



SKOLKOVO INNOVATION CENTRE



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ABOUT THE SKOLKOVO FOUNDATION

“I WOULD LIKE SKOLKOVO TO NOT ONLY BECOME A SOLID BRAND, AND I AM CONFIDENT THAT WE HAVE EVERY CHANCE TO DO THIS... BUT I WOULD ALSO LIKE SKOLKOVO TO BECOME AN IDEOLGOY THAT PERMEATES THE LIFE OF OUR SOCIETY AND IS UNDERSTANDABLE BOTH TO THE OLDER GENERATION AND TO YOUNG PEOPLE. IF WE ACHIEVE THAT, I VERY MUCH SUSPECT THAT THE EFFECT OF SKOLKOVO WILL BE TREMENDOUS.”

From Russian Federation President Dmitry Medvedev's closing remarks at a joint meeting of the Commission for Modernization and Technological Development of Russia's Economy and the Foundation's Board of Trustees.

25 April 2011

- ▶ “Skolkovo should promote a new view, a new approach to understanding what an innovative product and what an innovative process is, and what kind of potential Russia has.”

Viktor Vekselberg (*Business FM*)

- ▶ “Skolkovo is the largest project related to the modernization of the economy.”

Sergey Stepashin *after signing a cooperation agreement between Skolkovo and the Accounts Chamber of the Russian Federation, August 2011*

- ▶ “Skolkovo is an open project; it has a clear mission – to create an innovation environment, but along with that a very flexible strategy that will be determined not by officials, but by involving distinguished scholars, engineers, and entrepreneurs in the project.”

Vladislav Surkov

(*Business newspaper Vzglyad*)

- ▶ “Skolkovo is not a territory. Skolkovo is an ideology.”

Zhores Alferov (*IT News*)



SKOLKOVO BRINGS TOGETHER THE BEST!

- ▶ Special conditions for supporting companies working in priority sectors of modernization.
- ▶ More than 140 resident companies, research councils with the participation of international experts.
- ▶ Moscow State Open University and the Skolkovo Institute of Science and Technology in partnership with Massachusetts Institute of Technology.
- ▶ Partnerships with major global corporations:

- Boeing
- Lukoil
- Pocarom
- TATA
- Astra Zeneca
- Alstom
- Cisco
- EADS
- Intel
- Microsoft
- Nokia
- Nokia Siemens Networks
- Siemens
- Ericsson
- TNK-BP
- IBM
- DOW
- Johnson & Johnson
- GE
- ISS Reshetnev
- RSC Energia
- Sberbank

SKOLKOVO'S MISSION

CREATING A FAVORABLE ENVIRONMENT FOR DEVELOPING INNOVATIVE PROJECTS. CREATING A SELF-GENERATING “MAN-KNOWLEDGE-MAN” SYSTEM, BRIDGING THE GAP BETWEEN NEW KNOWLEDGE, TECHNOLOGIES, PRODUCTS AND SERVICES:

- ▶ An attraction pole for world-class advanced research, consolidating intellectual and creative resources consistent with logic and social ideals for technological advancement;
- ▶ Access for talented youth to contemporary knowledge and the

best international practices. Achieving personal success is possible through knowledge, creativity, work and an entrepreneurial spirit;

- ▶ Transforming advanced experience in the commercialization of scientific and technological developments, providing an accelerated introduction of innovative technologies to the real economy, updating the groundwork for participation in the creation of global technology platforms;
- ▶ Developing infrastructure for amenities for talent.



THE CITY

Skolkovo — a city with four dimensions: ergonomics, eco-friendliness, energy efficiency, and economy.

Location: Odintsovsky District, Moscow Oblast. The area is bounded by Moscow Ring Road and the Minsk and Skolkovo Highways.

Land area almost 400 hectares

Completion of the main construction program — 2015

Planned population — 15,000 residents

Planned buildings and facilities space — 1.6 million square meters

Master-plan designer — AREP Ville (France)

Landscape design — Michel Desvigne Paysagiste (France)

Engineering support — SETEC (France), experts in Russian companies





The project, which will be a breakthrough in the new economy, posed to urban planners a task unparalleled in the history of contemporary Russia. Creating a cutting-edge science and technology complex that must comply with the latest requirements in ergonomics, eco-friendliness, energy efficiency, and economy.

