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ACTIVITY PLAN
for the Implementation of Kazan Federal University's
Programme for Enhancing Its Competitive Ranking
among Leading World Centres of Higher Education and Research
2015-2020 (second stage, 2015-2016)

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PART 1. TARGET PERFORMANCE INDICATORS AND MEANS FOR ACHIEVING THEM

1.1 KFU's Objectives and Performance Indicators

The strategic objective of Kazan Federal University (KFU or the “University”) is to enhance its standing and academic reputation in the field of research and development (R&D), as well as achieve international recognition for the high standards of its academic programmes and global leadership in a range of priority research areas, thus enabling the University to secure a place among the world’s top 100 universities.

During the first stage of the Road Map implementation (2012-2013)¹, the major focus of development was directed at forming the platform as a basis for future transformations through creating required facilities and support infrastructure, and launching the Centres of Excellence as the main transformation drivers.

The improvement in the University’s positions in all key rankings and the achievement of established KPIs have demonstrated the appropriateness of the selected development strategy, model and techniques. Thus, during the second stage (2015-2016) we plan to consolidate and further build on the advantages that have been gained and put into practice by KFU’s natural sciences departments in general and social sciences and humanities departments in particular, as well as launch large-scale structural transformations and fully utilise all the advantages offered by a classical university situated in a truly unique, dynamically developing, and innovation-driven region, which is home to two main religious and cultural traditions.

The trajectory by which the University plans to achieve its selected target status is described by the set of performance indicators shown below.

¹ KFU Programme for Enhancing Its Competitive Ranking 2013–2020 and Roadmap I
http://kpfu.ru/portal/docs/F442796270/Plan.meropriyatij_Kazanskij.federalnyj.universitet._angl_.pdf

Table 1.Target Indicators

No.	Efficiency indicators for the Programme for Enhancing KFU’s Competitive Ranking	Unit of measurement	2013	2014	2015	2016	2017	2018	2019	2020
1	Positions in rankings, overall and by subject areas									
1.1.	Position in THE ranking, overall		-	-	-	-	-	351-400	226-250	175
1.2.	Position in THE ranking, by subject areas		-	-	-	-	-	-	-	-
1.3.	Position in QS ranking, overall		601-650	551-600	501-550	440	390	310	180	99
1.4.	Position in QS ranking, by subject areas - Physics and Astronomy		-	-	-	151-200	151-200	101-150	101-150	51-100
	Position in QS ranking, by subject areas – Chemistry		-	-	-	151-200	151-200	101-150	101-150	51-100
	Position in QS ranking, by subject areas – Medicine		-	-	-	-	-	151-200	101-150	51-100
	Position in QS ranking, by subject areas – Biology		-	-	-	-	-	151-200	101-150	51-100
	Position in QS ranking, by subject areas - Earth and Marine Sciences		-	-	-	-	-	-	151-200	101-150
	Position in QS ranking, by subject areas - Mathematics		-	-	-	-	-	-	151-200	101-150
	Position in QS ranking, by subject areas – Computer Science and Information Systems		-	-	-	-	-	-	-	151-200
	Position in QS ranking, by subject areas - Linguistics		-	-	-	-	-	-	-	151-200
1.5.	Position in ARWU ranking, overall		-	-	-	-	-	-	-	-
1.6.	Position in ARWU ranking, by subject areas		-	-	-	-	-	-	-	-
2	Number of articles									
2.1.	Number of articles in Web of Science database per faculty member (for past five years)	items	0.77	0.91	1.18	1.53	1.98	2.56	3.32	4.30
2.2.	Number of articles in Scopus database per faculty member (for past five years)	items	1.09	1.57	1.95	2.41	2.99	3.71	4.60	5.70
3	Citation									
3.1.	Number of article citations registered in Web of Science database per faculty member (for past five years)	items	1.81	2.15	3.15	4.79	7.30	11.12	16.94	25.80
3.2.	Number of article citations registered in Scopus database per faculty member (for past five years)	items	1.99	2.96	3.69	5.61	8.55	13.02	19.84	30.21
4	International academic staff including Russian citizens with PhD degrees from foreign universities, as percent-	%	1.9%	2.6%	3.3%	4.3%	5.7%	7.5%	9.8%	12.0%

No.	Efficiency indicators for the Programme for Enhancing KFU's Competitive Ranking	Unit of measurement	2013	2014	2015	2016	2017	2018	2019	2020
	age of total academic staff									
5	Percentage of international students enrolled in degree-granting academic programmes (including students from CIS countries)	%	3.4%	5.6%	6.0%	6.5%	7.7%	9.8%	12.0%	15.0%
6	Average Unified State Examination scores of students admitted for full-time Bachelor's and Specialist degree programmes (funded by the Russian federal government)	scores	76.8	76.0	76.0	76.2	76.4	76.6	76.8	77.0
7	Revenues from non-budgetary sources, as percentage of total revenues	%	33.0%	37.3%	38.0%	41.0%	45.0%	48.0%	51.0%	53.0%
<i>Supplementary indicators</i>										
8	Percentage of postgraduate and Master's degree students, as percentage of total student body	%	10.2%	9.5%	11.0%	14.0%	20.0%	25.0%	29.0%	35.0%
9	Percentage of faculty members with work experience or long-term internships at leading world higher educational and research centres	%	18.0%	18.0%	19.0%	22.0%	25.0%	28.0%	31.0%	35.0%
10	Position in Webometrics ranking		3236	1484	1000	500	300	200	150	100

1.2 Target University Model

1.2.1 The University's mission

The mission of Kazan Federal University has been set forth as:

- Contributing to Russia's innovation-driven development and enhancing the competitiveness of its human capital resources through ensuring high-quality academic standards, research and technological developments;
- Contributing to the promotion of the City of Kazan as a hub of creativity and dynamic innovation and a world-class centre of higher learning, research and academic excellence, as well as to the preservation and development of the city's unique cultural and educational heritage in line with its role as guardian of the distinctive historical and cultural legacy of the ethnically and religiously diverse region where Europe and Asia meet.

In line with KFU's growing international role and the degree of its internationalisation, the University may encounter new objectives that necessitate the revitalisation of its mission as a global hub of research and higher learning.

1.2.2 Global higher educational institutions selected as KFU's benchmarking peer group

Updating the target indicators and development model involved conducting a follow-up analysis of the global university peer group previously selected as role models when drafting the Roadmap during the first stage of the programme implementation. As a result, it was decided to exclude two universities from the group that were not ranked among the top 100 schools in the QS World University Ratings in 2013 and 2014: Radboud University Nijmegen, the Netherlands, and Cardiff University, Great Britain.

Therefore, the target group of peer universities now includes:

- Seoul National University (SNU), South Korea
- Peking University (Beida), China
- Lund University, Sweden
- The University of Helsinki, Finland
- Freie Universität Berlin (Free University of Berlin), Germany

Additionally, taking into account the expert suggestions provided at the first stage of the Roadmap, the following universities, which demonstrated the fastest growth in their respective rankings over the past five years, have been analysed and accepted for inclusion in the group of “fast-growing” higher educational institutions:

- Universidad de Chile, Chile
- Zhejiang University, China
- Hokkaido University, Japan
- Universidade Estadual de Campinas (UNICAMP), Brazil

These universities will serve as benchmarks for more precisely determining the growth dynamics of KFU’s target performance indicators in 2015-2020.

The current quantitative characteristics of peer universities are represented in the Table 2. Peer universities: Substantiated target model parameters.

Table 2. Peer universities: Substantiated target model parameters

University	Position in QS ranking in 2014\5-year growth	Articles in WoS database within 5 years per faculty member\% change within 5 years	Articles in Scopus database within 5 years per faculty member \% change within 5 years	Article citations in WoS database within 5 years per faculty member \% change within 5 years	Article citations in Scopus database within 5 years per faculty member \% change within 5 years	Total students / faculty member
Seoul National University (SNU), South Korea	31	6.54	5.34	32.07	28.18	28\6
Peking University (Beida), China	57	7.33	8.43	40.76	38.26	33\4
Lund University, Sweden	60	4.14	3.61	32.91	27.51	33\5
The University of Helsinki, Finland	67	4.82	4.60	40.65	41.28	35\4.5
Freie Universität Berlin, Germany	150	5.08	2.14	37.10	14.89	29\4
<hr/>						
University of Chile, Chile	220\+147	1.79\+35%	2.52\+40%	6.93\+59%	10.38\+64%	38\3
Zhejiang University, China	144\+74	13.91\+48%	10.53\+33%	46.26\+156%	45.28\+138%	45\3
Hokkaido University, Japan	135\+40	9.26\+1.5%	8.75\+5.5%	46.30\+18%	42.06\+17%	17\2
State University of Campinas (UNICAMP), Brazil	206\+86	7.39\+31%	8.96\+34%	26.3\+59%	30.73\+64%	18\2
Reference values for KFU	99	4.3	5.7	25.8	30.21	17\2

Upon analysing the reviewed peer universities, the 2020 target model indicators that KFU had accepted in 2013 were re-confirmed, whereas KFU's expected performance indicators for 2015-2018 and the fluctuation trends for these indicators for 2015-2020 have been reformulated.

1.2.3 Marketing strategy for the research services market

Four priority areas of KFU's development with respect to the University's speedy transformation into a world-class research university: Biomedicine and Pharmaceuticals; Oil Extraction, Refining and Petrochemicals; Advanced Materials; Info-communication and Aerospace Technologies. KFU plans to attain globally recognised results within these areas of study by 2020. They will be developed through:

- Creating Centres of Excellence and world-class unique laboratories;
- Inviting world renown scholars;
- Providing grant and scholarship support;
- Collaborating with large companies and leading research and academic centres;
- Working closely with reform-oriented institutes of the Russian Academy of Science.

At the same time, new interdisciplinary breakthrough areas of research, such as archeometry and in-depth Islamic Studies, have been developed thanks to an analysis of global and regional science trends, as well as the prospects of KFU's scientific schools and institutes.

1.2.3.1 Biomedicine and Pharmaceuticals

Development strategy:

- from separate breakthrough projects to the Centres of Excellence with deeper interdisciplinary integration (2013-2015);
- implementing global initiatives in Neurosciences and Translational Medicine (2015-2017);
- engaging KFU's humanities and social science institutes in these initiatives (2017-2020);

- establishing University’s research and academic space for Life and Society Sciences or Socio-humanitarian Biomedicine by 2020.

In 2013 – 2014, four Centres of Excellence, as part of the Programme for Enhancing KFU’s Competitive Ranking, were established, including:

- “Neurobiology”;
- “Regenerative and Translational Medicine”;
- “Genomics, Proteomics and Biotechnology”;
- “Pharmaceutics”.

These centres feature 20 new laboratories organised under the OpenLabs principle with a single Centre for Shared Use (Interdisciplinary Centre for Proteomic and Genomic Research, International Centre for Magnetic Resonance, Interdisciplinary Centre for Analytical Microscopy, “Biobank” and Research and Academic Centre for Pharmaceutics). OpenLabs operate like research incubators receiving grant support for projects, which are supervised by world-renown scientists.

In the framework of the established Centres of Excellence, KFU plans to become a leader in the sphere of **Translational Medicine**. The affiliation of three large multifunctional medical centres and the establishment of the University’s clinic will be a major step within this stage providing a platform for the development of the Translational Medicine where both biomedical diagnostics and therapeutic technologies and training of the new generation of medical researchers will be implemented. As a result the Centre of Translational Medicine and world-class clinic will be established. Neurobiology Laboratory which will serve as a platform for new developments has already been established within the first step of Roadmap I implementation with a financial support of Federal Megagrant. Research on **Functional and Clinical Neurobiology of Brain** will be developed in close interdisciplinary cooperation including Physics, Chemistry, Computer Science and Robotics. Translational research will provide an opportunity to:

- develop new methods for the treatment of neuropediatric diseases – epilepsy, pain, traumas and autism (projects supervisors: Khazipov R., h-index 37, Rozov A., h-index 25, Masson P., h-index 33);

- start activities on development of biosimilar computing systems providing neurophysiologists with new unique tool to check hypotheses and conduct experiments which are prohibited for use on living organisms (Erohin V., h-index 21);

- develop new approaches for migraine treatment and regeneration booster in case of neurotraumas and demyelinating diseases using cutting edge gene and cell technologies, autoimmune neurodegeneration and migraine neurobiology as well as role of microbiota in nervous system diseases (project supervisors Gerasimenko Yu., h-index 20, Giniatullin R., h-index 25).

Moreover, surgical simulators for specific patients (personified medicine) will be developed and set up to prepare students in pre-surgical skills. Yoshihide Hayashizaki (RIKEN, Japan, h-index 77) will supervise this project in collaboration with Juntendo University (Japan) and the Institute of Human Stem Cells (Russia), as well as industrial partner, Engineering Centre of Medical Simulators “Eidos”.

The project “Exom of 1,000 Tatars” will also be implemented in order to expose specific mutations of the Volga Region ethnic group with respect to the appearance of lacteal gland cancer, squamous cell and colorectal cancer (supervised by Professor Pestell, Thomas Jefferson University, h-index 90, corresponding member of the Russian Academy of Sciences Govorun V., h-index 15).

Principles of bridging translation and blurring translation will be used in order to implement the project of Translational Medicine. The latter is connected with the development of Bioesthetics, Biophilosophy, Bioeconomics and Biopolitics giving an opportunity to create the University’s research and educational space of “Life and Society Sciences Translation”.

The detailed description of the research area of the Centres of Excellence will be given in the Annex 6.

1.2.3.2 Oil Production, Refining and Petrochemistry

Strategy for development:

- research and development in areas that will be in high demand in the nearest future, including effective technologies for viscous oil and bitumen production (where we can become world leaders in the coming years);

- development of energy-efficient and clean technologies thanks to the extensive use of catalytic systems;
- mathematical simulations of problems at all levels.

The research equipment available in the University, as well as unique results in innovative areas and a network of contacts with leading scientists and research centres (cf. Annex 6), are major factors for KFU's excellent standing in the near future. Research will be carried out at the four Centres of Excellence in cooperation with leading research centres and business-partners, including: Schlumberger, JSC Tatneft, JSC Lukoil, JSC Rosneft, JSC Gazprom, and Xytel Inc. (USA).

The Centre of Excellence for Hydrocarbon Deposit Development Simulation will join the global Top-20 academic centres in the development of nonconventional hydrocarbon deposits. Modelling at this Centre, we plan develop integrated geological support technology for the sustainable development of oil producing territories, which is connected to *UNESCO's International Hydrological Programme*, as well as the continuation of the EuroSoils project in Eastern Europe. KFU's key competences in this sphere include: 3D-modeling of the geological environment; engineering and geological process monitoring and forecasting; rock's physical properties modelling based on "digital core" technologies; research into geological, economic, ecological and social functions of ground waters as strategic raw materials.

As for **the Centre of Excellence in New Technologies of High-Viscosity Oil and Natural Bitumen Production**, major results are expected in thermal in-situ oil and bitumen refining, which will be given priority in high-viscosity oil and bitumen extraction in the following decades. At present, they count for 70% of total developed hydrocarbons globally.

KFU also plans to be among the Top-10 world leaders in the research and development of thermocatalytic production methods by 2020. At least seven international patents for new methods of deposit development will be obtained. In 2015-2020, KFU will take part in large-scale projects in Russia, Romania, Venezuela, South Africa and Canada worth a combined minimum of RUB 2 billion.

Homogeneous and heterogeneous catalysis laboratories, which form the core of the **Centre of Excellence in Catalyst Development for Oil Refining and Petrochemistry**, will show breakthrough results in the following areas of catalyst development:

- reduction of oil viscosity and commercial petroleum extraction;
- monomer production, hydrocarbon flow pre-treatment and purification;
- linear alpha olefin extraction from ethylene.

By 2020, KFU plans to be among the Top-10 world leaders in the research and development of new types of high-performance catalytic systems (e.g. for ethylene oligomerisation and polymerisation with other olefins).

The **Interdisciplinary Centre of Excellence for Stratigraphy and Paleogeoreconstruction** is now being developed for the study of Earth history. The Centre will boost efficiency in the search for and operation of mineral deposits, as well as study environmental evolution scenarios based on a reconstruction of the planet's history.

The KFU brand and the University's unique competencies in this area will be associated with such International Stratigraphical Units as the Permian system, Kazan stage, and Tatar age. By 2020, KFU plans to join the Top-10 world-class centres of influence in the study of stratigraphy. With respect to paleoclimatic and paleogeophysical reconstructions for the last millennia, we hope to be among the global Top-5.

International patents for tools and processes to be used in recent lakes sediments sampling and study will be obtained. The equipment developed will be supplied to international research centres engaged in the study of paleoclimatology.

A detailed description of the research carried out by the Centres of Excellence is outlined in Annex 6.

1.2.3.3 Advanced materials

The development strategy:

- fundamental research focusing on “niche” areas: materials for quantum technologies, functional materials and metamaterials, materials for biomedicine, composite polymeric materials, nanostructured materials and composites for mechanical engineering (2015–2016);

- large-scale implementation of an integrated approach: computer-based design of materials with tailored consumer properties, including their synthesis and multi-method research with further feedback for correcting calculations and synthesis methods (2015–2017);

- concentration efforts on applied research with a view to designing new devices and prototypes, as well as development of technologies for the application of new synthesised material (2016–2020).

KFU's leadership in this key area is based on ample scientific resources that allow the University to promptly improve the quality of researches, as well as achieve outstanding scientific results that can be published high ranking scientific journals (in 2014, an article was published in the journal *Nature*). This is also possible thanks to significant investments coming to over RUB 1.5 billion in 2010 – 2014 that went toward the set-up of the latest laboratory equipment.

Two Centres of Excellence uniting several OpenLabs will be developed under the programme for 2015 – 2020. Research carried out through the **Quantum Technologies Centre** will look into the functionality of new materials with programmed properties in modern areas application (e.g. spintronics, magnonics, photovoltaics, quantum memory etc.). Thanks to collaborations with RIKEN (Japan) and National Chiao Tung University (Taiwan), by 2020 KFU will be a world leader in the design of mesoscopic electronic devices for quantum calculations and quantum modelling using two-dimensional electron systems and ions on quantum liquid surfaces.

The International Centre for Magnetic Resonance at KFU possesses unique experimental facilities with a wide range of methods for interdisciplinary research (magnetic superfluidity, EPR in biomedicine, NPR in structural biology, etc.) and innovative developments (new methods for magnetic resonance tomography in medicine, oil-well logging, etc.).

New Centres of Excellence will be organised by 2020 through the OpenLabs created during the first stage of the programme:

– **Glycolconjugates Centre.** A world centre for synthesis and approbation of unique glycans for high-selectivity organ diagnosis and tumour therapy in living organisms will be organised at the joint KFU-RIKEN bio-functional chemistry laboratory.

– **Composite Polymeric Materials Centre.** In collaboration with leading specialists from Moscow and St-Petersburg, representing institutes of the Russian Academy of Science, we are planning to develop new chemical products and binding agents (organic chemicals and monomer technology), as well as set up production of polymeric composites (polymer processing) and items using these materials. In 2014, research of heat-resistant polyimides was started. In 2015 – 2017, this field will be developed simultaneously with promising thermoreactive binding agents using cyanic ethers. New thermo- and heat-resistant polymeric composite materials (PCM), which can replace metals in structural materials, enjoy strong advantages over first-generation constructional polymers now manufactured in Russia and abroad.

– The **“Smart” and Functional Materials Centre** for mechanical engineering gives KFU a competitive edge in the development of bulk nano-modified materials and their processing technologies. By 2020, an intelligent system for the design of advanced materials with forecast properties, along with processing technologies, will be developed for car manufacturers.

A description of the research conducted at KFU’s Centres of Excellence in Advanced Materials is provided in Annex 6.

1.2.3.4 Info-communications and aerospace technologies

The main elements of the development strategy for this area are:

- Focusing on traditionally strong KFU scientific schools in line with on-going technological trends;
- Developing mechanisms for effective transferring new technologies to business;
- Concentrating on up-and-coming venture trends.

We can achieve a breakthrough in growth rates for competence accumulation through the development of an “IT-factory”, launch of new academic programmes (service system engineering, new digital media etc.), forecasting external and domestic de-

mand, focusing on technology exports to emerging markets, and setting up new innovative research and education centres.

At present, six centres conforming to international standards are being developed at KFU.

The Fundamental Informatics and Computational Sciences Centre focusses on development of methods for numerical simulation of physical processes, chemical reactions and processes for oil extraction, computational metabolomics, and data analysis in computer-based instruction. We aim to become a global leader in these areas by 2020.

HP, ABBY and Yandex are among the partners of **the Applied Aspects of Big Data Analysis Centre of Excellence**. By 2020, we will join the ranks of leading research teams in the application of data analysis in educational technologies, as well as emotion recognition, automatic text mark-up, neuro-inspired computational systems.

The Visualization, Interface, Digital Media and Gaming Industry Centre will be a crucial research subdivision for medical simulations, non-destructive methods of cultural heritage studies, human-computer interface technologies, and digital technologies for the media industry by 2020. The basic DigiPen and Digital Media Lab will enact as an “engine” for applied research. In addition, unique academic programmes will be implemented in tandem with non-standard multi-disciplinary research projects in partnership with industry leaders.

