

Working out new criteria for assessing innovation activity and its results

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Abstract. This article presents a study and lays down criteria impacting on the end efficiency of systems of assessment of innovation activity – the author assesses the significance of each of them in choosing an innovation project for subsequent generalization and reduction to a single indicator. Based on the results of the study, it is noted that innovation activity is a type of activity associated with transforming ideas/innovations into a new streamlined product adopted in the market; into a new or streamlined technological process used in practical activity; into a new approach towards social services. The author draws the conclusion that innovation activity involves a whole complex of scientific, technical, organizational, financial, and commercial activities. In designing, developing, and adopting innovations, one should determine relevant costs related to their implementation and possible sources of funding, assess economic effectiveness from adopting innovations, and compare the efficiency of various innovations through the comparison of one's proceeds and outlays. This calculation scheme is quite generalized and has to be corrected inclusive of the strategy for the development of a specific organization and the aims of introducing a system of assessment of innovation activity, since practice shows that orientation towards garnering additional profits and cost minimization are not always overriding.

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Introduction

Currently, Russia is in one of the stages of getting out of the economic crisis. In accordance with the Concept of National Long-Term Social-Economic Development through to 2020, the innovation type of economic development calls for that business entities display entrepreneurial initiative and expand their capacity for work in open global markets amid stiff competition with a view to boosting their competitiveness and ensuring sustainable development.

The objective of boosting the level of innovation activity of business entities and managing innovation activity with a view to improving the efficiency of enterprises' operation has gained special significance at this stage of the national economy's development – including the construction sector. The development of scientific-technical progress and innovation activity within the investment-construction complex will help improve the quality of construction output, ensure its superior consumer qualities, improve the living environment of man and bring it to the level already attained in the world's developed countries [1, pp: 11].

The reproduction of innovations requires the formation and development of an adequate mechanism for managing these processes, which is an aggregate of methods and tools for managing innovation cycles to ensure its continuity, sufficient dynamicity, and required scale. A crucial role, in this regard, is played

by organizational procedures for managing innovation projects [2, pp: 156].

The methodological development of issues related to ensuring the efficiency of managing innovation projects and innovation activity within the investment sphere has not been effected systemically enough up until now. One of the reasons behind this situation is the predominant concept of studies conducted earlier on the macro-economic aspect of innovations or at the level of large corporate establishments.

Over the last decades, virtually all official events held by state authorities, almost every forum for the scientific public have been bringing up the need for a shift to the innovation path of national development. Intuitively it is clear what it is about, while that it is what is needed is an axiom. However, the question arises: so what is an innovation mode of development in a strict sense, which is substantiated by measurements of innovativeness per se ("yes" or "no") and the degree of innovativeness. Well, here there is already neither clarity at all nor perspicuity in criterial assessments.

Back in the day, in developing the methodological fundamentals of constructing production functions (e.g., the Cobb–Douglas function), one was expected to introduce one more factor/argument, which, specifically, was to demonstrate the impact of scientific-technical progress. In this case, of course, if this marking out of a specific degree of the impact of innovation activity

is done stringently enough, it is the derived share that really can characterize the “degree of innovativeness”. However, it is quite difficult to realize this approach.

Many researchers link the assessment of the economy’s innovativeness with technological set-ups, since each of the used “technological aggregates” is associated with a particular technological set-up [3, 4]. There have also been provided the criterial attributes of each of the (so far six) technological set-ups. But this approach too does little to help assess the degree of innovativeness of social development (and the economy too), since in marking out technological set-ups there is not shown the main thing – what end results and to what degree each technological set-up impacts on.

Currently, for assessing the dynamics of the development of innovation processes a number of authors suggest introducing a special system of statistical indicators [5-7]. It has been noted that in accordance with the methodology of statistics the system of statistical indicators must comprehensively characterize the process or phenomenon under study. This, no doubt, is the case. However, both existing and proposed systems of statistical indicators for assessing the state and dynamics of innovation processes *are* too ready to be keen on particulars, whereas, essentially, the end results of innovation activity are not assessed in statistics.

The system of indicators for assessing and analyzing any process or phenomenon (including innovation activity as well) must, in the general case, be hierarchical, pyramidal, bringing to light both the general and particular characteristics of the process [8, 9].

Thus, the current lack of stringent approaches towards measuring the state of innovation processes calls for the construction of a system of criteria for assessing the degree of the economy’s innovativeness.

The author has worked out a system of criteria for assessing the efficiency of innovation activity at the stage of implementing an innovation.

Below we shall examine the more significant criteria impacting the end efficiency of systems of assessment of innovation activity and assess the significance of each of them in choosing an innovation project for subsequent generalization and reduction to a single indicator. Using it, under a relatively stable economic and political situation in the country, as well as the absence of concessional terms or other privileges in the purchase or one’s own acquisition of systems of assessment of innovation activity, it will be possible to evaluate a number of innovation projects and choose a potentially more effective one.

For that, let us break all the criteria into three groups. The weight of each group and each criterion within the group, as well as the numerical score for the criteria depending on a possible situation, is determined using the method of expert assessments, the assessment conducted through engaging leading specialists in the sphere under study.

1. Criteria impacting on the growth of additional costs. The assessment of this row of criteria is unambiguous, since it is natural that the growth of additional costs will have a negative effect on the project’s end efficiency; therefore, we assign the value 1 to these criteria in the absence of an increase in additional costs and the value 0 if there is an increase in them. The criteria are provided in Table 1.

