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COOPERATION OF GOVERNMENT AGENCIES, ENTERPRISES
AND EDUCATIONAL STRUCTURES: REGIONAL FEATURES
AND PROSPECTS FOR INTEGRATION

This article offers the results of the study of practices contemporary world in the field of public-private partnership and the possibility of their application in Russian Federation. On the basis of the analysis the main directions of realizing the projects of public-private partnership in Europe and the USA, the key factors influencing the efficiency of public-private cooperation are identified. Recommendations on its introduction in the regions of Russian Federation are suggested. Furthermore, the article provides the conclusions concerning the formation of the sustainable four-component system "Government – Business – Education – Science".

Keywords: public-private partnership; regional development plans; four-component system "Government – Business – Education – Science".

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ВЗАЄМОДІЯ УРЯДОВИХ СТРУКТУР, ПІДПРИЄМСТВ
ТА ОСВІТНІХ УСТАНОВ: РЕГІОНАЛЬНІ РИСИ
ТА МОЖЛИВОСТІ ІНТЕГРАЦІЇ

У статті представлено результати дослідження сучасних практик у зарубіжних країнах у сфері державно-приватного партнерства, а також можливостей їх застосування у Російській Федерації. Виділено основні напрямки реалізації державно-приватних проектів у Європі та США, а також ключові фактори, що визначають ефективність даної форми співробітництва. Надано рекомендації щодо впровадження подібних проектів у регіонах Росії. Запропоновано модель стійкої чотирьохкомпонентної системи «уряд – бізнес – освіта – наука».

Ключові слова: державно-приватне партнерство; регіональні плани розвитку; чотирьохкомпонентна система «уряд – бізнес – освіта – наука».

Рис. 6. Табл. 1. Літ. 14.

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ВЗАИМОДЕЙСТВИЕ ПРАВИТЕЛЬСТВЕННЫХ СТРУКТУР,
ПРЕДПРИЯТИЙ И ОБРАЗОВАТЕЛЬНЫХ УЧРЕЖДЕНИЙ:
РЕГИОНАЛЬНЫЕ ЧЕРТЫ И ВОЗМОЖНОСТИ ИНТЕГРАЦИИ

В статье представлены результаты исследования современных практик в зарубежных странах в сфере государственно-частного партнёрства, а также возможностей их применения в Российской Федерации. Выделены основные направления реализации государственно-частных проектов в Европе и в США, а также ключевые факторы, определяющие эффективность данной формы сотрудничества. Приведены рекомендации по внедрению подобных проектов в регионах России. Предложена модель устойчивой четырёхкомпонентной системы «Правительство – бизнес – образование – наука».

Ключевые слова: государственно-частное партнёрство; региональные планы развития; четырёхкомпонентная система «правительство – бизнес – образование – наука».

Introduction. Crucial changes in today's society and economic performance suggests wide-scale modernization of all industries. The world is transferring to the inno-

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vative type of economic development. This causes the necessity to search for additional sources of funding for the most socially significant projects. Unfortunately, government agencies do not always have the possibility to support social sphere only at budget expense. Under these conditions the mechanism of public-private partnership is a top priority in raising the investment attractiveness to solve social problems.

The world practice of implementing infrastructure projects under public-private partnership mechanism has shown that it is efficient enough and ensures sustainable social economic development of the state (Grimsey et al., 2005). However, there is a number of difficulties and drawbacks functioning the given mechanism related to.

Thus, it is obvious that there is a need to design an efficient mechanism of public-private partnership allowing to implement infrastructure projects at a higher quality level.

The goal of the research is to analyze and generalize the world experience and cooperation of government agencies, enterprises and educational structures based on public-private partnership, and to develop the recommendations on improving the use of the given mechanism in Russia.

The implementation of the set goal has created the necessity to solve the following tasks:

- to study the essence of public-private partnership as a form of cooperation of government agencies, enterprises and educational structures in order to solve social and economic issues;
- to analyze and generalize the experience of implementing the mechanism of public-private partnership in European countries, the USA and Russia;
- to identify the current trends in the development of public-private partnership mechanism in the world;
- to determine the main problems connected with applying public-private partnership mechanism;
- to design the model of the four-component system "Government – Business – Education – Science".

