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DEVELOPMENT OF THE INFORMATION SUPPORT MECHANISM OF ENTERPRISE INVESTMENT ATTRACTIVENESS

РОЗРОБКА МЕХАНІЗМУ ІНФОРМАЦІЙНОЇ ПІДТРИМКИ ІНВЕСТИЦІЙНОЇ ПРИВАБЛИВОСТІ ПІДПРИЄМСТВА

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In this article, a fairly new concept of investment attractiveness (IA) is considered. Gaps in the approaches of foreign and Ukrainian scientists to this concept and methods of its evaluation are revealed. In order to improve the quality of management of the company's investment activity, it is proposed to introduce an information support mechanism. Such a mechanism enables managing IA with regard to the hierarchical nature of this process and involves choosing indicators that make it possible to objectively characterize the level of attractiveness of corresponding enterprises. Since the information support mechanism of the system for managing IA is characterized by a high uncertainty level, incompleteness of necessary information and, consequently, the lack of a quality diagnosing of the data available, a Decision Support System (DSS) for managing IA must be sufficiently rich in content and accessible for Decision Maker (DM), who makes decisions on the level of IA.

Keywords: *investment, investment attractiveness, investment activity, information support mechanism, Decision Support System, Decision Maker.*

У цій статті розглядається досить нова концепція інвестиційної привабливості (ІП). Виявлено прогалини в підходах іноземних та українських вчених до цієї концепції та методів її оцінки. Для підвищення якості управління інвестиційною діяльністю компанії пропонується запровадити механізм інформаційної підтримки. Такий механізм дозволяє керувати ІП та включає в себе вибір показників, які дозволяють об'єктивно характеризувати рівень привабливості відповідних підприємств. Оскільки механізм інформаційної підтримки системи управління ІП характеризується високим рівнем невизначеності, необхідною інформацією, некомплектністю та, відповідно, відсутністю якісної діагностики наявних даних, система підтримки прийняття рішень (СППР) для управління ІП повинна бути достатньо багатою на вміст і доступною для прийняття рішень особою, яка приймає рішення (ОПР).

Ключові слова: *інвестиції, інвестиційна привабливість, інвестиційна діяльність, механізм інформаційної підтримки, система підтримки прийняття рішень, розробник рішень.*

В этой статье рассматривается достаточно новая концепция инвестиционной привлекательности (ИП). Выявлены пробелы в подходах иностранных и украинских ученых к этой концепции и методов ее оценки. Для повышения качества управления инвестиционной деятельностью компании предлагается ввести механизм информационной поддержки. Такой механизм позволяет управлять ИП и включает в себя выбор показателей, позволяющих объективно характеризовать уровень привлекательности соответствующих предприятий. Поскольку механизм информационной поддержки системы управления ИП характеризуется высоким уровнем неопределенности, необходимой информацией, некомплектностью и, соответственно, отсутствием качественной диагностики имеющихся данных, система поддержки принятия решений (СППР) для управления ИП должна быть достаточно богатой на содержание и доступной для принятия решений лицом, принимающим решение (ЛПР).

Ключевые слова: *инвестиции, инвестиционная привлекательность, инвестиционная деятельность, механизм информационной поддержки, система поддержки принятия решений, принимающее решение лицо.*

Formulation of the problem. The modern economy is characterized by global processes indicating its crisis state. This period is considered the most favourable for restructuring the activities, which is connected with the systemic factors of influence of investment activity.

Competitiveness of industry and the whole country depends on the competitiveness of enterprises. Competitiveness is the base of the European Union economy. Fluctuations in economic activity forced business to change traditional methods of organization and management and to search for new tools, knowledge, resources, and competences in order to strengthen its position and to ensure the competitiveness of the enterprises.

In this regard, scientists pay special attention to a fairly new concept – investment attractiveness. The aim is to develop the methodological mechanism ensuring information system of investment attractiveness of the company. To achieve this goal, the following general scientific and special methods are used: theoretical synthesis, analysis, and synthesis – to study the theoretical foundations of the system of investment attractiveness; abstract logical – for theoretical generalizations and drawing conclusions.

Let us start scientific work on this problem by considering the concept of "investment attractiveness".

Analysis of recent research and publications. L. L. Igonina considers that conditions of carrying out the investment process in the market economy take specific forms, which reflects the peculiarities of the interaction of subjects of investing in the system of market relations:

– availability of a significant, with a diversified by forms of ownership, the structure of investment capital characterized by a predominance of private investment capital compared with the state one;

– availability of an intersectoral network of financial intermediaries, which facilitate the realization of investment demand and supply;

– availability of a developed market for objects of investment (investee);

– distribution of investment capital between objects of investment according to economic criteria for evaluating the investment attractiveness [1].

