Demola International Project As An Instrument of Students Involvement in Science - Business Integration

Daria Y. Mironova, V. Vijaya kumar, Rajkumar Murugesan

Abstract:*Amid the crisis and organizations' lack of funding for R&D activities, new mechanisms of science-business integration are required. These mechanisms should enable companies to gain new technological solutions in a short period of time without imposing costs on innovation. Demola is the international platform of open innovation, which allows companies to get demo version or prototype of a new product in a short term; gives students the opportunity to apply theoretical knowledge in practice and gain experience in companies projects; helps university professors to establish contacts with business partners, expand the partner network, and get access to Demola's international network.*

Keywords:*Business-university collaboration; Demola.; Innovation; Research & Development; Science-business integration;*

I. INTRODUCTION

Amid the constant innovative development and formation of knowledge-based economy, much attention is paid to the integration between science and industry, contributing to the creation of favorable innovating climate. Through the process of integration, the education becomes more advanced by means of forming the skills necessary for meeting the industrial challenges in the conditions of uncertainty and dynamic social and labour market transformations [Shaidullina (2010)].

Nowadays, high-tech companies face such challenges as serious shortage of qualified talents, lack of new ideas and breakthrough technologies for the modernization and diversification of production, staff overloaded with work, and as a result, lack of time for testing interesting ideas and techniques. Therefore, there is a strong need for a new mechanism of interaction between students, companies, and universities, based on students' involvement in meeting the challenges of companies for creation of new innovative products and services. Such a mechanism is the Demola international project, which is the subject of this article.

Due to significance and topicality of the problem of building effective science-business cooperation, it is widely discussed worldwide nowadays. In Europe, there are at least 30 models of cooperation between universities and industry. However, despite the fact that students, as the main intellectual capital of universities and necessary and popular resource for companies, should play an important role in such cooperation, insufficient attention is paid to their involvement in projects implementation. Moreover, foreign models of establishing cooperation between universities and companies cannot work effectively in Russia owing to the peculiarities of Russian legislation and culture. Therefore, the article is focused on the analysis of the following issues:

- Conditions for development of collaboration between universities and companies in Russia and overseas;
- Interaction between universities, government, industry, and supporting networks and organizations in the process of creation, development, and commercialization of innovations;
- Existing foreign models of science-business cooperation and their strategies;
- Key results of applying Demola model in Russian region and the main difficulties encountered.

The results of this analysis are valuable for different target audiences from both theoretical and practical point of view. Theoretical analysis, dedicated to the special role of supporting networks and organizations in the process of creating innovations, could help companies to adapt existing models of cooperation with universities, taking into account the experience of Demola project's implementation in St. Petersburg. Despite the fact that Demola's model is not optimal and requires improvement to work effectively in Russia, the analysis of positive and negative aspects of this model's introduction could show industry the positive results of students' involvement in R&D projects and stimulate companies to increase the number of projects implemented jointly with universities with the participation of students. Thus, business obtains new ideas, prototypes of new products, and, potentially, talented employees. Students get an opportunity to apply theoretical knowledge in practice and therefore advance in skills. Universities increase the number of joint R&D projects and graduate high-qualified specialists with the experience in real projects. Finally, government promotes the development of innovative ecosystem of the region.

II. THEORETICAL FRAMEWORK

Nowadays, the importance of cooperation between universities and industry is hard to deny. Traditionally, companies regard universities as a source of future employees. However, every learning organization should be

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open to new ideas and new ways of identifying opportunities and meeting challenges [Wallin et al. (2014)]. For companies, cooperation between universities and industry became a way of getting external knowledge and R&D, which promote creation of innovations [Borrell-Damian (2009)].