Hypotheses of the research:

- efficient functioning of public-private partnership mechanism is possible only through cooperation of 4 components: government agencies, enterprises, educational and research structures;
- through functioning of this four-component system we achieve certain social and economic effects, both general and specific for every single element of the system.

The most significant theoretical contributions on implementing investment and socially-oriented projects through public-private partnership mechanism are presented in the works of M. Deryabin (2008), K. Kirchenko (2013), E. Korolev (2008), A. Kuzevanova and M. Poltavskiy (2014), I. Makarov (2008), S. Philina (2013), Y. Ragulina and T. Butova (2014), I. Risin and A. Kolosov (2013),.

Foreign experience in the field is presented in the works by V. Grimsey and M. Lewis (2005), O. Radionova (2012), A. Smith (2007), V. Varnavskiy (2012).

Research methodology. The basis for the research is the dialectic method suggesting the study of different economic events in their continuous development and interrelation. The following methods of processing information have been applied: selection, grouping, comparison and generalization, as well as table and graph methods.

As an object of the research we determine 13 countries which are the world leaders in the development of public-private partnership, during 2005 to 2014 especially.

The research consists of the following stages:

- ranging the countries by the total value of public-private partnership projects (Figure 1);
- ranging the countries by the number of public private partnership projects (Figure 2).

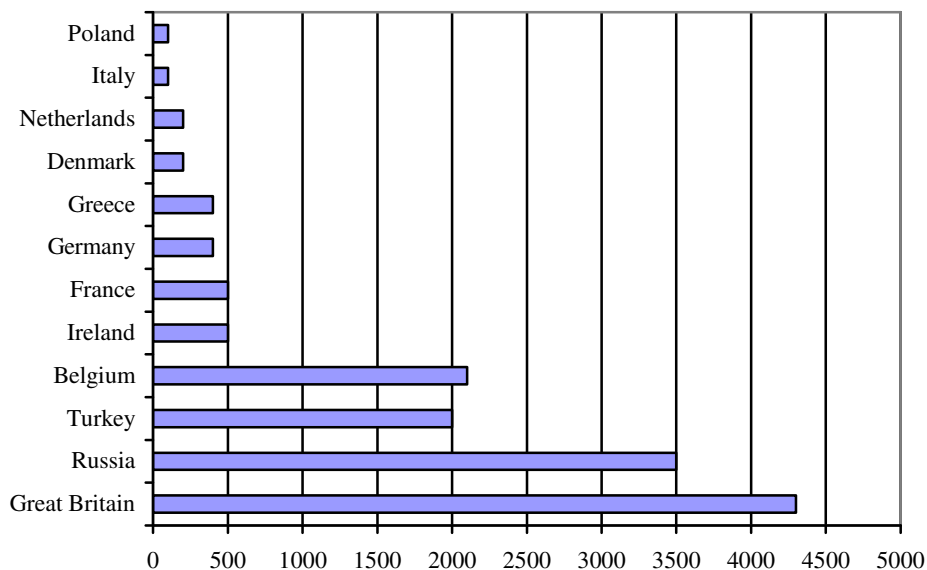


Figure 1. **Total value of the projects by countries**, designed by the authors on the data of the (Review of the European PPP Market)