The Centre for Robotic Systems and Technologies has a global outlook in regards to the development of fractal antennas, protected communication networks, and anthropomorphic adaptive manipulators that work against the influence of supply systems. Partnerships with Cisco, Keysight Technologies and Rhode & Schwarz are key milestones in the Centre’s development. Five to ten laboratories at the Centre will ensure KFU’s advance in modelling and management of autonomous distributed systems and inertial navigation by 2020.

KFU is eager to develop its **Gravitation, Astrophysics and Cosmology and Space Research and Technologies** Centres, which are engaged in space research. The first Centre will specialise in the research of dark matter and dark energy, space kinetics, X-ray astronomy while the second will carry out advanced research of near space

(solar-terrestrial interactions, ionosphere monitoring), as well as optic and radio monitoring of galactic and extragalactic bodies (in the framework of international projects Integral and SPG using the optical telescope PTT–150 located in Turkey, as well as MEGATORTORA complex established in Zelenchuk Observatory in 2014).

A more detailed list of the research in this area is provided in Annex 6.

1.2.3.5 New interdisciplinary Centres of Excellence

As it moves towards achieving its target model, the University is striving to implement the organic integration of research in natural, social sciences and humanities with a classic university education by employing an interdisciplinary approach.

New research and educational Centres of Excellence are being established and developed for this purpose:

– **Archeometry Centre of Excellence** conducts interdisciplinary research in social sciences, humanities, paleogenetics, paleoecology, archaeological material science and digital technologies. It will serve as a backbone for the reconstruction and 3D-modeling of Great Bolgar, the capital of Volga Bulgaria, a 14th century UNESCO World Heritage site.

– **ISLAMICA Centre of Excellence** is positioned as a hub for a global network that will monitor, analyse and forecast the opinions of the Muslim community, as well as carry out research into state-confessional relationships in Russia and the CIS. The Centre will also offer expert opinion with respect to the Islamic factor in global politics and economics, as well as the potential of Islamic world under of current geopolitical conditions. It will also render methodological support in warning and prevention of religious extremism and radicalism thus meeting the objectives of the Strategic Vision Group *Russia-Islamic World*.

New academic graduate and doctoral programmes, multidiscipline Bachelor's programmes, practice-oriented Master's programmes using advanced technologies and quality assessment systems will be carried out through the new Centres of Excellence.

One of the points of growth for quality research and the University's visibility is the **establishment of cooperation with institutes of the Russian Academy of Sciences** focused on reform in the following areas: biomedicine, space research, mathematical

modelling of orbital processes, archaeology, history, intercultural, interethnic and religious processes. This effort involves leading RAS scholars and their teams in the establishment of Centres of Excellence, OpenLabs and basic departments for purposes of joint participation in large international projects and training of unique specialists. The Roadmap of cooperation with RAS structures is provided in Annex 7.

1.2.4 Education market strategy

Under current plans, the University will have reached the following target indicators by 2020:

- Reduction of total number of students to 17,000+ (at the head university);
- Harmonisation of the student body structure, with an increase in the percentage of doctoral students from 5% to 15%, an increase in the percentage of graduate students from 8% to 20%, and a simultaneous decrease in the percentage of undergraduates from 72% to 60%;
- Increase in the percentage of international students up to 15% as regards KFU's main academic programmes;
- Increase in the percentage of international and Russian faculty and practitioners with working experience at the world's leading universities and research centres (up to 8%).

By 2020, the quality of educational services will have been fully conformed to international academic standards and will have been approved for accreditation by the leading international accreditation agencies (FIBAA, ZEvA, EFQUEL [distance learning], ACQUIN, APQN, ASIIN). The ratio of academic programmes at priority scientific areas with international accreditation will have reached 50% by 2020.

The academic environment in general, and the curricula in particular, will be highly internationalised due to the appearance of joint academic graduate and doctoral programmes with Top-200 foreign universities (50 programmes by 2020), as well as graduate programmes conducted in English (at least 50% of programmes by 2020).

Increased academic mobility for students will become one of the key elements of internationalisation. International mobility is also a factor in achieving better brand visibility, enhancing contacts with potential partners for the development of new joint aca-

ademic programmes, and accumulating faculty and students in order to foster a multi-lingual academic environment. The scope of international academic mobility should encompass at least 10% of KFU students per year by 2020.

Better accessibility of academic programmes and services will be reached through the mechanisms of distance learning, including learning in foreign languages, construction of customised academic paths for students, and grant support for international applicants and students on a competitive basis. The percentage of new distance academic programmes in foreign languages will have reached approximately 50% by 2020.

We are planning to continue the experience of Centres of Excellence, which has proved to be efficient in the priority research areas, in education. By the end of 2016 KFU will have opened a new **Centre of Excellence of Education in Physics**. Methodology basis will comprise of an innovative set of electronic resources *Learning Environment 21+* developed at the Institute of Physics for bachelors majoring in physics, mathematics and natural science (jointly with Innsbruck University, Austria). Some teaching aids offer unparalleled methodological techniques. Within this Centre, the further development is expected for the Laboratory Complex established in 2011-2014 in close cooperation with LD Didactic (Germany). In 2015 this Complex will extend the scope of its research opportunities by opening new laboratories – in photonics, medical physics, physics and chemistry of new materials.

The **Centre of Excellence of Education in Mathematics** is supposed to consolidate best global practices and best traditions of Russian mathematical school in order to put forward the strategy and curriculum of mathematical education focused on different levels and specialties of target audience.

1.2.5 Marketing strategy for prospective students

This marketing strategy is focused on two main components: attracting talented students and bringing in the best international students.

The set of activities focused on working with talented young people includes the following initiatives:

- “**Children’s University**” (for children from 8 to 11 years old) and “**Small University**” (for children from 11 to 17 years old) - to form research and creative approach,

as well as motivation to enter KFU. It is planned to increase percentage of first-year students' studied in "Children's University" and "Small University" up to 10% of the total number of enrolled students by 2020.

- "**KFU Lyceums**" (IT-lyceum and the Lyceum named after N. Lobachevski) – pursue search, selection and advanced training for talented youth in mathematics, informatics, foreign languages actually engaging leading KFU faculty. The model of life-long education is planned to be implemented in KFU Lyceums by 2020;

- "**Olympiads**". International and Russian Olympiads for pupils and students are regarded as effective ways of attracting talented young people. The University is a center of training and hosting regional and Russian Olympiads by subject areas. International Olympiads in informatics and chemistry will be conducted in 2016. The contest on Tatar language will be organized annually. Due to Internet-tours the geography and quantity of participants will be significantly increased (up to 100,000 people by 2020).

- **Social educational network "I'll become a KFU student!"** It is planned to increase the number of users up to 200,000 by 2020.

Summer and winter schools, annual scientific conferences as successful methods of recruiting prospective students will be further developed.

Due to complex work conducted by KFU with prospective students it is planned to increase the quality indicators of first-year students' – growth of the average score up to 20% by 2020, increase the percentage of winners of contests of different level who entered the university up to 30-40%.

During the two years of the Programme (2013-2014), a complete system of international student recruitment was developed, as well as a comfortable living environment. As a result, the number of international students increased by 48% in 2014 in comparison with 2013 (2,106 vs. 1,423 students).

Kazan Federal University will position itself as the leading Russian university, as well as a force for greater integration of the Turkic-speaking world in science and higher education. In working with applicants, long-term relationships with universities in Turkic-speaking countries will be especially important, including Turkey's Istanbul University, Yeditepe University, the National Turkish Observatory TUBITAK, the IR-

CICA Research Centre for Islamic History, and the Yunus Emre Institute, as well as universities and scientific research centres in Kazakhstan and Uzbekistan through their respective national programmes (Mevlana, Bolashak, etc.).

KFU is working to enhance its presence in the targeted markets. As such, the University has identified the following markets: China, Mongolia and South-East Asia, Latin America, the Middle East and Africa. KFU has selected these markets in line with Russia’s policy shift towards building innovation-driven economic ties with its BRICS country peers, as well as the Middle East (Iran, Iraq, Lebanon), the Asia-Pacific region (Vietnam, Indonesia, Malaysia), and Central and South America (Cuba, Brazil, Venezuela, Argentina, Colombia), even as traditional cooperation with Western countries is maintained at a stable and mutually beneficial level.

Among the planned activities in the targeted markets are efforts to establish direct links with secondary schools abroad, including “School Force”, a special Russian-language programme in China, India, and South Africa.

In 2020 the anticipated breakdown of international applicants for the University’s fundamental educational programmes in the targeted markets (groups of countries) is estimated as follows (%):

Table 3. Breakdown of international applicants

Turkic-speaking countries (Turkey, Uzbekistan, Kazakhstan, Turkmenistan, Azerbaijan, Kirgizia)	45
BRICS (China, India, South Africa, Brazil)	25
Middle East, South Asia and North Africa (Iraq, Iran, Lebanon, Syria, Morocco, Egypt, Israel, Algeria)	10
CIS countries (Tajikistan, Moldova, Ukraine, Armenia)	10
Asia-Pacific region (Vietnam, Indonesia, Malaysia)	5
Central and South America (Cuba, Venezuela, Argentina, Columbia)	3
Other regions, countries	2

One of the most effective tools in this regard is strengthening and expanding cooperation with Russian and international bodies. The active development of the Republic of Tatarstan’s innovation-focused economic partnerships with other Russian regions and foreign countries, for example through its 14 representative offices and 20 trading houses acting as KFU representatives, also helps to promote KFU on new educational markets.

To achieve a sustainable impact of the implemented activities intended to increase the number of international students, the University will continue to develop its grant support efforts as well as seek new funding sources for training international students. Russian and international programmes and foundations, such as the German Academic Exchange Service (DAAD), the EU Erasmus+ programme, Tatarstan's Algarysh programme, and national programmes in Turkey (Mevlana) and Kazakhstan (Bolashak) are among the grant and scholarship programmes sponsored by employers and international graduates.

1.2.6 Marketing strategy on the employers' market.

In order to develop cooperation with potential KFU partners a list of 120 companies² was developed with assistance of external consultants. Developed network, in a short term, should become an operating tool in cooperation with employers.

The university plans to open the following together with the leading companies by 2020:

- 100 joint laboratories
- 100 subdepartments
- 10 joint productions
- 100 small innovative enterprises

The university will become a foundation in its priority areas for the leading international companies (IBM, Unity 3D, ICL group of company, JSC Gazprom, JSC Rosneft, JSC Taif, JSC Nizhenkamskneftehim, JSC Lukoil, Schlumberger, Rostec, Russian Federal Space Agency).

The largest and most promising projects, implemented by KFU together with employers and with their support, are:

- "Rostec-KFU" Center of competence projects are development of adaptive and close to absolutely secure systems of data transmission, and global satellite systems of high accuracy positioning;

² Cf. the list of companies in Annex 13

- Development and creation of civilian products in a range of “Rostec” companies (JSC Roselectronics, JSC Shvabe, JSC KRET);
- Projects on coordination provision of lunar exploration, development devices for the orbital lunar module and lunar robots;
- Development and implementation of preclinical and clinical drugs trials with JSC “Tatchempharmpreparaty”, “Kaluga pharmaceutical cluster”;
- Improvement of manipulators, as “human hand”, external skeleton, and human muscles analogues for androids together with NGO “Android Technics”;
- Project on high-viscosity oil reservoirs models creation, using thermal catalytic processes together with JSC “Tatneft”, “Lukoil”, with support of “Schlumberger”;
- Development of high-viscosity oil intraformational processing technology for JSC RITEC together with JSC Tatneft, with Xtel Inc. (USA) support;
- Creation of catalysts and processes to reduce oil viscosity for JSC Tatneft;
- A series of projects of the “KFU-Keysight-Technologies” Scientific Center in biochemistry (creation of antenna arrays to detect tumors in human bodies without an X-ray or magnetic radiation), agriculture (analysis of plants and microorganisms viability in various stages of cultivation), and biotechnologies (analytical control of biological products production by the method of super-high-frequency);
- Project for Rohde and Schwarz company in the field of phased antenna arrays creation;
- Projects in the field of Smart City and fractal antennas development together with Cisco Systems.

To organize effective cooperation with KFU’s major employers Key Account Managers, assigned to the key partners, will play an important role. The “one window” mechanism will be implemented for the business community in order to establish stable contacts with KFU: all information about the opportunities of joint research, joint ventures, and creation of special educational programs can be obtained by clients in one place and at the same time.

In order to get over the innovation process gap between scientific and real economic sectors, KFU plans to continue to develop its own Center of Transfer Technologies.

Center's priority tasks are the following: university's partnership development with major international clients; searching for projects, promoting creation of new international and cross-disciplinary scientific cooperation; development of employees' competence in Small Innovative Enterprises.

The task 8.2 of the Strategic Initiative 8 of the Roadmap is about interaction with the key employers.

1.2.7 KFU's information infrastructure

Computerisation of the educational process and development of the Learning Management System are defined as the main pathways to developing KFU's information infrastructure. The informational and educational environment for e-learning that is now under development will include joint e-learning programmes (for general and additional education) with international and Russian partner universities, providing opportunities for continuous education from nursery to "third age" and supporting projects for the implementation of e-learning systems and open educational resources.

Establishment of "virtual departments" (employing the best scholars, faculty members and leading Russian and international experts) will facilitate academic mobility not only for study purposes, but also for students' pursuit of research work and participation in conferences and competitions. Plans call for increasing the pace of computerisation, the development of research work and projects, and the application of Elsevier, Scopus, SciVal Spotlight, and WoS resources.

The accelerated establishment of a centralised electronic repository and virtual centres for shared use will provide the required accessibility of intellectual resources.

The next priority area for the development of KFU's information infrastructure is the build out of the "E-University" unified corporate information system (CIS). The functionality of management modules for educational and other processes, monitoring of subdivisions activities and the evaluation of the University's activities will expand in the framework of CIS.

The University's current corporate website (www.kpfu.ru) will serve as a unifying platform for these services. Plans call for forming a communicative platform for university applicants, the research and teaching community, the business community and pub-

lic authorities. The website will be a place for discussing scientific, educational and cultural issues, as well as a tool for actively promoting the University's brand in the global information space. Strategic initiative No. 9 is devoted to the further development of KFU's website.

Total (100%) access to broadband Internet from all lecture rooms with a minimum speed of 1GB/sec for internal data transfer will be provided by 2016. The telecommunications infrastructure will allow seamless access to information systems across the University campus. Wi-Fi will be available across most of the KFU campus.

Accessible and safe functionality of information resources will be achieved through the introduction of a central back-end node.

A high-performance distributed server cluster will serve as the basis for a new information environment. The cluster's capacities will assure accessibility to disc space with minimum 10 Tbyte. A collective high-performance system, to be available upon request for any KFU academic or research project, will be established on the basis of the servers' computational resources.

An important step in this regard is the implementation of modern, innovative IT solutions developed at the University. These include the "e-dean's office" and "mobile student" applications for immediate feedback and access to the University's electronic services (including schedules, alerts, etc.), access control systems, solutions for asset location, regulated alert systems, surveillance systems and "smart" litter bins. According to the plan, the University should evolve as an experimental platform for its own cutting-edge developments in the information and communications spaces.

1.2.8 KFU's human resources potential, including top management, research and teaching staff

The formation of an HR target model requires consecutive transformations in both faculty members and management segments.

I. Research and teaching staff. Achieving the objective of creating an international core of highly skilled KFU faculty implies the simultaneous resolution of several tasks.

Increasing the share of international scholars invited for research and teaching purposes, as well as supervising doctoral students and providing expertise on curricula and academic programmes, will be achieved by launching KFU's recruitment programme with the focus of activities on priority research areas: the share of international research and teaching staff employed in these areas will reach 20-25% compared to 12% for the University overall. The same mechanisms will be applied for inviting faculty members with substantial experience in working in leading international and Russian universities and research centres.

The percentage of young faculty members will be increased through activities targeted at recruiting young researchers with international experience, post-doctoral students from foreign and leading Russian higher educational institutions, including Russian citizens holding PhD degrees. Activities for providing grant support to young faculty members and post-docs as stipulated under Strategic Initiative 2 will allow us to generate a "new wave" of talented researchers whose research activity will peak in 2019-2020. The percentage of post-docs among total faculty numbers will increase by 50 times upon the Programme's implementation.

Changes in the personnel balance that are in line with changes in the student body and research activities will be driven by the rapid development of priority areas. The percentage of faculty pursuing research in these areas will increase from 30% to 50% among the total number of faculty members.

Improvements in the academic staff's level of expertise will be driven not only by the recruitment of highly skilled staff from outside. We will also work toward enhancing the competencies of University staff, which will be attained through regular training sessions (internships of medium and long duration), staff exchange programmes with key international partners, and participation in various academic mobility programmes. The number of mobile staff will be increased up to 1,300 by 2020.

II. Managers. Targeted activities for recruiting managers with job experience in leading international and Russian universities and research centres are planned. In addition, it is anticipated that managers holding degrees from leading Russian and foreign universities, including MBA holders, will be recruited. KFU has established diversified

collaboration with well-known recruitment agencies operating in Russia (Odgers Berndtson, Boyden, Arthur Hunt, Amrop, etc.) as well as those working in international markets (Alexander Hughes, Perret Laver, Stanton Chase, Russell Reynolds Associates, etc.).

The development of best management practices and the improvement of managerial competencies will be supported by the implementation of an internship programme for University management and project coordinators at leading universities, research institutions and companies, including international corporations.

A revitalised corporate culture will be an essential element of the target model, which is equally important for all categories of KFU staff. Partnership values and an entrepreneurial approach will prevail across the University community. In order to develop these elements of organisational culture, we have planned institutional arrangements (such as “Entrepreneurial Factory”, specialised training sessions in management competencies by leading international experts), as well as new activities as outlined in the Roadmap (see Strategic Initiative 5).

1.2.9 Promising research and academic facilities

The University’s facilities generally correspond to international standards and requirements, making KFU an attractive choice for a large number of students and highly skilled employees. The University’s property base has been forming throughout its 200-year history of development as an institution of higher learning. Today, it comprises 686 real properties covering a total area of 825,000 sq.m., which effectively serve the needs of the University’s diverse academic and research activities. Various significant events have occurred in the University’s development during the past five years. The most prominent has been the institution’s reorganisation through mergers with a number of other universities, resulting in a doubling of the University’s facility base.

An additional impulse for developing the University’s facilities came from the Summer Universiade (World University Games), which Kazan hosted in 2013. As a legacy of the Games, the University has received 20 highly comfortable dormitories with 7,450 places and a total area of 212,000 sq.m., which together with its 17 existing dormitories fully meet the need for residential housing for international and non-

resident students according to the highest international requirements. Following the Games, the University also received sports infrastructure: three new sports centres where international competitions were held were transferred to KFU, significantly complementing its existing nine sports centres.

KFU's facilities upgrade programme has outpaced the goals set in the Strategic Development Programme framework: Over the past five years, upgrades conducted in priority research and technology areas have led to the creation of 415 laboratories (including 175 research labs and 240 training labs) and purchases of equipment worth over RUB 7 billion. A substantial part of this equipment is unique and has no analogue, which provides great potential for development and innovation in the fundamental sciences.

Upgrades have been made at buildings and facilities of the following KFU units: the Institute of Physics; the Institute of Management, Economics and Finance; the Alexander Butlerov Institute of Chemistry; the Centre for Technologies; the Nikolai Lobachevsky Scientific Library; and the Institute of International Relations, History and Oriental Studies, Institute of Fundamental Medicine and Biology.

In 2014 construction of a laboratory building at the Institute of Geology and Petroleum Technologies was completed (2,400 sq.m.). A new campus for the Institute of Chemistry with an area exceeding 7,000 sq. m. will be commissioned by May 2015.

To ensure the progressive development of medical studies, a priority area for the University, KFU has obtained a license to use a hospital complex with a total area exceeding 47,000 sq.m. A University clinic will be created in 2015 on the basis of three major health-care institutions.

Centre for Biomedical Engineering and additive technologies with a total area exceeding 5,000 sq.m. will be established in 2105.

The achievement of KFU's targeted model parameters by 2020 will require further improvement of its infrastructure, campus and auxiliary units that support research and academic activities, including:

- Building of modern research centres (laboratories) in the laboratory centre of the Institute of Geology and Petroleum Technologies and a new campus for the Institute of

Chemistry. By the end of 2016, plans call for equipping at least 50 labs for priority areas. The year-on-year growth in the number of newly established laboratories should equal four to five per year, for a total of 150 new and existing labs by 2020.

– Construction and modernisation of 10 facilities in Kazan, including the Volga Regional Centre for Advanced Training and Retraining of Professional Educators, and several academic buildings on Podluzhnaya and Professor Nuzhin streets, as well as the start-up of four facilities in Naberezhnye Chelny and two facilities in Elabuga. The total area of buildings planned for construction will exceed 100,000 sq.m.

More than 350 staff members improved their living conditions from 2011 to 2014. The project on construction of cottage settlement started in 2014 in cooperation with the Russian Housing Development Foundation. The new 22-apartment building for invited scientists will be commissioned in 2015.

Funds allocated for the programme for upgrading KFU's real estate assets, elaborated and approved by the Russian Federation Ministry of Education and Science, are considered as one of the sources for further development of research and academic facilities.

