

The cover features a central image of a person standing on a dark rock, looking up at a vibrant green aurora borealis in a starry night sky. The background is a dark teal color with several diagonal stripes in shades of blue and brown. The title 'REVISTA INCLUSIONES' is written in large, bold, white capital letters across the center.

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ANALYSIS OF THE EFFECTIVENESS OF THE COMPANY'S INNOVATION-DRIVEN GROWTH

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Abstract

The current methodological developments used to analyze the effectiveness of innovation-driven growth of economic agents in Russia do not ensure a comprehensive and objective systemic assessment of the effectiveness of the company's innovation activities. The analytical tools used in practice do not allow to establish the reasons for the low growth rates of indicators that measure the effectiveness of financial and economic activities. This, in turn, does not allow to identify reserves for increasing labor productivity and to form an effective business strategy for an economic agent. Due to this, a need arises to formulate new methodological approaches used to analyze the effectiveness of innovation-driven growth of commercial companies.

Keywords

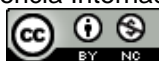
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Introduction

In the modern market reality, the prevailing practice of analyzing the effectiveness of innovation activities in Russia is based on the calculation of two main groups of indicators, including the sales indicators and the level of profitability of net discounted cash flows. In the conditions of a slowed down pace of economic development, it is impossible to identify the required reserves for increasing the effectiveness of the financial and economic activities of companies. At the same time, the innovative enterprises play the most important role in diversifying production, ensuring sustainable socioeconomic development, improving the technological living standards of the population, and finding ways to preserve the natural potential in the country¹.

The following conclusions have been made after the accumulation of the research of the leading scientific economists and systematization of the main provisions of the existing methods for analyzing the effectiveness of innovation-driven growth.

Firstly, there are no economically sound common standards approved by the regulator, and there are no standard values of indicators for evaluating and analyzing the effectiveness of innovation-driven growth.

Secondly, the use of only absolute and relative values in the current methods of assessing the effectiveness of innovation-driven growth without leading to a common integral indicator makes the conclusions about the effectiveness of innovation-driven growth insufficiently accurate and objective, and most importantly – not comparable with industrial or competitive values.

Thirdly, difficulties arise when setting up analytical accounting in terms of the types of innovation activities for the analysis and forecasting of basic indicators².

Fourthly, the existing methods are overloaded by the evaluation indicators, the calculations are too complicated, and the additional tables are required.

Fifthly, the multidirectional conclusions on assessing the effectiveness of innovation emerge because some indicators often prove the rapid innovation-driven growth, while the others, on the contrary, define innovation as ineffective.

Sixthly, the current methods require a careful classification of factors of innovation-driven growth and the development of approaches to link qualitative indicators of innovation to these factors.

All the above aspects indicate the need to develop an effective method for analyzing innovation-driven growth, which takes into account the specifics of doing business in Russia and the existing international practice of applying analytical tools to assess the effectiveness of innovation-driven growth.

¹ T. R. Kerimov, K voprosu otsenki ekonomicheskogo efekta ot realizatsii innovatsionnogo proyekta na primere proyekta OAO "TAIF-NK". Modern trends in economics and management: a new look num 16 (2012): 224.

² S. A. Konovalenko y M. N. Trofimov, K voprosu primeneniya metodik otsenki effektivnosti innovatsionnogo razvitiya predpriyatiya. Colloquium-journal Num 6-11(30) (2019): 116.

Methods

In accordance with the purpose of the study, the effectiveness of innovation-driven growth of the enterprise needs to be analyzed. For this purpose, ABP GROUP LLC will be considered as an object of the study.

Block 1. Indicators of profitability of the economic agent³

This group of indicators is primarily represented by two types of indicators:

- total profitability of the economic agent;
- return on assets.

The total profitability is defined as follows:

$$TP = \frac{GP}{SR} \times 100\%, (1)$$

where:

TP is the total profitability, %;

GP is the gross profit (profit before tax); and

SR is the sales revenue.

