

THE NEW CONCEPTUAL APPROACH TO THE EVALUATION OF INNOVATIVE BUSINESS DEVELOPMENT (APPLIED TO UKRAINIAN PHARMACEUTICAL ENTERPRISE “FARMAK”)

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In a market economy, it is increased the importance of objective necessity and the innovative development of market relations, which determines the level of their performance and innovations become the crucial precondition for competitiveness in a competitive environment.

The development of economic activity and the national economy can be achieved in various ways, depending on the selected strategies [4]. Let's consider the main ones (Fig. 1):

Innovative development should be considered, like the development based on the continuous searches and using new methods and fields of realizing the potential of the company in variable environmental conditions within the chosen mission and adopted motivating activity that is associated with the modification of existing and formation of new markets.

Innovative potential is a potential that incorporates industrial, scientific, financial, marketing, human, organizational resources and capabilities that allow the company to plan and innovate in continuous improvement of management on the basis of dynamic market environment.

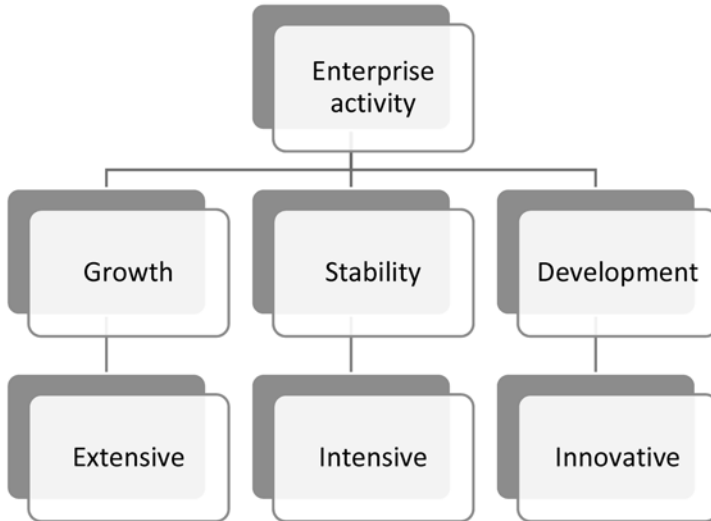


Fig. 1. Selection directions of enterprise development based on strategy*

* Source: compared by author on the basis of [4]

Some scientists propose to introduce a broader concept of “potential innovation development” [PID], which includes a set of innovative resources the constituent elements of the enterprise as a system: (logistical, technological, informational, financial, economic, etc.) [6].

Analyzing approaches to interpretation and evaluation PID that exist in modern economic science and practice, we note that most often it is based in isolation on the components of the internal environment of organizations and form innovative development potential (IDP) [5] (Fig. 2):

→ Market potential

→ Innovative potential — intellectual, interface, information and scientific and research components.

→ Production and sale potential: financial, labor, technology and others.

It is best to select the following items IDP:

Moving on an innovative path of development is possible only under certain conditions (Fig. 3).

In order to reduce the backlog of business enterprises of Ukraine from companies of developed countries and not to allow the country to become

an eternal outsider and raw materials appendage, it is necessary to change radically the strategy and the model of economic development.

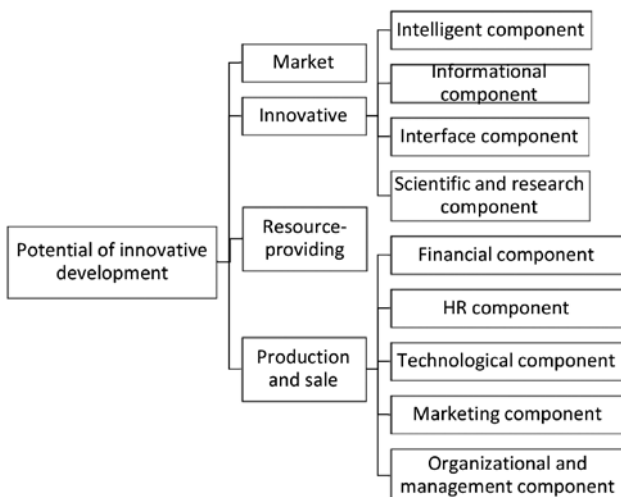


Fig. 2. The structure of the potential of innovative development*

* Source: compared by author on the basis of [5]

