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УДОСКОНАЛЕННЯ ІННОВАЦІЙНОЇ ДІЯЛЬНОСТІ ПІДПРИЄМСТВА

***Анотація.** В статті визначено, що для успішної реалізації інноваційного проекту та впровадження у виробництво нового продукту необхідно використовувати передові технології та сучасне програмне забезпечення, що є невід'ємною частиною успішної інновації через урахування життєвого циклу інновацій*

Запропоновано загальний потенціал підприємства розглядати через його основні складові а саме: виробничо-технологічний, науково-технічний, фінансово-економічний, кадровий та власне інноваційний потенціал.

База для впровадження технологічних інновацій ТОВ «АЛЬЯНС-ПАРТНЕР», яке надає широкий спектр допоміжних та консалтингових послуг, послуг на ринку зайнятості, туризму, страхування, перекладу тощо.

Для формування моделі інноваційного розвитку підприємства доцільно встановити такі ключові аспекти: систему створення вартості через модель співпраці з партнерами та постачальниками; створення ланцюжка вартості; технологічної платформи; інфраструктури, визначити вартості пропозиції, вартості діяльності для клієнтів і в цілому для підприємства.

Запропоновано система факторів впливу на формування моделі стратегічного інноваційного розвитку підприємства. Економічно розраховано доцільність вартості комплексу технологічного обладнання, що складає 6800,0 тис. грн. Враховуючи те, що кошти підприємство планує отримати в рамках програми соціально-економічного розвитку Сумської області, проведена оцінка ефективності інноваційного проекту, покупка технологічного обладнання, визначено, що термін окупності проекту складає 3 роки 10 міс. За показником чистої теперішньої вартості (NPV), досліджуваний проект є прибутковим. Показник індексу рентабельності проекту (PI) відповідає вимогам щодо позитивного

рішення про впровадження проекту $>1,0$. Внутрішня норма рентабельності проекту (IRR) також має позитивне значення 22% адже перевищує норму дисконту.

Ключові слова: інновації, інноваційна діяльність, життєвий цикл інновацій

УСОВЕРШЕНСТВОВАНИЕ ИННОВАЦИОННОЙ ДЕЯТЕЛЬНОСТИ ПРЕДПРИЯТИЯ

Аннотация. В статье определено, что для успешной реализации инновационного проекта и внедрения в производство нового продукта необходимо использовать передовые технологии и современное программное обеспечение, которое является неотъемлемой частью успешной инновации с учетом жизненного цикла инноваций.

Предложен общий потенциал предприятия рассматривать через его основные составляющие а именно: производственно-технологический, научно-технический, финансово-экономический, кадровый и собственно инновационный потенциал.

База для внедрения технологических инноваций ООО «АЛЪЯНС-ПАРТНЕР», которое предоставляет широкий спектр вспомогательных и консалтинговых услуг, услуг на рынке занятости, туризма, страхования, перевода и тому подобное.

Для формирования модели инновационного развития предприятия целесообразно установить такие ключевые аспекты: систему создания стоимости через модель сотрудничества с партнерами и поставщиками; создание цепочки стоимости; технологической платформы; инфраструктуры, определить стоимости предложения, стоимости деятельности для клиентов и в целом для предприятия.

Предложено система факторов влияния на формирование модели стратегического инновационного развития предприятия. Экономически рассчитано целесообразность стоимости внедрения комплекса технологического оборудования, составляет 6800,0 тыс. грн. Учитывая, что средства предприятие планирует получить в рамках программы социально-экономического развития Сумской области, проведена оценка эффективности инновационного проекта, покупка технологического оборудования, определено, что срок окупаемости проекта составляет 3 года 10 мес. По показателю чистой приведенной стоимости (NPV), исследуемый проект прибыльным. Показатель индекса рентабельности проекта (PI) соответствует требованиям положительного решения о реализации проекта $> 1,0$. Внутренняя норма рентабельности проекта (IRR) также имеет положительное значение 22% ведь превышает норму дисконта.

