

DOI: 10.12731/2218-7405-2013-7-55

METHODOLOGICAL APPROACH TO DETERMINATION OF INNOVATIONS EFFICIENCY AT INDUSTRIAL ENTERPRISES

Cherep A.G.

The methodological approach to determination of innovations efficiency is generally known: effects from innovative activities are compared to costs of innovations which provided these effects.

Efficiency on a macrolevel characterizes the effects of innovative activities, with the entire national economy being considered. So does it on the branch and regional levels. Commercial efficiency includes calculation of eventual effects of innovative activities for a given economic entity. Budget efficiency covers financial effects of innovative activities execution for local and national budgets.

In our opinion, it is expedient to determine the constituents of an enterprise's innovative activities efficiency applying the existing approach to selection of different types of effects from activities. It should be noted that in the scientific sources alongside with the term "effect from innovative activities" [2, p. 111], the terms "innovations introduction effect" [1, p. 67] and "effect from innovations implementation" [3, p. 49; 4, p. 36; 5, p. 29; 6, p. 68] are used; we consider it necessary to identify them.

The research of the Ukrainian authors' works shows that there are a lot of opinions about the amount of effects caused by innovative activities. Thus, the authors of the scientific works [7, p. 59; 8, p. 123] distinguish three interrelated effects: scientific and technical, economic, social.

According to R. Fakhutdinov [9, p 79], the fourth type of effect from innovative activities should be distinguished, that is the ecological one, whose

essence consists in diminishing emission of harmful substances to the atmosphere, decrease in production wastes, increase in the amount of ecological goods.

The fifth type of effect from innovative activities is described in the researches of the following scientists [10, p. 57; 11, p. 38; 12, p. 39; 5, p. 32]. They state that a resource effect, which shows influence of innovative activities on consumption volumes of certain resource types, should be taken into account.

A financial effect suggested by the authors [13, p. 59; 14, p. 41; 15, p. 42; 16; 17, p. 75] is based on the indices of durability, liquidity, solvency, profitability and shows the relation of innovative and financial activities.

On the basis of researching and generalizing the authors' views [3, 11, 12, 5, 15, 16, 1, 14] about the effect types from innovative activities we distinguish the basic effect types as follows: financial, economic, tax, scientific and technical, ecological, resource, social, commercial and budget ones.

Effects from innovations are interrelated. Economic results of innovative activities are directly related to scientific and technical as well as to tax and social effects. In their turn, resource and ecological effects are only caused by the scientific and technical progress influence on an economic effect of innovative activities indirectly.

Evaluation of innovative activities efficiency is an important constituent of a process of making managerial decisions about innovations at an enterprise. Effects of these activities determine the choice of prospective directions of an enterprise's development which will make possible a rise in competitiveness.

The problems of innovative activities efficiency are examined in the works by Ukrainian and foreign scientists, namely: V. Vasilenko, V. Shmatko [3, p. 98], N. Krasnokutska [17, p. 121], E. Krylova, I. Zhuravkina [18, p. 232], P. Khariva, O. Sobko, [19, p. 103]. The given authors emphasize on the issues of evaluation of innovative activities economic efficiency.

Economic evaluation of innovative activities efficiency includes the following tasks fulfilment: choice of a research strategic direction, determination of evaluation

indices and selection of a method of evaluating innovative activities efficiency [20, p. 37].

The analysis of sources testifies that there are several methods of efficiency evaluation. The first one consists in identifying innovative activities efficiency with innovative projects efficiency. The second approach consists in identifying efficiency through efficiency of investments in innovations.

The essence of economic efficiency evaluation of any economic activities, including innovative ones, consists in comparing an economic effect obtained with costs invested.

Projects, which are different innovation types, can be objects of evaluation. Firstly, objects are labour facilities and tools. They can be new, reconstructed or modernized, and in addition, those made, manufactured and used. Secondly, objects can be labour subjects – raw materials, materials, fuel, energy. Thirdly, separate innovation groups are subjects of population's final consumption, technological processes, methods of production organization, labour and management.

