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A Complex Approach to Evaluating the Innovation Strategy of a Company to Determine its Investment Attractiveness

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Abstract

Currently, innovations and the management's attitude towards innovations to a great extent determine the positions of big and small companies, and in particular – of start-ups. With the purpose of effective introduction of new technologies, inventions and know-how in the economic operations of such companies, a complex approach is necessary to innovative management. Given such an approach, at first, the components of the innovation strategy of a company are formed, followed by a complex assessment thereof and further use in making management decisions. Quantitative assessment of the components of the innovation strategy of the company – innovation climate and innovation position, as well as the innovative activity and innovative power – is necessary. It is proposed to use innovative power parameter as a complex assessment of the innovation strategy of a company; this parameter links all the enumerated innovative components together. In conclusion, an example is given and opportunities of applying the developed approach to evaluating the investment attractiveness of the company are considered. The subject company used in the example is a start-up industrial company in the energy field, planning to produce renewable electrical power sources – wind generators, which are manufactured using innovative technologies, protected with patents and know-how. Using the proposed complex approach, a quantitative assessment of the components of the innovation strategy of this company is performed and a conclusion is made as to the company's investment attractiveness.

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Keywords: innovation strategy, investment attractiveness, innovation potential, innovation climate, innovative position, innovative activity, innovative power, integrated assessment of the innovation strategy, innovative technologies, wind generator.

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1. Introduction

Investment attractiveness is the set of features, allowing a potential investor to assess, to what extent a particular investment object is more attractive than others, with the aim of investing the available funds. Pahomov (2005) believes that the key factors that a potential investor takes into account when choosing companies – objects for investments – and assessing the investment attractiveness are: manufacturing-technological factors, resources, institutional, regulatory and legal, infrastructural factors, as well as the export potential, business reputation, among others. Each of the aforementioned factors can be characterised with differing indicators.

Out of all parameters characterising the investment attractiveness of a company, under the current circumstances, the main parameters are those, which define the innovative activity. One of such parameters is the innovation strategy of a company (Rolik, 2009). The innovation strategy, innovations and innovative processes play a decisive role in the matter of acquiring and maintaining strengths of a company in a battle with the competition. Currently, innovations and the attitude towards innovations to a great extent determine the positions of big and small companies alike, including start-ups.

Management of innovative transformations provides for a certain order in choosing and implementing the innovation strategy: starting with determining the aim and ending with practical achievement of the aim. Implementation of the innovation strategy is supplemented with transforming and renewing the content and use of various resources and with redesigning the business processes, subject to novelties in managing and forming the organisational structure of the company. These transformations imply a transition from the innovation strategy to implementation of the innovation project. Upon deciding on all issues related to investments of the innovation project, it acquires the final shape in a form of an innovation programme.

The choice and implementation of the innovation strategy depends on the situation of the innovation potential, while its development can occur at the expense of components and elements of the internal environment of the company. Assessment of the innovative potential is carried out according to the scheme: resource-function-project, where the project implies an opportunity to roll out specific products. When evaluating the internal environment of the company, it is necessary to use detailed and diagnostic approaches. The external environment of the company is defined by the innovative climate, the impact of which on the innovative potential is determined according to the results of the STEP-analysis (Armstrong, 2006). The strategy of the innovation position of the company is determined through a combined analysis of the internal and external environment, namely, of the innovative potential and innovation climate.

In order to stay afloat in the market, an industrial company, by perceiving the weak signals of the external environment, must focus on meeting the client's needs. Moreover, to overcome the competition, the company must increase its innovative potential and become more attractive for investments (Rolik, 2009). At the same time, the company must select the best out of all competitors and through introduction of innovative technologies, inventions, and know-how, exceed all of the key components of the competitor's innovation strategy.

2. Components of the Innovation Strategy of a Company

2.1. Innovative potential

2.1.1. The Concept of innovative potential. Development of the innovative potential matches the path of development of the company and its structural units, as well as of all elements of the production-

economic system. Furthermore, a company's development is perceived as a response to changes in the external environment and hence has a strategic nature. The choice and implementation of the innovation strategy depends on the condition of the innovative potential, and therefore its assessment is a necessary managerial operation.