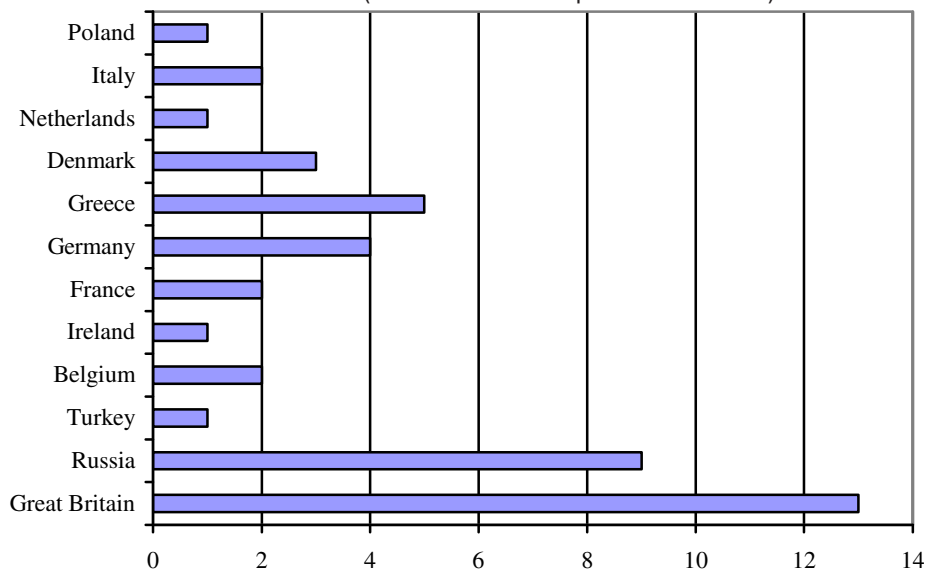


Figure 2. **Amount of public-private partnership projects**, designed by the authors on the data of the (Review of the European PPP Market)

Thus, we have defined countries-leaders in implementing public-private partnership projects in the first half of 2014. They are Great Britain, Russia and Turkey. The leadership of Great Britain is explained by the fact that the government of this country has become the first to apply this mechanism that allowed eliminating mismatches and defects in its functioning:

- structuring the total value and amounts of public-private partnership projects by industries;
- determining the key factors influencing efficient cooperation of government agencies and enterprises;
- designing the model of the four-component system "Government – Business – Education – Science";
- allocating the aggregate social and economic effects and effects for every partner in order to estimate the total efficiency of public-private projects;
- SWOT-analysis of public-private partnership mechanism on the regional level.

Key research findings. Cooperation of the state and enterprises has a long history. According to the clauses of Roman law private parties had the possibility to provide citizens with pure water. In the XVII–XVIII centuries in Great Britain private companies had the possibility to receive concessions from the state. The example of such concession is the East-Indian company resulting in the conquest and further exploitation of Indian colonies. Utility concessions were widely spread in France in the middle of the XIX century.

It should be noted that the fundamental work "An enquiry into the nature and causes of the wealth of nations" by A. Smith (2007) states that in case of implementing royal technologies by private parties the amount of state debts decreases sufficiently and using capital is much more efficient. Moreover, it should be stated that commitment of different states to cooperating through public-private partnership is the reason to implement the comparative analysis of practices in public-private partnership. The strategy of experience exchange between countries is timely today.

We can give the experience of Great Britain, the USA, Japan and some countries of Latin America as successful examples of partnership between the state and enterprises. World practice shows the trend of sustainable growth of close cooperation of government agencies and enterprises. In Europe the experience of implementing public private projects has existed for about 30 years. It should be noted that at present Western Europe witnesses significant increase in public-private projects, both in quantity and monetary value.

The leaders in implementing public-private projects from 2004 to 2014 were Great Britain – 12%; Germany – 4%; France – 4%; Greece – 3%; Belgium, the Netherland – 2% (Kuzevanova et al., 2014).

The level of social economic development of the country influences greatly the distribution of public-private projects between different industries. The areas of implementing public-private projects in Europe are presented in Figure 3.

Thus, transport industry leads in comparison with other branches. However, it should be noted that such branches as education, tourism and healthcare are also implementing public-private projects quite intensively.

The total cost of projects by branches is presented in Figure 4.

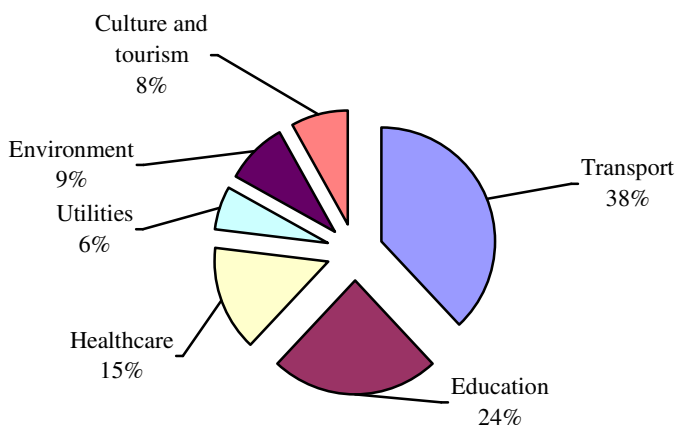


Figure 3. Main sectors of implementing public-private projects in Europe, % (Market Update. Review of the European PPP Market. First half of 2014)

