

ANNUAL REPORT 2019





**OPEN
INNOVATIONS**

October 21-23, 2019

**VIII MOSCOW INTERNATIONAL FORUM
“OPEN INNOVATIONS”**

**DIGITAL
NATION.
LEAP FORWARD
TO INTELLIGENT
ECONOMY**

14+

#OI2019

20 000
visitors

90
countries

800
speakers

220
Startup station project

200+
events

1000+
journalists

+7 (495) 956 00 33
SKOLKOVO INNOVATION CENTER

OPENINNOVATIONS.RU
OPENINNOVATIONS@SK.RU

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VIKTOR VEKSELBERG,
Chairman of the Board of Directors of Skolkovo Foundation

"Skolkovo is an international, open and transparent project, a venue for international cooperation, a channel for interaction between Russia and the rest of the world, for sharing human resources, ideas, contacts among talented young people. We see our project as a way to the future and we are looking forward to building this future together with you.

Skolkovo is beyond today. It is beyond tomorrow. It is about the day after tomorrow. The history of our country has left of birthmarks of sorts on our personality; we want our children to be free of them".



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ARKADY DVORKOVICH,
Chairman of the Skolkovo Foundation

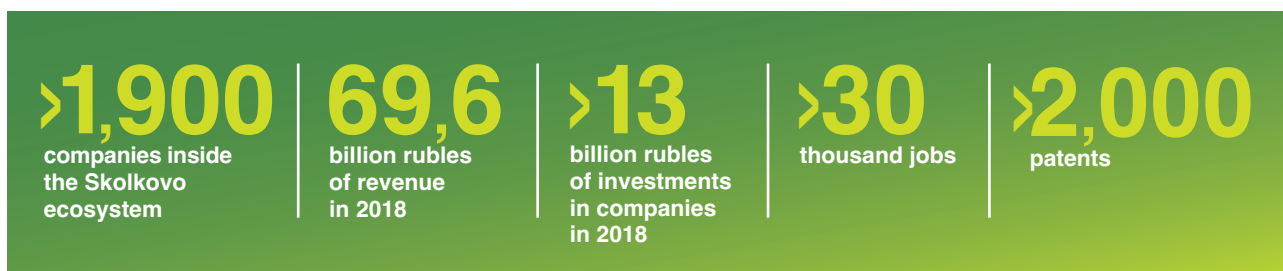
"By the end of 2018 we had approximately 2,000 startup companies running, 50% of them – in Moscow and in Moscow Region, the other half – throughout the whole territory of Russia. Skolkovo is an 'umbrella' and a legal basis for small innovative companies almost in all regions of Russia. Most of our startups are earning (their) money, many of them have already earned their revenues, many have profit which means they are on a stable growth trajectory, some of them are exporting their products".





OUTCOME OF THE SKOLKOVO ECOSYSTEM DEVELOPMENT

STARTUPS



MILESTONES OF THE SKOLKOVO ECOSYSTEM DEVELOPMENT

2010–2012

Reaching the chain-reacting amount of ecosystem elements.

2013–2015

Improving the quality of ecosystem elements and ensuring their integration.

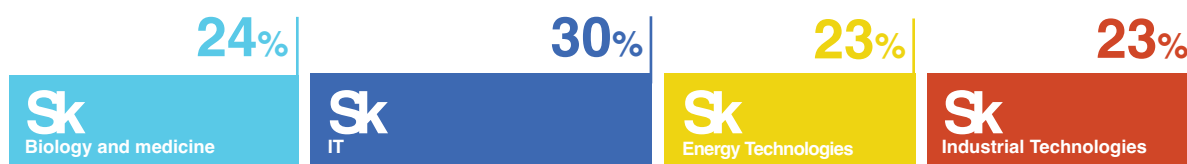
2016 and later

Moving transition to self-development stage, revealing the commercialization capabilities.

SUPPORT MEASURES FOR THE SKOLKOVO PROJECT PARTICIPANTS



SKOLKOVO PROJECT PARTICIPANTS BREAKDOWN BY CLUSTERS



ACCELERATION PROGRAMS

The major criteria of success when delivering support services for mature projects is their outcome in the form of signing a full-scale commercial contract with one of the Foundation's commercial partners.



Acceleration programs are used by companies at different maturity stages:

- incubation,
- acceleration,
- industrialization.

The Skolkovo Foundation is building and deploying both own and partnership programs to ensure a complete package of support measures from the concept origination stage to the market launch stage:

- We offer an individual 'focused' plan of development for a startup company.
- It includes defining the strategy, identifying the weaknesses and choosing a 'critical' path of the project development.
- The project managers from the Foundation's clusters work individually with the project team to ensure control over the plan execution (tracking).

■ Those startup companies which are already at later stages of development get dedicated support from the acceleration directors to ensure the launch of their products and solutions into the market.

■ They develop a commercialization strategy and create a project team comprised of members who possess research and entrepreneurial competencies.

■ At early stages the funding for startup companies includes micro- and mini-grants to pay for services and access to infrastructure facilities, also seed funding and business angels are employed at these stages.

■ Industrial startup companies are supported by marketing and sales centers of competence.

■ Skolkovo Venture Investments is the Foundation's subsidiary which is in charge of mentor support for technology-based startups to proceed with venture fund raising.

■ For startup companies we ensure high involvement in the interaction with industrial partners.

During the whole period of operations of the Skolkovo Foundation:

>20,000

applications from innovative projects have been reviewed

>2,500

startups have been successfully awarded with a Participant status

>70%

out of startups — early stage projects



INDIVIDUAL ACCELERATION

One of the most efficient measures of support offered for Skolkovo residents is finding customers and identifying markets for young teams.

VIZITEK is working on the implementation of an integrated security system at industrial enterprises. The system is intended to enhance effectiveness of industrial and occupational safety management. With the support of the acceleration director, a pilot operation project was launched, followed by a commercialization stage, price of the first contract was over RUB 40,000,000.

Digital Solutions NPP is an engineering company which is engaged in designing microcircuitry and radio-electronics for extreme operational conditions. As a result of using our acceleration program this company became a winner of the competition held by the Ministry of Industry and Trade and signed a RUB 500,000,000 contract.



Twins Technologies is working on the development of hard- and software suite for industrial equipment monitoring with predictive analytics functionality. Following the results of our acceleration program they have launched a project where their monitoring system will be deployed at the enterprises belonging to Russian Helicopters JSC, contracts with the companies from OAK and ROSATOM groups are in progress.

The Skolkovo Foundation started offering individual acceleration in late 2017 as a trial run, in 2018 this initiative was running at a 100% capacity. About 100 individual acceleration contracts have been signed, which resulted in the growing revenues of Skolkovo residents.

Predictive Technologies LLC turned to IT Cluster for assistance in finding opportunities for the commercialization of their innovative solution — a technology for the predictive analysis of customer behavior. Their cooperative efforts together with our acceleration director made it possible to find an opportunity to arrange a pilot run for their project which resulted in signing a seven-digit contract with one of the largest retail networks country-wide.

With the support of our Individual Acceleration Fund, **LIIS Engineering Solutions**, a company offering innovative 'smart home' solutions, managed to increase their revenues by 12 times (over RUB 600,000,000) during 2017–2018. Now the Europe's largest office facilities are among their customers, enjoying the company's solutions.