There are many research papers focused on the analysis of the impact of knowledge transfer on the openness in science and the trend from basic to applied research. However, only few authors conduct research on the critical role of students' involvement and the impact of technology transfer on education and vice versa [Stephan (2001)]. Collaborations between universities and companies may lead students to exposure to cutting edge technologies used in industry, developing employability skills, building professional networks and securing employment in industry [Rampersad (2015)]. For companies, such collaborations provides contacts with young, talented and ambitious people, what is important from the point of view of development of human resources in enterprises [Kurowska-Pysz (2014)],as well as from the point of view ofgetting access to new ideas. Students represent a perpetual source of potential inventors. As they matriculate they bring new ideas with them and as they graduate, they take them to other venues [Slaughter *et. al*. (2002)].

In 2000, Henry Etzkowitz developed the Triple Helix concept (Fig. 1), in which a key role is played by the effective collaboration between government, university, and business communities [Butler and Gibson (2013)]. The model is based on the assumption that university is the center of innovation activity in the modern society. It cooperates closely with industry by implementing R&D projects and becomes the government's main tool for promoting innovation.

Therefore, Henry Etzkowitz formulated three key elements that are essential for creation and development of innovation. However, the model does not take into account another important element, which promotes collaboration between three key elements and helps it to work more effectively, what leads to the acceleration of innovation process. Supporting networks and organizations are the fourth element, which directly interacts with university, business, and government communities. Such organizations often attract informational support and funding from government; get tasks (in line with industrial challenges), projects evaluation, and funding from industry; and obtain talented research staff (including academia and students), R&D initiatives, new ideas and technologies, infrastructure, and funding from universities (Fig. 2).

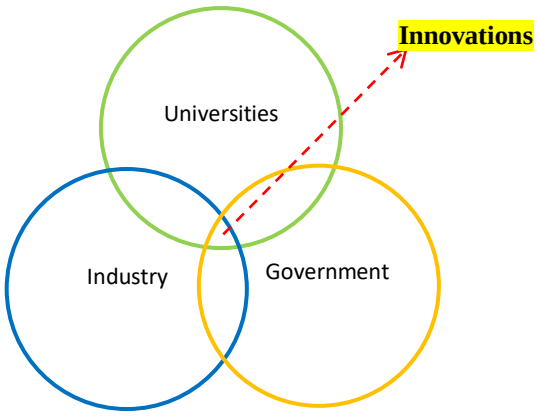

Fig. 1. Triple Helix model

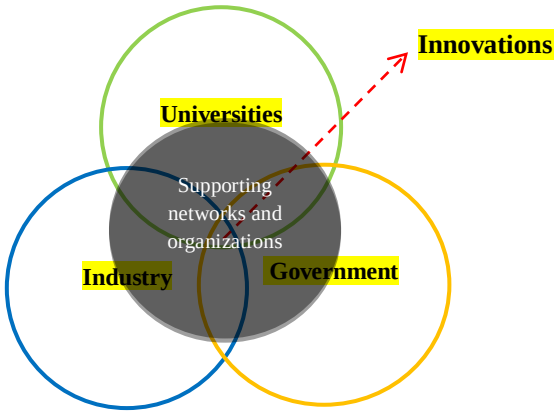

Fig.2. Triple helix model supplemented by the fourth element

The scheme below (Fig. 3) was developed by the authors on the basis of the model of innovations' creation and commercialization, which was developed by D. Mironova [Mironova (2014)]. D. Mironova supposes that the foresight (long-term forecast in certain areas of science and technology) should be at the beginning of the process to estimate the prospects of different directions of research. Along with the identification of technology trends and search of promising, but not yet tested directions of research, it is important to identify the challenges faced by leading companies in various areas, i.e. conduct market research. Both of these aspects (foresight and market analysis) are embodied in the developed model. The combination of marketing tools (such as the assessment of market potential of a project, development of a marketing plan, formation of a marketing strategy) with the elements of foresight would increase the efficiency of results of R&D, because the ideas generated by researchers in particular promising fields of science and technology would a priori be actual. In the authors' opinion, the proposed model of the commercialization of innovations (from foresight to introduction stages) allows to improve the relevance of R&D based on new ideas [Mironova (2014)].

