

MECHANISM OF FORMATION OF INNOVATION SECURITY AND ACTIVATION
OF INNOVATION ACTIVITY OF CORPORATIONS

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Abstract. The article defines the range of scientific-methodical and applied foundations of launching the mechanism of corporate innovation security within the framework of development of innovation activity and inclusion of corporation personnel in these processes. Groups of indicators for assessing innovation activity and basic innovation security of corporations have been created. Methods of multi-dimensional taxonomic analysis were introduced to distinguish safety indicators of innovation activity. The level of controllability of innovation activity of the corporation is estimated by the coefficient of safety of innovation activity, which combines diagnostic indicators of innovation processes in the corporation and forms the analytical field of vectors of innovation development. A mechanism for making and implementing management decisions to intensify innovation and ensuring corporate innovation security has been developed. The mechanism is based on an integrated assessment of the controllability of innovation activity of the corporation, which determines the ranked sequence of actions for setting and solving tasks within the corporate development program, as well as the use of a system for collecting and processing internal proposals for innovation. The algorithm of implementation of the mechanism of ensuring innovation security of corporation in the form of a flow diagram has been built. A computational model of virtualization of assessment of diagnostic indicators of innovation security of corporation based on the coefficient of safety of innovation activity has been developed.

Keywords: innovation security; innovation activity; coefficient of safety of innovation activity; resources of corporate innovations; indicators of evaluation of innovation activity

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1. Introduction

The state of innovation activity and corporate innovation security is the most important indicator of economic development of the world countries. Success in achieving sustainable economic growth can only be ensured by new knowledge and scientific and technical progress (STP). Most of the gross domestic product (GDP) in the leading countries is accounted for by new or improved technologies, products, equipment, and by various estimates, from 70% to 100% of growth of industrial production is achieved through the use of innovations. However, in spite of existing government programs to stimulate innovations, the share of GDP accounted for by

innovations in the OECD countries, remains insignificant. In this regard, there is a need to improve the system of innovation support and innovation security of economic sectors. So, at the macro level, three main tasks are solved: 1) state innovation strategy and security are formed; 2) favorable innovation climate for the economy as a whole is created; 3) state innovation programs are implemented. Macro level creates conditions for intensive development and stimulation of innovative activity at the level of business structures and corporations. This mechanism is designed to ensure the implementation of state and innovation strategy and security at the micro level, increase the level of innovation priorities of entrepreneurial initiative and form powerful tools for ensuring innovation security.

2. Literature Survey

Innovation is a major factor of the economic security and competitiveness of corporations and potentially includes the principles of financial success. Therefore, the problem of forming the state of economic security of the corporation is in the plane of solving current problems through innovation development and is characterized by increased attention of scientists from around the world (Darroch, 2003; Ahmed & Shepherd, 2010; Khorshid et al., 2020). Problematic issues of economic security are discussed in the works (Hamel, 2002; Thakor, 2003; Chehabeddine & Tvaronavičienė, 2020). There is a large number of works devoted to the definition of the term “innovation security”, and according to (Tushman & Anderson, 1997), one of the approaches to innovation security of the corporation is considered as a special ability to effectively function and reproduce innovation in a risk situation. However, this approach to defining the essence of security does not consider the prospects for development and the impact of innovation activity of corporations on ensuring their economic security.

In the works (Assink, 2006; Massumi, 2014) it is stated that for corporations, evaluation and monitoring of innovation security is necessary, first of all, because their actively used potential is a determining, stabilizing factor of anti-crisis development, a guarantor of economic growth and support of economic independence and security. One of the purposes of monitoring the innovation security of a corporation is to diagnose its condition according to a system of indicators that take into account the specific industry characteristics that are most characteristic of a particular corporation, and are of strategic importance for the latter. As for the dynamic approach to security, in the works (Hitt, et al. 2007; Johnson, et al. 2006; Kulmaganbetova et al., 2020), it is indicated that the corporation can use various forms of innovation. Thus, there used the development of cooperation with external production and technological partners, the implementation of joint innovation projects. The innovation policy of a company also does not preclude the acquisition of patents, licenses for various technologies. At the same time, innovation development at the cost of own technologies and competencies is among the priorities of economic activity.

