

Enhancement of Performance of Infrastructural Assets Built through a Public and Private Partnership

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Abstract

The paper covers the issues related to evaluation of efficiency of innovative development institutes that are set up through the public and private partnership. The paper offers a system of indicators applicable for quantitative and qualitative evaluation of efficiency of infrastructural assets built through a partnership between the government and businesses whilst accommodating the interests of each of the cooperating parties. The suggested methodology allows not only studying performance efficiency of these assets but carrying out a benchmarking assessment of a volume of investments to be made into infrastructural projects. On the basis of the outlined methodology, an efficiency study was carried out covering the regional innovative projects being implemented through the public and private partnership in the Republic of Tatarstan. The study findings helped reveal the problems related to taking advantages of the public and private partnership whilst identifying the ways how to eliminate such problems. The major problems include constraints on the range of possibilities of the public and private partnership, lack of a sound legal framework to regulate interaction of the involved parties, unequal status of the partners, lack of project management coupled with zero participation of the government in the decision-making process at the stage of project operation, monopolistic position of the assets built within the frame of the public and private partnership projects.

Keywords: public and private partnership (P3), efficiency, problems.

1. Introduction

A great variety of infrastructure-related projects are currently executed world-wide, aimed at encouragement of innovative development of relevant territories. A large part of such projects is only implemented on terms of the public and private partnership, particularly, in the form of technoparks, industrial parks, and business incubators. It means that the government only finances such projects if a private sector capital is involved in them.

However, the practical experience shows that efficiency of such projects is varying. Alongside with successful projects, some projects not going well can be found too. This necessitates investigation of the problems arising on the way towards establishment and promotion of partnership interaction between the government and businesses whilst strengthening efficiency of management over the projects that are aimed at giving impetus to creation of innovative infrastructure elements. Efficiency of P3 project execution as itself, in our opinion, can be determined by availability of a well-defined system of assessment which would make it possible to timely monitor efficiency of the interaction that, as a result, would help find the ways how to ensure attainment of such a level of efficiency that would be satisfactory to each of the parties involved in the partnership.

2. Literature Review

The issues relating to elaboration of theoretical and methodological approaches to assessment, simulation and forecasting of development of partnerships established between the government and private businesses and application of P3 projects when setting up innovative development establishments appear to be not new ideas that are met in the economic literature.

In the foreign literature the problem of P3 development was reviewed by E. Yeskomb (Yeskomb, 2007), D. Delmon (Delmon, 2009), M. Gerrard (Gerrard, 2001), A. Eustache (Eustache, 2007), B. Akintobi etc. Of great significance are the materials and publications written by the experts from the World Bank of the International Monetary Fund, consulting organizations, and authorities responsible for implementation of P3 projects both in Russia and overseas countries (International Monetary Fund, 2004; Asian Development Bank, 2008). These scholarly studies to a considerable extent reflect the legal framework of public and private partnerships, P3 generation and evolution both in Russia and abroad, diversity of P3 patterns, as well as separate factors serving as determinants of efficiency and risks for partners.

At the same time, acceleration of economic growth rates, diversification of tool packages used to handle the applied management models and strategic regional development models obviously lead to modification and sophistication of the processes under research. Accordingly, this allows the concepts relating to P3 structure and content to evolve, the methods and approaches to P3 assessment and setting up the system of indicators to get more well-defined, whilst changing the visions of capabilities and range of effective application of P3 advantages with regard to creation of innovative infrastructure elements (Melnik and Dyrdonova, 2014). These factors, in their turn, call for new generalizations and implications.

In this context, in our opinion, the highest priority areas include development of methodology of P3 project efficiency assessment with a view to determine how to improve the economic effect of the infrastructure-related projects (which nowadays are only realized by the government if private capital is involved), identification of the barriers hindering P3 projects development, as well as identification of the conditions for strengthening efficiency of the interaction within the public and private partnerships. All this must undoubtedly contribute to improvement of the innovative commitment of the enterprises acting as parties to P3 projects, as well as accelerate the innovative development in terms of a territory.

3. Research Methodology

Efficiency of the innovative infrastructure elements created on the principles of partnership, in our opinion, is determined by availability of a well-defined system of assessment which should include three groups of indicators:

- performance efficiency indicators applicable to the innovative infrastructure elements operated on a government level;
- performance efficiency indicators applicable to partnership projects implemented on a private sector level;
- economic metrics being of equal importance both to the government and entrepreneurs.