The unique layout of the city was the result of creative work by leading architects and Pritzker Prize winners Pierre de Meuron, Kazuyo Sejima, and Rem Koolhaas. French company AREP is in charge of

general management. They will have to think through and provide comfort and functionality, linking a university, technology park, research centerscentres, and residential quarters into the city's structure.

No less than 50% of the energy consumed by the city will be obtained from renewable sources. Special attention is paid to landscaping and gardening. The "smart city" system will provide maximum comfort with minimal consumable resources. Skolkovo will be a laboratory for testing

emerging construction, energy efficiency,
transportation and waste management
technologies





Human
Health



BIOMEDICAL TECHNOLOGIES CLUSTER

Priority Areas:

- ▶ Bio-healthcare
- ▶ Bio-pharma
- ▶ Industrial biotechnologies
- ▶ Bio-informatics

Biomedicine & Bio-pharmaceutics

Selection Rationale:

- ▶ Generally lower on feasibility due to complex nature of end-to-end biologics development, scarcity of experienced local talent and very high costs
- ▶ Highly attractive driven by large existing domestic market of ~\$1.5B, nearly 100% financed by Russian government

healthcare budget spend and nearly all on imported drugs

- ▶ Some areas (e.g. bio-similars) may have lower entry barriers and at the same time span across topics, ensuring broader impact

Priority Areas in Pharmaceuticals:

- ▶ Drug R&D
- ▶ Protein engineering
- ▶ Genomics and post genomic technologies
- ▶ Structural biology, pharmacology
- ▶ Synthetic (peptide) medicine
- ▶ Antibodies
- ▶ Organic chemistry
- ▶ Pre-clinical and the clinical studies ▶

Priority Areas in Biomedicine:

- ▶ Molecular Medicine (genomics, proteomics, metabolomics)
- ▶ Personalized , preventive and predictive diagnostics and therapeutics
- ▶ Oncology
- ▶ New generation vaccines
- ▶ Infectious diseases
- ▶ Clinical immunology and immunochemistry
- ▶ Regenerative medicine
- ▶ Nuclear medicine
- ▶ Biomedical equipment and devices

Bioinformatics

Selection Rationale:

- ▶ Consistently scores relatively high on feasibility, driven by the strong talent pool in math and hard sciences skills in Russia
- ▶ Relatively-low infrastructure and equipment costs (versus drug production) and high interest from international partners to collaborate with local scientists also supports higher feasibility and opportunity.



Priority Areas in Biomedical informatics:

- ▶ Bioinformatics
- ▶ Systems biology.
- ▶ Complex analysis and modeling of biological systems.
- ▶ Virtual organisms
- ▶ Structural computational biology
- ▶ Software for biomedical research.
- ▶ Computer modeling of properties of biopolymers
- ▶ Biomedical databases and infrastructure
- ▶ E-health