Lisin and Fridlyanov (2002) believe that the innovative potential of industrial companies consists of four parts:

- scientific and technical (technological) developments and inventions, self-achieved or acquired;
- infrastructure ensuring the passing through the novelty of all stages of the innovative cycle, its turning into a new introduction or innovation;
- external and internal factors, depicting interaction of innovative potential with other parts of the overall potential of the company and affecting the success of implementation of the innovative cycle;
- innovation culture, defining the personnel's level of susceptibility to novelties, the readiness and ability of the employees to implement them in a form of innovations.

Development of the innovative potential of a company as an integral system can be implemented only by developing the components of its internal environment. Therefore, an analysis of the internal environment of the company is necessary.

2.1.1.1 The structure of the internal environment of a company. The internal environment of a company is made of elements, forming its manufacturing and economic system. These elements are grouped into the following blocks:

- the product (project) block – the directions of operations of the company and the outcome in a form of products and services (projects and programmes);
- the functional block (the block of production functions and business processes) – the driver of transforming resources and operations into a process of work activity of the company's employees in all stages of the life cycle of goods, including study, development, production, sales, and consumption;
- the resource block – a set of material and technical, labour, informational, and financial resources of a company;
- the organisational block – the organisational structure, technology of processes of all functions and projects, organisational culture;
- the management block – the overall management of a company, the management system and style.

2.1.2 Approaches to evaluating the innovative potential. Evaluation of the innovative potential is obtained according to the scheme: resources (R) — function (F) — project (P). A project or a programme is the launching and implementation of a new product (service), a direction of operations.

2.1.2.1 The detailed approach. A detailed analysis of the internal environment and evaluation of innovative potential of a company are carried out generally during the stage of justification the innovations and preparation of a project for its fulfilment and implementation. Under circumstances of extensive labour intensity, it provides systemic and useful information.

2.1.2.2 The diagnostic approach. Time restrictions, lack of specialists, who are able to perform a systematic analysis, lack or unavailability of information about the company (especially when analysing the innovative potential of the competition) force the usage of diagnostic approaches to evaluating the innovative potential.

2.1.3 Measuring the innovative potential. To proceed with the task of evaluating the innovative potential, special questionnaires and surveys of varying detailed elaboration of parameters have been developed. General questionnaires with block evaluation are used (Table 1), in which experts give evaluation on a scale of 1 to 5.

Table 1. Evaluation of the status of innovative potential

No.	BLOCK COMPONENTS	Level of component status				
		Strengths		Weaknesses		
1. PRODUCT BLOCK						
(evaluation of quality, profitability, and sales amount of the product, status of the resource provisions and performance of functions – researches, development, production, sale, and service of consumers)						
1.1	Status of the product project No. 1	1	2	3	4	5
1.2	Status of the product project No. 2	1	2	3	4	5
1.3	Status of the product project No. 3	1	2	3	4	5
Summary evaluation of the status of the product block		1	2	3	4	5
2. FUNCTIONAL BLOCK						
(components of the functional block – stages of the life cycle of products)						
2.1	Research, development, based on experience and experiments, trials	1	2	3	4	5
2.2	Production: principal and auxiliary	1	2	3	4	5
2.3	Marketing and sales activity (sales)	1	2	3	4	5
2.4	Service works for consumers	1	2	3	4	5
Summary evaluation of the status of the functional block		1	2	3	4	5
3. RESOURCE BLOCK						
MATERIAL-TECHNICAL RESOURCES						
3.1	Inputs, materials, fuel and energy, components	1	2	3	4	5
2)	Premises and jobs, communication and transport	1	2	3	4	5
3)	Equipment and tools	1	2	3	4	5
Summary evaluation of the status of the material-technical resources		1	2	3	4	5
LABOUR RESOURCES						
3.2	Composition and competence of managers	1	2	3	4	5
2)	Composition and qualification of specialists	1	2	3	4	5
3)	Composition and qualification of employees	1	2	3	4	5
Summary evaluation of the status of the labour resources		1	2	3	4	5
INFORMATION RESOURCES						
3.3	Scientifically technical capacity; patents and know-how; scientifically technical information	1	2	3	4	5
2)	Economic information	1	2	3	4	5
3)	Commercial information	1	2	3	4	5
Summary evaluation of the status of information resources		1	2	3	4	5
FINANCIAL RESOURCES						
3.4	Possibilities of using financing from own funds	1	2	3	4	5
2)	Provision of operating assets	1	2	3	4	5
3)	Provision of funds for salary	1	2	3	4	5
Summary evaluation of the status of financial resources		1	2	3	4	5
SUMMARY EVALUATION OF RESOURCE TYPES						
3.1	Status of the material-technical resources	1	2	3	4	5
3.2	Status of the labour resources	1	2	3	4	5
3.3	Status of information resources	1	2	3	4	5
3.4	Status of financial resources	1	2	3	4	5
Summary evaluation of the status of the resource block		1	2	3	4	5
4. ORGANISATIONAL BLOCK						
ORGANISATIONAL STRUCTURE						
4.1	Configuration: the staff teams, range and levels of management	1	2	3	4	5
2)	Functions; composition and quality of work division	1	2	3	4	5
3)	Quality of internal and external, vertical and horizontal, direct and feedback links	1	2	3	4	5
4)	Relations: distribution of rights and duties in teams	1	2	3	4	5
Summary evaluation of the status of organisational structure		1	2	3	4	5
TECHNOLOGY OF PROCESSES FOR ALL FUNCTIONS AND PROJECTS						
4.2	Progression of technologies and methods used	1	2	3	4	5
2)	Level of automation	1	2	3	4	5
Summary evaluation of the status of technologies		1	2	3	4	5
ORGANISATIONAL CULTURE						
4.3	Communicative system and language of communication	1	2	3	4	5
2)	Traditions, experience and trust in abilities of the organisation	1	2	3	4	5
3)	Work ethics and motivation	1	2	3	4	5