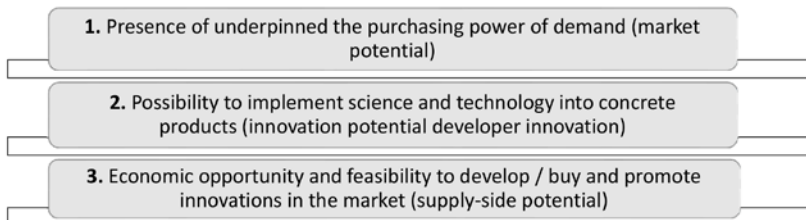


Fig. 3 Prerequisites of transition subjects of market relations to the of innovative development models*

* Source: formed by the author

It should be mentioned the fundamental difference between showing innovative models in the works of local and foreign scientists: in the latter the definition “model of innovative development” as such is rare. Instead commonly used definition is “innovative business model” that is carried out a systematic approach to evaluating IDP [25-28].

Emphasis of the analysis of innovative company development displaced depending on the time period and the level of economic activity.

Using the approach to defining the essence of innovative forms of assessment criteria in the time, there are two groups of methodological approaches, including:

- ✓ Innovative audit, as a way of evaluating and analyzing the innovative development and determination of the existing capacity of the company at a certain time.
- ✓ Analysis methods of using available innovation potential of the enterprise, assessment of prospects and performance conceived projects.

Innovative audit includes assessment processes of innovative business opportunities and their components:

- Innovative position;
- Innovative activity of the enterprise.
- Innovative environment;
- Innovative potential;

Analysis methods of using available innovation potential of the company, evaluating prospects and performance conceived projects can be identified in areas of use:

The financial efficiency and effectiveness, based on modified dynamic methods of calculation of economic efficiency of innovative projects:

- method of net present value NPV.
- method of calculating the profitability index PI.
- method internal rate of return IRR.
- method of calculating payback period PBP.

It should be noted that, despite the fundamental importance of these indicators design procedure requires constant improvement and adjustment, taking into account the specific objectives and activities. These methods are the most interesting for investors and shareholders.

- ✓ Methods that include evaluation of various options.

To summarize the various methods of assessing the potential of innovative and the prospects for its use, they should be distributed into two groups:

- Quantitative: economic and mathematical modeling and analytical methods;
- Qualitative: using subjective forecasts of experts;

✓ Combined: is often the most effective, as it includes all of the above (or most of them), and have a minimal level of subjectivity.

The most famous in the CIS are classic methods of calculating the economic efficiency of innovative projects, economic and mathematical models, market methods when developing a new product, their modernization and adaptation according to the specifics of the company.

Regarding the the developed foreign countries, we can give as an example of comprehensive evaluation method RADAR Improvement Model EFQM (Excellence Framework), which is one of the main standards of quality evaluation of innovative projects in the EU. This technique allows to measure deployment approaches in all areas of the organization (criteria group “Opportunities”).

In general form the evaluation process of innovative potential of the company is shown further (Fig. 4).

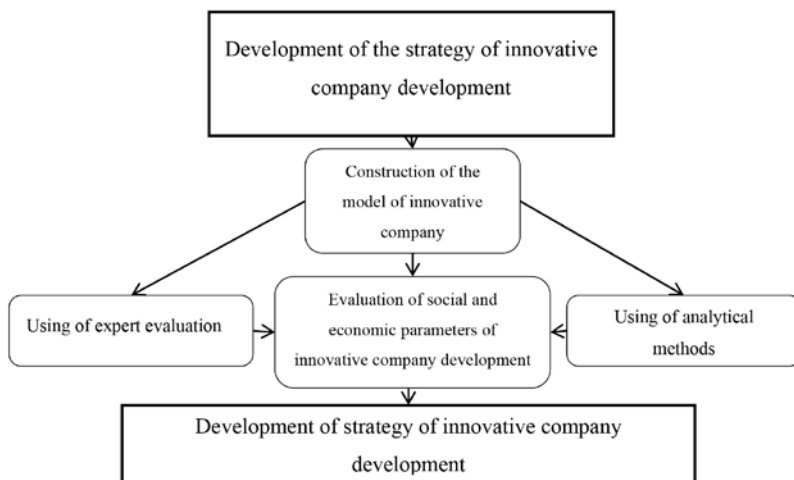


Fig. 4. A typical procedure for evaluating the potential of innovative development *

