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September 14, 2020 · Forbes Woman

Dislike of tomatoes: how a Belarusian woman came up with lamps for crop growth – and got into the Forbes rating

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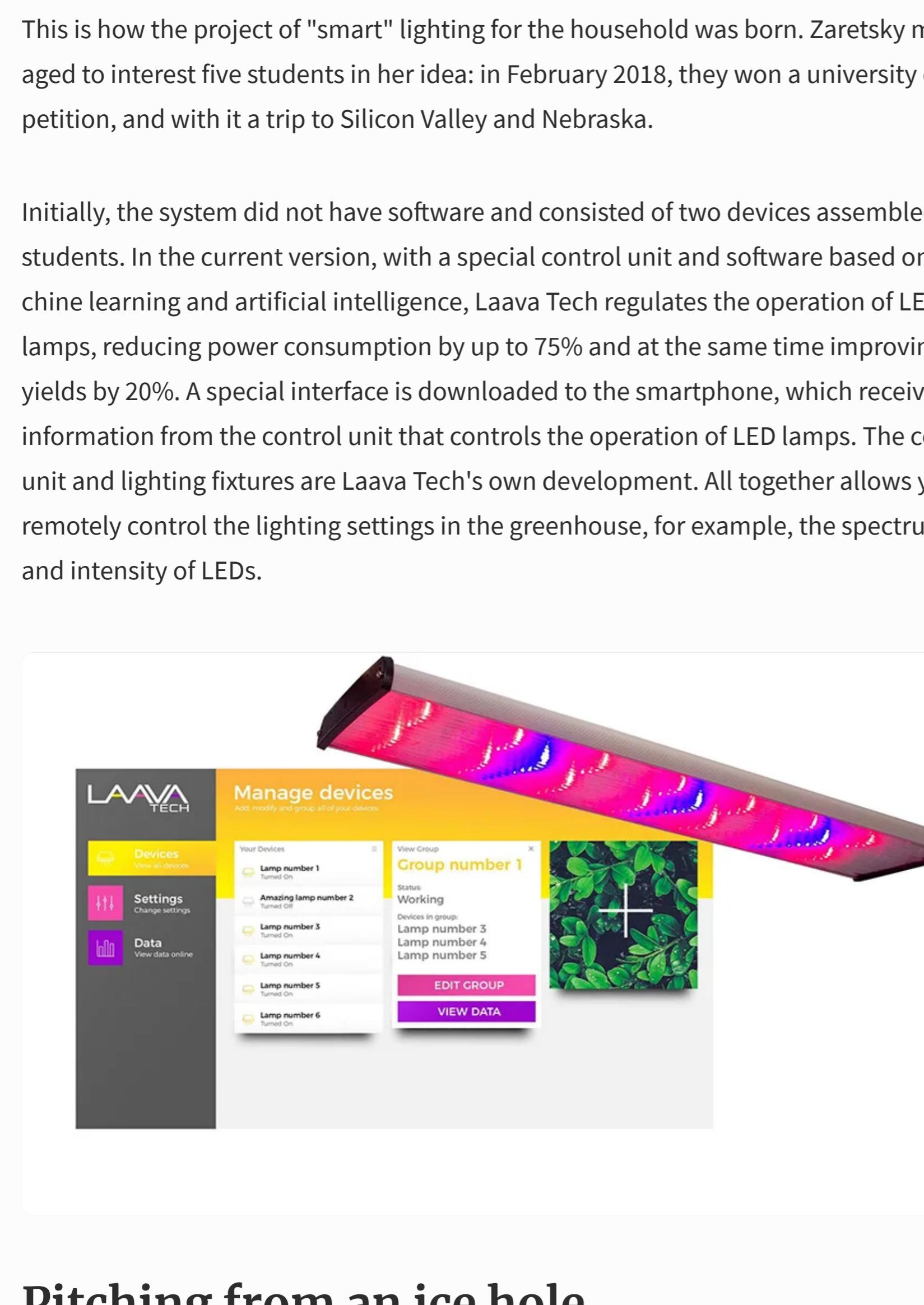


