SYNOPSIS ON THE TOPIC

Innovation infrastructure

Policies, institutions, technologies and financial support that spur the pace of innovation, and its commercial adoption.

Section supported by the Innovation Space project

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EXPERT OPINION

"We must now test completely new hypotheses in the face of uncertainty"

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Перспективные направления применения робототехники в бизнесе

Outstanding quotes from EEF 2019 about technology

Maxim Oreshkin, Alexander Povalko, Ruslan Sarkisov, Mikhail Bazhenov, Alexandrs Isurins, Alexander Liberov, Sergey Kolesnikov
Friends for Leadership 2020: New Perspectives for Global Cooperation to Achieve Sustainable Development

23 January 2020  13:00–14:00

Moderator

Roman Chukov
Chairman of the Board, Russian Center for the Promotion of International Initiatives; Assistant to Youth Policy Director, Roscongress Foundation

KEY CONCLUSIONS

New formats for sustainable development must address a wide range of problems based on new values

We need to think of alternatives and shift towards a new, more sustainable formats. What we are doing at Project Vertica is find solutions in five different areas of problems: environmental issues, social problems, urban problems, where there is no connection with nature, a lot of educational problems, and some aesthetic issues – Simone Rendeva, Founder, Project Vertica.

We choose our values through our actions. With everything we do, everything we choose to spend our money on, we define what we stand for and the causes that we believe in. It is a matter of responsible economic decisions – Simone Rendeva, Founder, Project Vertica.

My mission is to rebuild trust on the planet through financial transparency. The lack of trust is what is going to put an end to the planet – Gerardo Trevino, Chief Executive Officer and Founder, Paybook.

It is necessary to leave crisis management mode behind, and to build long-term projects for sustainable development

It is important that we think in terms of a long-term goal. How do we want our cities to look years from today? Otherwise we will be forced to live in a crisis management mode. We better shoot for the stars so that we could at least get to the moon – Simone Rendeva, Founder, Project Vertica.

Traditional values must be included in sustainable development programmes

If we start thinking about megatrends, I would like to talk, first of all, about the very human nature-based megatrend: being married, getting a family, raising up children. It could be a
Technology is an essential element in achieving sustainable development goals

We are all living in a huge economic machinery, and this machinery sets us, individuals, to any function. We are not sure what this function could be in the future, but what we are sure about is that we cannot achieve world peace and global leadership if we do not use technology. I want to think about us as the transformational leadership programme for the 21st century — Halit Ünver, Research Fellow, Institute for Applied Knowledge Processing.

KEY CONCLUSIONS

It is important to keep up with the quantum technology race

The second quantum revolution is essentially over. Now, there is a race between major players in quantum technologies. Russia is not a leader in this race, but neither is it a complete outsider. Russia has launched a programme to create their own quantum computer. RUB 23 billion has already been spent on this goal — Alexey Kavokin, Head, International Center for Polaritonics at Westlake University; Professor, University of Southampton.

The promise of quantum technology extends far beyond the field of cryptography

The quantum revolution is the most optimistic of all previous technological revolutions. Quantum computers will expand the possibilities available to humankind — this is the main difference of the quantum revolution. Quantum technologies will add to humans’ abilities. It will all start, probably, with financial services. New materials will be created. The ability to predict the behaviour of separate molecules will help cure cancer — Ruben Enikolopov, Rector, New Economic School.
We developed a special chip that already has a commercial application. Fully programmable, ultra-fast optical/optical switches for fibre optics nets, sensors for precision spectroscopy and spectrometry using synthetic spectra. In our devices, we can put a library of thousands of synthetic spectra, because the accommodation time is picoseconds, so we can follow a chemical reaction. We are faster than a chemical reaction. We also want to develop an optical, ultra-fast, quantum processor capable of working at room temperature — Gianfranco Basti, Full Professor of Philosophy of Nature and of Science, Lateran University in Rome.

Quantum technologies will help take medicine to a whole new level

We are developing the biggest project on pathological pain. One way of taking care of pathological pain is using transcranial stimulation. Stimulation that could be piloted by a quantum computer, because of the complexity of the task — Gianfranco Basti, Full Professor of Philosophy of Nature and of Science, Lateran University in Rome.

In the future, quantum theory could aid in the development of medicine through big data analysis. We must explore the enormous amount of information we have from every individual patient. This is what large-scale data management is, first and foremost, all about: trying to understand the individualised or personalised medicine of the future. Large scale data management and potential quantum technologies will help us better explore the medical technologies already being employed: imaging, pathology, lab tests — Otmar Wiestler, President, Helmholtz Association.