3. Methods

The study methodology will be based on conceptual techniques: 1) Participation of the state in innovation activity and provision of security. This process is objectively necessary due to various reasons: firstly, market regulators alone do not create the conditions for innovation activity to be a continuous flow of innovations; the second reason for increasing the role of the state in the field of innovation activity is the rapid growth of costs necessary for its implementation; the third group of reasons that requires more active participation of the state in innovation activity is related to the need for long-term technology forecasting; the fourth reason for increasing the role of the state in innovation activity is due to the fact that the level of technical progress and increase in the volume of resources absorbed by the innovation process, create the need for joint work and cooperation of various innovation entities, both private and state-owned, such as firms, universities, state laboratories. 2) System management concept. In this plane, we can identify a general system of state measures of innovation policy and security consisting of three blocks related to funding, distribution of technical knowledge and competition. 3) Structural relations method. The relation between the management mechanism and innovation entities is carried out through the state influence on the process strategy of the latter, as well as on the formation of resources for corporate innovation. The methods of the state influence in the field of innovation activity can be divided into direct and indirect ones. The main instrument of direct influence of the state on innovation activity

is the state scientific and technical policy. Carrying out the planning, organization and implementation of scientific and technical programs, the state itself creates scientific and technical resources. Indirect methods of the state innovation policy involve the use of mainly tools of economic regulation. They are not aimed at creating innovation resources as such, but provide support and stimulation of innovation activity.

4. Results

The growing role of innovation activity at the national level puts forward new requirements for the selection of the most effective mechanisms for the use and evaluation of innovation potential, innovation activity management of industrial corporations. Thus, for the development of independent innovation activity and provision of innovation security at the national level it is necessary to: a) create favorable conditions for the development of innovation activity at the legislative level; b) create a system of regulation of cooperation and participation of corporations, research institutes, and universities, in order to create and implement innovations at the application level (Bodie, et al. 2009; Ualzhanova et al., 2020).

At the corporate level, it is necessary to solve the following tasks: a) to develop and provide for the functioning of a mechanism for finding new ideas, inventions and developments; b) to create favorable conditions within the corporation that will motivate staff to creative work and innovation activity; c) to provide for the effective transfer of new knowledge, process developments, prototypes from one stage of the innovation process to the next one; d) to plan and monitor intra-firm innovation activities; e) to promote comprehensive functional interaction of participants in the innovation process (Holtzman, 2008). The evaluation group of indicators of innovation activity and security of the corporation, which demonstrates the results of the development of innovative products, is presented in Table 1.

Table 1. Indicators for evaluation of innovation activity and basic innovation security of corporations

Indicators	Criteria
1. Resource-saving	1. Capital intensity reduction ratio 2. Labor intensity reduction ratio 3. Material consumption intensity reduction ratio 4. Material consumption change ratio
2. Result	1. Fixed capital renewal ratio. 2. Labor mechanization and automation level. 3. Labor productivity growth. 4. Investment return period. 5. Economy through cost reduction. 6. Income growth through innovation products. 7. Product competitiveness level. 8. Innovation product share in total product volume. 9. Average wage growth through development of innovation products. 10. Growth in the number of jobs through development of innovation products. 11. Innovation product share in total production volume and its dynamics. 12. Process innovation cost share in innovation product volume.

Source: compiled by the author according to the data (Bagno et al 2017; Jones, Charles P., 2010)

The main problem of introduction of innovations in the business environment among OECD countries is the lack of adequate evaluation of the effectiveness of introduction of innovations, incomplete market analysis and misunderstanding of the ultimate goal of introduction of innovations, in connection with which there appear additional tangible and intangible costs. According to the above classification, corporations need to conduct a preliminary evaluation of innovations being introduced to take preventive measures to reduce unjustified losses and increase the level of innovation security. Corporate innovation management and provision of security should be of a project nature and be a purposeful activity in the field of planning, organization, motivation and control of innovation processes (Roe, 2004). Optimal solutions to the problems of implementing innovative projects must be found by joint efforts of different departments (Table 2).

Table 2. Main functions of innovation activity management at the macro and micro levels

Functions	Main elements of the content of innovation activity management functions	
	At the corporate level	At the macro level (in the area of state regulation of innovation activity)
Planning	Justification of the size of investments for the implementation of innovative projects; investment risk planning and discount rates for investment projects; innovation efficiency planning.	Detection of industries capable of generating innovations; planning of measures of the state support for innovation activity management proceeding from the strategy of development of economy and the state of public finances.
Organization	Finding specific forms of implementation of innovative projects (within a corporation, through creation of a new legal entity common for the corporation)	Development of special state programs to support innovations; development of innovation institutions and infrastructure (techno-city, technoparks), reduction of administrative barriers that accompany the implementation of innovation projects.
Motivation	Stimulation of purposeful effective activity of all participants of innovation process (management of innovation project, development, suppliers of the equipment, materials, support industries, etc.)	Optimal combination of direct (financing from the state budget) and indirect (tax benefits, state guarantees, soft loans, assistance in the process of innovation equipment leasing) methods of innovation support.
Effectiveness control and evaluation	Determination of the compliance of the actual results of innovation management with the planned indicators; evaluation of commercial efficiency of implementation of innovation projects.	Control of timeliness of allocation and target spending of the state financial resources allocated for innovations. Evaluation of budgetary, social, and environmental efficiency of innovation projects.