Summary evaluation of the status of organisational culture		1	2	3	4	5
SUMMARY OF COMPONENTS OF THE ORGANISATIONAL BLOCK						
4.1	Organisational structure	1	2	3	4	5
4.2	Technology of processes	1	2	3	4	5
4.3	Organisational culture	1	2	3	4	5
Summary evaluation of the status of the organisational block		1	2	3	4	5
5. MANAGEMENT BLOCK						
5.1	General, functional, and project management	1	2	3	4	5
5.2	System of management: planning, organisation, control, motivation, coordination	1	2	3	4	5
5.3	Management style (a combination of autonomy and centralization)	1	2	3	4	5
Summary evaluation of the status of the management block		1	2	3	4	5
SUMMARY OF BLOCKS OF INNOVATIVE POTENTIAL						
1	Status of the product block	1	2	3	4	5
2	Status of the functional block	1	2	3	4	5
3	Status of the resource block	1	2	3	4	5
4	Status of the organisational block	1	2	3	4	5
5	Status of the management block	1	2	3	4	5
Summary evaluation of the status of innovation potential		1	2	3	4	5

The criteria for giving evaluation are as follows:

- 5 – the status is very good, completely satisfying the normative model for achieving the innovative aim – categorized as a very strong aspect of innovative potential;
- 4 – the status is good, satisfying the normative model, does not require changes – a strength;
- 3 – average, requires certain limited changes to ensure compliance with the normative model;
- 2 – poor, requires significant changes – categorized as a weak point in innovative potential;
- 1 – a very weak status, requires radical transformations – a very weak point.

2.2. Innovation climate

Innovation climate is the condition of the internal environment of an industrial company, contributing to or preventing from the achievement of the innovative aim. Innovation climate is manifested through influence on innovative potential.

2.2.1 Structure of the external environment of the company. In the structure of external environment of any industrial company, as a rule, a distinction is made between macro- and micro- environment.

In macro-environment, four strategic spheres are distinguished: the social sphere (S), technological (T), economic (E), and political (P). Their influence on macro-environment of the company and its innovative potential is determined from the results of STEP analysis.

Micro-environment of a company is the totality of strategic areas of immediate environment, as a composition of subjects, which directly interact with the environment and affect the status of innovative potential.

Analysis and evaluation of innovation macro-climate. The objects of analysis are the spheres of the external macro-environment, while the subject – their impact on the innovative aims and strategies, namely, determination of the innovation macroclimate.

If necessary, the object of analysis can be deepened at the expense of two vectors – the territorial scale and sectors. However, to a certain extent, these two vectors have already been taken into consideration in structures and characteristics of spheres.

In capacity of distal (indirect) surroundings, external macro-environment does not always directly affect the potential of a company. More often, the influence is transferred through the external macro-environment (proximal surroundings), which directly, immediately influence the company's potential.

Therefore, it is more accurate to establish that the influence of climate on a company's potential is the subject of analysis.

Analysis and evaluation of innovation micro-climate. The object of analysis – zones of micro-environment. The subject – their impact on the innovative aims and strategies through the impact on innovative potential, namely, determination of innovation micro-climate. External environment to the extent of proximal surroundings of the company and direct impact on it, namely, micro-environment, is manifested as the totality of strategic areas.

