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Method of Innovative Development Strategy Formation for the Development of the Industrial Enterprises

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Abstract. The article proposed matrix method of choice of enterprises innovation strategy, based on the determination of the total integral indicator of the innovation potential and of the integral adaptability indicator of innovation activity potential.

Keywords: An innovative strategy, innovative potential, indicators of innovative potential, innovative development.

Introduction. The increasing role of individual economic agents, the necessity of their purposeful interaction with each other and the environment within the outlined methods of state and regional regulations, puts the problem of the strategy of innovative development, which should target innovation, investment, marketing and production sales activities of economic entities on the detection and comprehensive use of existing and future market opportunities, maintaining the balance of certain external and internal possibilities of development in order to achieve success in competition, maximize current and future income.

Materials and methods. Materials. When writing work has benefited research and development manuals, periodical literature and materials that reflect the economic and financial activity of the object of research. Methods. The study of this question used the following methods: the method of system analysis, economic-mathematical methods, matrix method, comparison and synthesis methods.

Discussion. In this regard, rather acute is the problem of timely promotion of innovative features, the concentration of resources, the operational management of an innovative process with minimum risk of incorrect selection of innovative direction.

A significant contribution to research and address issues of innovation development of enterprises have made such domestic scholars as Antoniuk L., Volkov A., Galchinskyy A., Heyets V., Grinyov A., Grinyova V., Lapko O., Krasnokutska N., Osetskyy V., Chervanyov D. and others [1, 2, 3, 4, 5].

Results. There is no single innovative strategy existing for all organizations. Every organization, even of one industry is unique, that's the reason why the definition of its operational strategy is an original as well, because it's depending on the position of the enterprise in the market, its potential, the dynamics of development, competitor behavior, economic conditions, social environment and many other factors.

So the choice of innovative operational strategy – is a complex process that requires consideration of a large number of multidirectional factors.

Based on the described above, we offer the methodology innovation strategy choice, which includes three stages:

1) Determination of total integral indicator of innovation potential ($I_{in.p}$). The cumulative integral indicator is defined as the arithmetic mean of integrated indicators of innovative potential:

$$I_{in.p} = \frac{I_{he} + I_{mtp} + I_{fep} + I_{sp} + I_{mp} + I_{ip} + I_{omp} + I_{mrp} + I_{imp}}{n_1}$$

where n_1 - total number of integrated indicators

I_{he} - integral indicator of human resources of enterprises

I_{mp} - integral indicator of material and technical potential of the enterprise,

I_{fep} - integral indicator of financial and economic potential of enterprise,

I_{sp} - integral indicator of the scientific potential of the enterprise,

I_{mp} - integral indicator marketing potential of the enterprise,

I_{ip} - integral indicator of the infrastructure potential of the enterprise,

I_{omp} - integral indicator of organizational and managerial potential of the enterprise,

I_{mrp} - integral indicator of market potential of the enterprise,

I_{imp} - integral indicator of informational potential of the enterprise.

2) Determination of the integral indicator of adaptability of the potential of innovative operation (I_{ad.p}). Adaptive component is the basis for making these particular strategic innovative decisions. Therefore, to assess the adaptive component it is proposed to introduce the concept of "integral indicator of the adaptability of innovative operation indicator" (I_{ad.p}), which will show how existing at the time of evaluation, respectively, industrial, financial, personnel, infrastructural and other features are adapted to the innovative changes and unpredictable demands of the environment, means how fast can the alternative and unplanned innovative solutions be realized within the selected strategy of innovative operation.

