

*Prudnikov V.F., Ishchenko I.O.***STANDARDIZATION OF INNOVATIVE ACTIVITY OF INDUSTRIAL ENTERPRISES****Ukrainian State University of Chemical Technology, Dnipro, Ukraine**

The article discusses issues of trust in an enterprise when financing, stimulating and investing in the innovative activity of an enterprise. Basically, innovation is carried out at their own expense. In the total amount of financing for innovation, the share of enterprises' own funds amounts to 94.9% of the total volume of financing. The share of financing from the state and local budgets is 80 times less. At the same low level of funding for innovation through domestic and foreign investors. This negatively affects the innovative development of the country's economy, without which Ukraine cannot become a self-sufficient state. One of the reasons for this is the risks that arise when introducing innovations. One of the risks is the level of an enterprise's ability to innovate. In the Law of Ukraine "On Innovation Activity", there is a contradiction between the decision making on state financing or stimulating the introduction of innovations and the responsibility for the implementation of innovations. The solution to this contradiction is the certification of the innovation management system of the enterprise, similar to the certification of quality management systems. The article proposes the creation of a standard and its main provisions of the innovation management system based on the existing international document – the Oslo Manual (Recommendations for the collection and analysis of data on innovations) and using an approach similar to DSTU ISO 9001 - 2015 (ISO 9001 - 2015 IDT).

Keywords: innovation, innovation, standard, certification, government funding, innovation management system.

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Introduction

The economic development of any country in the world at the present stage is linked with the development and implementation of innovations. One of the indicators characterizing the innovative development of the country's economy is the proportion of the costs of research and development in the country's GDP. Unfortunately, Ukraine on this indicator among European countries occupies the penultimate place – 0.48%, ahead of only Cyprus with the indicator – 0.46%. For comparison, the average value of the indicator in 2015 for the EU countries – 28 is 2.03%, and the highest value of the indicator for Sweden is 3.26%. At the same time, if the EU average is 28 for the period 2010–2015. all the time grew from 1.93% to 2.03%, then in Ukraine during this period it has a negative trend – 0.75% to 0.48% [1].

Presentation of the main material

The industry of Ukraine is characterized by low innovative activity of enterprises – in 2016, only 18.9% of enterprises were engaged in innovative activity. In this situation, for the development of

innovation in the economy, government support and the creation of conditions for investment in innovation activities are required. At the same time, the structure of the volume of financing of innovation activities in 2016 is [2]:

- at the expense of own funds – 94.9%;
- at the expense of the state budget and local budgets – 1.2%;
- at the expense of domestic investors – 0.6%;
- due to foreign investment – 0.1%;
- at the expense of loans – 2.7%;
- at the expense of other sources – 0.5%.

As can be seen, government support is minimal. The Law «On Innovation» in Section 2 spelled out issues of state regulation, such as [3]:

- the creation of a regulatory and legal framework and economic mechanisms to support and stimulate innovation;
- protection of the rights and interests of subjects of innovation activity;
- the establishment of preferential taxation of subjects of innovation.

Section 4 – “Financial support for innovation”

specifies the responsibility and control of the state body for providing financial support for the implementation of an innovation project.

Following this Law, the state should realize its active administrative and financial participation in the development of the innovation process, and declare the responsibility and control of the state body for the provision of financial support.

There is a certain contradiction in the provisions of the Law: financing should be carried out at the beginning of the implementation of an innovative project, and the state body is responsible for financial support according to the results of the project. Therefore, one of the main issues of supporting and stimulating innovation is the ability to realize innovation in an enterprise or organization, i.e. the need and sufficiency of the internal conditions of the enterprise for the implementation of innovations. Therefore, the assessment should be carried out not only the object of innovation, but also the ability of subjects to develop and implement innovations, i.e. it is necessary to assess the ability of the enterprise to carry out innovation.

For this assessment, you can use the international experience of process standardization. In connection with the movement of Ukraine to the European Community, in terms of the approach, it is advisable to focus the innovation legislation on existing international documents.