Analysis and evaluation of innovative climate in general. The measuring and analysis of innovation climate at a strategic level must be carried out with expert methods, by using Table 2. The evaluation of components and parameters of external environment are given by an expert on a scale of 1 to 5.

Table 2 Evaluation of the status of innovation climate

No.	COMPONENTS TO BE EVALUATED	Level of component status				
		Threats			Opportunit	
1. EVALUATION OF INNOVATION MACRO-CLIMATE (STEP analysis of strategic spheres)						
1.1	Social, natural-geographical, and communication sphere (social tension, transport, communications)	1	2	3	4	5
1.2	Technological and scientifically technical sphere (market of technologies and scientifically-technical information)	1	2	3	4	5
1.3	Economic and financial sphere (taxes, incentives, national investment climate)	1	2	3	4	5
1.4	Political and legal sphere (regional plans and programmes, legislative framework)	1	2	3	4	5
Summary evaluation of the status of the innovation macro-climate		1	2	3	4	5
2. EVALUATION OF INNOVATION MICRO-CLIMATE (analysis of strategic spheres)						
2.1	Area of economic management, market segment: level of competition, relations with consumers and partners	1	2	3	4	5
2.2	Area of capital investments	1	2	3	4	5
2.3	Area of new technologies and scientifically technical information resources	1	2	3	4	5
2.4	Area of inputs, fuels, energy and material and technical resources	1	2	3	4	5
2.5	Area of labour resources – labour market of specialists, managers, employees	1	2	3	4	5
2.6	Groups of strategic impact (at the level of the sector, region of the city, district)	1	2	3	4	5
Summary evaluation of the status of innovation micro-climate		1	2	3	4	5
SUMMARY OF INNOVATION CLIMATE						
1	Evaluation of macro-climate	1	2	3	4	5
2	Evaluation of micro-climate	1	2	3	4	5
Summary evaluation of the status of innovation climate		1	2	3	4	5

Criteria for the given evaluation are as follows:

5 – the status of the given component, parameter of the external environment is so excellent and acceptable that it allows using the available innovative potential to the fullest. This status is considered as an excellent opportunity for the company;

4 – the status of the given component, parameter is good, providing certain opportunities of employing the innovative potential;

3 – the status of the given component, parameter is not stable – there are no threats as of yet, however observation of its Dynamics are necessary;

2 – the status of the given component, parameter raises concerns, as it negatively affects the innovative potential. This status is categorised as a certain threat for the company;

1 – the status of the given component, parameter, without a doubt, is threatening, it must be regarded as a dangerous threat.

2.3. Innovation position of the Company

The strategic innovation position of a company is determined by jointly considering the internal and external environment, namely, the innovative potential and innovation climate.

The quantitative expression of the innovation position is calculated as a sum of both components:

$$I_{POS} = \frac{1}{2}(I_{POT} + I_{CL}), \quad (1)$$

where I_{POS} – innovation position;
 I_{POT} – innovative potential;
 I_{CL} – innovation climate.

3. A Complex Approach to Evaluating the Innovation Strategy of a Company

The complex approach consists of that after formation of the innovative potential, the innovation climate and innovation positions are determined, followed by a complex evaluation of innovative possibilities thereof. Meanwhile, quantitative evaluation of its innovative activity level is carried out simultaneously, and the complex parameter is determined in a form of innovative capacity (Rolik, 2012). At the same time, all evaluations of the main innovation components of an innovation strategy are made by one and the same expert, who is a recognised specialist in the field of operations of the company to be evaluated.

3.1. Innovative activity of a Company

Upon evaluating a particular situation in an industrial company, not merely its innovative potential, innovation climate, and innovation position are to be taken into account, but also its innovation activity level, specifically manifested by that company under the specific conditions must be borne in mind.

The innovative activity level of a company is determined using the following equation:

$$F_{IA} = \frac{1}{7} \sum A_i, \quad (2)$$

where $i = 1, 2, \dots, 7$;

A_i – parameters of innovative activity of a company.

Parameters of innovative activity:

A_1 – quality of the innovation strategy and innovation aim;

A_2 – the level of mobilisation of innovative potential;

A_3 – the extent of capital investments to be attracted;

A_4 – methods, culture, reference points used in introducing innovative changes;

A_5 – correspondence of the response of the company to the nature of competitive strategic situation;

A_6 – rate (pace) of introducing strategic innovative changes;

A_7 – justifiability of the level of innovative activity to be carried out.