SKOLKOVO FOR INDUSTRIAL COMPANIES

Industrial companies play a key role in building and developing innovation centers. Over 100 companies are the partners of the Skolkovo Foundation, and over 500 companies are involved one way or another in the activities inside the Skolkovo ecosystem. Industrial partners are doing research and establishing R&D centers, they are also developing the market for technology solutions offered by startup companies.

Inside the Skolkovo
IC territory:

45

companies located
their R&D centers

1,200 sqm

total area of
R&D centers

3

new centers are
to be launched in 2019



R&D Center of SIBUR Holding PJSC has been established as an international venue to enable specialists in polymer production and processing to communicate and share experience.

5,300 sqm of gross floor area.
RUB 737,000,000 is the total cost
of installed equipment.

R&D Center of Tatneft PJSC will deal with oil production and oil extraction technologies, methods of determination of viscosity of heavy oils in reservoirs.

9,900 sqm of gross floor area.
2,700 sqm of labs.

R&D Center of Pipe Metallurgical Company PJSC will be dealing with development of technologies for production, exploration, transportation of hydrocarbons, improving the efficiency of the main technological processes in the ferrous metal industry.

16,200 sqm of gross floor area.
4,100 sqm of labs.
RUB 637,000,000 is the total cost
of installed equipment.



SKOLKOVO ADVANTAGES FOR INDUSTRIAL COMPANIES

UNIQUE COMPETENCIES TO WORK WITH NEW HI-TECH BUSINESSES

- The technology portfolio is the largest in Russia: over 1900 startups which passed the project evaluation in the following areas: biotechnologies, IT, energy-efficient and advanced industrial technologies, 30+ new applications a week;
- An essential part of startups are active (profitable, running) businesses; the total annual revenue of this portfolio exceeds RUB 55 billion.

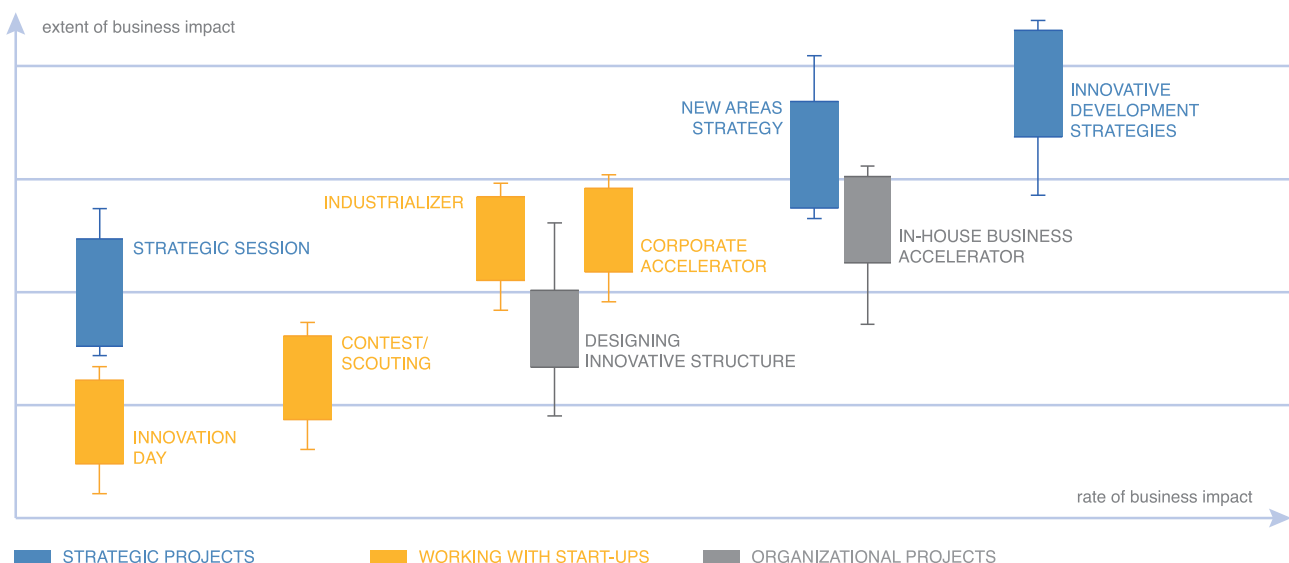
UNIQUE COMPETENCIES IN SEARCHING AND EVALUATION OF INNOVATIVE SOLUTIONS

- 6,500+ applications have been reviewed during the contest and assigning the resident status in 2018, all of the key Russian research centers were included in our search outreach.
- Our Expert Board is the largest in Eastern Europe, we provide technical and commercial evaluation of new projects: over 700 experts who revised over 15,000 applications from startups.
- The Foundation's Cluster Team is a combination of outstanding scientific and technological competencies, industry insights, a broad range of contacts and significant experience in dealing with innovations.

INFRASTRUCTURE FOR SUPPORT OF CORPORATIONS WHEN DEALING WITH 'OPEN INNOVATIONS'

- The competencies of the Cluster Team allow the Foundation to be a unique intermediary link between small technology-based companies and larger corporations.
- 200+ projects have passed the preparatory stage and introduced their projects to industrial customers in 2018 in the context of acceleration programs and competitions.

CHOOSING THE MODEL OF INTERACTION WITH OPEN INNOVATIONS



CORPORATE ACCELERATION PROGRAMS



A portfolio of the Foundation's corporate programs offers to the partners a choice of products and allows to move forward taking into account the required extent and rate of business impact:

Short demo-days to learn about innovative solutions



Innovative contests and accelerators



Complex strategic programs for implementation of the found solutions

UNIQUE ADVANTAGES OF THE FOUNDATION:

- **experience of successful implementation of corporate programs:** over 12 programs intended to find innovative solutions were implemented during 2018;
- **a vast database with next-generation projects which have been reviewed by experts:** over 1,900 startups;
- **competencies of the Foundation's Board of Experts:** over 700 experts with competencies in science, technology and business;
- **professional team:** 25 specialists.



CORPORATE ACCELERATOR



IN THE CONTEXT OF ACCELERATION PROGRAMS

A corporate acceleration program includes detailed review of the Partner's innovative tasks and methods of handling innovations in general, in accordance with these methods a profile of requirements to the participants and the program content are formed. The goal of acceleration at this stage is to ensure the balance between

the solutions offered by startups and the customer's needs, to assist in building interaction with the teams to proceed with the integration of the found solutions for the business applications.

During 2018 the Skolkovo Foundation successfully completed a number of corporate innovative programs.



ASTRAZENECA ACCELERATION PROGRAM – SKOLKOVO STARTUP CHALLENGE 2018

In April 2018 the Skolkovo Foundation and AstraZeneca International Biopharmaceutical Company launched a joint acceleration program for scouting and supporting projects at early and late stages in the field for developing methods for treatments of cancer, cardiovascular, respiratory and autoimmune diseases, metabolic and kidney diseases.

The scientific partners of the program are MIFI National Research Nuclear University and Siberian State Medical University. The program's venture partner is Primer Capital Foundation.

Under the supervision of scientific mentors from AstraZeneca two acceleration tracks were arranged: laboratory research and business skills development. Mentorship allowed the program participants to review their approach to carrying out scientific research and speed up practical results.

- over **140** applications received
- **30** project have been selected for a final stage of the contest
- **3** winners were granted the Skolkovo Project Participant Status
- **2** startups were supported with grants
- **5** projects were presented at Innovation Future Healthcare Forum (Cambridge).
- **3** startups continue scientific cooperation with AstraZeneca.