1.2.10 Economic and financial model

To be ranked among the world's leading research universities, KFU must transform its economic policy and financial model. Carrying out KFU's general strategy calls for a phased transition from being an extremely large educational institution with numerous social and regional functions toward a leaner, more compact research organisation, where social and training functions will be replaced by research and innovation functions. This process will be accompanied by changes and diversification in funding sources. In turn, this will mean that a growing share of KFU's revenues will come from research, R&D activities in collaboration with business; funding from international scientific foundations and organisations; endowment funds; and sponsorship support from alumni and other stakeholders.

The new financial model is based on financial and economic independence partially ensured by the University's status as an autonomous institution; financial policy

transparency; and operational flexibility. An important aspect of this process will be the institution's adoption of International Financial Reporting Standards (IFRS).

The University's budgeted expenditures imply an increase in investment in developing priority research areas. Investments will be made on a competitive basis and according to professional expert assessments of specific projects for establishing and equipping laboratories; bringing in foreign scientists, teachers and students; positioning the University in the international space; developing a publications programme; and participating in international scientific events.

The Supervisory Board and Board of Trustees will play significant roles in the formation and adjustment of the University's economic policy. External consulting teams experienced in formulating economic programmes and introducing financial models at leading universities using modern financial management tools will participate in the elaboration and implementation of the economic model.

Table 4. Financial plan

Indicators	2015	2016	2017	2018	2019	2020
Revenues, RUB mln, including	7,730	8,450	9,660	10,880	13,490	16,010
Education	4,600	5,100	5,600	6,100	7,300	8,300
R&D	1,000	1,200	1,400	1,600	2,000	2,500
Endowment and alternative funding sources	130	150	160	180	190	210
Programme for Enhancing KFU's Competitive Ranking	2,000	2,000	2,500	3,000	4,000	5,000
Expenses, RUB mln, including	7,730	8,450	9,660	10,880	13,490	16,010
Operating expenses	5,880	6,450	7,500	8,380	9,400	10,560
Capital expenditures	1,850	2,000	2,160	2,500	4,090	5,450

Details concerning income and expenses from the Roadmap financial plan are given in the Annex 1 and 2

1.2.11 Management and structural reorganisation

KFU sees modernising its management system and fostering a new corporate culture as key factors for ensuring the long-term sustainability of the transformations being made under the Programme for Enhancing KFU's Competitive Ranking.

The growth in the size of the University within the past several years, as well as KFU's merger with several other universities with their own distinct corporate cultures and management models, have required constant efforts to improve management efficiency. The mechanisms used to achieve this goal have included:

- The introduction of "efficient contracts" for absolutely all University staff, implying a high degree of individualisation of key performance indicators (KPIs);
- Improvements in the organisational structure based on the merger of departments and reduction in the number of management staff. Specifically, the number of KFU institutes is supposed to be reduced from 19 in 2014 to 12 in 2020;
- Management business process optimisation, including the introduction of a "service model" for the University's auxiliary functions (first of all, such as finances, personnel record-keeping, procurement, etc.) and a "one-stop-shop" mechanism for interacting with key external partners;
- Expansion of the strategic decision-making authority granted to KFU's International Academic Council.

KFU's target model is also notable for the anticipated changes in its corporate culture. By 2020, we see KFU becoming a university with a highly developed entrepreneurial and interactive environment. For us, this means the simultaneous growth of independence in decision-making and responsibility for the results of such decisions at all levels of the institution.

As a means of involving as many employees as possible in the University's transformation process, we are planning to use change management mechanisms that have proven to be effective. Relying on authoritative members of the University staff and faculty who are strong supporters of the idea of positive change, we will make every effort to ensure that those positive changes already made are irreversible, as well as to strengthen the effects of our activities thanks to their "end-to-end" support at all levels of the University community. We see an integrated communications programme as the key to generating such support. This programme will permit us to inform each university employee and student of the main aspects and specific events of the University's transformation programme online and without any distortion.

We consider the entire package of change management initiatives to be an individual measure, which is supposed to be taken within the entire programme implementation period.

The renewed management model will be built around the interests of key players in the University community: students, researchers, and teachers. Management will be totally subordinated to the goal of improving the efficiency of KFU's research and training work, with a special focus on the international aspects of this activity.

Details concerning initiatives related to KFU's management system and cultural transformation are outlined in Strategic Initiative 5.

1.3 Strategic Initiatives

1.3.1SI 1. Development of programme portfolio and intellectual products ensuring the University's international competitiveness

Starting from 2015, the development of new programmes will be initiated by the supervisors of the relevant priority areas. The profile of the programmes will be offered by teams working within the priority areas to be subsequently approved by KFU's International Academic Council.

The programmes will be developed with the involvement of scientific teams conducting research in promising interdisciplinary areas, including: medicine (medical engineering, biophysics, bioinformatics and medical cybernetics, nano-biotechnologies, pharmacology), material sciences, informatics, astronomy, geophysics, cultural linguistics, applied economics, and urban studies.

Ten new academic programmes within KFU's priority areas will be launched in 2015-2016 (3 in biomedicine and pharmaceuticals, 1 in petrochemistry and oil processing, 3 in advanced materials, and 3 in IT and space technologies). The total number of new academic programmes within the priority areas will have reached 80 by 2020. KFU will use a number of mechanisms for improving programme quality and promoting the recruitment of potential students. Thirteen programmes will be internationally accredited in 2015-2016.

The format of dual-diploma programmes is seen not only as a complementary element of quality improvement but also as one of the key factors for creating a flexible academic path. Dual-diploma programmes allow a graduate to transform his or her acquired qualification into manifold possibilities for further education or a professional career. KFU plans to launch at least 30 dual-diploma programmes by 2020. The key partners will be universities with renowned expertise in the relevant areas: the University of Nancy, France; the Federal Polytechnic School of Lausanne, Switzerland; the University of Birmingham, Great Britain; and the Middle Eastern Technical University, Turkey.

The mechanism for adapting foreign academic programmes as franchises, which was described in Stage 1 of the Roadmap, has been deemed inefficient due to the inadequacy of the legal basis. Thus, it will not be implemented at KFU in the nearest future.

The implementation of dual-diploma programmes with leading Russian industrial enterprises is planned as follows: theoretical courses will be delivered at the profile institutes of Kazan Federal University while the practical component will be carried out as internships at participating enterprises. One of the examples of this is the academic programme for drug development and medical materials being carried out in cooperation with the *Kaluga Pharmaceutical Cluster*.

We will gradually introduce modern educational technologies involving distance e-learning to promote access to education and the visibility of KFU's brand in the global information space.

E-courses and modules for individual academic paths for those students studying under higher educational programmes will be developed at the initial stage. The second stage implies transitioning some basic academic programmes into distance-learning formats that provide considerable openness of education. Simultaneously, these courses will be translated into foreign languages, resulting in robust development of joint academic programmes with Russian and international partners. Successful achievement of these goals will ensure the successful launch of joint competitive distance e-learning programmes at the final stage.

1.3.2SI 2. Invitation of external experts and development of key University staff, improving the qualifications of research and teaching staff

Activities under this strategic initiative are aimed at improving personnel qualifications, particularly in the framework of the international competencies of staff and their qualifications in the global research and educational market.

In the coming years, the target model envisages considerable growth in the percentage of international employees and experts with international experience. It is necessary to prepare an integral job offer for prospective applicants and arrange the employment process in order to meet the targets. In 2014 best employment practices for research and teaching staff as well as for managerial staff were analysed (based on the

example of leading foreign universities), key elements of the employment policy were defined, the main stages of the recruiting process were described, provisions of the standard job offer were formulated, the range limits of basic salary levels for invited top specialists as well as the scope and types of extra financial incentives were determined, applicant profiles for managers (six key manager positions) were developed, and compensation levels for specialists in project management recruited “from the market” (from project managers to heads of project offices) were identified.

In 2015 plans call for setting up a regular committee for employment (with international experts) and unifying recruiting processes on the basis of formalised regulations.

The unstable economic situation has a considerable impact on the initial set of targets for recruiting staff with international job experience. Consequently, KFU is paying special attention to the parallel development of various frameworks for staff recruitment. The University provides the option of concluding a standard contract (with the option of tenure available in some priority areas), as well as fixed-term contracts, contract for delivering lectures, contracts for distant work, etc.

Meanwhile, the University is determining the best approach for recruiting young researchers and faculty. KFU’s programmes for recruiting young researchers, teaching staff and post-docs are extensively supported by grants, whereas the University uses different types of grants and financing that may be “linked” to the anticipated achievements of a young scholar and the topic of his or her research. In 2015-2016 more than 160 post-docs will receive grant support.

Initiatives for academic mobility lie at the intersection of the tasks of “internationalisation” and the recruitment of young employees.

Within the framework of the initiative, we have envisaged the establishment of a system within the University for providing academic travel grants to support the international mobility of KFU employees, as well as the active use of outside programmes and foundations (the local Algarysh programme in Tatarstan, as well as bilateral agreements with China, Slovakia, Romania and other countries within the framework of national scholarship programmes).

We plan to intensify the use of long-term internships aimed at pursuing research, training, delivering lectures at foreign universities and the promoting the presence of teaching and research staff on international dissertation councils.

1.3.3SI 3. Attracting talented students, doctoral candidates and young researchers

The measures included under this strategic initiative are aimed at improving the quality and diversity of the student body by attracting talented students and young researchers from both Russia and foreign countries.

The target model provides an increase up to 15% in the proportion of foreign students enrolled in the University's basic educational programmes by 2020. To achieve this goal, KFU will bolster its efforts in the following areas:

- extension of cooperation with international recruitment agencies and associations (Jin Jie, China; ALAR [Russian-Latin American Association of Higher Education]; ICC, South Korea; Russian Resources, Indonesia; and Learning Vision, UK);
- regular participation in international higher educational fairs and exhibitions in those foreign countries deemed to be the main target markets for prospective students (Turkic-speaking countries in the CIS and further abroad, the BRICS countries, the Middle East and the Pacific Rim). In 2015 KFU is participating in 12 such exhibitions;
- development of the University's grant support system (at least 130 grants in 2020) for foreign undergraduate and graduate students enrolled in Master's degree and postgraduate programmes, from both KFU assets and external sources of funding (Russian and foreign educational foundations and programmes, employers and sponsors);
- extension of the range of advertising and promotional materials about KFU's academic services and products translated into foreign languages (Turkish, Chinese, Arabic, Spanish and Portuguese), taking into account the main target markets for prospective international students; the active involvement of foreign professors and students as native speakers for this purpose; and the need to maintain an active presence in the social media networks of the relevant country.

Academic mobility programmes will become an important mechanism for recruiting foreign undergraduate and graduate students. These include joint educational pro-

grammes with foreign partners, student exchange agreements, and educational and scientific activities for international students (summer and winter schools).

As a result of KFU's participation since 2008 in academic mobility network projects as a part of European and Russian university consortiums (Integration, Interaction and Institutions – Triple I and Towards Modern and Innovative Higher Education - AURORA), effective mechanisms for student participation in international academic mobility programmes have been introduced.

To achieve the target data point by 2020, i.e. 6% of all students involved in academic mobility programmes, we are planning to introduce a grant support system to encourage the participation of Russian and international students in academic mobility programmes with leading world universities. Leading European universities will be the focus group partners for the development of these programmes, including: the Catholic University of Louvain, Belgium; Humboldt University, Germany; the University of Helsinki, Finland; the University of Bologna, Italy; and the University of Innsbruck, Austria. We also plan to further develop our existing student exchange programmes with Chinese, South Korean and Japanese universities, particularly for students studying foreign languages.

1.3.4SI 4. Development of key emerging areas coupled with phasing out of inefficient activities

In its development of key emerging areas of study, KFU will continue to rely on solutions that have proven their effectiveness, including Eminent Scientific Research Centres, led by prominent scientists, the OpenLab system, and collaborations with world renowned research centres, as well as sub-departments jointly created with the RAS institutions and leading companies with a focus on priority research areas.

Through the advancement of four priority areas, we will move forward from tailoring the facilities and platforms of the Centres of Excellence on to the further evolution and consolidation of KFU's advantages in specific niches. Not less than three new Centres of Excellence will be opened based on KFU's competencies in humanities and experience in efficient management of interdisciplinary studies.

Selection of prospective research topics, laboratories, R&D projects and phasing out of inefficient activities will be possible thanks to professional expertise with the involvement of outside specialists. We will deepen the role of International Academic Council in making strategic decisions with respect to KFU's research agenda.

1.3.5SI 5. Enhancement of the University's management and financial system

The following tools will be used to achieve improvements in managerial competencies:

- introducing advanced international expertise in the KFU management system thanks to recruiting managers with experience of working abroad in leading industry-specific organisations. We are planning to hire at least seven such specialists at KFU in the next three years;

- developing currently employed managers' potential by improving their competencies through specialised international internships. In 2015-2016 the University's managers will undergo training on probation in National University of Singapore, Nanyang Technological University, São Paulo State University, Seoul National University, Peking University, the University of Helsinki, Hokkaido University in the framework of concluded agreements;

- fostering a culture of meritocracy by forming a candidate pool from among talented managers with high career potential.

Efficient personnel must be integrated into an efficient management system. The "continuous improvement" technique will be used to carry out a set of measures to optimise the University's business processes. The criteria for optimising the University's business process will be as follows: reducing the number of bureaucratic procedures; increasing the pace and productivity of decision-making; and boosting the transparency of service quality criteria from the standpoint of a potential user (student, employee, research department).

An analogous approach will be used to improve the "efficient contract" model. To successfully monitor and administer the system of Reference Efficiency Indicators (REI), a set of which will be developed individually for each employee in the course of

time, a highly developed IT system slated to be launched in the year 2015 will support the roll-out of the “efficient contract” model.

KFU is also planning to invest in efforts to further develop strategic planning as an element of the management system. A regular foresight exercise focused on areas of scientific activity (at least one foresight session per year) will be supported by expertise from the KFU’s International Academic Council and leading specialists from Russia and abroad. A functional strategy formulated for KFU subdivisions on the basis of strategic foresight recommendations is scheduled for the year of 2015.

The University’s financial system is to be further improved in three main areas:

- increase in the percentage of KFU’s revenues earned from non-budgetary sources. First of all, this involves conducting R&D for industry, as well as carrying out supplementary educational programmes for various business categories, and implementing educational programmes. To achieve this goal, we are planning to: improve the quality of interaction with key University partners from among industrial companies; and form sets of decisions in the sphere of basic and supplementary education that enjoy strong demand in the market. A 180% increase in the percentage of revenues earned from non-budgetary sources is scheduled for the period from 2014 to 2020;

- growth in the degree of KFU’s financial autonomy owing to the development of alternative funding sources. The trustees’ fund for target capital (endowment fund) and a pool of target financing funds for key research areas; grant and scholarship funds formed by donors; personalised funds linked to a specific professorship or academic chair, etc., may be among such sources. According to the plan, the growth of alternative funding resources will generate an additional RUB 250 million within the next 6 years;

- Enhancing the transparency of KFU’s financial system. The main element of this activity area involves annual open access preparation and publication of financial reports audited according to International Public Sector Accounting Standards (IPSAS). Audited reports will be published annually starting from fiscal year 2015.

1.3.6SI 6. Development of the University’s infrastructure and services

With the aim of fostering an attractive academic infrastructure and environment, KFU is carrying out programmes for purchasing state-of-the-art equipment and creating

employment for researchers and post-doctoral students in laboratories equipped according to international standards. An office responsible for supporting KFU's publishing activities (translations, corresponding with publishing houses, and maintaining a publications database) has been established on the basis of KFU's Nikolai Lobachevsky Scientific Library.

Based on the results of the first stage of modernisation of KFU's telecommunications infrastructure, further measures are planned, especially for the purchase of interactive multimedia equipment for classrooms (multimedia classes and language labs) and the implementation of a programme for high-productivity computing systems.

As part of the development of the E-University automated management system, it is essential to continue developing functional capacities of modules for the purposes of managing educational processes, monitoring subdivisions, conducting quantitative evaluations of the University's activities, starting analytic panels and applications for improving the quality of the University's management, and establishing an e-library of KFU intellectual products.

Residential facilities necessary for accommodating visiting professors, talented KFU research and teaching staff, and students were acquired when the Universiade Village was transferred to KFU. In order to extend the lifespan of residential facilities to 2020, older housing units will be renovated based on an assessment of their current condition. Moreover, another building in the Universiade Village complex will be constructed to make new residential space available.

Given the significant growth in the number of international students (up to 15%) and staff (up to 12%) that is expected by 2020, KFU plans to create a service to assist in the adaptation of foreigners via extending various services, including informational, linguistic, social, cultural and welfare support. Apart from traditional services oriented toward the social adaptation of international staff and students, KFU plans to introduce other types of support, including:

- Information services – creating special webpages with practical information on KFU's English website; publishing guidelines for target groups of invited specialists; and reporting on news and events of interest to KFU's international students and staff

on the University webpage, in the University newspaper *Colours of the World* and on *UNIVER-TV*;

- Linguistic services – providing courses in the Russian language for foreign specialists who have been invited to KFU;

- Social and cultural services – opening the Professor Club to promote the integration and adaptation of foreign specialists into the KFU academic community.

- The main performance indicator for the University’s foreigner adaptation service will be the rate of satisfaction of international students and staff with the quantity and quality of services provided, which will be evaluated through regular surveys (at least two surveys during their stay at KFU).

1.3.7SI 7. Strategic positioning in global academic community to improve KFU academic reputation

Academic reputation is one of the key determinants of a university’s competitiveness in the global market. In this context, one of the main criteria for achieving a strong academic reputation is a given university’s visibility within the academic community, which in turn depends on the university’s success in conducting research and academic activities as well as correct strategic positioning. We will consistently carry out activities aimed at improving KFU’s academic reputation in the following three areas:

1. Enhancing international publishing activities. Our goal is to increase the quality and quantity of our publications by creating incentives and establishing the right conditions for research and teaching staff. We will promote the publications of our scholars in journals with high citation indexes (in the top quartile of the relevant field of research). We will provide the necessary conditions for joint publications with representatives of the international academic community. Academic papers by international teams have an incomparably higher level of citation than publications by purely Russian authors, especially when the team includes prominent and highly cited colleagues.

To upgrade their research and intensify interaction with foreign universities, KFU scholars will cooperate actively in collaborative international research efforts. We will also increase the level of KFU journals to being them into compliance with the requirements of international abstract databases. As the result, eight KFU academic journals

will have been included in the Web of Science/Scopus by 2020. We will create the ultimate in convenient conditions for research and teaching staff through developing services for supporting publishing activities and academic writing. In turn, research and teaching staff will be able to focus on their core activities.

2. Transitioning to a new level of communications in the global academic environment. We have chosen a proactive approach to communications in order to increase KFU's visibility in the international academic environment. We will fully support those KFU representatives who take part in top-rated international scientific conferences, primarily within the priority research areas. With a view to increasing the significance of KFU-based scientific conferences, we will focus on improving the review quality and invitations of prominent globally renowned scientists to become members of the conference's scientific committee.

We will create added incentives for KFU representatives to become members of the editorial boards of leading international academic journals, which will provide acknowledgement for the significance of the University's scientific achievements.

3. Promoting openness to the global academic community. Familiarising the global academic community with KFU's current performance and the results of our research activities will help us to capitalise on our efforts to enhance the University's academic reputation.

When applicable, we will set up KFU representatives for participating in universities assessment for international rankings. We will monitor and evaluate how KFU is perceived in the Russian and foreign mass media, and on the Internet, along with registering key messages and announced issues on a regular basis. KFU's teaching and research staff will enter and actively engage in international professional networks; and expert opinions by leading scientists will be placed in the mass media. The percentage of publicly available publications, and synopses of those publications translated into English, will be significantly increased. Special English-language courses will be organised for teaching and research staff to improve the level of their proficiency in English. Financial support will be provided for obtaining international certificates as evidence of fluency in a foreign language.

1.3.8SI 8. Developing and implementing the University's marketing strategy and promotion in the global information space

Kazan Federal University believes that its focus on marketing is the most important factor in the University's effective external and internal activity. We realise that various areas of marketing activity could be better coordinated and correlated in order to gain improved results.

In this regard, we will develop a unified marketing strategy for KFU that will embrace the entire range of relationships with external stakeholders, employees and students in 2015. This strategy will include a detailed plan of communications. In the framework of the plan, each category of stakeholder will be given priority information channels and platforms for information distribution; as well as, there will be a defined approach for generating targeted information messages according to the principle "Each group to receive special messages". Within this process, a minimum of 10 platforms for each communication channel will be analysed and 2-3 priority platforms for each channel selected.

We will formulate a plan for the University's brand development in order to support the marketing strategy. We will harmonise our brand mark – logos, slogans and brand-book – and present them in a new, modern way. As a result of renewing the KFU brand mark, there may be a need for an overall re-branding of the University.

We will support regular communications in the form of high-quality informational materials (brochures, booklets and e-materials). The University's annual report and separate reports on research activity will serve as the major information sources.

We will strengthen cooperation with key external stakeholders - employers, alumni, the business community and government agencies – in a systematic way.