The main methodological document of the Organization for Economic Cooperation and Development (OECD) in the field of innovation is the "Guidelines for the collection and analysis of data on innovations (Oslo Manual)" [4]. The Guide identifies four types of innovation, covering a wide range of changes characteristic of enterprises: product, process, organizational and marketing. At the same time, for the purposes of financing and incentives, within these types it is necessary to distinguish between innovations in terms of the depth of the changes made. This classification was proposed by the Czechoslovak economist F. Valenta, which includes eight types of innovations and makes it possible to separate lower-level innovations, which are unequivocally carried out without external sources of financing (0–3 levels) and high-level innovations (4–7 levels), the introduction of which requires government and investment support [5].

Another document, the approach in which can be used in the formation of the innovation standard is the standard of the quality management system DSTU ISO 9001: 2015 (ISO 9001 – 2015 IDT) [6]. This standard uses a process approach, which is typical for innovation. The main difference between these processes lies in the object of management. At the same time, in relation to the subject there are many common functions that are characteristic of both quality management and innovation

management. Therefore, the requirements for the innovation management system in a certain part coincide with the requirements of the quality management system.

It is advisable to include the following provisions in the standard of the innovation management system, which are similar to DSTU ISO 9001: 2015.

Area of use

The standard establishes requests to the innovation management system for those cases where an enterprise:

a) needs to demonstrate its ability to introduce innovative projects, programs, to implement innovation activities in accordance with current legislative and regulatory requirements.

b) aims to realize innovation through the effective use of the system, including processes for continual improvement of the system.

The context of the enterprise

Understanding the enterprise and its context

An enterprise must establish the external and internal factors it needs that are essential in terms of its goals and strategic purpose and which affect the ability of its innovation management system to achieve the expected result.

An enterprise should monitor and analyze information about these external and internal factors.

Determining the scope of the innovation management system

An enterprise should establish the limits and applicability of the innovation management system in order to establish its scope.

When establishing this area, an enterprise should take into account:

a) external and internal factors;

b) requests from relevant stakeholders;

c) a list of innovations implemented in the enterprise.

The scope must be framed and managed as documented information. The scope should determine the types of innovations introduced into it, as well as include a justification for the inapplicability of certain requirements within the scope of the impact of the innovation management system.

Innovation management system and its processes

The company in accordance with the requirements of the Standard should develop, implement, maintain and constantly improve the innovation management system, covering the necessary processes and their interactions.

An enterprise should condition the processes necessary for the innovation management system and their application in the enterprise, and should also:

a) establish the sequence and interaction of these processes; establish and apply criteria and methods (including monitoring, measurement and relevant performance indicators) necessary to ensure

the effective implementation and monitoring of these processes;

b) establish the resources required for these processes and ensure their availability;

c) assign responsibility and authority for these processes;

d) handle risks and fulfill capabilities as required;

g) evaluate these processes and translate into reality any transformations necessary to ensure that these processes achieve the expected results;

h) improve the innovation management processes and system.

Leadership

Leadership and commitment

Top management should represent leadership and commitment to the innovation management system by:

a) taking responsibility for the effectiveness of the innovation management system;

b) ensuring that innovation policies and objectives for the innovation management system are adopted and coordinated with the context and strategic direction of enterprise development;

c) ensuring that the requirements of the innovation management system are embedded in the business processes of the enterprise;

d) promoting the application of the process approach and thinking, formed on the risk assessment;

e) ensuring the availability of resources required for the innovation management system;

f) communicating the importance of effective innovation management and fulfilling the requests of the innovation management system;

g) ensuring that the innovation management system achieves the expected results;

h) engaging, targeting and supporting staff efforts to ensure the effectiveness of the innovation management system;

i) encouraging continuous improvement;

j) encouraging the demonstration of leadership at various levels of government within a certain responsibility.

