

12. Cuny, J. E. Graph grammar based specification of interconnection structures for massively parallel computation [Text] / J. Cuny, H. Ehrig, M. Nagl, G. Rozenberg, A. Rosenfeld // Graph Grammars and their Application to Computer Science, LNCS 291. – Springer-Verlag, 1987. – P. 73–85. doi: 10.1007/3-540-18771-5\_46
13. Casti, J. Connectivity, complexity and catastrophe in large-scale systems [Text] / J. Casti. – «Wiley», New York, 1979. – 237 p.
14. Васильев, С. Н. Динамические модели экономического регионального управления природоохранной деятельностью [Текст] / С. Н. Васильев, А. И. Москаленко // Труды международной конференции «Проблемы управления в сложных системах». – Самара, 1999. – С. 309–344.
15. Юдицкий, С. А. Технология выбора целей при проектировании бизнес систем [Текст] / С. А. Юдицкий, П. Н. Владиславлев // Приборы и системы управления. – 2002. – № 12. — с. 60–66.
16. Юдицкий, С. А. Сценарный подход к моделированию поведения бизнес-систем [Текст] / С. А. Юдицкий. – М. : Изд-во «Синтез», 2001. – 108 с.
17. Питерсон, Дж. Теория сетей Петри и моделирование систем [Текст] / Дж. Питерсон; пер. с англ. – М. : Изд-во «Мир», 1984. – 264 с.
18. Кононов, Д. А. Построение модели возникновения, развития и устранения чрезвычайной ситуации с использованием аппаратов знаковых графов и сетей Петри [Текст] / Д. А. Кононов, С. А. Косяченко, Ю. А. Черепов // Проблемы управления безопасностью сложных систем. Труды XIV Международной конференции. – М. : ИПУ РАН, 2006. – С. 362–364.

*Досліджено аспекти виконання проектів розвитку наукомістких підприємств в області нанобіотехнологій, з орієнтацією та позиціонуванням на внутрішньому та міжнародному ринках, що суттєво впливає на життєзабезпечення та розвиток таких підприємств. Визначено фактори, які суттєво впливають на управління портфелем проектів. Також показана необхідність впровадження методів проектного управління при інноваційному розвитку організації, націленого на швидку комерційну реалізацію в найбільш перспективних галузях національної економіки*

*Ключові слова: портфель проектів, інноваційні проекти, нанобіотехнології, мікроелементи, управління проектами*

*Исследованы аспекты выполнения проектов развития наукоемких предприятий в области нанобиотехнологий, с ориентацией и позиционированием на внутреннем и международном рынках, что в значительной степени влияет на жизнеобеспечение и развитие таких предприятий. Определены факторы, которые существенно влияют на управление портфелем проектов. Также показана необходимость внедрения методов проектного управления при инновационном развитии организации, нацеленного на быструю коммерческую реализацию в наиболее перспективных отраслях экономики*

*Ключевые слова: портфель проектов, инновационные проекты, нанобиотехнологии, микроэлементы, управления проектами*

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# PROJECT MANAGEMENT FOR DEVELOPMENT OF SCIENTIFIC ORGANIZATIONS IN THE FIELD OF NANOTECHNOLOGIES ON THE BASE OF COMMERCIAL STRATEGY

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## 1. Introduction

A modern condition of project and program management technologies development is characterized by their further

development and widening their implementation in different fields of application. It also concerns the scientific companies' operation, where survival and further development in modern crisis and turbulence environment is extremely

important. This article is devoted to studies of introduction of project management technologies for sustainable development of scientific enterprises by means of efficient actions on formation of portfolio project management.

*Challenge problem.* The growth of population of the planet and elevation of life standards in particular regions, inevitably leads to customers' demand extension, and as a result, to extension of industrial and agricultural production. Thus, it requires building new plants, implementation of intensive innovative technologies in agriculture, that leads to exhaustion of limited capacities of natural resources, considerable aggravation of global ecological situation [1, 2].