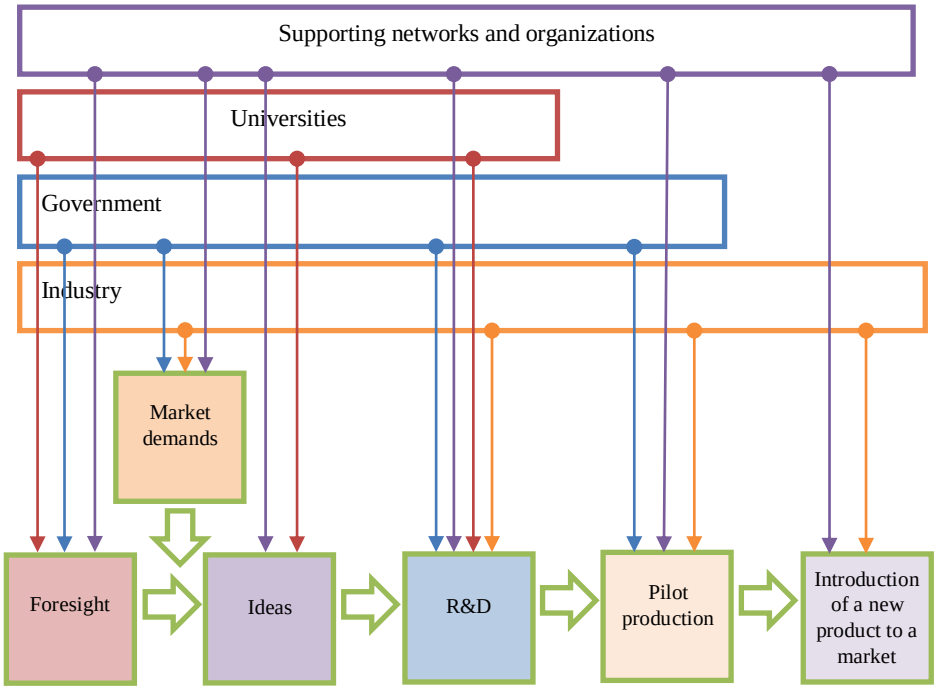

Fig. 3. Model of interaction between communities in the process of innovations' creation and commercialization

Therefore, in the developed model, *universities* takes part in foresight development, generation of new ideas, and R&D implementations; *government* takes part in the foresight development, formulates market demands (government R&D contracting in such fields as defense, space surveillance, etc.), and provides support for R&D implementation and pilot production; *industry* (including small innovative enterprises at universities) formulates market demand, conducts R&D projects (including projects implemented jointly with universities and with the involvement of students), carries out pilot production, and introduces a new product to a market. *Supporting networks and organizations* take part in different stages of the process of innovations' creation and commercialization by providing support (including organizational support, informational support, consulting support, etc.) needed for increasing of effectiveness of cooperation between the key participants of the innovation process. One of such organizations is the Demola Network that promotes generation of new ideas and R&D implementation, taking into account market demands.

III. SCIENCE-BUSINESS INTEGRATION IN RUSSIA AND OVERSEAS

In developed countries, there are different ways of forming closer ties between science and business. That is provided by the interaction of deliberate government policy, individual efforts of entrepreneurs, and active competition in creating new products and generation of new ideas [Ghuljaevskaja, Shumakova and Popov (2010)]. In Europe, there are at least 30 models of business cooperation, but most of them cannot work effectively in Russia, because of the specifics of the local organization of innovation activity and Russian legislation.

The successful cooperation between Russian business and science is hampered by the lack of internal funding and high costs of R&D [Komkov (2014)], as well as significant economic risks, R&D results' lack of readiness for introduction to the industry, the lack of highly qualified engineers, and the availability of more competitive foreign R&D results [Rud, Zaichenko and Bredikhin (2013)].