Building a methodical ground for evaluating different innovative activities efficiency, it is necessary to take into account their capability to raise intellectual and specific material resources indispensable for making innovations with a high consumption value; to provide intensive information exchange adequate to the situation and essential for creation of new knowledge which will lie down in the basis of the conception of making innovations with a high consumption value; to form powerful motivation to obtain eventual effects aimed at maximization of innovations' market potential.

In modern practice for grounding cost of investments in innovative projects, five basic methods of evaluation, which are conditionally divided into two groups, are mostly applied, They are as follows:

- 1) indices which are based on calculation evaluations (the time factor is not considered);

2) indices which are based on discounted evaluations (the time factor is considered, with a discounting procedure being used).

Depending on a time period, calculation of effects and costs gives indices of effect within a period of calculation and indices of annual effect.

The duration of a time period is stipulated by the following factors:

- duration of innovations period;
- period of innovations action;
- a degree of initial information authenticity;
- requirement of investors.

In general, the problem of economic effect determination and choice of the most optimal variants of innovations implementation require an excess of eventual effect from their application over costs of their development, manufacture and implementation on the one hand, and comparison of effects achieved to effects from application of innovation variants similar in purpose, on the other hand [21, p. 187].

The method of innovations effect calculation is grounded on comparison of effects from their adaptation to costs, which will allow to make decisions about effective application of new developments.

In the scientific works [10, 13, 22] it is suggested that economic efficiency of innovations should be determined by means of the following system of indices:

- integral index;
- profitability index;
- operating ratio;
- recoupment period.

Investment in market conditions is related to a considerable risk which depends on a period of recoupment of capital investments. The index of "recoupment period" is emphasized on condition there is some risk that innovation arrangements are not implemented and a funds owner is not able to make long-term investments.

Recoupment period (R_p) is a quantity of time periods, during which investment costs (IC) of an innovative project are fully covered by profits from this project (P).

Recoupment period (Rp)

$$Rp = IC / Pi. \quad (1)$$

In case of relatively similar annual cash flows, a recoupment period is determined by the ratio of investment amount IA to an average expected amount of a cash flow CF

$$Rp = IA / CF \quad (2)$$

where Rp is a recoupment period;

IA is an amount of invested capital, hrn.;

CF is an average cash flow of an innovative project.

At present the index is applied rather often; it is stipulated by the following factors: calculation simplicity; real possibility to use cash flows; evaluation of project liquidity and riskiness.

Liquidity and riskiness are conditional characteristic features of an investment project. Out of the two projects compared, that one with a shorter recoupment period is considered more liquid. The longer a project is, the less exact forecast evaluations of expected revenues are; therefore, the less a recoupment period is, the less risky a project is.

However, application of this method has its disadvantages. We think that this method does not consider cash flows after expiry of a recoupment period; it can result in erroneous decisions and incorrect cash value in future, absence of additivity property.

The operating ratio characterizes the ratio of a net profit average amount to an average amount of investments.

Operating ratio (OR)

$$OR = \frac{NP}{\frac{1}{2}(IA + ACd)}, \quad (3)$$

where NP is an average net profit from a project;

IA is an amount of initial investment;

ACd is an assets cost depreciated.

Like the Rp criterion, the OR criterion, which is calculated as a ratio of a project's average profitability to an average annual investment amount does not take into account the factor of time and is considered the least suitable for analysis of investment projects and making a budget of capital investments. The basic field of its application is a comparative evaluation of activities of an enterprise's subdivisions. There is no generally accepted algorithm of calculating the Rp criterion.

The drawback of this index is that cash flows and change in their cost within a specified period of time are not considered; we can also observe differences in net profit amounts per years.

Since the beginning of the 90-ies of the XXth century a new concept of making investment decisions and evaluation of effects from activities at all levels of an enterprise's management – concept of economic value added (VA) – has been applied.

