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**ON THE NEW APPROACH TO THE RISKS'  
IDENTIFICATION IN THE PROJECTS OF PUBLIC-  
PRIVATE PARTNERSHIP**

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### **Abstract**

In the paper proven strategic planning techniques for analyzing the external environment of the organization are corrected and applied to identify risks in PPP projects. The corrections into techniques are connected with some specific features of PPP projects: an influence of external environment on the public partner, possibility to attract public partner to the risk neutralization, etc.

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## Introduction

The functions of a State involve the provision of various services to the population in areas such as health, education, utilities, etc. In this case, any society, first and foremost, democratic, in varying degrees, exerts pressure on the State, demanding higher quality, range and quantity of such services and / or reducing the cost of their provision.

Around since the early 80-ies of the last century, States, where such pressure was in a greater degree, began to implement a variety of tools improving the efficiency and quality of services, including: decentralization, performance auditing, contracting out, and so on (Gruening, p. 2).

By the mid-90s this kind of policy was formed under the name of New Public Management (hereafter – NPM) (Dunsire, 1995, p. 21). It is considered that the new public management grew from the practice of public sector reform a number of English-speaking countries (New Zealand, Australia, Great Britain), in the 1980s. has gained wide popularity in the United States after the publication of the book D. Osborne and T. Gabler (Osborne, Gaebler, 1993), and then became a common way to solve the problems of public governance in most OECD countries (OECD, 1995).

On the one hand, NPM tools have focused on the introduction of competition or quasi-competition (e.g., yardstick competition (Shleifer, 1985, p. 320)) in the provision of public services, and on the other, gave rise to various forms of collaboration between the public and the private sector in the creation of infrastructure and the provision of services on its basis to the population. For this kind of collaboration gradually, beginning from the Great Britain, stuck title public-private partnership (hereafter – PPP) (English, Skellern, 2005, p. 7), (Hall at al, 2003, p. 2).

The last twenty years were characterized by the emergence of a cluster of scientific publications devoted to the phenomenon of PPPs (in particular, a literature review of this kind is contained in the (Suhaiza, 2011)).

On the other hand, a number of international organizations (UN, OECD, World Bank, and so on) and their research departments, government agencies have introduced the publication and periodic updating of guidelines for the development and implementation of PPP projects, summarizing the results of research and development experience in PPP different countries.

In its development of the theory of PPP is facing a number of objective and subjective obstacles.

Firstly, because of its relative youth and the rapid development, the theory of PPP is characterized by the absence of generally accepted definitions, the predominance of descriptive approach, the imperfection of the used procedures.

Secondly, the influence of socio-economic, political, legal and administrative factors contributes the significant country effect into the development of the practice of the PPP and its corresponding academic understanding (English, Skellern, 2005, p. 7).

Thus, there are the problems of estimating the countries' experience of PPP projects in terms of the scientific validity of the used procedures, their universality, and the contribution to the formation of the methodological basis of the theory of PPP.

In this article the problem of risk management in PPP projects is considered. It is the distribution of risks between the public and private partners that most researchers consider as the main advantage of the use of PPP over such tools of constructing and operating of infrastructure as public procurement and investment activity.

In the paper

- a number of flaws of the modern approach to risk management in PPP projects (imperfection of the conceptual apparatus, descriptive character of the applied procedures, the dominance of general risks over special industry risks, etc.) is identified

- applying of proven strategic planning methods for analyzing the external environment of the organization to identify and neutralize risks in PPP projects is proposed,
- some necessary improvements into the techniques of organizational analysis based on specific features of PPP projects (an influence of external environment on the public partner, possibility to attract public partner to the risk neutralization, etc.) are suggested.

The paper is organized as follows.

In Section 1 discusses the various definitions of risk, examines their advantages and disadvantages, proposes risk definition, which point out to easy identified criteria of risk.

Section 2 examines different approaches to the identification of risks in PPP projects, their shortcomings are identified, proposes a new method to risks identification.

In Section 3 the specificity of identifying risks at various stages of the life cycle of a PPP project is considered.

In Section 4 the risk identification method is constructed.

In Subsection 4.1 the techniques of defining of external environment of PPP project is considered.

In Subsection 4.2 the method of risks identification at the operational stage of PPP project is constructed (in sub subsection 4.2.1 (4.2.2) the risks connected with the macro-environment (micro-environment) of PPP project are considered).

## 1. The criteria of risk

There are a lot of quite different risk definitions in the theory of project management. The question arises, which of them is best suited for the purpose of identifying risks in PPP projects.

Let us exclude from consideration the definitions in which it does not distinguish between risk and its measurement, for example: “Risk is the probability of a loss”. This definition and five similar ones can be found in the following work (Vlek, Stallen, 1981, 238).