Policy

Development of innovation policy

Top management should establish, revise and manage innovation policies that:

a) meets the goals and context of enterprises, and also contributes to the movement in the chosen strategic direction of innovative development;

b) provides a framework for setting innovation goals;

c) contains an obligation to comply with the requests;

d) includes a commitment to continually improve the innovation management system.

Information Policy Innovation

Innovation policy should:

a) be framed as documented information;

b) be communicated to the employees of the enterprise, clear to them and used in the enterprise;

c) be available to relevant stakeholders, as far as possible.

Planning

Risk treatment and opportunity opportunities

Assuming an innovation management system, an enterprise should identify the risks and potential for which actions should be taken to:

a) provide a guarantee that the innovation management system can achieve the expected results,

b) increase positive results;

c) prevent or reduce undesirable results;

d) provide improvement.

Innovation goals and planning for their achievement

An enterprise should set targets for innovation for the respective functions, levels and processes necessary for the innovation management system.

Innovation purpose should:

a) be coordinated with the innovation policy;

b) be measurable;

c) take into account the requests submitted;

d) be important in terms of the conformity of innovations to products and services and an increase in customer satisfaction;

e) ensure the likelihood of their monitoring;

f) be communicated;

g) be updated as needed.

The company should maintain up to date and dispose of documented information on the goals in the field of innovation.

Planning the achievement of innovation goals, an enterprise should determine:

a) what will be implemented;

b) what resources will be needed;

c) who will be responsible;

d) when goals are achieved;

e) how the consequences will be assessed.

Planning Changes

When an enterprise identifies the need for changes in the innovation management system, these changes should be implemented as planned.

The company must take into account:

a) the purpose of the changes and their possible consequences;

b) the integrity of the innovation management system;

c) availability of resources;

d) distribution or redistribution of responsibility and authority.

Functioning

Operative planning and management

The company must plan, implement and manage the processes necessary to ensure compliance with the requirements of the innovative development of the company, as well as carry out actions by:

- a) establishing requests for innovation;
- b) establishing criteria for processes, as well as acceptance of implemented innovations;
- c) determining the resources needed to achieve compliance with the requirements for the implemented innovations;
- d) process management in accordance with these criteria;
- e) determining and preserving documented information to the extent necessary:

1) to ensure that the processes were carried out as planned;

2) to demonstrate compliance with the results of innovation requirements.

The company must manage the intended changes and analyze the consequences of unintended changes, taking measures to reduce any negative effect, if necessary.

Performance Evaluation

Monitoring, measurement, analysis and evaluation

The company should determine:

- a) that requires monitoring and measurement;
- b) monitoring, measurement, analysis and evaluation methods necessary to guarantee suitable results;

c) when monitoring and measurement should be performed;

d) when monitoring and measurement results should be analyzed and evaluated.

An enterprise should evaluate the operation and performance of the innovation management system.

The company should save the proper documented information as confirmation of the results obtained.

Analysis and evaluation

An enterprise should analyze and evaluate relevant data and information obtained from monitoring and measurement.

The results of the analysis should be used to evaluate:

a) the functioning and effectiveness of the innovation management system;

b) whether the intended has been successfully met;

c) the effectiveness of the actions taken to manage risks and realize opportunities;

d) the operation of external suppliers;

e) the need for improvements in the innovation management system.

Internal audit

An enterprise should conduct internal audits at scheduled intervals in order to receive information that the innovation management system:

a) complies with:

1) the company's own requirements for its innovation management system;

2) the requirements of this standard;

b) effectively implemented and functioning.

The company must:

a) assume, develop, implement and manage an audit program (s), including their frequency, methods, responsibilities, planning and reporting requirements that should take into account the significance of the audited processes, changes affecting the enterprise and the results of previous audits;

b) establish audit criteria and scope for each audit;

c) select auditors and conduct audits to ensure objectivity and impartiality of the audit process;

d) ensure that audit results are communicated to the appropriate managers;

e) take necessary corrections and corrective actions without undue delay;

f) save documented information as evidence of the implementation of the audit program and its results.