The way of product production growth by means of building and simple arithmetical replication of old-fashion technological level plants has run out of stream. From the other hand, the way of equipment dimensions decrease, reduction of energy consumption, saving classic production methods has also come to its natural technological and economical edge, when with fixed preplanned profit, the dimensions of plants just slightly decrease, while economic expenses for their building grow exponentially [3].

Therefore, the strategy to handle this global and controversial problem of population lays on the way of implementation of nanotechnologies, that in last several years have started their blustery development. In practical aspects, it is a production technology of products or its components that are needed for creation, processing and manipulation of particles, sizes of which are stated to be in range from 1 to 100 nanometers [1].

One of the most prominent direction of nanotechnologies is nanobiotechnology. The products of nanobiotechnology are designed for all living organisms [4].

Solving before mentioned issues, we meet the problem of time limits and financial resource limits, multitasking and prioritization of accomplishment on planned action, aiming to create new biological products, efficiency of distribution and usage of available resources, etc. [5].

The pointed out problems can be solved using project approach, that in modern practice is implemented due to project management technology application [6, 7]. Using this approach implicates application of integrated methods and models of effective project management [8]. However, deep studies of literature sources shows, that application of existing models and methods for commercial company management can not be to the full adjusted for project management of commercial development of state scientific organizations with science-based innovative biological products. It requires new methods and models development, that will allow to consider the specific management objects for non-standard situations and in turbulent environment [9, 10]. That is why studied in the article models and methods of management of complicated projects and their application in the field is actual.

Of course, the identified issues require professional treatment of management, that shows the necessity to implement project management approach that would provide multidisciplinary efficiency along with on schedule results.

So, the projects in the field of nanobiotechnologies should be placed in a category of challenging science-based projects. To receive maximum effect from their implementation, first of all, main peculiarities of such projects should be identified for further successful introduction of modern mechanisms into them. Therewith, science-based innovative companies are no willingly use project approach, though this specific activity is characterized by the programs for

adjustment of new productions of innovative products of nanotechnology, and as a result, requires the formation of project management portfolio and its skillful management, using modern methods and means of management.

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## 2. Analysis of literature base and problem formulation

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From one hand, nanotechnologies got its greatest evolution in such countries as Japan, USA, Germany and UK. In Ukraine and in post-Soviet countries a number of well know scientific-research schools study nanotechnologies. However, main directions are electronics, metallurgy, civil army and technics, material sciences.

As to biological objects (microorganisms, plants, animals, humans), the most prominent practical results have been reached by scientists of The Ukrainian State Scientific-Research Institute of Nanobiotechnologies and Resource Reservation, that is also a Satellite Center of Trace Element – Institute for UNESCO (Lyon, France). With that, till this time there has not been a single try to use modern achievements of theory and practice of project management for advanced implementation of nanobiotechnologies, as one of the most effective directions of agriculture.

The problems of portfolio project management have been studied by numerous Ukrainian and foreign scientists, such as Bushuyev S. D., Yaroshenko F. A., Tanaka H. [6], Morozov V. V. [7], Sydorчук O.V. [8], Rach V. A., [11], Teslia U. N. [12], Archibald R. [13], Clifford F. [14], Miloshevich D. [15] and others. In particular, we raised the difficulties in formation of project portfolio in building and IT companies, and program synthesis issue in different fields of knowledge. However, the problem of choosing the optimal content of project portfolio for development of science-based companies in turbulent environment has not been thoroughly studies for its practical resolution.

*Unsolved aspects of the problem.* A lot of studies have been performed in the field of innovative project management, there are some examples of successful accomplishment of scientific projects. However, the peculiarity of portfolio project management of science-based projects brings certain corrections into classic methods, where the success of project realization is determined by other criteria, specific for each particular direction. The challenge is to determine main differences of projects in nanobiotechnologies, aiming further effective application of methods in the project management realization [7].

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## 3. Purpose and objectives of the study

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The main goal of this research is to find the opportunities to involve project management approach to formation and further portfolio project management, considering the factors of turbulence environment, innovative character of projects and their science-based peculiarities. For that, it is important to identify the peculiarities of decision-making process in the process of formation and portfolio project management of specific projects, project unstable environment and its influence peculiarities, and to offer interaction scheme of innovative projects inside the portfolio.