The simplest indicators most frequently used for making a rough and quick analysis of P3 project attractiveness include capex, profit, as well as methods of analysis of break-even points and capex pay-back periods (Melnik and Dyrdonova, 2015). However, the above mentioned indicators feature some disadvantages consisting of, *inter alia*, an assumption of equal significance of income and expenses related to different time intervals.

For an investor, regardless of whether it represents a government or a private business, the income and expenses related to different time intervals are of the same value. Therefore, it would be more preferable to apply discounting methods when and if efficiency performance analysis is required to be made with respect to innovative development establishments created on the basis of P3.

Such indicators include *net present value (NPV)*, *capex profitability index (capex PI)*; *internal revenue rate (IRR)*; *discounted pay-back period (DPP)*. Therefore, these indicators should be used first of all when evaluating efficiency of joint projects.

It is worth noting here that when making a decision about taking part in any joint projects or supporting them it would be possible and necessary to rely on other assessments and criteria that in each particular case will be formed based on the objectives, participants, conditions of implementation, risks, as well as any other factors that may arise without having any quantitative parameters.

The main objective for the government from the point of view of its participation in joint projects is development of innovative infrastructure (Sadriev and Pratchenko, 2014), implementation of significant projects along with risk minimization and cost reduction, subject to whether it would be possible to offer high quality services to the economic entities, as well as financing of innovative R&D activities and assurance of social security for the population. That is why for the government an essential stage in the partnership project efficiency assessment process would be evaluation of the following indicators (where the calculation could be done with regard to federal, regional and local partnership projects): *private capex to budget capex ratio with respect to development of P3 projects*; *unemployment reduction rate*; *tax revenues increase factor with respect to the state budget*; *share of innovative products obtained in the course of P3 projects implementation*; *intelligence intensity*.

As far as assessment of effectiveness of private businesses participation in partnership projects is concerned,

reasonability of private business participation is most often determined by relative indicators that include profitability indices. These indicators allow assessment of performance efficiency of the organization as a whole, as well as evaluate profitability of separate areas of business activities (Melnik and Lukishina, 2014; Melnik and Mustafina, 2014; Sadriev, 2014; Melnik and Dyrdonova, 2015). The system of profitability indices reflects the business performance in a better way than, for example, profit indicator because the profitability indices reflect the ratio between the achieved effect as compared to the consumed resources.

Profitability indices typically include the indicators that reflect return on investments and investment project pay-back periods; sales profitability indices, as well as the indicators reflecting return on capital as a whole and its separate components.

Specified values of the presented indicators are usually differentiated by industry sectors, operation activities, product manufacturing technology etc. In case no rate values are specified it is necessary to trace behavior of the indicators over a definite time period.

Combination of the presented indicators, which represents the first stage of assessment, is a quantitative analysis that allows selection of the most economically sound project. However, taking into account that one of the major problems related to decline in P3 efficiency lies in the improper use of public money, it would be required to carry out a qualitative analysis of P3 performance efficiency alongside with evaluation of the presented indicators.

To that end, we suggest that attention should be paid to three aspects as minimum.

Firstly, as far as we are discussing here the issues related to improvement of innovative commitments of the enterprises as well as innovative potential of a given territory by means of P3 development it is necessary to evaluate the innovative component of the project, in particular, what innovations are borne by the project. If the innovations are of technological nature would it be possible to provide a protection for them (here the intellectual property protection is meant)? Do such innovations appear to "snap at the heels" of other manufacturers, both overseas and domestic ones?

Secondly, it is necessary to determine whether the production is a promising commercial project, i.e. a sales market has to be sought for. However, care should be taken not to carry out a shallow analysis of market capacity but to make a highly reliable analysis showing who really needs such novelties and what benefits can be gained from the application of this innovation.

Thirdly, it is necessary to get personally acquainted with a potential private partner. To what extent is he ready to become a startuper (since a majority of the projects are aimed at startup type entities)? When considering these aspects it is advisable to pay attention first of all to how the person is flexible when communicating with the partner. The ability to be flexible in running business is an indispensable condition for achievement of long-term success. As far as the business environment rapidly changes nowadays, it should be kept in mind that the business yielding a profit and success today may start yielding a loss tomorrow. That is why it is essential to be flexible so that your business could be rearranged correctly and adjusted accordingly.

The qualitative analysis can be carried out using the expert survey method, or focus group method.

Finding solutions to the partnership project effectiveness problems and seeking the ways of the effectiveness improvement should not become a single time task, which is currently similar to a project preparation stage, due to a rather long lifecycle of P3 projects and strong requirements as to the quality of summary indicators (i.e. timely implementation, keeping within the planned capex, performance on a very high level, availability of access for consumers). It is fundamental at the very beginning to set up a mechanism that would allow making analytical calculations of efficiency during the whole lifecycle of the P3 project at a time pre-agreed with the project participants, or in case of emergency.

