

UDC 658.5.011

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DIRECTIONS AND MECHANISMS OF INNOVATIVE HIGH-TECH AND ORGANIZATIONAL DEVELOPMENT OF REAL ECONOMY SECTOR

It is given the results of researching problems and prospects of real economy development and its leading sectors of economic activity – industry and construction. It is established the causes of development absence and inefficient functioning of these areas of management. On this basis the direction of innovation and high-tech industrial and organizational development and building complexes of the country were determined. Modern mechanisms for the implementation of such strategic tasks at the expense creation and progress outrunning of domestic enterprises that are capable to use modern standards and strategic project management, the latest achievements of science, engineering and technology to develop and implement various investment projects and development programs were proposed. It is proved that research results should promote not only the progress of the real economy, industry and construction, but also to increase global living standards in Ukraine.

Key words: *innovation and high-tech development of the real economic sector, industry and construction, strategic and project management.*

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НАПРЯМИ І МЕХАНІЗМИ ІННОВАЦІЙНО- ВИСОКОТЕХНОЛОГІЧНОГО Й ОРГАНІЗАЦІЙНОГО РОЗВИТКУ РЕАЛЬНОГО СЕКТОРА ЕКОНОМІКИ

Наведено результати досліджень проблем і перспектив розвитку реального сектора економіки та його провідних галузей господарювання – промисловості й будівництва. Встановлено причини відсутності розвитку та неефективного функціонування зазначених сфер господарювання. На цій основі визначено напрями інноваційно-високотехнологічного й організаційного розвитку промислового та будівельного комплексів країни. Запропоновано сучасні механізми реалізації такого стратегічного завдання за рахунок формування й випереджаючого прогресу вітчизняних підприємств. Доведено, що результати досліджень мають сприяти не тільки прогресу реального сектору економіки, промисловості та будівництва, а й зростанню до світових стандартів рівня життя населення України.

Ключові слова: *інноваційний і високотехнологічний розвиток реального сектору економіки, промисловості та будівництва, стратегічний і проектний менеджмент.*

Introduction. Decreasing of scientific-technical, technological and economic potential of the national economy, absence of real reform and inconsistent of government policies in socio-economic sphere development – all this led to the current crisis occurrence. Today Ukraine takes 161 place in the world by economic freedom index. Another indicator of modern development that reflects the country's place in the global economy is its international competitiveness. By this indicator, the state takes 82 place among 133 countries of the world, including such indicators as «institutions» – 120 «development of finance market» – 106 «product market efficiency» – 109. In the field of higher education Ukraine takes 45th place in the field of innovation development – 52nd, by the level of advanced technologies use – 65th, in the sphere of intellectual properties protection – 114th.

The events of the last two years, signature the association agreement between Ukraine and the European Union (EU) showed that the society is determined move to global stable standards and innovative development of the country in all life spheres, management and business. In these circumstances, the task of forming a new organization and management model of the further real economy development, its leading economic sectors, industry and construction based on the standards of the strategic, multi-project and project management which successfully used in leading countries and world companies, primarily in US, EU, Japan, Singapore, South Korea, Canada and so on becomes relevant.

Analysis of the recent research and publications sources. Studing problems of modernisation industrial-economic systems and different spheres of economic activity, development of theoretical foundations and practical measures for the management of innovation processes and development of high-tech dedicated to work of domestic and foreign scientists such as S. Valdaytsev, Z. Varnalii, V. Heyets, N. Ekvilain, U. Zabrodin, A. Mihailichenko, V. Onyshchenko, A. Saruhanov, P. Zavlin, S. Illiashenko, V. Soloviov, V. Stivenson, L. Fedulova, R. Jacobs and others [1 – 7].

Analyzing their researching and development dynamics of the national economy real sector, industry and construction from 80 years of the twentieth century to the present day, we can determine that the main problems that lead to their inefficiency and low competitiveness today are:

- a) declining the level of innovation-technological and economic potential of the national economy and its non-availability of progress for the last 25-30 years;
- b) inconsequence and weakness of the socio-economic state policy and innovation development for ensuring sustainable growth of the national economy.