There is no doubt that it is correct to consider risk as a random event: “In project management, risk is described as an uncertain event or condition that, if it occurs, has a significant positive or negative effect on at least one project objective” (Teller, 2013, 37).

In the definition there are two relatively small flaws and one significant merit.

Firstly, let us mark that it would be better substitute “described” with “defined”.

Secondly, the event can occur or does not occur whilst the condition can be true or false depend on the occurrence some events.

But in the definition we can find the operational criterion of risk: an uncertain event is a risk if its occurrence has significant effect on achievement of, at least, one project objective.

Let us move on the following question: “What are the PPP projects objectives can be?” This question is answered, in particular, Rui Souza Monteiro. He starts from the definition of risk: “Risk is defined as uncertainty of outcome, whether positive opportunity or negative threat, of actions and events” (Monteiro, 2010, p. 263) and some rows below writes: “In the project management approach, a risk is an event that may or may not occur and can lead to cost overruns, delays in the project completion, or failure to satisfy some project requirements” (Ibid).

Thus, Monteiro, on the one hand, considers costs, time of project delivering, and project qualitative characteristics as the targets of the project, but on the other hand, he contrary to Teller, and yourself, defines risk as an event which is negative towards achieving of the goals of the project.

Really, practitioners still tend to think of risk in terms of threats rather than opportunities (Teller, 2013, 37) however this approach, which can be quite satisfied at the operational

stage of PPP project, is absolutely unacceptable at the beginning stage when value for money for different PPP projects (or PPP and procurement) are comparing each other.

Summing up the discussion, in the paper we define risk as an uncertain event that, if it occurs, has significant effect on at least one project objective. It follows that the public partner, having started to develop a PPP project, should begin by defining the objectives of the project realization.

**2. The sources of method**

The analysis of research in the area of risks identification in the PPP projects has shown that there are two approaches to risks identification.

In the framework of first approach, the authors break the life cycle of a PPP project into stages and describe the risks associated with each of them, in the second one – the authors classify risks and give examples of typical risks for each of the identified classes.

We begin by considering the advantages and disadvantages of the first approach. First of all, note that the list of the steps of the PPP project, drawn up by all the authors of techniques of risks identification, in varying degree, is built along the value chain (Porter, 1985, 37) of PPP project. In particular, the Federal Highway Administration of US Department of Transportation (hereafter – FHWA) in its guide to risk management in PPP projects (FHWA, 2012, 3-2) identifies three stages of the life cycle of a PPP project: development, construction, operation, and management, whilst the guide of European PPP Expertise Centre (EPEC) – four ones: Project Identification, Detailed Preparation, Procurement, and Project Implementation (EPEC, 2011, 7).

Draws attention the fact that the proposed classification is not entirely consistent with the concept of life cycle, one way or another, dropping its final stage of cycle. This flaw is eliminated in G. Hodge’s paper (Hodge, 2004, 161), in which the author proposed a following classification of PPP stages: design and development, construction, finance, operation, ownership.

In turn, it is difficult to agree with Mr. Hodge in regard to the inclusion of a separate stage of finance in the list of independent stages of the project life cycle. Rather, it seems that financing can be considered as separate links of VAC of some others project stages, and these links cannot be integrated due to the diversity of subjects of risk management at various stages of the project.

The more detailed specification of phases of the project for the creation and operation of infrastructure, as a rule, contains in the papers of researchers of supply chains management (Fig. 1).

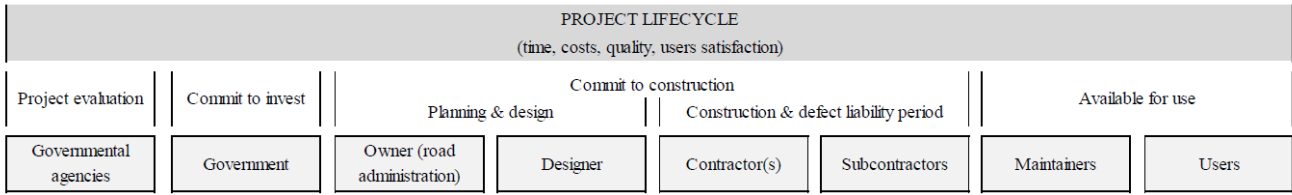


Fig. 1. Supply chain and project stages in road construction industry

Source: (Kati Kõrbe Kaare, Ott Koppel, 2012, 259).

It should be noted that in addition to the list of project stages Figure 1 indicates which entity is responsible for the implementation of the corresponding stage.

Thus, the question arises, on the one hand, on the universality and completeness of the proposed list of stages of a PPP project, and on the other hand, about the completeness of the list of sources of risk in each stage.