S7 STARTUP CHALLENGE – AN INNOVATIVE PROJECTS COMPETITION



S7 Airlines and the Skolkovo Foundation arranged a joint competition to attract innovative projects in the field of digital and industrial technologies. The winners could enjoy investment support from S7 Group and further commercial partnership with the airline, also money prizes from S7 Group and grants from the Skolkovo Foundation were promised to the winners.

The project was open for projects at all stages: from the concept origination to the running businesses. Following the results of the acceleration program S7 Group was provided with a market profile of innovative IT and industrial solutions in aerospace industry.

- over **600** applications received
- **60** teams have passed been selected for participation in a semi-final stage
- **20** teams have been invited to participate in the final pitch sessions
- **3** winners have been selected for pilot implementation of their solutions with S7.



IC ITECO ACCELERATION PROGRAM FOR FINTECH AND RETAIL CLUSTERS.

The goal of IC ITECO Acceleration Program which is Skolkovo resident and partner, was to expand the company's product portfolio by employing hi-tech project in FinTech and Retail areas.

- **10** innovative teams spent 2 months working with mentors and ITECO representatives and participating in workshops and trainings.
- **2** startups have signed agreements with IC ITECO.
- The demo-day resulted in RUB **90,000,000** of investments.

АЙТЕКО
ИННОВАЦИОННЫЙ ЦЕНТР



IN THE CONTEXT OF ACCELERATION PROGRAMS

«KHIMPROM STARTUP CHALLENGE 2018»

In December 2018 the Khimprom Startup Challenge 2018 — chemical technologies scouting — was finished. The development strategy of KHIMPROM PJSC, a leading Russian chemical company, includes refurbishment of production facilities and supplementing the product portfolio with advanced technology solutions. The outcome of the program for KHIMPROM PJSC were updated links with industry institutions, developers and universities. In 2019 three winning projects are preparing to get the Foundation's grants to support a trial run of their solutions for the benefit of Khimprom PJSC.

- **35** R&D institutions and universities were participating
- **137** application have been reviewed by Skolkovo and Khimprom experts
- **112** application were approved
- **15** finalists have passed a preparatory program to address the tasks offered by Khimprom



SERGEY NAUMAN,
Director General, Khimprom PJSC

“For us this competition is one of very important milestones, but this is just a beginning. I hope we'll meet many of the participants some time later and discuss possible cooperation scenarios. We put so much effort into Khimprom's conversion so that our enterprise would efficiently offer products which are in demand in the market.”

ENERGOPRORYV-2018



VIKTOR NABOICHENKO, ENEL Russia:

“Our company highly appreciates the importance of Energoproryv, the competition areas are all at the leading edge of global innovative developments”.

In 2018 the annual round of “Energoproryv-2018” took place. This event is an all-Russian competition aimed at scouting break-through projects capable of building a next-gen electric energy system in Russia. The competition is supported by Skolkovo and Rosseti PJSC under the auspices of the Ministry of Energy of the Russian Federation and Strategic Initiatives Agency.

The key areas of the competition are: “Improvement Technologies”, “Breakthrough Technologies”, “Future power engineers”. For many years this competition has become an integral part of innovative development ecosystem with Rosseti PJSC.

- **384** applications have been received
- **22** companies participated during face-to-face selection
- **12** teams have passed to a final stage, **6** of them were Skolkovo residents.



TVEL

In 2018 a project was finished which was arranged by TVEL JSC and aimed at handling in-house innovative teams. The project goal was to find the new development areas, to establish hi-tech production enterprises and increase revenues from the new businesses of TVEL JSC.

The Skolkovo Foundation participated in the project selection and HPP expert review, in implementation of acceleration program: HADI method, traction mapping, exponential growth method.

- 7 finalists have passed customer testing
- 3 finalists passed to the investment stage (scaling, small-batch release of customized products, prototype testing and obtaining Skolkovo Participant status)
- over RUB **295 million** — the share of acknowledged revenues from 7 projects
- over RUB **150 million** are savings achieved when manufacturing models and prototypes.



INTERNATIONAL ACCELERATION

Skolkovo companies can access a wide range of tools to support launching their solutions into global markets:

regular business missions to different countries;

support for the participation in international exhibitions and conferences;

industry-wide programs of international acceleration held together with the leading technology centers worldwide.

International acceleration programs make it possible for Skolkovo participants to go beyond the borders of domestic market and obtain necessary competencies to develop global business, attract international partners and investors to open overseas representative offices and ensure further growth of the company in the global market.

A partner network of Skolkovo international accelerators includes over 60 companies in 17 countries in Europe,

North and South America, Asia and Middle East. According to Forbes and Global Accelerator Report, the tools from this collection are considered to be the best accelerator tools, such as: Y-Combinator, Plug and Play Tech Center, 500 Startups, SOSV and many other.

Numerous industry events and demo-days with partner participation, including those held in the context of the largest international innovation forums at Skolkovo — Startup Village and Open Innovations — contribute to the stability of accelerators community.

Since 2018 microgrants have been offered for Skolkovo companies to participate in the accredited acceleration programs in Russia and abroad. Co-funding is based on the principle of reimbursement of the costs up to RUB 750,000 per one application, this amount covers up to 75% of travel and accommodation costs, and up to 50% of acceleration program costs. Each of the accredited programs is focused on the needs of Skolkovo residents and is not participatory.

Accredited acceleration programs are available in Russia, USA, Europe and China and are represented with such brands as Plug and Play, Venture Out New York, Starta Accelerator, Idea Foundry, Commercialization Reactor, Innway, PuE, Moscow School of Management Skolkovo, FRIL, Synergia and many other.



Microgrants to enable participation in international acceleration programs:

750,000
rubles

of reimbursement
for one application

50

per cent

of the cost of the
program Acceleration

7

programs

of international
acceleration

3

regions of the world

North America,
Europe, Asia



>130

companies were supported

20

companies on contract basis

>50

companies in the pipeline

SUPPORTING EXPANSION TO GLOBAL MARKETS

In 2018 revenues from international sales were recorded with **280** Skolkovo residents, the total amount exceeded RUB **7.16 billion**. Over **130** companies were supported which was a result of the Foundation's effort in developing businesses internationally and facilitating export of hi-tech products offered

by the Skolkovo residents. To achieve this goal the Foundation regularly arranges country-wide and industry-wide business missions, supports the participation of the Skolkovo residents in international exhibitions and conferences, arranges the meetings with international partners in Skolkovo.

TOP 5 INTERNATIONAL EVENTS IN 2018



- 7 countries showing their pavilions
- 50+ foreign startups are among the participants of the exhibition
- 28 foreign startups are participating in the competition
- 12 accelerators from 7 countries



- 21 companies have been selected
- 3 pitch-sessions: Japanese, Middle-Eastern and Indian
- 5 winners, 4 of them are Skolkovo residents



- 20 Skolkovo companies are represented
- Presentations were made for international delegations from China, USA, South Korea, Singapore, Laos, Thailand



- over 100 participants and over 50 embassies/countries
- 26 ambassadors and right-hand men from the embassies
- 8 Skolkovo companies are presented at the exhibition
- 30 guests were participating in a tour round Skolkovo



- 5 Skolkovo companies participated on a contractual basis
- 40+ meetings with corporate top managers and city leaders
- meetings with Huawei, CISCO, Bouygues, Ferrovial, INDRA

Over **1,000** contacts were established during 2018 which contribute to the development of the Foundation's partner network and partner companies abroad.