In order to master future data-based medicine or digital health, we must rely on three major pillars: first, we must have standardized, curated data; second, we must employ all of the powerful, new, AI-based algorithms and technologies for the analysis of complex medical data; third, we must rely on powerful computer technologies. This is where quantum computing comes in. If we could employ quantum sensing technology in a number of medical devices, we would certainly achieve a new level of quality in many of these devices. We are currently creating a model of the human brain using supercomputers, but once quantum qubit systems are available, ambitious projects like the human brain project will, of course, enter into a new era — Otmar Wiestler, President, Helmholtz Association.

Quantum tech will force humankind to face new philosophical and ethical questions

We should note the importance of the humanities. The more that technology advances, so too does the potential of these technologies to create and destroy. The quantum revolution poses yet another of these challenges. When we speak about the humanities, yes, we speak about ethics, we speak about true secular ethics that are based on physics and a humanistic philosophy. These values must lie at the centre of everything — David Verdesi, Anthropologist; author of the Superhuman methodology based on the research of world religions and the latest discoveries in quantum physics and neurobiology.
National AI Strategies in Russia and the World

22 January 2020  19:00—20:00

Moderator

Oksana Tarasenko
Deputy Minister of Economic Development of the Russian Federation

KEY CONCLUSIONS

Development of artificial intelligence (AI) requires strategic approach

National strategies have been launched in 30 countries, while 10 others are working on it. Not everyone understands what exactly is to be done, but a strategic vision is necessary — Kay Firth-Butterfield, Head, Artificial Intelligence and Machine Learning, World Economic Forum.

In 2019, 32 countries have admitted the importance of AI for the national economy, social relations, and security, and adopted their strategies. These countries include the US, China, the Netherlands, France, Japan, the UAE. Russia has approved the national strategy last year. We weren’t the first, that’s why we had a chance to explore best practices to develop a strategy — Oksana Tarasenko, Deputy Minister of Economic Development of the Russian Federation.

AI being essential economic growth driver for coming years

At the time of the technological revolution, the AI has potential to be a driver of deep social and economic change. By 2030, the AI-related global economic activity will reach USD 13 trillion, which will provide additional 1.2% to GDP annually — Oksana Tarasenko, Deputy Minister of Economic Development of the Russian Federation.

Transition from weak AI to strong AI is promising

The main areas of AI development are human language understanding, computer vision, and self-driving cars — Zhang Zhuo Chang, Guangzhou Technology, People’s Republic of China.

AI must work as regular human mind being able to solve a wide range of problems, that’s what we call ‘strong AI’ — Kay Firth-Butterfield, Head, Artificial Intelligence and Machine Learning, World Economic Forum.

Quality and availability of data being the basis for successful development of AI projects in machine learning

We do not have enough data, but it is important for us to thing how we can develop the economy using AI. Bad data means bad decisions. This also works for an AI-based economy — Kay Firth-Butterfield, Head, Artificial Intelligence and Machine Learning, World Economic Forum.
We lack information. Microsoft has enormous datasets from their customers. They can use the data to develop AI. But we don't have such companies in Korea — Cha Jung Hoon, Deputy Minister of Small and Medium-sized Enterprises and Start-ups of the Republic of Korea.
### Speakers and experts

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<th>Role/Position</th>
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<td>Director for Government and Regional Relations, Far East Investment and Export Agency</td>
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<td><strong>Aleksey Struchkov</strong></td>
<td>First Deputy Prime Minister of the Republic of Sakha (Yakutia)</td>
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<td><strong>Maria Chertok</strong></td>
<td>Organizer for the global charity initiative #GivingTuesday, Director of the Charities Aid Foundation (CAF)</td>
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<td><strong>Christoph Frei</strong></td>
<td>Secretary General, Chief Executive Officer, World Energy Council</td>
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<td><strong>Степан Кузнецов</strong></td>
<td>Managing Director, Digital Business Development Directorate, Sberbank</td>
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<td><strong>Riccardo Valentini</strong></td>
<td>Nobel Peace Prize Laureate; Professor, University of Tuscia</td>
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**Taras Popov**: 3 events

**Aleksey Struchkov**: 5 quotes, 9 events

**Жорес Алфёров**: 2 events

**Maria Chertok**: 2 events, 1 analytical material

**Christoph Frei**: 6 quotes, 9 events

**Степан Кузнецов**: 1 quote, 4 events

**Riccardo Valentini**: 4 quotes, 12 events, 1 analytical material
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