Let us apply concepts of life cycle, value added chain and the ideas of the above-cited works to improve the classification of PPP projects' stages. Similarly the Fig. 1, we'll supplement the list of PPP projects' stages<sup>1</sup> by an indication of the partner responsible for the implementation of the corresponding stage (Table 1).

**Table 1. Stages of the PPP projects'**

Stage	Design	Development	Procurement	Construction	Operation	Ownership
Partner	Public	Public	Public	Public&Private	Public&Private	Public&Private

Consider the second approach to the identification of risks in PPP projects, which base on the risks classification and description of typical risks for each of the identified classes.

In the paper of Fourier and Burger (Fourier and Burger, 2000, 309) the authors, based on the classification of specific risks (risks of supply and demand, financial risks, legal and political risks), indicate where to find the risks of each of the classes:

- demand risks derive from consumer preferences and tastes, substitute products, import competition, income patterns, demographic changes, etc.;
- supply risks relate to the ability to deliver, e.g. input and labour availability, input and labour costs, technical and production process risks, and so forth;
- financial market risks derive from the cost of capital, interest rates, exchange rates, inflation rates, etc.;
- lastly, legal and political risks relate to the legal framework, dispute resolution, regulatory framework, government policy, taxation, expropriation, nationalization, etc.

In turn, in contrast to the Fourier and Burger paper, OECD guide (OECD, 2008, 35), repeating almost word for word fragment quoted above, instead of "etc" and "so forth" uses the term "among other things": demand risk encompasses mainly demand-side operation risk and arises, among other things, from changes in consumer preferences, the emergence or disappearance of substitute or complementary products, import competition, and changes in income and demographics.

Thus, the question arises on the one hand, on the universality and completeness of the proposed risk classification, and on the other hand, about the completeness of this list of sources of risks.

Besides this, as noted above (English and Skellern, 2005, 7), the implementation of PPP projects in the institutional conditions of different countries, including the risks occurrence, have strongly pronounced country's specifics. For Russia it is especially significant because, firstly, the country later of some other countries began to implement the PPP mechanism, and secondly, RF has not fully formed system of federal and regional legal acts regulating this mechanism.

We use the examples of risk classifications, discussed in the literature, in order to build a methodology for the identification of risks, aimed at the completeness of risk identification in the PPP project.

Let us consider the approach to risk identification proposed by Ng and Loosemore (Ng and Loosemore, 2007, 69). The authors propose to divide the risks of a PPP project into two main groups: general risks or project risks: project risks arise from the way a project is managed or from events in its immediate microenvironment whilst general risks arise from natural, political, regulatory, legal and economic events in the macro-environment surrounding the project.

Such risk classification indicates the need for analysis of micro- and macro-environment of the PPP project in order to identify risks. But in the theory of strategic man-

<sup>1</sup> Table 1 corresponds to the BOT model of PPP: build, operate, transfer.



agement the technology of analysis of micro- and macro- environment of organization, in order to identify opportunities and threats to achieve organizational goals, have been developing over the last 40 years. The survey of these techniques, for example, we can start from 34 unstructured environmental trends, identified in the Ansoff's paper (Ansoff, 1980, 138), published in the first volume of Strategic Management Journal, move on to the structured and detailed analysis of firm's general and industry environment of Jauch and Glueck (Jauch, Glueck, 1988, 85,115), and finish by considerations of some recent improvements in methods of analysis.

Let us consider another example. The guide (FHWA, 2012) proposes to divide risks on the technical risks and non-technical ones (FHWA, 2012, Appendix A-1):

technical risk – risk arising from deviations from the project's original technical assumptions, specifications, or requirements;

non-technical risk – Risk posed by Political, Regulatory, Economic, and Social conditions, or Stakeholders.

Consider the problem of identifying non-technical risks of a PPP project. Using a fashionable abbreviated approach, we can say that the definition of a non-technical risk pushes us to apply for the risks identification the method, so to speak, of PRESS-analysis, which is concluded in the searching the factors that negatively or positively impact on the achievement of project objectives PPP in the Political, Regulatory, Economic, and Social conditions in which the project is being implemented, as well as in the actions of project Stakeholders.

In turn, in the strategic management PEST-analysis, with the letters P, E, S and T indicates the group, respectively, political, economic, social and technological factors, is applying to identify the opportunities and threats for achievements of goals of organization or its strategic business unit<sup>2</sup>.

Let us investigate the difference between the groups of factors analyzed in the framework of PRESS- and PEST-analysis.

The absence of letter "R" in the last title is not essential, since in strategic management the regulatory factors are studied in the subsection of "P" of PEST-analysis or in the analysis of the microenvironment of the organization.

