, Institute for Information Transmission Problems of the RAS and the Steklov Mathematical Institute of the RAS	Agreement on the Poncelet Interdisciplinary Scientific Centre	2017-2022 with possible prolongation
235.	EURECOM, France	Cooperation in teaching, research and support of the scientific community through the international exchange of students, staff, knowledge and experience	Agreement on academic cooperation	2013-2022 with possible prolongation
236.	Indian Statistical Institute, India	Academic exchanges; development of joint educational and research programmes; and joint educational, scientific and cultural events	Agreement of mutual understanding	From 2015 with possible prolongation
237.	Al-Farabi Kazakh National University, Kazakhstan	Cooperation in economic and legal sciences: exchange of students, instructors and researchers; joint educational and research programmes; and educational, scientific and cultural events	Cooperation agreement	2018-2023 with possible prolongation
238.	Fudan University, ROK	Academic exchanges; development of joint educational and research programmes; and the organization of joint educational, scientific and cultural events	Agreement on cooperation and academic exchanges	From 2009

239.	Nanyang Technological University, Singapore	Exchange of students and employees to organize research and teaching as well as joint research activities	Cooperation agreement	2017-2022 with possible prolongation
240.	Kyoto University, Institute of Economic Research, Japan	Development of scientific and educational exchanges of instructors, researchers and students as well as scientific literature, research and reference materials	Agreement of mutual understanding	2007-2022 with possible prolongation
241.	Kyoto University, Graduate School of Science, Japan	Exchange of students, instructors and researchers, joint research, curriculum, scientific and academic activities, student participation in summer schools, joint distance learning programmes and internships for students and instructors	Cooperation agreement	2011-2022 with possible prolongation
242.	Hokkaido University, Japan	Academic exchanges; development and implementation of joint educational and research programmes; joint research and publications; organization of joint educational, scientific and cultural events	Cooperation agreement	2019-2024 with possible prolongation
243.	Indiana University, USA	Exchanges of instructors, researchers and students as well as scientific literature, research and reference materials	Cooperation and partnership agreement	2005-2022 with possible prolongation

244.	George Mason University, USA	Exchange of scientific, pedagogical, administrative and managerial staff, students and graduate students as well as joint research and conferences	Cooperation agreement	2012-2022 with possible prolongation
245.	University of Michigan, USA	Exchange of students, instructors and researchers; development and implementation of joint educational and research programmes; joint educational, scientific and cultural events	Agreement of mutual understanding in academic cooperation	2019-2024 with possible prolongation
246.	University of Campinas (UNICAMP), Brazil	Organization of academic exchanges for students, graduate students as well as research and pedagogical workers; joint educational and research programmes; educational, scientific and cultural events	Cooperation agreement	2014-2024 with possible prolongation
247.	Spanish Economics Olympiad Association	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Organizing and holding a national qualifying competition in economics	2019-2022 and beyond
248.	Polish Economic Society	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Organizing and holding a national qualifying competition in economics	2019-2022 and beyond
249.	IPDA (International Professional Development Association) Ireland	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Organizing and holding a national qualifying competition in economics	2019-2022 and beyond
Administrative Bodies for Science and Education in Foreign Countries				

250.	Ministry of Education, Culture, Research, and Technology, Indonesia	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Organizing and holding a national qualifying competition in economics	2019-2022 and beyond
251.	Ministry of Public Education of the Republic of Uzbekistan	Organizing and holding a national qualifying competition for participation in the International Economics Olympiad	Organizing and holding a national qualifying competition in economics	2019-2022 and beyond
252.	Technology Information Forecasting and Assessment Council, India	Bilateral cooperation in science, technology and innovation policy, statistics and foresight as well as analysis of innovation systems, research and innovation strategies	Cooperation agreement	2021-2026

Appendix No. 11. List of abbreviations used in this text

1. AI – artificial intelligence
2. CPD – continuing professional education
3. CPS – cyber-physical system
4. CV – computer vision
5. ESG – environmental, social, and corporate governance
6. FAN – Free Analytical Network
7. HR – human resources
8. IDP – integrated digital platform
9. IoT – Internet of things
10. IT – information technology
11. JESDA – Joint Economic and Social Data Archive
12. MOOC – massive open online course
13. NGO – non-governmental organization
14. R&D – research and development
15. RAS – Russian Academy of Sciences
16. S&T – scientific and technological
17. STEM – Science, Technology, Engineering and Mathematics
18. USE – Unified State Exam
19. WoS – Web of Science