

Development of the mechanism of innovation project management at enterprises (Volgograd region practice)

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Abstract — The authors of the article have found that in order to transfer the development of small and medium-sized industrial enterprises to innovative rails, it is crucial to solve managerial problems caused by the lack of their own competencies and difficulties that distract the company's management resources from current activities. To solve these problems, the authors proposed a model of innovations project management involving resources of innovation infrastructure institutions. The distinctive feature of this model is separation of project processes into those aimed at innovative product production and those ensuring promotion of innovative products from the idea stage to the market realization stage. This approach makes it possible to clearly divide the areas of responsibility between enterprises and innovation infrastructure institutions. The authors also propose an algorithm for detecting, in the sectoral context, enterprises with the greatest potential for export and import substitution at the regional level, including import-export operations in the exchange process not only with foreign countries, but also with other subjects of the Russian Federation. The methodology that underlies the algorithm includes a system of criteria for assessing export potential and sets their weight for calculating final indicators; a specially designed questionnaire; a representative range of enterprises; and indicators calculation. The application of this algorithm makes it possible to assess export potential of enterprises in the sectoral context including opportunities for non-resource exports development. It is shown that the implementation at the regional level of measures to support non-commodity exports and import substitution stimulates an increase in the level of industrial enterprises innovative activity.

Keywords – *innovation, innovation activity, import substitution, innovation infrastructure, project management, export potential*

I. INTRODUCTION

Today in the Russian practice there is a range of problems that impede the development of innovative industries at the regional enterprises. These problems are rooted in the fact that most manufacturing enterprises in many regions belong to small businesses which entails a very high dependence on the external environment and significantly increases their risks associated with financial investments in innovations. With the growth of the business scale, the sustainability and level of enterprises innovative activity increases; however, small processing companies in the regions have practically no incentives and resources for business consolidation [1]. All this creates a formidable barrier to increasing innovative production, and, as a rule, the regional innovation systems lack their own resources to overcome this barrier.

II. MATERIALS AND METHODS (MODEL)

The following algorithm is proposed to identify enterprises with the greatest potential for the development of export and import substitution at the regional level [2,3]:

Stage 1. Methodological support of the study. It involves the following set of activities::

- development of a system of criteria (I_n) for assessing enterprises export potential;
- setting the criteria significance weights (k_i) by the method of expert assessments ;
- development of a questionnaire for data collection to assess enterprises export potential and import substitution possibilities;
- detecting a representative range of enterprises.

Stage 2. Questionnaire survey. This stage includes sending out and collecting filled questionnaires, processing received questionnaires.

Stage 3. Evaluation of enterprises export potential and import substitution: possibilities:

3.1. Calculation of indicators for assessing enterprises export potential:

- assigning each indicator (j_i) a certain value according to the five-point scale (in order to turn the indicators values into comparable forms);
- detecting a value indicator for each criterion:

$$I_n = \sum_{j=1}^p k_i \times j_i,$$

k_i – significance weight of the criterion under consideration;

j_i – number of points which are given by respondents for the i -th indicator;

- calculation of the export potential index for enterprises by industry:

$$I_{ep} = \sum_{n=1}^N I_n,$$

I_{ep} – export potential index of the enterprise;

I_n – value indicator for the n -th criterion ($n = 1, 2, 3, 4, 5, 6, 7, 8$).

- enterprises ranking in accordance with their export potential index.

3.2. Evaluation of import substitution includes:

- analysis of imported products structure;
- detecting in the region the presence of production of imported products analogues and products which got under embargo;
- identifying in the region enterprises that are potentially ready to produce import-substituting products;
- formation of the list of import-substituting projects and analysis of resources necessary for their implementation.

Stage 4. Drawing conclusions:

- drawing conclusions based on the data obtained;
- working out some proposals.

III. RESULTS AND DISCUSSION

Today, management problems can be identified at most enterprises:

- most enterprises do not have a clearly defined development strategy, i.e. there is no strategic plan in a formalized form;
- lack of incentives system for rationalization and inventive activity of employees;

- weak preparation of business plans for new technologies implementation and new products launch;
- the structures of most enterprises lack departments or employees who are responsible for innovative development; there is no intellectual property management system, no research of innovative products market, no strategic development for market promotion of such products [4].

