

## FORMATION OF STATE POLICY OF THE DEVELOPMENT AND USAGE OF INTELLECTUAL POTENTIAL OF UKRAINE

*Conceptual basis of state policy of the development and usage of intellectual potential, corresponding to the principles of legality, systematization, rational expediency hierarchy, subsidiarity, coordination, efficiency, effectiveness, synergy, emergency is offered in the context of the National Security Strategy of Ukraine and activation of innovative processes based on rational use of available intellectual potential. Methodical approach to phased decision-making process to determine strategic and tactical objectives, selecting methods, means and forms of counteracting threats, developing a set of measures, recruitment of staff able to understand and fulfil tasks is presented in accordance with the certain content and sequence of stages of state policy of the development and use of intellectual potential. Dynamic structural and functional complex of legal, informational, analytical, organization of management, social measures which are aim-oriented to eliminate potential and real threats to the intellectual development of Ukraine is suggested in order to implement this policy.*

*JEL: J28; O15; O38*

### Formulation of the Problem

In modern conditions activation of processes of accumulation of intellectual potential of Ukraine requires developing of science-based state policy and taking effective actions to counter threats for its development. The active participation of the state in regulating processes associated with the process of preventing the degradation and destruction of the intellectual potential involves the development of adequate mechanisms to counteract numerous threats. In our opinion, state policy of development and usage of intellectual

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potential of Ukraine should be implemented in the context of state policy to protect national interests and national security strategy.

In our opinion, the intellectual potential of the state is a productive force, and the intellectuals are a qualitative labour resource of the national economy. According to the axiological approach, state's intellectual potential is a highly effective and strategic resource of state's economy, capable of providing the necessary and decent conditions for the functioning and development of the socio-economic macro system. In accordance with the system approach, the intellectual potential is a systemic four-level entity: education-science-culture-spirituality, each of these components does not only supplement each other but also contributes to their development and growth.

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The existing legislation partly determines national priorities and strategic directions of the state policy in the system of protection of national interests, but important issues such as the preservation and development of the intellectual potential of Ukraine, minimizing threats in the intellectual sphere, the adoption of measures to enhance innovation processes and so on stay overlooked. The recently adopted National Security Strategy of Ukraine defines the main directions of the national security policy of Ukraine. In our opinion minimization of threats to national sovereignty and creation of conditions for the restoration of the territorial integrity of Ukraine within internationally recognized state border of Ukraine, guarantee of peaceful future of Ukraine as a sovereign, independent, democratic, social state ruled by law; establishing the rights and freedoms of man and citizen, ensuring a new quality of economic, social and human development, ensuring of the integration of Ukraine into the European Union and the creation of conditions for joining NATO are among the most important (Ukaz, 2015). According to Article 6 of the Law of Ukraine "On National Security of Ukraine" national interests priorities include: preservation and strengthening of the scientific and technological potential, strengthening of the innovation model of development; development of spirituality, moral values, intellectual potential of Ukrainian people, strengthening of the physical health of the nation, creating conditions for expanded reproduction of the population. But a number of threats to national interests in the intellectual sphere (Zakon, 2003) are mentioned in the Article 7 thus demanding the necessity of formation of state policy of development and usage of intellectual potential of Ukraine.

### **Analysis of Recent Research and Publications**

The theoretical and methodological foundations of the development of intellectual potential as the main productive power of society are grounded in the works of L. Antoshkina, V. Bazylevych, G. Becker, M. Blauga, V. Vrublevskyi, V. Heitsia, O. Doktorovych, M. Zhurovskyi, Y. Kanygina, O. Moroz, Y. Sayenko, V. Semynozhenko, V. Tkachenko and others. The processes of intellectualization and technological industrialization of the national

economy are described in the publications of O. Butnick-Siverskyi, I. Halitsa, O. Hrudzynskyi, O. Druhov, V. Petrenko, S. Simanovskyi, L. Fedulova.

Taking into consideration the important scientific achievements of domestic and foreign scientists, the research of the role and place of intellectual potential in the system of economic security of the state, the substantiation of the conceptual foundations of development of the state policy of development and use of the intellectual potential of Ukraine are becoming of great actuality.