Leaders of major global corporations, representatives of scientific and innovation institutions, as well as public authorities from many foreign countries visited Skolkovo to learn about the In-

novation Center and the leading edge technology solutions offered by Russian companies. In 2018 over **90** companies participated in **11** business missions which were arranged by the Foundation.

Since 2018 new practices and initiatives have been implemented aimed at promoting the solutions offered by Skolkovo

residents in the global markets, among them are:

■ East Bound — a competition for startups in the context of Open Innovations Forum,

■ pitch-session for Skolkovo startups as part of Abu Dhabi Moscow Investment Forum.

>500

international GR-contracts

>70

delegations from embassies and public agencies visited Skolkovo

>80

foreign embassies in contact with Skolkovo

>30

delegations foreign corporations

8

agreements on cooperation with Skolkovo

REPRESENTATIVE OFFICE OF THE SKOLKOVO FOUNDATION IN CHINA

The representative office of the Skolkovo Foundation in China offers a wide range of services for the residents of the Innovation Center: from advisory support to arranging business missions and finding investors. The major partner in China on a state level is the Chinese Ministry of Science and Technology. We have established partnership with the scientific parks in Beijing, Shanghai, Shenzhen, Harbin, Chengdu, Wuhan, Dalian. Several companies are working in the equipment development in the territory of China.

In 2018 the following business missions were arranged:

- in Retail sector — for Skolkovo partners Russian Post, X5 MVideo, for some

startups — to learn about innovations in the field of e-commerce and retail;

- in Biomedicine sector — for startups producing innovative medications to learn about Chinese regulatory practices to launch new medications in the market;

- in Electronics sector — for Skolkovo residents and partners.

Chinese partners were invited to Skolkovo events in Russia: Robotics Forum, Startup Village, Open Innovations.

Chinese delegations included investors, governmental officials, representatives of industrial companies. Some of the



10 Skolkovo residents were represented at a Russian exhibit booth during the Mobile Congress in Shanghai. The Congress became a venue for the meetings with investors and potential partners, and for a training offered by one of Chinese business schools to learn the basics of doing business with China.

companies sponsored the events. Jack Ma, the Alibaba founder made a speech during the Open Innovations Forum. Investors from China get involved in the housing development of Skolkovo Inno-grad.

>300

Skolkovo residents visited technology parks in China

52

Skolkovo residents got interested in technology parks in China

>60

Skolkovo residents were represented Chinese exhibitions

Tion is delivering air revitalization systems to Chinese schools
Geosplit has started a large pilot project with the National Oil Corporation of China

>30

companies are negotiating with Chinese investors

3

companies received investments from Chinese investors

>10

Skolkovo residents opened their offices and representative offices in China

10

residents applied for participation in the programs

INTERACTION WITH CIS

Skolkovo Participants have expanded their outreach in the CIS. Revenues in CIS — over RUB **1 billion**.

In 2018 **20** high-ranking delegations from Kazakhstan (N. Nigmatullin, a Majlis speaker, members of government), Belarus (Chairman of the State Science and Technology Committee, cabinet ministers) visited the Skolkovo Foundation. Delegations from Armenia, Kyrgyzstan and Uzbekistan were also high-ranking.

Over **100** Skolkovo participants are interested in scaling their businesses in CIS. Vist Mining Technology, Ya-Class, GlobalLab have significantly expanded their outreach in CIS. Integra-C, Eidos Medicine, Synezis, Group IB and other companies.

In Kazakhstan, Belarus, Armenia, Uzbekistan public authorities and development institutions have started preparing conditions for transfer of

technologies developed by Skolkovo participants to their countries. In 2018 **12** projects participants implemented their solutions in CIS, in particular such companies as GlobalLab, QRepublic, Synezis, Vizitek and other.

Over **80** companies from CIS have applied to become participants of the Skolkovo Project.





Skolkovo Intellectual Property Centre (IPC) was established in 2011. The team of the center includes more than 40 lawyers and patent attorneys providing the full range of professional services to

the participants of the Skolkovo project and to third parties with legal advice and patenting in Russia and abroad.

PROTECTION OF INTELLECTUAL PROPERTY AND TRANSACTIONS STRUCTURING

IPC OPERATIONAL OUTCOME

>650

applications

for registration of intellectual property objects, patent attorneys of the IPC "Skolkovo" prepared and filed.

>270

applications

of the total filed for obtaining patents abroad.

>200

patents

received in 2018.

150

foreign patents

Skolkovo participants in 2018, including those received with IPC support.



CUSTOMS AND FINANCIAL COMPANY

Importing Stemme S12 aircraft (able to fly using accumulated solar energy) for TEEMP LLC to carry out test of condensers in the context of their project involving development of energy-efficient and energy-saving products.



2018 RESULTS

A range of products processed and delivered by Customs and Financial Company is rather wide and various:

- chemical reagents,
- biological substances,
- samples of oil products,
- technological equipment,
- machinery and self-propelled machines,
- space and flying vehicles,
- laboratory furniture etc.

Customs and Financial Company was also engaged in importing equipment, construction materials required for completion of Skoltech construction operations, and to support importing personal belongings of Skoltech's faculty members.

2018 KEY FIGURES

1,061
application

were made by Customs and Financial Company

1,092
items

transferred and processed for the benefit of Skolkovo Skolkovo

2,1
billion rubles

was the total cost of goods transferred and processed by Customs and Financial Company

417.2
million rubles

was the amount of reimbursed customs payments





Dauria - Satellite Technologies LLC: was supplied with AURIGA space vehicle components to develop a low-cost and quick-assembled platform for small space vehicles.



Enel X Rus LLC have received charging stations for electric vehicles from the USA and Italy. These products will be introduced in the Russian market after some fine-tuning.

■ **Insilico LLC** was supplied with vitaferin A to proceed with manufacturing pilot batches of pharmaceutical substances.

■ **MNT LLC** was supplied with monomethyl auristatin E for scanning ion-conducting microscopy.

■ **Gamma-DNK LLC** was supplied with imported enzyme which was necessary for developing a single-molecule, tag-less, electronic DNA sequencer.

■ **Solvex LLC** was supplied with blue-green unicellular freshwater algae *Spirulina* powder.

■ **Agroplasma LLC** was supplied with a self-propelled vehicle for maize processing to be used in the project "Accelerated creation and seed production of maize hybrids on a fertile basis with the involvement of genomic and cellular technologies".

■ **New Green Technology LLC** was supplied with the sample of oil products and bituminous sandstones to study their composition and major properties.

■ **Svetlana-ROST JSC** was supplied with a model of black body to measure optical parameters of thermal imaging photodetectors.

■ **OKB Fifth Generation LLC** was supplied with a satellite model CUBSAT type for their project "Radiation-resistant control systems for nano/microsatellites".

■ **Technical Center of "SIBUR TRCP" LLC** was supplied with equipment and built-in appliances polyolefins testing under varying process parameters.

EXPORT

On top of import Customs and Financial Company (CFC) successfully handles export of goods to support the activities of Skolkovo residents, including participation in international exhibitions.