The current circumstances for innovation management implementation are caused by the conditions of high uncertainty, limited time and resources that have a significant similarity to the conditions for project activity. Therefore, the same approach to enterprise innovations management, as well as to of innovative projects management seems to be the most expedient. At the same time, the introduction of a project approach to increase the level of innovative activity of small and medium-sized industrial enterprises, is hampered due to the fact that innovative project management involves distracting the company's resources from use in its daily activities. In large companies, project offices are formed to apply this approach. However, small businesses do not have this opportunity. Therefore, the paper proposes to implement the project approach at the enterprise with the involvement of the resources of innovative infrastructure institutions (**Figure 1**).

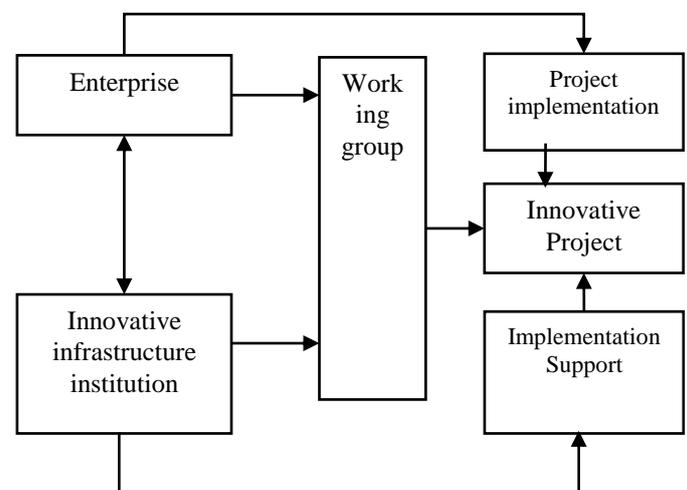


Fig. 1. The interaction model of project approach application at the enterprise with the involvement of the resources of innovative infrastructure organizations

The project processes can be divided into two main categories: processes that are aimed at obtaining the desired result of the project (innovation product, etc.), and processes that are necessary to control the processes for obtaining the product. They intersect and interact throughout the project life cycle. Such an approach makes it possible to clearly divide the areas of responsibility between enterprises and innovation infrastructure institutions [5].

With the proposed approach, the innovation infrastructure institutions perform a part of functions in managing the project development and implementation (Table 1).

Table 1 Methodological support for project management implementation at enterprises with the participation of innovation infrastructure institutions

Project Management Function	Methods and tools
Initiation	Technological audit
	Identification and description of technological potential (proposals) and / or technological needs
	Market research
	Assessment of fixed assets and space availability necessary for the project
	Assessment of necessary employees availability (number and qualifications, as well as employees experience in launching innovative products to the market)
	Registration of intellectual property rights
	Search for project funding sources
Planning	Development of project schedule
	Development of production plan and sales plan
	Development of financial plan (budgeting)
	Identification and assessment of possible types and sources of risks, development of measures to reduce them
	Development of proposals for qualified professionals team formation
	Development of management organizational structure
	Business plan development
Execution	Attracting investments aimed at innovative project implementation
	Search and selection of partners for project implementation
	Comprehensive information provision and methodological support to all participants of innovation project
	Innovative project support
Coordination of project implementation	Preparation of meeting minutes and protocols of intent
	Redirecting clients to partner organizations
Control	Development of project reporting for different management levels
	Monitoring project current status and formation of management reporting
Completion	Monitoring communication system functioning
	Registration of intellectual property rights
	Preparation of research and technical report on project implementation
	Preparation of financial report

The selected methods and tools correspond to the tasks to be solved within the framework of the project approach application for innovative projects implementation in various target groups: small and medium-sized enterprises, and start-ups.

The key aspect of structural changes in the economy bringing it to a higher quality level is economic development support based on the growth of high-tech products exports and production of competitive import-substituting products by industrial enterprises [6]. Based on this thesis, the assessment and analysis of the development potential for export and import substitution at the regional level in the areas of enterprise activity provides a fairly complete and clear (objective) picture of what is really happening.

The above algorithm is tested on the Volgograd region example. The study showed that the level of export potential and possibilities of import substitution of enterprises varies due to the industry specificity. According to our calculations, only 6% of export-oriented enterprises have a high level of export potential; the average one is 43%; the lowest is 51% [7]. If you pay attention to the export potential in the context of industries, you can see that enterprises in such sectors as food and machine-building industries, chemical production, and metalworking have the greatest potential for export activities realization (Figure 2).