3) Direct selection strategy. Upon different combinations of values of integral parameters I_{in.p} I_{ad.p} we can form a matrix of choice of innovative strategies that will look as follows: (Table 1):

Table 1

System of selection of innovative enterprise operation strategy

Value of the cumulative integral indicator of innovation potential (I _{in.p})	Very good (0,8 < I _{in.p} ≤ 1, in exceptional cases > 1)	Strategy "Niche market"	Passive offensive strategy	The active offensive strategy
	Good (0,5 < I _{in.p} ≤ 0,8)	The strategy of targeting small-intensive firms	The strategy of "proactive strikes"	The strategy of "challenge"
	Satisfactorily (0,2 < I _{in.p} ≤ 0,5)	Opportunistic strategy	The strategy of differentiation	The strategy of price leadership
	Poor (0 < I _{in.p} ≤ 0,2)	Strategy directed to innovative changes	The strategy of waiting	Imitational strategy
		Poor (0 < I _{in.p} ≤ 0,3)	Good (0.3 < I _{in.p} ≤ 0,7)	Very good (0.7 < I _{in.p} ≤ 1, in exceptional cases, > 1)
The value of the integral indicator of adaptability potential innovations (I _{ad.p})				

This technique described was tested on Ukrainian enterprises, which form a group of the State aircraft concern "Antonov", namely on the SE "Aviation Scientific-Technical Complex n.a. O.K. Antonov", on Kharkiv State Aviation Production Enterprise, SE "Kyiv Aviation Plant "Aviant" and SE "Plant of 410 Civil Aviation". The period of study covered 3 years, from 2007 to 2009.

According to the results of calculated integral and aggregate indicators of innovative potential and adaptability of the enterprise, according to the suggested method in the article, it has been defined the alternative strategies of innovative operation of investigated

enterprises. The position of enterprises on the matrix of strategies and vectors of changes of their innovation activities during 2007–2009 is presented on Figure 1.