Economic value added is an index of economic profits known from the economic theory, which differs from accounting profits by the fact that in order to calculate it not only explicit accounting costs but also implicit costs of capital allocation (lost profits due to the most profitable alternative variant of investments) are considered.

The main drawback of these three indices is that the time factor is not considered. Therefore, these indices are not adequately accurate and mostly used in rough, expected evaluations and for short-term innovative projects (up to one year).

The profitability index (PI , or profits index or index of profitableness) of an innovation project is a ratio of discounted net cash flows from an innovative project

(NCF_i) to discounted (on the same date) costs of investments. It characterizes the level of a net cash flow per unit of innovation costs or characterizes an amount of profits per unit of costs.

Calculation of the investment profitability index (IP)

$$IP = \frac{\sum_{i=1}^n \frac{P_i}{(1+d)^i}}{\sum_{i=1}^n \frac{I_i}{(1+d)^i}}, \quad (4)$$

if $IP > 1$, a project is effective, it is accepted;

$IP < 1$, a project should be rejected;

$IP = 1$, profits from an investment project equal costs. Thus, projects with profitability being higher than one can be accepted to be implemented.

The higher this index is, the bigger a return from each monetary unit invested in an innovation project is. The IP criterion is the highest when a portfolio of innovative projects is completed alongside with limitation of financing sources in volume. Independent projects are arranged according to IP minimization; projects with the highest IP indices are included in a portfolio in a consecutive order. The completed portfolio will be optimal in terms of maximization of a total cash flow.

In our opinion, the index drawbacks are as follows: impossibility to use projects with different life cycles in analysis; absence of additivity property.

It is important that this index should characterize a relative measure of an enterprise's worth increase, be an instrument of ranking investments by profitability, be used when an enterprise's innovations portfolio is made.

The internal income standard (IIS , or internal standard of profitability) is such a discounting rate, at which discounted net cash flows from an innovative project equal discounted costs of investment. In fact, it is the discount rate, at which a net cash flow equals zero.

Calculation of the internal income standard (IIS):

$$NCF = \sum_{i=0}^n \frac{P_i - I_i}{(1 + IIS)^i} = 0 \quad (5)$$

The higher the *IIS* value is, the higher the efficiency of an innovative project is. The index's economic essence is that an enterprise can implement projects, whose profitability rate is not lower than the cost of capital. It can be the cost of a targeted source or weighted average cost of capital (*WACC*).

if $IIS > CC$, a project is accepted;

$IIS < CC$, a project should be rejected as it will cause losses;

$IIS = CC$, profits from an investment project equal costs,

where *CC* is a cost of capital or of a corresponding source of funds.

In our opinion, this index has the following advantages and disadvantages.

The index's advantages:

- absence of dependence on the absolute amount of investments in an innovative project;
- possibility to use it for evaluation of a project's durability degree,
- considers change in a cash flow cost within a period of time,
- does not require preliminary establishment of a discount rate.

The index's disadvantages:

- can have several *IIS* values if a character of a cash flow changes more than once,
- additivity property is absent,
- can result in erroneous decisions about alternative innovative projects.

As the *IIS* criterion only shows the maximal level of costs, which can be associated with a project evaluated, in case the *IIS* values of two alternative projects are higher than the values of fund sources attracted to their implementation, the choice of the best out of them by the *IIS* criterion is not possible. This criterion does not possess an additivity property, does not take into account significance of a cash flow's components and, in addition, *IIS* for nonordinary cash flows can have several values.

Therefore, for "ordinary" investment projects the higher *IIS* is, the better, that is safety reserve is more essential. However, in a generalised case this rule does not always work; in particular, it is not true for projects with nonordinary cash flows.

Discounted recoupment period (*DRP*) is a period of time within which discounted net cash flows from an investment project will exceed discounted investment costs of this project.

