

# Proletarian Robots Getting Cheaper to Exploit (Video)

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A small robot wearing a cap as it scurries around the display floor at Skolovo outside Moscow, where an international robot conference was held this weekend.

Learning French from your housekeeper while she cleans up after you could soon become an affordable reality if a Russia robot maker reaches his planned price point.

A prototype of such a lady-robot, called Alice, was demonstrated at the international robotics conference held in Skolkovo, just outside Moscow, last weekend. The event featured robots ranging from human replicas to drones and automatic metalworking equipment.

But Alice enjoyed the most attention. With a fully functional arm and silicon head that responded to movement, her lifelike appearance and behavior garnered a lot of attention.

500 participants from start-ups, research teams and established companies took part in the 2nd international robotics conference in Skolkovo on March 1, featuring robots ranging from human replicas to drones and automatic metalworking machines.

"Anthropomorphic robots have very broad application," said Vladimir Konyshov, the head of Neurobotics, Alice's inventor and maker. "They can be used for entertainment, education and medical purposes. For example, to treat autistic disturbances arising from a lack of communication."

According to the International Federation of Robotics, about 3 million robots for personal and domestic use were sold globally in 2012, which was 20 percent more than in the previous year. The value of sales increased to \$1.2 billion.

Russia currently is a small player on this market but has a good chance of gaining a foothold in the sector, said Dmitry Grishin, founder of Grishin Robotics, which invested \$500,000 last year in Swivl, a U.S. company that produces robotic video devices.

A sound technological-academic foundation, promising programmers and a fast-growing community of people who have a keen interest in robotic products should help, Grishin said.

Neurobotics, a Moscow-based company that began producing anthropomorphic robots just over two years ago, is one of a growing number of Russian players in the segment. And it already has plans to diversify its products.

The Alice series can be customized to suit the individual tastes of its owner. Konyshov gave examples of how this could increase effectiveness: a robot with a talking head resembling the poet Pushkin can teach literature. History could be taught by a metal and silicon Peter the Great. Chemistry — by Mendeleev. Robots can even sell clothes, he added.

Right now Alice costs about one million rubles (\$27,500) but the company plans to cut its price by almost two thirds. The robot could also be sold in parts. Computer programmers, for instance, may only need the head with the electronic brain to use for testing different applications. Each part will cost no more than 2,000 euros (\$2,740) with an overall price coming to not more than 8,000 euros.

"We hope that such a division will help us bring the product to a broader market," Konyshov said.

So far the company, which employs 35 people, has about 20 orders for robots or their parts. Its plan calls for 100 units to be sold by the end of this year and 1,000 in 2015.

"We had seen a lot of investment in robotics in recent years," said Kate Darling, a research specialist at the Massachusetts Institute of Technology's Media Lab, which studies the sociological impact of robotic technology.

"Google, for instance, just bought a number of huge robotics companies and it is obvious they will start investing in household robots, which will mean a boom."

The robot-vacuum cleaner that was a big hit just a few years ago is already history. Units like Alice, which can interact with people, are all the rage, Darling said.

Another novelty on display at the Skolkovo event was a robot that can be assembled relatively easily from ready-made building blocks, just like a Lego construction kit.

"Our cybernetics construction kit makes it possible to easily assemble a wide range of household or industrial robots," said Roman Luchin, the head of Trik company based in St. Petersburg which produces the build-your-own robot kit.

The kit, which has an average price of 24,000 rubles (\$660), includes a processor, metal parts, wheels, tracks, portable engines, various sensors and other necessary construction blocks to custom build a robot. Trik also provides the accompanying software and hardware.

Luchin showed a prototype of a caterpillar belt robot that can be used to remotely carry out tasks with various small objects, like disposing of toxic waste.

"But we are most proud of the controller hardware, which is our own invention. It allows the creation of robots which can speak, hear and see," Luchin said.

He also said that interactive robots are the future of the industry, whose time has nearly come. Luchin expects today's cutting-edge technology to be popularized within the next decade. Others agreed.

"Even the most simple things are still hard for robots ... It will take a little bit longer [to create sophisticated interactive machines] but with all the investment going on, 2025 sounds pretty realistic," MIT's Darling said.

Robotics will continue to move into our daily life and take a variety of different roles, she said.

Whether or not humanity has a "Terminator" in its future remains to be seen.

"Time will show whether [a prevalence of robots] is a good thing or a bad thing," Darling said. "We do not know what will come next, maybe Skynet?"

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