Ключевые слова: инновации, инновационная деятельность, жизненный цикл инноваций

IMPROVEMENT OF INNOVATIVE ACTIVITY OF THE ENTERPRISE

Summary: *The article defines that for the successful implementation of an innovative project and the introduction of a new product into production it is necessary to use advanced technologies and modern software, which is an integral part of successful innovation by taking into account the life cycle of innovations.*

It is proposed to consider the general potential of the enterprise through its main components, namely: production and technological, scientific and technical, financial and economic, personnel and actual innovation potential.

Base for the introduction of technological innovations LLC "ALLIANCE-PARTNER", which provides a wide range of support and consulting services, services in the employment market, tourism, insurance, translation and more.

To form a model of innovative development of the enterprise, it is advisable to establish the following key aspects: the system of value creation through the model of cooperation with partners and suppliers; creating a value chain; technological platform; infrastructure, determine the cost of supply, the cost of activities for customers and for the enterprise as a whole.

The system of factors of influence on formation of model of strategic innovative development of the enterprise is offered. The expediency of the cost of the complex of technological equipment, which is 6800.0 thousand UAH, is economically calculated. Given the fact that the company plans to receive funds under the program of socio-economic development of Sumy region, the evaluation of the effectiveness of the innovation project, the purchase of technological equipment, it is determined that the payback period of the project is 3 years 10 months. In terms of net present value (NPV), the project under study is profitable. The project profitability index (PI) meets the requirements for a positive decision on project implementation > 1.0 . The internal rate of return of the project (IRR) also has a positive value of 22% because it exceeds the discount rate.

Key words: *innovations, innovative activity, life cycle of innovations*

Statement of the problem. The peculiarity of the functioning of industrial enterprises in modern conditions is their constant dependence on a combination of factors and is characterized by significant rigidity of competition. In this regard, the problems associated with the establishment of a comprehensive system of innovation management mechanism, which would be

aimed at the continuous production of innovations, are of particular importance. In conditions of fierce competition, an enterprise cannot supply one range of products to the market for too long. Therefore, constant innovation in the field of development and production becomes a prerequisite for the survival of the latter in market conditions, and the introduction of new product models on the market is a continuous process of scientific results.

In the conditions of functioning of modern economic system for a long time domestic enterprises tried to develop basically at the expense of an extensive way, but this the trend has practically exhausted itself and has become economically unprofitable. Development and effective functioning of enterprises is due to constant updating of products, implementation of organizational, managerial and other innovations. A retrospective analysis shows that companies that constantly implement innovative technologies are more successful and less vulnerable to negative impacts.

Analysis of recent researches and publications. A lot of works by foreign and domestic scientists are devoted to the study of the problem of innovations and innovative activity, in particular: Bilovods'ka, O. A., Illyashenko, S. M., Kovtunencko, K. V., Maslennikova, Y. I., Lohvynenko I., Kuz'menko, O. M., Plentiov, M. V., Novikova, O. A., Chernova, A. S.

Formulation purposes of article (problem)to study the theoretical aspects of innovation as a basis for the development of domestic enterprises, analysis of economic activity of LLC Alliance-Partner, calculation of economic efficiency of acquisition of innovative technologies.

The main material. To ensure the successful implementation of an innovative project and the introduction of a new product into production, it is necessary to use advanced technologies and modern software that is an integral part of successful innovation. Today Ukraine is in stagflation, which has a negative impact on the development of small and medium-sized businesses, in addition, there is insufficient state support, which in general creates obstacles for

innovative development of enterprises: additional risks, impossibility of formation of strategic plans, decrease in competitiveness products, insufficient staff qualifications.

The life cycle of innovation is a certain period of time during which innovation has an active life force and brings profit or other real benefit to the manufacturer or seller.