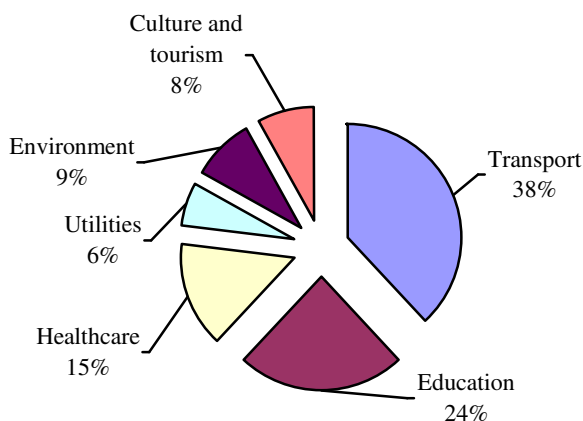


Figure 4. Total cost of public private-projects by branches, % (Market Update. Review of the European PPP Market. First half of 2014)

The leader by the amount of projects and branches where public-private partnership is applied is Great Britain. It is the first country where the practice of private prison was used. The programme "Private financial initiative", reflecting all modern forms of public-private partnership started in 1992 (Kirchenko, 2013). Gradually, together with the traditional spheres of using partnership the government agencies of Great Britain have started concluding contracts with private business regarding service provision, in social infrastructure the emphasis was also made on educational services, raising staff qualification, healthcare, low-income population aid, down-playing social disproportions in society structure. Moreover, similar partnership has been used in military and law-enforcement spheres.

Active use of public-private partnership forms caused fundamental changes in the structure of government agencies and enterprises. Consequently, there emerged the so-called "public private contracts and concessions" which made civil servants

entrepreneurs. They became the consumers of services of private companies and design the standards of behavior under market conditions.

According to the data of OECD the implementation of private-public partnership mechanism allows saving public expenditures of the British state by 15–20%.

The reforms introduced in France in the 1980–1990s in connection to power decentralization resulted in serious institutional changes. These reforms dealt with legislative regulations, delineation of powers of government agencies. This stipulated the necessity to update the regulatory framework concerning the delineation of powers among departments and communes, government and regional agencies. Moreover, the sources of funding were also divided. As a result, the powers of local government bodies were expanded and they acquired the independence in making decisions.

Because of such radical reforms under higher liberalization the French government revises its place in the area of infrastructure. According to the introduced provisions of the European Union France abandoned the monopoly of the state in energy utilities and in communications. Instead there appeared the indirect forms of privatization via contractual and concessionary agreements with private enterprises.

The relative independence of local government agencies and the consolidation of their impact on economy are seen in other countries which apply public-private partnership mechanisms, for instance Sweden, Japan, Canada, the Netherlands etc. There is an interesting fact that small municipalities without such independence as large ones would not rather use the partnership relations with private enterprises by developing and implementing social and production projects (Radionova, 2012).

It should be noted that cooperation of government agencies and enterprises brings positive results. Budget expenditures have reduced by more than 15% even in the countries where government-owned establishments are efficient enough in partnership relations with private enterprises. Nevertheless, not all these projects are successful, in some cases the state incurred additional expenses. It proves there must be designed a flexible system for implementing public-private projects in order to minimize risks.

In our view, efficient partnership between government agencies and enterprises is effected by a number of fundamental factors. Firstly, this is the level of partners' qualification. Every contract must be supported by highly-experienced advisers in the sphere of production, finance, law etc.

Secondly, the degree of project preparation is of great importance. It is obligatory to have well-functioning mechanism for regulatory and financial support. These contracts are the most complicated types of intergovernmental agreements.