The main reasons of economy not inefficiency are:

- inconsequence of previous economic reforms;
- insufficiency of legislative, regulatory, scientific and methodological basis for the national innovation system and the high-tech manufacturing formation;
- national policies and development programs non-availability, comprehensible state policy of socio-economical and innovativ development of economy, their implementation; mechanism;
- finance limitations and inefficiencies of other state science innovation support for processes, projects and development programs;
- lack of economic incentives for business entities to implement technological modernization by implementing innovative projects and development programs;
- low population innovation culture level and weak educational outlet on its growth;
- absence of developed large innovation and high technologies market in Ukraine;
- insufficient support for innovation, development of export-intended and high-tech manufacturers that are implementing innovative products;
- absence of public-private partnership and concerted action in the sphere of innovations for manufacturing and other economic sectors modernization;

- chaotic and unbalanced high-tech manufactures investment programs realization in Ukraine and lack of support from state body;
- low level of information-communication innovation processes service, including national science and economy integration into world processes;
- insufficiency of modern design, innovation, product-marketing and operation management of professional teams from the realization management standard of complex industrial systems development;
- lack of innovation consulting and development in the field of innovation-technological economy development;
- high imbalance in industrial inefficient load regions and lack of state policy proportional stable areas development.

Considering the mentioned facts? It is possible to confirm that Ukrainian industry innovative activity level in the field of engineering is almost 10 times lower of international standards (in Ukraine – it's 6-8%, and in the advanced countries and companies of the world – 70-90% [1, 9, 10]); fatigue of domestic manufacturer fixed assets in industry and construction exceed 80-85% of their technical-technological base (TTB); productivity and energy consumption per unit of production (or maintenance of buildings and structures) in accordance is 5-10 times lower and 3-8 times higher than in the USA, EU, Japan or South Korea.

Bold unsolved before parts of the general problem. According to the calculations of the famous Ukrainian specialist in the investment industry and construction G.O. Bardyska, to recover and to develop domestic economy to the European average it should be involved total investment amounting to 3,0-3,5 trillion dollars USA, including in the field of capital construction – 1,3-1,6 trillion dollars USA [5].

Considering these and other results of the conducted existing researches analysis and publications, it can be determined that existing approaches and mechanisms (strategy and policy) about organization and management of innovative and high-tech development of machine-building and other manufacturers in industry and construction in other areas of the national economy real sector need radical updates for real transition to an innovative model of development and management international standards. Still unexplored areas of specific and effective mechanisms (organizational, functional and production systems, procedures and tools) development of economy, industry and construction real sector. The basic material of this article is dedicated to implement these objectives

Formulation of the researching problems. The aim of this work is to illustrate new theoretical approaches and practical recommendations for the establishment of guidelines and mechanisms for innovative high-tech and organizational development of economy, industry and construction real sector, considering the best international and domestic experience, the latest achievements of science and technology, engineering, strategic, multi-project and project management [1 – 11]. Specific tasks that are solved in this article:

- 1) determination of strategic development directions of the real economy sector , industry and construction;
- 2) formation of industrial and organizational industry and construction and manufacture development mechanisms in these areas of management, providing their innovation progress and competitiveness.

Basic material and results. The authors' conducted researches allow to propose such results and recommendations.

Describing this work first tasks implementation and considering the global standards of social-economic management and innovative development of Ukraine, which are given in previous development and authors publications [4, 9-11], it is needed to determine the following specific features of real sector of the national economy, industry and construction development functioning and directions:

1. *The main objectives and priorities of modern public policy* innovation and high-tech development of the national economy should be:

- increasing in production scientifically based product with high added value volume;
- solving the socio-economic issues and saturation of the domestic market;
- optimization of regional and territorial development through the rational distribution of high-tech production;
- solving environmental problems and ensure safety, occupational safety, environment and areas of human activity;
- economic security and development of foreign trade.

In Table 1 there is given a detail of the above objectives and priorities.