The calculation of the indicators for the period under study is presented in Table 1. The horizontal analysis method is used as the basic research method.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Amount of sales by ordinary activities, thous. rub.	43,728	62,388	119,248	191.13	142.67
Gross profit, thous. rub.	3,342	6,485	19,219	296.36	194.04
Total profitability, %	7.64	10.40	16.11	-	-

Table 1
Calculation of the total profitability of the economic agent

According to the data in Table 1, the total profitability increased from 7.64 % to 16.11 %, which corresponds to four discrete points reflected in the proposed method. The value of the total profitability in the current market situation is estimated within the industry average (the country's machine-building sector).

Once the necessary indicators for Block 1 are found, the obtained data should be compared with the values of the intervals of Table 2.

³ S.A. Konovalenko, "Osnovy kompleksnogo podkhoda innovatsionnykh preobrazovaniy predpriyatiya", Bulletin of the Ryazan branch of the Moscow University of the Ministry of Internal Affairs of Russia num 11 (2017): 225.

Total profitability, %	Less than 0.0	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	40 – 45	More than 50.0 %
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 2
Discrete points of the "total profitability" indicator for fiscal year 2018⁴

Return on assets is found using the following formula:

$$RA = \frac{GP}{AA} \times 100\%, (2)$$

where:

RA is the return on assets, %;

GP is the gross profit (the pre-tax profit indicator can be used), %; and

AA is the average assets according to the balance sheet.

The return on assets is correlated with discrete points similarly to the above calculations for this group of indicators.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Average assets, thous. rub.	12,004	11,988.5	72,096.5	601.3	99.87
Gross profit, thous. rub.	3,342	6,485	19,219	296.36	194.04
Return on assets, %	27.84	54.1	26.66	-	-

Table 3
Calculation of the return on assets of the organization

Return on assets, %	Less than 0.0	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	40 – 45	More than 50.0 %
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 4
Discrete points of the "return on assets" indicator

The analysis of the calculations in Tables 3 and 4 indicates that the return on assets decreased from 27.84 % to 26.66 %, which corresponded to six discrete points. The reduction in the return on assets is a negative factor describing both a decrease in the effectiveness of managing the property of the organization and the entire economic activity.

⁴ The data from the tables at the end of 2018 are taken for the calculation of discrete points.

Block 2. Indicators of business and market activities

The corresponding group of indicators includes the following:

- turnover of stocks (describes the speed of stock sales from the moment they arrive at the warehouse until the moment the funds are credited to the accounts);
- revenue per ruble of costs incurred;
- revenue per ruble of assets (indicates the return on the sale of assets as part of the authorized activities); and
- turnover of receivables (describes the rate of repayment of the buyers' arrears from the moment of their formation until the moment of the full repayment).

The turnover of stocks is the most important indicator of business activities describing the rate of transition of stocks into cash:

$$TS = \frac{AS \times FT}{SR}, (3)$$

where:

TS is the turnover of stocks, days;

AS is the average annual value of stocks, rub.;

FT is the duration of the full turnover of stocks, days; and

SR is the sales revenue, rub.

Let us find the turnover of assets. The increase in the turnover of assets has a positive effect on the circulation of assets of an innovative enterprise.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Average value of stocks, thous. rub.	7,585	7,505	19,013	253.3	98.9
Duration of the period	360	360	360	-	-
Sales revenue, %	43,728	62,388	119,248	191.13	142.67
Turnover of stocks	62.44	43.3	57.4	132.56	69.34

Table 5
Calculation of the turnover of assets

The data in Table 5 indicate a high turnover of stocks at the innovative enterprise. The full production cycle of finished products is about 58 days. Such a high value of turnover indicates a significant demand for manufactured innovative products. This indicator corresponds to nine discrete points ($57.4 < 100$).

Turnover of stocks, days	More than 180 days	179 – 170	169 – 160	159 – 150	149 – 140	139 – 130	129 – 120	119 – 110	109 – 100	Less than 100
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 6
Discrete points of the “turnover of stocks” indicator

The "Sales per ruble of costs" indicator allows to evaluate the effectiveness of costs of innovation. It indicates what revenue corresponds to the ruble of investment in innovation activities of the company. The calculation is made using the following formula:

$$RC = \frac{SR}{PC}, (4)$$

where:

RC is the revenue per ruble of costs for innovation activities, rub.;

SR is the sales revenue from finished products, rub.; and

PC is the production costs attributable to primary costs, rub.

