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CLASSIFICATION OF FACTORS DETERMINING THE NECESSITY FOR SEARCHING OF A PARTNER WITHIN INNOVATIVE ACTIVITIES

Abstract. In the article the authors substantiated the connection between the indicators of innovation activity efficiency and indicators of innovation cooperation in the course of innovation processes. The importance of research into the problems of forming systems of interaction in Ukraine has been proved. The advantages for the formation of systems of interaction in innovation, the goals of the formation of systems of interaction in different temporal dimensions and the principles of cooperation have been identified. The analysis of factors for the establishment of interaction, their grouping by a number of features was conducted. The authors have formed a system of factors for establishing interaction based on the concept of the value of establishing interaction. The system of factors covers the following five groups: cost property, information and communication, quality and market. Being set forth forcibly, the group of cost and property factors form the cost of interaction, while the groups of information and communications technology, quality and market factors guide the cost of interaction between the participants of the interaction system within innovative processes. The authors of the study justified the need to identify a separate new group of factors as well as the types of relationships of the selected factors with the factors grouped according to the traditional features of classification. For formation of the administrative decision concerning participation in the system of interaction in innovative processes subjects shall substantiate system of factors on functional aspects

of implementation of innovative activity, define importance of each of them for achievement of the purposes of innovative process, as well as estimate power of influence of each factor on the determined criteria. Once the benefits and threats from participation in the system of interaction have been identified, the subject of innovative activity shall justify the decision regarding the innovation form. While carrying out the research, general scientific methods as well as methods of theoretical / applied innovation were used. In order to undertake the research, the authors involved general scientific and special principles, techniques and methods of scientific knowledge applied within the field of innovation management, in particular: semantic analysis, comparative analysis and method of systematization; grouping terms, factor analysis and synthesis, abstract-logic method.

Key words: innovation activity, interaction, innovative cooperation, interaction building factors, partners.

Introduction

Ensuring the economic development of the state is to a large extent achieved by high innovative activity of business entities, revival in the market of investment and innovation capital as well.

In the framework of modern languages, innovation is becoming more complex as the course of innovation processes accelerates,

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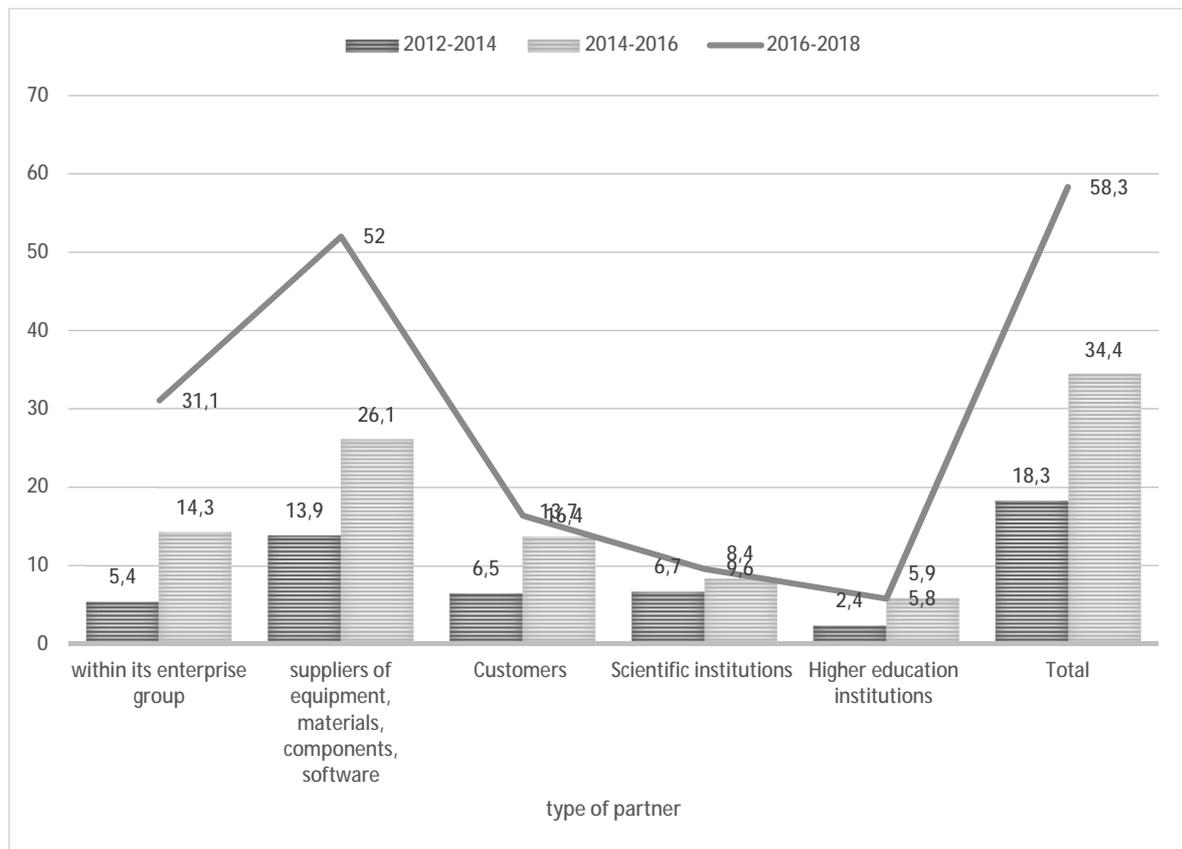
consumer demands become higher, besides, more and more dynamic and natural resources are being exhausted. In order to be successful while carrying out innovation activities, the participants are not forced to compete for the attention of consumers, but rather to join powers with a view to obtain extra benefits from the conjoint implementation of the innovation process stages.