In the framework of the latter also analyzes the main actions of external organizational stakeholders, primarily consumers, competitors, suppliers.

In turn, the lack of the letter "T" in the abbreviation "PRESS", from the point of view of the authors, quite significantly, because ignoring the risks arising from the current trend of reducing the length of the product and even technologies life cycles (Bayus, 1998, 763) in PPP projects, which are always long-term, is not permissible.

Thus, the problem of investigating the possibility of applying techniques, proven in strategic management, for the PPP project risks identification arises.

### **3. Risks identification at various stages of a PPP project**

The risk identification process continues throughout the life cycle of a PPP project, in each of its stages (Table. 1).

At the stage of initiation of a PPP project risk analysis is organized by the public partner in order to select a specific project of several alternative or comparison of advantages and disadvantages of PPPs compared with the mechanism of public procurement or other forms of infrastructure development.

At this stage, the public partner indicates the functions, which are transferred to the private partner, and identifies ways to compensate for the latest investments made to create infrastructure and implement these functions.

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<sup>2</sup> Strategic business unit (SBU) of the organization is a structural unit of the organization, which has its specific consumers and/or competitors (Hall, 1978, 17).

Currently, according to the federal law, PPP projects in the Russian Federation are realized in the form of a concession: the concessionaire constructs the infrastructure, and operates it. In this case, it is assumed that in PPP projects in the health sector during the operational phase, the private partner undertakes to provide medical services to the agreed range and volume at the expense of obligatory health insurance (hereafter – OHI), formed mainly from the part of the unified social tax paid by employers<sup>3</sup>. In addition, to accelerate the compensation of investments of the private partner, the latter, as a rule, have the right to provide medical services at the expense of Voluntary Medical Insurance (hereafter – VHI) and at the expense of population itself.

Consider the PPP project of reconstruction and subsequent operation of Perinatal Center, which currently being developed in St. Petersburg. The draft concept of the project states that

- the public partner is willing to pay at expense of OHI for agreed volume of services at birth, for women living in St. Petersburg and having pregnancy pathologies who entered the Perinatal Center in a planned or emergency basis,
- the public partner is willing to pay at expense of OHI for agreed volume of services in preparation for pregnancy (IVF<sup>4</sup>) for women living in St. Petersburg,
- private partner has the right at the expense of VHI and for cash to provide services at birth and preparation for pregnancy for women living in St. Petersburg and other regions of the Russian Federation, foreign citizens.

It should be noted that the risk analysis at this stage is preliminary, since the private partner has not been determined and the technology of providing services is not still known.

However, the declared public partner needs and ways to compensate the private partner investments allow us to identify the target consumers groups of future SPV<sup>5</sup>, and put in consideration the strategic business units, which will be responsible for working with various consumer groups.

However, the value added chain (hereafter VAC) of the future SPV is understood by public partner in generalized form (Table 2), without specifying the primary and support activities, and it makes it difficult to identify the risks associated with the service delivering.

**Table 2. Value added chain of potential SPV in the eyes of public partner**

<b>Support activities</b>	Firm infrastructure				
	Human resource management				
	Technology development				
	Procurement				
SBU	Inbound logistics	Operations	Outbound logistics	Marketing and Sales	Service
...	...	...	...	...	...
SBU	Inbound logistics	Operations	Outbound logistics	Marketing and Sales	Service
	<b>Primary activities<sup>6</sup></b>				

*Source: (Porter, 1985, 37).*

<sup>3</sup> Working population in Russia is not involved in the formation of the OHI fund that, in general, increases the costs of companies and reduces their international competitiveness (WHO, 2002, 31).

<sup>4</sup> IVF – In vitro fertilization.

<sup>5</sup> SPV (special purpose vehicle) – company, established for the implementation of the PPP project.

<sup>6</sup> It is interesting to note that in the traditional model of VAC (Porter, 1985, 37) primary activities are "supporting" support ones. However, there are studies in which the primary and support activities are organized more natural way (Swayne, 2006, 155).

In this case, it is assumed that for the preparation of the project public partner attracts consulting companies.

If the preparation of the project occurs with the involvement of the potential private partner, a preliminary analysis of the risks can be improved on the base of the knowledge of the service delivering technology. On the one hand, it increases the quality of risk analysis, but on the other hand, creates additional risk – the risk of claims by third parties (Moszoro and Spiller, 2012).

It should be noted that the basic idea of M. Porter, concluding in consistent consideration of links of VAC in terms of creating in the process of their implementation premium value for customers and/or cost optimization, is an ideal methodological base for Value for Money analysis, providing by the public partner in the project preparation stage. Nevertheless, examples of such application of Porter's concept are unknown to authors.

