

THEORETIC AND METHODIC GROUNDS TO PROVIDE MUTUALLY COORDINATED INTERCONNECTION BETWEEN STRATEGIC AND PROJECT MANAGEMENT OF INNOVATIONS AT THE ENTERPRISE

*SERGII MYKOLAYOVYCH ILLIASHENKO, YULIIA SERGIIVNA SHYPULINA,
NATALIA SERGIIVNA ILLIASHENKO*

Introduction

The practice shows that nowadays innovations and innovative activity take leading positions among main factors of economic growth either at separate enterprises or in national economies at a whole. They allow to increase the efficiency to use resources, adapt to the changes in the environment, to provide constant existing and development at the market. Under these conditions the ability to reveal perspective market opportunities of the innovative development are especially urgent. In order to realize them one needs internal and external conditions, to form portfolio of innovative projects, to investigate management strategy to realize them. It requires to create complex system mutually coordinated end-to-end control of innovations formation (investigation and production) and commercialization at the strategic and project levels. Its creation will give opportunity to react fast to changes, which permanently occur in environment, coordinate innovative development potential with these changes of enterprise or institution through productive, technological and other innovations introduction.

1. Analysis of the recent researches and publications

The role of innovations to provide economic growth, and also grounds to transfer the economic systems to the innovative development way is shown in works [Beckman, 2007; Santo, 1990; Shumpter, 2007; Twiss, 1989]. Conceptual bases to control enterprise innovative development are represented in works [Fedulova, 2014; Kuzmin, 2005; Rogoza, 2011]. The peculiarities to choose perspective directions of the enterprise innovative development are shown in works [Bilovodska, 2004; Dovbenko, 2010; Shypulina, 2012; Tereshkina, 2013]. These investigations mainly reveal strategic aspects of the innovations management at the enterprise, peculiarities to investigate innovative development strategies. However the question to provide coordinated interconnection of the innovations management at the strategic and project levels is not practically studied. The effective management needs the operative reaction to changes in the internal and external environment which is conducted at the project level, and then through system of feedback connections – at the innovations strategic management level. Without consideration of innovations management efficiency will be decreased at the enterprise, risk of non-compliance between its innovative development strategies and changes at the market with all circumstances is increased. Thus, the object of investigation is to develop theoretic and methodic grounds to form complex system of the mutually coordinated innovative development adaptive management at the enterprises at the strategic and project levels.

2. Order of procedures to develop innovative development strategy

The systematic analysis and literature sources and innovative activity practice generalization [Illiashenko, 2012; Illiashenko S.M. Strategic, 2010; Fedulova, 2014; Bilovodska, 2004; Kuzmin, 2005; Rogoza, 2011; Shypulina, 2012] provide the scheme of the innovative development strategy investigation at the enterprise (figure 1). In accordance with it the strategic analysis of the enterprise development current state is conducted at the first stage and besides one determines perspective directions of development, based on innovations, which

allow to coordinate internal opportunities of the innovative development (innovative development potential) and external ones, which are generated by market.

The author suggests the following strategic analysis procedures:

1. To distinguish and to ground perspective directions of the scientific and technological innovative development in the brunch, where enterprise is working, from the point of commercial view. It is suggested [Illiashenko S. M. Conceptual, 2010] to combine marketing prognostications to reveal the most probable tendencies of consumer's demand change at the target markets, with science and techniques development state expert estimations, to define possibilities to implement existing and perspective scientific and technical investigations of the brunch into new products, technologies of their production and promotion at the market which will correspond the existing and perspective consumers' demands.

2. Strategic analysis of the market positions at the enterprise, non-compliance between internal and external market opportunities at the market. Estimation of opportunities to strengthen its market positions owing to innovations creation and introduction: SWOT-analysis; SNW-analysis; PEST-analysis. To determine perspective directions of the innovative development at the analyzed enterprise.