The values of P_j and P_{j+1} , which can meet the conditions, should be calculated:

$$P_j < \sum_{i=0}^n \frac{I_i}{(1+d)^i} < P_{j+1}. \quad (6)$$

Discounted period of investments recoupment (*DPr*)

$$DP = J + \frac{\sum_{i=1}^n I_i / (1+d)^i - P_j}{CF_{j+1} / (1+d)^{j+1}}. \quad (7)$$

In addition to these classical criteria, some specialists apply other indices of investment analysis. In our opinion, for a potential investor the following criteria are of interest: level of self-financing of a project's initial investments; adapted net cash flows (*ANCF*); *IIS* and *DPr* calculated using *ANCF*. This index is used for monitoring absence of deficit of free monetary resources and allows to draw conclusions about a project's financial capability.

The formula of *ANCF* calculation does not differ technically from the formula of *NCF* calculation and is the current value of expected cash flows of an innovative project within a forecast period. The difference between *NCF* and *ANCF* is in that *NCF*, as a rule, is calculated proceeding from net flows of a project without consideration of its financing scheme. In every interval of a forecast period net flow is defined as a difference between profits from sales of innovative (improved) goods or goods manufactured with application of innovative production technique and

technology and values of investment costs (including capital investments and current assets appreciation), current costs of production and sales, tax payments.

Such an approach to *NCF* calculation is equivalent to cases when a project is implemented by one participant when financing solely from own financial sources. The second variant of *NCF* calculation considers the fact that loan capital is not free. Therefore, interests on debt obligations undertaken by a project initiator are included into cash outflows as a result of current activities within the framework of a project. However, in both variants a possibility of occurrence of deficit of financing sources within separate intervals of planning is not considered.

The indicated problem is levelled by means of addition of *ANCF* values to the list of efficiency criteria analysed. All cash flows considered, even those on initial stages of a project, should be non-negative. It is provided by planning definite financing sources for a project and including cash inflows and outflows related to financing in calculation (investment of owned assets and attraction of credits, repayment of debt's principal amount and interest). Thus, if traditional *NCF* is calculated on the basis of cash flows within investment and current activities, adapted current net value is determined with consideration of cash flows in all three activity lines: investment, current and financial (a so-called model of clearing account). It is obvious that such calculations can only be made in case a definite plan for a project's financing, in particular, a credit plan is available. The latter, in its turn, can be made on condition that an initiator of a project owns reliable information about the terms, amount and time when he will be able to attract corresponding financing as well as about the payment scheme under the contract.

Taking into account the above said, the formula of *ANCF* calculation can be given as follows:

$$ANCF = SFI_0 + C_{p_0} - I_0 = DFI_0 + \sum_{t=1}^n \frac{ACF_t^a}{(1+r)^t}, \quad (8)$$

where I_0 is an amount of initial investments;

SFI_0 is an amount of initial investments self-financing;

DFI_0 is an amount of initial investments debt financing;

ACF_t is an adapted cash flow (regulated with consideration of a financing scheme) of t -interval of the calculation;

r is the rate of discount,

t is an interval number of T-forecast period.

The efficiency of a project under terms of financing real for its initiator testifies the ratio: $ANCF > NCF$. The opposite inequality of $ANCF < NCF$ testifies that the conditions of loan capital attraction can render negative influence on a project's efficiency as compared to investment of owned assets in a hypothetical investment asset similar in a risk exposure level.

Possible substantial differences of $ANCF$ and NCF values can be explained by performance of two multidirectional factors. On the one hand, cumulative cash flow diagrams of most projects are negative at initial intervals of calculation due to scale investments; discounting diminishes their negative contribution to NCF values a bit. Thus when calculating $ANCF$, negative flows nearest in time narrow down. On the other hand, loan capital attraction for financing investments results in emergence of negative cash flows as redemption of debts and interests on them. As a result, cash flows considered by $ANCF$ are less than cash flows of a corresponding interval of NCF , which are considered when calculated. Significance of one or another factor depends, firstly, on the amount of loan financing and cost of loan capital; secondly, on a fixed discount rate. It should be noted that choice of a discount rate is a very substantial factor which determines results of calculation of standard criteria of investment projects efficiency. This rate is not an objective value given from outside. It characterizes necessary (acceptable) level of capital profitability for a person, who makes a decision, id est it is a subjective estimation of a definite project participant. If economic sense of a discount rate is not considered, interpretation of NCF can be incorrect.