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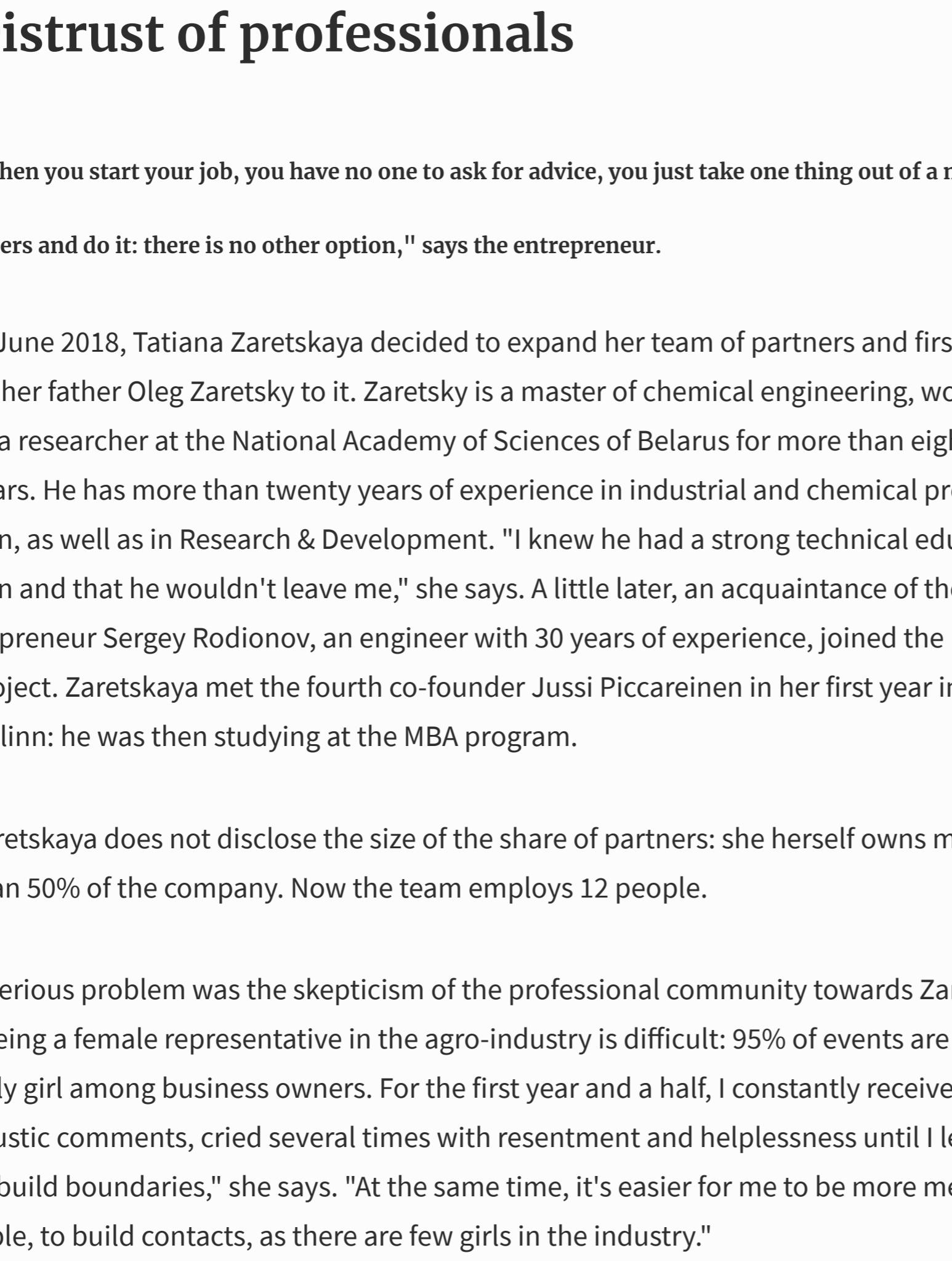
A native of Minsk Tatiana Zaretskaya never dreamed of her own business and wanted to build a career as a lawyer. In 2020, she was included in the Forbes European rating "Zo to 30" as the founder of the agrotech company Laava Tech, whose turnover is more than \$3 million per year. How did she manage to do that?

