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To cite this article: A E Gamberg *et al* 2020 *IOP Conf. Ser.: Mater. Sci. Eng.* **971** 052011

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# Centralized procurement as a financing tool for innovation and technology entrepreneurship

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**Abstract.** This article proposes a model of phased financing of innovative projects implemented by small enterprises to market, using the internal "fundraising" of such companies, by participating in centralized procurement procedures under 44-ФЗ and 223-ФЗ. The risks of applying such a model of project financing are assessed and the types of procurement procedures are compared with the current legislation of Russia in this area.

## 1. Introduction

The economy at the macro and mesoscale during the period of crisis changes in the market and the lack of demand for its raw material model should be ensured by the creation of domestic trade and domestic production. Ensuring such an economic model is impossible without the active development of innovations and technical innovations. Global practice shows that ensuring the launch of this type of product on the market is most effectively implemented through the science-start-up-business model, which is justified by the flexibility, speed and low level of overhead costs for start-ups belonging to the category of small and medium-sized enterprises, compared to large businesses. Thus, subjects of small technical entrepreneurship become focal companies in regional and federal value chains and can have a significant impact on GDP in aggregate.

Nevertheless, a number of studies of the latest market conditions suggest that even in the pre-crisis period one of the main problems of such enterprises is the inaccessibility of financial resources at the level of both venture capital and bank lending and other types of borrowed and attracted capital. It is worth mentioning that for the current period for the development of such projects to small businesses not secured by collateral, an extensive credit history and significant constant turnover, it will be extremely difficult to find financing.

The number of companies implementing scientific and technical projects and transferring technologies to mass production in Russia is still negligible.

It is obvious that in the process of transition from a command to an open type of economy in Russia, the development of this market was chaotic.

So, from 1991 to 1995, about 90 thousand newly opened enterprises implementing scientific and technical projects appeared on the market. First of all, this popularity of this line of business is due to the fact that the intellectual developments arising in the framework of academic science have the opportunity to commercialize in the domestic and foreign markets. However, the difficulty of overcoming market barriers associated with a large number of imports and the low organization of market relations themselves led to negative dynamics in the emergence of such enterprises in the future,



which was described in a study by A.V. and Gamberg A.E. [1]. So by 2000, their number barely exceeded 40 thousand, and by 2004 - 25 thousand [2].

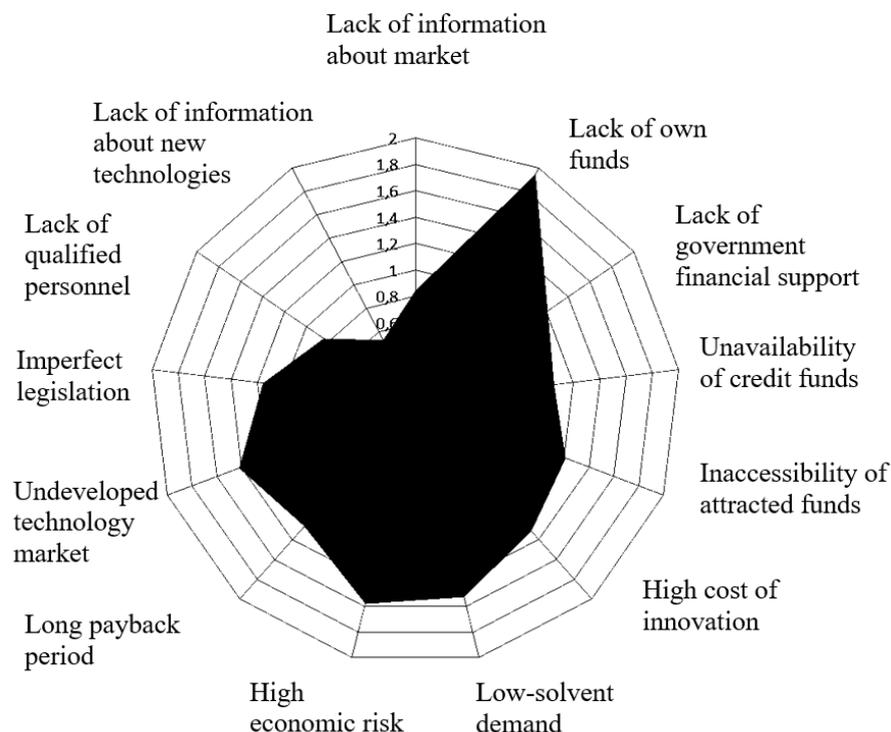
According to official statistics, less than half of the start-up small enterprises of the scientific and technical sphere survive in a five-year period, while the average life of the enterprise is 2-3 years, depending on the specifics of the business and market conditions. [3] These statistics clearly reflect the fact that the first stage of development of scientific and technical enterprises is critical for the conditions of the domestic economy. [4,5]