■ **AL Technologies LLC** with the assistance of CFC sent their demonstrational prototypes and product samples to Paris to Viva Technology 2018.

■ **Game Systems LLC** exported their Exo Jet amusement ride to Pakistan and USA

■ **Geosplit LLC** could export to China their equipment for marker diagnostics and monitoring of oil and gas well inflow profiles.



For participation in CES 2018 WayRay LLC sent to Las-Vegas their holographic projects and advertising materials. Bosch and Daimler AG delivered to Germany their Mercedes automobile with the installed equipment which was developed by the Skolkovo resident.





EDUCATION: SKOLTECH

Skoltech

Skolkovo Institute of Science and Technology

Skolkovo University of Science and Technology (Skoltech) is part of Skolkovo Project aimed at building the basis for the development of hi-tech industry in Russia. Skoltech act as a 'catalyst' for the

development of advanced research, enhancing entrepreneurial activity, preparing world-class professionals able to work in rapidly changing technology landscape.

2018 PRIORITIES

HUMAN CAPITAL

sustainable growth and development of international academic community

ACADEMIC AND TECHNOLOGY EXCELLENCE

enhancing expertise in priority areas of development

UP-TO-DATE CAMPUS

excellent conditions to study and live in at world's standards level

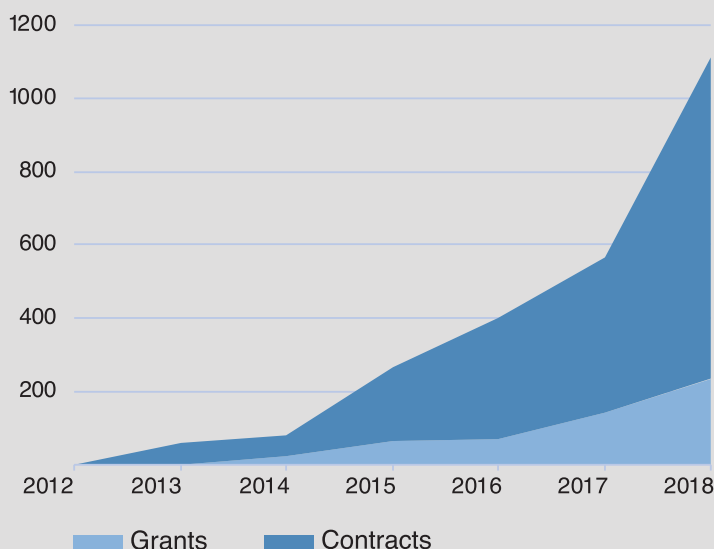
EDUCATIONAL PROGRAMS FEATURING WORLD LEVEL OF COMPETITIVENESS

bringing up leaders in science, technologies and business

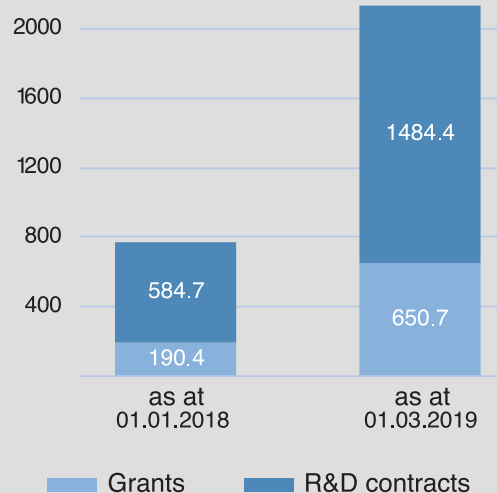


RAISED FUNDS

ANNUAL AMOUNT OF FUNDING
(million rubles)



PROJECT PORTFOLIO
(million rubles)



In 2018 joint labs were launched together with such hi-tech companies as Oerlikon, Huawei, Gazpromneft. Agreement on establishing laboratories with Sberbank, Topcon, Samsung are at the stage of finalization. As a new area Skoltech is planning to develop competencies in digital agriculture technologies.

In 2018 we continued our efforts on developing shared use infrastructure. Shared Use Centers in the field of genomics, Student's Workshop, Bio Visualization and Spectroscopy were running in the temporary campus facilities. HD Visualization and Clean Premises for Micro- and Nano Processing will be opened in the new

campus. SUC for advanced mass-spectrometry will be launched soon. Performance rate of Zhores — a flagship cluster of artificial intelligence and data modelling technologies — can achieve up to 0,5 peta-flops (No 6 in Russia) A supercomputer with a dedicated architecture (104 NVIDIA Tesla V100 GPUs) is intended for machine learning applications. Skoltech has created a portfolio with 101 projects; 6 of them have their PoPs abroad. Companies at Seed and Start-up stages account for 87% of all the projects. At this point most of the projects adhere to B2B and B2C models (92%) with an obvious focus on the development of hi-tech equipment and intelligence services.



Skoltech prioritizes **involvement of young ambitious professors and postdocs from the international academic market and establishing good conditions to enable their career growth.**

27 professors were hired in 2018, mostly from European and US universities. 9 postdocs from Skoltech who managed to demonstrate high level of R&D achievements and who made a significant contribution to the development of Skoltech, became professors.





In 2018 a key Skoltech building was commissioned — the Eastern Ring — a system of buildings with the total area of 136,000 sqm (diameter is 280 m and the height of the buildings is 2–3 floors). This system of buildings will accommodate classrooms, administrative offices and staffrooms, halls for conferences and seminars, a student center, a library, canteens and a cafe, and state-of-the-art research laboratories. Presently Skoltech is moving to a new campus, educational process has

already been relocated, as well as the teams of 2 centers (out of 10). Skoltech is diversifying its academic network by expanding cooperation with the best international universities. We opened laboratories in cooperation with Munich Technical University and the University of Calgary. We share academic knowledge and human resources with 30 universities, mostly from Europe and USA. Representatives of 800 foreign universities and research centers are co-authors of Skoltech science papers.

Skoltech's scientific expert review allowed to raise a record amount of funds in 2018:

1.1
billion rubles

Raised funds made it possible to implement

176
projects

For 2019-2022 contracted

>2
billion rubles



HUMAN CAPITAL

The key task is to attract talented enrollees and to develop a multicultural environment.

In 2018:

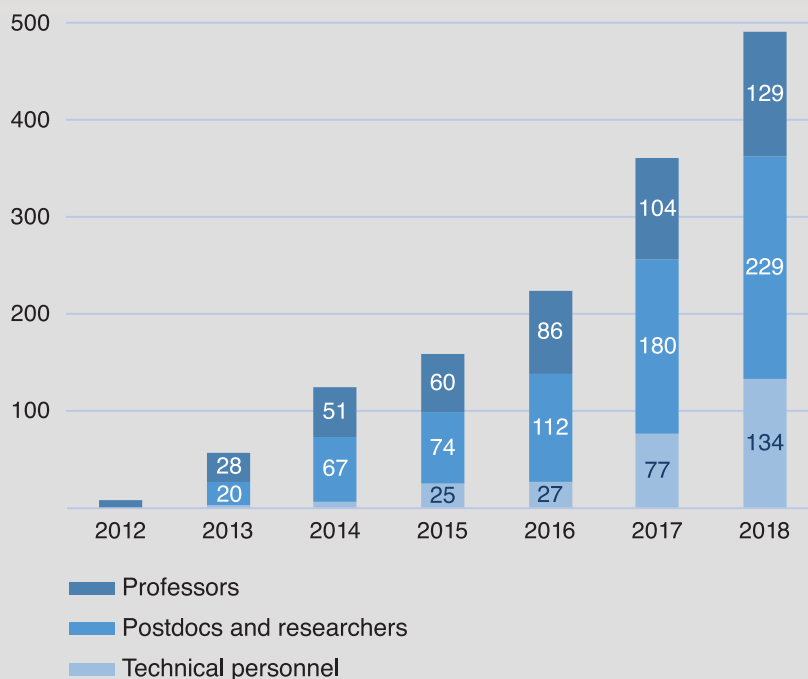
- **>500** enrollees became Skoltech students,
- **1,000** persons is the total number of students,
- **20%** of the students are foreigners,
- **30%** are women,
- **50** students from Munich Technical University, MIPT and other universities have been enrolled as visiting students.