In Russia, the priority in the field of science-business cooperation is to increase growth in the number of partnerships and implementations of joint and university research in the topical areas of science and technology, as well as the creation of alliances between universities and corporations [Ghuljaevskaja, Shumakova and Popov (2010)]. The collaboration between industry and universities serves for the latter as the additional source of funding for fundamental research and opportunity to generate revenue from commercialization of R&D results and slot graduates into jobs.

Nevertheless, industry and universities do not fully recognize the potential of such collaboration. It appears that universities lack of entrepreneurial skills, and they remain oriented towards the academic approach. At the same time, the industry is focused on achieving short-term goals; e.g. the main goal of small innovative enterprises is surviving, therefore they need quick solutions, which usually cannot be provided by universities. Besides, the environment, in which universities and companies operate, as well as internal structural units of universities and companies do not promote close collaboration. Such an environment should include appropriate legislation, financial support, incentives, and supporting structures and mechanisms.

In Europe, the attempts to create instruments of innovation policy aimed at improving interaction between science and industry have been undertaken for more than a decade. In many regions, the support programs for cooperation between universities, state research centers, and companies in the field of research and development were

adopted [Rudnik (2011)]. One of such programs is the Tempus program, which was started in 1989 to establish ties with the major universities in Poland and Hungary. Nowadays, Tempus grants help to support higher education reforms and carry out projects aimed at, inter alia, science-business integration in four partner regions: Eastern Europe, Western Balkans, Mediterranean, and Central Asia [Verli (2007)].

The European Commission promoted the idea of collaboration between universities and industry in various information documents and education development programs, which were started in 1980s, considering it as means of education's compliance with labour market's needs, improvement of graduates' employability, and maximization of knowledge usage. The program UNISPAR was established in 1993 after the 27th General Conference of UNESCO. The program is aimed at intensification of cooperation between universities and industry in the field of science, engineering, and technology. At present, many international organizations pay special attention to the strengthening of science-business collaboration and development of special programs to promote it. For example, Organization for Economic Cooperation and Development (OECD) continues to organize seminars and carry out research on the issues of public-private partnership in the field of science and technology. In 2010, OECD adopted the Innovation Strategy, one of the key points of which was the active attraction of industry funding for science and innovation, including funding from abroad, and increase of profitability in related activities [Gokhberg and Kuznetsova (2011)]. At the same time, the World Bank supports establishment of the effective national system, i.e. "network of firms, research centers, universities, and think tanks that work together to take advantage of global knowledge—assimilating and adapting it to local needs, thus creating new technology".

In 2006-2008 amid the increased resource base, the task of transition to the innovative model of development was set up in Russia. As a result, this led to increased state support, rising costs, and expanding range of forms and instruments of implementation. A number of fiscal measures (bonus depreciation, reduction of terms for write-off of expenditures on R&D, etc.) were introduced and large financial institutions were set up, including Bank for Development and Foreign Economic Affairs, RUSNANO, Russian Venture Company [Ivanov, Kuzyk and Simachev (2012)]. At the end of 2011, the Russian Government adopted the Strategy for Innovative Development of the Russian Federation 2020 that defined national long-term goals and priorities [Kravchenko*et al.* (2013)].

Russia's National Security Strategy to 2020 is focused on the following key points: improvement of the government's innovation and industrial policy; enabling environment for integration between science, education, and industry; carrying out systematic research to meet strategic challenges of the national defense, national and social security, and sustainable development of the country [Security Council of the Russian Federation (2009)]. The Russian Government has approved the rules of granting federal budget subsidies for development of cooperation between Russian universities and organizations jointly implementing complex projects on creation of high-tech production [Government of the Russian Federation (2010b)]. Thus, industry receives a stimulus to develop high-tech production by harnessing the potential of Russian higher school, while universities generate additional revenue by carrying out R&D projects for industry. In addition, the government provides support to universities for development of innovative infrastructure [Government of the Russian Federation (2010a)].