The methodical problem of measuring a discount rate adequate to that which represents the totality of specific features of an innovative project is debatable. For example, in theory the method of analogies is considered to be the most correct. However, practical prospects of identification of a liquid investment asset, whose profitability unsteadiness is equivalent to profitability unsteadiness of this innovative project or, at least, to total profitability of owned assets of a project initiator, are relatively obscure. Essential attention is also paid to the model of estimation of capital assets, in particular, to the problem of correct determination of b -coefficient. We think that the major drawback of this model, as far as innovative projects of a high level of novelty are concerned, is ignoring of unsystematic business risks rather than insufficient development of the securities market mentioned in many sources.

In our opinion, the method of cumulative construction mostly meets the task of determination of numerous specific risks of innovative projects and individual advantages of different investors concerning risks exposure. However, we should not insist on its application expediency in all cases. As known, this method provides for determination of premiums for separate unsystematic risks with aid of experts. A conservative (sometimes dishonest) opinion of an expert expressed in establishing high premiums can result in substantial understating of a project's efficiency criteria. In this connection, this method should be only used in case it is proven beforehand that unsystematic risks really render great influence on a project's expected profitability. The results of expert questioning should be processed with the use of corresponding statistical methods.

Speaking about the existing approaches to evaluation of economic efficiency of innovative projects, it should be marked that some authors suggest calculating NCF of a project not only by discounting a cash flow cost but also by increasing (compounding). Thus, it is suggested to submit a cost of cash flows before the moment of making a decision about financing a project. Some part of costs of innovative activities is supposed to be executed by an enterprise beyond the framework of a definite project. Only after receiving some results of scientific and

research activities of interest to investors, the corresponding pre-investment feasibility study can be carried out. Therefore, a cost of research and development financed by a project initiator beforehand is submitted before the moment of evaluation by means of the increase procedure (by the formula of compound interest), cash flows forecast in case the project is implemented – by the discounting procedure respectively. Without denying certain novelty of the considered approaches, it should be specified that registration of a cash flows cost before one or another moment is a standard procedure of financial accounting which is not related to technical complications. Collection and grounding of initial information for evaluation under terms of ambiguity of a project's technical and commercial effects are considered to be far more essential. We can assert that certain properly confirmed cost and time parameters of a project reduce risks from its implementation.

The second approach to evaluation of innovative activities efficiency is based on the calculation of indices of investments efficiency in innovations. Most fully this approach is described in the work by A. Tryfilova [23, p. 28], where it is marked that "when analysing efficiency of innovations attraction in economic turnover or selection of most rational out of them, their investment efficiency and economic affect should be determined in terms of an enterprise's economic growth dynamics" [23, p. 29].

The basis of evaluation of an innovative project's effect on an enterprise's activity economic results consists of a group of indices, which includes evaluation of basic and circulating assets increment and separately that of intangible assets, net income, profit from sales and increase in labour productivity (Table 1).

The analysis of the most widespread approaches to determination of innovative activities efficiency testifies focusing of most indices on evaluation of its economic and financial constituents.