Conclusions

The creation of such a standard with the implementation of the methodological provisions of the Oslo Guidelines for Ukrainian innovation processes and the appropriate certification of enterprises will allow government agencies and investors with less risk to finance the innovation activities of enterprises, increasing the amount of such financing, incentives and investment.

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**СТАНДАРТИЗАЦІЯ ІННОВАЦІЙНОЇ ДІЯЛЬНОСТІ
ПРОМИСЛОВИХ ПІДПРИЄМСТВ****Прудніков В.Ф., Ищенко І.О.**

У статті розглянуті питання довіри до підприємства при фінансуванні, стимулюванні і інвестуванні в інноваційну діяльність підприємства. В основному впровадження інновацій здійснюється за рахунок власних коштів. В загальному обсязі фінансування інновацій частка власних коштів підприємств становить 94,9% від загального обсягу фінансування. Частка фінансування з державного та місцевого бюджетів в 80 разів менше. На такому ж низькому рівні фінансування інновацій за рахунок вітчизняних і зарубіжних інвесторів. Це негативно позначається на інноваційному розвитку економіки країни, без якого Україна не зможе стати самодостатньою державою. Однією з причин такого становища є ризики, які виникають при впровадженні інновацій. Одним з ризиків є рівень здатності підприємства проводити інноваційну діяльність. У Законі України «Про інноваційну діяльність» існує суперечність між прийняттям рішення щодо державного фінансування або стимулювання впровадження інновацій і відповідальністю за реалізацію інновацій. Рішенням такого протиріччя є сертифікація системи менеджменту інновацій підприємства, аналогічно сертифікації систем менеджменту якості. У статті пропонується створення стандарту і його основні положення системи менеджменту інновацій на основі існуючого міжнародного документа – Керівництва Осло (Рекомендації зі збору та аналізу даних з інновацій) і використовуючи підхід, аналогічний стандарту ДСТУ ISO 9001 - 2015 (ISO 9001 - 2015 IDT).

Ключові слова: інновація, інноваційна діяльність, стандарт, сертифікація, державне фінансування, система менеджменту інновацій.

**СТАНДАРТИЗАЦІЯ ІННОВАЦІЙНОЇ
ДЕЯТЕЛЬНОСТІ ПРОМИШЛЕННИХ
ПРЕДПРИЯТИЙ****Прудніков В.Ф., Ищенко І.О.**

В статье рассмотрены вопросы доверия к предприятию при финансировании, стимулировании и инвестировании в инновационную деятельность предприятия. В основном внедрение инноваций осуществляется за счет собственных средств. В общем объеме финансирования инноваций доля собственных средств предприятий составляет 94,9% от общего объема финансирования. Доля финансирования из государственного и местного бюджетов в 80 раз меньше. На таком же низком уровне финансирование инноваций за счет отечественных и зарубежных инвесторов. Это отрицательно сказывается на инновационном развитии экономики страны, без которого Украина не сможет стать самодостаточным государством. Одной из причин такого положения являются риски, которые возникают при внедрении инноваций. Одним из рисков является уровень способности предприятия осуществлять инновационную деятельность. В Законе Украины «Об инновационной деятельности» существует противоречие между принятием решения по государственному финансированию или стимулированию внедрения инноваций и ответственностью за реализацию инноваций. Решением такого противоречия является сертификация системы менеджмента инноваций предприятия, аналогично сертификации систем менеджмента качества. В статье предлагается создание стандарта и его основные положения системы менеджмента инноваций на основе существующего международного документа – Руководства Осло (Рекомендации по сбору и анализу данных по инновациям) и используя подход, аналогичный стандарту ДСТУ ISO 9001 – 2015 (ISO 9001 – 2015 IDT).

Ключевые слова: инновация, инновационная деятельность, стандарт, сертификация, государственное финансирование, система менеджмента инноваций.