2. *The main directions of state regulation* further development of industrial and construction facilities Ukraine can be defined:

- to set priority sectors and industries;
- development of state targeted (priority and complex) software innovation and technological sectors development and productions;
- state regulation of structural changes;
- the development of competition and restriction of monopoly;
- tax regulation of industry and construction;
- monetary policy for the development of industry and construction;
- depreciation policy;
- investment policy;
- scientific, technical and innovation policy;
- state policy of reforming property relations;
- price and tax policy;
- state order and targeted development program;
- integration of domestic industry and construction industry into the world economy.
- promoting to economic security of Ukraine.

3. *Today the priority areas of innovation and high-tech development of the real economy sector, industry and construction* in which there are used targeted programs and investment projects with use of standards of strategic and project management are:

3.1. Electrostations technic-technological modernization creation and development of new and renewable energy sources, newest resource saving and energysaving technologies, comprehensive progress of capital construction sphere. This complex includes:

- health safety means and safety technics at mining enterprises; modern equipment for coal mining complex conditions; equipment for production and preparation for methane consumption (in coal mining areas);
- energy-efficient motors and drives for basic industries; different electrical equipment; sources and energy efficient lighting systems; functional and power electronics in the energy field;
- power stations and networks modernization, telemetry systems, automation and protection in nuclear power stations (NPP); electrical networks of issuance NPP capacities; gassteam installation and combustion technology of low-grade solid, liquid and gaseous fuels, traditional fuels, etc.;
- oil and gas drilling equipment, including oil and gas installations for extraction on the territory of the sea shelf;
- highly energy efficient compressor equipment;
- high-tech manufactures development of construction industry and building organizations.

Table 1 – The goals system of innovation and high-tech development, industry and construction, real economy sector of modern state policy

The growth of manufacture scientifically based products with high added value	<ol style="list-style-type: none"> 1. Specific weight share of high-tech products and competitive products with high value of added part in composition of GDP specific weight share growth. 2. Increasing the share of consumer goods in the composition of GDP. 3. Increasing GDP of industry. 4. Effective use of own potential and resources. 5. Ensuring strategic balance in national economy 6. Exit to foreign market, establishing of subsidiaries branches and joint manufactures.
Ensuring of competitiveness	<ol style="list-style-type: none"> 1. Improving the products quality and transition to international standards of quality management and competitiveness (TQM, ISO). 2. Nomenclature development and improvement and assortment of scientifically based technology and high-tech products with high added value. 3. Decreasing of product cost product, resource and energy intensity of production and products. 4. Promotion of domestic industrial products on domestic and world markets. 5. Creation and improvement of fundamentally new technical and technological base.
Solving of socio-economic issues	<ol style="list-style-type: none"> 1. Increasing revenue to the European level (of advanced countries). 2. Improving the education and professional skills of all staff. 3. Comprehensive automatization and cybernation manufacture, maintenance and management. 4. Creation of comfortable and safe working conditions. 5. Social protection of industrial personnel.
Optimization of regional (territorial) development and location of high-logic manufacture	<ol style="list-style-type: none"> 1. Creation of high-tech scientific production systems. 2. Strategic planning and placing new production, development available considering requirements and objectives of the Ukraine development programme strategy (its productive forces) under conditions of minimizing the total cost of establishing and implementing manufacture. 3. Elimination the uneven of trade and territorial production development. 4. Promoting the implementation of regional projects within the state industrial policy.
Solving of environmental problems and ensure of environmental protection	<ol style="list-style-type: none"> 1. The transition to international standards of sustainable development, environmental safety and environmental protection. 2. Creation of the most favorable conditions for people activities 3. Decrease negative impact of the industry on the environment. 4. Saving and strengthening of natural resource state potential. 5. Ensuring rational and complex use of natural sources of Ukraine.
Realization of implementation-innovation and target development programs	<ol style="list-style-type: none"> 1. Transition to program-budgeting and planning mechanism for the implementation of strategic objectives of innovation and development. 2. Simultaneous and mutually integrated development of the national innovation system and industrial sector of Ukraine based on management project and program development. 3. Ensuring establishment of economic growth and innovation development national centers.
Economic security	<ol style="list-style-type: none"> 1. Facilitating to innovation accelerated development of high-tech producing by the way of tax, customs and other preferences by the state investment policy. 2. Removing structural imbalances both in the industry and in the country. 3. Opposition of the Ukrainian raw materials transformation to industrialized countries. 4. Creating favourable investment climate and increasing innovation activity of industrial sector. 5. Prevention capital outflows. 6. Decrease the dependence of industry on import (energy and critical technologies), compliance limit exports. 7. Minimization of the shadow sector and industry criminalization.