3. Analysis of the innovative development potential current state at the enterprise (IDP), and also its sufficiency to realize innovative development perspective directions at the analyzed enterprise. To analyze the IDP state, it is more reasonably to apply methodic approach, suggested by Shypulina Yu.S. [Shypulina, 2006], which foresees to evaluate state of the separate IDP potentials-subsystems and their elements, accordingly:

- market potential (MP), as existence of real or potential demand, supported by the demand purchasing ability, or possibilities of its formation (for principally new products);
- innovative potential (IP), as opportunity to implement science and technique achievements into goods which are able to satisfy consumer's demands;
- producing and sales potential (PSP), as technical and economic opportunity, and economic reasonability of innovator to investigate (although it is not necessary, because new ideas, technologies may be bought), to produce and to promote innovations at the market.

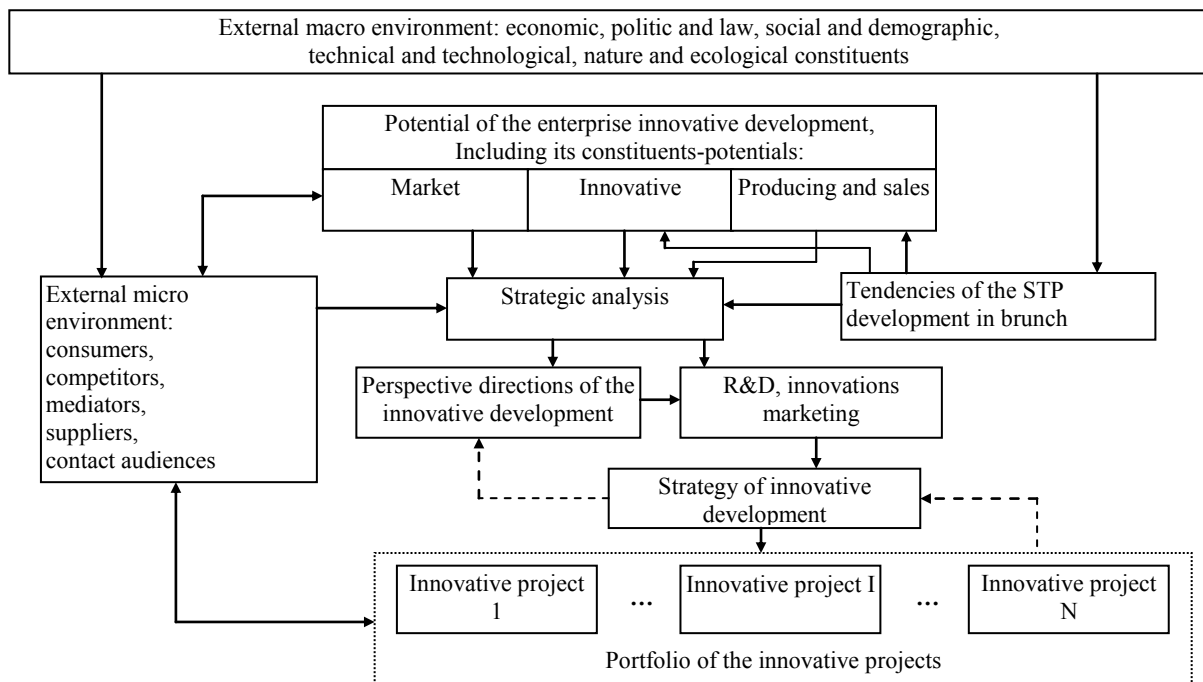


Figure 1. Scales scheme of the innovative development strategy formation and management at the enterprise

Source: author's investigation

Sufficiency of enterprise IDP to realize innovative development perspective directions is proposed to evaluate through comparing of real values MP , IP , PSP with their critical (minimum necessary) values, accordingly: MP_{cr} , IP_{cr} , PSP_{cr} . Scheme of estimation and making managerial decisions by its results is represented in table 1. The Table 1 has such Type Codes: C_{MP} , C_{IP} , C_{PSP} – accordingly, costs (monetary units) on increase of MP , IP , PSP level; T_{MP} , T_{IP} , T_{PSP} – accordingly, time consumptions to increase MP , IP , PSP levels; T_{MPcr} , T_{IPcr} , T_{PSPcr} – accordingly, critical (maximum acceptable) time consumptions to increase MP , IP , PSP levels.