"I've hated tomatoes since childhood," recalls Tatiana Zaretskaya, talking about the spontaneous creation of her own project. In 2017, the future entrepreneur came to the STARTERTECH university startup competition out of curiosity, planning to join one of the formed teams. When she did not like any of the ideas presented, Zaretskaya remembered her childhood dislike of tomatoes. Grandma germinated their seeds in glasses, placed them throughout the apartment, and then planted them in a greenhouse where vegetables had to be checked twice a week. "As part of the competition, I decided to offer an adequate idea that optimizes the growing process," says Zaretskaya.

Tatiana went to the contest because she realized that this was the last opportunity for her to take part in the student initiative to create a business. At Tallinn University, this direction is well developed, and she decided to just try it. She didn't have much interest in startups at that time - curiosity played a role.

This is how the project of "smart" lighting for the household was born. Zaretskaya managed to interest five students in her idea: in February 2018, they won a university competition, and with it a trip to Silicon Valley and Nebraska.

Initially, the system did not have software and consisted of two devices assembled by students. In the current version, with a special control unit and software based on machine learning and artificial intelligence, Laava Tech regulates the operation of LED lamps, reducing power consumption by up to 75% and at the same time improving yields by 20%. A special interface is downloaded to the smartphone, which receives information from the control unit that controls the operation of LED lamps. The control unit and lighting fixtures are Laava Tech's own development. All together allows you to remotely control the lighting settings in the greenhouse, for example, the spectrum and intensity of LEDs.

A screenshot of the Laava Tech mobile application interface. The screen shows a control panel for managing devices, specifically LED lamps. The interface includes a list of lamps, their names, and various control options. A large image of a LED lamp is displayed prominently at the top of the screen.

Pitching from an ice hole

Tatiana Zaretskaya grew up in Minsk and entered the Belarusian State University at the Faculty of International Relations. A few years later, she realized that it was pointless to study the disciplines of this direction in Russian, and began to look for alternative options for study and career development abroad.

Zaretskaya liked Estonia since childhood. She re-entered a bachelor's degree at Tallinn Technical University for the same specialty and moved. Studying at the university cost about \$3,500 per year, but the scholarship fully covered the costs of it and living in the country. The future entrepreneur also had an additional \$600-700 for pocket expenses.

"I was always sure that I would be a lawyer: I really liked it, I worked for some time by profession," says the founder of the agrotech company. It was personal savings from previous part-time jobs (up to \$3,000) that the entrepreneur invested in the first prototype of Laava Tech while participating in STARTERTECH. "He looked like an iron from the seventies," laughs the founder of the startup. The version of the product, close to today, appeared in Laava Tech by the end of 2018.

After winning the university competition, Zaretskaya decided not to leave the idea of her own business - the entrepreneur took part in the Polar Bear Pitching Competition, where she pitched the first version of the product in the ice hole: this was the main "chip" of the event. "Many people dissuaded me: they said that I had never stood in an ice hole, and there would be hardened and more experienced Finns around. I didn't listen to anyone and decided to try at least for the sake of experience," recalls the entrepreneur. As a result, Laava Tech took first place and won \$10,000, and Zaretskaya firmly decided that it was worth working on the project.

At the same time, work with pilot projects began: in Belarus, the girl found the right contacts through family and friends. The technology was first tested by familiar farmers who grew tomatoes, peppers and greens for sale in local markets. In the first year, Laava Tech had five pilot projects: work on them covered the costs of the team, which then had four people, on equipment, but did not bring any income.

The first customers of the startup (among them the Estonian company UrbanFarms, which learned about Laava Tech after its victory in STARTERTECH) were attracted by the opportunity to get a single solution from one company, rather than spending separately on LED lamps, vertical trusses and a data analysis solution. The main influx of customers occurred in 2019. The company gives access to all its products - software, hardware and database - for a monthly subscription of €5.93/m2. On average, the size of customers' areas varies from 1000 to 5000 m2. Thus, monthly earnings from one farm range from \$5,900 to \$29,500. The cost has not changed since the start of work.

Now Laava Tech has 16 customers, more than 50 are waiting for the delivery and installation of the company's solution due to logistics problems during the epidemic.

In each of the industries, Laava Tech has competitors: for example, LED manufacturers (Osram and Philips), creators of hydroponic farms (Plenty and YesHealth iFarm) and software suppliers (Agrinamics and Growlink). Nevertheless, according to Tatiana Zaretskaya, the company does not yet have direct rivals who combine all three decisions together. "Our biggest difference is that we can save 60-75% of electricity from LED lamps: now no one can do it but us," she adds.