Energy Efficient Russia





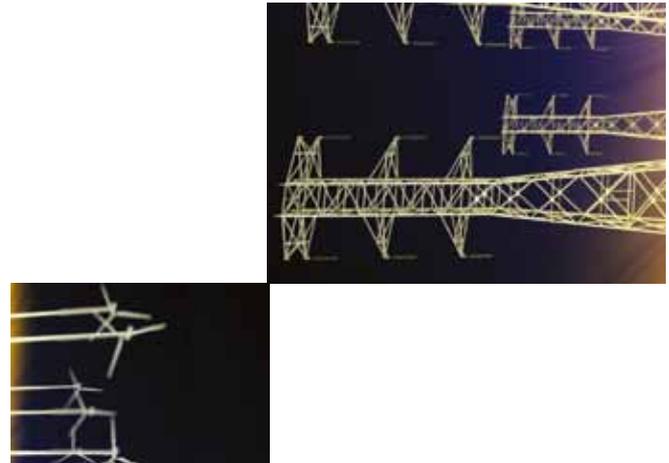
ENERGY EFFICIENCY CLUSTER

- ▶ Materials and technologies to improve the energy efficiency of buildings and installations: insulation materials, high-quality and high-tech façade materials, next generation energy efficient windows, ultra energy efficient buildings, LED indoor lighting, high intensity discharge lamps for outdoor lighting.
- ▶ Materials and design solutions to improve heat transfer, recycling secondary low-grade heat from power plants.
- ▶ Materials and technologies aimed at reducing waste in heating networks: insulation, diagnostic techniques, extending the life and overhauling pipelines.

- ▶ Materials and technologies aimed at reducing waste in electricity transfer, including: energy efficiency and electrical power transfer safety, modern management techniques, active- adaptive networks, modern superconductivity technologies and electric energy accumulators.
- ▶ Technologies for energy accounting on the side of generation and consumption.
- ▶ Materials, design solutions and technologies aimed at improving the energy efficiency of industry: metal manufacturing, oil and gas transportation, associated petroleum gas (APG) recycling, chemical and petrochemical industry.
- ▶ Technological solutions aimed at the comprehensive use of electric power and energy resources, including APG recycling.



- ▶ Efficiency upgrading and innovations in the renewable energy sphere.
- ▶ Biological treatment of waste from industrial undertakings and the environment (bioremediation), waste treatment including radioactive waste, grounds cleaning, exhaust gas, waste water, filter production and purification systems.





Telecommunications, Aerospace and Navigational Equipment





SPACE TECHNOLOGIES AND TELECOMMUNICATIONS CLUSTER

- ▶ Technologies, solutions and services using GLONASS for national infrastructure and globally competitive products and services for mass markets in Russia and abroad
- ▶ Technology, solutions and software for developing and managing the production of navigation chipsets, navigation equipment.
- ▶ Navigation systems using IT solutions to implement a wide range of services that rely on pinpointing the subscriber's

location using both satellite navigation systems (GLONASS) and alternatives based on advanced mobile networks.

- ▶ Technologies for developing astronics and hardware components, taking into account requirements for space technology.
- ▶ The design and manufacture of component parts (optoelectronics, onboard power) with a phased model of importing critical technologies (from “pure import” to transfer, complete knockdown production and in-house manufacture).
- ▶ Venture project of experimental-industrial aerospace production (catalysts, strains).



- ▶ Modern software for automation of R&D for rocket and space technology.



The logo consists of the letters 'Sk' in a large, bold, white sans-serif font, with 'It' in a smaller, white sans-serif font directly below it. The logo is set against a solid blue rectangular background.