Analysis by the scheme of table 1 is carried out by each innovative development perspective direction. The analysis is resulted in choosing the variants for realization of which IDP is sufficient.

Then necessary complexes R&D and also innovations marketing works during which the innovative development strategy at the enterprise is formed: as variety of classical innovative strategy (advance, protective, mixed, licensed etc), or as strategy of the innovative advancing [Illiashenko N.S. Formation, 2014; Illiashenko N.S. The, 2014], which foresees active search and realization of its potential advantages, leading positions taking in those activities, where there are necessary and available conditions. Marketing of innovations foresees to use complex of works connected with innovative products investigation, producing and sales processes orientation to satisfy consumers' demands, to form and stimulate demand. R&D – works, connected with implementation of science and technique achievements into innovative products, which is able to satisfy consumers' demands and bring profits for their investigator and producer.

Table 1. Scheme of the enterprise IDP diagnostics

Characteristic of IDP state and its constituents. Variants of managerial acts	IDP constituents		
	Market potential	Innovative potential	Producing and sales potential
IDP is enough to introduce innovations	$MP \geq MP_{cr};$ $C_{MP}=0$	$IP \geq IP_{cr};$ $C_{IP}=0$	$PSP \geq PSP_{cr};$ $C_{PSP}=0$
<i>PSP</i> is not sufficient. To check possibility of production technical reequipment, staff training and renewal, reforming of sales net and sales stimulation system. If no –variant to exclude from observing	$MP \geq MP_{cr};$ $C_{MP}=0$	$IP \geq IP_{cr};$ $C_{IP}=0$	$PSP < PSP_{cr};$ $C_{PSP}>0$
<i>IP</i> is not sufficient. To check possibility to stimulate workers' creative activity, to finance R&D, involve highly qualified specialists etc. If no – variant to exclude from observing	Conditions to render IDP state to the necessary level are: - Time limitations $T_{PSP} \leq T_{PSPcr};$ - Financial limitations $C_{PSP} \leq C_{PSPcr}.$		
	$MP \geq MP_{cr};$ $C_{MP}=0$	$IP < IP_{cr};$ $C_{IP}>0$	$PSP \geq PSP_{cr};$ $C_{PSP}=0$
<i>IP</i> and <i>PSP</i> are not sufficient. <i>MP</i> is sufficient. To coordinate <i>MP</i> , <i>IP</i> and <i>PSP</i> it is necessary to involve investment resources, which is very problematic	$MP \geq MP_{cr};$ $C_{MP}=0$	$IP < IP_{cr};$ $C_{IP}>0$	$PSP < PSP_{cr};$ $C_{PSP}>0$
	- time limitations $T_{IP} \leq T_{IPcr}; T_{PSP} \leq T_{PSPcr};$ - financial limitations $C_{IP} \leq C_{IPcr}; C_{PSP} \leq C_{PSPcr}.$		
<i>MP</i> is not sufficient, because there is no demand. To check ability and economic reasonability to form and stimulate demand	$MP < MP_{cr};$ $C_{MP}>0$	$IP \geq IP_{cr};$ $C_{IP}=0$	$PSP \geq PSP_{cr};$ $C_{PSP}=0$
	- time limitations $T_{MP} \leq T_{MPcr};$ - financial limitations $C_{MP} \leq C_{MPcr}.$		
<i>MP</i> and <i>PSP</i> are not sufficient, <i>IP</i> is sufficient. Variant may be realized only involving investments, investors must have stimulus: high profit, perspective market occupation etc. Variant is problematic	$MP < MP_{cr};$ $C_{MP}>0$	$IP \geq IP_{cr};$ $C_{IP}=0$	$PSP < PSP_{cr};$ $C_{PSP}>0$
	- time limitations $T_{MP} \leq T_{MPcr}; T_{PSP} \leq T_{PSPcr};$ - financial limitations $C_{MP} \leq C_{MPcr}; C_{PSP} \leq C_{PSPcr}.$		
Variant can't be practically realized, because there is no demand on new production, and organization is not able to implement science and technique achievements into new goods	$MP < MP_{cr};$ $C_{MP}>0$	$IP < IP_{cr};$ $C_{IP}>0$	$PSP \geq PSP_{cr};$ $C_{PSP}=0$
	- time limitations $T_{MP} \leq T_{MPcr}; T_{IP} \leq T_{IPcr};$ - financial limitations $C_{MP} \leq C_{MPcr}; C_{IP} \leq C_{IPcr}.$		
Variant can't be realized, there are no external and internal conditions of success	$MP < MP_{cr};$ $C_{MP}>0$	$IP < IP_{cr};$ $C_{IP}>0$	$PSP < PSP_{cr};$ $C_{PSP}>0$