In Russia, there are various organizational forms of integration between education, science, and industry: science cities, technology transfer centers, science and technology parks, business incubators [Trifunovic and Tankosic (2013)], technology platforms, integrated educational, and research and educational parks, including national and research universities, university complexes, education districts, etc. [Fonotov (2013)]. Besides, the programs for innovative development of Russian state-owned companies contribute to the process of development of cooperation between universities and industry in the field of R&D. Apart from conducting joint research, the programs also cover the following activities aimed at establishment of collaboration with universities: implementation of educational programs, mutual participation of university staff and company employees in collegiate management bodies and advisory boards of these organizations, targeted funding for personnel training, internships and trainings organized on the basis of companies, etc. [Gershman (2013)].

The successful cooperation between universities and enterprises is only possible in case of both sides benefit from implementation of joint projects, the important role in which is played by students – the main intellectual capital of universities and essential resource for industry. In this regard, in the world there are various projects promoting science-business integration by involving students in this process.

IV. DEMOLA PROJECT – A TOOL FOR SCIENCE-BUSINESS INTEGRATION

One of models for science-business integration was suggested in 2008 in Finland. The work on the creation of an international network Demola [Demola Network (2015)] was carried out with the participation of the municipality, Nokia Corporation, and University of Applied Sciences in Tampere. Currently, there are more than 10 Demola Network's representative offices in different countries: Demola expanded to Oulu (Finland), South and East Sweden, Budapest, Maribor, Vilnius, and Riga.

In autumn 2014, ITMO University, St. Petersburg Polytechnic University, and Venture Company "Xmas Ventures" started developing and adopting Demola's model to Russian legal, cultural, and business environment in St. Petersburg[Demola Saint Petersburg (2015)]. The reason for opening a Demola's branch in the northern capital of Russia was the fact that St. Petersburg is one of the most innovatively developed regions of the country, the largest industrial center with a high level of technical efficiency

[Makarov *et al.* (2014)]. The industrial complex of the city consists of more than 700 large and 23,000 small and medium-sized enterprises [Share of innovative industries in the urban economy will grow. Speech of G. Poltavchenko at the 62nd meeting of the International Club of Directors (2014)]. St. Petersburg is traditionally considered as Russian educational center, the city has more than 100 universities with more than 430,000 students. In recent years, St. Petersburg has been considered as a city with special creative environment, where original ideas and new technology are born and unique climate, in which open-mindedness and freedom of economic opportunities are highly appreciated, is formed [Butler and Gibson (2013)]. The proximity of St. Petersburg to Europe and rich scientific, educational and innovative potential were the decisive factors when choosing a launching pad for the international project Demola in Russia.

The main objective of Demola is the establishment of cooperation between industrial enterprises and universities by attracting students to creation of innovative products needed by companies. However, amid the present crisis and organizations' lack of funding for their own R&D activities, Demola project serves as an effective tool for innovative development, both for industry and for region on the whole.