Consequently, the level of efficiency of innovation processes is determined by the level of interaction between different market participants within innovation processes.

Formation of the management decision on refusal of independent implementation of innovative activity in favor of joint actions with partners is

carried out on the basis of the analysis and estimation of certain system of factors which cover a complex of conditions and parameters of implementation of innovations. The list of factors is objective and the power of their influence on the adoption of an informed management decision depends on the specific conditions of the assessment.

Globalization and the emergence of economic development opportunities through partnerships has had an impact on quantitative innovation performance as evidenced by the data presented in Fig. 1. For the period from 2012 to 2018, the share of innovatively active enterprises involved in innovative cooperation in Ukraine has increased by 40 %.



*Fig. 1. Share of innovatively active enterprises involved in innovative cooperation by type of partner (% of total number of innovatively active enterprises in the relevant group) **

** Developed by authors on the data of [Scientific and innovative activity in Ukraine, 2017, 2018]*

The largest share of partners represents suppliers of equipment and materials, their share in 2018–2016 grew by 38.1 % over the analyzed period, constituting 52 % of the total number of innovatively active enterprises. Increase in the

share of scientific institutions as partners during 2018–2012 occurred by 2.9 % (or a third), higher education institutions – by 3.4 % (more than twice).

Thus, on the one hand, we can state the fact of growing interest in the building-up of innovative

cooperation. However, another conclusion is the low level of partnership with those market participants who develop cutting-edge technologies and offer developments at the initial stages of the innovation process.

Accordingly, it should be determined which factors prevent the expressed interest from being transformed into practical cooperation.

Analysis of recent researches and publications, problem statement

There is a number of scientific works written by national scientist that are devoted to the study of factors influencing various aspects of innovation activity. In particular, many authors refer to the research of factors affecting the indicators of efficiency and effectiveness of innovation activity throughout Ukraine. In particular, A. I. Yashkina [Yashkina, 2013] researched and ranked the factors influencing the efficiency of innovation activity of Ukrainian enterprises. The author identified the following factors that determine the effectiveness of innovation activity of enterprises: the cost of scientific and technical works, the cost of innovation of enterprises.

Skiba M. [Skyba, 2011] substantiated the factors of decrease in innovation activity of industrial enterprises. The author divides such factors into two groups: institutional / legal factors and financial factors. The most significant factors that have led to a decline in innovation activity include a decline in the volume of financing and expenditures for the implementation of state programmes, an imperfect institutional and legal environment, gaps in legislation governing legal relations in the area of innovation and contradictions that lead to legal conflicts, a decline in international cooperation activities, restrictions on participation in international programmes, in particular, the EU's 7th Framework Programme, etc.

A. F. Morozov and M. I. Shumovetskyi [Morozov & Shumovetskyi, 2016] highlighted the main factors of the state innovation policy affecting the development of innovation activity at the enterprises of Ukraine. The authors marked down the factors of the scope of scientific work, the

number of scientists and organizations carrying out scientific researches, the amount of funding for innovative activity, the share of innovatively active industrial enterprises. These factors can be attributed to quantitative parameters that determine innovation activity.

O. O. Maslak and K. O. Doroshkevich [Maslak&Doroshkevych, 2012] laid special emphasis on positive and negative factors influencing innovative activity of Ukrainian enterprises. In particular, technical-economic, legal, organizational-administrative, social-psychological factors are referred to negative ones, while globalization processes, presence of innovative research institutions, existing forms of ownership, microsystem of innovation infrastructure and territorial factor are referred to positive ones.

V. P. Miklovda, K. I. Latynin, A. H. Fialkovskyi [Miklovda&Latynin& Fialkovskyi, 2019], having carried out their classification, investigated the factors of influence on the development of regional economy as a synergistic system. The authors pointed out the antecedent, current and forward development factors at the stages of the system functioning.

O. O. Zakharkin [Zakharkin, 2013] has developed groups of factors of negative influence on innovative activity of the domestic enterprises. Thus, such factors were divided into the group of endogenous factors and the group of exogenous factors of influence. Financial factors are attributed to two specified groups of influence.

Semenova V. G. [Semenova, 2017] devoted a research to the factors of negative influence on development of innovative activity. The author highlighted such negative factors as limited sources of funding, significant costs of implementing innovative projects and a high level of economic risk.

Poliakova Yu. V. [Poliakova, 2018] identified the factors of innovation activity throughout Ukraine, the key of which represent the level of development and application of innovation potential.

It is necessary to mention that in the researched works the factors of adjustment and building-up the interaction within innovative

processes remain poorly studied. Hryha V. Yu. [Hryha&Bohdan&Isakova, 2014] in his works studies value of the factor of small business in innovative processes and its interaction with other participants of the market in terms of innovative activity. Factors of development and issues of adjustment of interaction between business partners are investigated in works of Chukhrai N. I. [Chukhrai& Kryvoruchko, 2008], as well as factors of adjustment of interaction are divided into solving ones (important reasons) and facilitating ones (environmental reasons). Hirna O.B. [Hirna, 2006] singles out the factors of interaction within supply chains through the factors of utility for the partners. Pushkar A. I. [Pushkar & Kurbatova, 2013] described the key factors influencing the processes of formation and development of interfirm relations, having grouped them as follows: external factors, internal factors, factors of compatibility, and factors of consistency.