* Source: compared by author on the basis of [14]

As already mentioned above, the basic methods of evaluating the potential of innovative development can be divided into expert, quantitative and comprehensive.

It should be noted that all methods are somehow related to each other, due to, firstly, the specificity and scope of the company, and as a conse-

quence, the impossibility of creating universal indicators, secondly, without preliminary expert evaluation, quantitative methods be inflexible and does not cover everything that leads to distortion of the assessment.

Thus, based on a study of existing methodological approaches to the evaluation of innovative development company, we provide recommendations to improve the system of evaluation of innovative development company. We found that the main task of developing guidelines is to ensure the construction of such a system of evaluation of potential of innovative company development that could:

- I. Comprehensively cover all the components of the enterprise as an economic organization;
- II. Determine the number of participants IDP assessment process;
- III. Determine the composition of indicators and evaluation criteria;
- IV. Consider the regulated and unregulated influence factors to the level of innovation in the development of the evaluation system.
- V. To have a high level of flexibility associated with its ability to adapt and effectively use in any enterprise, given the characteristics of its business.

It is proposed a general evaluation of IDP exercise by components that characterize its most important aspects, taking into account external factors influencing them. Appropriate, in our view, should be evaluation procedure IDP and its recommendations for testing to a specified company (individually) (Table 1).

Table. 1

Parameters of structural components for evaluating IDP

Elements	Indicators of the development components	Indicators of innovative components	General indicators components
Organizational	The legal form of the company. The organizational structure of the company. Infrastructure of the company	Organizational structure, process technology on all functions and projects and organizational culture. Availability departments responsible for development and innovation. Availability of established relationships between departments to implement innovative projects	The presence of a key person in management;

Chapter 5. Social investments as a contribution to SMEs development

Elements	Indicators of the development components	Indicators of innovative components	General indicators components
Financial and economic	<p>Revenues from the sale. Non-operating income. Production costs. Distribution of profits. Profitability. Break-even point. Accounts receivable and accounts. The value of working capital. The capital structure. Share premium. Financial stability</p>	<p>New or improved ways of financing innovative projects. The share of the production of new or improved products. Potential investment opportunities for innovation. The possibility of funding different types of innovation. New or improved methods for obtaining the loan. The share of investment in research and development and intangible assets</p>	<p>The presence of staff empowered and interested in innovation; Evaluation of organizational management structure and internal communications; Assessment (and) the introduction of new techniques and management standards;</p>
Industrial	<p>The cost of fixed assets and the degree of wear. The degree of utilization of production capacity. Ensuring raw material and fuel and energy resources. The volume and range of products. Commodity stocks</p>	<p>The cost of research equipment needed to perform research and development. The average value of intangible assets (know-how). The use of advanced raw materials. The number of new products introduced (essentially new, new to the industry, new to the enterprise). Number of new developed technologies</p>	<p>The presence of mechanisms of adaptation or reorganization of the management structure; The Balanced Scorecard</p>
Marketing	<p>The volume of trade. The main suppliers of raw goods. Major producers of products. The main markets. Remains of finished products in stock. The maximum and minimum prices. Competitive strategy</p>	<p>The proportion of new markets. The share of new sales methods. The development of new sources of supply of crude or semi-fault. The number of existing and potential channels through which distributed new products. The system is efficient customer service. Availability of databases existing and potential customers and buyers</p>	<p>New trading methods, markets The emergence of new brands and trademarks</p>