The purpose of the study is to ground the conceptual rules of the methodology of forming a state policy of development and use of intellectual potential in order to ensure the country's economic security observing the dominant principles, apply a functionally integrated set of means to counter threats to the security of the development of the cultural and spiritual and scientific and educational basis of the national economy in order to implement the Strategy for the Development and Rational Use of Intellectual Potential in order to strengthen the economic security of the state.

The object of research is the process of formation and implementation of the state policy of development and use of intellectual potential. The subject of the research is theoretical and methodological principles and practical recommendations for the development of the state policy of development and use of the intellectual potential of Ukraine.

**Methods of research.** In the course of the research, the theory of systems was applied, the hierarchical concept of the study was developed thus including the methods: structural and axiological analysis to outline the architectonics of intellectual potential and the relationship between components of the system; systematization, theoretical generalization and aggregation when grounding theoretical and methodological principles of the state policy of development and use of intellectual potential of Ukraine and practical recommendations for its realization.

### **The Presentation of Research Results**

The decisive role in innovation processes enhancing through effective use of existing intellectual potential belongs to the state, which should form a reasonable macroeconomic policy taking into account the national economy. We believe that *state policy of the development and usage of intellectual potential of Ukraine* has to be updated as a part of national policy, implemented in accordance with the stated goals and objectives based on the general organizational and management principles and implemented through the mechanism of counteraction to threats to intellectual potential of Ukraine. Conceptual principles of policy of the development and usage of intellectual potential of Ukraine are presented in Fig. 1.

State policy of the development and usage of intellectual potential of Ukraine should be based on: constitutional norms; strategic documents about development of education, science, culture and spirituality (doctrine, programs, concepts, etc.); international, interstate agreements ratified by the supreme legislative body; laws, legislation; decrees and orders of

the President of Ukraine; the Verkhovna Rada of Ukraine and the Cabinet of Ministers of Ukraine; orders, prescripts of the Ministry of Education and Science of Ukraine, ministries and departments governing institutions intellectual sphere; orders and instructions of the regional (local) executive authorities issued within their competence.

It is important to stress that the subject of this policy is the state represented by the authorized bodies of state power. State policy in this area must be determined by the Verkhovna Rada of Ukraine and conducted by the Cabinet of Ministers of Ukraine and executive authorities in the field of education and science, culture and spirituality.

The objects of state policy of the development and usage of intellectual potential of Ukraine, on the one hand, can be intellectual potential as a strategic resource of the national economy, and on the other hand, threats aimed at its destruction and decay.

Let us consider them in more details. According to the author's approach the intellectual potential is a complex structural entity consisting of educational, scientific, cultural and spiritual components that are interrelated and complementary. Thus, education, being involved in the formation of intelligence, giving people-carriers of intellect ability to think, acquire knowledge, abilities, skills, be engaged in education and self-education is the basic component of intellectual potential.

In our opinion, the educational component of the intellectual potential reflects not only the quantitative status of accumulation of education fund, but also identifies those factors that determine its relationship with intellectual potential. These are the most important among them:

- possessing of the main bearers of today - knowledge and information – determines the appearance and growth of the modern role of class of intellectuals;
- belonging to the productive areas of the national economy, as the main result of work in education is the provision of related services, which by their inner nature cause a useful effect. Education produces highly qualified staff and it is a unique resource for creation of intellectual products;
- education creates intellect of a human being enabling the person to creatively and originally think, adopt innovative solutions and be prepared to be responsible for their implementation;
- education is not a source of only educational, but also scientific, spiritual and cultural values that enrich the intellectual treasury of each state.