"If we compare the efficiency of LED lamps with traditional light sources for greenhouses, such as sodium lamps, they may well save from 40% to 75%. It is also possible to achieve this level of savings in greenhouses in the presence of control systems: they allow you to supply light or turn it off depending on the level of natural light in order to provide the plant with the required amount of light," confirms Farhad Mamadaliev, business development manager of Fluence by OSRAM Russia-CIS (the company produces energy-saving and LED lamps).

In October 2018, Laava Tech won the University Startup World Cup in Copenhagen, in 2019 - won EIT Food in Israel and Make It In Contest in China.

The total amount of grants received by the startup in three years was about \$600,000. Of these, \$410,000 was spent on building a product and creating pilots, all the rest of the money went to employees' salaries. Zaretskaya still pays herself a minimum wage of \$565. However, Tatiana has alternative sources of income: she works as an adviser at Timey OU (a manufacturer of sensors to determine the freshness of fermented milk products) and several other companies whose names she does not disclose, and also invests money in venture funds.

"We actively participated in competitions and grants because we wanted to keep a clean cap table (capitalization table, in fact, the company's shareholder register with detailed details on investments. **Forbes Woman**) of the startup in the early stages and not to give a large percentage of the company to investors. Thanks to this, we now own more than 80% of the company," explains Zaretskaya.

The startup doesn't spend money on marketing at all. "Tours around the world are very helpful with PR and saving money for marketing: I have never taken part in competitions or competitions, spending the company's money on it," says the founder of the project.

Distrust of professionals

"When you start your job, you have no one to ask for advice, you just take one thing out of a million others and do it: there is no other option," says the entrepreneur.

In June 2018, Tatiana Zaretskaya decided to expand her team of partners and first invited her father, Oleg Zaretskaya. Zaretskaya is a master of chemical engineering, worked as a researcher at the National Academy of Sciences of Belarus for more than eight years, as well as in Research & Development. "I knew he had a strong technical education and that he would leave me," she says. A little later, an acquaintance of the entrepreneur Sergey Rodionov, an engineer with 30 years of experience, joined the team. Zaretskaya then met the fourth co-founder Juri Kirin, in her first year in Tallinn: he was then studying at the MFA program.

If the first projects of Laava Tech had to offer to their friends, now customers and strategic partners often come to the company on their own - through social networks. For example, today a startup is establishing cooperation with the Asian vertical farm YesHealth Group. Its representatives contacted Zaretskaya through the LinkedIn platform, paying attention to posts about victories and pilot projects of the startup.

One of the current advisers to Laava Tech - co-founder and former Tesla CTO Jeffrey Straubel - also wrote to the girl on LinkedIn. "We agreed to drink coffee in the morning when I come to San Francisco," says Zaretskaya. "As a result, Jeffrey began to help our project. Upon arrival in San Francisco, Laava Tech founder met Eric Betancourt, one of Salesforce's directors at the event: he also became an adviser to the startup."

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Now the startup has closed the seed round, but until the end of the year the entrepreneur cannot disclose the names of funds and business angels. The company is in the process of concluding several strategic partnerships, which can bring it an additional 3-5 million annually.

"We started raising the next round only this year, not because we had no proposals: we could agree to Russian or Estonian funds, but our goal was the world-renowned technology and growth," says Zaretskaya. "Such cooperation radically changes the company's development and gives it completely different opportunities in the future."

The current pandemic has stimulated interest in agrotech at the level of both large investors and states. When the borders are closed, logistics will only grow, and there is a technological approach that would ensure the cultivation, monitoring and collection of products while minimizing human participation. Mikhail Taver, partner of the Gagarin Capital venture fund, explains the situation.

According to Zaretskaya, lighting replacement is an expensive process for its customers and for this reason introduced a subscription format, not a one-time payment. "This format also allows us to constantly generate a stable income, regardless of whether we close a new deal this month or not, they have to change the light source, or to use the new technology and truly valuable solutions have a chance of success," explains skepticism on the part of professional community Yegor Kirin, founder of the Arro.Club agricultural platform.

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