## 2. Materials and methods

We conducted a study of the presence and structure of economic, organizational, scientific and technical barriers present in the domestic innovation market. In the course of this study, the leaders of small innovative enterprises created at the leading universities of Yekaterinburg, Chelyabinsk and Novosibirsk were interviewed, the sample included enterprises founded with the participation of the Ural Federal University, South Ural State University and Novosibirsk State University. [6]

The managers were asked to name the barriers that impede the development of their enterprise, which they had to face at this stage of activity, and also, in their opinion, would have to face in the future. During the questioning, the respondent was asked to rank the proposed types of barriers according to the degree of influence on the company's activity on a scale from 0 to 3 points, 0 - no influence, 3 - highest impact.

The results were processed by finding the average, fashion and median among the indicators assigned by respondents to each of the barriers. Based on these calculations, diagrams are constructed that show the weight of each estimated barrier in their total mass at all stages of the life cycle of a small innovative enterprise [4], according to the manager (Figure 1).



**Figure 1.** The average indicator for assessing barriers by entrepreneurs.

As you can see from the diagram, on average, entrepreneurs identify the main barrier is the lack of working capital of the enterprise.

Replenishment of the investment resource required for the implementation of projects in the unavailability of attracted financing and lending is possible by obtaining revenue from non-core supplies and the implementation of work, services and other non-operating income. [7,8]

The main criterion for choosing such channels for creating an investment resource for the implementation of innovative technological enterprise projects is the minimal risks of no payment at the costs incurred, as well as transparent conditions for fulfilling such contractual obligations and ensuring quick access and constant demand for such activities at low costs for attracting customers. [9,10] In this case, the centralized market becomes an ideal counterparty - state customers, whose procurement activities are regulated in accordance with local and federal laws.

### 3. Results

On the territory of the Russian Federation, two fundamental laws on procurement are in force: the Federal Law "On the contract system in the field of procurement of goods, works, services for state and municipal needs" dated 04.04.2013 N 44-FZ and the Federal Law "On the procurement of goods, works, services by certain types of legal entities" dated July 18, 2011 N 223-FZ. [11,12].

These laws apply to purchases made by government agencies (44FZ) and companies more than 50% state-owned, as well as some other types of organizations (suppliers of heat supply, electricity, services). The regulation of the responsibility of suppliers and customers within the framework of this legislation operates in accordance with the following principles: openness, transparency of information on the contract system in the field of procurement, ensuring competition, professionalism of customers, stimulation of innovation, unity of the contract system in the field of procurement, responsibility for the effectiveness of ensuring state and municipal needs, the effectiveness of procurement, which follows from paragraph 6 of Art. 1 h. 1 44-FZ and clause 3 of article 1 223-FZ. A comparison of risk factors for taking part in centralized procurement, as an instrument for generating investment capital for a small enterprise - a technical startup and conducting direct commercial activities according to these legal acts is presented in the table below.

**Table 1.** Comparison of risk factors for taking part in centralized procurement.

| Factor                                     | 44  | 223   | Open market                                    | Note   |
|--|---|---|--|--|
| Marketing cost                             | Minimum (financial security)                          | Average (financial security + paid inquiries)         | High (customer acquisition costs, advertising) | Participation in purchases under 44-FZ and most purchases under 223-FZ does not require investments in marketing, contracts are concluded through an open trading procedure.   |
| Payment period                             | From 15 to 30 calendar days from the date of delivery | From 15 to 90 calendar days from the date of delivery | Limited only by contractual obligations        | Most of the purchases under 44-FZ and part under 223-FZ pass through treasury support. The law always protects the interests of the supplier if the contract is fulfilled, which implies the imposition of significant penalties on the customer in case of violation of the terms of payment. |
| The risk of not accepting goods / services | Low (subject to technical specifications)             | Average   | High   | Within the framework of 44 and 223 Federal Laws, a number of regulators operate that do not allow the acceptance of products / goods / services by customers, provided that they comply with   |

| Factor           | 44   | 223  | Open market                             | Note   |
|------------------|--|--|---|--|
| Contract pricing | Contract pricing is based on the collection of offers from different suppliers, future price fluctuations are taken into account | Contract pricing is based on the collection of offers from different suppliers, future price fluctuations are taken into account | Limited only by contractual obligations | the technical specifications, such as the Federal Antimonopoly Service, the Treasury, and higher organizations of the customer). In the case of the commercial market, the only protection against acceptance is an arbitration court with a heterogeneous practice structure.<br>The price of a centralized order is formed from the offers of potential participants that initially take into account the potential drop in prices at future auctions, a 10% variable price coefficient for price increases is also laid, which makes the pricing in a centralized order 20-30% higher than in the market. |