Development of Demola project in Russia is especially important owing to Russia's transition to the innovative model of development. However, Russian economy approaches innovation standards slowly and gradually [Ivanter and Komkov (2012)]. Under the crisis conditions, the government formally supports the idea of establishment of an effective innovation policy, which would ensure competitiveness and stabilization of macroeconomic indicators; but the innovation activity actually remains outside the scope of the anti-crisis campaign [Zaitseva (2011)]. Innovative sector is characterized by the long-term stagnation, extremely limited distribution of non-technological innovation, and low competitiveness (multiple gap with the leading countries in terms of innovation performance) [Makarova, Mikova and Poznyak (2012)]. Due to the technological backwardness in manufacturing industry and inefficient institutions, Russia is currently unable to compete with the economies having highly skilled workforce and exporting innovation; at the same time, because of the relatively high labor costs, the country is clearly not competitive in comparison with the countries with low income and low-cost production [Golova (2014)]. The export volumes of high-tech products in Russia are comparable with the third world countries' ones [Frolov and Ganichev (2014)]. Russian companies' funding for R&D activities (as a percentage of GDP) is still unacceptably low to transit to the innovative model of development [Biryukova (2014)] and equaled 1.5% in 2014 in comparison with 2.8-4.2% in counties-leaders of innovations, such as Israel, Finland, Sweden, Japan [Sukhovei (2014)], but is slightly higher than in developing countries - 0.6-1.3% [Battelle Memorial Institute (2013)]. In crisis conditions, Russian companies tend to reduce funding for R&D projects. However, investments in R&D provide economic stability in times of crisis [Innovation - the pledge of stability in times of crisis (2011)]. Decisions on anti-crisis measures, made by Russian enterprises, show that the innovation potential of the country is not developed enough and it is not ready to actively participate in overcoming the crisis [Komkov, Lugovtzev and Yakunina (2012)]. This led to the necessity for developing new mechanisms that would encourage innovative growth in companies without imposing costs on R&D activities.

Companies cannot increase innovation expenditures in unfavorable crisis conditions. Demola project allows them obtain innovative solutions developed by young and promising specialists, without imposing costs. In addition, Demola gives students an opportunity to gain invaluable experience of working on real projects, applying knowledge in practice, and learning to do market research, and find a job in large and well-established companies.

The project's operating principles are as follows (Fig.4): a company set up a task (a case) to solve. Demola forms an interuniversity interdisciplinary student team for each case. Student teams work on cases and develop prototypes during one semester. The teams are consulted by companies representatives, professors from universities, and Demola facilitators. Students working on projects in Demola gain additional university credit points. English is used as a working language.

Based on the obtained results, each team presents a prototype of its product. Companies, which provided cases, have the right to buy a solution from teams in the form of a non-exclusive license, if they are satisfied with the results.

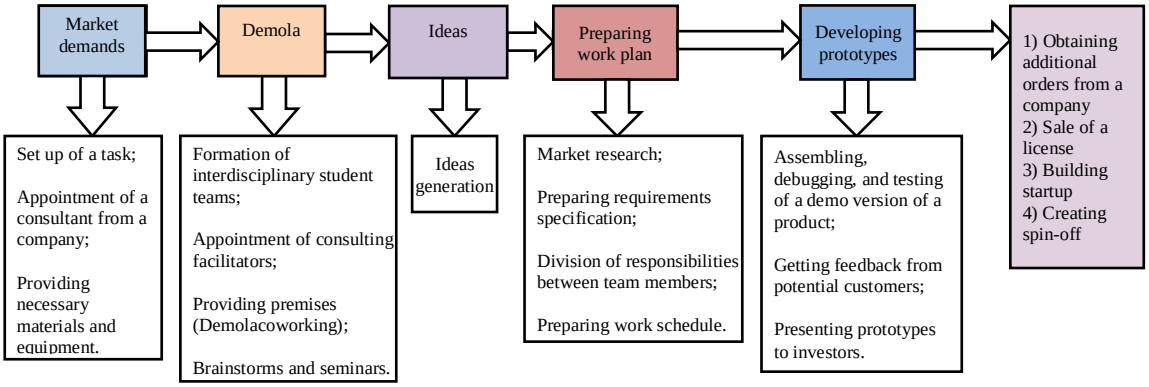

Fig.4. Demola's operating principles

If a company does not buy a solution within one month after the final presentation, a student team reserves the right for intellectual property on the solution and can dispose of it at its discretion. Such experience of using intellectual services promotes innovativeness of a customer [Doroshenko (2011)], as well as provides a company with an opportunity to identify talented students and form a personnel reserve.