3.2. Mechanical engineering and instrumental engineering, which should provide high-tech development of all manufacture industries; development of modern high-quality steel, manufactures of enterprising newest building technique. This group includes:

- production of newest rocket-space types and aviation technique, and electric vehicles; system tools of technological projection, manufacturing and logistic support of working processes of new generation technique; newest tools of diagnostic types, machinery, equipment and parts for high-tech systems of various purpose;
- production of newest high-tech types and economic building technique and equipment for the building industry enterprise;
- systems of telemetry, ranging in different environments optoelectronic systems of dual purpose;
- equipment and materials for welding and performance of related processes, durable and dynamically stable welded constructions; equipment, materials and newest technologies for corrosion protection;
- equipment and special technologies of newest steel producing types; recycling technology of secondary raw materials nonferrous metals;
- household and municipal electronic technics and its technological processes of manufacturing based on innovative modern types of televisions, refrigerators and other consumer goods.

3.3. Nanotechnologies, microelectronics, information technology, telecommunications and computer systems. This complex applies to:

- information systems of control and management of basic technologies objects and various economic industries objects; intellectual computer systems and high productivity means; recognition software systems and processes object; digital broadband media distribution systems;
- laser techniques and equipment, technological processes of their application;
- electronic database of communication systems, computer and telecommunications technologies; optical fiber systems; light signal and information outfit.

3.4. Chemical technologies, new materials, biotechnology progress developing includes:

- modern catalysis, development and use of new catalysts and new catalytic processes;
- development of genetic-engineering technology;
- immunological medicines and biomixture materials;
- modern construction materials and technologies for their production and use;
- ceramic and supersolid materials;
- modern materials of chemical production;
- newest types of semiconductors and monocrystalline material.

3.5. Machines and mechanism, other industrial production for high-tech development of agriculture and processing industry

3.6. Transport systems; building, reconstruction, technical upgrading and modernization. This comprehensive direction includes:

- innovative technologies, machines and mechanisms for roads, bridges and transportation systems building and reconstruction;
- rationalizing modern system using satellite and ground-based equipment rationalizing ;
- ports reconstruction;
- gas, oil and ammonia transportation modernization.

3.7. Human health and economic sphere care includes:

- diagnostic and therapeutic software and hardware complexes;
- modern medicines;
- equipment and technology for alternative energy sources;
- energy-efficient, resource-saving, modular, environmentally safe equipment for water treatment systems, water purification, heating and control means.

3.8. Information-communication systems and technologies developing.

Along with determination and guarantee of realization domestic industry development and building sector priority directions, state structural policy modern mechanisms should provide measures for:

- investment flows and other resources in priority areas stimulation;
- support innovative and high-tech industries development that promotes and implements scientific and technical progress, high technology production and competitive production of world-class quality;
- protection and financial support of sectors that are in state of stagnation, diversification and optimization, which require industrial machinery radical overhaul;
- reorganization of production in depressed areas;
- developing national strategic, tactical and other plans, programs, national, sectoral and regional projects for the solution of structural adjustment programs as well as all categories of staff training and re-training, including new working power creation;
- solving problems related to capital focus and priority in capital-intensive areas of structural adjustment.

Considering these and other features of the real economy, industry and construction should take place at the national and regional levels of governance (strategic plans, programs, laws, regulations and other instruments) and in specific investment projects and targeted programs of enterprise and other complex systems development.