We will launch internship programmes for KFU students to give them practical experience before graduating from the University. Together with select employers, we offer summer internship programmes, part-time work during study hours with the possibility of taking time off during exam sessions, and the right to undergo pre-graduation training at partner organisations.

In addition to basic information activities within the framework of "career day" events, we will offer workshops and training sessions on CV writing and how to get

hired by top companies. Moreover, together with partner employers, we will organise on the KFU campus a gathering of students by companies located all over Russia, to have all of them gather in one place for a few days.

KFU and its graduates will help each other after graduation. The University helps companies train its alumni and choose the best and brightest to set up joint academic programmes providing facilities for start-ups, access to equipment for research and prototyping. Alumni will assist KFU by delivering lectures, conducting seminars, informal meetings and motivational activities for students, as well as financing individual University initiatives and the endowment fund. The most famous alumni will deliver plenary reports at official KFU events, thus helping to create a positive image of the University.

We will also use traditional methods of promotion, such as advertising in print and electronic media, in order to expand our audience.

Social networks are the basis for communications in the modern world. We will create KFU pages on major social networks like Facebook and VKontakte to share a common language with the youth. We expect a two-fold increase in the number of followers of KFU pages on social networks by the end of their first year.

We highly appreciate the opinion of our students and staff; that is why KFU will use all opportunities to inform our target audience about the University's key development issues and listen to alternative points of view. KFU will carry out regular internal surveys in order to gather and systematise comments by students and staff on key changes. We will discuss implementation and results of the Programme for Enhancing KFU's Competitive Ranking, taking into account feedback received in planning further actions. Our effective internal communications will help promote and support the leaders of major changes in KFU's development.

1.3.9SI 9. KFU portal-based implementation of "Supersite" concept

Our web-site is the main channel of communications with the external world, which forms the first impression of the University. SI 9 mission is to bring KFU's portal in line with the best global standards, taking into consideration recommendations given by specialists from QS and Webometrics and examples of those universities that are

leaders in their respective categories: Harvard University’s website may be used as an example as regards content and recognition by international rankings (1st place in the Webometrics rating), while the University of Chicago and Duke University are examples of universities with the best classic website design, and Biola Undergraduate is an example of innovative design (Webbyawards, Vandelay design). As a result of implementing the SI9 measure, we expect to see significant growth in the portal’s popularity and an increase in our ranking in the Webometrics rating, as well as the transformation of our website into KFU’s central “knowledge base”.

KFU’s “supersite” concept implies transitioning from a unified information page to a personalised service that induces users not only to post already existing content but also to create their own unique content. The concept will be based on three main principals:

A. “Essence in three clicks”. Users of our portal will find required information presented in a well-structured form at a maximum of three clicks.

B. “A site with a human face”. Thanks to the application of web 2.0 principles, the site’s architecture will permit faculty members to independently maintain personal web pages and blogs, as well as edit and publish articles. Furthermore, we will ask students and faculty to share stories about their experiences studying and working at KFU.

B. “Fullness and transparency”. With the help of the new portal, we will centrally maintain all relevant information on KFU activities, including records of speeches, seminar proceedings and publications in international journals. In time, the portal will become the University’s main knowledge base.

The KFU portal will be developed in four main areas:

1. Making organisational changes to support and develop the site. To ensure sustainable site support, we must both develop individual structural units and include them in KFU’s business processes, especially as regards rights and obligations for requesting, supplying and editing information:

1.1. **One-window principle.** We will create a dedicated structural unit that will become a “single window” for all issues relating to site development, support and promotion.

1.2. **Updates from people on site.** We will regulate the constant process of updating the portal's content, which implies the active involvement of people on site – in KFU's institutes, departments, and laboratories. In this way, we will obtain “first hand” information about the most important events at KFU.

2. KFU site functionality enhancement. Partnering with invited external specialists, we will update the site's architecture and design on the basis of up-to-date requirements for web portals, including:

2.1. **Personal account 2.0.** Updated personal accounts will become a sort of “visiting card” and simultaneously a “virtual assistant” for each KFU faculty member. The functionality of information hosting will be improved and multimedia options broadened. To save time, we will subsequently amplify the list of administrative business processes (applications, inquiries, reports, curriculum management) for personal accounts.

2.2. **Direct link to top University authorities.** Our portal will permit users to send messages to top KFU authorities. In this way, we will be kept informed of all internal problems that usually do not reach the top authorities for some reason.

2.3. **“Bottom-up” content.** All employees will have the opportunity to create and edit pages without involving the portal administrator thanks to the wiki-principle, as is the current practice, for example, in the machinelearning.ru project at Moscow State University's Institute of Calculus Mathematics and Cybernetics.

2.4. **Comfortable on any screen.** Our portal will look the same on any screen, be it a smartphone, table PC, notebook or TV set controlled by any popular operating system.

3. Content. We will organise regular content updating according to the best world practices:

3.1. **The home page is the face of the University.** We will fundamentally remake the home page, leaving only key information and modern navigation with a sliding design. We will also add the most important news from KFU institutes and laboratories, as well as articles, video clips and information highlighting the achievements of our students and employees.

3.2. **KFU is an “open” university.** We will create pages for all functioning laboratories and post data on them about the largest R&D, programmes and academic course materials in addition to contact information.

3.3. **Useful contact database.** To help our future students, employees, and academic and business partners find the people from KFU that they need to contact, we will systematise our contacts, publications and academic course materials available on the personal pages of our portal.

3.4. **Full English version.** KFU is becoming more and more popular among international faculty and students, so we will speak their language. To do that, we will create a full English version of the website with identical functionality to the Russian version.

4. Promotion. Having created a renewed KFU portal, we will make every effort to tell potential users about it. The portal promotion will include the following activities:

4.1. **Involvement in promotion.** All our employees will be actively involved in promoting the KFU portal, be it a link on a business card, signature in an e-mail message, or link to a personal page in conference presentations.

4.2. **In the upper lines of search engines.** Portals appearing in the upper lines of search results in popular search engines have higher website traffic. We will invite the best specialists to optimise the portal to adjust it to ranking algorithms used by popular search engines (SEO optimisation). In this way, a larger number of our potential employees, students and partners will get a chance to learn more about us through our online presence.

PART2. ACTIVITY PLAN FOR THE IMPLEMENTATION OF KAZAN FEDERAL UNIVERSITY PROGRAMME FOR ENHANCING ITS COMPETITIVE RANKING AMONG LEADING WORLD CENTRES OF HIGHER EDUCATION AND RESEARCH («ROADMAP»)

2.1 Indicators of Activity Plan

№	Indicator	Unit of measurement	2015	2016	2017	2018	2019	2020
1	Number of specialists with professional experience in leading Russian and foreign higher educational institutions and/or academic centres, invited for managerial positions	persons	15	20	22	23	25	27
2	Number of KFU scientific journals in Web of Science or Scopus databases	items	3	4	5	6	7	8
3	Number of employees included in personnel pool for top managerial positions	persons	40	44	48	52	56	60
4	Young research and teaching staff with professional experience in leading Russian and international higher educational learning and research centres, as percentage of total young research and teaching staff	%	4%	6%	8%	10%	12%	15%
5	Research and teaching staff participated in academic mobility programmes, as percentage of total of research and teaching staff	%	27%	34%	40%	47%	54%	60%
6	Number of KFU academic mobility programmes for research and teaching staff	ед.	750	938	1125	1313	1500	1688
7	Young research and teaching staff, as percentage of total research and teaching staff	%	38%	40%	41%	42%	43%	45%
8	Degree-seeking full-time students receiving financial support, as percentage of total of degree-seeking full-time students	%	12%	13%	14%	16%	18%	20%
9	Research trainees and young research and teaching staff receiving financial support, as percentage of total research trainees and young research and teaching staff	%	20%	21%	22%	23%	24%	25%

№	Indicator	Unit of measurement	2015	2016	2017	2018	2019	2020
10	Number of joint degree programmes and joint professional training programmes, with leading Russian and international higher educational and research centres	items	35	55	65	70	75	80
11	International students from leading world universities, as percentage of total number of students	%	0.9%	1.5%	2.5%	3.5%	4.5%	5.5%
12	Number of R&D projects, implemented under joint supervision of leading international and Russian scholars and/or academic centres	items	67	87	97	107	117	125
13	Number of joint R&D projects, implemented with Russian and international high-technology companies	items	28	30	32	35	40	45

2.2 Roadmap 2015 – 2020

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
SI 1. Development of programme portfolio and intellectual products ensuring the University's international competitiveness	mln.	132.0	308.0	180.0	270.0	570.0	705.0	950.0	1200.0
Task 1.1 Cooperation with leading universities, research centres and companies for designing competitive educational programmes and resources	mln.	109.2	254.8	140.0	210.0	450.0	550.0	700.0	900.0
Activity 1.1.1 Implementation of joint academic programmes with leading foreign universities, as well as academic programmes in English	Number of joint degree programmes and joint professional training programmes with leading Russian and international higher educational and research centres. Items, cumulatively (PI 10)	20	35	40	55	65	70	75	80
Activity 1.1.2 International accreditation of KFU academic programmes	Number of programmes with international accreditation	6	6	6	10	14	22	30	40
Activity 1.1.3 Implementation of double-degree programmes	Number of double-degree programme graduates, persons.	0	15	0	17	20	25	28	30
Activity 1.1.4 Invitation of leading international and Russian researchers and specialists to lecture at KFU	Number of international academic staff members including Russian citizens with PhD degree from for-	50	50	60	60	70	80	125	150

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
	eign universities, persons								
Activity 1.1.5 Development and implementation of e-learning programmes including MOOCs on EdX, Coursera etc.	Number of developed e-learning programmes, MOOC courses	8	11	13	16	18	21	23	30
Activity 1.1.6 Development of professional training programmes in cooperation with leading international and Russian companies	Number of professional training programmes in cooperation with leading international and Russian companies, items, cumulatively	15	20	23	30	33	40	43	50
Task 1.2 Development of doctoral programmes	mln.	22.8	53.2	40.0	60.0	120.0	155.0	250.0	300.0
Activity 1.2.1 Involvement of leading researchers and experts in doctoral theses defense	Number of researchers and scholars involved, persons	15	25	25	35	80	90	100	100
Activity 1.2.2 Grant programme for support of doctoral students	Number of grants awarded, items	60	90	100	100	220	240	250	250
Activity 1.2.3 Development of new international Doctoral programmes in English	Number of implemented international Doctoral programmes in English. Items, cumulatively	2	5	5	8	11	15	19	23
SI 2. Invitation of external experts and development of key University staff, improving the qualifications of research and teaching staff	mln.	72.0	168.0	98.0	147.0	313.0	383.0	520.0	650.0
Task 2.1 Implementation of	mln.	40.8	95.2	54.8	82.2	173.0	209.0	280.0	350.0

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
measures for professional involvement of researchers from leading universities and research centres									
Activity 2.1.1 Implementation of grant programme for recruiting post-docs from Russian and international higher educational and research centres	Percentage of young research and teaching staff with professional experience in leading Russian and international higher educational and research centres, % (PI 4)	3	4	5	6	8	10	12	15
Activity 2.1.2 Grant programme for young researchers	Research trainees and young research and teaching staff receiving financial support, as percent in total research trainees and young research and teaching staff, % (PI 9)	20	0	21	0	22	23	24	25
Activity 2.1.3 Organization of regular international scientific student conferences in KFU priority areas	Number of international scientific student conferences in KFU priority areas	5	6	5	7	14	15	16	17
Activity 2.1.4 Measures for professional involvement of highly-cited researchers from leading universities and research centres	Number of highly-cited researchers from leading universities and research centres	101	110	110	120	130	135	140	150
Task 2.2 Participation in international, Russian, regional and university programmes of academic	mln.	31.2	72.8	43.2	64.8	140.0	174.0	240.0	300.0

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
mobility									
Activity 2.2.1 KFU research and teaching staff participation in programmes of international academic mobility	Research and teaching staff participated in academic mobility programmes, as percent in total of research and teaching staff, % (PI 5)	13	14	17	17	40	47	54	60
	Number of KFU academic mobility programmes for research and teaching staff, items. (PI 6)	350	400	450	480	1125	1313	1500	1688
Activity 2.2.2 Training programmes for KFU research and teaching staff; organization of internships in leading universities and research centres	Number of KFU research and teaching staff, participated in training and internship programmes, per year	20	20	25	25	60	70	80	90
Activity 2.2.3 Researchers exchange programmes with leading universities and research centres	Research and teaching staff participated in academic mobility programmes, as percent in total of research and teaching staff, % (PI 5)	13	14	17	17	40	47	54	60
	Number of international researchers participated in KFU academic mobility programmes	150	200	180	250	480	530	580	600
SI 3. Attracting talented students, doctoral candidates and young researchers	mln.	72.0	168.0	98.0	147.0	313.0	383.0	529.0	650.0
Task 3.1 Financial support to promising students, doctoral can-	mln.	48.0	112.0	64.0	96.0	200.0	240.0	320.0	400.0

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
didates, research trainees and young researchers									
Activity 3.1.1 Grant programme for long-run support of students	Degree-seeking full-time students receiving financial support, as percent in total of degree-seeking full-time students, % (PI 8)	6	6	6	7	14	16	18	20
Activity 3.1.2 System of academic competitions for students, doctoral candidates, and research trainees	Number of participants, persons	500	700	700	800	1700	1900	2100	2400
Activity 3.1.3 Student exchange programmes with leading world universities	International students from leading world universities, as percent in total number of students, % (PI 11)	0	0.9	0	1.5	2.5	3.5	4.5	5.5
Activity 3.1.4 Grant support for students in KFU academic mobility programmes, including joint academic programmes	Number of grants awarded to students participating in academic mobility programmes	0	20	10	20	35	40	45	50
Task 3.2 Attracting prospective international students	mln.	19.2	44.8	26.0	39.0	83.0	101.0	144.0	170.0
Activity 3.2.1 Cooperation with international recruiting agencies, associations and career centres, participation in international education fairs	Number of international students recruited for study in priority areas, persons	0	350	0	400	450	500	600	700
Activity 3.2.2 Grant programme for international graduate and postgradu-	Number of grants awarded to international students for study in Master and Doc-	0	120	0	150	175	200	225	250

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
ate students	total programmes (number of attracted students), items								
Activity 3.2.3 “School Force” programme for secondary schools in China, India, South Africa and Cuba by KFU teaching staff	Number of schoolchildren participating in the programme, persons	150	300	550	850	1100	3000	7000	10000
Activity 3.2.4 Information, communication and advertising support of KFU international admission process	Implementation of the plan for Information, communication and advertising support of KFU international admission process (yes/no)	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Task 3.3 Attracting prospective Russian students	mln.	4.8	11.2	8.0	12.0	30.0	42.0	65.0	80.0
Activity 3.3.1 Development of KFU lyceum system with full-time and part-time education for promising schoolchildren	Number of schoolchildren studying in KFU lyceums within the reporting period, persons	1500	1500	1500	1500	1700	1700	2000	2000
Activity 3.3.2 Organization of all-Russia national academic competitions among schoolchildren	Number of academic competitions held, items	0	0	1	0	1	1	1	2
Activity 3.3.3 Development of «Junior university» and other activities involving schoolchildren and their parents	Number of participants, persons	1700	2500	2500	3500	7000	8000	9000	10000
Activity 3.3.4 “School site” on KFU web-portal	Number of registered users of the site, persons	0	5	50	100	120	140	170	200

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
Activity 3.3.5 Advertisement in Russian printed and e-publications	Implementation of the plan of promotional events (yes/no)	-	Yes	-	Yes	Yes	Yes	Yes	Yes
SI 4. Development of priority research areas, phasing out of inefficient activities	mln.	264.0	626.0	356.0	534.0	1125.0	1365.0	1880.0	2350.0
Task 4.1. Development of the world class R&D platform in KFU. Establishing international research centres in collaboration with leading foreign and Russian universities and international companies	mln.	14.4	43.6	22.4	33.6	80.0	108.0	200.0	250.0
Activity 4.1.1 International expertise of large-scale projects implemented in KFU	Number of positively evaluated projects, items	8	12	8	12	20	20	20	20
Activity 4.1.2 KFU participation in international collaborations, implementation of large-scale international R&D projects	Number of implemented projects, items	9	10	10	11	12	13	14	15
Activity 4.1.3 Cooperation with world leading companies and research centres (out of KFU's Top 120 prospective partners)	Number of cooperation agreements with leading research centres and companies, items	36	42	47	53	65	78	92	100
Activity 4.1.4 "Key account management" and "single entry point" approaches for interaction with key	Number of key partners from business and industry taking advantage of "key account management" and	1	2	5	8	10	14	17	25

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
partners from business and industry	“single-entry point” approaches, items								
Activity 4.1.5 Development of Technology Transfer Office	Amount of investments in Small Innovative Enterprises established by KFU, mln.	10	20	30	30	70	90	120	150
Task 4.2. Establishing research centres (laboratories) for outstanding world class scientists in priority research areas	mln.	249.6	582.4	333.6	500.4	1045.0	1257.0	1680.0	2100.0
Activity 4.2.1 Implementation of “Eminent Scientist Research Center” programme (large-scale projects led by outstanding international and Russian scientists)	Number of outstanding scientists in “Eminent Scientist Research Centers”, persons.	13	17	19	22	24	26	29	30
Activity 4.2.2 Establishment of new, including joint, research laboratories and academic centres by leading scientists in KFU priority areas	Number of R&D projects, implemented under joint supervision of leading international and Russian scholars and/or academic centres, items (PI 12)	52	67	77	87	97	107	117	125
Activity 4.2.3 Establishment of joint academic departments with RAS institutes and leading companies in national research priority areas	Number of joint R&D projects, implemented with Russian and international high-technology companies (PI 13)	27	28	29	30	32	35	40	45
Activity 4.2.4 Expertise of conducted research, laboratories and R&D pro-	Number of evaluations made by external international experts, items	5	5	10	10	30	40	45	50

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
jects									
SI 5. Enhancement of the university management and financial systems	mln.	34.8	81.2	50.0	75.0	170.0	205.0	260.0	325.0
Task 5.1 Development of the personnel pool for top management positions and recruitment of external specialists with professional experience in leading Russian and international higher educational and research centres	mln.	24.0	56.0	32.0	48.0	100.0	120.0	160.0	200.0
Activity 5.1.1 Training programmes for university managers and project leaders in advanced higher educational and research centres and companies	Number of managers trained, persons	4	6	10	15	25	20	20	20
Activity 5.1.2 Recruitment of external specialists with professional experience in leading Russian and international higher educational and research centres, for managerial positions	Number of specialists with professional experience in leading Russian and foreign HEIs and/or academic centres, invited for managerial positions, persons (PI 1)	12	15	17	20	22	23	25	27
Activity 5.1.3 Development of the university personnel pool for managerial positions	Number of employees included in personnel pool for top managerial positions (PI 3)	38	40	42	44	48	52	56	60
Activity 5.1.4 Establishment of re-	Number of employees re-	0	5	5	5	15	15	15	20

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
cruiting service; cooperation with recruiting consultant having international experience	cruited by the recruiting service, persons								
Task 5.2 Continuous improvement of the Programme management processes	mln.	2.4	5.6	4.0	6.0	15.0	20.0	25.0	40.0
Activity 5.2.1 Project management structure optimization. Design, regulation and optimization of the project management processes	Percentage of project management processes regulated and improved, %	0	100	100	100	100	100	100	100
Activity 5.2.2 Skills Enhancement Programme for university personnel involved in project management	Number of employees participated in Skills Enhancement Programme, persons	10	10	15	15	40	50	50	90
Activity 5.2.3 KFU organizational culture assessment. Implementation of measures for organizational culture transformation	Number of measures taken for organizational culture transformation, items	1	2	2	2	4	4	4	4
Activity 5.2.4 Change management strategy development. Activities for change management process support (seminars, strategic sessions)	Number of activities for change management process support, items	1	2	2	2	4	4	4	4
Task 5.3 KFU management system improvement according to best practices	mln.	2.4	5.6	4.0	6.0	15.0	20.0	25.0	30.0
Activity 5.3.1 Effective performance	Number of International	1	1	1	2	3	3	3	3

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
of KFU International Academic Council	Academic Council activities, items								
Activity 5.3.2 Improvement of effective (performance-oriented) contract system	Percentage of academic and managerial staff under effective performance-oriented contracts, %	55	60	75	80	90	100	100	100
Activity 5.3.3 Development of automated IT- system for administering effective (performance-oriented) contracts	Percentage of employment contracts administered by the IT-system, %	0	10	10	40	50	70	100	100
Activity 5.3.4 Improvement of organizational structure	Percentage of organizational units improved, %	0	10	20	30	50	70	90	100
Activity 5.3.5 Regular audit and optimization of university business processes. Incorporation of service-oriented approach for supporting units	Percentage of supporting units implementing service-oriented model, %	0	10	10	20	30	40	50	60
Activity 5.3.6 IFRS-based financial reporting	IFRS-based financial report submitted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Task 5.4 Development of KFU strategic planning system	mln.	3.6	8.4	6.0	9.0	25.0	30.0	35.0	40.0
Activity 5.4.1 Development and implementation of university units functional strategies	Updated functional strategies, items	4	6	0	0	0	0	10	0
Activity 5.4.2 Development of the	Number of reports, items	1	1	1	1	1	1	1	1