Figure 1  
Conceptual basis of policy of the development and usage of intellectual potential of Ukraine

State policy of the development and usage of intellectual potential	
Regulatory basis	
Constitutional regulations	Decrees and orders of President of Ukraine
National doctrines	Resolutions of Verkhovna Rada and Cabinet of Ministers
Laws and legislation	Orders of ministries and agencies
Strategic aims	Tactical tasks
Reduction of potential threats Phased transition to preventive measures Lifelong learning Cultural and spiritual growth of society	Overcoming of educational qualification imbalance Pause of brain drain Stimulation of R&D Decrement share of foreign orders for R&D
Principles	
legality, consistency, rational expediency, hierarchy, subsidiarity, coordination, efficiency, effectiveness, synergy, emergency	
Objects	Subjects
Intellectual potential Threats and dangers	Executive and local authorities
Threat counteraction mechanism	
Set of tools:	Set of functions:
Legal Informational-analytical Financial-economical Organizational management Social	Developmental Preventive protection Active protection Reconstruction
Expected Results	
Minimization of destructive factors and creation of favourable conditions for the development of intellectual potential of Ukraine Development of state-private partnership in educational, scientific, cultural and spiritual spheres Activation of innovation processes in the real economy sector Transition of national economy to higher technological norms (VI-VII) Accelerated development of NBIS-technologies Strengthening of the noosphere ideas and building of nano economy	

Source: developed by authors

Science is the sphere, which further develops and strengthens the intellectual potential, and its main task is to produce new knowledge, develop all kinds of scientific research and offer new approaches to solving difficult and unusual problems to the national economy. The unconditional relationship between science and intellectual potential is caused by the following aspects:

- firstly, by the special status of science as a highly productive area of the national economy, which is directly involved in the creation of high-tech intellect products;
- secondly, science as an open system for the creation of new knowledge should be the basis of national intellectual progress and further implementation of modern effective methods of management;
- thirdly, the science improves human intelligence as it is based on the scientific outlook responsible for the continued updating of existing and continuous production of new knowledge;
- fourthly, the development of science as a source of economic growth should become a policy priority and a prerequisite for the realization of the intellectual potential and the formation of an innovative economy.

Culture, in our opinion, is an integral part of the intellectual potential as the appropriate level of the development of the state, human beings and society and it is characterized by personal and social values, relevant knowledge and skills. Culture as an intrinsic value and the highest expression of human morality is naturally intertwined with such features of intellect as a practical orientation of mind, the ability to a creative search and inventiveness, initiative, and thus it complements and enriches the intellectual potential. Culture enriches the intellectual potential and gives it a sign of creativity, ingenuity, creativity and so on.

Spirituality, which in an invisible way positively affects a person's ability to think, create, enrich their inner world, and thus increase intellectual potential is a sophisticated and yet extremely important part of the intellectual potential. Spirituality as an integral part of the intellectual potential is responsible for constructive processes which must take place both inside the individual, and at the state level, because the intellect without spirituality can be a threat on a global scale. The role of spirituality in enriching intellectual potential, in our view, is indisputable, as such features of human nature as integrity, high morals, faith in higher spiritual ideals are the foundation for effective social work and, therefore, they contribute to the directing of national intellectual potential into all, without any exceptions, spheres of the national economy.

Threats to the intellectual potential that we have structured according to their internal structure are the absolute objects of the proposed state policy. Thus, in the field of education we identified the following threats: ongoing educational qualification imbalance; leveling the value of the diploma and the consumer attitude to education; turning Ukraine into a "country of a diploma" or a country of "certified unemployed"; loss of highly qualified high school staff; corruption as an institutional deformation; defundamentalization of higher education. The threats of destruction of the scientific sector include: reduction of the number of fundamental scientific research, research and development; loss of

competitive advantages in certain high-tech industries; increase of the share of foreign orders; science (intellectual) emigration; reduction of the demand of the manufacturing sector in research and development and domestic technology; permanent dependence of domestic science and industry on imports of outdated technologies and objects of industrial property. Cultural sphere of Ukraine is experiencing crushing destruction because of the following detected threats: the appearance of a "cultural trap"; cultural colonization growth under the influence of globalization and mega-realization; loss of cultural identity. Levelling of the moral and spiritual values; spiritual decline and loss of Christian moral values; formation of a spiritual vacuum, or "spiritual desert"; propaganda of spiritual and intellectual violence are among the most significant threats in the cultural sphere.