Source: compiled by the author according to the data (Tidd & Bessant 2013)

It is proposed to assess the level of controllability of innovation activity using one quantitative indicator – the coefficient of safety of innovation activity (I_s). It should contain as parameters diagnostic indicators obtained as a result of taxonomic analysis. It is assumed that, knowing the dynamics of the integrated indicator (I_s), which reflects and summarizes information on intellectual capital, process innovation and product innovation, the corporation management, firstly, will be timely and accurately informed about the state of innovation activity; and secondly, it will be able to develop measures on innovation security and prepare for possible market turbulence in advance, before emergencies arise.

The integrated indicator (I_s) with such characteristics plays the role of a certain independent expert, as it gives a consolidated assessment of the three main areas of corporate management, according to the same rules and the only method of calculation: 1) development of product, process innovations; 2) intensive use of intellectual capital of the corporation, 3) formal determination of the sequence of actions to enhance the innovation activities of the corporation.

To reduce the size of the problem and pay increased attention to certain indicators of innovation activity security, we used methods of multi-dimensional taxonomic analysis allowing to obtain attributes that would most fully characterize the phenomenon under study, but would form less numerous sets as possible (Kraus, et al. 2016). As a result of consistent application of methods of taxonomic analysis (ball method, center of gravity method, potential method) the following diagnostic indicators which comprehensively characterize innovation security of corporation were distinguished:

- Y_1 – increase in the share of sales in new markets or new products as a ratio of total sales;
- Y_2 – share of profits from process innovations as a ratio of total profits;
- Y_3 – share of profits from projects carried out based on the author’s innovations;
- Y_4 – joint research and development projects;
- Y_5 – specific duration of preparation for the production of new products;
- Y_6 – investment growth rates;
- Y_7 – specific costs for the acquisition of licenses, patents.

After selection of representative diagnostic indicators, the integrated indicator – coefficient of safety of innovation activity (I_s) – is formed. The theory of utility deals with the issues of integration of different indicators

into one integrated indicator. According to this theory, the integrated indicator is a utility function. The utility function is built to quantify the value of the studied objects, phenomena, economic, political and social processes. The initial data for building such a function are the preferences of people, especially of those who make management decisions, i. e., their professional opinion about the values of the processes under study expressed by them either as regards different areas of innovation activity and security, or the same areas but in different conditions.

In certain conditions, for most indicators there are critical areas of values. When falling within these areas it becomes impossible to offset reduction of one indicator by improving others. Moreover, the size and position of critical areas do not depend on the value of other private indicators; and outside the critical areas of private indicators there is a rule of substituting the usefulness of some indicators for others. Better variants (according to informal estimates) of the state of innovation security may have the values of the utility function, which are less than those of less desirable variants when estimated by an individual expert. In our opinion, the non-compensatory advantage in the assumed formulation is more appropriate for the integrated evaluation of innovation security of industrial corporations than the compensatory one. The lack of utility function for the general case of activity of corporations in different situations greatly complicates the possibility of applying this advantage in real economic conditions (Cunningham, 2014). However, for our study this is possible in the following cases: a) values of all private indicators that are taken into account when calculating the estimates of innovation activity must be the final values known before the calculations of the integrated indicator, or the strategic goals of the corporation must be known as a set of ideal values of all considered indicators; b) evaluation of each private indicator is performed with some specified accuracy, which is determined by the number of digits after the comma.

While preserving commonality of statements, we assume that condition (a) is satisfied so that the strategic development goals of the corporation are known, which are accepted as ideal values of Y_1, \dots, Y_n , of certain indicators of the state of innovation activity and security. If the corporation achieves the values simultaneously for all n indicators, its strategic development goals will be achieved by 100% and the level of innovation security will be maximum.

In our paper, to form such an indicator we used vector methods of ordering objects, in particular the method of non-compensatory advantages. The advantage of this approach is that it adequately reflects the evaluation of innovation activity and security of the corporation, including if the deterioration of the values of any diagnostic indicator can not be offset by the improvement, even simultaneous, of all other diagnostic indicators (Huber et al 2010).