Factors of development of interaction between institutional environment and innovative entrepreneurship in Ukraine are highlighted by I. Prylutska [Prylutska, 2014]. Such factors of interaction include political and legal, scientific and technological, innovation, economic, socio-demographic, cultural and mental factors. I. Prilutska also identified the most influential institutions of innovative entrepreneurship development in Ukraine: the state, innovation infrastructure and investment intermediaries.

Fernández-Esquinas, M., Pinto, H., Yruela, M. P., Pereira, T. S. [Fernández-Esquinas, M., Pinto, H., Yruela, M. P., & Pereira, T. S., 2016] are researching the factors of interaction between universities and firms. From the firm perspective, the authors consider three groups of leverage. The first group concerns the so-called structural elements of the firm, such as its size, operating years and sector of activity. The second group of factors covers the importance of the strategic search for the firm, while the third group relates to the opportunities available to firms to establish relationships with the academic sector. These may be referred to as 'situational factors' as they concern the social and economic structure of the firm. Networks and trust between agents from different

sectors are important factors that influence university and industry linkages.

P. Anzola-Román, C. Bayona-Sáez and T. García-Marco [Anzola-Román, Bayona-Sáez & García-Marco, 2019] investigate the factors for successful collaboration in three areas of the innovation process that are of huge importance (i.e. R&D, production development and commercialization of innovation). In the research and development phase, intra-company collectivism and teamwork were the factors that contributed to the success of overall innovation development with an external partner. At the stage of implementation, the authors highlight the factors of exposure and permeability through building relationships and communications with external subjects, while the factor of focusing on their clients as well as allocation resources for building their loyalty are the key features at the stage of commercialization.

S. Hosseini, A. Kees, J. Manderscheid, M. Röglinger and M. Rosemann [Hosseini, S., Kees, A., Manderscheid, J., Röglinger, M., & Rosemann, M., 2017] identify such factors as strategic alignment, cultural factors and human resource management factors that influence the success of innovation collaboration.

Purpose and tasks of the research

In the given research the purpose is set to substantiate and form the system of factors which are being analyzed and estimated by domestic subjects of innovative activity at building the interaction within innovative processes.

In order to achieve this goal, the authors identified and grouped the factors of interaction, as well as determined the interrelationships between different groups of these factors.

Methodology

The methodological basis for this research is being formalized by the classical provisions of economic theory, general scientific methods as well as methods of theoretical and applied innovation. In order to carry out the research, the authors follow general scientific and special principles, techniques and methods of scientific

cognition in the field of innovation activity management.

Semantic and comparative analyses as well as systematization method have been used for theoretical substantiation of the factors of interaction; grouping method and factor analysis method have been used for development of classification of factors, analysis and synthesis for generalization of the role and place of the factors of interaction within the processes of innovative development. The method of structural and logical modelling is used to build a scheme of general sequence of making managerial decisions.

For drafting the conclusions and theoretical synthesis of the results of the conducted research the abstract logical method was applied.

The application of the above-mentioned methods and techniques allowed for elaborating a comprehensive approach to the study. The implementation of this methodology is consistent with the requirements of the classification codes for scientific and economic research.

The described methods provided for carrying out the research of theoretical and applied fundamentals of economic development on the basis of implementation of innovations, therefore are coordinated with the O block Economic Development, Innovation, Technological Change, and Growth, within O1 'Economic Development' and O12 'Microeconomic Analyses of Economic Development'.

The proposed provisions and approaches are based on the study and generalization of the fundamental provisions of the theory and practice of innovative processes, so the selected methods are being mentioned in the O3 block Innovation, Research and Development, Technological Change, Intellectual Property Rights within O31 'Innovation and Invention: Processes and Incentives'.

Justification of approaches and drawing the conclusions in the framework of the present research are being performed by a set of methods specified in the block D Microeconomics, namely the justification of managerial decisions on joint innovation activities D7 'Analysis of Collective Decision-Making', D70 'General'.

Identification and systematization of the interaction factors within the innovation processes allows business entities to ensure the benefit from development potential, thus the methods applied relate to the D2 block 'Production and Organizations' and D25 block 'Intertemporal Firm Choice: Investment, Capacity, and Financing'.

The main material

In the methodological regulations on innovation statistics in Ukraine [Methodological provisions on statistics of innovative activities, 2015], active cooperation with other enterprises or organizations within the innovation projects is referred to as cooperation on innovation issues or innovation cooperation. According to the requirements of these regulations, entering into contacts without having evidenced the joint activity shall not be deemed as cooperation.

In the framework of the research, the concept of "interaction within innovative processes" shall be understood as a set of joint actions (relations) of subjects of innovative activity while creating, mastering, using and distributing the innovations focused on the improvement of efficiency and performance of innovative process.

The essence of interaction is manifested in the fact that the subjects coordinate their interaction within the processes of innovation activity management, while the particular result of each of them does affect the behaviour of the other participant and the innovation process as a whole. Such active relations influence the dynamic result of innovations, creating an integrated system, while interacting with each other as well as with the external environment.

Interaction within innovations may unite direct or other types of competitors, and competitive relations are possible when the resources remain within one system of creation of an innovation. Thus, an interaction of three types emerges [Brykova, 2006]:

- competition as a process of permanent competition between manufacturers, which stimulates their innovation activity;
- creation of innovation and production networks aimed at the transfer of information and technologies through building of informal links, cooperation and partnership of innovation market participants;

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– a transaction that represents the exchange of goods and services, primarily technological, being carried out between economic entities.