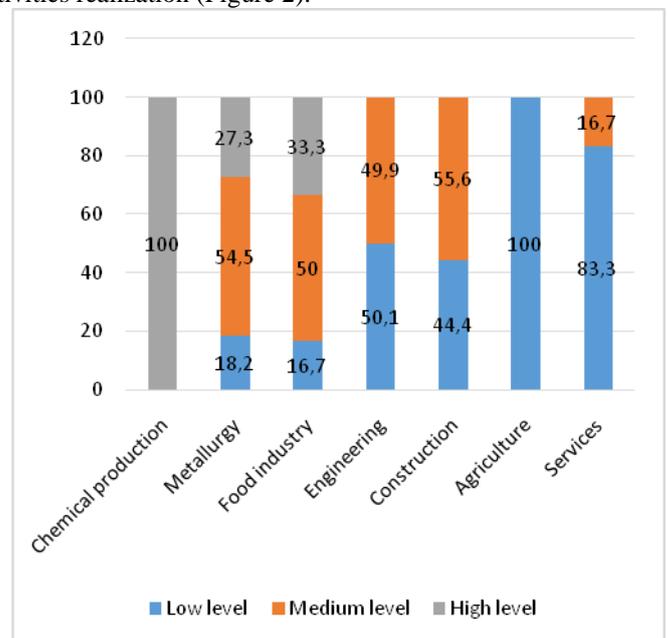


Fig. 2. The level of export potential of the Volgograd region enterprises, %

The analysis has shown that the biggest part of product range of food, chemical and metallurgical industries can be produced at the Volgograd region enterprises. With implementing the import substitution policy and organizing imported analogues production, the regional production volume can be significantly increased.

The obtained results necessitate the development of state policy to support small and medium-sized enterprises. It should take into account the most efficient and rational allocation of limited resources.

IV. CONCLUSION

Today, there is a number of problems that impede the development of innovative industries at regional enterprises in the Russian conditions. These problems are rooted in the fact that most manufacturing enterprises in many regions belong to small businesses, which entails their very high dependence on the external environment and significantly increases their risks associated with financial investments in innovations. With the growth of business scale, the sustainability and level of enterprise innovation activity is increasing, however, small processing companies have practically no incentives and resources for business consolidation in the regions. All these factors create a formidable barrier to increase innovative production, and, as a rule, regional innovation systems lack their own resources to overcome this barrier.

To increase the production volume of innovative products, it is necessary to create appropriate conditions and incentives for enterprises; however, the regional innovation systems resources are not enough for this, as a rule.

To transfer the development of small and medium-sized industrial enterprises to innovative rails, it is crucial to solve managerial problems related to the lack of their own competencies and to the difficulties caused by the distraction of company management resources from current activities. At the same time, under the modern conditions of constant

market orientation in order to achieve the enterprises goals, their reference corporate strategies should be combined with innovative development strategies.

The focus of policies aimed at the development of technology transfer and commercialization systems should be shifted towards supporting industrial enterprises and their activities on creating and commercializing intellectual property.

References

- [1] Schumpeter, J.A. Capitalism, socialism and democracy (2010), pp. 1-442. DOI: 10.4324/9780203857090
- [2] Harihayati, T., Lubis, R., Atin, S., Widiyanti, U.D. The company's performance assessment using balanced scorecard (2018) IOP Conference Series: Materials Science and Engineering, 407 (1), DOI: 10.1088/1757-899X/407/1/012067
- [3] Drucker, P.F., Noel, J.L. Innovation and entrepreneurship: Practices and principles (1986) Journal of Continuing Higher Education, 34 (1), pp. 22-23. DOI: 10.1080/07377366.1986.10401060
- [4] Committee of education, science and youth policy of the Volgograd region. Orders. Access mode: <http://obraz.volgograd.ru/norms/acts/672/>
- [5] Dolan, E.G. Science, public policy, and global warming: Rethinking the market-liberal position (2006) Cato Journal, 26 (3), pp. 445-468
- [6] Korobov, S.A., Moseiko, V.O., Marusinina, E.Y., Novoseltseva, E.G., Epinina, V.S. The substance of a rational approach to entrepreneurship socio-economic development (2017) Contributions to Economics, (9783319454610), pp. 207-223. DOI: 10.1007/978-3-319-45462-7_24
- [7] Committee of industry and trade of the Volgograd region. Access mode: <http://promtorg.volgograd.ru/>