Table 1

The system of evaluation indices of efficiency of innovations attraction to an enterprise's economic activity

Index, calculation formula	
1 group – indices of evaluation of innovations investment efficiency	
1. Index of efficiency of investments in intellectual capital.	$E_{ic} = \frac{IA_1 - IA_0}{I_n} \times 100\%$ <p>IA0, IA1 – costs of intangible assets of an enterprise before and after investments in innovations respectively, money unit; I_n – sum of investments, money unit;.</p>
2. Index of investments efficiency by amount of an enterprise's additional profit from sales.	$E_p = \frac{P_1 - P_0}{I_n} \times 100\%$ <p>P1 - P0 – annual profits from an enterprise's sales before and after investments in innovations respectively, money unit.</p>
3. Index of efficiency of investments by amount of net profits from invested means.	$E_{NP} = \frac{NPi_1 - NPi_0}{I_n} \times 100\%$ <p>NPi₁ – NPi₀ – an annual net profit of an enterprise before and after investments in innovations respectively, money unit.</p>
4. Index of efficiency of investments by amount of net profit	$E_{NP} = \frac{(NPi_1 - NP_0) + (D_1 - D_0)}{I_n} \times 100\%$ <p>D₁ – D₀ – annual depreciation of fixed assets and intangible assets before and after investments respectively, money unit.</p>
5. Index of efficiency of investments by amount of output per man	$E_p = \frac{OM_1 - OM_0}{I_n} \times 100\%$ <p>OM₁ – OM₀ – an average output per man before and after investments in innovations respectively, money unit.</p>

Summarizing the above given we can assert that evaluation of innovative activities efficiency is a separate, extremely saturated by the spectrum of the approaches and methods, applied field of economic knowledge, which exceeds the limits of investment analysis. The method of innovations efficiency evaluation carries great potential for further scientific researches, which, first of all, should be aimed at solving practical problems of innovative management at Ukrainian enterprises.

References

1. Chuhraj M.I. Tovarna innovacijna polityka: upravlinnja innovacijamy na pidprijemstvi / M.I. Chuhraj, R. Patora. K. : Kondor, 2006. 398 s.

2. Fathutdynov R.A. Strategicheskyj menedzhment : uchebnyk. M. : Delo, 2005. 448 s.
3. Vasylenko V.O. Innovacijnyj menedzhment: navch. posibnyk / V.O. Vasylenko, V.G. Shmat'ko, za red. V.O. Vasylenka. K. : Centr navchal'noi' literatury, 2005. 440 s.
4. Ekonomika j organizacija innovacijnoi' dijal'nosti: navch. posib. / [I.I. Cygulyk, S.O. Kropel'nyc'ka, O.I. Mozil', I.G. Tkachuk]. K. : Centr navchal'noi' literatury, 2004. 128 s.
5. Johna M.A. Ekonomika i organizacija innovacijnoi' dijal'nosti: Navch. posibnyk / M.A. Johna, V.V. Stadnyk. K. : Akademija, 2005. 400 s.
6. Kozy nec V.P. Podgotovka ynnovacyj y upravlenye proektamy: monografija / V.P. Kozy nec, V.V. Малыj ; Pod red. V.A. Tkachenko. Dnepropetrovsk : Porogy, 2006. 482 s.
7. Медынский V.G. Reynzhynryng ynnovacyonnogo predprynymatel'stva / V.G. Медынский, S.V. Yl'demenov ; pod red. prof. V.A. Yrykova. M. : JuNYTY, 1999. 414 s.
8. Chuhraj M.I. Formuvannja innovacijnogo potencialu promyslovyh pidpryjemstv na zasadah marketyngu i logistyky: dys. ... d-ra ekon. nauk: 08.06.01 / Chuhraj Natalija Ivanivna. L. : Nacional'nyj universytet «L'vivs'ka politehnika», 2003. 475 s.
9. Faej L. Kurs MVA po strategicheskomu menedzhmentu / Faej
10. L., R. Rendel. ; Per. s angl. M. : Al'pyna Pablysher, 2002. 112 s.
11. Vasyl'ev A.V. Ocenka эффеktyvnosty ynnovacyj / A.V. Vasyl'ev, P.N. Zavlyn. SPb. : Byznes-prensa, 1998. 386 s.
12. Ekonomika i organizacija innovacijnoi' dijal'nosti: naukovе vydannja / [za red. A.M. Stel'mashhuka]. Ternopil' : Ekonomichna dumka, 2001. 176 s.
13. Ekonomika Ukrai'ny: strategija i polityka dovgostrokovogo rozvytku: Monografija / V.M. Gejec', V.P. Aleksandrova, T.I. Art'omova [ta in.]. K. : Feniks, 2003. 1006 s.

