Innovative entrepreneurship as a factor of the sustainable development in Irkutsk region

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Abstract. The introduction of high technologies in activities of small and medium-sized businesses is a priority task of sustainable development of Irkutsk region. The state is taking measures to support small and medium-sized businesses in the form of tax deferral, financial assistance and a number of benefits to enterprises in the spheres of activity most affected by the pandemic. Budgetary funding of scientific research of universities and other scientific organizations is a prerequisite for development of innovative products. Financial support of innovative technology parks, science cities, innovation centers for the transfer of improved technologies contributes to the introduction of practical modernized goods and/or services sold by small innovative enterprises. Young entrepreneurs between the age of 18 and 30 can receive grants for R&D or subsidies for development of technological production. Small innovative businesses are very risky, so applicants apply for grants from entrepreneurship support funds or investments in venture capital funds. In addition, entrepreneurs use modern innovative technologies to improve their knowledge and skills on the basis of online coworking, crowdfunding and crowdsourcing platforms. However, one of the main components of an innovative breakthrough is the system of education, research and development based on fundamental sciences. Sustainable development of small innovative enterprises is carried out through the creation of technology parks.

1. Introduction
Ensuring stable development of small and medium-sized businesses in Russia amid the growing global economic crisis due to the fall in oil prices and the spread of coronavirus infection is a priority task. The sanctions against the Russian Federation by the EU countries and the United States of America lead to a reduction in investment in Russia. The combination of all these negative factors leads to a reduction in production, a decline in competitiveness, and closure of small and medium-sized businesses. In accordance with the "Unified Register of Small and Medium-Sized Businesses" of the Federal Tax Service, the number of small and medium-sized enterprises in the Siberian Federal District as of 08/10/2020 amounted to 595,954 enterprises and decreased by 25,686 compared to 2019 [1]. Development and implementation of innovative technologies is one of the key factors in the revival of entrepreneurship. According to Peter F. Drucker "Innovation is a special tool that allows an entrepreneur to take advantage of change and turn it into new opportunities for, for example, starting a new business or providing a new service" [2]. Innovative entrepreneurship as a special form of entrepreneurship has been legally regulated in the Russian Federation since 2009 [3]. At present, development of innovative technologies is the main factor in the transition from a resource-based economy to the introduction of innovations in production and services. The level of development of

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fundamental science in Russia is the basis for development and implementation of an innovative model for the development of the national economy. The experience of foreign countries, such as Norway, Sweden, Germany, proves that budgetary funding for research in universities and other scientific organizations is a prerequisite for the development of innovative products. Scientific research organizations of the Russian Academy of Sciences and scientific departments of higher educational institutions conduct research under the "Program of fundamental scientific research of the State Academy of Sciences for 2013-2020". State funding of the innovation sphere is about 60% [4]. In the Global Competitiveness Report 2018, Russia ranks 43rd in terms of provision of innovative products and services [5]. As noted earlier, financial support of innovation technology parks, science cities, innovation centers for the transfer of improved technologies contributes to the introduction of practical modernized goods and/or services sold by small innovative enterprises. On the other hand, private investors are facilitating dissemination of innovative high-tech products online, that are evolving more rapidly with the expansion of the Internet. Informational and investment support is provided through online video conferences, seminars, trainings, fairs, and entrepreneurship contests.