Elements	Indicators of the development components	Indicators of innovative components	General indicators components
Human resource	The number of workers. The structure of employment. The level of wages. The level and dynamics of labor productivity. The level of complexity. The intensity of traffic on the reception staff. Productivity	The proportion of workers in the intellectual sphere in total employment. The proportion of people who are highly qualified in the specialty and profile work. The proportion of those engaged in research and development, which are the authors of patent applications in total employment. New methods of training staff. The development of radically new organizational forms of cooperation with employees	The effectiveness of the mechanism of management of intellectual property; Prospects for attracting innovative managers; The use of new organizational forms of cooperation with internal and external entities: active, passive, indirect
Social	Types and amount of social payments to employees. The cost of SC measures. The structure and the cost of non-productive assets	New types and amounts of social benefits and measures. The latest non-productive assets. The share of social and cultural activities	
Scientific and technological	The number of scientific developments that have been put into practice activities of technologies, types of goods. The amount of research and development. The stage of the product life cycle. The competitiveness of goods	Using new methods of production, advanced technology. The combination of different types of scientific data and information from innovation, scientific and technical information. New high technologies, systems and equipment, computer systems. Scientific and technical and design documentation	Patent data and / or Data on international patenting

* Source: formed by the author

It is expedient to use these Fig.s, because these parameters are most influence on the system of the innovative capacity and can see a more complete picture, and easily get their calculation of the available sources for researchers.

Analysis of innovativeness of PHC “Farmak”

“Farmak” today is a large and powerful company, which every year is growing, evolving, moving to new, higher levels. “Farmak” occupies a leading position among pharmaceutical companies in Ukraine and CIS drugs’ market (Table 2).

Table 2

Key activity indicators of PHC “Farmak”, 2016

Indicators units. of measurement	Value 2016	Value 2015
Sales bln.	2,6	2,45
The market share of Ukraine		
among all manufacturers of medicinal products, %	6,2	5,6
among Ukrainian manufacturers, %	17,1	16,26
The share of export, %	22,61	22,37
The amount of investments in technology projects, mln. UAH	250	
Including in the innovative technologies (innovative project in Shostka), mln. UAH	70	
Other investments (Project «PLZ 2» is an open modern development laboratory of liquid medicines), mln. UAH	480	
Company’s own funds, ths. UAH	1 684 033	
Capital	2 736 756	

* Source: formed by the author

Based on the data table shows that the PHC “Farmak” is a company that is a leader in its field and has an active innovation. The biggest project to date — the plant for the production of substances (c. Shostka). It is not just individual production and complete plant with all modern utilities. The ability of modern infrastructure that has this area, will further develop the production of substances directly not only to “Farmak”, but also for other pharmaceutical companies Ukraine and abroad.

Conduct the rapid evaluation of innovative development (Table 3):

Table 3

Calculation of component indicators of innovative potential (IP)

Component IIP	Calculation / Value	Weight number ($\sum m_j = 1$)	
Human resources	quotient of the research-active staff (with higher degrees of education) to the total number: $I_{hr} = 1402 / 2409$	0,582	0,2
Financial and economic potential	quotient of the Company's own funds / The total amount of capital $I_{fe} = 1\ 684\ 033 / 2\ 736\ 756$	0,615	0,1
Scientific and technological potential	quotient of the registered own new developments to existing amounts being developed: $I_{st} = 40 / 74$	0,541	0,2
Production and sale potential	– The level of development of new products and / or new technologies: 20/131 = 0,153, in percentage: * 100 = 15,3 %, If the technology: 1/6 = 0,167, in percentage: * 100 = 16,7 % – quotient of the possible (such planned) sales to existing routes, or uncaptured market shares: Distribution channels: taken mainly exported (because exported more than 22.3% of production): Available : CIS and Asia — 5 from 10 possible, Europe — 3 from 5 possible in time: (5 + 3) / (10 + 5) = 0,533 $I_{ps} = 0,6 * 15,3 + 0,4 * 53,3 = 0,0918 + 0,2132$	0,305	0,4
Patent and legal potential	quotient of the unpatented products to produced $I_{pl} = 131/220$	0,595	0,1
Indicator innovation potential	$IP = \frac{(I_{hr} \cdot m1 + I_{fe} \cdot m2 + I_{st} \cdot m3 + I_{ps} \cdot m4 + I_{pl} \cdot m5)}{\sum m_j}$	0,472	X

* Source: formed by the author

The results obtained by calculations it can be concluded that the existing innovation potential is now at 47.2%.