Sk
It

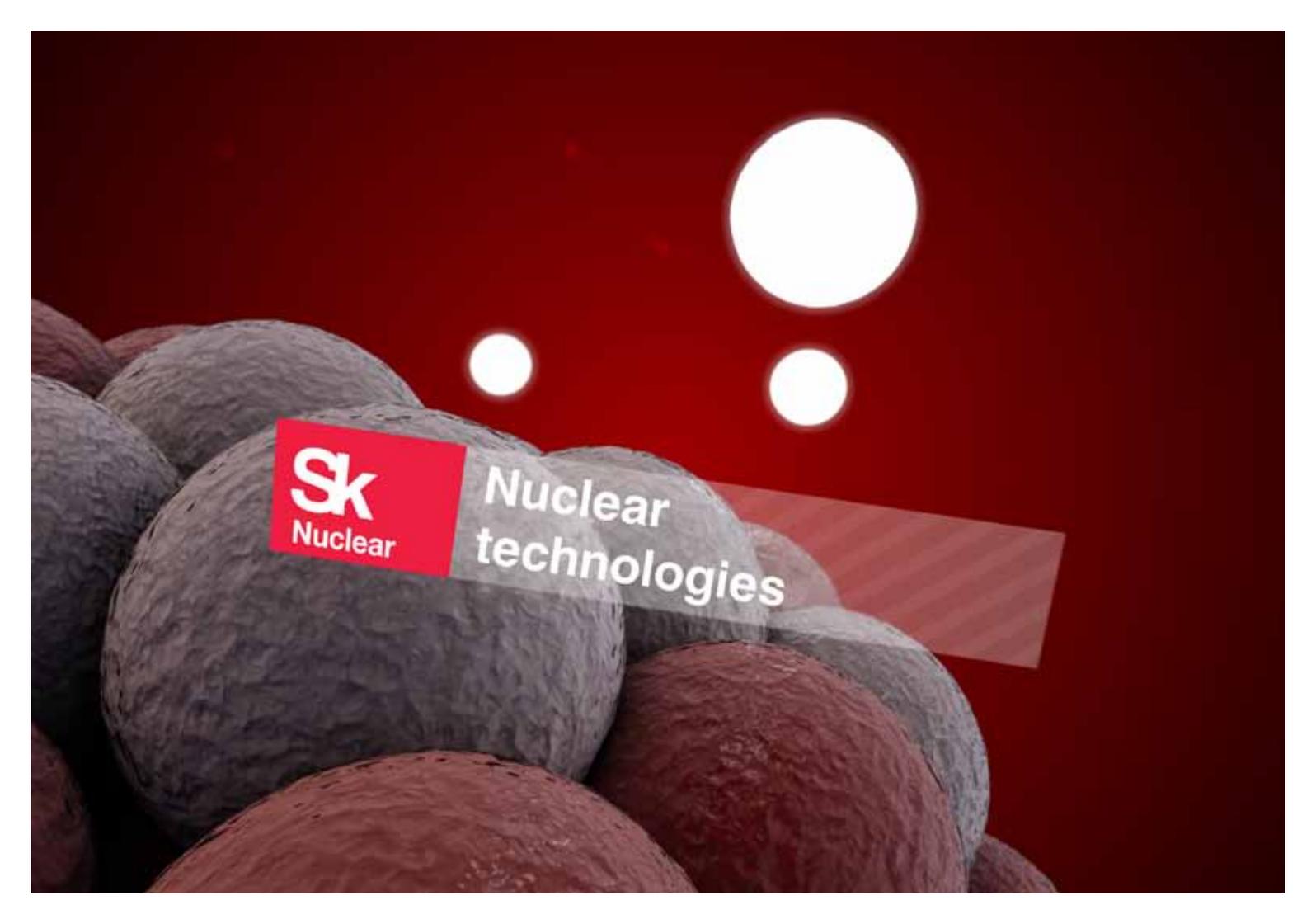
The text 'Informational technologies' is written in a white, bold, sans-serif font. It is centered within a semi-transparent grey rectangular box that has a diagonal hatching pattern. The box is overlaid on a background of server racks with glowing blue and white lights.

**Informational
technologies**



INFORMATION TECHNOLOGIES CLUSTER

- ▶ New generation of intelligent multimedia search engines.
- ▶ Recognition and processing of images, video and voice.
- ▶ New methods for storing, processing and transferring information.
- ▶ Develop of new high-performance computing and data storage systems.
- ▶ Mobile applications.
- ▶ Web X.O.
- ▶ Complex engineering solutions.
- ▶ Software for the financial and banking sectors.
- ▶ Cloud computing.
- ▶ Analytical software.
- ▶ IT security..
- ▶ Wireless sensor networks.
- ▶ Embedded control systems.
- ▶ “Green” information technologies.
- ▶ IT in education.
- ▶ IT in medicine and healthcare.

The image features a dark red background with three bright white circles of varying sizes. In the foreground, there is a pile of dark, textured spheres. A semi-transparent red banner is overlaid on the scene, containing the SK Nuclear logo and the text 'Nuclear technologies'.