The available diagnostic indicators vary from 0 to 1 (they can be measured as a percentage), being dimensionless values, the algorithm for forming the integrated indicator of safety of innovation activity (I_s) has a lexicimous character and is a mathematical operation of eight consecutive procedures. If the generalized indicators Y_1, \dots, Y_n are numbers in the range from 0 to 1, the value of the integrated indicator of safety of innovation activity can be found by the formula:

$$I_s = \frac{(m_1 \times 100 + m_2 + \sum_{i=1}^{n-2} \frac{m_{j+2}}{10^{2 \times i}})}{100} \quad (1)$$

where I_s - integrated indicator of safety of innovation activity of a corporation;
 n - number of diagnostic indicators Y_i ;
 m_1 - minimum number of Y_1, \dots, Y_n ;
 $m_j, j=2, \dots, n$ - minimum of the remaining numbers after selecting the previous minimum.

The use of the algorithm for non-compensatory advantage leads to obtaining the value of I_s , which reflects as percentage the degree of achievement of strategic goals of innovation security of the corporation. The calculated indicator I_s is useful not only as an integrated numerical value of the safety of innovation activity of a corporation, but mainly as an indicator of the order of setting and solving management tasks of a corporation. It indicates that according to the concept of non-compensatory ratios of individual indicators of innovation activity, the main task of corporate management is to increase the indicator with a minimum value at least to the level of the next indicator in order of value. Without this, actions to increase other indicators will not lead to a significant increase in the controllability of innovation activity and security of a corporation. This is a priority task of a corporation. How to do it and how much other indicators change is decided in each case. The main thing is that during increase in the indicator with the minimum value, other indicators do not fall below the level of the next indicator in order of value. Next a ranked sequence of indicators is formed, which are included in the number of diagnostic ones, and management decisions are made in accordance with this sequence. In this case, each subsequent step includes in the calculation a chain of indicators increased by one indicator. As a result of step-by-step application of such formalized procedures, the integrated value of safety of innovation activity (I_s) will be increase and, accordingly, the corporation will move from one state of innovation activity to a more advanced one. This is how the strategy of intensifying the innovative activity of corporation should look like. The terms of solving strategic tasks of a corporation should be determined based on budget and resource constraints and the competitive situation.

The development and evaluation of strategic decisions for the management of innovation activity of a corporation is proposed to be carried out using a three-level system of indicators. At the top level of the system there is one integrated indicator – coefficient of safety of innovation activity (I_s) – as well as its arguments, which are diagnostic indicators.

At the second level of the system of evaluation of strategic decisions for the management of innovation activity of a corporation traditional indicators of evaluation of innovation activity should be used. They should be used by employees in accordance with the technologies adopted by a corporation. The estimates obtained with their help are initial data for calculation of values of diagnostic indicators – arguments of the integrated indicator.

The third level of the system of indicators for evaluation of strategic decisions is formed by initial indicators, which appear in the balance sheets of a corporation, payment documents, etc. By their nature, they are suitable only for evaluation of the actual state of a corporation and its retrospective states, i. e., only for evaluation of the progress in implementing strategic decisions. Forecasting the possible state of a corporation with such detail is unlikely to lead to correct results: dispersion of data of this type will be very large both theoretically and practically (Von Hippel, 2008). However, the initial indicators are used as input data to calculate the values of diagnostic indicators.

The combination of three levels of aggregation of data on the actual and possible activities of a corporation, the synthesis of practical and scientific methods of evaluation of the results of activities and decisions hold out a hope of increased flexibility of innovation activity management, rapid adaptation of corporation management to rapidly changing conditions in its industry. We propose a system approach to the selection and processing of innovation ideas in industrial corporations, which is based on the principles presented in Table 3. The main problem of involving the personnel of a corporation in innovation activity is the issue of its motivation. The difficulty of this issue is two-sided. On the one hand, employees of a corporation may be unmotivated to innovation activity, which results in their reluctance, and in some cases (for example, if the introduction of new equipment entails job cuts) resistance to innovations.