To solve second objective results of this study, strategic goals of innovation and historical and economic growth of the country for the implementation of the ongoing progress of industrial enterprises and construction companies were identified. It is needed at first to implement the restructuring of their industrial and economic, organizational and functional systems of innovation investing mechanism production advanced forms and operations, based on common approach to project planning, development and management of domestic producers and providing these complex challenges of continuous improvement :

1. Ensuring manufactures responds to real conditions of the external environment by the way of:

- formation or clarification manufacture mission;
- business-activity strategy determining and development as long-term goals realisation means;
- specific projects and programs development and local integrated goals implementation;
- specific projects and programs development and integrated local and objectives implementation;
- these realization projects and programs processes organization management.

2. The ways for innovation-investment activities providing by creation new and improvement existing products, technologies and production capacity for customer needs satisfaction are:

- consumer demand and needs dynamics study, various segments and market sectors competition and prospects;
- creating of new company products creating and existing company products improvement;
- design new and improving existing technology and production capacity, improving it's production and economic mechanism and organizational and management systems and business activities.

3. Development of high-tech production that provides:

- production facilities and equipment, high technologies uninterrupted introduction optimization and rationalization;
- their efficient use ensure;
- new and rationalization existing processes design in space and time;

- industrial systems cybernation and automation, flexible manufactures and new lines creation;
- total quality management and competitiveness of products and manufacture ensuring;
- rationalization and improving management efficiency of enterprise manufacture

4. *The ways to develop the system of providing production activities:*

- comprehensive implementation and effective use of modern information and computer systems planning, organization, control and regulation of material-mechanical production that provides energy needs;
- procurement system and inventory management optimization;
- energy efficiency and enterprises energy saving improvement;
- equipment, buildings, structures and communications repair improvement;
- tool, transport and warehouse company facilities rationalization.

Comprehensive and effective solution of these problems provides use of modern project management and program innovation-investment development of high-tech industry approach of which is related to the:

- creating of new production systems (industrial companies and manufactures) for the production of competitive products;
- renovation and development of high-tech manufacture in existing industrial complexes and production facilities.

Conducted researches considering the world experience analysis results and successful management (and nowadays state of Ukrainian enterprises) allowed to *determine such main tasks as for business-processes progress keys:*

1. To monitor and analyse environment, market and customer needs to indicate global trends, identify new innovation, determination of specific requirements and conditions for further development and business activities.

2. To form and/or improve systematic imagery about the mission and total innovation-investment strategy of company development in total, individual elements and activities sphere etc. It is necessary to consider the requirements, conditions and achievements about development in environment, to assess the current state and potential opportunities and improving systems and all spheres of the company activity, to develop them to the best world standards.

3. To develop and effectively implement innovative programs and projects by the creation and realization of new products, modern services and other innovations. To manage strategic process according to certain general and innovative investment strategies of the company. The concept and plans for product innovation should be developed, full range of research, design and other works for development, implementation and realization of innovation (projects and programs) should be conducted and their economic and other efficiency should be ensured.

4. It is necessary to create and develop marketing, development and other effective systems and fields of activities for the promotion, marketing and firm in-life service product innovation. This is especially important for unique vehicles, machinery, equipment, buildings and other facilities that have long-lasting operation period (several years) and require constant of service repair, further improvement.

5. To implement innovative technology development, technical-technological base and entire production system of the enterprise, including their features, sphere of material-technical and other support, organization and management, etc.

6. At same time with the development of industrial and construction companies, industrial and technically complex engineering systems, it is also advisable to improve the structure and functions of firms oriented on service. They need to develop logistics and effective resource flows and services for themselves and for all their customers (clients) to develop and implement new advanced qualification standards of personnel and services, develop a list of systems and mechanisms for the effective implementation of these services, ensuring their good quality.

7. To improve infrastructure, functions and direct relationships with consumers, customers and other contact audiences ensure maximum innovation and investment projects and programs «turnkey» with focus on long-term mutually beneficial cooperation with Ukrainian foreign audience, and in the field of foreign activity.