The concept of the innovation life cycle plays a fundamental role in planning the production of innovations and in organizing the innovation process. This role is as follows:

- forces the head of the business entity to analyze economic activity both from the standpoint of the present time and in terms of prospects for its development;
- determines the need for systematic work on planning the implementation of innovations, as well as on the acquisition of innovations;
- is the basis of analysis and planning of innovation. When analyzing an innovation, it is possible to establish at what stage of the life cycle is this innovation, what is its immediate prospect, when will the sharp decline begin and when will it end its existence [6].

In fig.1. shows the overall potential of the enterprise and its main components - production and technological, scientific and technical, financial and economic, personnel and actually innovative potential, which is like a core of all potential, organically entering into each of its parts.

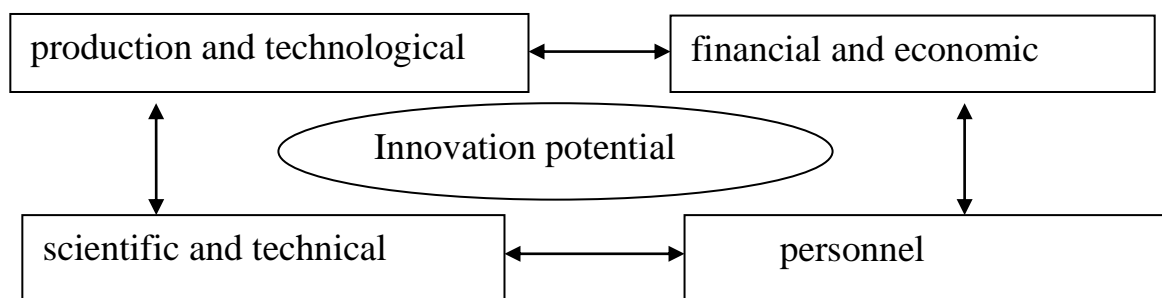


Figure 1. The composition of the potential of the enterprise
compiled by the author based on [2] .

There are more complex links between the elements of the overall potential, but the innovation potential determines the final part of the production cycle and directly affects the results of the enterprise.

ALLIANCE-PARTNER Limited Liability Company (hereinafter referred to as ALLIANCE-PARTNER LLC) was founded in 2016. Legal address of the company: Ukraine, Sumy, street Gagarin, building. 2.

LLC "ALLIANCE-PARTNER" provides a wide range of services for the provision of support and consulting services in the market of employment, tourism, insurance, translation, etc. Partnerships have been established with many foreign and Ukrainian partners.

It is necessary to consider and analyze the range of its services, their composition and structure (Table.1.).

Table 1- Composition and structure of services

Groups of goods	2017 y.		2018 y.		2019 y.		On average for 2017 - 2019 .	
	Revenue thousand UAH	Specific weight, %	Revenue thousand UAH	Specific weight, %	Revenue thousand UAH	Specific weight, %	Revenue thousand UAH	Specific weight, %
Employment abroad	2419.5	50.6	2820.1	55.4	3451.3	62.5	2897.0	56.2
Foreign business consulting	463.8	9.7	671.9	13.2	872.5	15.8	669.4	12.9
Tourist vouchers	439.9	9.2	570.1	11.2	579.8	10.5	530.0	10.3
Travel insurance	683.8	14.3	6 16.0	12.1	386.5	7.0	562.1	11.1
Visa Support	655.1	13.7	269.8	5.3	171.2	3.1	365.4	7.4
Translation	119.5	2.5	142.5	2.8	60.7	1.1	107.6	2.1
Total	4781.6	100	5090.5	100	5522.1	100	5131.4	100

compiled by the author according to the company

From the calculations of table 1. It can be argued that the largest share in the structure of services of LLC "ALLIANCE-PARTNER" on average for 3 years is employment abroad - 56.2%. Moreover, sales of this type of services for

the three studied years have a steady upward trend, which indicates the strengthening of market specialization of the company, namely as an agency for foreign employment. This was due to an increase in contracts with companies in various industries in the partner countries and due to the growth of domestic workers willing to work abroad.