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
department for science, technologies and educational markets foresight									
Activity 5.4.3 Regular foresight and rectification of university priority areas	Number of foresight research projects and sessions, items	1	1	1	1	2	2	2	2
Task 5.5 Enhancement of university financial sustainability and development of new financial sources	mln.	2.4	5.6	4.0	6.0	15.0	15.0	15.0	15.0
Activity 5.5.1 Rising up university revenues from alternative financial sources	Revenues from alternative sources, mln. rubles	60	70	70	80	160	180	190	210
Activity 5.5.2 Development of endowment and external funding system	Endowment and external funds volume, mln. rubles	40	55	70	85	160	190	220	250
SI 6. Development of the University's infrastructure and services	mln.	75.0	156.0	109.0	163.0	432.0	590.0	850.0	1100.0
Task 6.1 Facilities for comfortable academic environment	mln.	70.0	140.0	100.0	150.0	400.0	550.0	720.0	900.0
Activity 6.1.1 Equipping laboratory workplaces for researchers and post-docs	Number of employees with upgraded workplaces, persons	150	250	300	300	800	1000	1100	1200
Activity 6.1.2 Upgrading telecommunication infrastructure	Percentage of lecturing rooms, research laborato-	60	87	100	100	100	100	100	100

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
	ries and other academic premises with high speed broadband Internet access, including KFU intranet, %								
Activity 6.1.3 Unification and development of IT systems. Incorporation of LMS (Learning Management System) and KMS (Knowledge Management System). KFU e-library development	IS maturity level according to COBIT classification	2	3	3	4	4	5	5	5
Activity 6.1.4 Supporting services for international staff and students	Percentage of users satisfied with service quality, %	30	35	40	45	50	55	60	70
Task 6.2 Development of housing premises for international and domestic staff and students	mln.	5.0	16.0	9.0	13.0	32.0	40.0	130.0	200.0
Activity 6.2.1 Construction and renovation of housing premises for promising students, research trainees and young academic staff	Total area of new or renovated buildings, square meters	0	2000	0	2000	0	3000	4000	0
Activity 6.2.2 Construction of housing premises for international and promising domestic academic staff	Total area of new buildings, square meters	0	2000	2000	0	2000	0	3000	3000
SI 7. Strategic positioning in global academic community to improve KFU academic reputation	mln.	54.2	132.8	83.0	127.0	256.0	323.0	460.0	540.0
Task 7.1 Enhancement of KFU in-	mln.	30.2	77.8	43.0	67.0	140.0	183.0	260.0	330.0

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
International publication activity									
Activity 7.1.1 Inclusion of KFU scientific journals in Web of Science or Scopus databases	Number of KFU scientific journals in Web of Science or Scopus databases, cumulatively, items (PI 2)	3	3	4	4	5	6	7	8
Activity 7.1.2 Incentivizing KFU publication activity	Number of publications in WoS within reporting period, items	500	500	600	600	1400	1700	2300	3000
	Number of publications in Scopus within reporting period, items	500	800	600	800	1800	2400	3200	3600
Activity 7.1.3 KFU publications' quality improvement	Number of publications in top-quartile of WoS journals in terms of Impact-factor for relevant research area within reporting period, items	25	30	42	48	140	204	368	600
Activity 7.1.4 Publication activity support and academic writing services	Number of requests to support services within reporting period, items	100	200	200	300	600	900	1200	1500
Task 7.2 Development of communications within international academic environment	mln.	13.0	30.0	20.0	30.0	56.0	70.0	110.0	120.0
Activity 7.2.1 Organizing world level conferences in KFU priority areas	Number of conferences with the participation of highly - cited scientists (top-50 H-index in WoS and Scopus), items	0	1	1	1	3	5	7	10

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
Activity 7.2.2 Organizational and financial support for KFU researchers' participation in international conferences and other scientific events abroad	Number of KFU researchers participated in international conference, with publications in top-quartile WoS and Scopus subject lists, persons	50	50	65	65	150	180	210	250
Activity 7.2.3 Membership in international academic associations	Number of memberships in international academic associations, items, cumulatively	2	3	3	5	10	10	10	10
Activity 7.2.4 Establishing integrated database of active contacts (CRM system); development of academic staff networking by means of online and offline activities	Number of active international contacts per staff member, items	0	0	0	1	2	3	4	5
Activity 7.2.5 Participation of KFU academic staff in editorial boards of international scientific journals	Number of KFU academic staff participating in editorial boards of international journals indexed in WoS and Scopus, persons	30	35	45	60	65	70	75	80
Activity 7.2.6 Organization of open lectures of world class scientists, social leaders and international award holders at KFU	Number of open lectures at KFU with the involvement of leading scientists, social leaders and international award holders, items	0	0	0	1	2	3	4	4
Task 7.3 Promoting KFU transparency for international academic community	mln.	11.0	25.0	20.0	30.0	60.0	70.0	90.0	90.0
Activity 7.3.1 Cooperation with Rus-	KFU position in QS World	401+	401+	401+	350-400	250-	200-	150-	150

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
sian and international university ranking agencies for promoting KFU visibility in academic environment	University Ranking					300	250	200	
Activity 7.3.2 Expanding KFU academic staff participation in international professional networks (Researcher ID, ORCID and other)	Percentage of academic staff with personal accounts in three and more professional networks (including ORCID), %	5	7	15	25	50	60	65	70
Activity 7.3.3 Promoting expert opinions of KFU representatives in mass media.	Number of expert opinions of KFU staff covered in Russian mass media, items	100	200	200	300	600	700	800	1000
	Number of expert opinions of KFU staff covered in international mass media, items	1	3	3	4	15	25	35	50
Activity 7.3.4 Translating into English and publishing KFU conference proceedings, monographs etc.; with open access to above-mentioned materials	Number of KFU scientific publications translated into English available in open access as percent in total KFU publications, %	5	10	15	20	40	60	80	90
Activity 7.3.5 Translating into English and publishing abstracts of dissertations theses; with open access to them	Number of abstracts of dissertations theses translated into English available in open access as percent in total abstracts of dissertations theses, %	2	5	7	10	15	20	40	70
Activity 7.3.6 English language courses for KFU research and teach-	Number of lectures, man-hours	12500	12500	12500	12500	50000	50000	50000	50000

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
ing staff									
Activity 7.3.7 International language proficiency certification of KFU research and teaching staff	Research and teaching staff certified at least as Intermediate users as percent in total research and teaching staff, %	5	10	10	15	20	30	40	50
Activity 7.3.8 Mass-media monitoring, developing sustainable relations with media	Number of positive articles in mass media, including international, items	100	100	120	120	300	420	550	700
SI 8. Development and implementation of marketing strategy and University promotion in global information space	mln.	11.0	30.0	19.0	30.0	62.0	87.0	142.0	177.0
Task 8.1 Development of marketing strategy and KFU brand promotion	mln.	5.0	8.0	3.0	4.0	7.0	7.0	7.0	7.0
Activity 8.1.1 Development, approval and actualization of marketing strategy, including communication plan	Developed/ updated strategy (yes/no)	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Activity 8.1.2 Development and approval of University logos, slogans and brandbook, setting logo design rules for KFU units	Approved logo, slogan, brandbook	-	Yes	-	-	-	-	-	-
Activity 8.1.3 Preparation of promo materials, issuing annual general and	Annual material issuing plan is outturned (yes/no)	-	Yes	-	Yes	Yes	Yes	Yes	Yes

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
scientific reports									
Task 8.2 Cooperation with key external stakeholders (employers, business-partners, authorities and alumni)	mln.	6.0	16.0	12.0	21.0	40.0	60.0	110.0	140.0
Activity 8.2.1 Regular organization of Career days at KFU	Number of events held, items	1	1	1	1	2	2	2	2
Activity 8.2.2 Development of KFU Alumni club and organization of events on a regular basis.	Number of contacts in alumni database, persons	500	1000	5000	12000	30000	40000	50000	60000
	Number of events per year, items	0	1	0	1	1	1	1	1
Activity 8.2.3 Advertising in printed and e-media	Annual promotional plan is outturned (yes/no)	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Task 8.3 Communication with internal stakeholders	mln.	0.0	6.0	4.0	5.0	15.0	20.0	25.0	30.0
Activity 8.3.1 Creating official KFU profiles in social networks. Social Media Marketing	Number of followers in social networks, items	26000	29000	31000	34000	38000	42000	46000	50000
Activity 8.3.2 Regular student and academic staff opinion polls	Number of polls per year, items	0	2	0	2	4	4	4	4
SI 9. KFU portal-based implementation of “Supersite” concept	mln.	5.0	10.0	7.0	7.0	9.0	9.0	9.0	8.0
Task 9.1 Organizational changes for sustainable support of the web-	mln.	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
site									
Activity 9.1.1 Establishing the department for web-site maintenance (according to the single entry point approach)	Department established, items.	0	1	1	1	1	1	1	1
Activity 9.1.2 Issue Regulations on posting and updating information on the web-site	Regulations issued / updated (yes/no)	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Task 9.2 Extending functionality of KFU web-site	mln	3.0	7.0	3.0	3.0	2.0	2.0	2.0	2.0
Activity 9.2.1 Development of the Supersite design plan, approval of the specifications and budget	Specification and budget approved (yes/no)	Yes	-	-	-	-	-	-	-
Activity 9.2.2 Improvement of the personal accounts' functionality on KFU web-site	Percentage of functions mentioned in specifications realized in personal account (%)	0	20	50	100	100	100	100	100
Activity 9.2.3 Developing and maintaining tool for receiving feedback from the portal's users	Web-site usability level, average evaluation grade by faculty, %	10	15	15	15	50	60	70	80
	Web-site usability level, average evaluation grade by student, %	10	10	10	15	50	60	65	70
Activity 9.2.4 Adding functions allowing users to create and update sample pages of the web-site (Wiki	Functionality extended (yes/no)	-	-	Yes	-	-	-	-	-

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
software)									
Activity 9.2.5 Adapting the website to mobile devices (iOS, Android, Windows Phone mobile phones and tablet PCs)	Number of platforms for which mobile version is designed, items.	0	0	1	2	3	3	3	3
Task 9.3 Maintaining and uploading content to the web-site	mln.	1.0	1.0	2.0	2.0	3.0	3.0	3.0	2.0
Activity 9.3.1 Maintaining and uploading pages of institutes and laboratories (structures units and departments separately from laboratories (in 2015 - creation only)	Percentage of laboratories having their own pages on the website, %	0	0	10	20	30	50	70	90
	Percentage of institutes supporting their own pages on the website (minimum 10 postings per month), %	25	25	50	75	90	100	100	100
Activity 9.3.2 Encouraging academic staff to create and support their personal pages in KFU website	Percentage of academic staff actively running their own webpages (filling level min 90%, two or more postings per month, %	0	0	0	15	30	50	65	80
Activity 9.3.3 Aligning the English website version with the Russian version	Percentage of the Russian website content presented in the English version, %	5	10	15	30	50	75	100	100
Task 9.4 Promotion of KFU web-portal	mln.	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
Activity 9.4.1 Offline promotion of the web-portal	Number of offline communication vehicles, regularly placing links to KFU web-	3	3	4	4	5	5	6	6

Strategic Initiative / Task / Activity	Performance Indicator	Evaluation of Cost (mln. rub) / Performance Indicator Value							
		2015		2016		2017	2018	2019	2020
		HY1	HY2	HY1	HY2				
	portal, items								
Activity 9.4.2 Website Search Engine Optimization	Increase in website traffic in the sections devoted to priority areas, as percentage of 2015 value, %	0	0	25	35	100	200	300	400
Total	mln.	720.0	1680.0	1000.0	1500.0	3250.0	4050.0	5600.0	7000.0

ANNEXES

Annex 1. Funding by the subsidy

Activities of 211 Decree / Tasks	Financing		
	Total 2015-2020, mln	2015, mln	2016, mln
Activity 1 according to Decree № 211. Implementation of measures on formation of the personnel pool of university managers; recruiting specialists with work experience at leading foreign and Russian universities and research institutes to managing positions at KFU	740	80	80
Task 5.1 Development of the personnel pool for top management positions and recruitment of external specialists with professional experience in leading Russian and international higher educational and research centres	740	80	80
Activity 2 according to Decree № 211. Implementation of measures on attracting and recruiting to KFU young researchers and staff with working experience at leading foreign and Russian universities and research centres	1221	132	132
Task 2.1 Implementation of measures for professional involvement of researchers from leading universities and research centres	1221	132	132
Activity 3 according to Decree № 211. Implementation of the programme of international and all-Russian academic mobility of the staff for internships, professional training and re-training and in other forms	999	108	108
Task 2.2 Participation in international, Russian, regional and university programmes of academic mobility	814	88	88
Task 7.2 Development of communications within international academic environment	185	20	20
Activity 4 according to Decree № 211. Implementation of measures improving doctoral programme	555	60	60
Task 1.2 Development of doctoral programmes	555	60	60
Activity 5 according to Decree № 211. Implementation of measures, supporting students, interns, young researchers and professors	1480	160	160
Task 3.1 Financial support to promising students, doctoral candidates, research trainees and young researchers	1480	160	160
Activity 6 according to Decree № 211. Implementation of new educational programmes in	3145	340	340

Activities of 211 Decree / Tasks	Financing		
	Total 2015-2020, mln	2015, mln	2016, mln
cooperation with leading Russian and foreign universities and research organizations			
Task 1.1 Cooperation with leading universities, research centres and companies for designing competitive educational programmes and resources	3145	340	340
Activity 7 according to Decree № 211. Implementation of measures on recruiting students from leading foreign universities to study in Russian universities, including partnership educational programmes with foreign universities and university associations	555	60	60
Task 3.2 Attracting prospective international students	555	60	60
Activity 8 according to Decree № 211. Implementation of the following activities in the framework of scientific and research measures in accordance with the Russian basic long-term research programme for universities, taking into account priority international fundamental areas and applied research:	9805	1060	1060
-research and development projects, involving leading Russian and foreign researchers as managers, and (or) in cooperation with promising scientific organizations, including the opportunity to create departments in universities;	9657	1044	1044
Task 4.2. Establishing research centres (laboratories) for outstanding world class scientists in priority research areas	7622	824	824
Task 6.1 Facilities for comfortable academic environment	1110	120	120
Task 7.1 Enhancement of KFU international publication activity	925	100	100
-research and development projects, in cooperation with local and international high-tech organizations, including the opportunity to create departments in universities.	148	16	16
Task 4.1. Development of the world class R&D platform in KFU. Establishing international research centres in collaboration with leading foreign and Russian universities and international companies	148	16	16

Annex 2. Cumulative financial needs

Strategic Initiative / Task	Total 2015-2020, mln.	Total subsidy 2015-2020, mln.	Total 2015, mln.	Total subsidy 2015, mln.	Total 2016, mln.	Total subsidy 2016, mln.
SI 1. Development of programme portfolio and intellectual products ensuring the University's international competitiveness	4 315	3 700	440	400	450	400
Task 1.1 Cooperation with leading universities, research centres and companies for designing competitive educational programmes and resources	3 314	3 145	364	340	350	340
Task 1.2 Development of doctoral programmes	1 001	555	76	60	100	60
SI 2. Invitation of external experts and development of key University staff, improving the qualifications of research and teaching staff	2 351	2 035	240	220	245	220
Task 2.1 Implementation of measures for professional involvement of researchers from leading universities and research centres	1 285	1 221	136	132	137	132
Task 2.2 Participation in international, Russian, regional and university programmes of academic mobility	1 066	814	104	88	108	88
SI 3. Attracting talented students, doctoral candidates and young researchers	2 360	2 035	240	220	245	220
Task 3.1 Financial support to promising students, doctoral candidates, research trainees and young researchers	1 480	1 480	160	160	160	160
Task 3.2 Attracting prospective international students	627	555	64	60	65	60
Task 3.3 Attracting prospective Russian students	253	0	16	0	20	0
SI 4. Development of priority research areas, phasing out of inefficient activities	8 500	7 770	890	840	890	840

Strategic Initiative / Task	Total 2015-2020, mln.	Total subsidy 2015-2020, mln.	Total 2015, mln.	Total subsidy 2015, mln.	Total 2016, mln.	Total subsidy 2016, mln.
Task 4.1. Development of the world class R&D platform in KFU. Establishing international research centres in collaboration with leading foreign and Russian universities and international companies	752	148	58	16	56	16
Task 4.2. Establishing research centres (laboratories) for outstanding world class scientists in priority research areas	7 748	7 622	832	824	834	824
SI 5. Enhancement of the university management and financial systems	1 201	740	116	80	125	80
Task 5.1 Development of the personnel pool for top management positions and recruitment of external specialists with professional experience in leading Russian and international higher educational and research centres	740	740	80	80	80	80
Task 5.2 Continuous improvement of the Programme management processes	118	0	8	0	10	0
Task 5.3 KFU management system improvement according to best practices	108	0	8	0	10	0
Task 5.4 Development of KFU strategic planning system	157	0	12	0	15	0
Task 5.5 Enhancement of university financial sustainability and development of new financial sources	78	0	8	0	10	0
SI 6. Development of the University's infrastructure and services	3 475	1 110	231	120	272	120
Task 6.1 Facilities for comfortable academic environment	3 030	1 110	210	120	250	120
Task 6.2 Development of housing premises for international and domestic staff and students	445	0	21	0	22	0
SI 7. Strategic positioning in global academic community to improve KFU academic reputation	1 976	1 110	187	120	210	120

Strategic Initiative / Task	Total 2015-2020, mln.	Total subsidy 2015-2020, mln.	Total 2015, mln.	Total subsidy 2015, mln.	Total 2016, mln.	Total subsidy 2016, mln.
Task 7.1 Enhancement of KFU international publication activity	1 131	925	108	100	110	100
Task 7.2 Development of communications within international academic environment	449	185	43	20	50	20
Task 7.3 Promoting KFU transparency for international academic community	396	0	36	0	50	0
SI 8. Development and implementation of marketing strategy and University promotion in global information space	558	0	41	0	49	0
Task 8.1 Development of marketing strategy and KFU brand promotion	48	0	13	0	7	0
Task 8.2 Cooperation with key external stakeholders (employers, business-partners, authorities and alumni)	405	0	22	0	33	0
Task 8.3 Communication with internal stakeholders	105	0	6	0	9	0
SI 9. KFU portal-based implementation of “Super-site” concept	64	0	15	0	14	0
Task 9.1 Organizational changes for sustainable support of the web-site	11	0	1	0	2	0
Task 9.2 Extending functionality of KFU web-site	24	0	10	0	6	0
Task 9.3 Maintaining and uploading content to the web-site	17	0	2	0	4	0
Task 9.4 Promotion of KFU web-portal	12	0	2	0	2	0
Total	24 800	18 500	2 400	2 000	2 500	2 000

Annex 3. Performance indicators calculated according to individual methodology

№	Performance indicators calculated according to KFU methodology	Unit of measurement	2013	2014	2015	2016	2017	2018	2019	2020
2	Number of articles in Web of Science and Scopus databases per faculty member, excluding duplicates	items	0.5	1.3	1.4	1.6	1.7	2.0	2.6	4.0
3	Average citation index per faculty member, calculated according to total number of articles in Web of Science and Scopus databases excluding duplicate citations	items	5.7	8.5	11.4	15.3	20.6	27.7	37.2	50.0
4	International academic staff including Russian citizens with PhD degrees from foreign universities, as percentage of total academic staff	%	1.9	2.6	3.8	5.0	6.6	8.7	11.4	14.0
5	Percentage of international students enrolled in degree-granting academic programmes (including students from CIS-countries)	%	3.4	5.6	6.0	6.5	7.7	9.8	12.0	15.0
6	Average Unified State Examination scores of students admitted for full-time Bachelor's and Specialist degree programmes (funded by the Russian Federal Government)	score	76.8	76	76.0	76.2	76.4	76.6	76.8	77.0
7	Revenues from non-budgetary sources, as percentage of total revenues	%	34	37	38	41	45	48	51	53
8	Percentage of postgraduate and Master's degree students, as percentage of total student body	%	10.2	10.6	11	14	20	25	29	35
9	Percentage of faculty members with work experience or long-term internships at leading world higher educational and research centres	%	10	15	20	25	30	35	37	40
10	Amount of R&D revenues	billion of rubles	0.6	0.8	1.0	1.2	1.4	1.6	2.0	2.5

Annex 4. Methodology of calculating supplementary performance indicators

Performance indicator number	Performance indicator title	Method for calculating	Formula for calculating	Calculation example (as for 2014)	Data source
8	Master's and doctoral degree students (full-time and part-time) as percentage of total student population	Percentage ratio of the number of master's and doctoral degree students to the total number of students (main campus only considered)	$PI8 = \frac{A1+A2}{B1+A2} * 100\%$ where A1 = master's degree students A2 = doctoral degree students B1 = bachelor's and master's degree student population	$PI8 = \frac{1492.1 + 810.2}{23520.0 + 810.2} * 100\% = 9.5$	Form № HE-1 of the Federal statistics monitoring, KFU internal reporting system
9	Doctoral degree, including PhD, holders as percentage of in total teaching staff	Percentage ratio of the number of teaching staff members with doctoral degrees (including PhD) to the total number of teaching staff members (including external part-time staff)	$PI9 = \frac{A1}{B1} * 100\%$ where A1= number of teaching staff members with doctoral degrees (including PhD holders and external part-time staff); B1= total number of teaching staff members (including external part-time staff)	$PI9 = \frac{419}{2357} * 100\% = 17.7\%$	Form № HE-1 of the Federal statistics monitoring, KFU internal reporting system
10	Position in Webometrics ranking	Webometrics ranking information may be found at webometrics.info. It is updated twice a year in January and July. To calculate indicator, the last updated version is taken into consideration.	-	1484	webometrics.info

Annex 5. Changes in the target model

Element of target model	Previous version	New version		Rationale for amendment
Strategic Objective	To increase the University's competitiveness in world class research and development and to achieve recognized international parity in academic programmes that allows the University to occupy a respectable position among the global top 100 universities.	To enhance University standing and academic reputation in the field of research and development (R&D), as well as achieve international recognition for the high standards of its academic programmes and global leadership in a range of priority research areas, thus enabling the University to secure a place among the world's top 100 universities.		Refining the strategic objective; Sharpening the academic reputation improvement need
Target indicators	«Target indicators» table is comprised of 7 target indicators and 3 KFU supplementary indicators. Positions in 5 QS subjects areas specifies additionally.	2 of 7 target indicators has been changed according to the Guidelines for Roadmap preparation 2 of 3 supplementary indicators has been changed by University 5 indicators has been revised (Position in QS ranking, by subject areas) 4 indicators has been added (Position in QS ranking, by subject areas)		Changes in the Guidelines for Activity plan development (Roadmap) Development strategy for research priority areas
	Number of articles in Web of Science and Scopus databases within past three years, excluding duplicates	4	Number of articles in Web of Science within past five years 4.30 Number of articles in Scopus within past five years 5.70	Changes in the Guidelines for Activity plan development (Roadmap)

Element of target model	Previous version		New version		Rationale for amendment
	Citation in Web of Science and Scopus within past five years	50	Citation in Web of Science within past five years	25.80	Changes in the Guidelines for Activity plan development (Roadmap)
			Citation in Scopus within past five years	30.21	
	Percentage of faculty members with work experience or long-term internships at leading world higher educational and research centres	40%	Indicator has been changed: Percentage of academic staff with PhD and Doctors of Science degrees	35%	Focus on improvement of academic quality and internationalisation of university environment
	Amount of R&D revenues, billion rubles	2.5	Indicator has been changed: Position in Webometrics ranking	100	Specifyig the needs for improvement of KFU academic reputation and international positioning
	Percentage of international academic staff including Russian citizens with PhD degrees from foreign universities	12% According to average annual number of academic staff	Percentage of international academic staff including Russian citizens with PhD degrees from foreign universities	12% According to average annual number of FTE (positions)	Targeted value for international academic staff including Russian citizens with PhD degrees from foreign universities increased. Transition from individual to unified methodology of calculating performance indicators.