4. Findings and Discussions

Using the above outlined indicators of P3 project social and economic significance, the authors of the present paper carried out an assessment of performance efficiency of major P3 projects executed in the Republic of Tatarstan, namely, the Industrial Park "Kamskiye Polyany", the Special Economic Zone "Alabuga", Kamsky Industrial Park "Master", Chistopol Industrial Park, and Technopolis "Khimgrad". The analysis findings were as follows:

Indicator No. 1 – private capex to budget capex ratio. The data obtained during the assessment showed that combined financing pattern underlie all the reviewed projects. The assessment results allow stating that absolute parity conditions can not be found in any of the reviewed projects. The closest to a factor of 1 is the project named as the Industrial Park "Kamskiye Polyany". The value of Indicator No. 1 is 1.03 in this project, which clearly demonstrates a budget load reduction. The most expensive is the project named as the Special Economic Zone "Alabuga", where the volume of private capex is sizably higher than the funds spent by the federal and regional budgets. The private to budget

investment ratio is 5.45 giving evidence that the project is implemented mainly through private investments. The second project in terms of the size is Chistopol Industrial Park where the overall amount of financing comes up to RUB 19.7 bn. But at the same time the amount of private investments 30.27 times exceeds the amount of state investments. This has become possible owing to the fact that four largest projects fall under the Single-industry City Development Program financed through the Vnesheconombank. An approximately equal amount was put in by private investors and the government into the Industrial Park "Kamskiye Polyany", of which Indicator No. 1 is 1.03. This could be explained, in particular, by the fact that a favorable environment has been created for business development in this territory along with high simplification of interaction with the state authorities. Furthermore, a number of preferences are offered, owing to which a private partner obtains a long-term and stable demand for its services together with a ready infrastructural item. Moreover, the private partner may keep this infrastructural facility without buying it out. In two other projects, namely, Kamsky Industrial Park "Master" and Technopolis "Khimgrad", a higher burden is borne by the state budget, no parity is observed, the amount of invested budget funds exceeds the amount of private investments. Maybe, it would be better for the management of these projects to conduct more vigorous activities towards raising private sector investments through offering more comfortable conditions. As far as only a higher number of private investors would produce a positive effect on the progress of the region, the government authorities in that case could obtain an opportunity to reduce the budget expenses through the private investment funds, while using the saved budget funds in other economic areas, as well as for stable development of the investment project as a whole.

After ranking the budget investments by the levels of power, it becomes evident and worth noting that regional authorities take active hand in all the investment projects, however their share is different. The lowest percentage of regional investments accounted for by Chistopol Industrial Park, while the highest – Kamsky Industrial Park "Master".

The summary given above once again confirms the assertion that only through joint efforts of the government and private sectors any considerable results could be achieved, which would strengthen the private sector's standing along with economic growth of the region as a whole.

Next important indicator – tax revenues with respect to all level budgets. The expected tax assignments to all level budgets under the Industrial Park "Kamskiye Polyany" project will amount to RUB 1,160 mln by 2017. The tax assignments to be made by the Special Economic Zone "Alabuga" are expected to amount to RUB 20 bn by 2020. The tax assignments to be made by Kamsky Industrial Park "Master" to all level budgets are expected to amount to RUB 4.0 bn per year. This undoubtedly suggests effectiveness of the investment projects.

The increase in the tax revenues contributed to the economic standing of the Republic of Tatarstan as a whole. Tatarstan is in the upper position in Privolzhsky Federal District by amounts of tax payments. Tax assignments by the Republic of Tatarstan amounted to 18% of the overall amount.

Thus, the sizable tax yield of the investment projects, whether planned or actual, once again could serve as a confirmation that interaction between the government and private businesses within the frame of P3 projects produces a significant positive effect for the nation state as a whole, owing to which a great variety of other programs and projects can be implemented.

Next indicator – innovative product share, or new products mastering coefficient – shows the capability of the enterprises involved in P3 projects to introduce innovative or technologically modified products. All the projects under review demonstrate a predominating share of modified products in the overall amount of shipped products. The innovative products accounted for 18.5% of the amount of shipped products within the Republic of Tatarstan, where the contribution of Technopolis "Khimgrad" to creation of innovative products in the region was 0.3%, according to the assessment.

As far as *intelligence intensity* of the projects is concerned, the assessment of this indicator should be carried out from the project residents' perspective. Some of them could boast the achieved results. For example, the assets of residents of the Khimgrad project contain more than 100 developed patents and trademarks, and about 20 know-how.