The next position in the structure of sales of services with an average share of 12.9% is occupied by foreign business consulting, ie assistance in opening and further legal support of foreign business by Ukrainian founders - clients of the studied company. This area of activity is promising, has a clear positive dynamics, can be even more profitable due to the expansion of the geography of sales from the current Poland and the Czech Republic to a number of countries of the European Union.

The third position in the sales structure is occupied by the services of a tour operator, this type of activity on average for 2017-2019 accounts for a share of 10.3% without significant fluctuations and trends. That is, we can say that LLC "ALLIANCE-PARTNER" has its own established customer base among those wishing to relax abroad and provides them with quality service at affordable prices. This direction also includes services for the purchase of air tickets and tickets for international bus transportation.

The following three types of services - travel insurance, visa support and transfer for LLC "ALLIANCE-PARTNER" are ancillary to them in the sales structure for an average of three years accounted for 11.1%, 7.4% and 2.1% respectively with negative dynamics for all three positions throughout the study period.

To understand the description of the innovative business model, it is advisable to use a conceptual scheme that includes four main blocks, such as value creation system, value proposition, customer and financial model (Fig. 2.). Each of the above blocks of the model of innovative development of IAlliance-Partner LLC provides for the formation of tasks. In order to form a model of

innovative development, it is expedient to establish the following key aspects in the framework of implementation at Alliance-Partner LLC:

1. Value creation system: model of cooperation with partners and suppliers; value chain; technological platform; infrastructure.

2. Offer value, value of activity for customers and in general for the enterprise.

3. Clients: product promotion channels; target groups of clients; mechanism of interaction with clients, because the main clients of Alliance-Partner LLC are large enterprises with which it is necessary to apply a special approach to the implementation of solutions.

4. Financial model: cost structure; income structure; scheme of financial flows, to understand the feasibility and budgets for financing innovation