Each parameter of innovative activity level is also determined by an expert on a scale of 1–5 (Table 3).

Table 3. Evaluation of innovative activity of an organization

No	PARAMETERS OF INNOVATIVE ACTIVITY TO BE EVALUATED	Level of parameter status				
A ₁	Quality of the innovation strategy and innovation aim	1	2	3	4	5

A ₂	Level of mobilisation of innovative potential	1	2	3	4	5
A ₃	Extent of capital investments to be attracted	1	2	3	4	5
A ₄	Methods, culture, reference points used in introducing innovative changes	1	2	3	4	5
A ₅	correspondence of the response of the company to the nature of competitive strategic situation	1	2	3	4	5
A ₆	Rate (pace) of developing and implementing the innovation strategy	1	2	3	4	5
A ₇	Justifiability of the innovative activity level to be carried out	1	2	3	4	5
	Summary evaluation of the status of innovative activity	1	2	3	4	5

3.2. Innovative power of a Company

The innovative capacity of an industrial company is determined by multiplying the innovation position, obtained from equation (1) with the factor of innovative activity (2):

$$C_{IN} = I_{POS} \times F_{IA}, \quad (3)$$

where C_{IN} – innovative capacity;

I_{POS} – innovation position;

F_{IA} – factor of innovative activity level.

By inserting the value of innovation position from (1) into (3), a final representation of the innovative capacity is obtained, expressed using all of the key components of the innovative strategy of a company:

$$C_{IN} = \frac{1}{2}(I_{POT} + I_{CL}) \times F_{IA}, \quad (4)$$

The obtained value of the innovative capacity can serve as a complex evaluation of the innovation strategy of a company, and it links the main innovative components together: the innovative potential, innovation climate and innovation activity.

3.3. Complex evaluation of innovative strategy of a Company

The process of obtaining the complex evaluation of the innovation strategy of a company takes place as follows:

The value of the innovative potential of the company is calculated using the data of Table 1. The maximum possible value of the summary evaluation of innovative potential is 5, the minimum – 1.

The value of the innovation climate of the company is determined using the data of Table 2. The maximum possible value of the summary evaluation of innovation climate is 5, while the minimum – 1.

The value of the innovation position of the company is calculated using the equation (1). The summary value of the innovation position thus obtained will be between the maximum and minimum value, i.e. between 5 and 1.

The innovative activity level of the company is determined according to the equation (2) and using the data of Table 3. The summary value of the factor of innovative activity of the company will be between the maximum and minimum value 5 and 1.

The innovative capacity of the company is determined using the equation (4). The summary value of the innovative capacity will be between the maximum and minimum value, i.e. between 25 and 1.

After performing all of the aforementioned calculations and obtaining the summary quantitative values of the innovation climate, innovation position, innovation activity, and innovative capacity, an expert

performs a complex evaluation and prepares an opinion about the investment attractiveness of the company.

4. An Example of Complex Evaluation of the Innovation Strategy of an Industrial Company

A start-up industrial company in the sphere of energy, planning to manufacture renewable energy sources – wind generators (WG) – was considered as an example for implementing the innovation strategy; in the manufacture of the WG, patented innovative technologies (Gonostay, Rolik and Gonchar, 2010, 2011) and know-how were used. The new technology of multiplying the magnetic flow (Baik, Levin and Rolik, 1998) to be used in the process of manufacturing the generators surpasses the existing technologies and allows outshining the competitors in the market of WG. Another novelty is the technology of manufacturing blades using a composite material in a single technological process (Illarionov, Rolik at al., 1996), which contributes to a safer and more durable construction of the aerodynamic part of WG.

The subject company plans to manufacture WG of small capacity in 3 modifications: 0.75 kW, 5.0 kW, and 10 kW. In line with these modifications, conceptual designs have been prepared for the mechanical, aerodynamic, and electrical part of the WG, the construction and technological documentation has been prepared, development prototypes have been made, and a complex testing of the prototypes has been performed.

A quantitative evaluation of innovative potential, innovation climate, and innovation position of the company was performed using the proposed complex approach, and an assessment of the company's innovative activity and innovative capacity was performed as well.