2. Models and methods
In carrying out this study, the method of economic analysis, methods of theoretical research, including analysis, systematization, generalization, comparison, interpretation of facts, statistical data, were used. As a result, the world and Russian experience in the development of innovative technologies, their use for sustainable development of the Russian economy and further development and formation of small innovative enterprises were analyzed. In the context of the coronavirus pandemic, entrepreneurs have been hit hardest. Production and services to the population are suffering colossal losses; some small businesses will no longer be able to restore their activities. The worsening economic situation, the rise in product prices, and the lack of working capital further exacerbated the situation. According to Elena Sigacheva, Deputy Head of Irkutskstat "At the end of last year, only 13% of the surveyed small organizations had almost full capacity utilization..." [6]. Considering the increase in VAT from 18 to 20%, the halt in production amid the coronavirus pandemic and the stagnation of the Russian economy, the number of small enterprises in the Irkutsk region is steadily decreasing. According to the information of the Federal State Statistics Service for Irkutsk Region, the number of small enterprises at the end of 2018 was 3292, the average number of employees was 90,647, in 2019 their number was 3 106 with an average number of employees of 83,965, the number of employees decreased to 77,860 people as of April 1, 2020. However, at the same time, there was an increase in investment in fixed assets of small enterprises from 2,994,430 thousand rubles in 2018 to 3,535,841 thousand rubles in 2019 [7, 8]. Many entrepreneurs are closing their enterprises, the main reason is lack of access to funding for knowledge, a decrease in demand for products, a lack of qualified workers for a rapid change in production technology.

The state is taking measures to support small and medium-sized businesses. The tax deferral provided to small businesses published in the decree No. 409 "On measures to ensure sustainable economic development" of April 2, 2020 will partially offset the direct consequences of the reduction in turnover due to anti-epidemic measures and reduced demand [9]. Government decree No. 540 on the provision of financial assistance and a number of benefits to enterprises in the spheres of activity most affected by the pandemic was published on April 18, 2020 [10]. Small innovative businesses are very risky, so applicants apply for grants from entrepreneurship support funds or investments in venture capital funds. The Foundation for Assistance to the Development of Small Forms of Enterprises in the Scientific and Technical Sphere implements 6 programs ("Smarty", "Start", "Development", "Internationalization", "Commercialization", "Cooperation"). Young entrepreneurs aged 18 to 30 can receive grants for research and development up to 500 thousand rubles. State support for youth innovative enterprises is carried out in the form of subsidies up to 300 thousand rubles [11]. However, the government support measures are not enough, so entrepreneurs use modern innovative technologies to improve their knowledge and skills on the basis of online coworking, crowdfunding and crowdsourcing platforms. The coworking center «Tochka Kipeniya» is very
popular in Irkutsk, it organizes events for entrepreneurs and startups using modern cloud technologies. During 2018, more than 13,500 people took part in their 650 open events [12]. The coworking center “in Lermontov” with a built-in business accelerator was opened in 2015. Currently, “in Lermontov” is an object of innovation infrastructure, created by private entrepreneur Alexei Egorov for entrepreneurs in the field of innovation. Since 2016, the corporate accelerator Generation S has been helping to connect large businesses and startups with innovative ideas in Irkutsk. Already in 2017, 106 startups from Irkutsk applied for participation in GenerationS-2017. The best of 3.47 thousand technology entrepreneurs were able to participate in the accelerator to refine projects in accordance with consumer needs. Annually, as a result of competitive selection, the best projects on the recommendation of Generation S receive funding and promotion from the company’s partners and venture investors [13]. Creation of specialized infrastructure coworking, crowdfunding and crowdsourcing online platforms and organizing events on their basis contributes to the promotion of entrepreneurship innovations [14].

Crowdfunding platforms are increasingly funding startups and innovative businesses. Creation and promotion of business ideas and social projects are the most common areas of crowdfunding investment. Crowdsourcing platforms enable startups and existing entrepreneurs to receive services, develop and carry out marketing research by attracting specialists from various fields to participate in the project, searching for partners, and exchanging information with interested enterprises. Projects and startups at various stages of development and implementation are carried out through crowdsourcing. Crowdsourcing contributes to both creation and improvement of new ideas and the dissemination of successful projects. Successful promotion of goods or services using crowdsourcing occurs due to a clear understanding of what the consumer wants to receive. Crowdsourcing is used to improve the business processes of a small enterprise by searching and developing non-standard solutions to the assigned tasks by attracting employees of the enterprise and specialists not associated with the company. According to statistics, only 17% of organizations in Russia use crowdsourcing in their activities [15]. Business owners, especially young startups who have ideas for creating an innovative product, but do not have money for implementation, are increasingly turning to coworking, crowdsourcing, and crowdfunding as modern systems of mutual assistance.