According to the results of the analysis in Table 7, the return on the ruble of innovation costs is growing, which indicates an increase in returns by types of innovation activities of the enterprise. This indicator increased from 1.08 to 1.19 over the specified period, which positively describes the level of business activities of the organization.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Sales per ruble of costs, thous. rub.	1.08	1.11	1.19	107.0	102.0
Costs for the period	40,386	55,903	100,029	178.93	138.42
Sales revenue, %	43,728	62,388	119,248	191.13	142.67

Table 7
Calculation of sales per ruble of costs

The comparison of the data obtained in Table 7 with the values of discrete points in Table 8 resulted in the value of the interval indicator of discrete points within four (the actual value was 1.19). This value corresponds to the normal level of business activities in terms of innovation costs.

Sales per ruble of costs, rub.	Less than 1.0	1.00 – 1.05	1.06 – 1.10	1.11 – 1.15	1.16 – 1.20	1.21 – 1.25	1.26 – 1.30	1.31 – 1.35	1.36 – 1.40	More than 1.41
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 8
Discrete points of the “sales per ruble of costs” indicator

The “Sales per ruble of assets” indicator is of great importance for the business activity of the company, which determines the level of the company's income to the value of the company's property. An increase in the indicator certainly has a positive effect on the effectiveness of the entire economic activity. The indicator should be found using the following formula:

$$SA = \frac{SR}{AS}, (5)$$

where:

SA is the sales per ruble of assets, rub.;

SR is the sales revenue, rub.; and

AS is the average value of assets on the balance sheet, rub.

The results obtained in Table 9 indicate a decrease in profitability in relation to the value of the company's assets. The decrease was more than twice from 3.64 rub. to 1.65 rub. This decrease was due to a significant increase in the real value of property and the value of fixed assets of the company, in the first place. The increase in the value of fixed assets is associated with a program for the modernization of equipment that produces innovative products of the organization.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Average annual value of assets, thous. rub.	12,004	11,988.5	72,096.5	601.3	99.87
Sales revenue, %	43,728	62,388	119,248	191.13	142.67
Sales per ruble of assets, rub.	3.64	5.20	1.65	45.32	142.8

Table 9
Calculation of sales per ruble of assets

It was found in the course of the analysis that the indicator value corresponded to nine discrete points. In this case, this actual value over the past year was 1.65, which was higher than the level recommended by the current method. In general, the level of indicators of business and market activities is within the recommended standard values. The analysis indicates a high potential for innovation.

Sales per ruble of assets, rub.	Less than 1.0	1.00 – 1.05	1.06 – 1.10	1.11 – 1.15	1.16 – 1.20	1.21 – 1.25	1.26 – 1.30	1.31 – 1.35	1.36 – 1.40	More than 1.5
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 10
Discrete points of the “Sales per ruble of assets” indicator

Block 3. Indicators of the management effectiveness

The group of indicators of the management effectiveness includes:

- sales per employee; and
- sales per unit area.

Sales per employee is an indicative indicator of the management effectiveness, since it indicates the relative profitability of the organization's personnel, which depends on the quality of managerial decisions made by managers. The indicator is found using the following formula:

$$SE = \frac{SR}{AAH}, \quad (6)$$

where:

SE is the sales per employee, rub.;

SR is the sales revenue, rub.; and

AAH is the average annual headcount.

Let us calculate the sales indicators per employee in Table 11.