Students Scouting Campaign:

- **65** events,
- **25** cities,
- **6** media-projects,
- Skoltech's Olympiad.

Skoltech's graduate:

- **400** persons,
- **26** countries of the world.



2018 GRADUATES

80%

have launched startups
or are employed by hi-tech
companies or continue their
education in Russia

20%

continue their
education or became
postdocs at the best
universities abroad.



KEY INDICATORS OF SKOLTECH'S DEVELOPMENT

Indicator	2015	2016	2017	2018 plan	2018 actual
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HUMAN CAPITAL

Faculty (number of persons)	60	86	104	120	129
Research assistants (number of persons)	74	112	184	215	229
Students (graduates and postgraduates), number of persons	315	481	706	810	977

ACADEMIC SUPERIORITY

Publications classified in such databases as Web of Science, Scopus etc. (number of publications/number of faculty members)	2,5	4,4	5,6	4,6	5,8
Graduates (number of persons)	51	81	92	180	176
Share of Skoltech graduates involved in innovative activity, %	51	67	67	65	69

CREATING VALUES

External funding (contracted funds), billion rubles	265	348	554,7	1064	1112
Filed patent applications (number of applications/number of faculty members)	–	–	0,2	0,2	0,5
Companies participating in Skolkovo Project	9	12	19	25	26



INTERACTION BETWEEN THE SKOLKOVO FOUNDATION AND SKOLTECH

In 2018 in the context of a key Skolkovo's area of competence which **is developing entrepreneurship and innovations**, and under the support from the Foundation's Department of Science and Education: 26 companies were established and

granted the Skolkovo resident status, 15 teams were provided with advisory support. The Foundation's team participate in providing support to the projects in the context of Skoltech's STRIP program of translational research and innovations.

The Skolkovo Foundation and Skoltech are jointly enhancing collaboration with industrial partners by facilitating the development of new research projects and R&D contracts:

- In 2018 an agreement on R&D collaboration was made with the Foundation's partner — Philips, this agreement made it possible for Skoltech's students to have a long-term internship with Philips;
- In 2018 Skoltech received from Siemens – the Foundation's partner - educational licenses for software intended for learning and research;
- A unique oil and gas laboratory is running at Skoltech, initially this lab was established together with Gazprom-neft, however, today this lab receives tasks from almost all domestic oil companies which are the Foundation's partners, and the laboratory itself intensively works with the

Skolkovo participants. Several new startups have been launched on the basis of the lab's developments.

The Skolkovo Foundation and Skoltech are active participants of some governmental programs and initiatives, such as Digital Economy and National Technology Initiative. The Foundation has become the prime customer for CoBrain-Analytics NTI project implemented at Skoltech.

Skoltech's employees often use SUC services of Technopark. Skoltech has also established several Shared Use Centers, including those with state-of-the-art equipment submitted by Technopark.

The Foundation is intensively involving the technology expertise of the Skoltech's faculty in the cooperation with industrial partners. The staff of the Science and Education Department participates in the transfer of technologies which are developed at Skoltech.





EDUCATION: SKOLKOVO INTERNATIONAL GYMNASIUM

Skolkovo International Gymnasium is a general education private institution using educational programs compliant with the Federal State Educational Standards and standards adhered to by International Baccalaureate schools. The Gymnasium's priority is to maintain nourishing educational environment and to deliver good quality

of education. The Gymnasium uses the best Russian and global practices to promote talents and capabilities of the students, to provide incentives for their continued education in the best Russian and foreign universities followed by further active scientific and research work.

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STUDENTS, TEACHERS, ACCOMPLISHMENTS

TEACHERS AT SKOLKOVO INTERNATIONAL GYMNASIUM

Educational process in the Gymnasium is compliant with the Federal State Educational Standard and International Baccalaureate Programs. Skolkovo International Gymnasium has IB World School status and is authorized according to all IB stages.

- **35** teachers give their classes in English;
- **11** teachers are foreigners (USA, Switzerland, Serbia, Spain);
- **41** teachers have highest or first qualification category;
- **10** candidates of sciences and doctors of sciences;
- **22** teachers have experience of work at international education organizations;
- **78** teachers have experience of work with International Baccalaureate Program.

SUPPLEMENTARY EDUCATION:

Supplementary education offered by the Gymnasium has reached a new level and become one of the prioritized vectors of development:

- **65** areas;
- **867** participants;
- **75** events.

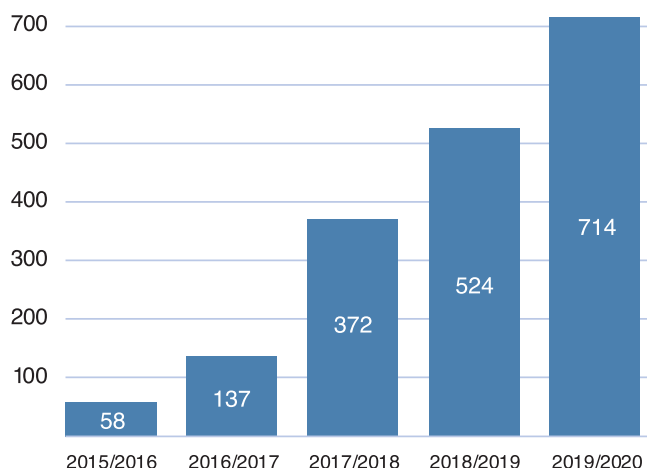
ATTAINMENTS

In 2018 the students from the Skolkovo Gymnasium took 2nd place in the final part of Moscow Masters Championship under WorldSkills standards, and became participants of the Moscow select team. The results demonstrated by the Gymnasium's students in ProeKToriya project are also worth noticing.

A federal level event: launching an all-Russian educational campaign "Digital Class" with the participation of the Minister of Education of the Russian Federation and top managers of the major technology-based companies.

International contacts: MIT, China, Finland, Qatar, Croatia.