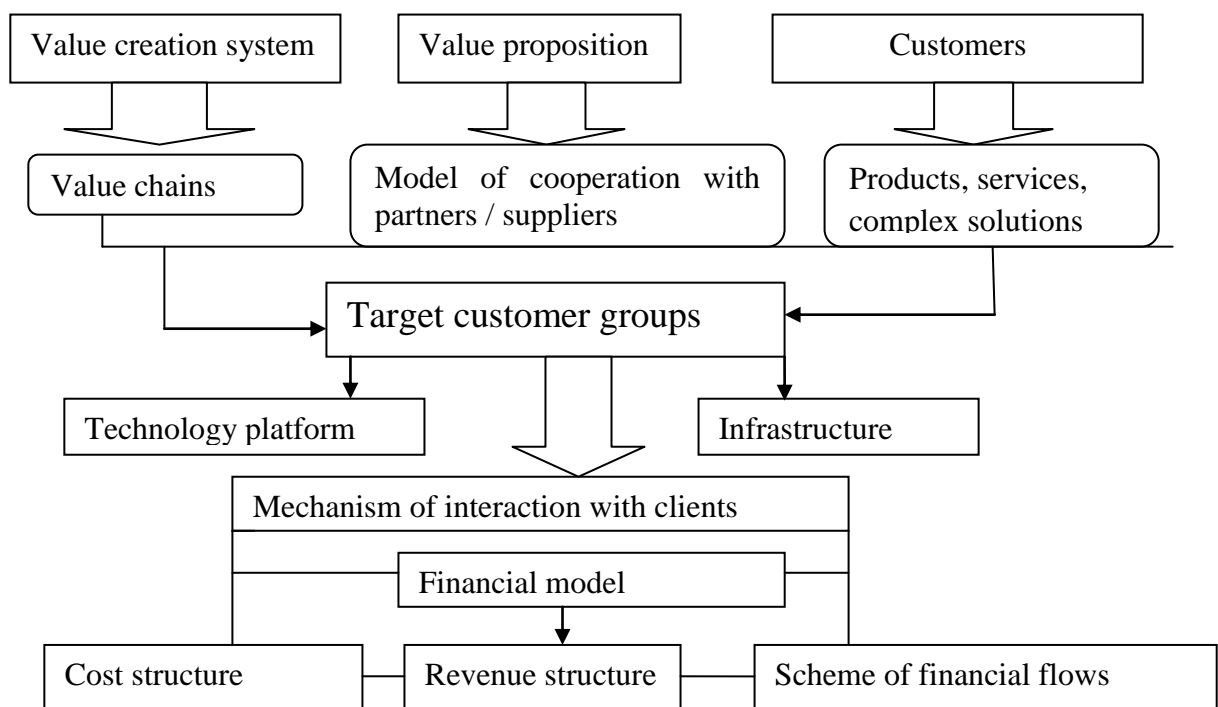


Figure 2. Business model (conceptual scheme) *compiled by the author based on [3]*

Therefore, if we evaluate the financial component, it should be noted that financial indicators are the key criteria for assessing the current activities of Alliance-Partner LLC.

Regarding the next component of training and development, it should be noted that to ensure a long stay, promotion in the market, businesses must invest in staff training, information support, which is very important in a changing environment. Alliance-Partner LLC should value its own employees, because they allow it to achieve the desired result. Therefore, it is worth considering the project of creating a single information system of knowledge and experience, through which the company will be able to properly accumulate knowledge, use in the future for project implementation and exchange of experience with the parent company that implements EU projects and territories.

The realities of today indicate that to determine the strategy of innovative development of LLC "Alliance-Partner" in the face of lack of resources, instability of the political and economic situation, it is necessary to use methodological tools that will identify errors in the early stages of strategy. It is well known that the formation and choice of the model of innovative development of the enterprise is influenced by (Figure 3):

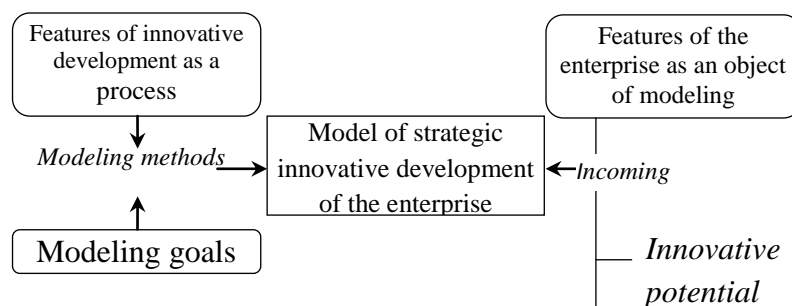


Figure 3. The system of factors influencing the formation of the model of strategic innovative development of the enterprise (*compiled by the author based on [5]*)

- modeling goals as a factor in choosing modeling methods and seeing results;
- features of innovative development as a component of economic development of the enterprise, which by the presence of a significant subjective

component in its composition and the problematic use of statistical methods and approaches, have a significant impact on the nature and course of innovation processes;

specifics of the researched enterprise as an object of modeling, which combines individual sets of goals and resources and forms the input data of the research: the accumulated potential; differentiated and specific competencies that determine the directions and scope of possible and potentially effective innovations; forecast of the economic situation; flexible organizational forms that allow combining the decentralization of management necessary for the effective development of innovations and centralization, which is necessary for the use of key technologies and constant control over the implementation of innovations; analysis of external factors and phenomena; methods of allocating resources that meet the needs of profitable investments at the moment and creating opportunities for such in the future; features of the interaction of strategic and innovation management at the enterprise level, which must be taken into account to ensure systemic links between the object under study and its individual elements in the modeling process.

The table above shows the main changes for the implementation of the program of innovative development in the near future. At the moment, the company's management has not approved the plan, so it is not final and needs some improvements.

Table 2. Plan of expenses for innovative activity, thousand UAH

№	Directions of the Program	The amount of funding		
		Total	2020	2021
	Total within the Program	2056,72	1320,17	290,41
I	Mastering new technologies, everything	494,13	1138,83	101,01
II	Development and release of innovative products, total	470	153	159
III	Innovation in management	92,59	28,17	30,4

Developed by the author on the basis of enterprise data

So, as we can see, the largest funding is provided for the development of new technologies, as well as an increase in funding for 2020.