To solve the set missions, we need to solve following issues:

1. To make characteristic analysis of innovative projects of science-based companies.

2. To make a list of projects to form a project portfolio.

3. To build an integration model, that links scientific advanced research products, current innovative projects and future projects of innovative development.

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#### 4. Analysis of the characteristics of innovation projects nanobiotechnology

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One of higher priority scientific directions in the field of nanobiotechnology has been started by The Ukrainian State Scientific Research Institute of Nanobiotechnologies and Resource Reservation (further Institute). Development of this direction made it possible to synthesize and industrially produce basic essential micronutrients. Studies, production and sales development as at the national market, as abroad, may be considered a project. So, project portfolio contains following projects:

1. Fortification of products for general consumption (flour, salt, sugar, soft drinks, drinking water...).

2. Product bio-fortification for mass consumption:

– Farming, meat, different domestic and farm animals by adding well-balanced polisaturated microelement composition in formula feed and water.

– Fortification of vegetable products (all grain crops, vegetables), using microelements in pre sowing seed processing and during plant vegetation period.

3. Special purpose products for people with elevated risk of disease emergence for following population groups:

– people working in hazardous industry (chemists, metallurgists, miners, mechanic engineers, people working in ore mining industries, in nuclear power plants and so on);

– sportsmen, astronauts, militarists, rescue workers, where stress situations and physical exertions are typical for their every day work.

For all working categories the necessity of microelements intakes is elevated. It is connected with compensation of hazardous factors influence. To fulfill the balance, additional microelement intakes are needed.

4. Manufacturing of veterinary products for treatment purpose (animals, birds, useful insects including silkworms, bees).

5. Receiving and usage of disinfecting products and paints on a base of Silver and Copper biocide character, manufactured using nanotechnologies.

6. Water and drainage decontamination.

7. Manufacturing of packing materials of biocide character, aimed to extend product storage period.

8. Biofortification of medical herbs and mushrooms. Manufacturing of medical products on their base.

9. Trace element application for pharmaceutical industry.

10. Production of fabric and bandages with biocide properties.

11. Production of special purpose products, for army and civil needs for preservation in State Government Reserve of Ukraine.

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#### 5. Building integrated model for management improvements in innovative project process of science-based company

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Management improvement of science-based innovative project management of the company should be initiated from regulations of portfolio project and program management,

the processes of development and project decision making. The decision must not have any lobby grounds, but should be motivated by strategy and feasibility studies [11]. Fulfillment of requirements provide following steps:

1. *Consolidation of plan making and control* of all projects and programs in one plan of innovative project activity. As a rule, a manager responsible for strategic plan making and company development is appointed to be responsible for project expertise, formation, planning and control, determination of priority plans for innovative project activity.

2. *Formulation and implementation of processes* for initiation and development of projects and programs. Project initiation – is a result of pre-project activity, whether it is analysis of strategic opportunities or strategic planning, goal-setting in various aspects of company, for example claim analysis.

– The development of investment strategy during company reformation must be preceded by;

– Analysis of strategic position and the concept of enterprise development.

Development of product-market strategy of the company, on which bases is formed goal-setting in the frames of main business of the company [16, 17].

Of course, at first and “concept” and “product-market strategy” can only exist in the minds of senior management, without sufficient details. It is important that they must be approved by the management and informed to key developer and command of a project or a program.

3. *Standardization of project cycle* development and implementation of projects and programs, requirements for presented project materials, whether it is technical, economic, planning and budget or marketing documentation. Feasibility studies of projects, their gradual development and presentation in the same format – is an important measure, before making rash decision and to begin to work on the project, it is necessary to assess the situation, in order not to regret for the decision [18]. It's not secret that among the Ukrainian enterprises there are some cases when the undeliberate decisions, led to profit losses, project term failure lost profit and strategic mistakes of enterprise. Seeing this, all projects and programs should be justified by evaluation criteria, applied to the projects of the same type.