SK
Nuclear

Nuclear
technologies



NUCLEAR TECHNOLOGIES CLUSTER

Nuclear Science Technologies

- ▶ Small-scale nuclear power.
- ▶ Development and spin-off of fast neutron reactors.
- ▶ Hybrid reactor schematics.
- ▶ Radio-biological research.
- ▶ Research for improving radiation safety standards..
- ▶ Radio-biological research.
- ▶ Methods of mass-transfer measurements.
- ▶ Methods of structure control for materials and compounds.
- ▶ Nuclear power elements.
- ▶ Certification of components for Space Electronics.
- ▶ High energy density physics.
- ▶ Hydrogen energetics.
- ▶ New methods of isotope separation.
- ▶ Processing and storage of spent fuel and radioactive waste.
- ▶ New types of nuclear fuel.

Radiation Technologies

- ▶ Medical isotopes and radiopharmaceuticals.
- ▶ Radiation therapy and magnet therapy.
- ▶ Laser technologies for medicine, dentistry and biotechnology.
- ▶ Diagnostics systems based on radiation and magnetic fields.
- ▶ Food disinfection.
- ▶ Sterilization of medical devices.
- ▶ Deposition, implantation.
- ▶ Industrial irradiation.
- ▶ Cleaning and surface modification.
- ▶ Electron-beam epitaxy.
- ▶ Filters production.
- ▶ Waste processing, including radioactive waste.
- ▶ Land clearing, exhaust gas, waste water.
- ▶ Logging
- ▶ Radiation processing of minerals.



Technologies for the Creation of New Properties of Materials

- ▶ Materials for nuclear and thermonuclear energies.
- ▶ New materials for prosthetics and implants.
- ▶ Methods for extracting high purity and rare earth materials.
- ▶ Rare earth magnetic materials.
- ▶ Creation and control of thermophysical properties of materials.
- ▶ Defectoscopy

- ▶ Microscopy
- ▶ Radiography.

Technologies for Mechanical Engineering, Instrument Making and Microelectronics

- ▶ Machinery construction for energetics.
- ▶ Engineering of safety systems for nuclear facilities.
- ▶ Particle accelerators and their components.
- ▶ Lasers.
- ▶ Neutron generators.

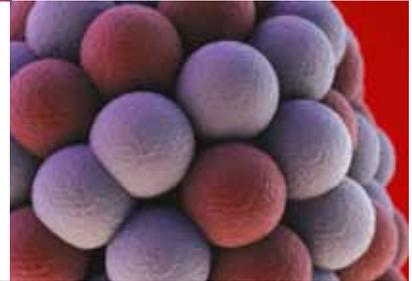
- ▶ Microscopes and telescopes..
- ▶ Microwave electronics.
- ▶ Detectors, sensors, dosimeters.
- ▶ Welding and cutting materials.
- ▶ Welding and tempering metals.
- ▶ Semiconductor alloy (implementation) techniques.
- ▶ Radiation annealing.
- ▶ Deep reactive ion etching.
- ▶ Lithography, electroplating and molding (LIGA technologies).
- ▶ Systems of calibration, inspection and certification for detectors.
- ▶ Secondary standards.

**Technologies of Designing,
Constructing, Modeling, and
Engineering Complex Technological
Objects and Systems**

- ▶ Predictive modeling in power-plant engineering.
- ▶ Modeling of material structure and properties in extreme conditions.



- ▶ Automated control systems.
- ▶ Life cycle control systems for complex technological objects.
- ▶ Technologies for calculations on supercomputers.
- ▶ Display systems for analytical system data.
- ▶ Simulation for nano-, bio-, radiation technologies.





HOW DO I BECOME A RESIDENT?

▶ **What are the procedures for reviewing applications?**

There are two categories of applications:

- *Application for Skolkovo project participant status;*
- *Application for a project preliminary examination.*

▶ **What is the difference between a project preliminary examination and an application for Skolkovo project participant status?**

- If your application for participant status is accepted, you will receive a project participation certificate and will be granted all the rights and responsibilities of project participants.

- If your application for preliminary examination of a project is accepted, you will receive a copy of the decision from the Expert Board on your project's compliance with criteria for participant projects. This procedure is recommended to individuals and legal entities to evaluate your project on its merits before making decisions about organizing a legal body to satisfy the requirements for participants.