Small investment enterprises achieve increased profits through development of investments through the selection of highly qualified management personnel and appropriate professional qualifications of employees. The main task of entrepreneurs is to create a team and use investments in the training of high-tech production personnel. In modern production, there is a faster reduction in the production cycle of goods, the introduction of new technologies, the creation of competitive goods and services that require new knowledge and qualifications of workers. One of the main components of an innovative breakthrough is research and development based on fundamental science. On the other hand, the education system, high professionalism of specialists will make it possible to make the right choice of products and/or services and to protect their intellectual property.

3. Results and discussion
The successful development of innovation abroad is due to the fact that many universities are engaged in entrepreneurial activities through the opening of innovative small businesses. In Germany, in most universities, specialized structural units carry out implementation of research results in the industry and facilitate the opening of small and medium-sized enterprises under the EXIST program of the Federal Ministry of Education and Research of Germany. In addition, 23 German patent agencies advise and assist inventors in filing their ideas into patent applications [16]. The creation of new high-tech jobs is a prerequisite for the introduction of innovative methods for the sustainable development of the Irkutsk region. The productivity of one employee in a small business is 2 times higher, the implementation time is shorter. Small business generates 24 times more R&D costs per dollar than large business [17]. Sustainable development of small innovative enterprises is carried out through the creation of technology parks. Currently, there are 120 operating and developing technology parks in Russia. The Technopark of Irkutsk National Research Technical University and the Angarsk Technopark operate in Irkutsk Region. More than 30 small innovative enterprises have been created...
on the basis of the Technopark of Irkutsk National Research Technical University. The Technopark of Irkutsk National Research Technical University takes a leading place in the development and implementation of expert seminars, master classes and trainings, retraining courses or advanced training for industrial entrepreneurs. It is planned to promote startups of Irkutsk National Research Technical University through regional clusters [18]. The Center for Social Innovation (CISC) at Irkutsk State University promotes and supports social innovation projects of entrepreneurs and socially oriented non-profit organizations. The Foundation "Support Center for Small and Medium-Sized Businesses in the Irkutsk Region" provides support to improve the production level, develop a management system, and introduce new products [19]. Effective interaction of small and medium-sized businesses, educational and scientific institutions, the Entrepreneurship Support Fund with the participation of the state and regional governments and with attraction of investors lead to the sustainable development of the region based on industry clusters [18]. The creation of science-intensive and high-tech industries based on technologies of the preservation and restoration of natural resources of the Baikal region raises the level of efficiency of small and medium-sized businesses and helps to attract investments and enter the international markets of entrepreneurs, considering new expanded opportunities.

4. Conclusions
Irkutsk Region has a high intellectual and significant energy and mineral resources potential, a favorable geographic location. The sustainable development of the Irkutsk region is ensured by the comprehensive development of the processing industry. Clusters are one of the most effective ways to activate innovative growth in sectors of the economy due to the involvement of all the main elements of the regional innovation system in the clustering process. Creation of small innovative enterprises on the basis of technoparks of Irkutsk National Research Technical University and Angarsk should become a priority task in the concept of sustainable development of the Irkutsk region.

The regional government, the Siberian Branch of the Russian Academy of Sciences and the leading universities of Irkutsk region interact in the development and creation of science-intensive and high-tech industries on the territories of scientific and industrial clusters in four designated zones of advanced development (South, North, Pribaikalskaya, Agricultural-oriented regions) [18]. Transition from a raw material strategy to the dynamic development of territorial production complexes for the development of natural oil and gas resources in the northern territories of the Irkutsk region contributes to the creation of new jobs, the growth of small and medium-sized businesses. According to scientists' forecasts, development of oil and gas fields is promising for the next 100 years, therefore, it is necessary to create science-intensive and high-tech industrial and service enterprises [20]. Fuel and energy resources of the region, with the use of innovative energy-saving technologies and high-tech equipment in the oil and gas industry, will increase the energy efficiency of the economy and improve the environmental situation.

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