Element of target model	Previous version		New version		Rationale for amendment
	Position in QS ranking, by subject areas - Mathematics	149	Position in QS ranking, by subject areas - Mathematics	101-150	Development plan for KFU research priority areas and new Centres of Excellence
	Position in QS ranking, by subject areas - Physics and Astronomy	98	Position in QS ranking, by subject areas - Physics and Astronomy	51-100	Development plan for KFU research priority areas and new Centres of Excellence
	Position in QS ranking, by subject areas – Chemistry	85	Position in QS ranking, by subject areas – Chemistry	51-100	Development plan for KFU research priority areas and new Centres of Excellence
	Position in QS ranking, by subject areas - Linguistics	197	Position in QS ranking, by subject areas - Linguistics	151-200	Development plan for KFU research priority areas and new Centres of Excellence
	Position in QS ranking, by subject areas - Earth and Marine Sciences	140	Position in QS ranking, by subject areas - Earth and Marine Sciences	101-150	Development plan for KFU research priority areas and new Centres of Excellence
			Position in QS ranking, by subject areas – Medicine	51-100	Development plan for KFU research priority areas and new Centres of Excellence

Element of target model	Previous version		New version		Rationale for amendment
			Position in QS ranking, by subject areas – Biology	51-100	Development plan for KFU research priority areas and new Centres of Excellence
			Position in QS ranking, by subject areas – Computer Science and Information Systems	151-200	Development plan for KFU research priority areas and new Centres of Excellence
			Position in THE Ranking	175	Changes in the Guidelines for Activity plan development (Roadmap)
KFU Mission	<ul style="list-style-type: none"> - Development of a strong research and academic hub with the support of innovative regional and country development by providing world class academic programmes, research and technological development; - Promotion of Kazan as a creative city and world class academic centre, preservation and development of its unique cultural and educational heritage in the ethnically and religiously diverse transitional region between Europe and Asia. 		<ul style="list-style-type: none"> - Contributing to Russia’s innovation-driven development and enhancing the competitiveness of its human capital resources through ensuring high-quality academic standards, research and technological developments; - Contributing to the promotion of the City of Kazan as a hub of creativity and dynamic innovation and a world-class centre of higher learning, research and academic excellence, as well as to the preservation and development of the city’s unique cultural and educational heritage in line with its role as guardian of the distinctive historical and cultural legacy of the ethnically and religiously diverse region where Eu- 		Refining the mission.

Element of target model	Previous version	New version	Rationale for amendment
		rope and Asia meet.	
Global universities selected as KFU's benchmarking peer group	Targeted group of 7 universities is described in «Main gaps analysis» part	Targeted group of 5 top-rated universities and 4 fast-growing universities is described in "Target University model" part	Recommendations to the Roadmap-1 by KFU International Academic Council members and the RF Ministry for Education and Science experts
Research marketing strategy	Identify 4 Priority Areas: <ul style="list-style-type: none"> • Biomedicine and Pharmaceuticals; • Oil Production, Oil Refining and Petrochemistry; • Prospective Materials; • Info-Communication and Space Technologies 	Priority Areas left unchanged. Developing the University clinic on the base of Republican Hospital in the framework of "Biomedicine and Pharmaceuticals" priority area. Establishing the new Centres of Excellence in: <ul style="list-style-type: none"> • Archeometrics; • Complex Islamic Studies The KFU Roadmap on cooperation with Russian Academy of Science institutes has been added.	Development Strategy for research priority areas
Educational programme marketing strategy	Described in parts «Positioning in international academic space» and «Harmonization of student body» By 2020:	Described in part «Educational programme market strategy» Indicators have been corrected as for the number of joint academic programmes and the number of degree programmes in	Emergency in more ambitious and specific aims for joint academic programme development. National legal space is not

Element of target model	Previous version	New version	Rationale for amendment
	<ul style="list-style-type: none"> • 45 joint academic programmes with HEIs ranked as top -300 • 60 master degree programmes in English • 70 franchised programmes 	<p>English by 2020, namely:</p> <ul style="list-style-type: none"> • 50 joint academic programmes with HEIs ranked as top -200 • 50 master degree programmes in English • 30 double degree programmes • 25 academic programmes with international accreditation • 100 programmes with partner business companies • Educational franchising has been phased out <p>Establishing the new Centres of Excellence in:</p> <ul style="list-style-type: none"> • Education in Physics; • Education in Mathematics 	<p>framed for academic programme franchising</p>
Prospective students marketing strategy	Described in part «Positioning in international academic space»	<p>Described in part «Prospective students marketing strategy»</p> <p>Target international markets have been clearly defined.</p> <p>Target proportion of international student body as to its geographical distribution has been defined for 2020. As an additional approach to attracting prospective</p>	Sharpening identification of target model's features as to international prospective student area.

Element of target model	Previous version	New version	Rationale for amendment
		students, the organisation of all-Russia and international Olympiads have been proposed.	
Employer market strategy		<p>Adds on:</p> <p>“Key Account Managers” approach to interaction with key employers have been introduced.</p> <p>New ways for cooperation have been foreseen:</p> <ul style="list-style-type: none"> • student placement for traineeship at key employers; • research supervising; • career monitoring. <p>The target 2020 value for student body, contracted for by business and industry, have been determined.</p>	Development of cooperation with employers as of complex activity
KFU Information infrastructure		<p>Adds on:</p> <p>Super-site development strategy for KFU portal has been given the priority status and stands out as a separate Strategic Initiative 9</p>	Strategic plan for international academic reputation enhancement demands changes in KFU internet communications with outside world
Human resources capital, including top management, research and teaching staff		<p>Adds on:</p> <p>The target 2020 value for participants in international academic exchanges have</p>	Sharpening identification of specific target model’s elements

Element of target model	Previous version	New version	Rationale for amendment
		been determined.	
Features of KFU perspective facilities and infrastructure		Adds on: University clinic has been added to the target model as a new element	Development of world class University clinic as part of Biomedicine and pharmaceuticals priority area
Economic and finance model			Without substantial changes
Management and structural transformation		Adds on: Focus on transformation of KFU organisational culture and change management as on key elements of management efficiency enhancement Incorporation of service-oriented approach for support functions, KAM tool and “single-entry point” approach into cooperation with key partners	Recommendations to the Roadmap-1 by KFU International Academic Council members and the RF Ministry for Education and Science experts
Extra elements: applied research and innovations	Elements are described separately in parts “ <u>Research focused on priority areas</u> ” and “Advancement of technology transfer centre, offices for applied research and developments”	Elements are described jointly in part “Extra elements: applied research and innovations”	Reflow of Target model’s elements to maintain general Roadmap logics
Quantitative characteristics of Target model			
- Percentage of faculty holding doctoral degrees, %	50%	Not included	Decreasing total number of supplementary KPIs for Target model due to the

Element of target model	Previous version	New version	Rationale for amendment
			Performance Indicators introduction
- Percentage of researchers from leading universities and research centres involved in working at KFU	4.5%	5.0%	More ambitious target indicator has been proposed
- Percentage of researchers among faculty (without post-doctoral fellows)	20%	Not included	Decreasing total number of supplementary KPIs for target model due to the Performance Indicators introduction

Annex 6. Centres of Excellence: Structure and key parameters

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
Biomedicine and pharmaceuticals				
1. Neurobiology	<ul style="list-style-type: none"> • «Developmental Neurobiology» • «Neuropharmacology» • «Combinatorial Chemistry and Neurobiology» • «Kinetic neuro-rehabilitation» • «Electrical synapse» 	<ul style="list-style-type: none"> – Development and normal brain functioning – Pathologies of nervous system – Artificial neuronal systems 	<ul style="list-style-type: none"> ▪ INSERM (France); ▪ Aix-Marseille University (France); ▪ Institute of Structural Biology, Grenoble (France); ▪ University of Helsinki (Finland); ▪ University of Eastern Finland (Finland); ▪ Institute of Materials for Electronics and Magnetism in Parma (Italy); ▪ Institute of Bioorganic Chemistry of the Russian Academy of Sciences; ▪ Kazan Scientific Centre of the Russian Academy of Sciences 	<ul style="list-style-type: none"> ▪ R. Khazipov, HI=37; ▪ A. Rozov, HI=25; ▪ Yu. Gerasimenko, HI=20; ▪ I. Lavrov, HI=15; ▪ R. Giniatullin HI=25; ▪ A. Gabibov, HI=18; ▪ V. Yerokhin, HI=21

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
2. Regenerative translational medicine	<ul style="list-style-type: none"> • «Reprogramming of somatic cells» • «Personified medicine» • «Gene and cell technologies» • «Extreme biology, project Chironomids» • «Extreme biology, project RIKEN CAGE+» • «Healthy and Safe nutrition» 	<ul style="list-style-type: none"> – Personified medicine – Surgeon simulators – Kinetic neuro-rehabilitation 	<ul style="list-style-type: none"> ▪ RIKEN and NIAS (Japan); ▪ University of Coimbra (Portugal); ▪ Thomas Jefferson University (USA); ▪ Whittemore Peterson Institute (USA); ▪ Institute of General Genetics of the Russian Academy of Sciences 	<ul style="list-style-type: none"> ▪ Richard Pestell, HI=90; ▪ A. Rizvanov, HI=15; ▪ Andras Palatas HI=18; ▪ Saverio Belucci HI=37; ▪ Vincent Clifford Lombardi, HI=17; ▪ S. Kiselyov HI=17
3. Genomics, proteomics and biotechnology	<ul style="list-style-type: none"> • «Structural biology» • «Protein-cell interaction» • «Omics technologies» • «Bionanotechnologies» • «Paleoanthropology and paleogenetics» • «Microbial technologies» 	<ul style="list-style-type: none"> – Gene, cell and gene-cell therapy of degenerative diseases 	<ul style="list-style-type: none"> ▪ Institute of Genetics and Molecular and Cell Biology, Strasbourg, (France); ▪ University of Massachusetts, Lowell (USA); ▪ Louisiana Tech University (USA); ▪ Biochemical Institute, University of Texas at Austin (USA); 	<ul style="list-style-type: none"> ▪ Yoshihide Hayashizaki, HI=77; ▪ V. Govorun, HI=15

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
			<ul style="list-style-type: none"> ▪ Scientific Research Institute of Physical-Chemical Medicine. 	
4. Pharmaceuticals	<ul style="list-style-type: none"> • «Pathogenesis markers» • «Molecular and biochemical bases of pathogenesis and therapy of tumorous diseases» • «Neuropharmacology» 	<ul style="list-style-type: none"> - Personified pharmacogenomics - Neuropharmacology 	<ul style="list-style-type: none"> ▪ University of Bristol (Great Britain); ▪ Fox Chase Cancer Centre (USA); ▪ University of Hawaii (USA); ▪ Univeristy of Giessen, Max Planck Institute (Germany); ▪ University of Tübingen (Germany); ▪ Okinawa Institute of Science and Technology (Japan); ▪ JSC “Tathimfarm-preparaty” 	<ul style="list-style-type: none"> ▪ Patrick Masson HI=33; ▪ Ye. Nikolskiy, HI=18
Oil production, oil refinery and petrochemistry				
1. Hydrocarbon deposit development simulation	<ul style="list-style-type: none"> • «Mathematical modeling of thermocatalytic processes of high-viscosity oil production» 	<ul style="list-style-type: none"> - Deposit development simulation by thermocatalytic methods 	<ul style="list-style-type: none"> ▪ Colorado School of Mines Petroleum Engineering Department, 	<ul style="list-style-type: none"> ▪ David Law, HI =10; ▪ Dennis Coombe, HI=12;

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
			<ul style="list-style-type: none"> Golden (USA); ▪ Core Laboratories, Houston (USA); ▪ Carnegie Institution for Science, Washington (USA); ▪ Royal Institute of Technology, Stockholm (Sweden); 	<ul style="list-style-type: none"> ▪ Mastorakos Epaminondas, HI=28; ▪ Margot Gerritsen, HI=14
<p>2. New technologies of high-viscosity oil and natural bitumen production</p>	<ul style="list-style-type: none"> • «Thermodynamic and rheological characteristics of high-viscosity oils» • «Interbedding catalytical refining of high-viscosity oil» • «Interbedding combustion» 	<ul style="list-style-type: none"> - Thermal interbedding refining of oil and bitumen 	<ul style="list-style-type: none"> ▪ Middle East Technical University, Ankara (Turkey); ▪ Texas A&M University, Texas (USA); ▪ Stanford University (USA); ▪ Alberta Innovates Technology Futures, Alberta (Canada); ▪ University of Alberta, Edmonton (Canada); ▪ University of Calgary (Canada); 	<ul style="list-style-type: none"> ▪ S. Verevkin, HI=34; ▪ Jean Charles De Hemptinne, HI=19; ▪ V. Emelyanenko, HI=18; ▪ Xavier Rozanska, HI=19; ▪ Tayfun Babadagli, HI=18; ▪ Pedro Pereira-Almao, HI=15; ▪ Mark Sephton, HI=25;

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
			<ul style="list-style-type: none"> ▪ Xytel Inc. (USA); ▪ JSC «RITEK»; ▪ JSC «Tatneft» 	<ul style="list-style-type: none"> ▪ Chuan Wu, HI=23; ▪ Gang Chen, HI=39; ▪ Anthony Kovscek, HI=26; ▪ Mustafa Versan Kok, HI=28; ▪ Gordon Moore, HI=16; ▪ Malcolm Greaves, HI=14; ▪ Joseph Matthew Wood, HI=18
3. Development of catalysts for oil refining and petrochemistry	<ul style="list-style-type: none"> • «Nano-sized clusters of transition metals » • «Chemically decorated carbon nanotubes and nanostructures using methods of non-chemical activation of metal complex catalysts» 	<ul style="list-style-type: none"> – Reduction of oil viscosity and getting commercial oil products, – Derivation of monomers, preparation and clearing of hydrocarbonic streams, – Derivation of liner alpha-olefins from ethylene 	<ul style="list-style-type: none"> ▪ Institute of Chemistry of Organometallic Compounds (ICCOM-CNR) (Italy); ▪ Institute of Biochemistry of Greifswald University (Germany); ▪ Institute of Solid State and Material Research, IFW-Dresden (Germany) 	<ul style="list-style-type: none"> ▪ Giuliano Giambastiani, HI=24; ▪ Joachim Heinicke, HI=26; ▪ Andreas Petr, HI=19

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
4. Stratigraphy and Paleogeoreconstruction	<ul style="list-style-type: none"> • «Interdisciplinary stratigraphic research» • «Isotope studies» 	<ul style="list-style-type: none"> – Integration and processing of astrophysical, biosphere, sedimentation and geochemical information 	<ul style="list-style-type: none"> ▪ Institute of Reservoir Petrology, Aachen (Germany); ▪ Boise State University (USA); ▪ Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany); ▪ Technische Universität Bergakademie Freiberg (Germany); ▪ University of North Carolina at Chapel Hill (USA) 	<ul style="list-style-type: none"> ▪ A.Andreev, HI=29; ▪ H.Oberhänsli, HI=19; ▪ Yves Gallet, HI=28; ▪ Johannes Krause, HI=28; ▪ Joerg Schneider, HI=15; ▪ Spencer Lucas, HI=23; ▪ Helmut Weissert, HI=36
Advanced materials				
1. Centre for Quantum Technologies	<ul style="list-style-type: none"> • «Advanced materials for quantum technologies» • Quantum fluids and quantum gases • «Quantum informatics» • «Basic elements of quantum technologies » 	<ul style="list-style-type: none"> – Advanced materials for quantum technologies – Synthesis and research of functional heterostructures of superconductor-ferromagnetic, superconductive spintronics – Transport, spectral and magnetic properties of 	<ul style="list-style-type: none"> ▪ RIKEN, Japan; ▪ Univeristy of Innsbruck (Austria); ▪ National Chiao Tung University, Hsinchu (Taiwan); ▪ University of Augsburg (Germany); 	<ul style="list-style-type: none"> ▪ K. Kono, HI=24; ▪ R. Grimm, HI=42; ▪ S. Abe, HI=28; ▪ V. Ryazanov, HI=16; ▪ M. Kupriyanov, HI=22

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
	<ul style="list-style-type: none"> • Spintronics technologies • Anomalous superconductivity and magnetism • Mossbauer optics • Functional programable photonics materials for biomedical and info-communication applications • Plasm microscopy 	<p>new materials with strong electron correlation</p>	<ul style="list-style-type: none"> ▪ The Theoretical and Physical Chemistry Institute of National Hellenic Research Foundation; ▪ University of Lyon (France) 	
<p>2. International Centre of Magnetic Resonance</p>	<ul style="list-style-type: none"> • NMR-structure • “Magnetic superfluidity and nonlinear magnetic resonance” • “EPR in biology and medicine” • «Chemoinformatics and molecular modeling» • Research of spatial structure of biologically active peptides and drugs in solutions and in complexes with model membranes by NMR methods of 	<ul style="list-style-type: none"> – Research of spatial structure of biologically active peptides and drugs in solutions and in complexes with model membranes by NMR methods of high resolution – Development of MR tomography in research of living objects – Spin superfluidity in condensed mediums – Synthesis of nanomaterials and development of magnetic resonance 	<ul style="list-style-type: none"> ▪ Neel Institute (France); ▪ University of Eastern Finland (Finland); ▪ Hokkaido University (Japan); ▪ University of Strasbourg (France) 	<ul style="list-style-type: none"> ▪ Yu. Bunkov, HI=24; ▪ R. Giniatullin, HI=25; ▪ A. Varnek, HI=21

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
	<p>high resolution</p> <ul style="list-style-type: none"> • Development of MR tomography in research of living objects • Spin superfluidity in condensed mediums • Synthesis of nanomaterials and development of magnetic resonance methods • Development of new approaches, problem-oriented methodic and technologies based on NMR with magnetic gradient for solution 	<p>methods</p> <ul style="list-style-type: none"> - Development of new approaches, problem-oriented methodic and technologies based on NMR with magnetic technologies based on NMR with magnetic gradient for solution gradient for solution - Computer design of new reactions, materials and biologically active molecules 		
3. Centre of Glycolconjugates	<ul style="list-style-type: none"> • «Laboratory of Biofunctional Chemistry» • DNA-sensors 	<ul style="list-style-type: none"> - Glycan synthesis and approbation for high-selective organ diagnostics and tumor therapy in living organisms - Synthesis and development of new materials for DNA-based, nano- and mesoporous materials, aptamers biorecognition - Development of hyper- 	<ul style="list-style-type: none"> ▪ RIKEN (Japan); ▪ University of Lund (Sweden); ▪ Comenius University (Slovakia) 	<ul style="list-style-type: none"> ▪ K. Tanaka, HI=32; ▪ T. Hianik, HI=22