For a project or program to be examined and approved for realization, it is necessary to have its vision according to certain form that also contains feasibility studies of reasonability of the project. Here, the depth and the form of project or program development depends on sufficient information for making project decisions. Thus, it could be a determination of project portfolio configuration [19], which consists of a specific set of active projects and that would ensure maximum benefits from the use of resources, including financial [19].

So, for small and obvious, in terms of projects or programs feasibility, it is enough to develop an investment proposal with financial and economic profit assessment (if the project has a direct economic effect). For more difficult projects, it is necessary to study the possibilities of project realization with detailed analysis of alternatives and result presentation. For the projects that require more detailed studies, that includes, for example the development of experiment models, new innovative products and other works, it required to develop full-scale feasibility study. A possible configuration of such projects` portfolio is shown in Fig. 1.

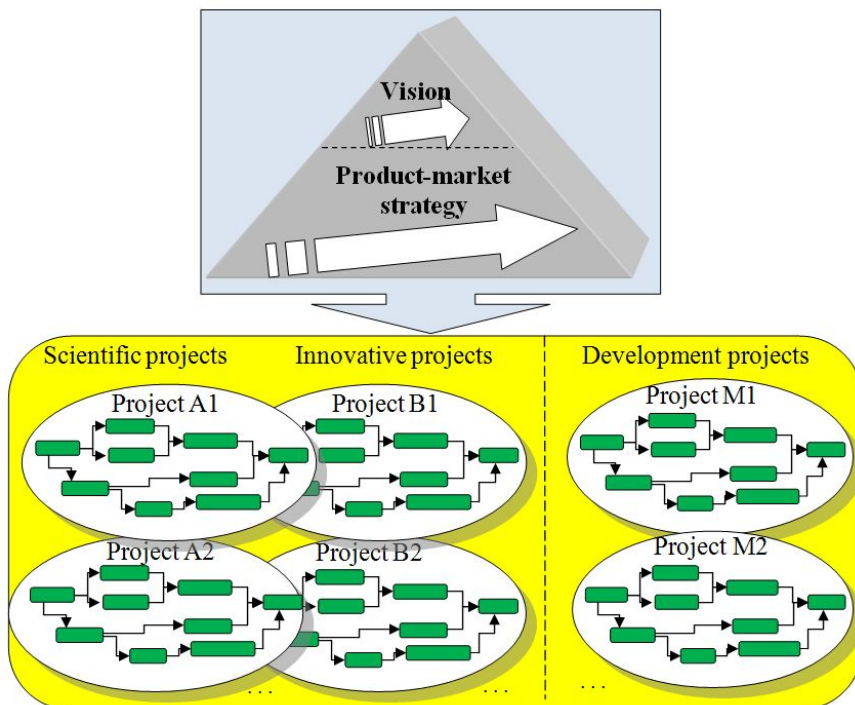


Fig. 1. Composition of project portfolio for development of science-based companies

All the projects must to pass a mandatory examination by professionals, that are directly involved in the development of company strategy, expertise of financial and economic services. If necessary, the development department should use other competent evaluation.

Another important point to ensure effective management of project and program portfolio is:

4. *Competence level differentiation* in making project decisions [8, 13].

The level of decision-making must match the importance of the project. The decision of the majority of the projects should be taken at the level of the Investment Committee of science-based companies. The composition of Investment Committee should include people, who promote the strategy of the company - functional directors, managers, responsible for development, strategic planning [20]. The Investment Committee must be headed by general director of the company, that bears main responsibility for all actions within the enterprise. With particularly significant projects, the level of decision-making inevitably moves to the level of the board of directors of the company. Of course, it is obvious, that the draft project should be preliminary approved on the Investment Committee. Besides, functional directors must have opportunity to make current working decisions in the project, within established competences and spending limits. As a rule, the allowed limits are given within a certain amount per year in quarterly terms.