▶ **What is the formal examination?**

The formal examination is part of the procedure for reviewing applications received by the Foundation. It verifies the completeness and thoroughness of the documents submitted by the applicant, as well as a legal review of constitutive

documents, statements and employment contracts for members of the project team.

► **What is the preliminary examination?**

The preliminary examination is the decision by the Expert Board as to whether your project meets the following criterion:

- *Innovation (provides for the development and/or commercialization of unique products and/or technologies, and/or products and/or technologies with a competitive advantage over similar global products);*
- *Matches a priority area of activity;*

- *International cooperation (provides for the participation of a foreign specialist possessing considerable authority in investment and/or research circles).*

► **How do I become a Foundation expert?**

The expert's resume must be sent to experts@i-gorod.com, including contact information, place of employment, position, country of residence, which of the Foundation's priority areas you have expertise in, information about education, degree levels and titles.

▶ **How are experts chosen to evaluate my project? Who assesses my application?**

The meeting of the Expert Board is held in absentia. Information about the applicant is not disclosed. The list of experts that who participates in a given session is automatically selected from the aggregate membership of the Expert Board in the particular area.

▶ **What happens after the meeting of the Expert Board?**

If this is an application for a preliminary examination, you will receive a copy of the Expert Board's decision on your project. If this is an application for participant

status, you will receive a notice that you need to submit documents in hard copy to the Foundation's Legal Department. If the paper documents correspond with the previously submitted electronic copies, you will receive a decision on awarding your company Skolkovo project participant status.

▶ **What is the timeframe for reviewing the application?**

An application for a preliminary examination will be considered within 25 days. An application for participant status will take up to 40 days. If the application is submitted only in Russian or only in English, additional time will be needed to translate the materials.

▶ **How do I determine which of the Foundation's priority areas my project belongs to?**

If it is difficult to determine which area your project belongs to, we recommend starting with the end consumer. If, for example, they are consumers of technology or healthcare products, then the project belongs to the area of "Biological and Medical Technologies."

On the application form, you can specify several areas your project belongs to, but this will increase the application review time. If you are sure that the project corresponds strictly to one of the areas,

we recommend that you indicate exactly which one. You may also indicate that the deliverables of the project are usable in other areas.

▶ **When can members start using their tax benefits?**

As soon as they receive participant status.

▶ **Besides tax benefits, what does Skolkovo offer?**

Skolkovo provides discounts on importing high-tech equipment, job placement for foreign nationals, access to overseas investors, as well as GR and PR support.

► **Why do Skolkovo project participants require international cooperation?**

One of the key ideas of Skolkovo is international cooperation, the transfer of technology, the exchange of experience and global competitiveness. Skolkovo will support project teams that have the experience and skills necessary for success on the global market.

► **How can a foreign company acquire member status?**

Foreign companies must register a subsidiary or new entity in the Russian Federation. A partnership agreement with major international companies (for

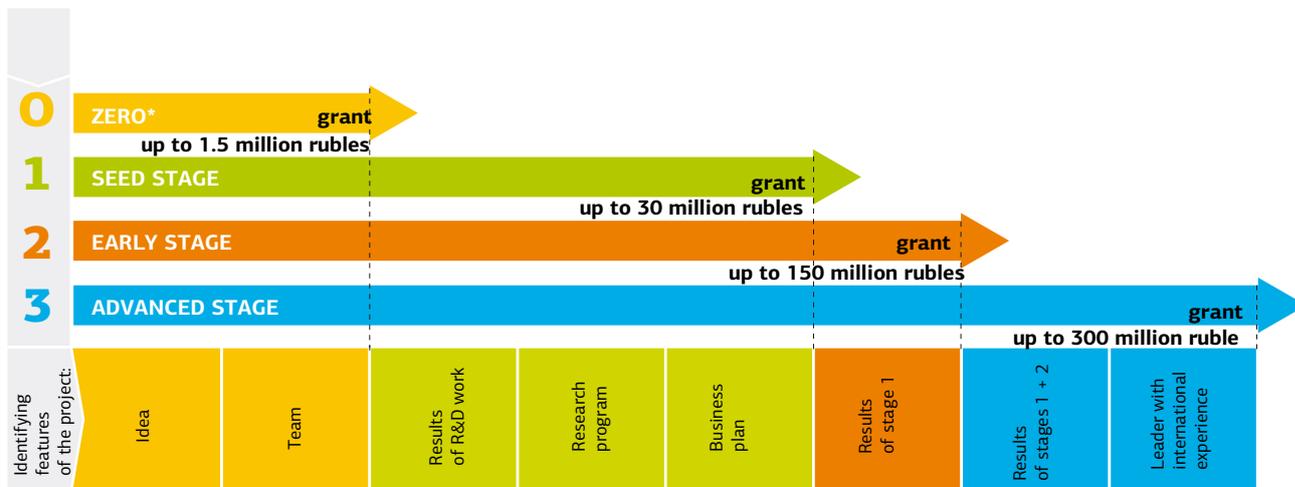
example, IBM, Siemens, Aistom, etc.) can be used as an instrument. These companies are key partners of the Foundation.