Thirdly, there is a need to design more advanced regulatory framework as projects in infrastructure require large investments and have a long payback period. Therefore, private investors need legal guarantees.

Finally, there is a necessity to estimate properly strengths and weaknesses of local market conditions. This means there must be transparency and stability in attracting funds to implement projects.

It should be noted that about 6% of public-private projects turned to be unsuccessful. The example of such unsuccessful cooperation of the state and the private sector is constructing the autoban in Czech Republic: a foreign private developer

offered the system of funding suggesting, eventually, to shift all the risks on the state that led to terminating the contract and paying out the significant penalty by Czech government (Korolev, 2008).

Another example is constructing the railroad crossing under the Channel in Great Britain. This project was underestimated both by the state and the enterprises implementing it. The failure of the project is explained by low demand for railway transportation. As a result both government agencies and enterprises incurred great losses.

The experience of the USA is of great interest too, as it uses the so-called "reverse concession" mechanism (Makarov, 2008). Its main point is that the premises of local schools are conveyed to the private sector. Private enterprises renovate educational establishments at their own expense and then the government takes leasing on them with the right of further repurchase at the end of the leasing period.

As to Russia it faces the constant funding gap in the sphere of education, especially in regions. Therefore, the necessity of using such practice is obvious.

We are going to study the American model of public-private mechanism, for example, within the education system. For instance, in the USA there is a system of scientific institutions which includes a great number of educational establishments of different profiles. However, there is an interesting fact that besides educational activity these educational establishments are in charge of inventing and developing technologies for their further launch (Risin et al., 2013). The state provides significant means for R&D, and institutes themselves use extra-budgetary funds. Investors, in turn, acquire shares of the institute in proportion to their investments and, consequently, get the possibility to take direct part in allocating profits. The same system is also used in Germany (Philina, 2013).

In Russia the main aim of the agreement on public-private partnership in the sphere of education is to create new workplaces. We suggest the scheme for forming the four-component system "Government – Business – Education – Science" (Figure 5).

Every party of this mechanism serves its own interests. Particularly, enterprises take direct part in preparing qualified specialists for implementing production modernization.

This leads to increasing the employment of the nation and, consequently, to greater consumption of goods and services produced by enterprises (Varnavskiy, 2012). In other words, public-private partnership in higher education is a source of additional profit to raise the living standards of the society.

Due to the complexity of public-private partnership the estimation of its functioning efficiency must be implemented on the basis of both aggregate social economic effects and effects which every partner acquires (Figure 6).

Thus, economic realities require the formation of innovative structure of developing public-private partnership the main elements of which are business communities, educational structures and government agencies.

Having analyzed the practices of applying the mechanism of public-private partnership in Europe, the USA and Russia we can identify the following general trends.

To begin with, there is absolutely different degree of state participation in projects from the primary stage to the stage of its implementation. It depends on the features of business activity and the experience of partnership relations.