As a rule, decisions in the project are made by functional directors personally and are included in projects and programs portfolio as a message. Functional Directors must report on the results of independent projects to Investment Committee [21]. But, in modern turbulent environment, where every time there are changes in portfolio environment, that significantly affect its configuration, on the number of active projects, it leads to unpredictable results and stops all project activity. As

one of solutions of this situation can be offered application of dynamic programming methods, that allow to make a choice of a set of priority data of the projects. Their control will determine base configuration of project portfolio, that in the best way will be responsible for the project activity for a certain period.

The cycle of planning for innovative project can be linked to the annual cycle of financial and economic planning. However, for Ukrainian research companies that are in conditions of crisis, unstable markets and turbulent environment, the flexibility in project portfolio formation is one of the most important factors of competitiveness. The portfolio may change as the completion of stages of developing projects and programs changes, also because of changes in the strategic plans of the company and on other important considerations. To tackle the balance in terms of flexibility and company homeostasis (constancy of

internal environment), there may be use quarterly cycles of consolidated planning [22].

As a rule, the consolidated planning and control of innovative projects is a responsibility of managers responsible for strategic planning and development of the company, that must ensure that the company keeps to the strategy and innovative portfolio project.

**6. Methods of implementation of the proposed models of management of complex projects**

Regarding all mentioned and studies problems, we can specify another list of issues to be solved to make a transfer from scientific production company to project oriented management form. Basing on experience of development and implementation of project activity in organization, we can advice following steps [12, 15, 16]:

Step 1. *Diagnostics of company and management system*. It aims to regulate business processes of organization, to determine strong and weak points of managements, search for resource reserves and to calculate the needed financial amount to make project portfolio and for project realization. Of course, here must me performed evaluation of existing organizational structure of the company, its opportunities to become market-oriented. Also, it is required to make apprise and make test work with the staff of scientific organization, where the issue of the biggest concern will be the ability to know and use common definitions, by means of special training tutorials, meetings, qualification improvement courses and formation of special purpose motivated teams (groups), etc.

Step 2. *Development of market-oriented development strategy*, that must be built basing on received analysis data of Step 1. This step is predetermined by requirements of system approach [7, 16], and basing on uncovered problem tree, will allow to build a structure of goal tree [16] pro-



gram development. The same results will become a base in elaboration of organization development conception, that will lead to formation of projects of different directions, showed on Fig.1.

Step 3. *Initiation of the process of project portfolio formation.* This step must be performed under a professional governance of project managers, that have necessary competences and practical skills of project portfolio management. The administrative management must be included in the process and also take an active part in it.

Step 4. *Development of regulations on planning and budgeting of projects.* This step may be initiated simultaneously with Step 3 and be performed parallel to it. The presence of regulating documentation will help to involve a wider circle of specialists to project management, and will allow to standardize as project management processes, as company management.

Step 5. *Elaboration and confirmation of normative-regulation documentation on functioning of project management system.* This step follows Step 4 and as well may be performed parallel to Step 3. Here we talk about starting up the project management system of introducing the information system and performing planning and control processes on its basis. The main processes will be development, planning and project realization, and these processes must be described.

Step 6. *Tutorials for staff.* In spite of the fact that staff training tutorials should be initiated starting from Step 3, the presence of this Step shows that Step 4 and Step 5 are over. But now we talk about complex trainings with real “pilot projects” of organization, of different types and configurations. Here we can talk about trial exploitation of system of project-oriented management for market-oriented organization with application of integrated information-program systems.

Step 7. *Finalization of introduction of program system project management.* Here we talk about corporate system of project management in the company, that may mean functioning of project-oriented company with portfolio project management, hybrid project management [22], marketing projects, innovative projects and projects of sales system.

## 7. Conclusions

The analysis of problems in control of portfolio project management, that regards the development realization in the field of nanobiotechnologies, can distinguish their following distinctive features: the introduction of nanobiotechnologies, in many cases, has significant national economic effect, which makes a significant impact on the value of the gross national product; prominent ecological direction of all developed products; a big variety of directions for their application; important social role of works, directed to public health improvement; the necessity to implement regulatory, stimulating, control management methods, aiming to accelerate the introduction of new technologies; the opportunity to involve advanced technologies for national security.

