ROBOTS INC

ROBOFORUM 2015

MOSCOW HOSTED SECOND INTERNATIONAL ROBOFORUM

For the second year running, the world's leading robotics engineers came to Moscow to join an international robotics forum called Roboforum. The event preceded an opening of a robotics exhibition ROBOSTATION organized by Bal Robotov (Grand Ball of Robots) company in the Moscow VDNKh exhibition center. The principal goal of the event is to inspire young people to go into robotics.

The ROBOFORUM participants were robotics stars and top managers from Russia and worldwide. The forum speakers talked about the robotics development prospects in Russia for the next five to twenty years, discussed what qualities and competencies the future engineer in robotics should have and shared their views on how to make children and young people interested in engineer professions.

Among this year's forum participants there were principals of such companies as Russian Machines – Manfred Eibeck, FANUC Russia – Marco Delaini, the Center for Robotics and Mechatronics in the German Center of Aviation and Aerospace (DLR) – Gerd Hirzinger, director of iCub Department of the Italian Institute of Technology – Giorgio Metta , leading figures in the Russian robotics: vice-rector of the Moscow STANKIN State Technological University Professor Yuri Poduraev, founder of the International Institute of Cybernetics and Artonics Professor Mikhail Ignatiev and many others. More than thirty other scientists and robotics experts arrived from Italy, England, France, USA, Canada, Ireland, Russia and Germany.

A welcoming speech was given by a Soviet cosmonaut, president of the Federation of Cosmonautics of Russia, twice Hero of the Soviet Union, General Vladimir Kovalyonok. He said that our astronauts would be happy to transfer a significant portion of their hard work in space to robots and urged young people to become engineers**.**

The principal item of the ROBOFORUM'2015 agenda was the subject of:

EDUCATION FOR THE NEW GENERATION OF ENGINEERS

Key aspects of Roboforum 2015:

ERA OF ROBOTIZATION: ON THE WAY TO PROGRESS
Requirements of the world's economy for robotics today and tomorrow

NEW INDUSTRIAL REVOLUTION
On the way to innovation economy

LIVE COOPERATIONS OF THE NEW INDUSTRIAL REVOLUTION
Experience of young entrepreneurs - roboticists

LEADERS OF ROBORIZATION
Russian and foreign private and state-owned companies in the epoch of changes

PROFESSIONALISM IN ROBOTICS
Motivation of and deficit in professional staff; new roles for businesses and the state

QUALITY TECHNICAL EDUCATION
Forgotten values of the world's diversified sustainable economies

PROFESSION OF THE FUTURE
New tasks, new competences

GROUNDBREAKING EDUCATION METHODOLOGIES
Instruments of experience exchange between generations

THROUGH ROBOTICS TO ENGINEERING THINKING
Teaching the technical way of thinking

"HIDDEN" ENGINEERS
Today's children but tomorrow's major innovations

The subject of the first panel discussion was Era of Robotization: on the Way to Progress. The forum participants stressed that Russia and the world need robots to assure sustainability and competitiveness of their economies. Mats Hanson, the head of Skoltech educational program, was of an opinion that "currently we may say we live through an era of terabits; today the era of terabits becomes an era of robotics."

One could learn from the discussion that today there are 20 million robots on our planet; the growth in their number is accelerating by 30% per annum at average and their lifetime has increased from ten to fifteen years. Today robotics constitutes a market of $30bln in annual turnover. The manufacturers' plans just for the next two years are to sell 30 million robots which will double their quantity. As a reference, in 1998 the total population of robots worldwide was 200 thousand.

“Robot is a very reliable tool. Industrialization of Russia will not be possible without robots. They are a key. Russia has to catch up with the rest of the world in that area since other countries are some thirty years ahead,” said Manfred Eibeck, CEO of Russian Machines. He believes the Russian people are too accustomed to traditional processes and machinery depreciated by endless processes. Russia will not be able to accelerate its industrial revolution unless it gets rid of outdated equipment and starts using new one.