INVESTMENT POLICY

How does the Foundation participate in the financing of innovative projects?

Skolkovo provides non-repayable and non-refundable grants to participants. The

Foundation does not plan to share in the capital stock of innovation companies, nor does it lay claim to revenue share.



* The decision for funding at stage 0 is made by the head of the cluster; at later stages it is made by the investment committee.

Factors in project attractiveness.

Stage 0

- ▶ An ambitious team (founder) with entrepreneurial potential.
- ▶ An ambitious team (founder) with entrepreneurial potential.

Stage 1

- ▶ All of the above.
- ▶ Significant competitive advantages over similar global products or solutions used in Russia.
- ▶ Russian market of at least \$300 million, or a world market of \$1 billion.
- ▶ The chance to sell starting at \$50 million and/or capitalization starting at \$100 million over five years.

Stage 2

- ▶ All of the above.
- ▶ A co-investor with relevant experience.

Stage 3

- ▶ All of the above.
- ▶ Prospects for a global company breakthrough on the world market (potential capitalization starting at \$1 billion over five years).

FOUNDATION ADMINISTRATION CHART



MANAGEMENT OF THE FOUNDATION



Viktor Feliksovich Vekselberg
President of the Skolkovo Foundation, Co-Chair of the Foundation's Board

Born April 14, 1957 in Drohobych (Ukraine).

- ▶ In 1990 he founded the management company Renova (originally a Russian-American joint enterprise). He is currently Chairman of Renova Group's board of Directors. .
- ▶ In 1996 he founded SUAL Holding and served as President of the company until 2003, when he became Chairman of the Board of Directors.
- ▶ In 2007, after founding the amalgamated company Rusal, the result of a merger between SUAL, RUSAL and Glencore, he served as Chairman of the Board of Directors of the consolidated company (UC Rusal).

- ▶ In 2002-2003 he was Chairman of the Tyumen Oil Company (TNK) and is currently a member of the TNK-BP Board of Directors.

He is a member of the Management Board of the Russian Union of Industrialists and Entrepreneurs (RSPP) and Chairman of the RSPP Committee on International Cooperation. In March 2010 Russian President Dmitry Medvedev appointed him Head of the Russian part of the project to create an innovation center in Skolkovo.



Craig Barrett
Co-Chair of the Skolkovo Foundation Council

Born August 29, 1939 in San Francisco (USA).

- ▶ In 1964 he graduated from Stanford University with a Ph.D. in Materials Science.
- ▶ In 1964-65 he was a fellow at the National Physical Laboratory in England, and in 1972 he was a Fulbright Fellow to the Technical University of Denmark.

- ▶ From 1974 to 2009 he worked at the Intel Corporation, successively holding the posts of manager, Vice- President, Senior Vice President, President of the corporation and CEO.
- ▶ Since 1999 he has been a member of the US National Commission for Mathematics and Science Teaching for the 21st Century.

CONTACT INFORMATION

For project participants, partners and experts

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