Thus, in the article were shown the results of latest authors' researches, that are characterized as follows:

1. There was performed activity analysis of typical science-based Ukrainian enterprise, and on its bases there were determined main characteristics and a list of innovative projects;

2. Were identified three types of projects: scientific projects of perspective development products, innovative projects and projects for market promotion and commercialization;

3. There was built a concept model of integration of three project types in the frames of dynamic condition portfolio project management in the process of realization of market-oriented development of enterprise.

4. Were suggested the methods of realization of studied development strategy for science-based enterprise on the grounds of suggested in the article portfolio project integration model.

In the result of the study, the models of project portfolio formation, that has been developed in the past, has gained their further development. For this was offered a method of dynamic programming, using which may allow to build necessary conceptual and mathematical models and to come closer to challenged goals. Therefore, we can conclude, that this approach can be used in portfolio project management for the projects on development of different science-based companies.

## References

1. Avcyn, A. P. Mikroelementozy cheloveka: etiologiya, klassifikaciya i organopatologiya [Text] / A. P. Avcyn, A. A. Zhavoronkov, M. A. Rish, L. S. Stochkova. – Moscow: Medicina, AMN SSSR, 1991. – 496 p.
2. Linnik, V. A. Pyatyj mezhdunarodnyj simpozium FESTEM – impuls k vozrozhdeniyu nauchnoj shkoly mikroelementologii Ukrainy [Text] / V. A. Linnik, V. G. Kaplunenko, Yu. A. Lyubimaya // Mikroelementy v medicine. – 2014. – Vol. 15, Issue 1. – P. 40–44.
3. Kaplunenko, V. G. Koncepciya «Kompleksnoi programi zbagachennya produktiv xarchuvannya mikronutrientami i vikoristannya ix dlya profilaktiki profesijnix zavvoryuvan pracuyuyuchix u shkidlivix umovax» na 2013-2017 roki» (zaklyuchnij) [Text] / V. G. Kaplunenko, Ya. Simonov et. al. – Kiev, 2012. – 180 p.
4. Kaplunenko, V. G. Nanomaterialy i nanotexnologii v veterinarnoj praktike [Text] / V. B. Borisovich, V. G. Kaplunenko, N. V. Kosinov et. al.; V. B. Borisovich, V. G. Kaplunenko (Eds.). – Kiev: VD «Avicena», 2012. – 512 p.
5. Patent Ukraini na korisnu model № 29856. Sposib otrimannya akvaxelativ nanometaliv «Erozijno-vibuxova nanotexnologiya otrimannya akvaxelativ nanometaliv» [Text] / Kosinov M. V., Kaplunenko V. G. – MPK (2006): V01J 13/00, V82V 3/00. Opubl. 25.01.2008, byul. №2/2008.
6. Bushuev, S. D. Upravlenie innovacionnymi proektami i programmami na osnove sistemy znanij P2M: Monografiya. [Text] / F. A. Yaroshenko, S. D. Bushuev, X. Tanaka. – Kiev: «Sammit-Kniga», 2012. – 272 p.
7. Morozov, V. V. Osoblivosti upravlinnya portfelem proektiv rozvitku naukomistkix innovacijnix pidpriemstv v oblasti nanobiotexnologij [Text] / V. V. Morozov, Yu. O. Lyubima // Visnik Nacionalnogo texnichnogo universitetu «XPI». Zbirnik naukovix prac. Seriya: Strategichne upravlinnya, upravlinnya portfelyami, programami ta proektami. – 2015. – Vol. 2, Issue 1045. – P. 26–35.