The goals of interaction building are acceleration of processes at all stages as well as optimization of the result of efforts.

The participants in the systems of cooperation are those who can offer the necessary parameters of cooperation and meet the established criteria and goals of the innovation process. Interaction participants (partners) are representatives of various spheres of activity, legal entities or individuals, their associations (buyers, suppliers, competitors, sellers, consultants, customers, investors, contractors, etc.) as well.

Fig. 2 shows the conceptual basis for the interaction building within innovation processes at the strategic, tactical and operational management levels.

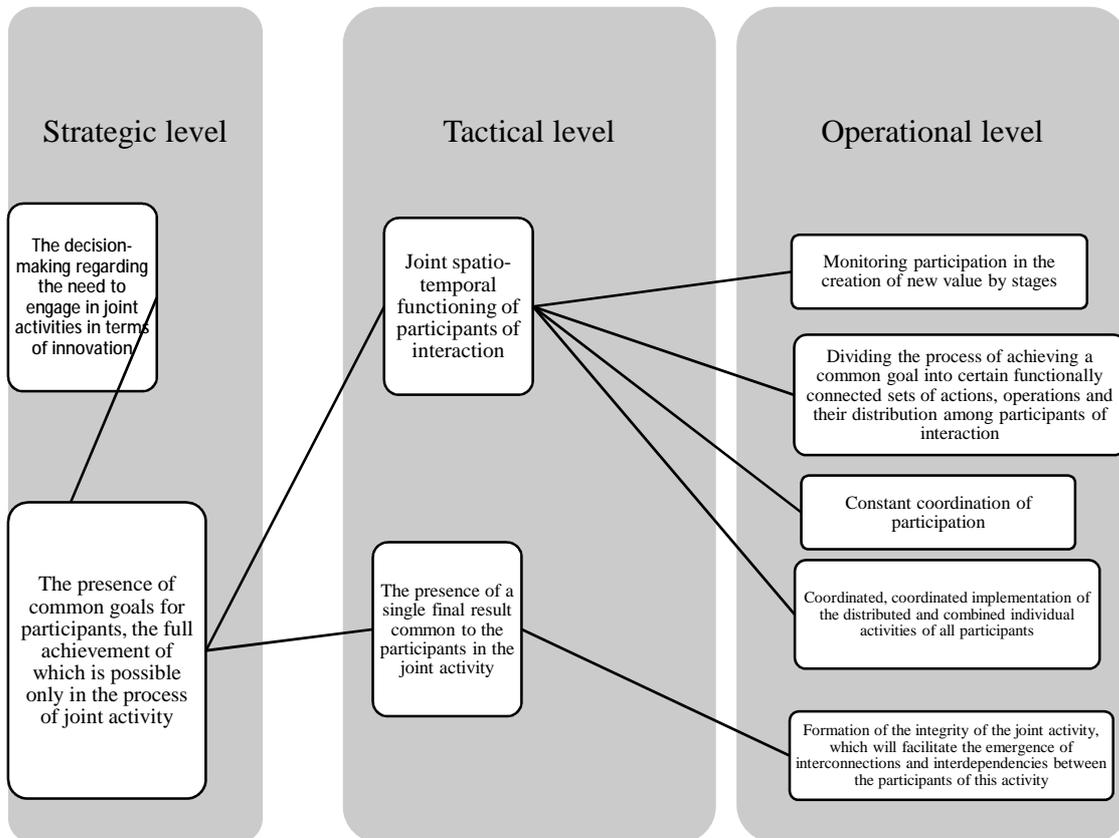
The decision-making regarding the need to engage in joint activities in terms of innovation is to be attributed to the strategic management level.

The strategic level also includes the procedure for linking the goals and objectives of different partners in different temporal dimensions.

Cooperation is preceded by a mandatory analytical phase required to identify the benefits and threats of participation in a partnership. This monitoring is performed individually for each entity based on its own innovation performance and potential. However, a list of driving powers (factors) may be typical and justified aiming to improve the efficiency of innovation management.

When substantiating the expediency of transformation of an independent subject of innovative activity into a partner within the system of interaction, it is appropriate to apply the concept of the usefulness of building cooperation.

In the process of building interaction between participants in the framework of innovation activities, the keystone principles of interaction marketing shall be focused on (fig. 3).



*Fig. 2. Conceptual basis for the interaction building within innovation processes**

* Developed by authors

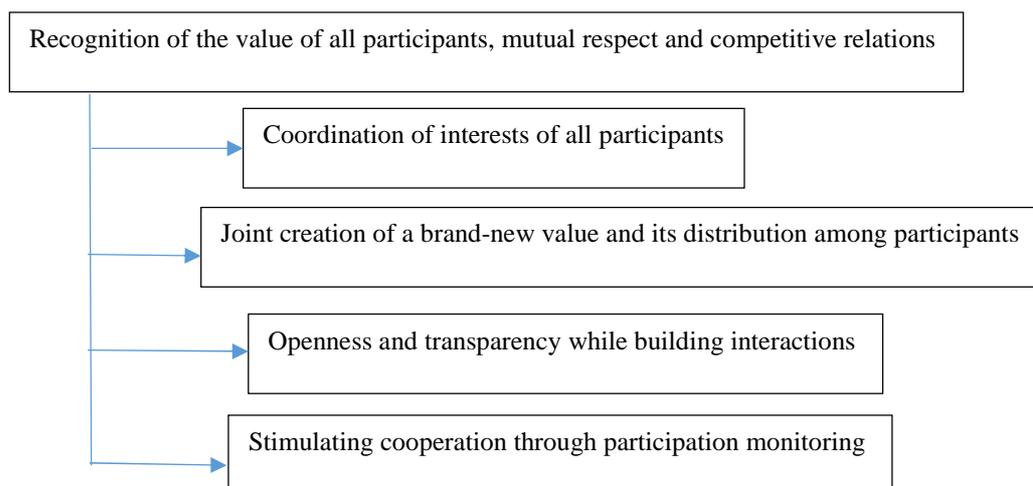


Fig. 3. Principles for Building Cooperation on Innovation Issues*

* Developed on the bases of [Sviridova, 2013]