Source: author's investigation

Table 2 shows character of innovations marketing works and R&D at the typical innovative cycle stages.

Works complexes mentioned in the table 2 are conducted for each productive innovation.

In work [Illiashenko S.M. Strategic, 2010] one shows, that innovative development strategy is necessary to observe at three generalized levels:

- corporative, where general grounds of the innovative strategy as general economic development strategy constituent are developed, and also its mutual coordination with other functional strategies (marketing, staff, financial, technological) is conducted;

- business-level, where one investigates actions concerning creation and introduction of innovations for each strategic business-units (SBU), and also makes strategic decisions concerning modification of the existing product nomenclature and product assortment, including generation and selection of new goods ideas, their concepts development etc;

- product, where one develops product innovative strategy and marketing programs concerning promotion of each product innovations (within separate business-projects) at the market.

One has to notice that in general innovative development strategy may foresee investigation and realization of several innovative projects, which can be different by scales, technologies for their realization, duration of product innovations life cycle and its stages, stage of significance for enterprise-innovator etc. Their realization

can take place by various schemes: consequently, parallel, parallel and consequently (consequently-parallel). Moreover the enterprise can simultaneously continue to produce and realize traditional goods. Accordingly, choice of rational scheme to introduce innovative projects portfolio must include comparing analysis of the comparing variants economic efficiency considering risk factors. It must also take into account resource, market and other limitations. However innovative projects portfolio formation foresees beforehand analysis of each perspective projects by complex of different criteria and selection of the best ones.

Table 2. Scheme of the interconnection between R&D and innovations marketing at the product innovative cycle stages

Stages of the innovative cycle	R&D	Marketing of Innovations
Analysis of coordination between enterprise development internal and external possibilities	Analysis of branch development tendencies, and own technical and technological possibilities of the enterprise	Estimation of the enterprise current market positions and possibilities of their strengthen
Generation and selection of ideas for innovations	Use of project methods: prototype analysis, brain attack, synectics, liquidation of situations "blind corner", morphological maps etc	Analysis of the current and perspective consumers' needs and other market subjects. Estimation of new products correspondence to the market subjects' requirements
Investigation of the new good conception and its checking	Prognostication of the technical and economic characteristics concerning product innovations	Searching of ways to strengthen product innovation market attractiveness
Business-analysis	Specification of the product innovation technical and economic characteristics. Formation of the business-idea, main goal and innovative project objectives	Complex of marketing researches conducting, investigation of the marketing strategy and program concerning new good promotion at the market
Estimation of the ability to achieve marketing program objectives	Technical and economic grounding of the project	Estimation of the enterprise marketing potential
Investigation, producing and laboratory experiments of new good	Development of the constructive and technological documents, practice of technologies, beforehand testing of the studied pattern, state testing (if it is necessary)	Specification of the target market, estimation of the competitive positions of the product innovations, investigation of the marketing testing program
Examination of new good in the market conditions	Correction of the product innovation construction and technologies if its producing after market testing	Method of the test marketing
Commercial producing of the new good	Researches conducting concerning new production improvement and technologies for its production	Realization of marketing innovations actions. Analysis of the new production market adequacy and situation development at the market

Source: author's investigation

3. Formation of the innovative projects portfolio and its ground

Taking into account above mentioned the following consequence of innovative projects portfolio procedures and its realization rational scheme ground.