8. Sidorchuk, L. L. Identifikaciya konfiguracii parku kombajniv u proektax sistem centralizovanogo zbirannya rannix zernovix kultur [Text]: avtoref. dis. ... kand. techn. nauk: spec. 05.13.22 / L. L. Sidorchuk. – Upravlinnya proektami ta programami. – Lviv, 2008. – 18 p.
9. Molokanova, V. M. Iteracijna model zhittevoogo ciklu portfelya proektiv rozvitku organizacii [Text] / V. M. Molokanova // Upravlinnya rozvitkom skladnix sistem. – 2012. – Vol. 14. – P. 52–60.
10. R2M: Upravlenie proektami i programmami. T. 1, Versiya 1.2 [Text] / Bushueva S. D. (Ed.) – Kiev: Naukovij svit. – Rukovodstvo po upravleniyu innovacionnymi proektami i programmami predpriyatij., 2009. – 198 p.
11. Rach, V. A. (2010). Upravlinnya proektami: praktichni aspekti realizacii strategij regionalnogo rozvitku [Text]: navch. posib. / V. A. Rach, O. V. Rossoshanska, O. M. Medvedeva; V. A. Racha (Ed.). – Kiev: «K.I.S.», 2010. – 276 p.
12. Teslya, Yu. M. Informacijna texnologiya upravlinnya proektami na bazi ERPP (Enterprise Resources Planning in Project) ta APE (Administrated Projects of the Enterprise) sistem [Text] / Yu. M. Teslya, A. O. Biloshhickij, N. Yu. Teslya // Upravlinnya rozvitkom skladnix sistem. – 2010. – Vol. 1. – P. 16–20.
13. Archibald, R. D. Upravlenie vysokotexno-logichnymi programmami i proektami [Text] / R. D. Archibald; per. s angl. E. V. Mamontova; Bazhenova A.D., A. O. Arefeva (Ed.); third edition. – Moscow: Kompaniya AjTi; DMK Press, 2004. – 472 p.
14. Klifford, F. G. Upravlenie proektami: prakticheskoe rukovodstvo [Text] / F. G. Klifford, E. U. Larson. – Moscow: Izdatelstvo «Delo i Servis», 2003. – 528 p.
15. Miloshevich, D. Nabor instrumentov dlya upravleniya proektami [Text] / D. Miloshevich; per. s angl. E. V. Mamontova; S. I. Neizvestnogo (Ed.). – Moscow: Kompaniya AjTi DMK Press, 2006. – 729 p.
16. Bushuev, S. D. Kreativnye texnologii upravleniya proektami i programmami: monografiya [Text] / S. D. Bushuev. – Kiev: Sammit – Kniga, 2010. – 768 p.
17. Morozov, V. V. Procurement management in development projects of the process approach to decision-making. Science in the modern information society [Text] / V. V. Morozov // USA, North Charleston: Scientific Publishing Center “Academic”. – 2015. – Vol. 3. – P. 158–161.
18. Rukovodstvo k Svodu znanij po upravleniyu proektami (Rukovodstvo PMBOK) [Text] / Pyatoe izdanie, 2013. Project Management Institute, Four Campus Boulevard, Newton Square, PA 19073-3299 USA/SShA, 586 s.
19. Morozov, V. V. Upravlinnya proektami: procesi planuvannya proektnix dij [Tekst]: pidruchnik / V. V. Morozov, I. V. Chumachenko, N. V. Docenko, A. M. Cherednichenko. – Kiev: Universitet ekonomiki ta prava «KROK», 2014. – 673 p.
20. Morozov, V. V. Formuvannya, upravlinnya ta rozvitok komandi proektu (povedinkovoi kompetencii) [Text]: navch. posibn. / V. V. Morozov, A. M. Cherednichenko, T. I. Shpilova; V. V. Morozova (Ed.). – Un-t ekonomiki ta prava «KROK». – Kiev: Takson, 2009. – 464 p.
21. Morozov, V. V. Osnovi zakupivel tovariv, robit ta poslug v proektax [Tekst]: navch. posi / V. V. Morozov. – Kiev: Takson, 2003. – 744 p.
22. Bushuyev, S. Management of development program for international companies' in turbulence environment [Text] / S. Bushuyev, T. Minayeva // Visnik Nacionalnogo texnichnogo universitetu «XPI». Zbirnik naukovix prac. Seriya: Strategichne upravlinnya, upravlinnya portfelyami, programami ta proektami. – 2015. – Vol. 1, Issue 1110. – P. 3–11.