Initially, in Table 1, an expert in the field of implementing wind power projects gave evaluation on each stage in each of the five blocks to be considered (due to the limited length of publication, the intermediate evaluations are left out). The following evaluations were obtained in these five analysed blocks: status of the product block – 3; status of the functional block – 3; status of the resource block – 2; status of the organisational block – 3; status of the management block – 3. Thereafter, the summary evaluation was calculated for the status of innovation potential of the company, constituting 3 points.

Further on, in Table 2, the same expert used two of the key components of innovation climate of a company to be evaluated to give the summary evaluation: macroclimate evaluation – 2; microclimate evaluation – 2. Then the summary evaluation of innovation climate was calculated, constituting 2 points.

Thereafter, according to equation (1), the value of the innovative position of the company was calculated, constituting 2.5 points.

Then, in Table 3, the expert gave an evaluation in each parameter of A_i for the innovative activity of the company ($A_1=2$; $A_2=2$; $A_3=2$; $A_4=3$; $A_5=3$; $A_6=2$; $A_7=2$). Thereafter, according to the equation (2) and by using the data from Table 3, the value of the innovative activity quotient of the company was calculated, constituting 2.29 points.

And finally, according to equation (4), the innovative power of the company was determined. The obtained value of innovative power of the company at hand equals 5.73, constituting only 23 % of its maximal possible value.

And in conclusion, an expert in the field of implementing wind power projects gave an opinion about investment attractiveness of the company to be analysed. The obtained result allowed advising the investor, in order for the latter to be able to take a reasonable managerial decision about financing the subject company. Finally, the expert gave a conclusion about that the decision on investing funds should be made only in case if the obtained summary value of innovative capacity of the industrial company is more than 50 %.

5. Conclusions

Managing innovation transformations with the aim of improving investment attractiveness of a company is intrinsically linked to creation of the innovation strategy. To reach the set goals, it is necessary to have an objective evaluation of the components forming the innovation strategy of a company, affected by internal and external environment, as well as by the specific situation of the company. When evaluating a particular situation of a company, not only its innovative potential, innovation climate, and innovation position must be taken into account, but also the innovative capacity that the company specifically manifests under the particular circumstances must be borne in mind.

A complex approach is proposed suggesting that, firstly, formation and quantitative evaluation of the components of the innovation strategy is performed, followed by a complex evaluation with the aim of objectively determining the investment attractiveness of the company. It is suggested to use the concept of innovative capacity to perform a complex evaluation of the innovation strategy, since it links all of the innovation components: innovative potential, innovation climate, innovation position, and innovative activity.

A decision in favour of investing funds should be made only if the innovative capacity of the industrial company exceeds 50 % of the maximum value.

References

- Armstrong, M. (2006), *A handbook of Human Resource Management Practice* (10th edition), Kogan Page, London, pp. 143-144.
- Baik, R., Levin, N.N. and Rolik, Y.A. (1998), Inductor machine, LV Patent 11928.
- Gornostay, A.V., Rolik, Y.A. and Gonchar, A.A. (2010), Wind Power Plant, BY Patent 6551.
- Gornostay, A.V., Rolik, Y.A. and Gonchar, A.A. (2011), Wind Turbine, BY Patent 7688.
- Illarionov, A.M., Rolik, Y.A., Sipkevich, A.A. and Vinogradov, R.I. (1996), The rotor blade and method of its manufacturing of composite material, LV Patent 11214.
- Lisin, B.K. and Fridlynov, V.N. (2002), Innovative potential as a factor of development, *Innovations*, No.7, pp. 18.
- Pahomov, V.A. (2005), Factors of investment attractiveness of enterprises - the contractor, *Problems of entrepreneurship in Russia's economy*, Interuniversity collection of proceedings, Issue No. 8, Moscow, Strategic management Technology, pp. 116-125.
- Rolik, Y.A. (2009), Increase of investment attractiveness enterprise by implementation of innovation strategy, *Proceeding of TTI Research and Academic Conference Research and Technology – Step into the Future*, Transport and Telecommunication Institute 11 - 12 December, Riga, Latvia, Vol. 4, No.4, pp. 108-109.
- Rolik, Y.A. (2012), Complex estimation industrial enterprise's innovation strategy, *Proceeding of International Scientific Conference MK-2012-6, Innovation in the industrial sector*, 28-30 November, Kazan, Russia, Vol. 1, pp. 247-251.
- Shinno, H., Yoshioka, S., Marpaung, S. and Hachiga, S. (2006), Qualitative SWOT analysis on the global competitiveness of machine tool industry, *Journal of Engineering Design*, Vol 17, No.3, June 2006, pp. 251-258.