1. The beforehand estimation of each innovative project, which realizes perspective innovative development directions, is selected at the strategic analysis stage (see fig. 1) and enterprise IDP diagnostics (see table 1). The analysis of literature sources results in criterion base of estimation, which include the following criteria groups:

1.1. Criteria, which consider the enterprise-innovator specific:

- project correspondence to the enterprise development strategy, its targets, image, traditions;
- changes in the enterprise development strategy, which may be caused by innovative project, observed;
- allowability of the project from the positions concerning enterprise relation to innovations and their radicalization degree;
- correspondence of the project to the enterprise strategic behavior concerning risk: unacceptability of risk, inclination to risk, neutral attitude;
- correspondence of the project time features to the enterprise demands.

1.2. Market (marketing) criteria:

- conformity of new (modernized) production, which is provided by the innovative project to consumers' demands;
- prognosticated market capacity, tendencies of its change, diapason and character of demand swings;

- expected market part of the enterprise-innovator, target for new production types, how their appearance will influence on the existing goods;
- duration of the new products life cycle and its stages;
- conformity of price to consumers' demands, economic and psychological price acceptance by consumers;
- opportunity to realize innovations by the existing methods and sales channels;
- conformity to the existing methods of the new production promotion at the market;
- competitor positions of the enterprise and new product;
- conformity of the project to the innovative process subjects' interests, ability to satisfy them;
- actions development scenario at the market and their probabilities, probability of the innovative project success by each scenario and average weighted.

1.3. Scientific and technical criteria:

- conformity of the project to enterprise innovative strategy;
- technical and technological possibility to realize project;
- patent clearance and protection of the project;
- providing of the project with scientific and technical resources (staff, research base, equipment and tools; informative base etc);
- perspectives of the project for further development on its base, its effect on other projects.

1.4. Financial and economic criteria:

- project value (in general, by works types and stages);
- financial provision of the project (in general, and also its separate works and stages);
- economic efficiency of the project: *NPV*, *PP*, *PI*, *IRR*;
- acceptable efficiency level for the enterprise;
- value estimation of risk.

1.5. Producing criteria:

- technical and technological provision;
- staff provision (quantitative and qualified factors, experience);
- conformity of the project to producing capacities;
- provision with raw, materials and utilities.

1.6. Criteria of the innovative environment state:

- conformity of the project to state, regional and local programs;
- presence and sufficiency of the infrastructural provision;
- possible state support (financing, privileges etc);
- conformity of the project to economic, political and law, natural and ecological, social and demographic, technical and technological constituents in the economy environment.

Negative estimation of the analyzed innovative project almost by one of mentioned criteria is ground to analyze possibilities of its realization, after which one makes decisions about its including to the portfolio. To compare alternative projects, they have to be evaluated by all criteria, using methods of their factors closing into one integral one and determine their chances for success.

The group which estimates the project has to include: specialists in the proper scientific and technical branch, and also in the related sectors; users (consumers) of innovations, after project realization; specialists in management and economics; persons, who participated in such estimating processes; specialists, who have experience in forming of the scientific and technical policy at the enterprise and institution. The estimation of innovative projects requires specialists' interpersonal and intergroup relations coordination. It allows to consider opinions of representatives from different subdivisions at the enterprise, consumers and other interested persons.

2. Complex estimation of the innovative projects portfolio (for those projects, which were selected at previous stages – p. 1.1-1.6) for each from possible introduction schemes (see above) is suggested to be conducted through portfolio analysis well-known methods [Blank, 2004]. In order to take into account risk factor it is reasonably to use scenarios method distinguishing optimistic, pessimistic and nominal scenario. The main problems consist in complications to define scenarios probabilities and prognostications of costs and results for each innovative project by every scenario. Quality of their solving depends on experience and persons' qualification, who conduct analysis.