Marco Delaini, general director of FANUC, quoted some numbers confirming that Russia is lagging behind of the rest of the world. “In China,” he said, “they increased their robot production by 60 thousand robots in one year, while Russia - only 500 robots.” Sergey Belavsky, general director of BIT Robotics and the maker of the first Russian delta robot explained the reasons for the country’s lagging behind in robot implementation. According to him, “the demand for industrial robots is huge; however, the cost of robots is also high. To achieve payoff, not one to three key people should be replaced as it would be needed in Germany, but some eight. In addition, in Russia everybody is looking for quick payback.”

It is clear that the main factor hampering an extensive expansion of robots still is their high cost. Luckily, computer and cybernetics industries are the only ones these days where the product cost keeps decreasing while the engineering characteristics keep improving. That means that in some ten years the robot that today may cost a few thousands US dollars will not be more expensive than an iPhone. “The future belongs to small, inexpensive, sensitive, smart, cross-functional robots,” said Gerd Hirzinger, the head of the Robotics and Mechatronics Center of the German Center of Aviation and Aerospace.

Participants of the second panel discussion called Order for Intellects or Intellects with no Need for Being Ordered focused on who and how should be trained today not to run into a deficit of engineers tomorrow as well as what qualifications and skills engineers of the new generation should have in order to facilitate an innovative development of the country.

“Every engineer should work in a team. Robotics essentially comes down to a correct task definition.” “...Every robot engineer should be broadly educated and knowledgeable. Each one should be a good mathematician, build mathematical models, have full computer literacy as well as have skillful hands to make good robots,” shared his opinion Professor Mikhail Romanov, head of chair in the Moscow University of Radio Engineering, Electronics and Automatic Machines.

“The main problem in the university training stems from schools failing to teach a systemic approach which is indispensible in any robotics. A skill and desire to learn something systemic should be seeded early enough, definitely not later than at school,” said Professor Yuri Poduraev, vice-rector for academic affairs in STANKIN Moscow Technical University.

The third panel discussion was about engaging children in engineering-related creativity, new approaches to and new methodologies in education. “It is advisable to encourage children to have a first go on robotics when they are five to six years old. At the same time it is equally important to be aware that at the age of nine to ten children lose their thirst for being young designers,” said Leonid Gusev, director of the Russian Festival of Science and deputy vice-rector of Moscow State University.

An interesting opinion was offered by Vera Baklashova, director of Intel educational programs in Russia and the CIS. “These days the entire Intel program is focused on teaching children to think differently. Unfortunately, children are very much used to the pattern where they are given homework to do which will be checked the next day. This is the most terrible product given by our school system so far where a child does nothing else but just passively waits for being asked for homework done.”

It would be very difficult to make children interested in anything without making their adults equally interested because quite often it is adults who shape children’s interests and activities. “The only way to convince parents that they should send their children to robotics is to make robotics fashionable,” said Igor Nikitin, cofounder and general director of BAL ROBOTOV.

Young robotics engineers working in construction, mechanical engineering, education, beauty parlor and industrial robotics had a chance to speak at the forum’s individual sessions. All of them shared their experience and opinions on what it means to be a robotics engineer, why robots should be manufactured and how to make them work for everybody’s benefit.

ROBOFORUM’2015 became the second unique opportunity for scientists, experts, businessmen and industry leaders to meet, make contacts and discuss subjects essential for the long-term economic development of Russia and worldwide.

Parallel to the forum, a summer exhibition called ROBOSTATION opened its doors. The exhibition is interactive and focuses on robotics; its area being 3,000 square meters. The robot exhibition proper demonstrates robots made in Russia and other countries capable of robot manufacturing. There are also such attractions as Secret Design Engineering Laboratory, Robotics School for Children, Azimov Lecture Hall and a playground with play stations. On the top of that, Robot Station will provide over one hundred lectures, master classes and workshops on weekends and public holidays.

The Second International ROBOFORUM is over now; the ROBOSTATION exhibition will continue till August the 23rd.

ROBOFORUM's information partners:

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