As the effectiveness of the investment process and the level of investment object of IA are interconnected, we believe it is important to determine the essence of the definition of "enterprise investment attractiveness" and related categories to identify quantitative and qualitative indicators to be affected in order to build a hierarchical system of managing IA.

There is no unified approach to defining IA in economic literature. The detailed analysis of the proposed by scientists structure of the IA concept and methods of its evaluation has revealed significant differences. Thus, L. S. Valinurova and O. B. Kazakova argue that the term of "investment attractiveness" is used without contextual and categorical content equating it with the investment risk, investment potential or financial flow. Therefore, the authors propose to define IA as "a set of various objective signs, properties, means, capabilities of the economic system determining the potential solvent demand for investments" [2]. At the same time, scientists consider the concepts of IA, investment activity, and investment risk to be related ones.

Investment activity is a ratio of the current investment volume to the previous one; it can be regarded as an auxiliary element in the course of studying problems of investment character without analysis and evaluation of their properties and without regard to their impact on other components of the investment process, as well as the result of interaction of investment supply and demand. Thus, IA is a "general characteristic of strengths and weaknesses of the investee from the standpoint of the investor according to the criteria formed by him" [2].

A similar view is held by M. I. Leshchenko, V. O. Demin, I. I. Maruschak, who define IA as an integral feature, combining:

– investment capacity – the volume of investments required to meet the demand, which is determined by the availability of products with specific consumption characteristics and capital investments required for its production;

– investment favourability – a degree of the enterprise ability of a targeted using of investments and the ability of the best possible use of their own resources and capabilities;

– investment security – the indicator determined by the availability and functioning for a long time of legal documents regulating the terms of the enterprise and investor activity [3].

S. Yu. Nikonov believes that IA is "an integral characteristic of an individual enterprise, sector, region, state in terms of the development prospects, the profitability of investments, and level of investment risk". And, according to the scientists, the relevant concept is the investment potential – "a quantitative characteristic considering basic macroeconomic indicators, territory saturation by factors of production, level of the population income, and its consumer demand" [4].

A. S. Malovichko has a different view of the definition of IA. According to the scientist, IA is "a degree of a potential investor's ability to invest in the enterprise at certain characteristics of its economic activity corresponding to a pre-defined correlation of riskiness and profitability of the investment" [5]. I. O. Blank has a similar view and defines IA, as "general characteristics of advantages and disadvantages of investing in individual spheres and objects from the standpoint of an individual investor" [6].

E. I. Krylov considers IA an independent economic category, which is characterized by stability of the enterprise financial status, return on capital, share prices, and level of dividends, and is formed due to the competitiveness of products and client orientation of the enterprise. According to the scientists, the level of innovation activities within the strategic development is important for enhancing the enterprise IA [7].

In the opinion of F. M.-G. Topsakhalova, R. R. Lepshokova, D. A. Kojchueva, IA should be considered in its narrow and broad meaning. On

the one hand, IA is an integral result of reflecting the dynamics, current and projected state of the entity, and on the other hand, it is a system of socio-economic, political, financial and administrative relations, which arise in regard to the expediency of investing into a particular economic entity. That is, this is an economic category, which is characterized by the efficient use of resources, capacity for self-development based on increasing the return on capital, technical and economic level of production, quality, and competitiveness of products. Also, the scientists believe that IA defines a set of different factors, which list and impact may differ and vary depending on the composition of investors, as well as industrial and technical features of the invested production, quality of its economic development both in the past, at present, and in the future [8].

O. V. Bandurin and B. A. Chub, S. I. Basalaj and L. I. Khoruzhij use the term of "investment attractiveness" to determine the reliability of borrowers by grouping them on the basis of indicators of formal and informal evaluation of their activity [9, 10]. The analysis of the proposed interpretations of IA allows revealing such unresolved questions:

– the lack of characteristics of IA as a structure-forming component of the system of managing IA (a complex of institutional, organizational, informational criteria for the evaluation of individual enterprises);

– IA is not considered as an active component of the process of "purchase and sale": the higher the market value of the investment object, the higher the level of IA;

– the lack of IA description from the position of the systemic and purposeful approach: the level of enterprise IA is informationally significant for both the investors and investee, therefore, to determine this level, there should exist a corresponding database and an exhaustive list of factors influencing the level of the enterprise IA.

The most popular modern definition of investment attractiveness was proposed by The Gdańsk Institute for Market Economics (iBNGR). According to the authors, investment attractiveness is understood as a set of incentives for investment, which offering wide-ranging benefits that may be obtained when conducting business activities in certain areas. They result from the specific features of the area where a given economic activity is being developed. These benefits are defined as location factors too. This is a category, which has an essential impact on the decision-making process related to business activity locations. From this perspective, the region, which is attractive for investors, is the one that makes the best location for foreign direct investments. Hence, it may be concluded that investment attractiveness has a real character and is reflected in investors' decisions about transferring their capital.