However, it should be noted that the main purpose of this policy is to develop a set of measures to prevent or minimize the threat to the intellectual potential of Ukraine.

Taking into account the long-term nature of this policy we will define strategic and tactical goals of its implementation. In particular, the strategic objectives of state policy of the development and usage of intellectual potential of Ukraine should be: minimizing of real threats to intellectual potential of Ukraine, overcoming of the most dangerous; prevention of new more dangerous threats caused by the aggravation of internal and external contradictions of national and global character; transition to a phase of preventive measures which will be effective in combating threats aimed at the destruction of intellectual potential.

Tactical objectives of this policy should be: overcoming of education and qualification imbalance in the preparation of specialists of high school; immediate suspension of talented young people outflow abroad; eradication of corruption in higher education; reduction of the share of foreign orders for R & D; stimulation of the demand for domestic research and development; displacement of lack of spirituality and immoral behavior out of the system of established norms of social behavior.

Science and innovation are integral attributes of highly developed economies and national advantages in global competition. It is worth noting that domestic science is experiencing a critical period and the state needs to rethink its own role in the national economy.

Author's studies in this context made it possible to establish the following trends:

- permanent underfunding of science, lack of motivation among domestic investors to invest in the development and implementation of the latest scientific research, the implementation of applied research;
- annual drop in the indicator of GDP's knowledge intensity showing the danger of the decline of national science and the beginning of irreversible processes for its restoration. Thus, the share of research and development expenditure in GDP in 2016 amounted to 0.48%, in 2015 – 0.64%, and in 2014 – 0.69%, while in the EU (EU–28) it is an average of 2.03%. (Statystychnyi zbirnyk, 2016, c. 77);
- in 2016 19.3% of the total expenditures were spent on fundamental scientific research being financed at the expense of budget funds by 91.7%. The share of applied research expenditures amounted to 22.2%, 49.5% of which were financed from the budget and

31.2% at the expense of the enterprises of the entrepreneurial sector. 58.5% of the total expenditures were spent on implementation of scientific and technological (experimental) development, 37.4% of which were financed by enterprises of the enterprise sector, 34.0% by foreign firms and 13.5% by their own funds. Greater part (86.2%) of the cost of experimental development falls on the branch of technical sciences (Statystychnyi zbirnyk, 2016, c. 56);

- low demand for high technology products by domestic producers, which can be explained by the general decline in business activity, the predominance of the national economy of the III and IV technological processes, the slow pace of development of the national innovation system;
- reorientation of domestic scientists for the foreign orders fulfilment, reaching in some areas 90% of the total volume of work performed (Malitskiy, 2011, p. 12).

We must emphasize that the key idea of the state policy of the development and usage of intellectual potential of Ukraine is grounded by the internal nature of potential and real threats, the nature of their origin and form of expression. It must be carried out by using appropriate tools and grounded by certain functional tasks.

1. Monitoring and identification of potential threats through a set of observations of the object security state, defining passports threats.
2. Application of effective preventive methods for combating threats using modern information technology, communications and so on.
3. Localization of realized threats to intellectual potential of the state in order to prevent their deepening and causing serious damage and loss.
4. Preventing the further decline of intellectual potential and further deepening of the intellectual crisis in society through appropriate legal documents, the recovery of investment and innovation climate, improvement of the social protection of the intellectual sphere etc.

These objectives of state policy of the development and usage of intellectual potential of Ukraine are carried out to facilitate rapid decision making to prevent and / or neutralize threats and create a positive environment for the rapid recovery of the national intellectual potential and transition to the stage of enrichment.

In our opinion main principles or a combination of general and organizational and management principles and a set of specialized functions that start the mechanism to counter threats to intellectual potential make the conceptual basis for the policy of the development and usage of intellectual potential of Ukraine.

The priority principles include: legality, consistency, rational expediency, hierarchy, subsidiarity, coordination, efficiency, effectiveness, synergy, and emergency.

Let us consider each of the abovementioned principles.

The principle of legality. It means the carrying out by the governmental bodies and officials responsible for specific measures to counter threats to intellectual potential all inherent



functions under the current Constitution, the laws and regulations in accordance with established legislative competence.