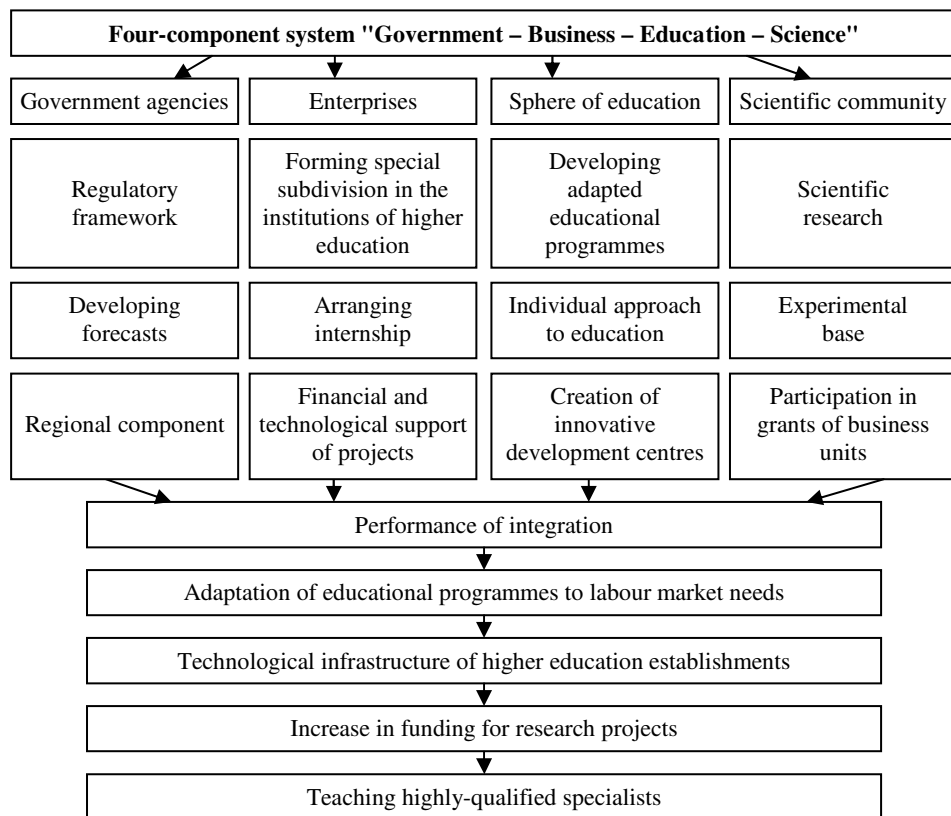


Figure 5. Model of the four-component system "Government – Business – Education – Science", authors'

It also should be noted that projects of public-private partnership are greatly supported at both federal and local level. One should not forget about the orientation of public-private cooperation on social services (Deryabina, 2008). The involvement of different other organizations for separate events has become widely spread. Finally, there is always an opportunity to conduct additional agreement under new specific conditions.

Particularly, it should be underlined that world experience of developing this mechanism has both positive and negative effects.

The efficient tool for studying the mechanism of public-private partnership at the regional level is SWOT-analysis (Ragulina et al., 2014). It allows estimating the studied object from the points of strengths, weaknesses, opportunities and threats (Table 1).

It should be noted that there is a range of problems related to the development of public-private partnership institute at the regional level.

The key problem is the absence of prepared specialists able to perform the development and implementation of such projects. Unfortunately, most educational structures are not engaged in preparing such specialists. There are no educational standards, neither preparation programmes, nor special disciplines.