14. Karpun' I.N. Innovacijnyj rozvytok sub'ektiv gospodarjuvannja: metodologija formuvannja, mehanizmy realizacii' : monografija / I.N. Karpun', M.S. Hom'jak. L., 2009. 432 s.
15. Sharko M.V. Konceptual'nye osnovy ynnovacyonnogo rozvytyja ekonomyky Ukrayny: teoretyko-metodologicheskye aspekty / M.V. Sharko. Herson : HNTU, 2005. 394 s.
16. Mykytjuk P.P. Analiz vplyvu investycij ta innovacij na efektyvnist' gospodars'koi' dijal'nosti pidpryjemstva : monografija / P.P. Mykytjuk. Ternopil': Ekonomichna dumka, Tern. Nac. Ekon. Un-t, 2007. 296 s.
17. Hariv P.S. Innovacijna dijal'nist' pidpryjemstva ta ekonomichna ocinka innovacijnyh procesiv./ Hariv P.S. Ternopil' : Ekonomichna dumka, 2003. 326 s
18. Krasnokuts'ka N.V. Innovacijnyj menedzhment : Navch. posibnyk / N.V. Krasnokuts'ka. K.: KNEU, 2003. 504 s.
19. Кгылов Э.У. Анализ эффективности инвестиционной и инновационной деятельности предприятий : учеб. пособие / Э.У. Кгылов, У.В. Журавкова. М. : Финансы и статистика, 2001. 384 s.
20. Hariv P.S. Aktyvizacija innovacijnoi' dijal'nosti promyslovyh pidpryjemstv regionu / P.S. Hariv, O.M. Sobko. Ternopil' : TANG, 2003. 180 s.
21. Majorova T.V. Investycijna dijal'nist' : Navch. posibnyk / T.V. Majorova. K. : CUL, 2003. 376 s.
22. Markova V.D. Strategicheskyj menedzhment / V.D. Markova, S.A. Kuznecova. M. : YNFRA-M, Novosybyrsk, 2000. 287 s.
23. Matrosova L.N. Formyrovanye organizacyonno-ekonomycheskogo mehanyzma upravlenyja ynnovacyonnymy processamy v promyshlennosti: monografija / L.N. Matrosova. Lugansk : Yzd-vo VUGU, 2000. 462 s.
24. Tryfylova A.A. Metodologicheskye osnovy yntegracyy strategicheskogo y ynnovacyonnogo menedzhmenta / A.A. Tryfylova // Menedzhment v Rossyy y za rubezhom. 2004. №3. S. 27-34.

Список литературы

1. Чухрай М.І. Товарна інноваційна політика: управління інноваціями на підприємстві / М.І. Чухрай, Р. Патора. К. : Кондор, 2006. 398 с.
2. Фатхутдинов Р.А. Стратегический менеджмент : учебник. М. : Дело, 2005. 448 с.
3. Василенко В.О. Інноваційний менеджмент: навч. посібник / В.О. Василенко, В.Г. Шматько, за ред. В.О. Василенка. К. : Центр навчальної літератури, 2005. 440 с.
4. Економіка й організація інноваційної діяльності: навч. посіб. / [І.І. Цигилик, С.О. Кропельницька, О.І. Мозіль, І.Г. Ткачук]. К. : Центр навчальної літератури, 2004. 128 с.
5. Йохна М.А. Економіка і організація інноваційної діяльності: Навч. посібник / М.А. Йохна, В.В. Стадник. К. : Академія, 2005. 400 с.
6. Козинец В.П. Подготовка инноваций и управление проектами: монография / В.П. Козинец, В.В. Малый ; Под ред. В.А. Ткаченко. Днепропетровск : Пороги, 2006. 482 с.
7. Медынский В.Г. Реинжиниринг инновационного предпринимательства / В.Г. Медынский, С.В. Ильдеменов ; под ред. проф. В.А. Ирикова. М. : ЮНИТИ, 1999. 414 с.
8. Чухрай М.І. Формування інноваційного потенціалу промислових підприємств на засадах маркетингу і логістики: дис. ... д-ра екон. наук: 08.06.01 / Чухрай Наталія Іванівна. Л. : Національний університет «Львівська політехніка», 2003. 475 с.
9. Фаей Л. Курс МВА по стратегическому менеджменту / Фаей
10. Л., Р. Рендел. ; Пер. с англ. М. : Альпина Паблишер, 2002. 112 с.
11. Васильев А.В. Оценка эффективности инноваций / А.В. Васильев, П.Н. Завлин. СПб. : Бизнес-пресса, 1998. 386 с.
12. Економіка і організація інноваційної діяльності: наукове видання / [за ред. А.М. Стельмащука]. Тернопіль : Економічна думка, 2001. 176 с.