The principle of consistency. It is based on a study of economic phenomena and processes as complex systems that can be transformed into the threats to intellectual potential. Measures to counteract any threats have to be interconnected and interdependent and based on the use of the system categories as a unity of interrelated elements that act together to achieve a common goal. However, the principle of consistency should act concerning the system and the quality of the measures to counter threats to intellectual potential of Ukraine on the basis of their high organization and analytical work planning.

The principle of rational expediency. It is focused on the necessity of state regulation of processes related to the organization of measures to counteract threats to intellectual potential.

The principle of hierarchy. It provides a comprehensive study of integrated development programs and usage of intellectual potential at different levels of the system hierarchy and helps to identify causal interdependencies regarding the oncoming of real and potential threats to intellectual development.

The principle of subsidiarity. It deals with the distribution of competences between the bodies under which each level of authorities should have powers sufficient to solve problems at the appropriate level with maximum efficiency for the whole system. Development and effective use of intellectual potential are largely dependent on the mutually agreed activity of the structures identifying the nature of educational and scientific space, support culture and spirituality.

The principle of coordination. It means a sequence of coordinated actions of state and local governments to counteract the threats to intellectual potential, compliance with public policy objectives and strategic priorities of the state.

The principle of efficiency. The principle shows that public institutions responsible for the development and usage of intellectual potential of the country, should respond quickly to signs of potential threats and the need to use the most effective arsenal of prepared measures to counteract threats.

The principle of effectiveness. It means that the complex of developed measures to counteract threats to intellectual potential has to be activated rapidly when a decision on its application is taken. Timely and appropriate analytical information allows you to quickly evaluate past, present or future events to take appropriate action for correction or improvement. However, the principle of effectiveness also implies the limit of unnecessary information in management decisions.

The principle of synergy. It means ensuring of joint actions to achieve a common goal as a whole is much more than the sum of its elements. During the measures to counteract threats to intellectual potential of the state synergy means synchronized usage of a set of various measures that together will result in a better effect than when they are used separately.

Principle of emergency. It is characterized by the appearance of new qualities or emergent strategies that arise spontaneously in the course of the proceedings of state policy of the

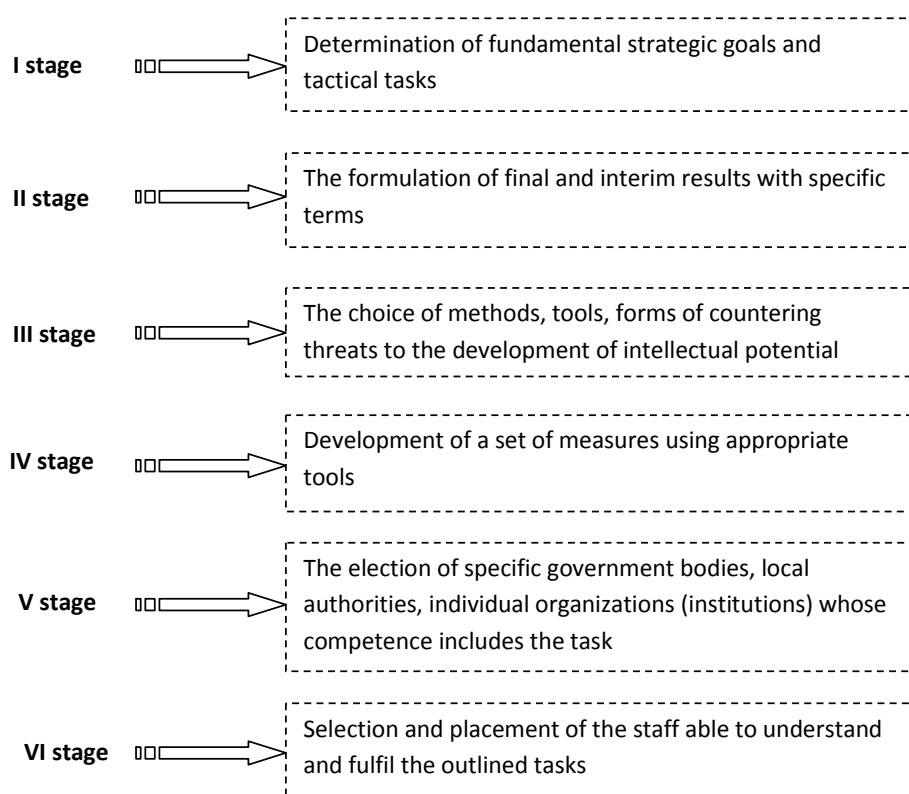
development and usage of intellectual potential and create a specific action plan to counteract the threats and destructive factors.