Table 3. Principles of collecting and processing innovation proposals by corporation personnel

Principle name	Principle content	Principle implementation directions
Priority principle	Provides for taking into account the priorities of a corporation in the selection of innovation projects	Priority of active innovation strategy instead of copying strategy
Integration principle	Integrated comprehensive evaluation of an innovation idea	Participation of both technical services specialists and marketers in the expert group
Mobility principle	Possibility of fast implementation of an innovation project	Modernization of production, purchase of the newest equipment, advanced training of the personnel
Differentiation principle	Division of employees involved in the implementation of an innovation idea into categories	For each category of employees involved in the implementation of an innovation idea, there are separate indicators of material incentives
Incentive expediency principle	Encouraging employees for innovation ideas and participation in their implementation	Material incentives only for those innovation ideas that can be implemented within a corporation or sold as intellectual property

Source: compiled by the author according to the data (Stewart & Fenn 2006)

On the other hand, the corporation management can encourage innovation proposals of employees increasing their motivation, however, the incentive system does not take into account the usefulness and profitability of the innovation idea for a corporation. In this case, encouragement of innovation ideas is unprofitable for a corporation, if they can not be implemented within a corporation or sold as intellectual property.

In the system of motivation of involvement of employees in innovative activity of corporation that we propose 4 groups of employees in relation to cycles of innovation process are considered. The first group is encouraged for innovation proposals that can be implemented within a corporation. The second group is encouraged for development of investment and innovation projects. The third group is encouraged for the material implementation of innovation projects. The fourth group is encouraged for the production and sale of innovation products during its development (Blatz, et al. 2006).

The management system will be more effective if it is not focused on one, even the main stage of the innovation process. Therefore, in our opinion, it is necessary to build a management mechanism that will link the individual stages of this process, will work on a regular basis and will allow to more effectively achieve the goals set for the corporation. As a basis of this mechanism, it is proposed to use an integrated evaluation of the manageability of innovation activity. It involves the determination of the ranked sequence of actions for setting and solving objectives of innovation activity, as well as the use of the proposed system of collection and processing of innovation proposals of employees of a corporation. This leads to the need to form a mechanism for system management of innovation activity consisting of three blocks of management decisions (Fig. 1).

The first block is a technology for selection of innovation ideas and proposals that best meet the strategic goals of a corporation and the needs of the market. It is necessary to use four main sources of new ideas. The first sources is the market, with impulses coming both from consumers, and from competitors. The second source is the corporation itself, first of all specialists of design and process services, marketers, etc. The third source is domestic and foreign corporations that sell intellectual property (patents, licenses, know-how, etc.). The fourth source is independent firms, various consulting agencies.