The results of the risk analysis process in the preparatory stage of the PPP project, which is usually provided by representatives of the public partner, consulting companies, potential private partners, are reflected in the attached to the Concept of the PPP project risk matrix, the structure of which corresponds to the classical approach to risk management: risk identification, risk description, risk sharing, the mitigation of risk and, likely, risk monitoring.

On the stage of procurement the potential service providers are connecting to the risks analysis, and on the operational stage it is performed by the public and private partner (SPV) together.

On the stage of procurement, in the process of SPV formation, potential bidders, providers of appropriate services, present the risk analysis, primarily financial, to their potential investors, financial institutions.

Analysis of the risks performed by a potential service provider to potential investors, and risk analysis, carried out with the participation of SPV in the project's operation phase relies primarily on the private partner experience in identifying environmental opportunities and threats in the strategic planning of his activities.

The scanning of an environment of the PPP project in order to identify risks arising from occurring in it processes, implies preliminary identification of the environment.

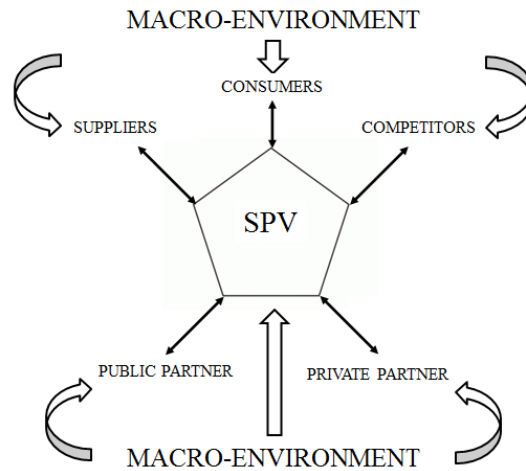
## **4. The method of risks identification in the PPP projects**

### **4.1. Identification of the environment of the PPP project**

In the strategic management the external environment of organization divides into the general environment, which include factors affecting activities of all economic agents (macro-environment), and the industry environment, which include factors affecting activities of industry agents only (micro-environment). Let us assume that the object of risk identification is one of SPV SBUs, which had been revealed at the development stage of PPP project.

The factors of macro-environment can act on SBU immediately, changing the behavior of its internal stakeholders, and indirectly, as a result of their impact on key external stakeholders of SBU – customers, competitors and suppliers. In the analysis of public-private partnership to the list of external stakeholders of SPV must be added the public partner.

In addition, if the SPV realizes only part of the activities of the private partner, for example, SPV is its division (Chandler, 1991) or has a complicated ownership structure, certain threats (as, indeed, and opportunities) can come from changes in the corporate strategy of the private partner (Fig. 2).



**Fig. 2. How macro-environment affects SBU of SPV<sup>7</sup>**

As noted above, to the completion of the project development stage the public partner and potential private partners have information on the target consumer groups of future SPV.

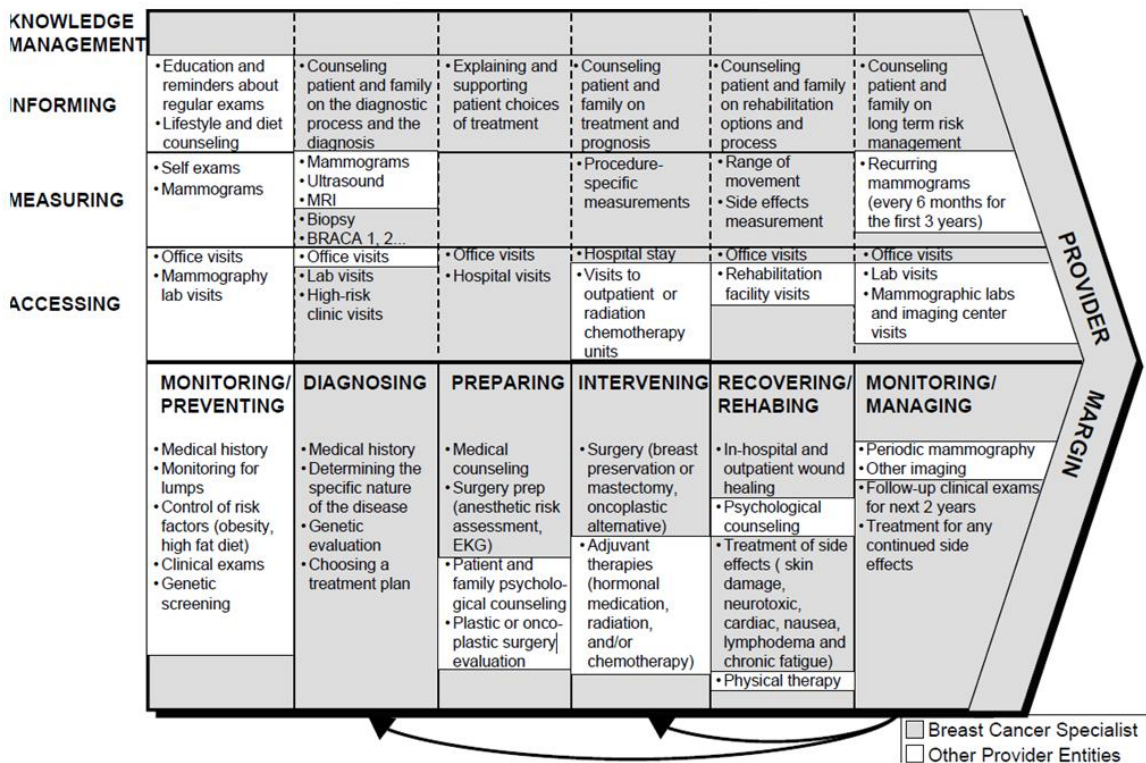
Such information allows project participants to identify SPV competitors – the organizations whose services can benefit consumers if they are not satisfied with the quality and / or price of services provided by the private partner.

