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# Коммерсантъ

## Recognize the future

### Details of life

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"The science". Appendix No. 63 (<https://kommersant.ru/apps/117996>) from 12/20/2018, p. 30



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Photo: From personal archive

Developments capable of providing Russia with a technological breakthrough are looking for national development institutions - they were created for this, and for this they spend significant resources. Venture investors are in constant search of new technologies and innovative products that will be in demand by the market and will more than pay back the funds invested in them. But in both cases, the key question is the same: how, at an early stage in the development of a technological project, to understand that there is a great future behind it?

I would like to make a reservation right away that the assessment of the project - even the most authoritative one - is not the ultimate truth, but rather a forecast that can be more or less accurate. There are not so many places in Russia where such forecasts are put on stream. The most famous of them is the Skolkovo Foundation, more precisely, its expert service, the country's largest mechanism for selecting promising technologies: it uses the services of 750 experts - prominent specialists in various fields of science, technology and business. For eight years of its existence, it has reviewed more than 12 thousand projects. At first, this

mechanism was used exclusively to replenish its own, Skolkovo pool of resident companies (now there are more than 1800), but then other development institutions began to resort to the services of Skolkovo as commercial customers: the Industrial Development Fund,

Five to seven computer-selected experts participate in the project evaluation procedure. They receive an anonymous questionnaire for consideration, in which applicants outline the main characteristics of their technology. These include: the problem the project is aimed at, a description of the underlying technology, current market trends and the planned market entry scheme, a description of competing solutions and the project's advantages over them, the competence of the team and a project implementation plan with key stages for the next two to three years ...

Experts evaluate the project according to four criteria.

1. Scientific validity, technological feasibility. As a rule, there are no problems with the scientific component of projects. It is rarely necessary to weed out pseudoscientific ideas, although Skolkovo experts considered and, of course, rejected the project of creating a perpetuum mobile long ago. Not so long ago, a project was rejected, the authors of which proposed a technique that, according to them, would allow to fight heart failure by using a pacemaker, which sets the rhythm of a healthy heart to diseased tissue. Experts found the "resynchronization method" untenable from the point of view of evidence-based medicine.

A much more common case is the questionable practical feasibility of development. For example, the experts considered the project of an emergency resuscitation aid system. As conceived by the authors, a robotic defibrillator and an electrostimulator performing forced pulmonary ventilation are delivered by drone to the scene and, independently or with the help of a physician at a distance, carry out resuscitation procedures. Too many questions arose about the project: for example, which of the random people who happened to be at the scene of the accident would decide that the patient needs just such help? Where will the system be used if drone flights are prohibited in metropolitan areas? And the project was rejected as impracticable.

2. Team. It is important that project participants have the knowledge, scientific or industrial experience and entrepreneurial potential to implement their plans. Common mistakes include, for example, cases when a team that is going to bring their technology to market in the foreseeable future contains only developers - and there is no manager who would focus on commercialization issues. A common mistake in "university" projects is that a startup team includes a graduate student and his scientific advisor. It is not uncommon to have to deal with cases of "bloated states". This is especially true for projects with a significant scientific

component. The startup team includes one academician, two correspondent members, three doctors of science. It is clear that these are people burdened with many responsibilities, and the project needs developers,

3. Competitive advantages. In this part of the application form, it is important to prove that the applicant knows the competitors and that his technology (product) has significant advantages over existing or developing analogues. Some startups are actually engaged in intelligence activities, sending journalists to competitors, who at conferences or exhibitions ask them what tasks their new development is solving, at what stage it is, when it is planned to enter the market, etc.

With the current competition and the speed of creating new technologies, for a startup these are questions of life and death. Recently, the Skolkovo expert commission did not accept a well-developed project for creating autonomous cleaning robots designed for wet cleaning of educational, residential and industrial premises, offices, hospitals, and airports. The only reason was the lack of price competitive advantages over Chinese technology.

It happens that a high-tech solution loses competition not to another high-tech solution, but to some traditional technology. So, the development team proposed a project to create robot fish for aquariums. Such fish outwardly and in habits would be exactly like the real ones and would save the aquariums from the need to acquire the inhabitants of the seas, feed them and create suitable conditions for them. However, experts have calculated that keeping robotic fish in a commercial sense is not at all cheaper than keeping live individuals and significantly loses in this sense to attractions built on virtual and augmented reality technologies.

4. Potential for commercialization. Quite often, developers who are focused on the technology they create do not attach sufficient importance to the question of why they are creating it, who their client is, and what exactly they are going to sell to him. Plus, what market does their company intend to enter and, finally, how to make money. Meanwhile, these are key questions that determine the prospects of the project and its assessment by experts. It happens that the process of submitting an application to an expert committee allows developers to take a fresh look at the problem of commercializing their technology. For example, one team developed equipment based on nuclear neutron technologies that allows, like X-rays, to penetrate into the thickness of the studied mass. Initially, the authors of the project planned to offer this equipment to customs and law enforcement agencies for checking baggage and cargo. But it is known that government agencies are not an easy client for a startup, and the team has reoriented to use the technology in the diamond mining industry. The installation created by her makes it possible to "see" large diamonds in the rock without crushing it. The startup has acquired large corporate clients.

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But there are times when good, "working" technology does not find a field of application in which it could become an attractive business. So, it is known what dangers lie in wait for young people who do not take their smartphones out of their ears - these are emergency traffic situations, and the inability to hear emergency announcements in public places. To help "people with headphones", the developers came up with a device that could be equipped with cars and public places (shopping centers, airports) - it would sound an alarm and mute the sound in the headphones. The developers failed to present a compelling business plan. The approval of the project by experts rested on the question: who is willing to pay for it?

I would like to draw your attention to the fact that the design, or, in professional slang, the packaging of the project plays a very important role in the examination. That is, a detailed, accurate and well-structured presentation of information in an applicant's questionnaire is 50% of success.

We live in such an era: it is not enough to make a good product - you also need to be able to sell it.