Table 1. Criteria impacting the growth of additional costs

Group 1 criteria (18%)	Numerical score	
	in the presence of the criterion	in the absence of the criterion
The need for expenditure on training personnel and engaging additional employees (3%)	0	1
The need for integrating the electronic system with the information architecture of the project (5%)	0	1
Payment for system support (with the manufacturer) (2%)	0	1
The need for engaging loaned funds for implementing the project (in this case, additional costs are the interest on the loan) (8%)	0	1

2. Criteria characterizing the competitive environment:

a) Having comparable counterparts. Here we have to make clear one important consideration associated with the ambiguity of interpretation of the term “innovation”. Some authors assert that the existence of comparable counterparts does not allow us to consider the project innovative. We, however, believe that this not right, since one has to take into account the geographical segmentation of the market –

certain products can be innovative to a particular country, region, etc.).

b) The time from the approval to the implementation of the project. This criterion is currently becoming one of the most crucial due to the increasingly accelerating development of the market. Big times for implementation are, above all, fraught with the loss of clients due to the emergence of a similar product with competitors a bit earlier.

Table 2. Criteria characterizing the competitive environment

Group 2 criteria (24%)	Possible situation	Numerical score
The existence of comparable counterparts (14%)	the absence of comparable counterparts	1
	their absence within the country	0.5
	there is only 1 comparable counterpart	0.3
	there are no more than 2 comparable counterparts	0.15
	the existence of more than two comparable counterparts	0
The time from the approval to the implementation of the project (10%)	up to 3 months	1
	up to 6 months	0.5
	up to 12 months	0.25
	over 3 months	0

We shall next explain the reasons behind this way to assign points depending on a possible situation.

The existence of more than two comparable counterparts, even in different regions of one country, increases the risk of not getting the whole profit, which is associated with that in this situation during the period of implementing the project, amid the intensive development of information technology, there is a high likelihood of competitors penetrating into the region, and, as a consequence, the product losing its status of an innovative one.

When there are no more than two comparable counterparts, the numerical score for the criterion is 0.15, which is due to the fact that even in the most unfavorable conditions, in conducting an adequate marketing policy, there is preserved the possibility of getting a foothold in the market and attracting a part of the potential customer base.

The explanation of the significance of the first criterion, provided that there is one single comparable counterpart, is adequate to the previous one, inclusive of a probable decrease in risk of about twice.

Despite the presence of foreign entities in the Russian market, the significance of the first criterion in a situation where there exist comparable counterparts overseas is higher than in those examined before. This fact is due to that in terms of the number and variety of products offered the subsidiaries of foreign companies are greatly losing out to their head offices located overseas, which, above all, is associated with Russian legislation being imperfect. Besides, not all foreign participants are prepared to enter the Russian market, since their subsidiaries are under the Russian jurisdiction and operate within Russian law, and, consequently, all political and other risks hold for them the same way as for all Russian companies. In addition, they need to ensure their work is in line with corporate standards [10]. All these factors considerably reduce

the likelihood of emergence of a product from overseas, which would lay claim to being innovative in Russia.

It is natural that the total absence of comparable counterparts corresponds to a score of 1.

The scores for the second criterion are entirely associated with the risk of emergence of a similar product with competitors during the period of implementing the project, amid market uncertainty, and inclusive of modern trends in the development of the market of electronic services. It is quite obvious that the longer the time for implementation of the project, the higher this risk, and, consequently, the lower the numerical score.

3. Criteria impacting on the customer base.

This row of criteria is, in our view, the most important, since under a high likelihood of attracting a considerable volume of new clients, the company can dispense with additional expenditure and ignore possible negative factors associated with the competitive environment.

It should be noted that regardless of the possible situation the criteria in this row have not gotten a score of 0 due to the fact that even under the most negligible goals the project will either be expanding the customer base or help the company entrench its positions among existing clients – it goes without saying that a project that can result in the loss of clients will be rejected right away. As a consequence, projects matching the criteria facilitating the direct expansion of the customer base have a score of 1, and those aimed at preserving one's positions, as well as those aimed at satisfying the needs of already existing clients, – 0.5.

Thus, innovation activity is a type of activity associated with transforming ideas/innovations into a new streamlined product adopted in the market; into a new or streamlined technological process used in practical activity; into a new approach towards social services.

Table 3. Criteria impacting on the customer base

Group 3 criteria	Possible situation	Numerical score
The expansion of the customer base within the segment of the market (14%)	The product is aimed at satisfying the needs of existing clients	0.5
	is aimed at attracting new clients	1
Partnership with other companies (telecommunications, petroleum, automotive) (8%)	is envisaged	0.5
	is not envisaged	1
The limitedness of potential demand (6%)	Demand does not depend on any preferences, gender, occupation, etc.	1
	The product is intended for a narrow circle of persons	0.5
The existence of the possibility of going beyond the boundaries of the geographical segment of the market (18%)	exists	1
	does not exist	0.5
The expediency of stopping the expansion of the branch network (12%)	expedient	1
	not expedient	0.5

Innovation activity involves a whole complex of scientific, technical, organizational, financial, and commercial activities.

The choice of way and dimension of the company's innovation activity depends on its resource and scientific-technical potential, the requirements of the market, stages in the lifecycle of machinery and technology, and the characteristics of sectoral identity.

In designing, developing, and adopting innovations, one needs to determine relevant costs related to their implementation and possible sources of funding, compare economic effectiveness from adopting innovations, and compare the efficiency of various innovations through the comparison of one's profits and costs.

In conclusion, we would like to note that this calculation scheme is quite generalized and has to be corrected inclusive of the strategy for the development of a specific organization and the aims of introducing a system of assessment of innovation activity, since practice shows that orientation towards garnering additional profits and cost minimization are not always overriding.

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