The best from alternative variants of innovative project portfolio is reasonably to choose by criterion *risk/result* → *min*. As enterprise can simultaneously continue issue of traditional goods together with innovative production, alternative variants of portfolio have to include them for analysis objectivity.

4. Project management of the enterprise innovative development

Considering mentioned above scheme of portfolio management is investigated, which include both traditional and innovative goods (figure 2).

The planning of the project includes: choice of criteria and methods to evaluate success (see p. 1 and 2); estimation of needs in resources and resource provision; analysis of risks; choice of the project conducting technologies; setting of the project conducting graphic; choice of time concerning appearing at the market; prognostication of the innovations life cycle and its stages duration.

Organization of project conduct: project team formation; decisions concerning leaders and motivation; choice of the organizational structure; providing of the doers' communication.

Analysis and control of the project conduct: choice of the analysis method; determination of the control order and reaction for changes in project realization conditions; determination of the project correction order. Order of the portfolio analysis is analogical; however it considers portfolio factors in general with diversification effect.

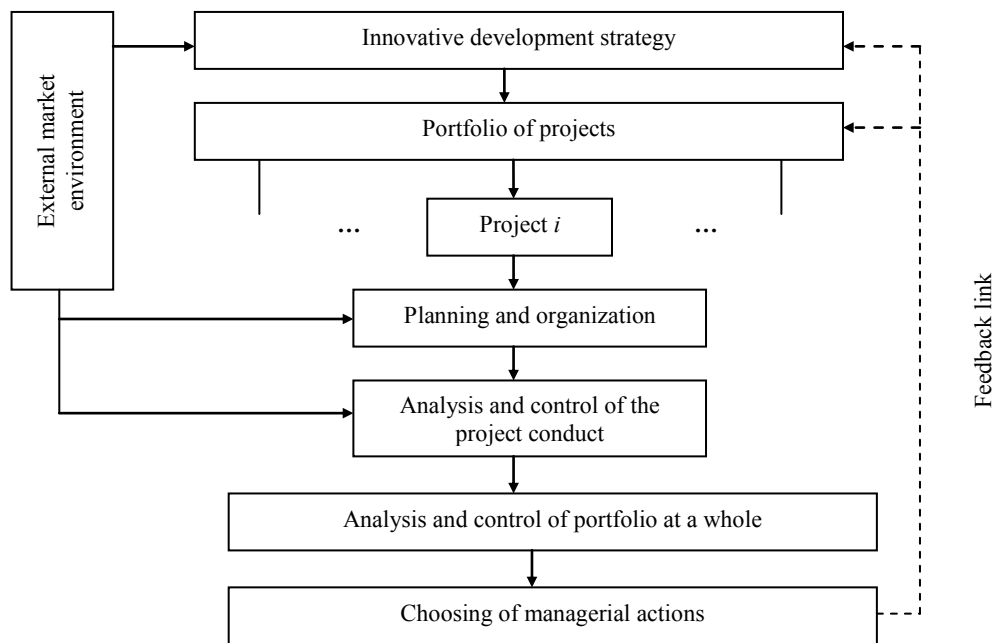


Figure 2. Scheme of the innovations portfolio management

Source: author's investigation

The analysis is resulted in selecting of variants for further actions:

- to continue to conduct the project (projects portfolio) without changes;
- to modify the product nomenclature (remove the product line from production, introduction of new product line);
- modification of the product line (introduction/excluding of new product modification within product line [Illiashenko, 2011], figure 3);
- modification (change of characteristics: quality, design, functions etc) of the concrete product.