Indicators	Years			Rates, %		
	2016	2017	2018	2018 vs 2017	2017 vs 2016	
Average annual headcount, people	16	18	20	111.1	112.5	
Sales revenue, %	43,728	62,388	119,248	191.13	142.67	
Sales per employee, thous. rub.	2,733	3,466	5,962.4	172.03	126.82	

Table 11
Calculation of sales per employee

The value of the indicator for the reporting period increased more twice; the growth in profitability indicates a competent and well-thought-out marketing and management strategy, as well as the optimal headcount in the company. Let us compare the actual value of the indicator in 2018 with gradation of discrete points in Table 12. The company can be assigned nine points, which is a very good result and above the average value for the industry and the market.

Sales per employee, thous. rub./person	Less than 200	200 – 210	211 – 220	221 – 230	231 – 240	241 – 250	251 – 260	261 – 270	271 – 280	More than 281
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 12
Discrete points of the "Sales per employee" indicator

Sales per unit area is crucial for evaluating the sales and marketing activities of the company in promoting innovative products on the market. The indicator is found using the following formula:

$$SA = \frac{SR}{UA}, (7)$$

where:

SA is the sales per unit area, rub./sq.m;

SR is the sales revenue, rub.; and

UA is the usable area, sq.m.

According to Table 13, the company's useful sales area grew by more than 6.5 % for the reporting period, the sales revenue increased more than 2.5 times, and the existing dynamics of absolute indicators led to an increase in the effective indicator more than 2.5 times, which could indicate an increase in the management effectiveness in terms of the company's marketing strategy and the promotion of innovative products in the markets.

Indicator	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	vs 2016
Area, sq.m	5,680	5,810	6,050	104.13	102.28
Sales revenue, %	43,728	62,388	119,248	191.13	142.67
Sales per unit area, rub.	7.69	10.73	19.71	183.69	139.53

Table 13
Calculation of sales per unit area

The obtained results indicate a high rank of discrete points of the effective indicator within nine, which is still higher than the average indicator for the industry and the market.

As such, the indicators of the company's management effectiveness are within the maximum boundaries of discrete points used in the method under consideration.

Sales per sq.m, thous. rub.	Less than 10.00	10.00 – 10.50	10.51 – 11.00	11.01 – 11.50	11.51 – 12.00	12.01 – 12.50	12.51 – 13.00	13.01 – 13.50	13.51 – 14.00	More than 14.01
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 14
Discrete points of the "Sales per sq.m" indicator

The indicators of financial stability and liquidity make up the most important block of indicators determining compliance with financial discipline, cash flow effectiveness, and timely repayment of obligations undertaken by the company.

Block 4. Indicators of financial stability and liquidity

This group of indicators includes:

- current liquidity ratio; and
- equity to total assets ratio⁵

The current liquidity ratio is found using the following formula:

$$CLR = \frac{ACA}{ACL}, (8)$$

where:

CLR is the current liquidity ratio;

ACA is the amount of current assets, rub.; and

ACL is the amount of current liabilities, rub.

Let us find the current liquidity ratio in Table 15.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Amount of current assets, rub.	5,917	1,857	115,011	-	31.38
Amount of current liabilities, rub.	13,585	9,267	123,034	191.13	142.67
Current liquidity ratio	0.44	0.20	0.93	-	-

Table 15
Calculation of the current liquidity ratio

The value of the coefficient for the reporting period increased slightly from 0.44 to 0.93, which was a positive trend, but its size did not exceed the standard value; this was due to a significant increase in the current liabilities of the company as a result of obtaining short-term loans for the working capital financing. One of the priorities of the company is to maintain the positive dynamics of the indicator. Let us compare the actual value of the indicator with the graduated scale of discrete points in Table 16: the company is assigned zero discrete points according to the current method.

Ratio value	Less than 1,00	1.00 – 1.05	1.06 – 1.10	1.11 – 1.15	1.16 – 1.20	1.21 – 1.25	1.26 – 1.30	1.31 – 1.35	1.36 – 1.40	More than 1,41
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 16
Discrete points of the "Current liquidity ratio" indicator

The "Equity to total assets ratio" indicator is of great importance for assessing the level of adequacy of the company equity; an increase in the value of the indicator positively

⁵ A. P. Frolov, "Spetsifika ekonomicheskogo analiza innovatsionnykh proyektov", Economic analysis: theory and practice num 1 (2013): 2-12.

influences financial stability and overall solvency. The value is usually found using the following formula:

$$ETA = \frac{E}{BC} \times 100\%, (9)$$

where:

ETA is the equity to total assets ratio, %;

E is the equity, rub.; and

BC is the balance currency (by the asset), rub.