Factors are a condition, a driving force, the cause of a process, determining its nature or one of its main features [A great explanatory dictionary of modern Ukrainian, 2005]. Correspondingly, the factors of interaction are the driving forces of the formation of actions or other active relationships

that facilitate the determination of joint activities within innovative processes, ensuring their success, consistency and efficiency.

Table 1 provides the classification of interaction building factors according to a number of shared features.

Table 1

Characterization of the cooperation building factors within innovative processes by groups of attributes

Attribute 1	Types 2	Comments 3	Examples of factors 4
Place of origin	Internal	Are being formed in the internal environment of a subject	Qualification of employees
	External	Are being formed in the external environment of a subject	Level of competition in the innovation market
Type of influence	Positive	A factor has a positive impact on the result of the innovation process	Availability of own patents
	Negative	A factor has a negative impact on the result of the innovation process	Lack of access to sources of raw materials
Direction of influence	Direct	A factor directly affects the flow and outcome of the innovation process.	Number of consumers-innovators on the market
	Indirect	A factor indirectly affects the flow and outcome of the innovation process.	Consumer income
Management opportunities	Manageable	The effect and magnitude of a factor may be changed as a result of an action	Resources used
	Unmanageable	The effect and magnitude of a factor may not be changed as a result of an action	Credit resource cost
	Partly manageable	The effect and magnitude of a factor can be slightly altered as a result of a targeted action programme	Cost of the resources used

1	2	3	4
Source of knowledge	Objective	The effect of a factor arises and exists regardless of the characteristics of the person making the management decision	Company market share
	Subjective	The effect of the factor is manifested in connection with the individual features of the person making the management decision	Brand awareness
Duration of influence	Permanent	The effect of a factor is permanent	Company location
	Discrete	The action of a factor occurs when the conditions of its action are being repeated	Resource price
	Non-recurrent	The factor has only affected once	Types of statutory activities
Source of formation of the factor that causes the need to find a partner in the innovation activity	Cost	The effect of a factor is determined by the amount of expenditure	Cost of innovation
	Property	The effect of a factor is determined by the availability and volume of tangible and intangible assets	Amount of own fixed assets for implementation / production of innovative products
	Information and communication	The effect of a factor is determined by indicators of information support and communication provider	Distribution channel maturity
	Quality	The effect of a factor is defined by indicators of management quality, business processes and production	Level of enterprise management efficiency
	Market	The effect of a factor is determined by the parameters of the state and dynamics of the innovation / innovation market itself	Development of innovation infrastructure

* Developed by authors on the basis of [Khimchenko, 2013; Zharovska, 2015; Yashkina, 2013; Prylutska, 2014]

The direction of action allows the grouping of factors into external and internal factors depending on the environment in which they occur. The external environment is the force that occurs outside the subject and affects its activities. The external environment includes other subjects of the market and a set of state and interstate institutions, conditions that operate and create the environment of the subject of innovation. It is divided into the macro, meso- and micro environment.

V. B. Ivanova [Ivanova, 2017] considers the following to be the factors of macroeconomic development influencing the innovation activity: factors characterizing the general economic level of development; factors characterizing the level of industrial development; factors characterizing the

level of labour market development; factors characterizing the level of scientific and technical sector development.

A. M. Khimchenko [Khimchenko, 2013] considers organizational structure (owners, management, employees) and internal situational factors (finance and accounting, resource provision, personnel factor, production factor, product and process development factor, marketing) as internal environment factors.

In terms of the nature of impact, factors can be divided into positive (stimulants) and negative (distimulants), which do not significantly affect the innovation process.

The factors of resistance to innovations, which can be attributed to negative factors, are

considered in detail by Popov S. A. [Popov, 2012] in his work “State management innovations of mass character: systematization of resistance factors”. The author systematizes such factors according to the features that relate to innovation, the authority and the key types and ways to support the process of their implementation, current and innovative activities as well.

Since 2007 the survey of innovative activity of enterprises and organizations is carried out with the help of a special EUROSTAT questionnaire. This survey allows for the identification of data on innovation cooperation with scientific, educational institutions and enterprises. Observations according to Form No. 1NN-Survey on the innovation activity of an organization (enterprise) for the relevant period provides data on factors that hold innovation activity [Methodological provisions on statistics of innovative activities, 2015].

Considering the direction of impact, factors can be divided into direct and indirect ones. Most commonly, the factors of direct influence include quantitative and qualitative indicators and parameters of functioning of internal environment of an enterprise and factors of external microenvironment.

Zharovska N. Yu. [Zharovska, 2015] considers measures of direct regulation of innovative development as factors of direct influence, while institutional regulation of innovative development of enterprise as indirect factors.