For example, for the SBUs of future Perinatal Center in St. Petersburg, whose activities are associated with the provision of services at birth and preparation for pregnancy for cash and VHI to women living in St. Petersburg and other regions of the Russian Federation, foreign citizens, such competitors may be:

- two federal perinatal center, located in St. Petersburg,
- city's maternity hospitals providing paid services,
- private medical relevant organizations of St. Petersburg, Moscow and foreign countries (mainly Finland, Germany, Israel, USA).

In turn, to determine suppliers the VAC (Table 2) is not enough, and it should be specified by the service provider. Below is an example of this kind VAC for such primary activity of the oncology clinic as providing services for the treatment of breast cancer (Fig. 3). At Fig. 3 services within the shaded parts of the chain are provided within the SBU, in the light ones – as support activities of SPV (or outside the clinic).

<sup>7</sup> For simplicity reasons at the figures we denote SBU as SPV.



**Fig. 3. The care delivery value chain for breast cancer**

Source: (Porter and Teisberg, 2006, Appendix B, 409).

From the perspective of risk management of PPP project SBU's VAC is important for at least three reasons. It helps us

- to identify the subjects of risk management: SBU management – for primary activities, management SPV - for support ones (Table 1),
- to obtain information about the technology of the service delivering and, accordingly, suppliers of resources (for health care organizations – suppliers of drugs, medical equipment and consumables),
- by considering of separate links of VAC (Fig. 3) to identify specific, in the paper – medical risks: events which can negatively affect the quality of medical services.

#### 4.2. Identifying risks of the operational stage of PPP project

As noted above, in the strategic management the analysis of the environmental impact on the activities of the organization is divided into two stages: analyses of the general and industry environment (Porter, 1985, 4-6, Jauch, Glueck, 1988, 85, 115), which consistently considered below.

##### 4.2.1. Analysis of the macro-environment of the PPP project

Having identified the main channels of macro-environment influence on the activity of SBU (Fig. 2, (Swayne, 2006, 60)), the latter begins to identify how each environmental factor impacts on the results of the PPP project, which during the operational phase are mostly determined by the characteristics of demand for SBU's services and supply of them.

The algorithm of analysis is:

- to select factor from the list of traditionally considered macro-environment factors, usually joined in four groups of factors: political, economic, social and technological (Jauch, Glueck, 1988, 89-100)<sup>8</sup>,
- to successively examine how selected factor influences on the interaction of SBU with its key external stakeholders (Fig. 2) in terms of achieving the objectives of the PPP project,
- to determine the mechanism and to evaluate the influence of selected factor on the internal SBU's stakeholders,
- to form a package of actions to use/neutralize the influence of the factor on the achievement of objectives of the PPP project.

We apply the proposed algorithm to identify the risks of a PPP project related to effects of one of the Economic factors of the macro-environment: the stage of the life cycle of the country's economy (Ibid, 90).

The World Bank baseline scenario predicts a recession of Russian economy in 2015 (Russian Economic Report, 2015, iii). At this stage of economy development company's incomes are going down and, accordingly, budget and employees incomes are going down too.

Since the duration of a PPP project makes it almost inevitable its implementation in the period of recession, in this period, because of the demand reduction (which does not depend on the actions of the private partner), PPP Agreement should provide some mechanisms of demand stimulating from the side of public partner or matching changes in the volume of services provided.

To assess the impact of the recession on the performance of the health care provider, funded by OHI, VHI and directly by the population, let us consistently consider its impact on SBU's stakeholders, shown in Figure 2.