According to the analysis, there is a deficit in the company equity capital, its value is significantly lower than the standard and the industry average. Lack of equity can be compensated either by attracting an additional number of company participants, or by an additional investment of the founders or owners of the company.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Equity, rub.	360	795	6216	-	31.38
Amount of assets, rub.	13,945	10,063	134,110	191.13	142.67
Equity to total assets ratio	0.025	0.08	0.05	-	-

Table 17

Calculation of the equity to total assets ratio

Following the results of the comparison of the data obtained during the analysis with the gradation of discrete points in Table 18, the company can be assigned a zero value of discrete points, and the state of the equity to total assets ratio should be considered unsatisfactory.

Ratio value	Less than 0.050	0.050	0.0526	0.551	0.576	0.626	0.651	0.701	0.726	More than
		–	–	–	–	–	–	–	–	0.751
		0.0525	0.550	0.575	0.600	0.650	0.675	0.725	0.750	
Value of discrete points	0	1	2	3	4	5	6	7	8	9

Table 18

Discrete points of the “Equity to total assets ratio” indicator

According to the analysis of the indicators for this block, the company does not meet the requirements of the market in terms of financial stability and liquidity. A significant reformation of the balance sheet, a decrease in the total level of current liabilities, and an increase in the amount of equity are required. The management is recommended to refinance credit and loan obligations, as well as to raise additional investments or increase the contributions of the founders of the company.

Block 5. Effectiveness of innovation management

The main indicators of the effectiveness of innovation management are the following:

- NPV; and
- Net profit per ruble of cash inflow from innovation activities.

1. The NPV describes the total amount of cash inflows for a particular reporting period, with due consideration of the inflation expectations and anticipated income in the foreseeable future. The effectiveness of investment is considered high if the NPV of the innovative project is positive. The increase in the NPV indicates an increase in the effectiveness of innovation management. In the Russia's practice, the NPV is a key indicator of the return on investment in the manufacturing sector.

The investments in creating innovative products of ABP Group LLC are shown in Table 19. The classification of costs typical of the form of explanations to the balance sheet and the report on financial results broken down by cost items was used to group the costs.

Costs, thous. rub.	Years		
	2016	2017	2018
Material costs	84	430	661
Labor costs	903	2,043	1,686
Labor insurance premiums	239	566	469
Depreciation	-	-	7
Other costs	1,589	2,956	9,505
Total	2,815	5,995	12,328

Table 19
Investments in the creation of innovative products of ABP Group

The discount rate is accepted in the calculations as 11 %, 15 %, and 20 %. According to the data obtained, the NPV of the project for the modernization of the abrasive resin-bond polishing and cleaning tools production amounted to 21,047.7 thous. rub.

The NPV indicator is closely related to the payback period of an innovative project. Various payback periods are determined with different standards of the expected income. The project payback periods are presented in Table 20 at various rates of profit incorporated in the projected business plan.

Profit rate, %	Payback period, years
11	6.9
15	7.8
20	9.8

Table 20
Value of the payback period for different values of the discount rate

6.9 years is the probable payback period of an innovative project for the abrasive resin-bond polishing and cleaning tools production. Given the current market situation and the state of the internal and external factors, the estimated rate of return for the near medium term will be no more than 11 %, although the project can be fully implemented with an increase in the rates of return to 20 %.

The NPV indicator is an indicator of the effectiveness of an investment project. The investments in the investment project are justified if the NPV is greater than the investor's return on capital, and the issue of its implementation may be considered⁶.

The following indicators of the effectiveness of innovation management were obtained in Table 21 as a result of the calculations.