13. Економіка України: стратегія і політика довгострокового розвитку: Монографія / В.М. Геєць, В.П. Александрова, Т.І. Артьомова [та ін.]. К. : Фенікс, 2003. 1006 с.
14. Карпунь І.Н. Інноваційний розвиток суб'єктів господарювання: методологія формування, механізми реалізації : монографія / І.Н. Карпунь, М.С. Хом'як. Л., 2009. 432 с.
15. Шарко М.В. Концептуальные основы инновационного развития экономики Украины: теоретико-методологические аспекты / М.В. Шарко. Херсон : ХНТУ, 2005. 394 с.
16. Микитюк П.П. Аналіз впливу інвестицій та інновацій на ефективність господарської діяльності підприємства : монографія / П.П. Микитюк. Тернопіль: Економічна думка, Терн. Нац. Екон. Ун-т, 2007. 296 с.
17. Харів П.С. Інноваційна діяльність підприємства та економічна оцінка інноваційних процесів./ Харів П.С. Тернопіль : Економічна думка, 2003. 326 с
18. Краснокутська Н.В. Інноваційний менеджмент : Навч. посібник / Н.В. Краснокутська. К.: КНЕУ, 2003. 504 с.
19. Крылов Э.И. Анализ эффективности инвестиционной и инновационной деятельности предприятия : учеб. пособие / Э.И. Крылов, И.В. Журавкова. М. : Финансы и статистика, 2001. 384 с.
20. Харів П.С. Активізація інноваційної діяльності промислових підприємств регіону / П.С. Харів, О.М. Собко. Тернопіль : ТАНГ, 2003. 180 с.
21. Майорова Т.В. Інвестиційна діяльність : Навч. посібник / Т.В. Майорова. К. : ЦУЛ, 2003. 376 с.
22. Маркова В.Д. Стратегический менеджмент / В.Д. Маркова, С.А. Кузнецова. М. : ИНФРА-М, Новосибирск, 2000. 287 с.
23. Матросова Л.Н. Формирование организационно-экономического механизма управления инновационными процессами в промышленности: монография / Л.Н. Матросова. Луганск : Изд-во ВУГУ, 2000. 462 с.

24. Трифилова А.А. Методологические основы интеграции стратегического и инновационного менеджмента / А.А. Трифилова // Менеджмент в России и за рубежом. 2004. №3. С. 27-34.

DATA ABOUT THE AUTHOR

Cherep Alexander Grigoryevich, PhD in economics, Associate Professor

Zaporizhzhya National University

66, Zhukovsky Str., Zaporozhye, 69600, Ukraine

cherep_a_v@mail.ru

ДАННЫЕ ОБ АВТОРЕ

Череп Александр Григорьевич, кандидат экономических наук, доцент

Запорожский национальный университет

ул. Жуковского, 66, г. Запорожье, 69600, Украина

cherep_a_v@mail.ru