2. Innovation and technological audit in the management of innovation activities of Alliance-Partner LLC:

Today, Alliance-Partner LLC aims, or rather the main goal of the activity is to increase profits and enter new markets, through partial re-profiling of activities through the introduction of innovations in working with clients.

In the near future it is planned to implement a new project to implement a system of accelerating communication relations in the company, namely the opening of a department to attract foreign students to study.

The introduction of an improved mechanism for managing the innovation activities of processes at LLC "Alliance-Partner" requires increasing the efficiency and effectiveness of employees through the use of innovative approaches to the organization of teamwork using a new system of communication (Table 3).

Table 3.-Innovative approaches in the organization of collective work of employees

№	West
1.	1. Introduction of team building technologies: 1) involvement of staff in the process of solving the problems of the enterprise to obtain new ideas with the best offer; 2) introduction of quality management with the organization of teams to improve work processes
2.	. Creation of a corporate portal that will allow employees to use an automated system in accordance with the rights of restricted access management

Developed by the author on the basis of enterprise data

Both social benefits (free medical insurance, leisure activities, free accommodation, not only rent and possible purchase) and material benefits will be used to stimulate the effective work of employees, create and distribute new knowledge, stimulate and encourage the generation of new ideas.).

Thus, the projected cash flows from the implementation of the investment project, which will be formed as the difference between the projected income from sales and sales of services in the base year to update the process (2020) are calculated and listed in table. 4.

Table 4-Projected cash receipts in the framework of the implementation of the innovative project of Alliance-Partner LLC, 2021-2024.

Years	2021 y.	2022 y.	2023 y.	2024 y.
Projected cash inflows, thousand UAH (CF_t)	2202,58	2576,79	3014,84	3527,37

It should be noted that when evaluating the effectiveness of an innovative project, it is advisable to take into account certain aspects which include:

- the need to compare the amount of investment costs, on the one hand, and investment income on invested capital - on the other.

- the cost of the project should take into account not only direct costs but also indirect, not only tangible but also intangible assets. Indirect costs include costs associated with the preparation of the project for implementation, control over project implementation, the formation of the required amount of investment resources. Intangible assets are costs for the right to use new technologies, purchase of patents, inventions.

- as part of investment income (net cash flow) should take into account the amount of net profit and depreciation in the operation of equipment purchased under the innovation project.

- as money as a result of inflation decreases its value over time, the amount of future investment income to be compared with the costs incurred at the beginning of the innovation project must be reduced to present value by discounting.

To assess the effectiveness of an innovative project, we calculate the following well-known indicators: NPV (net present value of the project), IRR

(internal rate of return), PI (profitability index of the project), DPP (discounted payback period), which are used by experts to assess the effectiveness of public investment projects. The discount rate for settlements was set at 20%, which meets the requirements for the evaluation of public investment projects. We group the initial data for calculation in table 5.

Table 5- Initial data for calculating the effectiveness of the innovation project

Indexes	2020 p.	2021 p.	2022 p.	2023 p.	2024 p.
Investments, I_t , thousand UAH	6800,0	-	-	-	-
Cash flow CF_t , thousand UAH		2202,58	2576,79	3014,84	3527,37
Discount rate, r	0,2	0,2	0,2	0,2	0,2
Discounted cash flow $\frac{CF_t}{(1+r)^t}$, thousand UAH		1835,48	1789,44	1744,70	1701,09

Having determined the amount of annual cash flow, it was discounted taking into account the discount rate of 20%, the results are presented in table 6. Based on the annual results of the discounted cash flow, the total amount of cash flow under the project is determined. Using the results obtained, we calculate the performance evaluation indicators, which are presented in table 6.

Table 6.