As can be seen from the table, the main advantage of participating in procurement of state customers for a small enterprise in the scientific, technical or industrial sphere is the absence of risks of non-payment or late payment, which allows us to predict a stable external cash flow. The model for implementing the financing scheme for innovation is presented in the figure below.

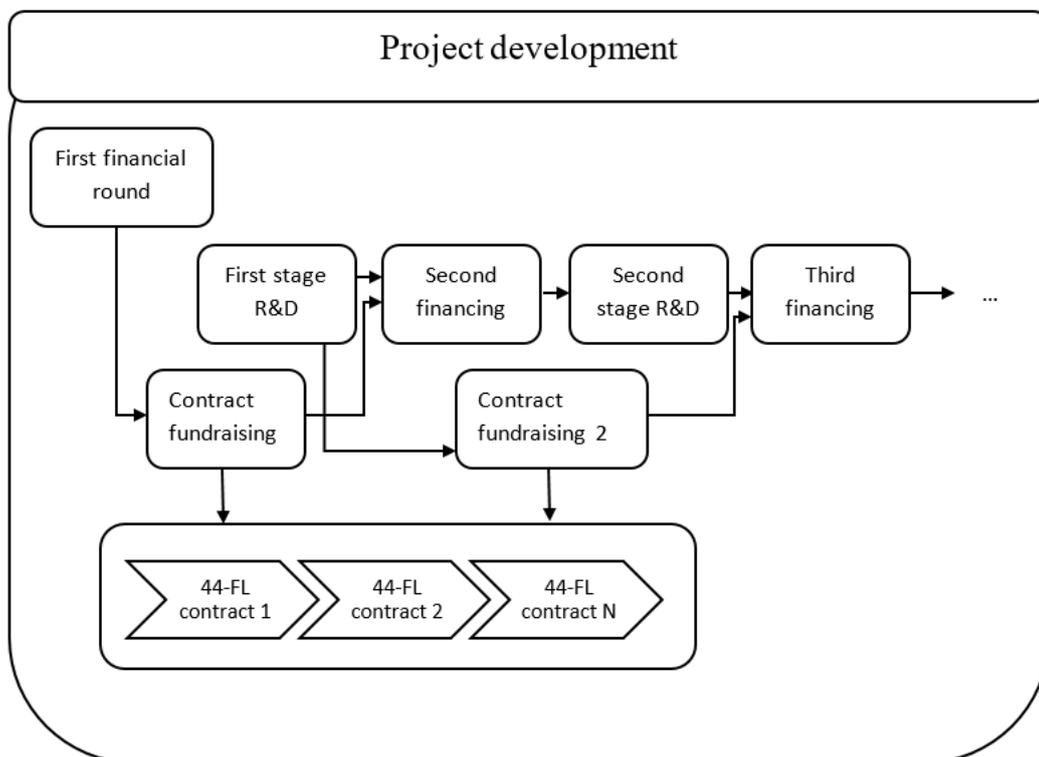


Figure 2. Model of financing of innovation based on centralized procurement.

As can be seen from the figure, between the end of the first stage of research and the end of the execution of centralized contracts there is a time lag, justified by the fact that an external business process can interfere with the target process - product development.

#### 4. Conclusion

As the subject of contract execution, the enterprise should choose the subject of its competencies, usually associated with engineering. The optimal solution is to solve design problems in the format of work and services for a wide profile, competencies of this kind are widely valued in the centralized market, but at the same time they do not carry a large amount of variable costs at the first stage of contract execution and allow you to keep the level of current expenses unchanged, while the cost. Such services are quite high. The use of such a financing scheme can ensure a stable financial flow for a technical startup, which gives an almost insurmountable competitive advantage in the speed of entering the market. In addition, this mode of project financing allows you to make contacts with potential customers of the main product being developed as part of the fulfillment of contractual obligations for executed centralized orders.

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