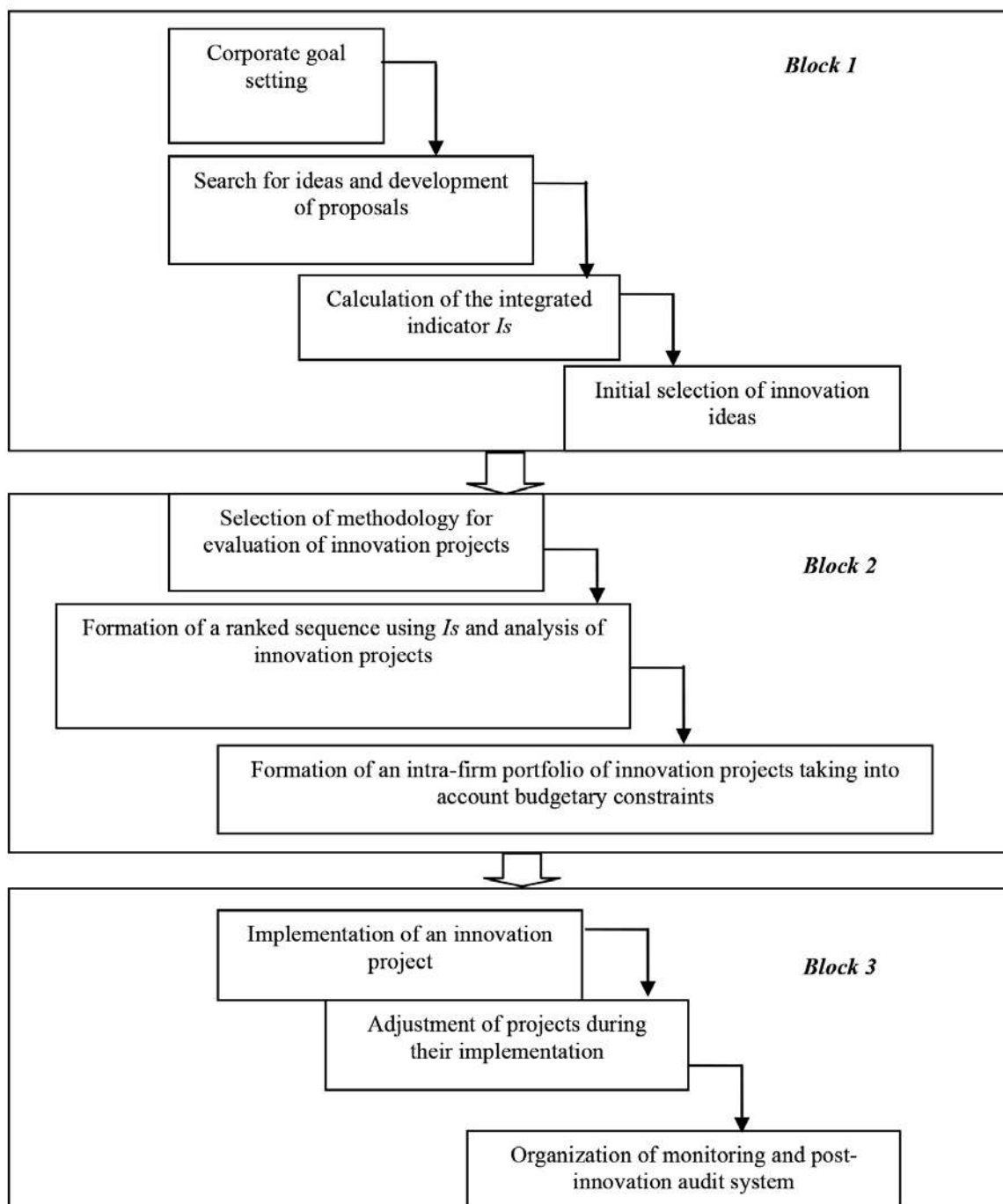


Figure 1. Mechanism for making and implementing management decisions regarding activation of innovation activity and provision of corporate innovation security

In the second block, the selected ideas and proposals are subject to economic and financial evaluation, as a result of which an internal portfolio of innovation projects should be formed within the budget constraints of a corporation. The third block includes the methods of intra-firm support of effective implementation of portfolio projects and control of the results of this implementation.

In our opinion, this approach will allow to form a fairly complete, detailed list of management functions so that to further assign these functions to specific divisions giving them the appropriate powers and providing a system of motivation for effective innovation management. According to the revised classification of innovation activity proposed in the article, all incoming ideas and innovation proposals can be divided into two groups: initiative and forced innovations (de Goede, 2017).

Innovation ideas aimed at increasing the competitiveness of a corporation are referred to the first group (initiative innovations). To get in the initial list, these ideas must be selected through double testing. The first test is a check of the idea for compliance with the strategic goals of a corporation. At the first stage, it is conducted by almost all employees of a corporation, the evaluation criteria depend on its specifics. At this stage, the concept of the future product, service, technology, etc. is discussed. It is necessary to find out what advantages the product has in relation to competitors, whether there are legal or moral problems. Then the previously evaluated idea gets to experts. The experts should evaluate the feasibility of the idea from a financial and technical point of view, whether it corresponds to the image of a corporation. As a method of such evaluation it is expedient to use a scoring matrix. The matrix is built this way. First of all, the departments and services involved in the evaluation of the idea are determined, each of which is assigned a weighting factor, the value of which reflects its role in the development and success of a corporation. Specialists of the departments evaluate the proposed idea using a 10-point scale (Sammut-Bonnici & Paroutis, 2013).

Ideas that have passed the first stage of selection are checked using the second group of tests. At this stage, the formulated concept of an idea is embodied in a more detailed verbal or visual form. The verbal description should especially indicate the characteristics and advantages, it is also supplemented by sketches, illustrations, presentations, models. The task of the stage is to evaluate the market chances of an idea. Ideas that have not passed a test for market attractiveness are rejected. The rest ideas are included in the initial list, which is checked for economic efficiency in the second block of the proposed mechanism for investment process management.

The second group (forced innovations) includes proposals of a forced nature, related, in particular, to the need to replace worn-out equipment, increase the reliability of production and safety in accordance with new legislation, etc. For such proposals, first of all it is necessary to check the possibility of an alternative way to solve the problem. The selected innovative proposals of forced nature are included in a separate initial list of forced proposals in descending order of urgency of their implementation and divided into two unequal parts – long-term and short-term proposals. The necessary part of the investment budget of a corporation is allocated for the implementation of the most urgent proposals planned for the near future (Buse, et al. 2010). It is hardly expedient to check the economic efficiency of forced projects, rather it is necessary to organize strict control over the spending of funds and the implementation of planned deadlines.