According to the sources of knowledge regarding the nature of the factors, the latter can be divided into objective and subjective.

Subjectivity of factors arises in connection with the manifestation of the subject's ideas about the cause of the issue, feelings, beliefs and desires of the subject. Objectivity of factors is confirmed by the fact of its independence from the subject. The objective factors include the state of the environment, geographical position, natural and climatic conditions of innovation activity, while the subjective factors include scientific potential, economic situation, and human resources. The main objective factors include: the gap between scientific and technological base of production; economic ineffectiveness of innovations; irresponsiveness of scientific and design centres to

the practical needs of production; lack of personal interest of certain groups of researchers and workers towards innovations; imperfection of management and marketing methods; failure of the education system to meet modern requirements of training researchers and managers of production; shortcomings of legal protection of intellectual property. The subjective factors are as follows: lack of adequate comprehension of the development prospects of the keystone spheres of human activity; disregard of theoretical knowledge; vacancy of mind; rejection of innovations; fear of risk [Voronkova, 2008].

In terms of duration, the factors are divided into those that have a one-time effect (non-recurrent), those that permanently (permanent) and periodically (discrete) affect the process and the result parameters.

The factors of development of cooperation between institutional environment and innovative entrepreneurship in Ukraine are highlighted by I. Prylutska [Prylutska, 2014]. In particular, this author identifies the following factors of interaction as political and legal, scientific and technological, innovation, economic, socio-demographic, cultural, and mentality ones.

Sticking to the basic principles of interaction referred herein, it was proposed that the factors that make it necessary to find a partner in innovation shall be grouped as follows:

1. Cost
2. Property
3. Information and communication
4. Quality
5. Market

The cost factors cover those factors that are directly generated by the costs of the innovation process stages and can be measured in terms of money.

The cost factors include:

- innovation costs;
- borrowing costs (borrowed money);
- cost of used resources;
- opportunity of resource mobilization;
- lack of funding from external sources.

According to the Instruction on completing the State Statistical Observation Form No. 1-Innovation, the concept of “innovation costs” provides for the definition of costs associated with

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research and development / design works; the production of a prototype; laboratory and market testing of innovative products; technological preparation of production of innovative products and the promotion of products on the market and their subsequent distribution.

Financial resources may be allocated to innovation activities in the form of borrowed funds, funds received for irrevocable use, funds received for the performance of a specific order, as well as in the form of the company's own resources. In connection with high risk of innovative processes cost of their financing is rather high. Besides, immaturity of the domestic financial market as well as its instruments lead to considerable complications for industrial enterprises while using of external sources, therefore, for financing of innovations the Ukrainian subjects benefit from, mainly, their own means.

Besides, it makes sense to identify factors related to the volume and availability of property of the innovation subject. Assets are not only means and objects of labour but also an element of relations in which assets participate in the innovation process and create added value that can be used in the following innovation activities, i.e. intangible assets. The common elements that form property are divided into two groups: tangible and intellectual capital. Tangible capital arises from the interaction of fixed assets and working capital as well.

The group of property factors includes:

- Lack of own fixed assets (current assets) for implementation / production of innovative products,
- lack of intangible assets (patent, copyright, design rights, trade secrets (know-how), trademarks, service marks)
- lack of basic and auxiliary research equipment.

For development of innovative processes and building the interaction systems necessary conditions are sufficient volume of information maintenance: formation of system of an information exchange between the organization and external environment and implementation of modern information systems. Information and communication factors shall build-up cooperation with counterparts of an enterprise,

the established circle of strategic consumers, distribution channels, etc.

The informative and communicative factors are as follows:

- scope of information and technology;
- scope of information on the markets;
- immature consumer base;
- distribution chain maturity;
- market database parameters for the market as a whole and for its individual customers;
- level of the internal and external communication systems;
- level of brand awareness within the market as well as among market participants (reputation of the enterprise, customer base, commitment of consumers, order portfolio, franchise agreements, license agreements).

Quality factors are the technologies, methods and processes that contribute to the efficiency of innovation activities of an enterprise through quality management. The quality indicators shall include parameters of products and processes of innovative activity management.

The quality factors are determined not only by the quantitative composition of the personnel, directly or indirectly related to the innovative activity of an enterprise, as well as its qualitative characteristics, i.e. a set of creative abilities, problem solving skills, leadership, entrepreneurial and managerial skills of the personnel. Thus, quality factors referred herein have many common features with the factors of formation of intellectual capital of the subject of innovative activity. In the framework of a perspective of increase in efficiency of innovative activity as a complex classification of factors of intellectual capital management was carried out by H. O. Shyvanenko [Shvydanenko, 2016].

The quality factors that create the need for collaboration include:

- lack of work force;
- manufacturing experience;
- insufficiency (lack) of the research base;
- enterprise management performance level;
- supply chain performance;
- level of collective knowledge of employees of the enterprise, their creative abilities, opportunity to solve issues, leadership qualities, entrepreneurial and managerial skills;

- level of cross-functional cooperation in research and development;
 - expertise in the innovation marketing.
- Thus, the following are the market factors:
- number of professional intermediary agencies (venture capital companies, marketing and advertising agencies).
 - innovation infrastructure development;
 - market competitiveness level;

- innovation products demand;
- innovation demand emerging.

Fig. 5 demonstrates a schematic representation of the interrelationships between the identified factors of the necessity to find a partner to carry out an innovation processes. The affiliation of individual factors to the classification groups justified in Table 1 is also highlighted.