At the same time we would like to stress that adherence to these principles is a necessary condition for an effective policy of the development and usage of intellectual potential of Ukraine.

It is important to note that state policy of the development and usage of intellectual potential is conducted by stages. On the basis of certain sequences and content of the stages of formation of state policy of the development and usage of intellectual potential, the author developed a methodical approach to staged decision-making process in order to determine strategic and tactical objectives, selecting methods, means and forms of countering threats, develop a set of steps, recruit staff able to understand and fulfil the tasks (Fig. 2).

Figure 2

Stages of state policy of the development and usage of intellectual potential of the state



Source: compiled by the authors.

The presented methodical approach to a staged decision-making in the formation of the above mentioned state policy based on the synthesis of important local features of effectiveness of such a policy allows to determine intermediate and final results, to assess the extent of the impact of actual and potential threats to the development of intellectual potential of Ukraine, to form effective tools for counteractions and reveal demands for staff.

In addition to these stages, we find it important to distinguish two phases of the implementation of this policy - active and passive. Under the urgent socio-economic contradictions and constant threats to intensify the development of intellectual potential active phase of counteraction policy against threats starts and respectively under the conditions of the weakening of action of destructive factors it is advisable to switch to a passive stage and use preventive measures and countermeasures.

Applied nature of state policy of the development and usage of intellectual potential is expressed through the mechanism of counteraction to threats that consists from dynamic structural and functional measures aimed at preventing potential threats or neutralizing (minimization, elimination) real threats to the development of intellectual potential. It is important to mention that action of the mechanism is aimed at achieving specific goals, such as preventing destructive factors or keeping them at an appropriate level of influence; developing of effective means to counteract potential threats; prediction of possible threats etc. To achieve this goal it is necessary to fulfil a number of tasks, including: to identify the causes of destructive factors; to find out the primary and secondary factors that encourage the implementation of threats; to structure real and potential threats; to adapt legal and / or norm acts to the specific conditions of their implementation; to constantly monitor destructive factors; to conduct periodic (quarterly, monthly) diagnostics of threats and so on.

The mechanism of counteraction to threats to intellectual potential consists of a set of measures of legal, information-analytical, financial, economic, organizational, managerial and social issues. The complex of legal actions is aimed at the development and adoption of important and extremely necessary legal documents which would determine the legal basis for the recognition of intellectual potential as a strategic resource of the national economy and intellectual safety as an important part of the economic security. The necessity of intellectual security, its appearance among other types of economic security, in our opinion, is the result of implicit state awareness of the importance of intellect for the harmonious development of the state as well as gradual progress.

The absence of legal basis on the issue updates the prospects for the development and adoption of a number of legal documents. First of all, we should start working on a draft law "On the intellectual security of Ukraine," which would outline the legal basis and measures to strengthen intellectual security. Other regulations should also include relevant decrees and orders of the President of Ukraine, resolutions and orders of the Government of Ukraine, orders, instructions, regulations etc. of ministries and departments of Ukraine.

The complex of measures of managerial, informational and analytical character provides continuous monitoring of the level of threats to intellectual potential and analysis of

conditions, impact of factors and actual values of rates of intellectual security. In order to avoid threats and prevent crisis situations it is necessary to constantly monitor the internal and external environment. Monitoring of threats is a specially organized system of observations for a considerable number of threats that have different sources of origin and forms of display. It is obvious that the effect of threats is directed to objects of security in order to cause some damage, unbalance, destruction, provoke danger etc. That is why constant monitoring and identifying of key threats will enable to timely develop and take practical measures to minimize or eliminate their negative impact. The results of Monitoring can be used to assess the level of threat to integral development of the intellectual potential of the state and the subsequent diagnosis of possible crisis situations. In general information-analytical range of measures covers important activities for the gathering, evaluation and analysis of the information on the effect of destabilizing factors, forms their display and so on.