Thus, Demola Saint Petersburg project is an international open innovation platform, which:

- Allows a company to get off-the-shelf solutions in a short period of time: demo or prototype of a new product;
- Gives a student an opportunity to gain experience of working on real projects, apply knowledge in practice and find a job in large companies
- Helps a professor from university to establish contacts with industry, expand partner network, and gain access to Demola international network.

Since 2008, more than 1600 students from 37 universities have taken part in the international project, including Lund University, Vilnus University, University of Oulu, Tampere University of Technology, Linköping University, etc. Companies have set up more than 500 cases; among them are Nokia, Intel, Metso, Sony, Saab, Canon, NokianTyres, Ericsson, Lenpoligraphmash, Mezon.Ru, Megafon.

V. IMPLEMENTATION OF DEMOLA MODEL IN ST. PETERSBURG

In the course of implementation of Demola project in St. Petersburg, the authors identified factors that restrict development of Demola Network in Russia:

(1) Demola franchise does not provide commercial business model. This is a social project in which government should play an important role. If city government does not allocate funding (as it does not in St. Petersburg), the franchisee has to look for external funding for project implementation (e.g., sponsorship).

(2) Tax legislation and legislation in the field of patents and intellectual property protection differ in Russia and Finland. Therefore, all legal documents must be brought into line with the standards of Russian legislation, with the involvement of lawyers.

(3) The unstable political situation and Russian policy on import substitution in recent times may discourage potential partners (including Russian companies) to cooperate with the Finnish brand.

(4) State or city grants for Finnish project are difficult to obtain.

(5) Companies are not willing to pay large sums to students and administrative fees to the Demola franchisee. In the current crisis situation it is difficult to find sponsors.

(6) There is no academic credit system in Russian universities. Therefore, it is extremely difficult to include Demola in the educational process and give students additional benefits from participating in Demola project.

(7) Most students, even foreign ones, are trained in Russian and got used to communicate in Russian, while their level of English remains mostly low. This applies especially to engineering students, who are the major contributors to the creation of prototypes. Therefore, the requirement to use English as a working language in Demola is almost impossible to fulfil. Despite the fact that franchisee partners with an international language school, language workshops cannot change the state of affair in the short term.

(8) Russian companies are often not satisfied with the fact that, according to Demola model, intellectual property should belong to students.

The difficulties, which St. Petersburg franchisee faced with, largely indicate that expansion of the Finnish project to other Russian regions in the form, in which it appears to be working well in other countries, is not desirable. The results of two Demola sessions (spring and autumn) in St. Petersburg showed that the Finnish model should be modified and improved. Adaptation of the Finnish model could lead to the creation of a completely new model that could be expanded to other Russian regions and would take into account the economic, legal and political environment. However, in comparison with the first session, the number of tasks from companies and the number of applications from students increased twofold, and the number of universities from which students came increased from 14 to 25 in the second session.

The main factors contributed to the achievement of these results are the following:

(1) among the founders of the company, which was established to develop Demola project in St. Petersburg, are two largest technical universities of St. Petersburg, a venture company, and managers experienced with innovations and technology transfer;

(2) the process of attracting students to take part in Demola becomes easier due to involvement of universities in development of Demola project in St. Petersburg;

(3) despite the crisis, many companies are interested in cooperation with talented students and participation in a new project with minimum expense (the commission paid to a company, which develops Demola project in St. Petersburg, is small, what makes this project social rather than lucrative).

VI. EXAMPLES OF SCIENCE-BUSINESS INTEGRATION PROJECTS AND THEIR STRATEGIES

Due to the underdevelopment of cooperation processes in the innovation sector, one can observe that Russian companies insufficiently apply scientific achievements to production and underestimate market research [Mironova and Shkolnikov (2012)]. As a rule, innovation strategy based on fundamental research leads to technological breakthroughs, regardless of future market study. However, in practice innovation strategy based on analysis of market

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needs is more effective than based on analysis of available technologies one. Therefore, it is necessary to maintain a balance between technology and market research and between marketing pull and technology push strategies [Golichenko (2006)].