8. To improve system and standards of management human resource enterprises to apply modern project and program oriented methods of personnel management which implements innovative-investment projects and development programs. Thus, for the improvement of staff it is recommended to implement integrated and world achievements, best systems and personnel management standards, such as:

- standards ISO 9000, defining the total system and sphere of management;
- American, Japanese, European and other standards of project management and corporated business (PMBok: 2004, P2M, IPMA, PRINCE 1 i 2 [7,8]);
- modern strategic management, which is based on the balanced system of indicators (The Balanced Scorecard). This system was proposed in the mid-1990s, by US scientists R. Kaplan and D. Norton;
- innovative form of gradual improvement management of enterprise personnel in the process of its development, which is based on the model of maturity project management (Project Management Maturity Model – PMMM).

9. To implement integrated development and information resources management of systems and sphere of innovation company, its projects and programs

10. Ukrainian enterprises have to improve effectiveness of consumption (spending) material (especially) energy resources constantly, to provide real (at times) to reduce energy consumption and material production and production, to provide modern management and activity development in this sphere.

11. It is necessary constantly to improve all the financial and economic activity of business entities, especially in the field of studing, involvement and efficiency and return on investment involved in innovative projects and development programs. This strategic direction is advisable to use modern tools and procedures for project financing, effective management of development and implementation business plans, budgets, and other financial plans, standards of performance.

12. In the period of its activity development in any project or program, each manufacture must ensure the protection and system management in environmental area. In this field, the manufacture is more expedient to interact with the state bodies, with regional and local , public (environmental) organizations, with society etc.

13. Development of all types, directions and spheres of relationships with the environment, innovative manufacture that carries out improvement, going to be competitive. It is needed to improve the management of external relationships, develop effective PR-programs for organization and its products positive image.

14. As it was mentioned, each innovative manufacture must manage its development, systemic and long-term process improvement and change. To provie this it is recommended:

- to create (improve) and constantly measure complex of the organization activities performance;
- to conduct internal and external quality evaluation, to ensure its uninterrupted improvement and management based on totaly system quality management (TQM), international and domestic quality standards etc;
- to perform comparative analysis of activities, achievements, state and potential of the manufacture, to evaluate the performance of pre-designed policies, programs and projects;
- to make changes and adjustments to their policy measures to promote sustainable development and improvement of enterprise competitiveness, etc.

In complex and effectively realized certain strategic goals and objectives it should be based

on the creation of innovative-investment model, strategy and program of company development at the application of this strategic and unique process project management standards.

Analysis of successful companies and world enterprises in innovation management, business-projects and development programs confirms advanced experience that is possible to determine the following basic rules of corporate and project management to solve improving business processes of various Ukrainian enterprises problems:

1. The integration of innovative tasks as fundamental basis for improving the competitiveness of the company – innovator is a single innovative program. This means that:

a) all staff understand adopted innovative program (strategy) development of innovative enterprise and support it;

b) all fields of the enterprise activity for effectively interaction and agreement develop according with this concept;

c) innovative problem (projects and programs, etc.) focus is to satisfy the demand on defined market segments;

e) innovative potential is concentrated (focused) in limited innovation-investment area (field).

2. Creating and stimulating of innovation-investment climate in the innovations company provide:

a) development sense of career and readiness to risk both in managers and in employees;

b) development of extradepartmental and interdisciplinary thinking of developers;

c) development of critical attitude to achieved results in innovation and innovation business.

d) stimulating of innovation and investment activity on the enterprise;

e) development and deepening of cooperation with other organizations – innovators and business partners

3. Using of extraordinary organization solutions, which means:

a) organization of innovation-investment measures and transformations (innovation) as permanent basis of evolution and manufacture business-processes;

b) use of project form of innovation activity management;

c) the development of flexible, innovative adaptive structures.

4. Development and application management methods of innovation projects:

a) fundamental training of innovation, innovative measures and transformations;

b) quality project planning;

c) objective evaluation and economic projects assessment;

d) strict control by projects implementation.

5. Preparing of manufacture and innovative products promotion:

a) implementation researching and technical training of innovative products series manufacture under long-term demand of estimates for promising market segments;

b) preparing defined market segments for innovation product;

c) construction the system for sale innovative product;

d) preparation of system for service consumers maintenance.