Indicator	The result obtained
I_t , thousand UAH.	6800,0
$\sum_t \frac{CF_t}{(1+r)^t}$, thousand UAH.	7070,0
NPV, thousand UAH.	270,0
PI	1,04
IRR, %	22
DPP, y.	3 y. 10 mon.

According to the results of calculations of the effectiveness of the studied innovative project for implementation at LLC "Alliance-Partner", as an object of

funding from public funds, it can be noted that the payback period of the project is 3 years 10 months. According to the net present value (NPV), as can be seen from table 7, the researched project is profitable. The project profitability index (PI) meets the requirements for a positive decision on project implementation, namely $PI (1.04) > 1.0$. The internal rate of return of the project (IRR) also has a positive value of 22% because it exceeds the discount rate. Therefore, the above results indicate the feasibility of project implementation. It should be noted that the expected income was calculated based on the increase in sales of the enterprise. However, the proposed systems will also have a positive impact on expanding the scope of services and attracting new entrants to study.

Insights from this study and perspectives for further research in this direction. The peculiarity of the functioning of industrial enterprises in modern conditions is their constant dependence on a combination of factors and is characterized by significant rigidity of competition. In this regard, the problems associated with the establishment of a comprehensive system of innovation management mechanism, which would be aimed at the continuous production of innovations, are of particular importance.

The evaluation of the innovation management system of the enterprise must be carried out with the help of cost-effectiveness indicators for the innovation orientation of the system; rationality of work in the system; realization of goals by the system; efficiency of decisions in the system; employment of personnel in the management of the system; the efficiency of the management staff of the system; educational and qualification level of system employees; the usefulness of the information used in the system;

Proposed solutions to improve the mechanism of innovation management, which should ensure the innovative development of the enterprise. The first steps to improve the mechanism of innovation management should be restructured business processes aimed at implementing innovative activities of the enterprise, proposed clear stages of creating management infrastructure to

ensure the development of innovation and enterprise.

The assessment of the economic feasibility of the proposed measures showed that the proposed measures are effective and can be implemented at the enterprise to improve the conditions for innovation of LLC "Alliance-Partner".

References

1. Bilovods'ka, O. A. (2018). Marketinhova politika rozpodilu innovatsiynoyi produktsii promyslovyh pidpryemstv [Marketing policy of industrial companies' innovation products distribution]. Kyiv: Kondor. (in Ukrainian)
2. Illyashenko, S. M. (2019). Problemy upravlinnya innovatsiynym rozvytkom pidpryemstv u tranzytivnii ekonomitsi [Problems of companies' innovation development management in transitional economy]. Kyiv: Kondor. (in Ukrainian)
3. Kovtunenکو, K. V., & Maslennikova, Ye. I. (2017). Innovatsiyna ekonomika: teoretychni ta praktychni aspekty [Innovation economy: theoretical and practical aspects]. Available at: <http://dspace.puet.edu.ua/bitstream> (accessed January 9, 2020).
4. Lohvynenko, Ye. I., Kuz'menko, O. M., & Plentiov, M. V. (2010). Vyznachennya harakterystyk dlya opysu diyal'nosti innovatsiyno aktyvnyh pidpryemstv [Definition of characteristics for description of innovation active companies]. Available at: http://archive.nbuv.gov.ua/portal/soc_gum./VSUNU/2010_11_2/Logvinenko.pdf (accessed December 28, 2019).
6. Novikova, O. A. (2017). K voprosu o vybore priopitetnyh napravlenii sovershenstvovaniia sistemy upravleniia innovatsionnoi aktivnosti promyshlennoho predpriyatiia [About a choice of priority directions of industrial companies innovation activity management improvement]. Internet-journal Naukovedenie (electronic journal), vol. 9, no. 5. Available at: <https://naukovedenie.ru/PDF/95EVN517.pdf> (accessed December 27, 2020).

7. Chernova, A. S. (2015). Suschnost' innovatsionnoi aktivnosti predpriyatii [Essence of companies' innovation activity]. Molodoi uchenyi, no 1, pp. 311–312