Thus, the first block of the control mechanism can be represented as the following algorithm (Fig. 2).

The results of the study conducted using the proposed methods were modeled within a virtual corporation (conventional study model). During approbation: 1) the current state of innovation activity is

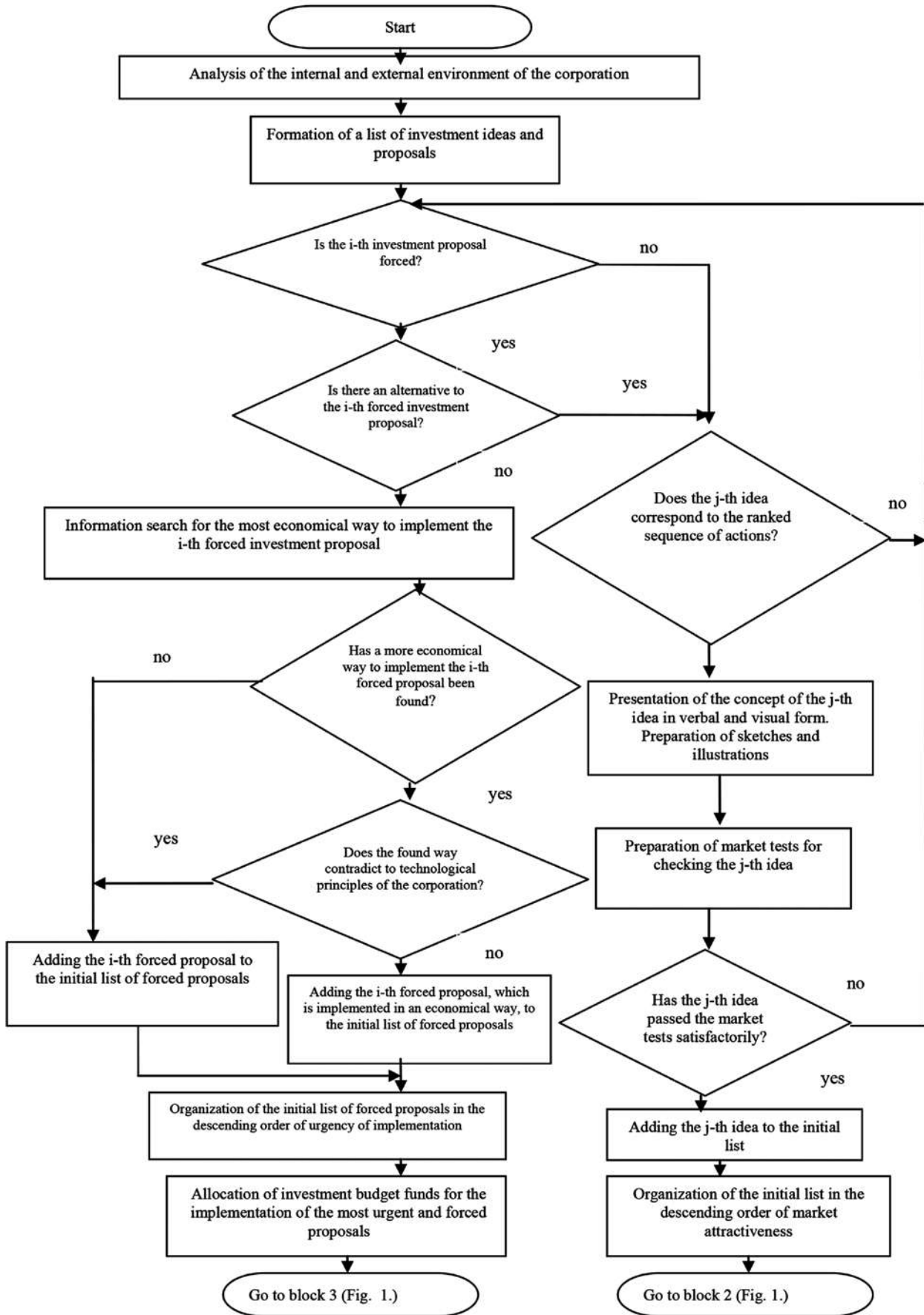


Figure 2. Algorithm of implementation of the first block of the mechanism of provision of innovation security of the corporation

analyzed, indicators are determined that comprehensively characterize the manageability of innovation activity; 2) integrated indicator of manageability of innovation is calculated; 3) a formalized sequence of management decisions to increase innovation activity is defined; 4) according to the proposed algorithm, recommendations for activation of innovation activity are formed. The dynamics of diagnostic and integrated indicators of the virtual model of the corporation is presented in Table 4.