If the indicator shows the innovative potential of analytics possible provisions for innovation and share their use, the intensity of this Figure shows innovation activity.

Calculate defines innovation activity index IA, which characterizes the rate of innovation and creation of innovation of market relations in the economy (industry) (Table 4).

Table 4

Calculation of component indicators of innovation activity (IA)

Indicators IA	Calculation / Value		Weight number (Σmj = 1)
1. The impact of innovation	(Net) Income from implemented innovations / Total earnings (income) 79330 / 241865	0,328	0,1
2. The attitude of employees working in research and development toward to the total number of staff with higher education	115/1402	0,132	0,1
3. The attitude of actually implemented innovative projects to planned and / or which are at the stage of implementation, in quantitative or qualitative terms	one realized at the moment of the three planned (№ 6 workshop in Shostka): 1/3	0,333	0,1
4. The level of innovation financing:	investment in the implementation of innovative projects and products / Total investments = 70 / 250	0,28	0,1
5. Savings resulting from innovation	Effective cost / General spent money for innovative projects and products = 81 492 / 131 427	0,62	0,2

6. Timeliness implementation of innovative projects	The planned / actual elapsed time (in months) Project in Shostka was completed a year of the planned one and a half: 18/12	1,5	0,4
Index of innovative activity (IA)	$IA = 1,5 \cdot 0,4 + 0,62 \cdot 0,2 + 0,28 \cdot 0,1 + 0,333 \cdot 0,1 + 0,132 \cdot 0,1 + 0,328 \cdot 0,1$	0,831	X

* Source: formed by the author

Consequently, the company that was analyzed sufficiently has a high level of innovative activity and quickly realizes conceived projects.

Index of innovative development I_{id} defines as:

$$I_{id} = \sqrt{IP \cdot IA} = \sqrt{0,472 \cdot 0,831} = 0,626.$$

The closer the value of I_{id} to one, means the higher the level of IDP. (Table 5).

Table 5

Verbal and numerical scale values Harington's interpretation of I_{id}

Graduation of quality intensity	The numerical intervals
Very High	1,0 — 0,81
High	0,8 — 0,631
<u>Middle</u>	0,63 — 0,371 (0,625)
Low	0,37 — 0,21
Very Low	0,2 — 0

* Source: formed by the author

Consequently, the company has studied the average level of innovative development, a great-untapped innovation potential and high level of innovation activity that is PHC “Farmak” this is now developing.

The results suggest that the strengths PHC “Farmak” can result in a significant level of their capital for innovation, infrastructure and existing facilities that have no analogues in Ukraine.

Weaknesses is the lack of innovation and employment potential of employees as part of a small busy towards R & D, so it is necessary further explore the willingness of employees to identify innovative changes and

innovative ideas and initiatives. There is not realized potential sale of the company.

Conclusions. In order to adequately assess the current situation and the choice of perspective directions of innovative development of the enterprise should conduct systematic and timely assessment of the existing innovation potential that will enable them to adjust and predict the likelihood and character of the results of innovative activity.

The need for making an objective assessment of innovative company development also because using this indicator entity can promptly detect a threat to innovation crisis and quickly prepare appropriate tools to overcome the crisis, allowing the maximum to minimize impact and increase the effectiveness of decision-making.

Having performed an analysis of the problem, it was concluded that there is no single methodology for evaluating of innovative company development, due to ambiguous interpretation of the concept of “innovation capacity” scientists and various theoretical and methodological approaches to its evaluation. The most famous in the CIS are classic methods of calculating the economic efficiency of innovative projects, economic and mathematical models, market methods when developing a new product, their modernization and adaptation according to the specifics of the company.

Having a rapid evaluation of PHC “Farmak” using modified methodological approaches, it was found that the analyzed company has the average level of innovative, a great untapped innovation potential and high level of innovation activity, that is such an enterprise develops.

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