The financial and economic block of measures includes steps aimed primarily at: attracting the necessary financial resources for active or passive phase of the policy of the development and usage of intellectual potential; financing multilevel set of preventive measures; accumulation of necessary funds to protect the safety of objects during the activation of specific threats; directing sufficient financial resources for effective measures to prevent the transformation of the real threats into danger; allocation of funds for compensation of losses; search for alternative sources of funding. In general, the issue of financial security is one of the most urgent as without its solution it is difficult to talk about conservation and the accumulation of intellectual potential, ensuring of intellectual security. Without sufficient financial resources it is impossible to conduct effective actions to monitor potential sources of threats, their activation and protection of objects of security in general. A key role in this process should be done by the state on behalf of the competent authorities responsible for conducting research and education policy in close cooperation with economic and financial institutions. It is obvious that recognition of the crucial role of science in the intellectual development of society and the recognition of intellectual potential as a strategic resource of the state must change the attitude of the competent authorities and top officials to the problem in general and in the financial sector in particular. Business entrepreneurs interested in the commercialization of scientific ideas, financing of discoveries and inventions must take part in enhancing of intellectual and innovative processes. Only mutual participation of the state and business in terms of the state-private partnership is the first step to solving real problems of counteraction to threats to intellectual potential, and further promotion of its growth.

The effectiveness of the mechanism of counteraction to threats to intellectual potential of Ukraine depends largely on the performance of a complex of organizational and managerial nature. Such measures include the organizational work related to monitoring and diagnostics of threats, actions for their neutralization, minimization or elimination. Fulfilling such content should be put on the appropriate level entities that carry out a series of measures of whole-state nature, including: to timely fulfil the decisions taken by higher jurisdiction bodies; logistical support within their own jurisdiction; to generalize the practice of national legislation on security; to develop proposals for improving the existing legislation in this area. Besides, organizational and managerial actions include measures of

control over the intellectual potential, decisions on the usage of appropriate tools, the organization of education and training of security.

In particular, V.I. Franchuk (2010, p. 381) emphasizes the need for training specialists in economic security. In his opinion under modern conditions of activation of numerous threats to the needs of the national economy highly skilled security staff must be trained. Considering this the author developed a conceptual model of safety training specialists in Ukraine.

Social activities are an integral part of the overall set of measures involved to the functioning of countering threats to intellectual potential of Ukraine. The importance and necessity for such a complex of events are caused by the sphere of its usage. It is about the social sector that covers a fundamental guarantee of intellectual security of Ukraine and elements including the subjects and objects of security from the position on the development of intellectual potential. The complex of social activities is carried out by the relevant bodies and provides measures to enhance the level of the learning process in Ukraine's higher educational establishments, educational services, organization of scientific work, conduction of cultural religious activities with research and teaching staff, students, management of universities and research institutions. Facilities of security being under constant pressure of destabilizing factors also need social protection, meaning that representatives of media intelligence should receive adequate remuneration for their creative work. Thus, measures may include social security allowances, bonuses for special working conditions, additional bonuses, etc.

The implementation of state policy of the development and usage of intellectual potential of Ukraine is a continuous dynamic process of achieving set goals with the help of a multifunctional mechanism of counteraction depending on the tasks and situation.

Thus, the function of support of the development and reproduction is active if there is the positive dynamics of the indexes of intellectual security (growth for figures-stimulants and reduction for figures-non-stimulants). In our opinion, this function is aimed at taking concrete actions to gradually enrich the intellectual potential, saving products of mental labor, active protection of intellectual property rights, strengthening of intellectual security, forecasting and rapid response to the appearance of potential threats. Besides, the function is associated with the process of development of strategic plans, different developmental programs and carrying out the strategies and is revealed through their phased implementation.