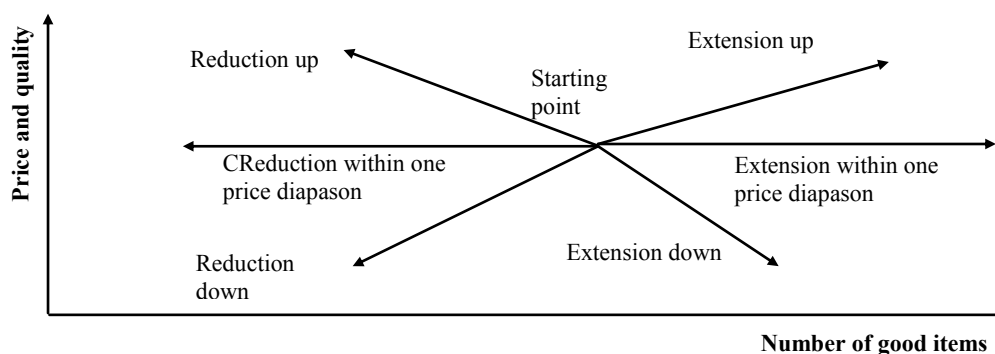


Figure 3. Variants of the product line modification

Source: author's investigation

Variants b) (especially) and c) are risky and require to come back to the strategic analysis (see figure 1). Variants a) and d) has low risk level. In any case choice of the managerial actions requires marketing analysis of

the portfolio goods market positions owing to the portfolio analysis methods: BCG Matrix, Mac Kinsi General Electric etc. It is reasonably to be added with analysis by criteria and methodic p. 3.

The analysis of suggested schemes figure 1 and figure 2 shows the mutual coordination between strategic and project levels concerning innovative process management. It means that changes, initiated at the strategic level, require corrections at the project level, and vice versa.

Conclusions and directions for further researches

Making conclusions one should mention, that authors develop theoretic and methodic grounds to form complex system concerning mutually coordinated adaptive management of the enterprise innovative development at the strategic and project level. Their practical realization will give opportunity operatively react on changes in internal and external circumstances, coordinate actions of the strategic and operative innovations management at the enterprise, increase efficiency of management and decrease innovative risks owing to it. They suggest conceptual scheme of the interconnection between R&D and innovations marketing at the product innovative cycle stages, that allow to increase management efficiency. The procedures to control enterprise innovative development are improved, criteria base is formed.

The received results develop enterprise innovative management theory in part of investigation and ground approaches to provide coordinated interconnection between strategic and project management instruments and methods. Further researches have to be oriented to store statistic materials concerning factors crucial values determination to make efficient decision to control innovations at the enterprise both at strategic and project level accordingly to the suggested approaches.