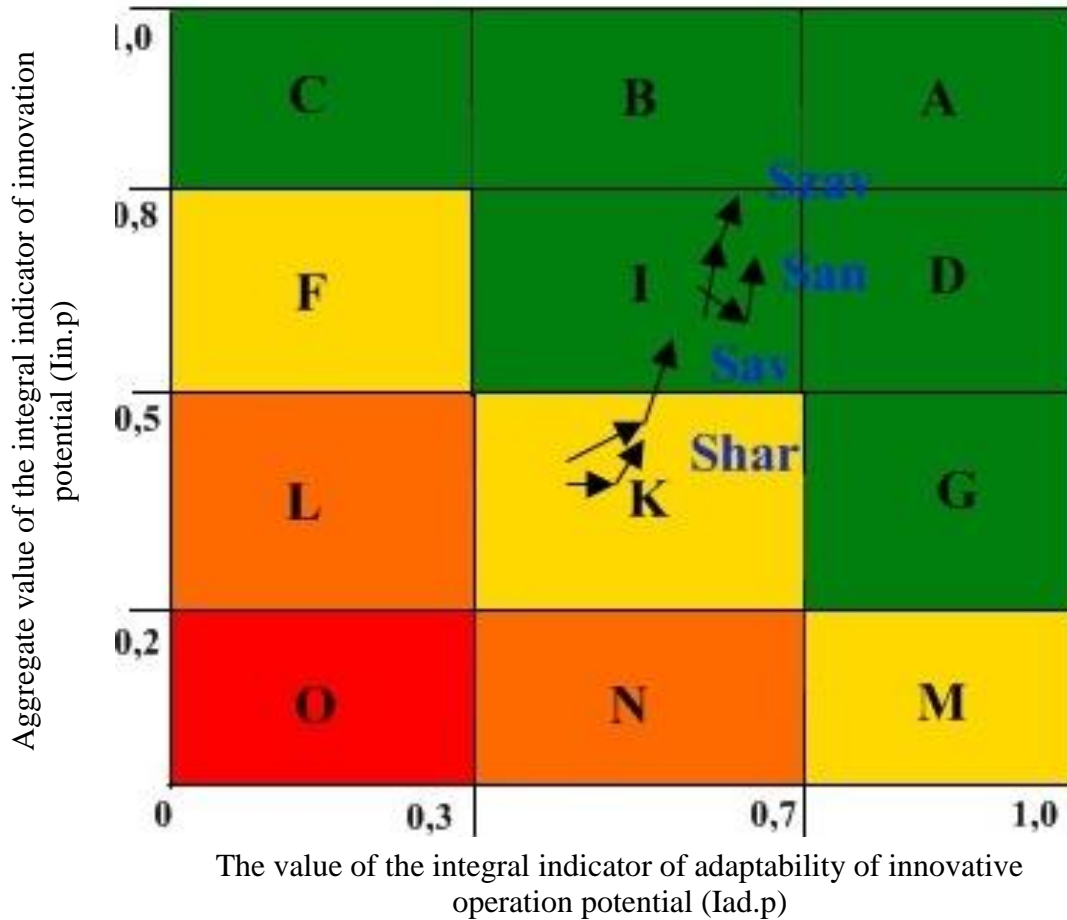


Fig. 1. Strategic changes and directions of innovation activity development of the enterprises which are part of the State Concern aircraft "Antonov" for 2007–2009.

Conclusions. According to the results of the analysis, SE "Aviation Scientific-Technical Complex n.a. O.K. Antonov" for the past three years follows the strategy of "Proactive Strikes". This strategy aims to protect favorable market position in aircraft building industry. This strategy is close to the enterprise because it requires the availability and use of significant production capacities to occupy the leading positions in the market, geographically beneficial location, fixing a positive company image among consumers. By direction of the vector can be said that although the company has had a mild recession in 2008, but resumed its positions and its activity is now clearly focused on the transition to offensive strategy. It should be enough for this enterprise to only slightly increase its innovative potential and that due to the presence of high scientific, personnel, infrastructure and information component will not be difficult.

Kharkiv State Aircraft Manufacturing Enterprise for 3 years is in the zone of differentiation strategy, which consists in the implementation of company improvements, modernization and modification of the product. Yes, indeed, the possibility of staying at such a strategic position is ensured only by gained in the Soviet Union years considerable industrial potential and existing in the enterprise, as well as in all enterprises of this sector in Ukraine, and the highly innovative and active personnel. The company since long time is referred to as unprofitable, as the production capacity and technology will soon become so much obsolete that no public funds will be good enough for their recovery. This situation is reflected by the position of vectors on the matrix, they show that the position of the

enterprise in 3 years on the market hasn't significantly changed, and the length of the vectors indicates the absence of attempts to build up existing innovative potential.

SE "Kyiv aviation plant "Aviant" during the 2007-2008 years was also in the zone of differentiation strategy. However, during 2009 the enterprise succeeded to mobilize all available resources to improve the innovative potential and to transit to a strategy of "proactive strikes". Although the position compared to other companies, which are exposed to this strategy is quite low, development perspectives are now scheduled by the enterprise.

SE "Plant of 410 Civil Aviation" as well as SE "Aviation Scientific-Technical Complex n.a. O.K. Antonov" within 3 years holds a strong position in the area of strategy of "Proactive Strikes". However, the enormous scientific potential of this enterprise puts it in a more advantageous position towards the innovative development. Rapid strategy of movement to the leadership positions in the market is reflected in the thrust and the length of the vectors compared to other companies. Proper use of the mentioned strategy on condition of building up the necessary innovative potential, beneficial support from the state, will enable the enterprise to take a leading position in the named industry, ensuring the basis for a common recovery of the country economy.

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Методика формирования стратегии инновационного развития промышленных предприятий

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Аннотация. В статье предложена матричная методика выбора инновационной стратегии предприятия на основе определения совокупного интегрального индикатора инновационного потенциала и соответствующих интегральных индикаторов адаптивности потенциала инновационной деятельности.

Ключевые слова: инновационная стратегия, инновационный потенциал, индикаторы инновационного потенциала, инновационное развитие.