The profitability index analysis findings show that economic efficiency of the implemented projects is not high enough suggesting that as much as possible efforts should be made to assure attainment of the target indicators whilst increasing the social and economic efficiency of the regional projects.

Thus, the performed analysis of social and economic significance of the implemented regional public and private partnership projects allows stating that P3 projects are necessary since they produce a great social and economic effect. At the same, it is worth noting that the P3 project delivery efficiency has not been very high so far.

Only by creating the necessary conditions along with a required and effective infrastructure, as well as by applying a more careful approach to the issue of evaluation of social and economic efficiency of P3 projects it would be possible to forecast that P3 projects will bring the expected social and economic results.

However, even now when the public and private partnerships are in progress in Russia it is still worth noting that

only by joint efforts of the government and private sectors any significant results could be attained, which, firstly, would contribute to strengthening the private sector's standing, and, secondly, would accelerate the social and economic growth of the country as a whole.

In order to trigger the P3 establishment and achieve the effect demonstrated by the experience gained by overseas countries it would be essential to cope with the problems associated with interaction between the government and private sector, in particular, the problems that have been identified above:

1. Constraints on the range of P3 possibilities. It is essential that the positive effects of public and private partnerships operation could be used in the different areas of national economy.
2. Lack of a sound legal framework to regulate interaction of the involved parties. The public and private partnerships should call for official relations or agreements between the government and private sector participants. Such agreements must be fixed in official documents, in particular, in regulatory legal acts, i.e. create special legal institutions.
3. Unequal status of the partners. The government within the frame of P3 relationship must act as a partner to a private sector rather than a regulator or promoter of economic activity. In other words, the government should participate in P3 projects on *pari passu* basis with the private investor, rather than establish the relationship by exercising the state powers. The relationship that has been established between the government and private sector could be qualified as relations where the partners have unequal status.
4. Lack of project management coupled with zero participation of the government in the decision-making process at the stage of P3 project operation. P3 projects are intended, first of all, to pursue public interests. Joint objectives and interests of both partners should be coordinated on the basis of state publicly useful objectives.
5. Monopolistic position of the assets built within the frame of the public and private partnership projects. The public and private partnership should be regarded as an institution serving to arouse and stimulate competition. Unfortunately, in Russia the government actually causes formation of a monopolist player on the market, i.e. it is possible to rightfully assert that P3 projects are an institutional trap. And it is essential that system inherent errors should be found to answer a question why P3 projects in Russia are not operating as a competitive mechanism.

As it may be seen, there are a lot of problems associated with getting the right understanding and, accordingly, making the right use of P3 project advantages. However, even at this stage it becomes clear that elimination of deficiencies will be conducive to achievement of a sizable effect in all the areas of the national economy.

5. Concluding Remarks

Available institutional conditions scarcely ever allow taking advantage of public and private partnerships fully and successfully, and enhance efficiency of such cooperation, due to which it becomes necessary that, firstly, a list of high priority innovative projects should be made up to clearly show the projects calling for private sector investments; secondly, create a broad legal framework intended to regulate the public and private partnerships; thirdly, it is necessary to align the state apparatus so that it should be strong enough to readily and effectively address the objectives of both separate regions and the country as a whole on terms of partnership with businesses; fourthly, it is necessary to make full and effective use of the possibilities of existing P3 institutions; and, *inter alia*, it is essential to consider the issue of retraining and further training of state employees, entrepreneurs, arrangement of seminars, conferences dedicated to the modern trends in development of public and private partnership and making use of P3 institutions as an instrument of innovative development. It is required also to create a comprehensive system of evaluation and monitoring of partnership effectiveness as well as development of monitoring programs within the structure of public and private partnership.

Based of the comments outlined above, the proposed methodology of comprehensive evaluation of innovative infrastructural assets built through the public and private partnership is required, firstly, to get understanding of necessity of a P3 project for a particular region; secondly, to assess attractiveness of the P3 project for each of the participants; thirdly, to evaluate trends and prospects of the P3 project; fourthly, to work out enforcement actions with respect to P3 projects in all relevant areas through various means of control.

As can be seen from the above, it is essential that the concept of public and private partnership should be introduced as quickly as possible into all spheres of life and national economy sectors. In the Russian Federation, a priority should be given to the industrial businesses (innovative R&D activities, support of small and mid-size businesses), and social sphere. In order to enjoy advantages of such partnership relations it would be necessary to bring the interaction pattern to a new level, correct the system inherent errors, and achieve the right understanding of the concept of the public and private partnership which has been established by the moment, as well as considerably improve the

quality of management over such projects.

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