Indicators	Indicator value
NPV, thous.rub.	21,047.7 (2.1)
Payback period, years	6.9 years
Profitability index	1.13
Internal rate of return	0.14

Table 21

Indicators of the effectiveness of innovation management resulting from the modernization of the abrasive resin-bond polishing and cleaning tools production according to the proposed method

The amount of net profit per ruble of liquidity inflows should be recognized as a special indicator of the effectiveness of innovation management. This indicator reflects the rate of transformation of the most liquid assets into the bottom line of the company; the growth of the indicator positively influences the investment attractiveness of the innovative project and ensures the formation of a trend for the investor in the short term from the moment the company enters the market with its innovative product until the end of the product life cycle. The calculation of the indicator for the period under study is provided in Table 22.

Indicators	Years			Rates, %	
	2016	2017	2018	2018 vs 2017	2017 vs 2016
Cash flow from investments	50,084	56,502	41,307	73.1	112.81
Net profit, thous. rub.	350	435	5,431	1,248	124.28
Net profit per ruble of liquidity inflows, rub.	0.006	0.007	0.13	-	-

Table 22

Calculation of the "Effectiveness of innovation management" indicator

A significant increase in the resulting indicator can be noted, which may indicate an increase in the profitability of the project for investors; the attractiveness of the project increased significantly from the moment the product had entered the market until the end of the reporting period, but it was not sufficient in the market at the end of the period. The values of the indicators at the level of nine and zero points, respectively, are obtained through the comparison of the actual values with the graded scale of discrete points, according to the two indicators considered above.

The small value of net profit per ruble of liquidity inflows is a concern and may adversely influence the implementation of the project and the desire to invest in it.

⁶ S. A. Konovalenko y E. S. Barabash, "Sistema kolichestvennykh i kachestvennykh pokazateley v metodike otsenki innovatsionnogo razvitiya", Economics and Entrepreneurship Vol: 11-3 num 76-3 (2016): 287 – 291.

Indicators	0	0.05 – 0.10	0.11 – 0.15	0.16 – 0.20	0.21 – 0.25	0.26 – 0.30	0.31 – 0.35	0.36 – 0.40	0.41 – – 0.45	More than 0.5
NPV	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9
NP (net profit per ruble of cash liquidity inflows from innovation)	Less than 0.2	0.21 – 0.25	0.26 – 0.30	0.31 – 0.35	0.36 – 0.40	0.41 – 0.45	0.46 – 0.50	0.51 – 0.55	0.56 – 0.60	More than 0.61
	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9

Table 23

Discrete points of “Effectiveness of innovation management” indicators

The weight distribution of the significance of the indicators under study is provided in Table 24. The distribution can be calculated using various mathematical methods – for example, the least squares method, correlation regression analysis, or factor analysis⁷.

Indicators and indicator group	Indicator weight
1	2
<i>Block 1. Indicators of profitability of the economic agent</i>	
1. Total profitability	5
2. Return on assets	5
<i>Block 2. Indicators of business and market activities</i>	
3. Turnover of stocks	5
4. Revenue per ruble of costs	5
5. Revenue per ruble of assets	5
<i>Block 3. Indicators of the management effectiveness</i>	
6. Sales per employee	5
7. Sales per sq.m of the usable area	5
<i>Block 4. Indicators of financial stability and liquidity</i>	
10. Liquidity ratio	10
11. Equity to total assets ratio	5
<i>Block 5. Indicators of the effectiveness of innovation management</i>	
12. NPV	45
13. Net profit per ruble of cash inflow from innovation activities	5
Total:	100

Table 24

Distribution of the indicator importance weights for the analysis of the effectiveness of innovation

⁷ S. A. Konovalenko y E. S. Barabash, “Kompleksnaya otsenka effektivnosti innovatsionnogo razvitiya organizatsii”, Advances of the modern science and education Vol: 5 num 4 (2017): 56-63.

Block 6. Improving the innovations and innovation policy

This group of indicators describes the measures of the company aimed at improving the innovation policy. The main directions of improving the innovations are provided in Table 25.

In this case, the innovations are improved in the following areas:

1. Development of an innovation program;
2. Implementation of certification and quality control of innovative products; and
3. Organizational, technical, and other measures.