According to H. Godlewska-Majkowska, when identifying a set of possible locations for investments, it is vital to examine the potential investment attractiveness of an enterprise and a region. A report entitled "Reinventing European Growth. Ernst&Young's 2009 European Attractiveness Survey", in turn, defines the perceived investment attractiveness as a combination of an image of a given area and investors' confidence [11].

L. Kupiec, when analysing the term "attractiveness", claims that it means possessing such attributes, which appeal, attract, and arouse interest due to their uniqueness and exceptionality. Attractiveness is thus a passive notion but it can be turned into an active one when we start using it to stimulate the environment. It is a factor that can attract and encourage various business activities. It enables different forms of cooperation and implementation of all innovations. The author compares attractiveness with a notion of competitiveness, which involves rivalry, competition, and winning or even fighting against an economic entity that operates in a similar area of business. Competitiveness, unlike attractiveness, is active and sometimes resembles a fight. It is, therefore, possible to state that we can compete on our attractiveness [12].

A. Nizielska considers IA means having good conditions for establishing business activity in a certain area [13].

According to the report of the annual research project carried out by the team of GIME in cooperation with the Konrad Adenauer Foundation, investment attractiveness is Multidimensional matter, consisting of many factors and indicators [14].

Zakirova E. defines investment attractiveness as an independent economic category, a set of external and internal factors, as well as qualitative and quantitative indicators of the investment potential of any level of the economic system – state, regional, sectoral, and the level of economic entities [15].

Solving unresolved parts of the common problem. In addition, the presented definitions are mutually complementary, so we propose to consider IA as an economic category characterized by a combination of the specified by the investor qualitative and quantitative indicators, the relation of which influence the final result of investing, which is conditioned by a certain level of profit associated with the implementation by the enterprise of its investment activity.

As Canadian Ambassador to Ukraine Roman Vashchuk said, Canadian investors express a great interest in the arrival or expansion of activities in Ukraine. At the same time, they are also interested in certain guarantees of investment protection.

And as the effectiveness of managing IA is largely dependent on its information support, as in the process of making management decisions, the quality of information influences the investment figures, which form the level of the enterprise performance and its rate of growth, there is a need to develop such a mechanism.

Presentation of the main research material. Information support of investment activity is "a process of continuous purposeful selection of appropriate informative parameters required for carrying out analysis, planning, and preparing operational management decisions on all aspects of the enterprise investment activity" [16].

The system for information support of managing investment activity is defined by sectoral features of the enterprise, its organizational and legal form and scope of diversification of investment activity. Specific indicators of the information support system for managing investment activity of enterprises are formed using external and internal sources of information. Indicators that are formed from external sources are divided into indicators that:

– determine the pace of the sector development;

– reflect the situation of the investment and stock markets;

– describe the condition of the market for monetary instruments of investment;

– reflect the activities of contractors and competitors.

Indicators of the information support system for managing enterprise investment activity associated with internal sources are divided into:

– indicators determining the level of enterprise economic activity;

– indicators characterizing the level of enterprise financial stability;

– normative and planned indicators of the enterprise.

Using such indicators allows creating a purposeful system of information support for managing enterprise investment activity oriented both to strategic investment decisions and effective management of enterprise investment activity [16].

On the other hand, an important component of any management system is a system of planning, control, and information support. The source of information within the information support system is the accounting system. In order to build an effective information support system, it is necessary to determine the need for information, collect and prepare it with the help of the accounting system, and provide this information as intended by means of the reporting system [17].

In this regard, management of IA is a functional subsystem of control over the flow of investments both on the part of the investor and on the part of the recipient of the investment resources. In fact, the investment flow intensity depends on local investment attractiveness of the investee, region or sector and investment attractiveness of the country in whole.

Depending on the intensity of the investment flow there created an information network, the elements of which correspond to indicators characterizing the investment activity. The maximum flow in the network corresponds to the maximum investment flow. Therefore, with the purpose of managing the level of IA, it is sufficient to control the information flows, which accompany the investment flows.

To predict the flow of information, it is important to simulate the development of investment flows corresponding to the stable part of the investment network. Conducting such computing experiments will allow finding the best solutions for both the investor and recipient of investments.

Thus, management of IA is impossible without an appropriate Decision Support System (DSS) to ensure supplying investment resources (by the investor) or their use (by the investee). For this reason, the author proposes a mechanism for information support of the system for managing IA (Fig. 1).

Assuming that the main elements of DSS are known [18], we emphasize features of implementing the information support mechanism of the system for managing IA.