6. Providing high efficiency and economy-innovation and investment projects and development programs:

a) reducing the duration and decreasing the cost for innovations and innovative-investment business;

b) ensuring maximum possible world class quality and satisfy the demand for innovative products;

c) implement of ahead innovative measures and changes in competitions;

d) permanent identification of the highest achievements and focus their innovations on their rational and efficient use

Conclusions. The main result of the gradual introduction and use of proposed mechanisms and practical recommendations for innovation and high-tech development enterprises and organizations is that it should be supported their progress and competitiveness in global and neoliberal space and also ensure Ukraine welfare to international life standards. This conclusion confirms the European model of sustainable development, which involves the state leadership and society.

The main areas for further researching in the field of innovation and high-tech development of real economy sector, industry and construction should be the search of financial effectiveness mechanisms, administrative and intellectual support of the above processes.

References

1. Федулова Л. І. Напрями формування інноваційної системи нового технологічного укладу в Україні / Л. І. Федулова // Вісник Кам'янець-Подільського національного університету імені Івана Огієнка. Економічні науки. – 2014. – Вип. 9. – С. 99 – 104.
http://nbuv.gov.ua/UJRN/vkrpien_2014_9_26.
2. Ілляшенко С. М. Інноваційний менеджмент / С. М. Ілляшенко. – Суми: ВТД Університетська книга, 2010. – 334 с.
ISBN 978-966-680-504-4.
3. Забродин Ю. Н. Управление нефтегазостроительными проектами / Ю. Н. Забродин, В. Л. Коликов, А. М. Михайличенко, А. М. Саруханов. – М. : Омега, 2016. – 475 с.
ISBN: 5-370-00017-4.
4. Онищенко В. О. Тенденції та проблеми розвитку науково-виробничої сфери регіонів України / В. О. Онищенко, В. М. Кривошеї // Економіка і регіон. – 2012. – № 3. – С. 3 – 9.
Режим доступу: http://nbuv.gov.ua/UJRN/econrig_2012_3_3.
5. Бардиш Г. О. Проектне фінансування / Г. О. Бардиш. – К. : Хай-тек прес, 2008. – 464 с.
ISBN: 978-966-96736-9-5.
6. Chase R. B. Production and Operations Management: Manufacturing and Service / R. B. Chase, N. J. Aquilano, F. R. Jacobs. – Boston, Irvin/McGraw-Hill, 2014. – 814 p.
ISBN-13: 978-0075612780.
7. Cleland Dirk. Project Management: Strategic Desing and Implementation / Dirk Cleland. – New York, Irvin/McGraw-Hill, 2015. – 440 p.
ISBN: 9780071471602.
8. Руководство к своду знаний по управлению проектами (Руководство РМВоК) // Американский национальный стандарт ANSI/PMI 99-001-2004 // Русское издание PMI. – 2004. – 388 с.
ISBN: 978-1-933890-71-5.
9. Толкачов Д. М. Прогресивні організаційні форми ефективного розвитку і функціонування підприємств й інших унікальних систем у сучасних умовах України та їх адаптація до світових стандартів / Д. М. Толкачов // Вісник Одеської державної академії будівництва та архітектури. – 2010. – Вип. 37. – С. 35 – 371.
http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=4%282%29_23.pdf.
10. Редкін О. В. Світові стандарти управління інноваційним розвитком економіки України, промисловості та будівництва / О. В. Редкін, Д. М. Толкачов // Економіка і організація управління: Збірник наукових праць Донецького національного університету. – Вінниця, 2014. – Вип. 1(17) – 2(18). – С. 215 – 223.
<http://jeou.donnu.edu.ua/article/download/1061/1079>.
11. Нестеренко М. П. Забезпечення інноваційного та високотехнологічного розвитку машинобудівних підприємств із виробництва сучасної будівельної техніки / М. П. Нестеренко, О. В. Редкін, Д. М. Толкачов // Збірник наукових праць. Серія: Галузеве машинобудування, будівництво. – Полтава: ПолтНТУ, 2015. – Вип. 3(45) – С. 62 – 72.
http://znp.pntu.edu.ua/files/archive/ua/45_2015/10.pdf.