It is proposed to accrue ten points in the final integral indicator of innovation effectiveness for each rationalization proposal.

Areas	Extra points
<i>Development and implementation of innovation (program)</i>	10
Improving the management practices	10
Improving the organizational structures	10
Improving the effectiveness of shift working hours	10
<i>Application of the modern innovation quality control systems</i>	10
Application of the modern logistics systems	10
Implementing the R&D departments	10
Improving the knowledge management system	10
Improving the professional development of workers and raising the level of human capital	10
Developing the progressive forms of strategic corporate ties	10
Other suggestions for improving innovation	10

Table 25
Suggestions for improving innovations

The product of the total discrete score of each indicator for the established groups by the recommended weights provides the integral value of the final index. The sum of the indicators allows to judge about the final index of the enterprise under study. This method of analyzing the effectiveness of innovations was named the integral evaluation method⁸.

The generalized calculations of the final index of the effectiveness of innovation-driven growth are provided in Table 26.

Indicators by groups	Indicator value	Discrete points	Significance weight	Integral index
<i>Indicators of profitability of the economic agent</i>				
1. Total profitability	16.11 %	4	5	20
2. Return on assets	26.66 %	6	5	30

⁸ M. N. Trofimov, Sovershenstvovaniye sovremennogo mekhanizma upravleniya investitsionnoy deyatel'nostyu kommercheskikh organizatsiy (Ryazan. 2018), 65.

<i>Indicators of business and market activities</i>				
3. Turnover of stocks	57.4 days	9	5	45
4. Revenue per ruble of costs	1.19 rub.	4	5	20
5. Revenue per ruble of assets	1.65 rub.	9	5	45
<i>Indicators of the management effectiveness</i>				
6. Sales per employee	5,962.4 thous. rub.	9	5	45
7. Sales per sq.m of the usable area	19.71 thous. rub.	9	5	45
<i>Indicators of financial stability and liquidity</i>				
10. Liquidity ratio	0.93	0	5	0
11. Equity to total assets ratio	50.0 %	0	5	0
<i>Indicators of the effectiveness of innovation management</i>				
12. NPV	2.1	9	45	405
13. Net profit per ruble of cash inflow from innovation activities	0.13	0	5	0
<i>Indicators of improving the innovations and innovation policy</i>				
Improving the modern quality control systems	undergoing			10
Improving the corporate innovation strategy	undergoing			10
Integral index:			100	675

Table 26

Integral method for assessing the effectiveness of the abrasive resin-bond polishing and cleaning tools production of ABP GROUP LLC

The calculation of the integral indicator using the proposed method allows to quickly compare it with the similar average values for the industry or for the competitor. The disclosure of information in management reports also allows owners and investors to get a real picture of the possible implementation of the innovative project, to identify weaknesses and bottlenecks in various areas of corporate governance. Application of the integral method will significantly improve the quality of monitoring the implementation of investment and innovations of companies engaged in R&D. The introduction of the universal scale of effectiveness (Table 27) in the economic system of companies will provide statistical information on the effectiveness of investments in an industry, region, or country as a whole⁹.

Scale (interval)	Level of the innovation effectiveness
Below 200	Unacceptably low level of effectiveness
200 to 300	Critical level
301 to 400	Low level
401 to 500	Satisfactory level of effectiveness

⁹ S. A. Konovalenko y E. S. Barabash, "Metodika otsenki effektivnosti innovatsionnogo razvitiya organizatsii", Advances of the modern science Vol: 4 num 3 (2017): 11-16.

of which:	401 – 433	lower range of the satisfactory level
	433 – 466	average range of the satisfactory level
	467 – 500	upper range of the satisfactory level
501 to 600		Good level of effectiveness
of which:	501 – 533	lower range of the good level
	533 – 566	average range of the good level
	567 – 600	upper range of the good level
601 to 700		Increased level of effectiveness
of which:	601 – 633	lower range of the increased level
	633 – 666	average range of the increased level
	667 – 700	upper range of the increased level of effectiveness
701 to 800		High level of effectiveness
of which:	701 – 733	lower range of the high level
	733 – 766	average range of the high level
	767 – 800	upper range of the high level
801 to 900 (over)		Highest level of effectiveness
of which:	701 – 733	lower range of the highest level
	733 – 766	average range of the highest level
	767 – 800	upper range of the highest level