Firstly, the database must ensure the availability of all factors influencing the level of IA (at the level of the state, sector, enterprise), their diagnosing, open access to all accompanying information both of the investor and investee. It should be noted that the current system of collection and dissemination of statistical information does not satisfy the demand for it even partially. The situation is worsened by incompleteness, inaccuracy, unreliability, the ambiguity of statistical data, and the cumbersome bureaucratic apparatus, which does not allow obtaining necessary information for the analysis in proper time. Furthermore, the database must provide a whole complex of marketing and advertising/promotional activities, be a base for the mass media and for carrying out special activities (e.g., changing the perception dominant [19], psychological climate [20], etc.).

Secondly, the initial knowledge base has a quite specific character since it must ensure making a decision on optimization of IA on the basis of the existing database and for this purpose to produce a set of Pareto-optimal solutions [18]. Pareto-optimality corresponds to the multi-criteria evaluation of IA.

The system for managing IA is characterized by a hierarchical nature of goals, criteria, factors, and points of management, as well as a set of models providing for a specific diagnosis, analysis, and possibility of determining the level of IA and, consequently, developing methodological recommendations on increasing MTE IA based on incomplete, inaccurate, unreliable, ambiguous information. Therefore, a fuzzy base of initial knowledge of the production type with fuzzy conclusions is the most adapted one. The hierarchy of this base to some extent follows the hierarchy of the information support mechanism of the system for managing IA.

Determination of the level of IA and, consequently, the development of methodological recommendations on increasing IA and building an appropriate DSS requires the involvement of a wide range of models and methods borrowed from different fields of knowledge. DSS for managing IA is an intelligent system for processing data, the hierarchy of indicators, factors influencing them, and goals.

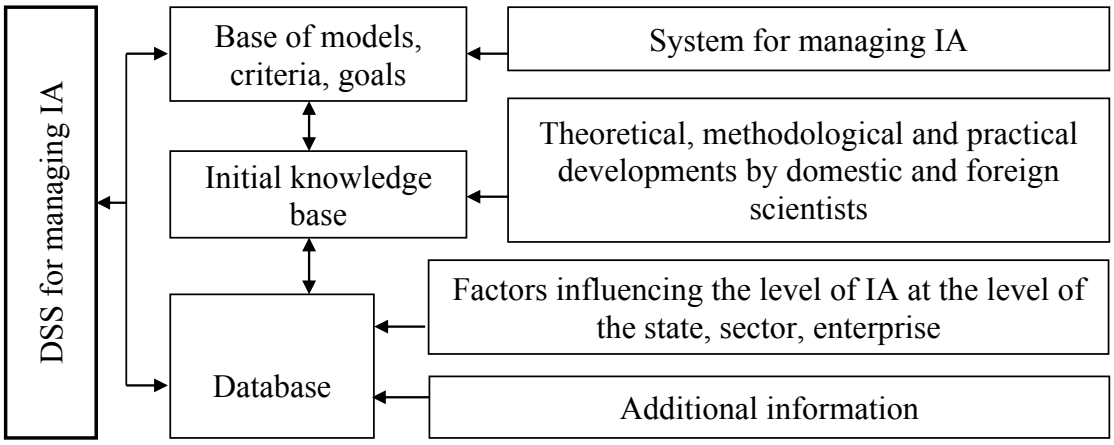

Figure 1. The information support mechanism of the system for managing IA

Due to the fact that the formation of global goals can be impossible, DSS for managing MTE IA has to deal with multi-purpose, multi-criteria hierarchical models, i.e., it must be able to evaluate the goals, indicators, factors influencing them and their integral estimates for different levels of the hierarchy of IA. Such hierarchical systems are complemented by additional information in the form of knowledge, professional experience and expert assessments of highly qualified investment professionals.

The information support mechanism of the system for managing IA was improved by using the method of introducing DSS. Unlike the existing mechanisms, the mechanism proposed by the author consists of:

– the base of initial data;
– diagnosing the base of initial data;
– knowledge bases;
– multi-criteria evaluation of the level of investment attractiveness.

Such a mechanism enables managing IA with regard to the hierarchical nature of this process and involves choosing indicators that make it possible to objectively characterize the level of attractiveness of corresponding enterprises.

Conclusions. Thus, the information support mechanism of the system for managing IA is characterized by a high uncertainty level, the incompleteness of necessary information and, consequently, the lack of a quality diagnosing of the data available. However, regardless of conditions of uncertainty, DSS for managing IA must produce coordinated management decisions aimed at optimizing the level of IA. The multi-criteria choice of optimal management decisions, the subjectivity of purposeful choice and inconsistent goals lead to making organizational management decisions related to inefficient use of resources, which complicates achieving the defined goals. Elimination of consequences of such decisions can require spending considerable resources.

DSS for managing IA must be sufficiently rich in content and accessible for DM, who makes decisions on the level of IA. Interest in obtaining investments contributes to filling the database with objects, which allows comparing, analysing, and simulating possible strategies of development.

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