Table 4. Values of diagnostic indicators of innovation security of the virtual corporation

Criterion	Periods of time				
	t_1	t_2	t_3	t_4	t_5
Y_1	0.53	0.7	0.41	0.49	0.48
Y_2	0.7	0.67	0.49	0.52	0.51
Y_3	0.81	0.79	0.53	0.61	0.59
Y_4	0.8	0.81	0.56	0.65	0.62
Y_5	0.86	0.91	0.58	0.698	0.71
Y_6	0.89	0.92	0.63	0.72	0.81
Y_7	0.94	0.93	0.67	0.81	0.88
Is (%)	55.6888	73.7888	44.6777	53.9888	52.2677

Depending on the obtained ranked sequence of diagnostic indicators, actions of corporation management for increasing manageability of innovation activity and security should be annually adjusted according to the strategy of the corporation. In our opinion, in a situation of weak perception of innovations by the personnel and at large scales of corporation, it would be expedient to use a variant of so-called double structure when implementation of new strategy, as far as possible, is separated from operational activity. This allows the corporation management to provide support for innovations in the departments involved in their implementation, and to use their official power to quickly implement the necessary decisions. At the same time there can take place a destruction of traditionally developed sequence of passing of commands and its replacement by direct contacts of the manager with executors bypassing some levels of hierarchy.

5. Discussion

By essence of innovation development and security of the corporation, the authors mean the internal characteristic of innovation opportunities expressed in the coordination of scores and criteria that justify a mechanism that reflects the interdependence of key innovation resources aimed at developing the economy of the corporation as a whole. The characteristics of the content of innovation security is a set of potential-forming components, internal innovation process, various properties, key contradictions, trends and relationships that shape the competitiveness of innovative products for the reporting period under the influence of different conditions. Innovations are the basis for increasing competitiveness, which is a key condition for provision of the economic security of the corporation.

Due to the need to achieve key goals in creating innovation security of corporations, important tasks are formed, which are solved by the subsystem of microeconomic security: a) monitoring of opportunities for protection against internal and external threats of the environment; b) identification of various conditions that contribute to damaging the image of the corporation, material, financial damage, disruption of its sustainable operation and growth; c) development of structured management decisions on strategic and tactical sustainable economic activity; d) study of partners, contractors and competitors; e) creation of favorable conditions for compensation of damage, reduction of the negative consequences formed at infringement of economic safety; f) diagnosis and forecasting of information characterizing the state of the subsystem of economic security, control over its effective functioning.

Thus, the policy of innovation security is a system of views, various measures, solutions, specific actions in the area of general economic security, which determine the conditions for achieving business goals. Thus, the im-

plemented security policy of the corporation must allow to carry out economic activities, produce competitive products, increase production efficiency, carry out correct marketing activities, make high profits.

Conclusions

In the framework of the conducted study, we defined the concepts of innovation security of the corporation and its place in the overall economic security of business. The substantiated concepts do not reflect all its characteristic features, but only some structurally substantiated components. As a result, the existing approaches to the formation of the concept of innovation security are very different. The need for the corporate level to solve such problems of innovation security has been proved: a) development and functioning of a mechanism for finding new ideas, inventions and developments; b) creation of comfortable conditions within the business structure of the corporation, which encourage personnel to be creative and innovative; c) provision of the transfer of new knowledge, process developments, prototypes from one stage of the innovation process to the next one; d) planning and use of monitoring of intra-firm innovation activity; e) promoting comprehensive and integrated interaction of participants of the corporate innovation process. The innovation security of the corporation consists of unique abilities to increase material, investment, information, and personnel components, which will help the organization to achieve new strategic goals. It should be noted that not all products proposed by organizations in the existing market, form their potential, but only those that are potentially profitable. That is, products created on the basis of innovation technologies have high quality characteristics and should be in demand among end users.

When substantiating the content of innovation security, it is necessary to take into account that it is associated with the mandatory introduction into production of innovation ideas and technologies, organizational and managerial key decisions. An indicator that is used to evaluate the safety of innovation activity based on the algorithm of non-compensatory advantage was proposed in the article. The integrated indicator is formed on the basis of diagnostic indicators obtained by methods of taxonomic analysis. The lack of an integrated approach significantly reduces the efficiency of innovation activity. The mechanism of activation of innovation activity and provision of innovation security, which will allow to connect separate stages of innovation process according to the proposed algorithm, will work on a regular basis and will allow to more effectively achieve business goals set before corporation was formed in the paper.

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