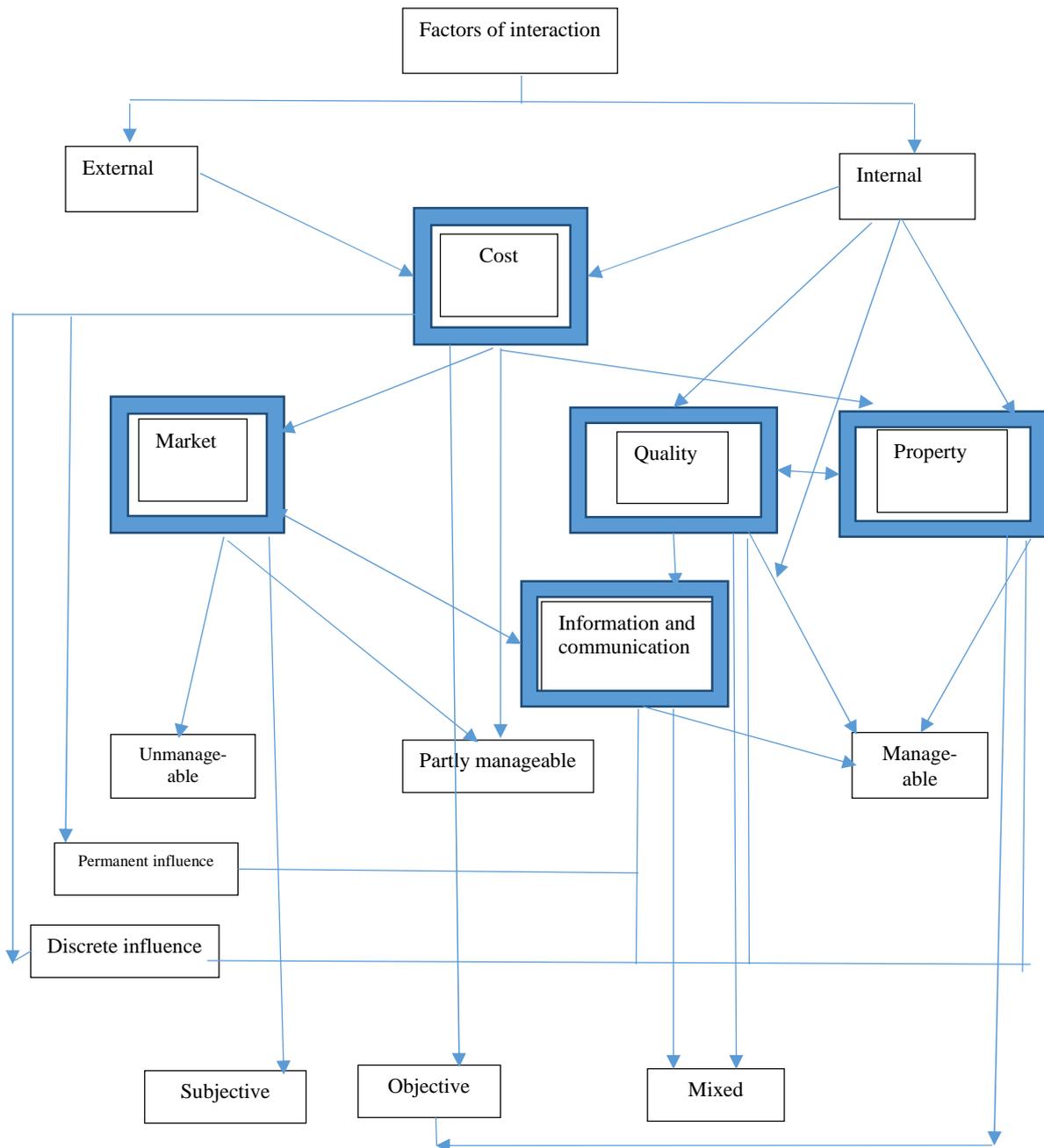


Fig. 5. Schematic representation of the interrelationships between the identified factors of the necessity to find a partner to carry out an innovation processes *

* Developed by the authors

In particular, cost factors shall be attributed simultaneously to the factors of the internal environment (features of innovation activity within the enterprise, innovative product of the enterprise, innovation management system) as well as to the factors of the external environment (rate of credit resources for financing, level of profitability of the internal market of bonds/ shares). Yakovleva-Melnik N. developed recommendations for managing cost factors to manage distribution of foreign innovative capital depending on the phase of his “cycle of life” [Yakovleva-Melnik, 2019].