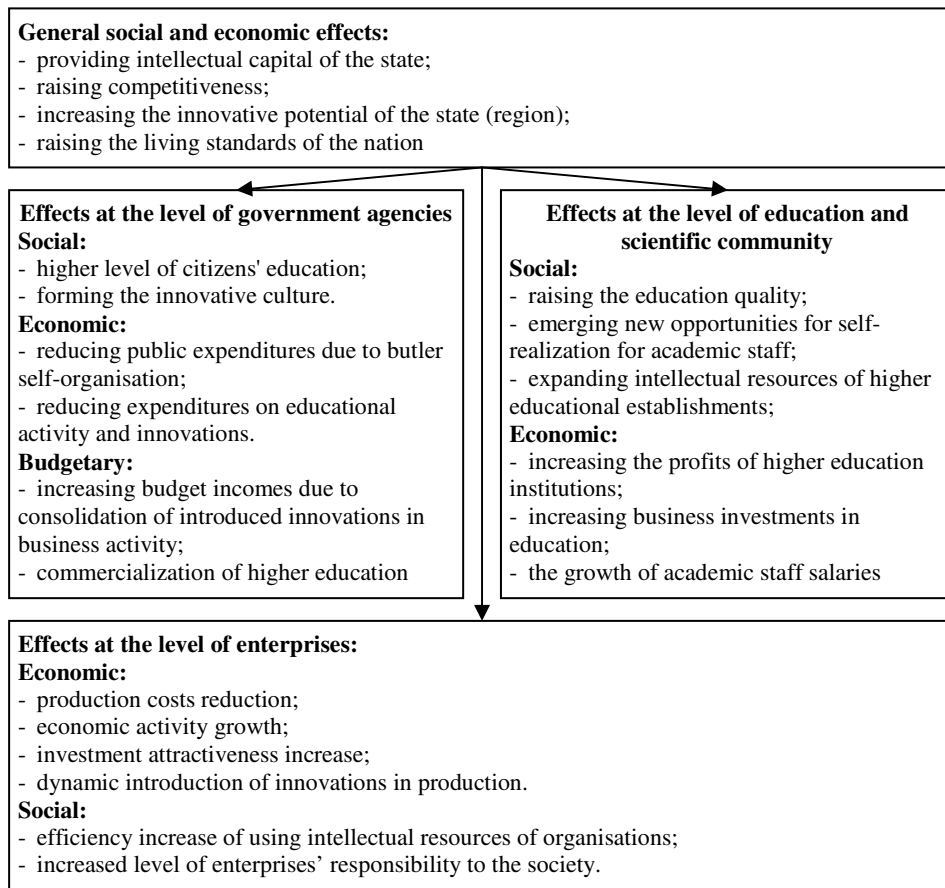


Figure 6. Classification of aggregate social economic effects of public-private partnership mechanism, authors'

Table 1. Public-private partnership in its regional aspect: SWOT-analysis, authors'

Strengths	Opportunities
using a certain part of consumers' means which leads to reducing the budget load; raising the quality of consumer service; shifting a significant part of risks on enterprises in the process of implementation and, consequently, reducing the risks of the federal subjects; providing competitive advantages; maximum transparency in relations between government agencies and enterprises; balanced allocation of commercial risks	designing and implementing non-standard socially significant projects; attracting highly qualified specialists; using the innovative potential of private enterprises
Weaknesses	Threats
high level of transaction costs; insufficient experience in implementing public-private partnership projects	high risks from implementation

As a result there appeared the need in retraining and further training programmes in this area.

One more important problem is poorly developed institutional environment causing the reduced performance and efficiency in implementing public-private projects at the regional level. As a result, it is necessary to develop smart policy paying attention to the economic potential of a region (Ragulina et al., 2014).

The problem of coordinating government agencies and enterprises in implementing joint projects can be solved by creating expert-consulting centers.

The problems of legal character concern documenting the state property. Correct legal documenting requires some investments in the process of developing required documents before implementing a public-private project.

Development of partnership relations is also retained by uncertainty and risks, for both public-private sectors. There is always certain depreciation of public-private projects as compared to their primary cost. The causes for such phenomena are constant growth of prices for raw materials, services and also the so-called "human error".

The critical factor is the absence of trust in partners. Partners do not feel confident concerning the order of necessary actions. There is also a complicated procedure of concluding agreements, lots of bureaucracy while developing projects and getting approvals. All these negative events influence the amount of time spent on the conclusion of an agreement in some cases, this can take a few years.

Research limitations and directions for further investigation. The authors suggested the original model of the four-component system "Government – Business – Education – Science" which can be used for encouraging the development of public-private partnership institute, which performance efficiency is estimated on the basis of aggregate social economic effects and effects for every partner.

It should be noted that this research was done on the basis of the examples of 13 countries-leaders in public-private partnerships whose national interests, statistic data, results and indices are not able to provide absolutely reliably global trends in developing public-private partnership institutions and their impact on the world economy.

It should be pointed out that the development of such partnership relations is influenced by the uncertainty and the related public and private risks. Designing the recommendations on reducing risks is one of the fundamental directions for further our investigation.

Conclusions and recommendations. The results of cooperation between government agencies, enterprises and education units show that the leaders in implementing public-private projects during 2005–2014 were Great Britain, Germany, France, Greece, Russia.

This research allows us identify the key factors influencing the efficient partnership of government agencies and enterprises. They include partners' qualification, the development of more advanced regulatory framework and the system of estimated strengths and weaknesses related to local market conditions.

The designed model of the four-component system "Government – Business – Education – Science" with identifying aggregate social economic effects and effects for every single partner allows carrying out the estimation of efficient performance of public-private partnership mechanism. The formation of the national innovation sys-

tem requires the creation of efficient technological basis, modernization of infrastructure and active involvement of science and education under the support of government agencies and enterprises. Thus, summing up, we could make the conclusion that the hypotheses of this research are completely proved.

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Стаття надійшла до редакції 15.10.2015.