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
		<p>sensitive selective DNA-sensors for determination of DNA- recognizing molecules, i.e. drugs, biomarkers, genotoxicants, food supplements, etc.</p> <p>– Testing and validation of real samples, DNA sensors and their applications</p>		
4. Centre of Polymeric Composite Materials	<ul style="list-style-type: none"> • Polymeric Composites • Dielectric spectroscopy of complex systems • Thermoanalysis and material science • Laboratory of X-ray research 	<ul style="list-style-type: none"> – Development of thermoactive polymers (epoxides, polysulfones, polyimides) of new polymeric materials, incl. composite ones, for aviation, automobile and space industries – Development and research of physical and chemical characteristics of new polymer nanocomposite catalysts based on layered silicates – Methods of producing advanced functional materials with programma- 	<ul style="list-style-type: none"> ▪ Technical University Ilmenau (Germany); ▪ University of North Carolina (USA); ▪ University of Pisa (Italy) 	<ul style="list-style-type: none"> ▪ Yu. Feldman, HI=24

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
		ble properties		
5. Centre of Smart and Functional Materials	<ul style="list-style-type: none"> • Development and research of advanced materials • Physics and mechanics of multiphase environment 	<ul style="list-style-type: none"> – Development and research of advanced smart materials with programmable properties and processing technologies: – Dimensional nanomodified materials for machine building details – Smart materials – New processing technologies of dimensional nanostructured materials – Intellectual design system for advanced materials with programmable properties and processing technology for machine building 	<ul style="list-style-type: none"> ▪ University of Osaka (Japan); ▪ Ufa State Aviation Technical University Ufa (Russia) 	<ul style="list-style-type: none"> ▪ A. Vinogradov, HI=24; ▪ R. Valiev, HI=75
Info-communication and Space Technologies				
1. Fundamental informatics and computational sciences	<ul style="list-style-type: none"> • «Computational methods and methods of computer modeling» • «Algorithmic methods, alge- 	<ul style="list-style-type: none"> – Optimized statistical decisions and computational aspects of their implementation 	<ul style="list-style-type: none"> ▪ University of Cincinnati (USA); ▪ Washington University (USA); 	<ul style="list-style-type: none"> ▪ Jiri Matas, HI=30; ▪ Sergey Grinshpun, HI=42; ▪ Igor Konnov,

Centre of Excellence, meg-projects	Open Labs, laboratories	Research areas	Partners	Key participants
	<p>bras and logics» (algorithmic theory of information)</p> <ul style="list-style-type: none"> • «Theory of computability and applied algebra» • «High-performance computing» • «Analysis of research data» • «Computational metabolomics» • «Numerical methods of efficient resource management in networks » • «Wavelets and general approximation theory» 	<ul style="list-style-type: none"> - Computer simulation, management of development of hard-to-recover deposits - Data analysis and computer-aided instruction - Numerical analysis of nonlinear solutions of mathematical physics - Soft shell theory 	<ul style="list-style-type: none"> ▪ Stanford University (USA); ▪ Princeton University (USA); ▪ University of Oulu (Norway); ▪ Cambridge University (UK); ▪ Czech Technical University in Prague (Czech Republic); ▪ Institute of Toxicology (UK); ▪ University of Wisconsin (USA); ▪ University of Notre Dame (USA); ▪ University of Illinois at Urban Campaign (USA); ▪ Moscow State University ▪ University Paris 7 	<p>HI=30;</p> <ul style="list-style-type: none"> ▪ M. Schneider, HI=26; ▪ Erkki Laitinen, HI=15; ▪ Bradley Efron HI=50; ▪ Wolfgang Koch HI=15; ▪ A. Antonov, HI=16

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
			(France); <ul style="list-style-type: none"> ▪ King Abdullaziz University (Saudi Arabia); ▪ California University (USA); ▪ Arabian Gulf University (Bahrain); ▪ SAS; ▪ AUTODESK; ▪ Intel; ▪ NVidia; ▪ Clustrix Inc 	
2. Software engineering and smart technologies	<ul style="list-style-type: none"> • «Quantitative linguistics» • «Big data and data analysis» • «Machine understanding» • «Data mining in education» 	<ul style="list-style-type: none"> – Service science management engineering; – Designing and quality management of complex heterogenic multiplatform software systems and built-in decisions; – Distributed analysis of big data in forecasting for retail business; 	<ul style="list-style-type: none"> ▪ Wayne State University (USA); ▪ Higher School of Economics; ▪ Institute for System Programming of the Russian Academy of Science ; ▪ Kurchatov Institute; 	<ul style="list-style-type: none"> ▪ Soren Wichmann, HI=12; ▪ I. Batyrshin, HI=7; ▪ Tom Ziemce, HI=15; ▪ Salvatore Di Stefano, HI=11; ▪ Pei Wong, HI=5

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
		<ul style="list-style-type: none"> - New technologies of semantic mark-up and semantic web - Analysis of emotions - Smart searching technologies; - Computational neurobiology, neurobiologically inspired systems 	<ul style="list-style-type: none"> ▪ Instituto Polytecnico Nazionale (Mexico); ▪ Moscow State University; ▪ Ural Federal University; ▪ Nazarbayev University (Kazakhstan); ▪ Lappeenranta University of Technology (Finland); ▪ Politecnico di Milano (Italy); ▪ University of Newcastle (Australia); ▪ Universitat Autònoma de Barcelona (Spain); ▪ Max Planck Institute for Evolutionary Anthropology (Germany); ▪ RIKEN (Japan); ▪ DLS; 	

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
			<ul style="list-style-type: none"> ▪ Nuris; ▪ Wolfram Research; ▪ ABBY; ▪ Yandex 	
3. Visualization, interface, digital media, gaming industry	<ul style="list-style-type: none"> • «Digital Media Lab» • «Innovations and media communications» • «Nondestructive methods of cultural heritage studies» 	<ul style="list-style-type: none"> – Nondestructive methods of cultural heritage studies, innovative technologies of digital entertainment, visualization in; – New technologies of human-computer interface; – Digital technologies for media industry 	<ul style="list-style-type: none"> ▪ Swarco; ▪ Ertico; ▪ EMBO; ▪ ICCROM; ▪ Carl-Zeiss-Foundation (Germany); ▪ European Research Council; ▪ Deutsche Forschungsgemeinschaft (DFG) (Germany); ▪ Institute of Archeology of the Russian Academy of Sciences ; ▪ Oregon State University (USA); ▪ University of Mary- 	<ul style="list-style-type: none"> ▪ Allesandro Artusi, HI=7; ▪ Joune Ikonen, HI=6

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
			<ul style="list-style-type: none"> land (USA); ▪ Lappeenranta University of Technology (Finland); ▪ University of Girona (Spain); ▪ University of Ottawa (Canada); ▪ Temple University (USA); ▪ DigiPen; ▪ Arab Regional Centre for World; ▪ Bavarian State Dept. of Monuments; ▪ Mail.Ru Group; ▪ Unity 3D; ▪ 1C; ▪ LLC «Inspectra» 	
4. Robotics and associated technologies	<ul style="list-style-type: none"> • «Adaptive decentralized communication systems» 	<ul style="list-style-type: none"> – Anthropomorphic adaptive manipulators 	<ul style="list-style-type: none"> ▪ Cisco; ▪ «Android technics»; 	<ul style="list-style-type: none"> ▪ R. Ibragimov, HI=10;

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
	<ul style="list-style-type: none"> • « Adaptive fractal antennas» • «Multispectral systems of image synthesis» • «High-capacity miniature kinetic energy store devices» • « Autonomous inertial navigation systems» • «Android robototechnics» 	<ul style="list-style-type: none"> – supply systems resistant to environment effect – Fractal antennas – Modeling of distributed systems with connections – Autonomous inertial navigation – Machine vision 	<ul style="list-style-type: none"> ▪ Rostec Corporation ; ▪ «Avtodoria»; ▪ State Inspectorate for Traffic Security of the Republic of Tatarstan; ▪ Roselectronica; ▪ United Rocket and Space Corporation; ▪ JSC RDIME; ▪ Schwabe; ▪ Military-industrial companies 	<ul style="list-style-type: none"> ▪ B. Miller, HI=10; ▪ V. Klassen; ▪ Sh. Chabdarkov
5. Gravitation, astrophysics and cosmology	<ul style="list-style-type: none"> • «Cosmology» • «X-ray astronomy» 	<ul style="list-style-type: none"> – Theoretical cosmology – Axion electrodynamics – Space kinetics – Research of dark energy and dark matter 	<ul style="list-style-type: none"> ▪ Catalan Institute for Research and Advanced Studies (Spain); ▪ Multidisciplinary Centre for Astrophysics of Technical University of Lisbon (Portugal); ▪ Max Planck Institute for Astrophysics 	<ul style="list-style-type: none"> ▪ A. Starobinsky, HI=61; ▪ S. Odintsov, HI=60; ▪ Shinichi Najjiri HI=37; ▪ M Volkov, HI=23

Centre of Excellence, meg-projects	Open Labs, laboratories	Research areas	Partners	Key participants
			(Germany); <ul style="list-style-type: none"> ▪ Space Research Institute of the Russian Academy of Sciences; ▪ Special Astrophysical Observatory of the Russian Academy of Sciences; ▪ Kobayashi-Maskawa; ▪ Institute for the Origin of Particles and the Universe; ▪ Nagoya University (Japan); ▪ National Tsing Hua University (Taiwan) 	
6. Space research and technologies	<ul style="list-style-type: none"> • «Research of near space» • «Research of quick-changing processes in the Universe» • «SHF engineering and radio-telecommunications » 	<ul style="list-style-type: none"> – Solar-terrestrial relations – Ionosphere monitoring – Monitoring of galactic and extragalactic objects active in radiofrequency range – Wide-angle optical moni- 	<ul style="list-style-type: none"> ▪ United Rocket and Space Corporation; ▪ Rhode&Schwarz; ▪ JSC «Schwabe»; ▪ Agilent Technologies; ▪ JSC «Roselectronica»; 	<ul style="list-style-type: none"> ▪ A. Kosovich, HI=39; ▪ Wayne K. Hawking, HI=33; ▪ O.Kurtanidze, HI=31; ▪ M. Gilfanova,

Centre of Excellence, megaprojects	Open Labs, laboratories	Research areas	Partners	Key participants
		toring of coelosphere	<ul style="list-style-type: none"> ▪ NASA; ▪ Big Bear Solar Observatory (USA); ▪ Stanford University (USA); ▪ National Astronomical Observatory of Japan; ▪ Shanghai Astronomical Observatory (China); ▪ Sternberg Astronomical Institute of the Moscow State University; ▪ Institute of Applied Astronomy of the Russian Academy of Sciences; ▪ Radiophysical Research Institute (NIRFI); ▪ Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation of 	HI=40

Centre of Excellence, meg-projects	Open Labs, laboratories	Research areas	Partners	Key participants
			the Russian Academy of Sciences	

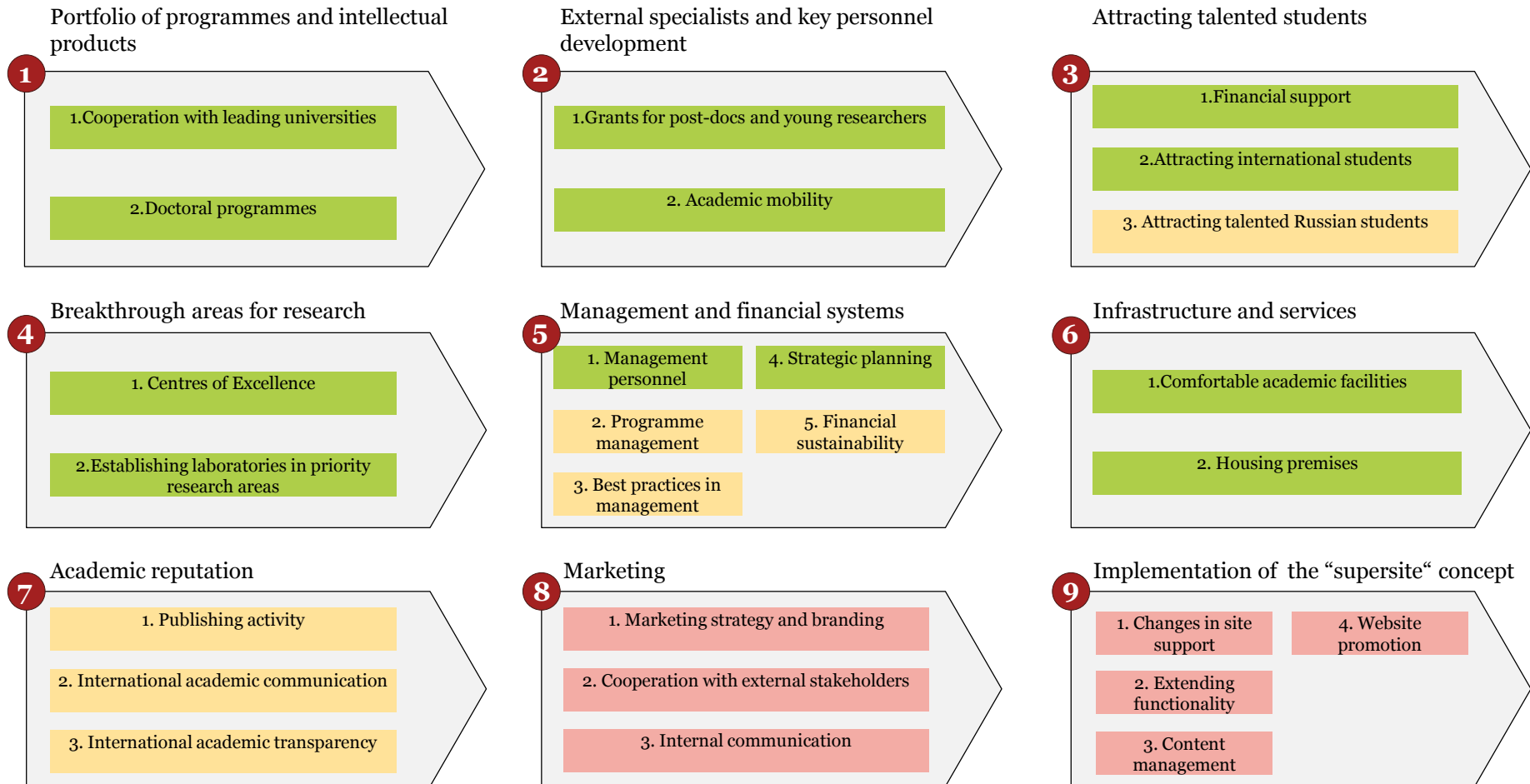
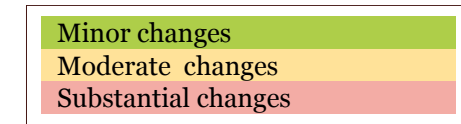
Annex 7. Cooperation with the Russian Academy of Sciences (RAS)

Institute	Research areas	Contacts at the RAS
Institute of Physics	Research of objects of high-temperate atmosphere and ionosphere of Earth	Institute of Solar-Terrestrial Physics, Siberian Branch
Institute of Physics	Development of physical-chemical and biological applications of NMR in fundamental medicine	Tomography Centre, Siberian Branch (Academician Renad Sagdeev)
Institute of Physics Mini-megaTORTORA	Research of near and far space. Space technologies. New informational space technologies. Research of rapid process technologies in near and far space.	Special astrophysical observatory
Institute of Physics	Optic authentication of new emission sources (supermassive black holes, neutron stars, galactic clusters) identified by orbiting astronomical observatories (INTEGRAL, SWIFT, CHANDRA, XMM-Newton, PLANCK, GAIA, SRG) by means of PTT-150 telescope.	Space Research Institute, The Scientific and Technological Research Council of Turkey (TUBITAK)
N.I. Lobachevsky Institute of Mathematics and Mechanics, Institute of Physics	Theoretical cosmology. Space kinetics. Axion.	Institute for Theoretical Physics (Academician Alexey Starobinsky)
Institute of Ecology and Nature Management	Mathematic modelling of mist flows as a challenge for environmental protection	Institute of Mechanics and Engineering
Institute of Ecology and Nature Management	Global and regional changes of modern climate. Climatic conditions and resources of Russian Federation constituent regions. Circulation and energetics of atmosphere. Climate and air basin of Kazan, Tatarstan.	A.M. Obukhov Institute of Atmospheric Physics (Director – Corresponding Member Igor Mokhov). V. Zuev Institute of Atmospheric Optics. Institute of Numerical Mathematics. Institute of Global Climate and Ecology. Institute of Geography.
Institute of Ecology and Nature Management	Evaluation of natural resources potential for Russian lakes, forecasting of its changes with due account for regional social and economic development	Institute of Limnology (Shamil Pozdnyakov)
Institute of Ecology and Nature Management	Ecotoxic properties of new compounds	Institute of General and Physical Chemistry
Institute of Ecology and Nature Management	Biodiversity of the Volga River basin	Institute of Ecology of the Volga River Basin
Institute of Ecology and Nature Management	Phytocenology and vegetation protection	Institute of Biology, Urals Branch
Institute of Fundamental Medicine and Biology	Searching for expression patterns – Huntington's disease	Institute of Cytology and Genetics, Siberian Branch
Institute of Fundamental Medicine and Biology	Genome and predictive medicine, methods of early pathology diagnostics	Institute of Chemical Biology and Fundamental Medicine, Siberian Branch

Institute	Research areas	Contacts at the RAS
Institute of Fundamental Medicine and Biology	Neurophysiology of motor systems. Molecular biology, molecular genetics, Microbiology, Neuropharmacology, neurobiology, phytochemistry	Kazan Institute of Biochemistry and Biophysics Kazan Scientific Centre
Institute of Fundamental Medicine and Biology	Molecular biology, molecular genetics. Joint research of ferments-ribonuclease.	Engelhardt Institute of Molecular Biology
Institute of Fundamental Medicine and Biology	Microbiology. Joint research of microbial autoregulators	Institute of Microbiology
Institute of Fundamental Medicine and Biology	Joint academic programmes for students majoring in molecular biology	Bioengineering Centre
Institute of Fundamental Medicine and Biology	Molecular biology, microbiology	Skryabin Institute of Biochemistry and Physiology of Microorganisms
Institute of Fundamental Medicine and Biology	Molecular biology, molecular genetics, microbiology	Bioengineering Centre
Institute of Fundamental Medicine and Biology	Cell biology	Institute of General Genetics
Institute of Fundamental Medicine and Biology	Combinatorial chemistry and neurobiology	M.M. Shemyakin and Yu.A. Ovchinnikov Institute of Biorganic Chemistry
Research and Educational Centre of Pharmaceutics	Development of anticholinesterase drugs on pyridoxine base	A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Centre
Institute of Geology and Petroleum Technologies	Oil-and-gas reservoir modelling	Trofimuk Institute of Petroleum Geology and Geophysics, Siberian Branch
Institute of Geology and Petroleum Technologies	Paleoclimate and paleomagnetism	Institute of Physics of the Earth
Institute of Geology and Petroleum Technologies	Stratigraphy of oil-and-gas basins	Institute of Geology Institute of Paleontology
Institute of Geology and Petroleum Technologies	Enhanced oil recovery, petrochemistry	A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Centre
Institute of Geology and Petroleum Technologies	Enhanced oil recovery	A.V. Topchiev Institute of Petrochemical Synthesis
Institute of Computer Mathematics and Information Technologies	Solution methods for nonlinear boundary equations	Keldysh Institute of Applied Mathematics
Institute of Computer Mathematics and Information Technologies	Grid methods for boundary equations	Institute of Computational Mathematics and Mathematical Geophysics, Siberian Branch
Institute of Computer Mathematics	Development of parallel algorithms	Institute of Applied Mechanics, Urals Branch

Institute	Research areas	Contacts at the RAS
and Information Technologies		
Institute of Computer Mathematics and Information Technologies	Research on programmes' computational capabilities	Dorodnicyn Computing Centre
Institute of Computer Mathematics and Information Technologies	Artificial intelligence	Institute of Control Sciences
Alexander Butlerov Chemical Institute	Dehydration of hydrocarbons Nonwoven fabric-based catalysts Synthesis of oxide carriers and catalysts	Boreskov Institute of Catalysis
Alexander Butlerov Chemical Institute	Chemistry of heterorganic compounds Functional nanomaterials Homogeneous catalysts for petrochemistry	A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Centre
Alexander Butlerov Chemical Institute	Electroanalytical chemistry	Institute of Geology and Analytical Chemistry
Alexander Butlerov Chemical Institute	Advanced polymer composites	Institute of Macromolecular Compounds, St Petersburg N.S. Yenikolopov Institute of Synthetic Polymer Materials, Moscow
Alexander Butlerov Chemical Institute	Functional nanomaterials	Kazan E.K. Zavoisky Physical-Technical Institute
Institute of International Relations, History and Oriental Studies	Project Bolgar	Institute of Archaeology
Institute of International Relations, History and Oriental Studies	Establishing material culture of suburban population of the Russian state in the XVII-XVIII centuries.	Institute of Archaeology and Ethnography, Siberian Branch
Institute of International Relations, History and Oriental Studies	Interaction of human beings and environment. Arche-zoology	Institute of Archaeology
Institute of International Relations, History and Oriental Studies	Interaction of human beings and environment. Paleopedology	Institute of Physicochemical and Biological Problems of Soil Science
Institute of International Relations, History and Oriental Studies	experimental archaeological studies	Institute of Archaeology Institute of Ethnology and Anthropology
Institute of International Relations, History and Oriental Studies	Development of policy of interethnic and inter-confessional cooperation in the Volga Federal District The role of Tatars in civilizational processes in the Volga River region, Trans-Urals and Central Asia in XIX – beginning of XXI centuries.	Institute of Russian History, Sh. Marjani Institute of History, the Academy of Sciences of the Republic of Tatarstan