Comparative analysis of Demola and similar foreign projects showed that in most cases foreign programs use either a strategy of marketing pull or technology push. For example, the Austrian program called Science Fit, which is implemented by universities in the region of Styria and funded by the European Regional Development Fund, government of Styria, and city of Graz, only uses the strategy of marketing pull. The aim of the program is to help small and medium-sized enterprises to overcome their challenges, and students and postgraduates to find a job in these companies.

The Austrian program called FFG (Austrian Research Promotion Agency), which is aimed at promoting launch of innovative products, serves as an example of science-business cooperation based on technology push strategy. The program is organized by the Austrian Institute of Technology and funded by the Federal Ministry of Science, Research and Economy.

Another example of applying technology push strategy is the Innovation Focus through Strategic Partnerships program, which was established in the Netherlands by Eindhoven University of Technology and the Government of the Netherlands. The main goals of the program are the following:

- to actively develop, strengthen, and expand cooperation with the leading technology companies and organizations at the regional, national, and international levels;
- to stimulate the transfer of knowledge and innovation projects to small and medium-sized enterprises of the region;
- to promote entrepreneurship and provide advisory and other forms of support for high-tech startups and small innovative enterprises established on the basis of universities [Davey *et al.* (2011)].

It should be noted that the strategy used by Demola not only allows to meet the challenges of particular companies (marketing pull strategy), but also enables student teams to explore market, determine real needs in developed products, and build a startup to commercialize competitive innovative solutions while working on projects (technology push strategy). This optimal balance led to the project's successful operation in different countries around the world.

Notes

To sum up, it is obvious that today there is much tension around the issue of science-business interaction. This problem often leads to the lack of demand for universities' R&D results from industry [Mironova (2012)]. Nowadays, one of the main problems of high-tech companies is the acute shortage of highly qualified engineering staff and their lack of business ideas and breakthrough technologies to modernize and diversify production. As a result of current staff overload of work there is a lack of time on testing of interesting ideas and techniques in companies. The model of Demola project helps to solve this problem, by creating an environment of co-creation between universities and companies through the involvement of students in meeting the challenges of industry.

In this paper, the authors conduct analysis of cooperation between universities and industry in Russia and overseas. In other countries, the importance of building innovation infrastructure was identified by government and companies a long time ago; while Russia has only recently transited its economy to the innovative path of development, and the conditions for creation and commercialization of innovations are insufficient for full development of innovation infrastructure. For this reason, the application of foreign experience related to innovations' creation and commercialization is difficult and requires significant adjustments and modifications.

At the same time, business, government, and universities are conscious of the need for cooperation in order to stimulate the promotion of innovation. In the article, authors emphasize the role of students in a special way, as their activities inside and outside universities can result in new ideas, inventions, start-ups, communities focused on raising competencies by participating in various projects. When describing the Triple Helix model, H. Etzkowitz mentioned that the potential for future economic development increasingly lies in universities, inter alia, because students represent an ever-renewing source of new ideas [Etzkowitz*et al* (2007)].

However, the Triple Helix model does not take into account another element, which promotes collaboration between three key elements and helps it to work more effectively. This fourth element is the supporting networks and organizations, which take part in different stages of the process of innovations' creation and commercialization by providing support (including organizational support, informational support, consulting support, etc.) needed for increasing of effectiveness of cooperation between the key participants of the innovation process. Demola International Network is one of such organizations. It promotes generation of new ideas and R&D implementation, taking into account market demands.

Comparative analysis of Demola and similar foreign projects showed that in most cases foreign programs use either a strategy of marketing pull or technology push, whereas Demola uses both of these strategies. Demola is the project that in general could work well in the Russian conditions; however, a number of factors listed in this article prevents it from the expansion to other regions of Russian Federation. Authors hope that their experience of development of the international project in St. Petersburg will be useful for development of such projects on the whole.

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