To reduce the paper volume, analysis is carried out simultaneously for all the activities (SBUs) of the private partner.

### **Consumers**

Reduction of corporate incomes leads to a reduction of their contributions to the fund of OHI and creates a risk of Fund's obligations sequestration in the current planning period and reducing them in the next one. In this case, due to come into effect the protective mechanisms of the PPP Agreement mentioned above: a secure of planned task in OHI, restrictions on diminishing fund's obligations in future period.

On the other hand, the reduction of corporate income leads to a significant reduction in the size of the fringe benefits package offered by the company to its employees, in particular, a diminishing in the consumption of VHI services.

In 2009, 11 per cent of Russian companies reduced the budgets of employee voluntary health insurance (VHI) programs at the expense of certain categories of staff, 24 per cent reduced the cost of health insurance policies to all employees, 65 per cent of employers didn't change their VHI budget (VHI market overview, 2010, 5).

Due to the fact that in the short-run company's expenses for VHI affect its performance less than the other costs, we can hypothesize that these expenses are not just the normal good for company (Varian, 2010, 96), but the luxury good (Ibid, 101). Actually, the study conducted by HeadHunter suggests that differentiation of insurance programs for various categories of staff and changes in program conditions have allowed most of the surveyed companies to reduce the VHI budget by 10-20 per cent. 38 per cent of respondents have reduced their budgets by more than 20 per cent (VHI market overview, 2010, 6).

Since the public demand for VHI and paid medical services, as a rule, is the normal good, falling in employee incomes will inevitably reduce their demand. However, the impact of the decline in market demand can be, generally speaking, partly offset by SBU, if it is able

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<sup>8</sup> The list of factors relevant for healthcare organizations can be found in (Swayne, 2006, 48-49).

to extend the range of its customers by those whom services of higher quality have ceased to be available. Besides this, in contrast to companies, demand for VHI and paid medical services, being (especially for the younger population) the luxury good too, in general, has less income elasticity. In this situation, the applying of price discrimination (Varian, 2010, 462) and sales promotion can offset losses in the corporate sector.

Thus, the entering of the country into recession should be the signal for the private partner to the revision of the range and volume of services, pricing strategies and marketing tools used to stimulate consumer demand for paid medical services and VHI.

### **Competitors**

As noted above, the recession in the economy leads to a reduction in demand for paid medical services and VHI. Given conditions, the competitive environment generates two risks for SBU.

Firstly, the reduction in demand leads to increased competition in the market of paid medical services and VHI, which may lead to a reduction in SBU's market share. Generally speaking, it is assumed that the probability of this risk is reduced if public partner includes the experience of successful medical service providing in a competitive environment into the selecting criteria<sup>9</sup> for determining a private partner at procurement stage of PPP project.

Secondly, incentives for entry of private medical organizations into the OHI system are strengthening, which leads to a risk of reduction of share SPV in OHI, discussed above.

### **Suppliers**

As noted above, in a recession the volume of services in the healthcare market is reduced, leading to a reduction in the volume of purchases of healthcare providers and complicates the applying of second degree price discrimination. Thus, there is a risk of an increase in operating costs compared with the projected level which falls on the private partner.

It should be noted that in Russia the problem of this risk neutralization is facilitated for the private partner because, according to the Russian legislation, SPV has no status of contracting authority and, correspondingly, obligations to purchase in accordance with formalized procedures (Ivanov, 2012, 40).

### **Public Partner**

In the context of recession and cutbacks on public health, the public partner is interested in attracting private financing. However, in the case of disclosure information on reducing the revenue side of the PPP project or increasing its costs side, public partner may be pressured to end the project and to choose of alternative ways of providing services, delegated to the private partner (Vecchi at al., 2013).

In addition, the decrease in relatively low income of patients, receiving services under the OHI system, can prevent them from consumption of additional paid services, and make the public partner to prohibit providing paid services for this patient group.

### **Private Partner**

Let us assume that the SPV is involved only in the part of the business-portfolio of the private partner. In this case, its resources can be used to support other activities of the private partner, the hardest hit by the recession: for the payment of dividends to its shareholders, for the creation of excess reserves, for the avoiding of firings, etc. (Tirole and Laffont, 1993, 1).

In this case, the public partner, being in a situation of moral hazard can be quite sensitive to the third party claims.

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<sup>9</sup> The experience can be used as selecting criterion at the prequalification stage and as awarding criterion at the final stage of tender.

## Special Project Vehicle (SPV)

The processes occurring in the environment SPV, can act directly on its internal stakeholders. In a recession time there are fewer opportunities for staff outside the SPV, on the one hand, and work in the conditions of long-term public procurement is usually attractive to the staff. So, the recession should not give rise to risks (in the negative sense) of the PPP project objectives achievement.