*The function of preventive (prophylactic) protection* is seen through a complex of prophylactic measures in order to prevent and debar threats as a result of excessive activation of destructive factors in the intellectual sphere of national economy. Carrying out of functions of preventive measures requires fulfilling of urgent preventive measures by government bodies, local self-management and individual subjects. In our opinion effective preventive measures include the following: security measures which mean protection of all objects of intellectual security from the effects of destabilizing factors; regulatory measures are designed to ensure the behaviour of subjects of security, which would meet the requirements set in special regulations (codes); registering measures which are focused on identifying potential sources of threats, their classification, structuring, description, analysis

and so on; information measures mean systematic informing of the subjects of management on the real situation in the intellectual sphere; prognostic measures are aimed at developing priority directions of counteracting potential and real threats.

The function of active protection is particularly important in cases when a specific threat or the set of threats begin to act i.e. to mean a devastating blow to a particular object of security. Irreversible destructive actions in certain sectors of intellectual activity under these conditions begin to activate and the most dangerous social and economic processes become to develop. This means that such a situation requires decisive actions taken by the entities responsible for security in the intellectual sphere of the national economy. Activities related to the adoption of additional measures to prevent further degradation of domestic science, destruction of the intellectual potential, carrying out of fast and adequate reforms in the education sector, increased innovation processes, establishing closer cooperation between educational institutions, research institutions and high-tech industries serve as an example of implementation of active protection functions. The current situation can be kept for some time within the accepted limits and catastrophic damage can be avoided under the condition of the rapid response of the state to such destructive actions in this area. In cases when the management solutions taken by security subjects were late or ineffective, the overall situation goes out of control and develops according to a negative scenario.

Replacement function deals with compensatory measures related to the reimbursement of the caused damages. The implementation of this function is only possible through the establishment of reserve funds or the necessary funds by the state or local budgets. These renewable-stabilization funds should also be established at the level of individual business entities participating in scientific, research or innovation activities. It should be emphasized that it is difficult to estimate the amount of the damage as the consequences of the implementation of specific threats can be short-termed and long-termed. For example, if the government spends a lot of money on training specialists in software, information technology, and after graduation most of these highly qualified professionals work for foreign orders or moves abroad, the consequences of implementing such threats as intellectual migration are measured by significant amounts. According to the Commission on Education of the Council of Europe, the loss of every scientist is estimated at \$ 300.000 and Russia annually loses about \$ 50 billion as a result of the "brain drain" (Petrachenko, 2007, p. 52-55). So we can say that such losses mean for the state not only economic issues, but they contain hidden demographic and social catastrophe, the consequences of which will have to be dealt with for decades.

Besides concrete actions aimed at covering expenses as a result of the implementation of specific threats, remedial measures of long-term nature should mean adding a separate article of expenses into the budget that would guarantee annual funding (or compensation) of losses from realization of threats to intellectual potential of Ukraine. We are confident that in such a case the devastating effects of inefficient usage of intellectual potential or protracted crisis of national science will not have a crushing blow to the educational and scientific sectors of the national economy.

## Conclusion

System steps aimed at overcoming the degradation and destruction of the state's intellectual potential include the development of effective mechanisms for countering threats based on the grounding the conceptual foundations of the state policy of development and use of intellectual potential and ensuring the economic security of the state. In order to implement such a policy, a dynamically changing structural and functional complex of legal, informational, analytical and forecasting, organizational and managerial, social means, aimed at preventing potential and eliminating real threats to the intellectual development of Ukraine is proposed.

According to the internal structure, this mechanism consists of methods, levers, tools and a complete set of provision (legal, regulatory, information, personnel, financial). Depending on the type of origin or threat of occurrence, the mechanism of countering the threats to intellectual security of Ukraine fulfils certain functions, in particular, the function of support for development and self-reproduction, the function of preventive protection, active protection function, restorative function.

Thus, state policy of counteracting threats to intellectual potential of Ukraine is some purposeful activity of state bodies, formed and implemented by state institutions and aimed at minimizing and / or counteracting the threats to intellectual potential.

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