Annex 8. Strategic Initiatives' Structure



Annex 9. Composition of Strategic Initiatives 7, 8, 9

Strategic initiatives	Tasks
<p>7</p> <p>Academic reputation improvement by KFU's strategic positioning in international academic community</p>	<ol style="list-style-type: none">1. Incentivizing of international publication activity by KFU staff2. Development of communication with international academic environment3. Increasing the transparency for international academic community <hr/>
<p>8</p> <p>Marketing activities</p>	<ol style="list-style-type: none">1. Development of KFU marketing and branding strategy2. Cooperation with key external stakeholders (employers, business partners, authorities, alumni)3. Development of KFU internal communication system for staff and students <hr/>
<p>9</p> <p>Implementation of "Supersite" concept for KFU web portal</p>	<ol style="list-style-type: none">1. Organizational changes for website management and maintenance2. Advancement of KFU web-site functionality (personal account, feedback tool, Wiki-software)3. Website content management4. KFU website promotion

Annex 10. Results of Programme Implementation for 2013-2014

QS Ranking Agency

- +** Level of infrastructure
- +** Job placement for graduates
- +** Innovations

- ?** Organization code
- ?** Distant learning
- ?** Citation index

PwC Consulting

- +** Improved position in rankings
- +** Research (in priority areas)
- +** Publications

- ?** Project management regulations
- ?** Internal communications, involvement
- ?** Change management

International Council of the Ministry of Education and Science

- +** Recruitment of leading scientists
- +** State-of-the-art laboratories
- +** Campus and infrastructure

- ?** Academic reputation
- ?** Governance
- ?** Marketing strategy

Leading Experts of the Ministry of Education and Science

- +** National recognition
- +** Increasing share of international students

- ?** Unique scope of research
- ?** Integration with RAS and medical schools
- ?** Revision of peer universities
- ?** Management of key clients

Webometrics Experts

- +** Complete and regularly renewed news feed at KFU website
- +** "Personal account" functionality

- ?** Insufficient informational content of KFU website
- ?** English version of KFU website

KFU International Scientific Council

- +** Recruitment of professors
- +** Publication activity

- ?** Financing humanitarian sciences
- ?** Dual Degree programs

+ Recognized as successful

? Areas for improvement

Annex 11. Implementation of Strategic Audit Results



Annex 12. New elements of the Road Map for 2015-2016

1 Pharma-2020

2 Development of the University Clinic

3 “Entrepreneurship Factory”

4 Center of Excellence in Islamic Studies

5 Cooperation with global companies

6 Engineering Center

7 Enhancing academic reputation

8 Unique scopes of research

9 Integration with Russian Academy of Sciences

10 Set of marketing activities

11 KFU website development

12 “From students to scholars”

13 Change management and corporate culture

14 Significant international events

15 Development of Technoparks (KFU, EIDOS)

16 Center of Excellence in Mathematics

17 Development of effective student cooperation

Annex 13. “120 Prospective partners”. List of companies

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
1	Biomerieux	French company, one of leaders in the production of reagents, equipment and software for <i>in vitro</i> diagnostics	Chemistry, new materials, IT	www.biomerieux-russia.com/
2	Armstrong Building Products	Global leader in the production of floating ceilings and floor coverings. Founded in 1860, includes 44 plants in 12 countries.	Chemistry, new materials	www.armstrong.ru/
3	Aksalta – Russian paints	One of the leading Russian paint and coating companies.	Chemistry, new materials	www.ruskraski.ru/
4	SCA	International company that produces consumer goods and paper products.	Chemistry, new materials	www.sca.com/ru/
5	Procter & Gamble	One of global leaders in consumer goods production	Chemistry, new materials	https://www.pg.com/ru_RU/
6	AkzoNobel	One of global leaders in the production of paints and coatings	Chemistry, new materials	https://www.akzonobel.com/ru/
7	Eni-nefto	Subdivision of the Italian energy provider Eni producing and marketing engine oils in Russia	Chemistry, new materials	www.eninefto.com/
8	Evonik	One of the leading companies producing special chemicals	Chemistry, new materials	http://corporate.evonik.com/
9	Clariant	Global leader in producing chemicals for textile, printed, mining and metallurgic industries	Chemistry, new materials	www.clariant.com/
10	Omya	Leading producer of industrial minerals - calcium carbonate-based and dolomite-based filling agents and pigments- and major distributor of various chemicals.	Chemistry, new materials	www.omya.ru/
11	Albis	Russian office of Swiss company focusing on thermoplastic production in Europe	Chemistry, new materials	www.albis.com/
12	Firmenich	Global leader in the development and production of aromatic substances for perfumery and food industries	Chemistry, new materials	www.firmenich.com/
13	Kalekim	Russian office of Kale group, manufacturer of materials for construction and decoration	Chemistry, new materials	www.kalekim.ru/
14	Ashland	Branch of international chemical company Ashland, first Russian manufacturer of polyacrylamide	Chemistry, new materials	www.ashland.com/
15	Forbo	Subsidiary of Forbo group, large manufacturer of floor coverings, constructive chemicals and industrial glues	Chemistry, new materials	www.forbo-stroitech.ru/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
16	Ferro	Large international manufacturer of coatings and paints for ceramics and other polymers	Chemistry, new materials	www.ferro.com/
17	Styrolution	German manufacturer of styrol-based materials	Chemistry, new materials	https://www.styrolution.com/
18	Karpov Chemical Plant	Manufacturer of inorganic chemistry products, technical, food and reagent's qualification, medical preparations, substances and constructive materials	Chemistry, new materials	www.karpovchem.ru/
19	Nizhnekamskneftekhim	Major petrochemical company leading in the production of synthetic resins and plastics in the Russian Federation. Member of Taif Group.	Chemistry, new materials	www.nknh.ru/
20	Kazanorgsintez	Large chemical company that produces more than 38% of the whole Russian polyethylene and extensively exports its production	Chemistry, new materials	www.kazanorgsintez.ru/
21	Akrikhin	Pharmaceutical company is included in TOP-10 large manufacturers of medicines in Russia	Medicine, Biology, Pharmaceuticals, Chemistry	http://akrikhin.ru/
22	AstraZeneca	Factory of AstraZeneca Group in Kaluga district	Medicine, Biology, Pharmaceuticals, Chemistry	www.astrazeneca.ru/
23	Bayer	One of major global chemical and pharmaceutical companies	Medicine, Biology, Pharmaceuticals, Chemistry	http://bayer.ru/
24	GlaxoSmithKline	One of leading international pharmaceutical companies	Medicine, Biology, Pharmaceuticals, Chemistry	www.glaxosmithkline.ru/
25	Intervet	Merck office in Russia dealing with the production of medicines and vaccines for pets	Medicine, Biology, Pharmaceuticals, Chemistry	www.msd-animal-health.ru/
26	SmithKline Beecham-Biomed	Subdivision of GlaxoSmithKline producing vaccines in Russia	Medicine, Biology, Pharmaceuticals, Chemistry	www.glaxosmithkline.ru/
27	MSD (Merck)	MSD are subdivisions of Merck, large pharmaceutical company located outside the USA and Canada	Medicine, Biology, Pharmaceuticals, Chemistry	www.msd.ru/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
28	Synthes	Swiss manufacturer of medical equipment recently introduced to Johnson&Johnson Group	Medicine, Biology, Pharmaceuticals, Chemistry	www.synthes.com/sites/intl/RU/
29	Teva	Israel pharmacological company producing more than 1400 medicines and chemical substances	Medicine, Biology, Pharmaceuticals, Chemistry	www.teva.ru/
30	Roche	One of world leading companies in pharmaceuticals, leader in <i>in vitro</i> diagnostics and histodiagnosis of cancer	Medicine, Biology, Pharmaceuticals, Chemistry	www.roche.ru/
31	Royal Dutch Shell	One of world major oil and gas companies	Medicine, Biology, Pharmaceuticals, Chemistry	www.shell.com.ru/
32	Baxter	American healthcare company with focus on of hemophilia, kidney and immune diseases treatment	Medicine, Biology, Pharmaceuticals, Chemistry	www.baxter.com.ru/
33	Berlin-Chemie	Russian office of Menarini Group, developer and manufacturer of medicines	Medicine, Biology, Pharmaceuticals, Chemistry	http://berlin-chemie.ru/
34	Bio-rad	International pharmacological company specializing in clinical diagnostics	Medicine, Biology, Pharmaceuticals, Chemistry	www.bio-rad.com/
35	Omega-Bittner	Manufacturer of medicines and biological supplements	Medicine, Biology, Pharmaceuticals, Chemistry	www.omega-bittner.ru/
36	Hematek	Manufacturer of infusion solutions, member of B.Braun Group	Medicine, Biology, Pharmaceuticals, Chemistry	www.gematek.ru/
37	Berlin-pharma	Berlin-Hemi/ Menarini plant in Kaluga Region	Medicine, Biology, Pharmaceuticals, Chemistry	www.berlin-chemie.ru/
38	Akvion	Russian manufacturer of vitamin supplements and preventive drugs	Medicine, Biology, Pharmaceuticals, Chemistry	www.akvion.ru/
39	Serdix	Pharmaceutical enterprise of Servier Group in Russia	Medicine, Biology,	www.servier.ru/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
			Pharmaceutics, Chemistry	
40	Abbott	One of the world's leading pharmaceutical companies	Medicine, Biology, Pharmaceutics, Chemistry	http://abbott-russia.ru/
41	Actelion	Russian office of Swiss company focused on medical research and medicines development	Medicine, Biology, Pharmaceutics, Chemistry	www.actelion.com/
42	AstraZeneca	Global pharmaceutical company with offices in more than 100 countries	Medicine, Biology, Pharmaceutics, Chemistry	www.astrazeneca.com/
43	Nearmedic	Manufacturer of medicines and distributor of medical equipment. Group includes a network of clinics	Medicine, Biology, Pharmaceutics, Chemistry	www.nearmedic.ru/
44	Orion Pharma	Finnish R&D pharmaceutical company focused on the development and production of ready-made medicines and substances	Medicine, Biology, Pharmaceutics, Chemistry	http://orionpharma.ru/
45	Actavis	International company developing medicines in gastroenterology, gynecology, urology, cardio-vascular and respiratory systems for patients with central nervous system diseases	Medicine, Biology, Pharmaceutics, Chemistry	www.actavis.ru/
46	Alfa Wassermann	Russian office of the Italian pharmaceutical company	Medicine, Biology, Pharmaceutics, Chemistry	http://alfawassermann.ru/
47	Gedeon-Richter	Hungarian pharmaceutical company, major manufacturer of medicines in the Eastern Europe	Medicine, Biology, Pharmaceutics, Chemistry	www.rg-rus.ru/
48	R-Farm	Major Russian developer and manufacturer of medicines	Medicine, Biology, Pharmaceutics, Chemistry	www.r-farm.com/
49	Biocodex	International pharmaceutical company, medicines and probiotics manufacturer	Medicine, Biology, Pharmaceutics, Chemistry	http://ru.biocodex.com/ru/
50	Sotex	One of the leading manufacturers of medicines, member of Protek Group	Medicine, Biology, Pharmaceutics, Chem-	www.sotex.ru/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
			istry	
51	Valenta	Russian producer of medicines. Member of Otechestvennye Lekarstva Group.	Medicine, Biology, Pharmaceuticals, Chemistry	www.valentapharm.com/
52	Zambon	Office of the Italian pharmaceutical company specializing in pain killers and medicines for respiratory diseases	Medicine, Biology, Pharmaceuticals, Chemistry	http://zambon.ru/
53	Tatkhim-pharmpreparaty	Governmental company with two plants for medicines production	Medicine, Biology, Pharmaceuticals, Chemistry	www.tatpharm.ru/
54	SIA	One of the leading Russian pharmaceutical distributors	Medicine, Biology, Pharmaceuticals, Chemistry	www.siamed.ru/
55	F-Sintez	Pharmaceutical enterprise located in Krasnogorsk district, Moscow region	Medicine, Biology, Pharmaceuticals, Chemistry	http://f-sintez.ru/
56	Ford-Sollers Elabuga	Ford and Sollers joint enterprise focused on the automobile production, plant in Economic Zone <i>Alabuga</i>	IT and technologies, new materials	www.sollers-auto.com/ru
57	ThyssenKrupp Materials	Russian subdivision of a large metallurgic and machine building company dealing with production and marketing of rolled steel	IT and technologies, new materials	www.tkmr.ru/
58	ABB	One of the world leaders in electric and power engineering equipment and production automation	IT and technologies, new materials	http://new.abb.com/ru/
59	Denso	Japanese machine building company specializing in car parts and equipment	IT and technologies, new materials	www.denso.ru/
60	Draeger	Russian office of the German company Draeger, manufacturer of medical technics and individual protection equipment	IT and technologies, new materials	www.draeger.com/sites/ru_ru/
61	Marcegaglia	International metallurgic company producing rolled metal products, pipes and metal constructions	IT and technologies, new materials	www.marcegaglia.ru/site/
62	Kazan Optic-Mechanical Zavod (KOMZ-Baigish)	Factory producing optic equipment in Kazan	IT and technologies, new materials	www.komz.su/
63	Radiopribor	Leading Russian defense complex developer and manufacturer of airborne electronic equipment for civil and military aviation	IT and technologies, new materials	www.rp-kzn.ru/
64	State Research Centre	Manufacturing unit for aviation industry	IT and technologies,	www.priborist.net/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
	Concern CSRI El-ektropribor		new materials	
65	Nvidia	World leader in producing graphics processing units and computer graphics equipment	IT and technologies, new materials	www.nvidia.ru/
66	Toyota	World leader in automobile industry, owner of R&D network	IT and technologies, new materials	www.toyota.ru/
67	BMW	World leader in automobile production	IT and technologies, new materials	www.bmw.ru/
68	Gazprom Promgaz	Research and project institute of JSC «Gazprom»	IT and technologies, oil extraction, petro-chemistry	http://promgaz.gazprom.ru/
69	Alnas	Pipeline equipment (electric-centrifugal pumps for oil companies) producing factory located in Almetyevsk, a member of Rimera group	IT and technologies, oil extraction, petro-chemistry	www.alnas.ru/
70	Tatneft	One of the largest Russian oil companies	IT and technologies, oil extraction, petro-chemistry	www.tatneft.ru/
71	Neftepromhim	Research institute specialized in technologies for oil industry	IT and technologies, oil extraction, petro-chemistry	www.neftpx.ru/
72	GE Healthcare	Subdivision of General Electric specialized in medical equipment	IT and technologies, medicine	www3.gehealthcare.ru/
73	Johnson&Johnson	A large manufacturer of cosmetic, sanitary and hygiene goods, medical equipment	IT and technologies, medicine	www.jnj.ru/
74	B. Braun	German medical and pharmaceutic device company	IT and technologies, medicine	www.bbraun.ru/
75	B. Braun Avitum	Subdivision of B.Braun specialized in equipment supply for hemodialysis and dialysis services	IT and technologies, medicine	www.bbraun-avitum.ru/
76	Thermo Fisher	Producer and supplier of equipment for clinic laboratory diagnostics and research in biology and medicine	IT and technologies, medicine	www.thermo.com.ru/
77	3M	Multi-profile century-old international corporation annually investing approximately \$1.4 bln to R&D	IT and communication technologies	www.3m.com/
78	Cisco Systems	World leader in network technologies	IT and communication technologies	www.cisco.com/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
79	Microsoft Corporation	One of the leaders in software development	IT and communication technologies	www.microsoft.ru/
80	IBM	One of the world leaders in IT	IT and communication technologies	www.ibm.com/ru/ru/
81	Schneider Electric	Международная машиностроительная компания, один из лидеров в области управления электроэнергией	IT and communication technologies	http://schneider-electric.com/
82	General Electric	Global multi-industry company with subdivisions in machine building, energetics, transport, health care and finance	IT and communication technologies	www.ge.com/ru/
83	E.ON	Group of five GRES (regional power stations) acquired by E.ON, German energetics company	IT and communication technologies	http://eon-russia.ru/
84	Google	One of the world leaders in IT	IT and communication technologies	www.google.com/
85	Eni	Russian subdivision of one of the large Italian energetic companies	IT and communication technologies	www.eni.com/
86	Robert Bosch	One of the leaders in automobile and industrial technologies, producer of household appliances	IT and communication technologies	www.bosch.ru/
87	Alstom	French machine-building company, one of the world leading producers of power-engineering equipment and railway transport	IT and communication technologies	www.alstom.com/
88	Hitachi	Japanese conglomerate producing industrial, medical, construction, household appliances	IT and communication technologies	www.hitachi.ru/
89	Intel	World leading producer of microprocessors	IT and communication technologies	www.intel.ru/
90	Valiant	International company specialized in solutions for heating, ventilation and air conditioning	IT and communication technologies	www.vaillant.ru/
91	Яндекс (Yandex)	One of the Russian leaders in IT	IT and communication technologies	www.yandex.ru/
92	Kazan Helicopter Factory	Producer of military and civil helicopters	IT and communication technologies	www.russianhelicopters.aero/ru/kvz/
93	Tattelecom	The largest operator of wire telecommunications in Tatarstan	IT and communication technologies	www.tattelecom.ru/
94	JSC Generating Company	Regional generating company in Tatarstan, one the largest in Russia	IT and communication technologies	http://tatgencom.ru/
95	Mail.ru Group	One of the largest Russian Internet-companies, owner of social networks Vkontakte and Odnoklassniki	IT and communication technologies	http://mail.ru/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
96	OpenWay	International company, developer of software for payment systems	IT and communication technologies	www.openwaygroup.com/
97	Acronis	Developer of software for data back-up and information security	IT и технологии, коммуникации	http://acronis.ru/
98	ABBYY	Developer of software for image recognition and translation into foreign languages	IT and communication technologies	www.abbyy.ru/
99	Helwett Packard	One of the largest producers of computers servers and software	IT and communication technologies	www.hp.ru/
100	Energy Consulting	Российская компания, специализирующаяся на консалтинге в области ИТ, а также оказывающая услуги аудита, оценки и управленческого консультирования	IT and communication technologies	www.ec-group.ru/
101	IBS Group	One of the leaders in system integration and software development on the Russian market	IT and communication technologies	www.ibs.ru/
102	Megafon	One of the three largest Russian mobile networks providers	IT and communication technologies	www.megafon.ru/
103	JSC Vypelkom	One of the three largest Russian mobile networks providers	IT and communication technologies	http://beeline.ru/
104	MTS	One of the three largest Russian mobile networks providers	IT and communication technologies	www.company.mts.ru/
105	Rushydro	One of the largest Russian power holdings, a leader in power production on the basis of renewable sources	IT and communication technologies	www.rushydro.ru/
106	Oracle	Large developer and integrator of ERP-systems	IT and communication technologies	www.oracle.com/ru/
107	Rostelecom	One of the largest Russian and European telecommunication companies, the leading Russian provider of broadband services access and toll-TV	IT and communication technologies	www.rostelecom.ru/
108	Dell	Producer of consumer electronics	IT and communication technologies	www.dell.ru/
109	LG	Producer of consumer electronics	IT and communication technologies	www.lg.ru/
110	Canon	Producer of consumer electronics	IT and communication technologies	www.canon.ru/
111	Siemens	Transnational concern: electronics, electrical technologies, power equipment, transport, medical appliances and lighting technologies	IT and communication technologies	http://siemens.ru/

No	Company's name	Description of initiatives	Areas for cooperation	Web-site
112	Lenovo	Producer of consumer electronics	IT and communication technologies	www.lenovo.com/ru/ru/
113	Panasonic	Producer of consumer electronics	IT and communication technologies	www.panasonic.com/ru/
114	Philips	Producer of consumer electronics	IT and communication technologies	http://philips.com/
115	Fujitsu	Japanese leader of ICT market	IT and communication technologies	www.fujitsu.com/ru/
116	Sony	Producer of consumer electronics	IT and communication technologies	www.sony.ru/
117	McAfee	Large producer of anti-virus solutions	IT and communication technologies	www.mcafee.com/ru/
118	PayPal	The largest electronic payment system	IT and communication technologies	https://www.paypal.com/
119	Dr.Web	Large Russian software developer in information security	IT and communication technologies	http://drweb.com/
120	Symantec	Large international software developer in information security	IT and communication technologies	www.symantec.com/