Thus, the PPP project risks, generated by the recession of the Russian economy, have been above identified. To identify all the macro environmental risks, we can apply the same techniques to the rest factors of general environment of the PPP project.

### 4.2.2. Analysis of the micro-environment of the PPP project

Risks arising during the operational phase of the PPP project may not be associated with the changes in macro environment of the PPP project, but have the industry-specific nature. In the paper, to identify and analyze such risks are encouraged to use a generalized model of industry competition suggested by M. Porter (Porter, 1985, 5).

There are three ways to apply the model. It can be used by:

- portfolio investor, to assess the potential profitability of the industry,
- potential service provider to assess the attractiveness of the industry and the possibility of overcoming industry's barriers,
- service provider, to identify the opportunities and threats generated by the SBU's industry environment.

We use the last variant of application of the above model of M. Porter. Let us perform the analysis, showing how in considered period of time

- industry, form and potential SBU's competitors
- consumers
- suppliers

may affect the achievement of the objectives of the PPP project.

We construct an algorithm to identify the risks arising from competition of SBU and its industry competitors.

1. Identify primary activities of SBU within VAC, and support activities, implemented by SPV in relation to SBU.

Fig. 3 shows an example of VAC in providing medical service. As with most medical services, the following activities are consistently carried out:

- new patient attracting,
  - diagnosing,
  - preparing,
  - intervening,
  - reanimation / recovering,
  - post operation service (including follow-up marketing and follow-on ing<sup>10</sup>).
2. Perform analysis of the activities carried out SBU within VAC

Implementation of this step of the algorithm requires consistent review of VAC elements within each of the activities carried out in order to compare the quality of care for the implementation of relevant elements and costs arising from their implementation.

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<sup>10</sup> Follow-on marketing – patient transfer to another VAC.



## 2.1. Compare the quality of performance of activities SBU and its competitors

Advantage in the quality of medical services in the framework of the appropriate VAC link can rely on more modern technology of medical services, qualifications of staff, quality of medical equipment, medicines and consumables, service level, accompanying medical manipulations. It should be noted that the quality of medical services not only related to the implementation of the primary activities of the private partner, but also with the implementation of supporting ones.

In particular, one of the main sources of occurrence of medical risk – risk of low quality of medical services, is laboratory tests, which are usually organized at the support activities level (or outsourced). On the other hand, the source of intrahospital infections can be wrong organization of hospitalization in the clinic.

The advantage of SBU's competitors in the quality of medical services creates a demand risk which is concluded in the switching some of SBU's patients on the competitors services. This risk can be identified in the operational phase of PPP project, for example, when new competitors enter the SBU's market.

The public partner, as it mentioned above, can reduce this risk by establishing the appropriate criteria (experience of successful competition) in the tender documentation on the project development stage or directly protect the market from new entrants.

## 2.2. Compare the cost of performance of activities SBU and its competitors

There are some risks, when SBU's competitors have advantage over SBU in the costs. Firstly, having information about the average level of market costs, the public partner can review the relevant targets of the PPP project. Secondly, relying on lower costs, competitors SBU can reduce the cost of paid services that will generate demand risk discussed above.

To reduce the likelihood of such risk occurrence may be encouraged to consider each link of VAC in terms of costs management: identify opportunities to reduce them or to create value for the patient, the effect of which is known to exceed the corresponding increase in costs.

## 2.3. Identify medical risks

Demand risk in the implementation of PPP projects can not only occur in the case of advantages competitors over SPV in the delivery of health services (due to mistakes in the procurement stage, changes in the list of industry competitors, etc.) but also in the case of isolated cases of providing substandard care, the so-called iatrogenic errors<sup>11</sup>.

Eliminate this type of error is not possible due to the presence of attributive human factor in the providing of medical services, which requires mandatory professional liability insurance of a doctor. However, consistent analysis of VAC links allows us to identify sources of human errors as full as possible.

We return to the Fig. 3. Moving from one link of VAC to another one, we can identify the possible sources of errors in the implementation of all activities in the provision of medical services: transcript of mammography, biopsy analysis, the choice of means of anesthesia, surgery, etc.

Thus, the PPP project risks, generated by the competition on the SBU target market, have been above identified. To identify all the micro environmental risks, we must also consider the relationship of the SBU with its consumers and suppliers.

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<sup>11</sup> Should be distinguished substandard medical care associated with unqualified actions of medical personnel, use of substandard equipment, drugs or donor material from a lack of results in health care. In particular, in the IVF probability of a successful outcome in the best clinics of St. Petersburg barely exceeds 50%.

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