NUMBER OF STUDENTS AT SKOLKOVO INTERNATIONAL GYMNASIUM (persons)



TARGET CAPITAL FOUNDATION

The Target Capital Foundation was founded at the Skolkovo International Gymnasium in 2018. The Foundation's mission: to ensure long-term sustainable development of the Gymnasium's educational programs. The Foundation's funds are intended for:

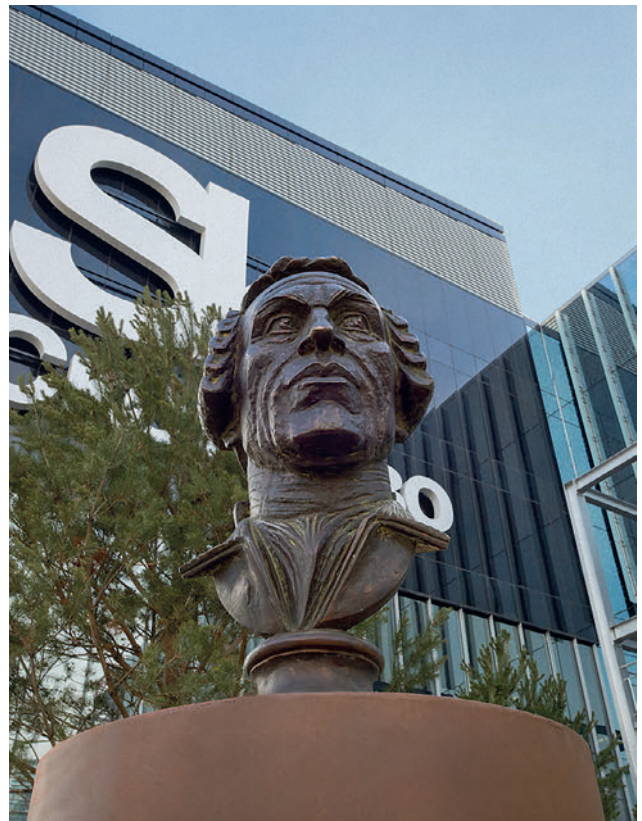
- innovative educational programs;
- improving the Gymnasium's infrastructure;
- ensuring international mobility.

Due to the Foundation's support the students can have internships abroad and participate in international events, be aware of the world's research activities and breakthrough technologies.





SMART ART FOR SMART CITY



The unique externality of the Skolkovo Innovation Center is designed in close interaction with art concept. 14 objects-d'art, 3 monuments and 7 monumental art objects have been installed. Those objects are located in association with the names of the streets and the purposes of the Innograd's systems and structures.

In 2018 the First Open Competition was arranged together with Innopolis (Tatarstan). The goal of this competition was to create the best design of object-d'art to be placed in the territories of innovative development.



OPEN INNOVATIONS STARTUP TOUR

Startup Tour has been held in various cities in Russia since 2011 and is the biggest project of this kind in Russia and CIS. The event is aimed at promoting technology-based entrepreneurship and identifying good innovative projects. The

best market experts - renowned businessmen, mentors, business angels, representatives of venture funds, major technology experts take part in this event. Startup Tour includes the competition of technology-based projects and a broad

educational and conference programs. Startup Tour includes sessions on the global trends and international practices, trainings to enhance the competencies of startup teams working with hi-tech projects.



2018 RESULTS

11

cities participated
in the Tour

1,104

applications were
received

60

hours of mentor
sessions

37,000

kilometers traveled across
Russia the organizers
of the Tour

342

in face-to-face stage
of the competition

35

projects have been
selected for a semi-final
part of Startup Village

7,622

participants

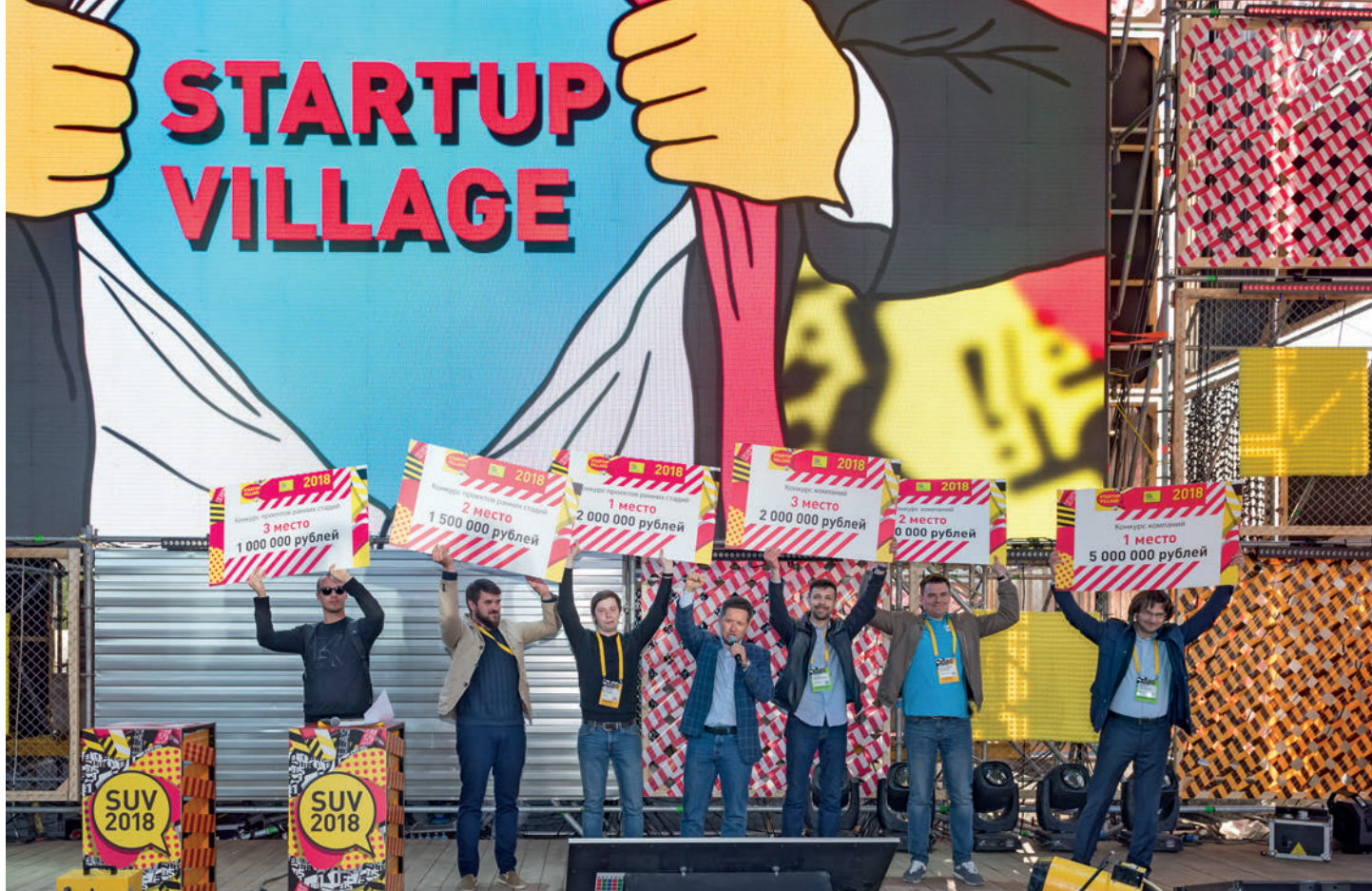
165

educational
sessions

300,000

rubles – the money prize
for a super-finalist
in each of the Tour cities





STARTUP VILLAGE 2018

In summer 2018 the 6th annual international startup conference for technology-based businesses took place. Startup Village is venue for meeting investors, where participants can enjoy the oppor-

tunity to adopt expertise and knowledge of successful entrepreneurs from different countries, present their projects during the competition and at the Innovation Bazaar, and larger technology-based

corporations, representatives of public authorities and development institutions discuss technology trends and methods of bringing-up the next generation of Russian entrepreneurs.