Table 27

Proposed universal scale for assessing the effectiveness of innovation-driven growth of the enterprise

Results

The proposed algorithm for analyzing the effectiveness of innovation-driven growth includes several stages:

1. Calculating the indicators and discrete points;
2. Calculating the integral index of innovation-driven growth; and
3. Analyzing the results and discovering the reserves to improve the strategy of innovation-driven growth.

The application of this method is aimed at using the integral method that allows to compare the final indicator with the average values for the industry and the market. The main problem in the formation of the proposed method is the validity from the standpoint of science and business practice, the intervals for calculating discrete points, and the distribution of weights between the indicators – in other words, the validity of standard values¹⁰.

¹⁰ I. V. Elokhova y S. E. Malinina, “Sovremennyye problemy otsenki ekonomicheskoy effektivnosti innovatsionnykh projektov”, Bulletin of Perm University. Series: Economics num 3 (2014): 74-81.

The authors see the following ways to overcome these difficulties:

1. Application of the standards developed on the basis of statistical tools and the existing standards adopted by bodies that monitor the socioeconomic development of economic agents. The Ministry of Economic Development of Russia, the Bank of Russia, and the Ministry of Finance of Russia are such bodies in the Russian Federation.

2. The authors propose to use the significance indicator as an increment in the interval of discrete points in the assessment. In accordance with the current rules, with the federal audit standards, and with the Order of the Ministry of Finance of the Russian Federation "On accounting forms" No. 66n, the indicators that significantly influence the final indicator include those holding at least 5 % in its structure. In other words, the authors believe that the increment should be equal to 5 % of the standard (basic) indicator, which can be considered scientifically valid¹¹.

This approach will ensure objectivity and uniformity of the data calculation and scientific validity in the proposed method for assessing and analyzing the effectiveness of innovation-driven growth.

The main criteria for the innovative nature of products in the economic analysis are the following:

1. Effectiveness;
2. Ensuring competitiveness;
3. Improving the effectiveness of the innovative production;
4. Emergence of new useful properties and relevance for society;
5. Progressive use of advanced technologies;
6. Investment attractiveness; and
7. Quality corresponding to high standards and technical conditions¹²

Conclusion

Following the results of analyzing the effectiveness of innovation-driven growth of ABP GROUP LLC in the abrasive resin-bond polishing and cleaning tools production using the proposed method (**675 points**), the company is described by an increased level of effectiveness (which indicates the high effectiveness of innovations at the enterprise); the innovative potential is high. However, this result assumes a search for opportunities for further growth in the effectiveness of innovations. The development of the conditions and infrastructure of innovation must be continued, which requires the creation of an effective

¹¹ S. A. Konovalenko y E. S. Barabash, "Obosnovaniye podkhoda k tselostnosti innovatsionnogo razvitiya predpriyatiya", International research Vol: 1 num 30 (2017): 183-187.

¹² S. A. Konovalenko y R. A. Kornilovich, "Printsipy formirovaniya sistemy innovatsionnogo razvitiya predpriyatiya", Economics and Entrepreneurship Vol: 9-2 num 86-2 (2017): 525-527.

accounting and analytical system of innovation-driven growth. A high level of current liabilities, an ineffective capital structure of the company, and an insufficient level of inflows of liquid funds as a result of the promotion of innovative products on the market are also noted as factors that constrain development. The proposed method enables an investor to compare the integral indicator with the similar average values for the industry or for the competitor. The disclosure of information in management reporting also allows owners and investors to get a real picture of the possible implementation of the innovative project and to identify weaknesses and bottlenecks in various areas of corporate governance. Application of the method will significantly improve the quality of monitoring the implementation of investment and innovations of companies engaged in R&D.

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