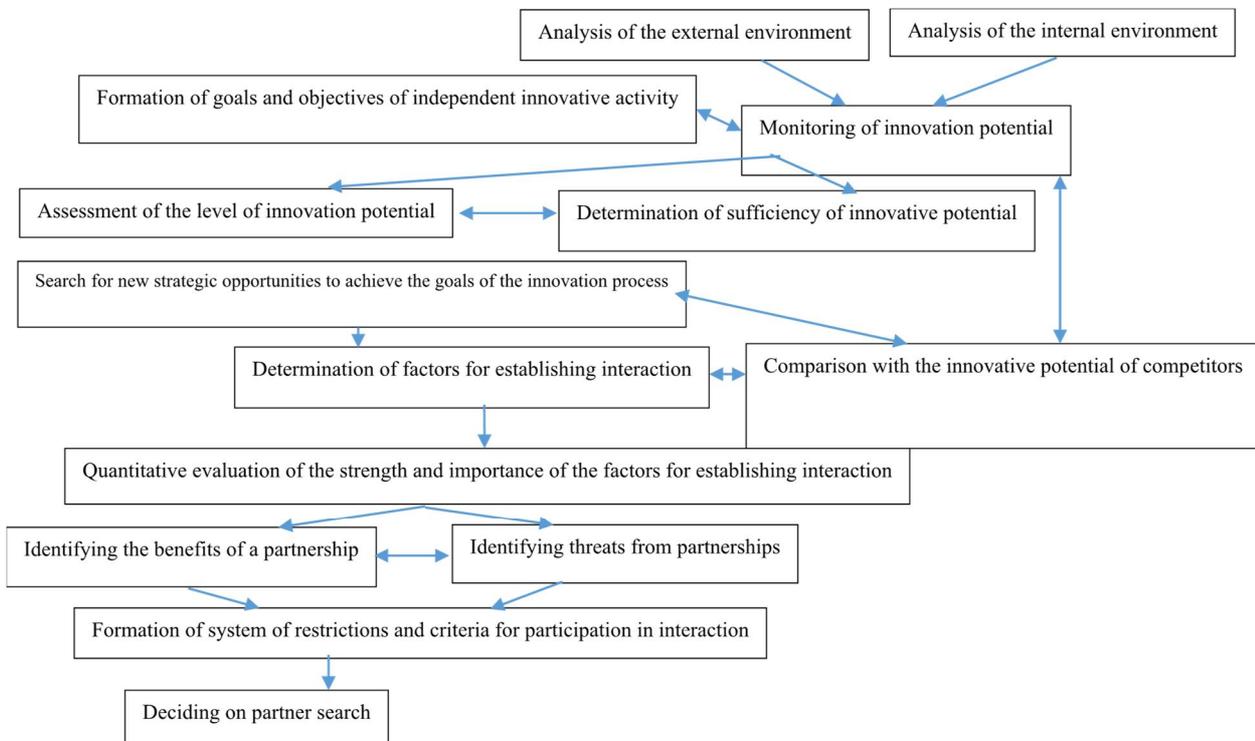
The cost factors are closely related to other factors and affect other groups of factors. The size of expenditures on innovations determines the level of quality factors, the level of security of the subject's property and completeness of information support, the establishment of communications with other market counterparties as well. Petrovych, Y. [Petrovych, 2019] convinces in its work the importance vital socially – economic and production tasks, reasonable investment support for project activities, proper staff training and retraining.

While the cost factors can be categorized unambiguously as objective factors of interaction,

the quality, market and information and communications technology factors are either mixed (depending on the valuation methods) or being represented as subjective ones.

We have developed the classification of interaction factors based on both existing grouping features, having supplemented it with new ones. The new feature “a source of the factor formation” allows to consider various functional and resource aspects of innovative activity in the most complex way. The groups of factors by sources of formation were singled out, as well as the presented scheme of interrelations shall form the basis of the mechanism for establishing cooperation between innovation subjects.

For the formation of interaction within innovation processes, subjects shall justify the system of factors on the functional aspects of innovation activity, determine the importance of each of them for the achievement of the goals of the innovation process, and evaluate the power of influence of each factor by the determined criteria. The general sequence of formation of the system of factors to substantiate the need to find a partner within innovative processes is shown in Fig. 6.



*Fig. 6. The place of factors of establishing interaction in innovation processes **

* *Developed by the authors*

Having taken into account the nature of decisions regarding cooperation building, it is important to stress the assessment of the features of the external and internal environment in order to identify the strategic opportunities and threats of the innovative activity subject.

The monitoring of the subject's innovative potential shall provide the top management with information on the enterprise's innovative potential as well as the methods and opportunities for it to become more sophisticated and effective. According to the results of the monitoring of the innovative potential of the enterprise, it is possible to develop an acceptable strategy of innovative development of the enterprise, with the help of which the goals and mission of the enterprise are to be achieved in the course of the implementation of the innovative potential.

The monitoring of innovation potential shall be seen in the context of the strategic opportunities that an enterprise has to offer to identify real opportunities for independent innovation activities.

The results of monitoring of the innovative potential of an enterprise provide grounds for making a decision on independent achievement of innovation development goals or the need to find a partner. Available scope and quality of resources, researches concerning the information on competitors, a market conjuncture and technological development of an enterprise are key criteria for the corresponding economic decision-making.

Conclusions

The factors of cooperation between subjects that are considering joint innovation activities' implementation have been suggested to be grouped according to a certain number of characteristics. The identification of these classification features should contribute to a better understanding of the mechanism of innovation cooperation.

The authors have profoundly considered the rationale for the "source of origin" identification. According to this criterion, all factors are divided into five groups: cost, property, information and communication, quality and market.

The cost factors are being determined on the basis of parameters of the cost of implementation of individual stages and the process as a whole. The property factors are being grouped based on

parameters of provision of the subject of innovative activity with tangible and intangible assets. The information and communication factors are formed on the basis of parameters of information support of the subject and parameters of communication base for building relations with market participants. The quality factors which are considered while establishing interaction, are defined on parameters of quality of performance of particular processes within a business model used by the subject, and quality of initial resources needed to carry out an innovative activity. The market factors are defined by parameters of a condition and development of the market environment for development and commercialization of innovation.

The identification of the benefits and risks resulting from the participation in the innovation subject cooperation system shall be followed by a quantitative assessment of the power and significance of the factors. This is what the following research by the authors will be dedicated to.

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