RESULTS OF STARTUP VILLAGE 2018

15,000
participants

1,100
international
participants

78
countries

4,000
startups

1,000
investors

100
sessions

1,500
investor meetings
and startups

430
speakers

9
venues





OPEN INNOVATIONS 2018

Open Innovation Annual Forum has been held in Moscow since 2012 under the auspices of the Government of the Russian Federation and among the con-

tributors of innovative ecosystem this event is considered to be a unique venue for discussion. Topic of the Forum is "Sources of the Digital Breakthrough".

In 2018 the format of Open Innovations Forum included 3 thematic days: "Manpower and Education", "Business and State", "Science and Technology".



21,435
participants

220
projects

973
meetings

1,499
investors

90
countries

34
agreements

814
speakers

182
business sessions

11
industrial sectors





INFORMATION TECHNOLOGIES CLUSTER

The main objective of the Information Technology Cluster is to create in Russia a completed ecosystem for the development and commercialization of the Skolkovo projects in the field of new technologies

in the IT industry. The Cluster team is working on promoting the strategic IT areas - from the search and detection systems to cloud computing technologies.

2018 RESULTS

629
participants

42.9
billion rubles
of the revenue

5.7
billion rubles
amount of
investments

15
patents
received in the
territory of
foreign states





BIOMEDICAL TECHNOLOGIES CLUSTER

The mission of the Cluster is to establish a competitive industry of biomedical technologies. Their performance results are the growing number of companies aimed at commercialization of science

and biomedical technologies. In health care this means that the future of science in general and opportunities to help people depend on the successful implementation of innovations.

2018 RESULTS

454
participants

6.79
billion rubles
of the revenue

1.16
billion rubles
amount of
investments

66
patents
received in the
territory of
foreign states





ENERGY TECHNOLOGIES CLUSTER

This cluster support advanced technologies aimed at improving efficiency, safety and reducing environmental impact of the processes associated

with production, transportation and utilization of fuel and energy resources in various sectors of economy.

2018 RESULTS

446

participants

11.9

billion rubles
of the revenue

2.57

billion rubles
amount of
investments

37

patents
received in the
territory of
foreign states





CLUSTER OF ADVANCED PRODUCTION TECHNOLOGIES, NUCLEAR AND SPACE TECHNOLOGIES

The main objectives are to increase the reliability of products, the introduction of modern production methods (primarily automation and industrial

Internet systems), the transition to numerical experiments, product lifecycle management.

2018 RESULTS

394
participants

8.53
billion rubles
of the revenue

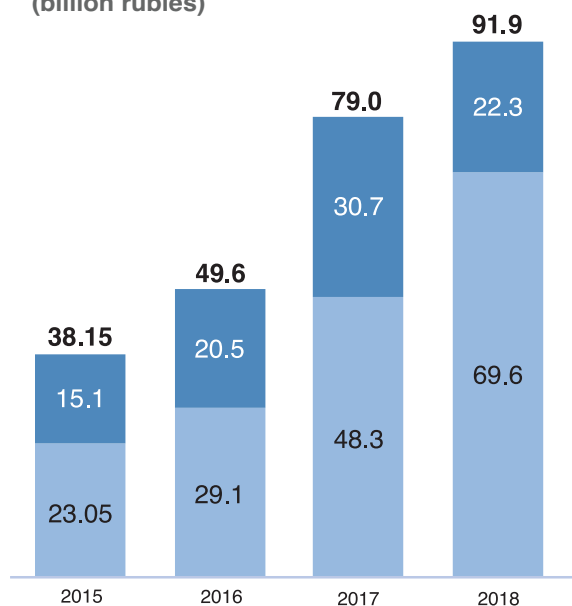
2.71
billion rubles
amount of
investments

21
patents
received in the
territory of
foreign states



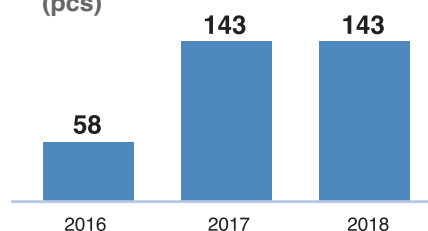
PROGRESS ON KEY PERFORMANCE INDICATORS

REVENUES EARNED BY SKOLKOVO PARTICIPANTS
(billion rubles)

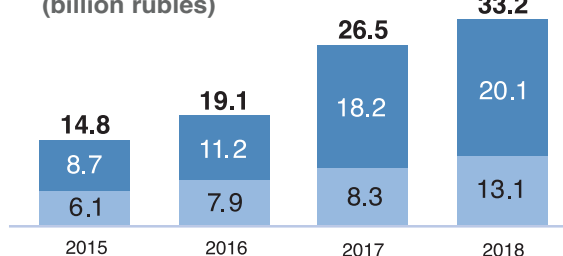


Revenues earned by Skolkovo participants without the Resident status
Revenues earned by Skolkovo participants with the Resident status

INTERNATIONAL PATENTS
(pcs)



RAISED INVESTMENTS
(billion rubles)



Investments in physical infrastructure
Investments in technology-based start-ups

PRELIMINARY RESULTS ON THE KEY INDICATORS IN 2018

Indicator	Plan	Actual outcome
Revenues earned by Project Participants (billion rubles)	36	69,6
Extrabudgetary investments (into the projects of Skolkovo participants and other legal entities which are users of the services), billion rubles	9,2	13,1
Number of patents received in the territory of foreign states by the Skolkovo Project Participants and other persons as a result of using the patent support service	100	143
Number of companies participating in the Skolkovo ecosystem, included in the TechUp rating	10	24
Amount of extrabudgetary investments in the development of the physical infrastructure facilities at the Skolkovo IC, billion rubles	13	20,1
Number of jobs created in the ecosystem, thousand units	28	33
Quantity of the project participants accommodated in the Skolkovo IC territory	350	437
Number of partner R&D centres accommodated in the Skolkovo IC territory	35	45
Number of Skolkovo IC accredited regional operators	4	7
Reduction of administrative and business expenses covered by the federal budget subsidies, in the reporting year as compared to the previous year	5%	20%
Commissioning of Skolkovo IC facilities (cumulative), thousand square metres	650	606
Creating jobs in the territory of Skolkovo IC — plan execution, %	100%	302%
Number of jobs offered by the companies located in the Skolkovo IC territory, thousand units	6	16,9
Amount of taxes paid to the budget of Moscow from companies located in the territory of Skolkovo IC, billion rubles	0,9	2,9

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CONTACT INFORMATION

PHONE:

+7 (495) 956-00-33,
+7 (495) 967-01-48

FAX:

+7 (495) 739-53-06,
+7 (495) 967-01-96

Legal address:

4, Lugovaya Street, territory
of Skolkovo Innovation Center
Mozhaysky District, Moscow, 143026

E-mail for incoming correspondence:
SKFoundation@sk.ru

HOW TO GET THERE

By public transport:

1. Suburban train from the Belorussky Railway Terminal
Destination station: Skolkovo Innovation Center
2. Municipal transport routes: No 818, 818E
from metro stations Slavyansky Boulevard, Filevsky
Park, route No 867 from Kuntsevskaya metro station

By a personal transport:

1. From MKAD along the Minsk Highway
2. From MKAD along the Skolkovo Highway
and Novaya street.

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