References

- [1] Beckman S.L. Innovation as a Learning Process / Sara L. Beckman, Michael Barry // California Management Review. – Fall 2007. – Vol. 50, № 1. – P. 25–56.
- [2] Bilovodska O.A. Systematic analysis and improvement of theoretic and methodological approaches to choose enterprise innovative development directions / O.A. Bilovodska // Problems of science. – 2004. – №4. – P. 7-15.
- [3] Blank A. I. Financial strategy of the enterprise: study guide / Blank A. I. – Kyiv: Nika-Center, 2004. – 720 p.
- [4] Dovbenko V.I. Choice of enterprise innovative development directions under conditions of market state changes / V.I. Dovbenko // Bulletin. – Lviv: Publishing House of National University “Lviv Politechnique”, 2010. – №690.
- [5] Fedulova L.I. Conceptual bases of the enterprise innovative development management / L.I. Fedulova // Marketing and management of innovations. – 2014. - № 2. – P. 122-135.
- [6] Illiashenko N.S. Formation of the theoretical grounds in advanced development at the country and enterprise level / N.S. Illiashenko // Economic Annals – XXI. – 2014. – №5-6. – P. 78-81.
- [7] Illiashenko N.S. The comparative analysis outstripping and alternative types of development / N.S. Illiashenko // Marketing and management of innovations, 2014. – №2. – P.21-28.
- [8] Illiashenko S. M. Conceptual grounds of the marketing prognostication concerning strategic scientific and technological innovative development directions in Ukraine based on expert estimations / S. M. Illiashenko // Bulletin of national university "Lviv Politechnique". Problems of economics and management. – 2010. № 668. - P. 68-74.
- [9] Illiashenko S.M. Methodological grounds to form complex mechanism of the innovative development potential / S.M. Illiashenko // Mechanism to control industrial enterprise innovative development potential: monograph / issued by PhD in Economics, Associate Prof. Yu.S. Shypulina. – Sumy: LLC "PH "Papyrus", 2012. – P. 52-73.
- [10] Illiashenko S.M. Strategic management of innovative activity at the enterprise based on the innovations marketing / S. M. Illiashenko // Actual problems of economics. – 2010. - № 12. – P. 111-119.
- [11] Illiashenko S.M. Theoretic and methodic grounds of the commercial innovative policy at the enterprise / S.M. Illiashenko //Marketing and management of innovations. – 2011. - № 2. - P. 13-26.
- [12] Kuzmin O.Ye. Management of innovative process at the enterprises: problems and ways of their solving / O.Ye. Kuzmin, S.V. Knyaz, L. I. Melnik // Economic Bulletin of National Technical University of Ukraine “Kyiv Polytechnic Institute». – 2005. – №2. – P. 371-382.
- [13] Rogoza M.Ye. Strategic innovative development of enterprises: models and mechanisms: monograph / M.Ye. Rogoza, K. Yu. Vergal// HEI “Poltava University of Economics and Trade”. – Poltava : PUET, 2011. – 136 p.
- [14] Santo B. Innovation as mean of economic development / B. Santo; transl. from Hungarian; under issue of B.V. Sazonov. – Moskva : Progress, 1990. – 295 p.

- [15] Shumpster J. Theory of economic development. Capitalism, socialism and democracy / Joseph Shumpster; intord. V.S. Autonomova. – Moskva : EKSMO, 2007. – 864 c.
- [16] Shypulina Yu.S. Management of the industrial enterprise innovative development potential. See PhD in Economic Sciences: 08.02.02 / NTU "KhPI" - Kharkiv, 2006. – 253 p.
- [17] Shypulina Yu.S. Modern approaches to intensification of the industrial enterprises innovative development: theoretical review / Yu. S. Shypulina // Marketing and management of innovations. – 2012. – №3. – P. 128-140.
- [18] Tereshkina N.E. Innovative strategy: theory and practice of realization in Ukraine / N.E. Tereshkina // Intellect. Innovations. Investments. – 2013. – №4. – P. 124-129.
- [19] Twiss B. Management of scientific and technical innovations/ Shortened transl. from Eng. – Moskva: Economics, 1989. – 271p.

Abstract

The theoretical and methodic grounds to form complex system of mutually coordinated adaptive management of enterprise innovative development at the strategic and project level were investigated. Their practical realization will allow operatively to react to the changes of external and internal conditions, to coordinate innovations strategic and operative management actions at the enterprise, to increase its management efficiency and to decrease innovative risks. The received results develop theory of enterprise innovative management in part of approaches investigation and ground to provide coordinated interconnection between instruments and methods of strategic and project management.

Key words: strategic management, project management, innovative development, innovative management, marketing of innovations, enterprise.

Note about authors:

Illiashenko Sergii Mykolayovych, Doctor of Economics, Professor, Head of the Department of Marketing and Management of Innovative Activity, Faculty of Economics and Management, Sumy State University, Sumy, Ukraine; Dr. hab, Professor, University of Economics and Humanities (Bielsko-Biala), Poland.

Shypulina Yuliia Serhiivna, PhD, Associate Professor, Associate Professor of the Department of Marketing and Management of Innovative Activity, Faculty of Economics and Management, Sumy State University, Sumy, Ukraine.

Illiashenko Nataliia Serhiivna, PhD, Associate Professor, Associate Professor of the Department of Marketing and Management of Innovative Activity, Faculty of Economics and Management, Sumy State University, Sumy, Ukraine.