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THE INFLUENCE OF UNIVERSAL AND SPECIFIC RISKS ON QUALITY MANAGEMENT DURING IMPLEMENTATION OF LARGE-SCALE RUSSIAN INVESTMENT PROJECTS IN THE CONDITIONS OF UNCERTAINTY

Abstract: *The aim of the article is to display the identification features of current territorial megaprojects as a relevant tool of the state strategic management and to reveal a number of specific risks, accompanying quality management in the processes of the development and the realization of large investment projects. As a rule a megaproject is connected with a long term prospect that intensifies its probabilistic character and provokes one or another risk: macroeconomic, political, geographical, engineering, technical, financial, commercial, organizational and legal, tariff, taxation one and others.*

Special attention is paid by the authors of the article to such types of the risks as a risk of competence and a corruption risk. Using the example of current Russian megaprojects such as, for instance, “Ural Industrial – Ural Polar”, construction of the Olympic objects in the city of Sochi, it was shown that these risks became the reason for the rebranding of the megaproject or they lead to a considerable increase of the fact costs in comparison with the planned ones. The authors are convinced that the display of possible corruption risks at the pre project stage, taking into account of reputation risks and the elimination of risks of low competence are an important task implying the reduction of the uncertainty of the final effect from the realization of the territorial integrated megaproject.

Keywords: *Territory, Megaproject, Development, Integrated character, Life cycle, Uncertainty, Risk, National strategy, Regional policy*

1. Introduction

The development of megaprojects is an important tool of the strategic territorial management in its macroeconomic and global dimension. Characteristic features of territorial megaprojects are: 1) high costs

(USD 1 billion); 2) capital intensity; 3) consortium of firms as a financial source of the megaproject; 4) large amount of works measured in labor hours: 2 million labor hours for the design of the project, 15 million labor hours for the construction; 5) conditions of implementation: 5–7 years and

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more; 6) high level of profits and expenses at a considerable dynamics of assets; 7) necessity of the solution of problems of the international business; 8) remoteness of regions where the megaprojects are being realized, additional expenses for infrastructure; 9) impact on the social and economic sphere of the region and even of the countries where the megaproject is being realized (Mitrofanova et al., 2015b; Zhukov, 2014; Zhukov, 2012).

Megaprojects today are becoming today an independent format for the development of the strategy of a particular region, district, influencing the speed and the quality of changes of the economic space of the territory of the realization and adjoining regions (Inshakov, 2011; Inshakova & Voloshina, 2009).

The success of the Russian territorial megaprojects mainly depends on the way the project is protected from differentiated risks, resulting from the fluctuations of the external environment and the complicated character of the projects themselves. The risks arise in the situation of the uncertainty understood as a result of the complete ignorance or insufficient knowledge of natural and social phenomena into which the project “intrudes”.

The megaproject is connected with a long term prospect that strengthens its probabilistic character. That’s why at a stage of its realization some circumstances that reduce its reliability as a whole may arise. For instance: 1) changes in the strategy of the territorial development, dislocation of production, reassessment of potential natural resources resulting from the development of new deposits are taking place; 2) problems in the provision of the succession of the strategies approved earlier and correspondingly in the priorities of social and economic development of territories appear; 3) if the approved temporal consequence of construction and introduction into use of some objects of a megaproject were not based from the point

of view of technological relations, economic expedience or, for instance were marked by a weak linkage with the development of the capital engendering industries of a territory (Mitrofanova et al., 2015a; Mitrofanova et al., 2015b).

Today in Russia among the projects planned for the realization and those that are being implemented the oil and energy complex, metallurgy and infrastructural industries are dominating.

In Russia during 10–15 years the megaprojects assessed at 150 billion dollars (more than 10% of the GDP of the country) that are approved by the state authorities for the implementation are being realized those which use the model of the state private partnership. Mainly they are the projects of a large scale development of new territories, social and economic development of which is at low lever now.

Megaprojects of the integrated development of the Nizniye Priangarye, Southern Yakutia, Zabaikalye and the Arctic are thought to create a new economic frame capable of the dynamic development of problematic regions of Siberia and the Far East (62% of the volume of all investments of all projects are being realized in the area beyond the Ural mountains of Russia).

2. Literature Review

A considerable contribution to the development of the theory of risks was made by the famous economist or classics of the economic thought: (Abdel-Basset et al., 2019; Das et al., 2019; Dirick et al., 2019; King et al., 2018; Novo-Corti et al., 2019; Santis, 2018; Souza et al., 2019).

The problem of risks of the realization of large scale investment projects as a tool of the infrastructural development of territories (such as, for instance, La Manche tunnel, Øresund Bridge between Denmark and Sweden, Vasco da Gama bridge in Portugal and others) was thoroughly studied in the works of the scientists: (Achten et al., 2019;

Bayrak, 2018; Bogoviz & Sergi, 2018; Brazill-Boast et al., 2018; Fragkos& Kouvaritakis, 2018; Genoud, 2018; Moreda, 2018; Morozova et al., 2018; Osabuohien et al., 2019; Popkova, 2019); Sergi et al., 2019; Zheng et al., 2019).

The problems of risks identification, practical aspects of their realization in historic and current territorial megaprojects and methodological aspects of the assessment and leveling of the risks at different stages of the life cycle of a large scale investment project were studied in the works of the scientists: (Bi & Cai, 2019); Bo et al., 2019; Clark, 2019; Díaz et al., 2019; D'Orazio & Popoyan, 2019; Huang, 2019; Huber & Huber, 2019; Wan et al., 2019; Zhang & Chen, 2019).

3. Research Methodology

Methodological base of the solution of scientific goals within the systematic and evolutionary approaches became the use by

the authors of the general scientific and specific methods of research and knowledge: comparative method, subject and object method, historical and logical analysis, statistical method, method of expert estimation. This allowed to study the problem of risk identification, risk assessment arising in the process of the development and the realization of territorial megaprojects (integrated, multi industrial) in a more objective, integrated and systematic way and to suggest a number of measures concerning their leveling and elimination.

For proving strong susceptibility of the large investment projects in Russia to the influence of risks, let us use the data of the official statistics of the Federal State Statistics Service of the Russian Federation for 2018. Let us consider the dynamics of the volume of investments into fixed capital, new fixed capital formation, and the share of innovative goods, works, and services in top-priority spheres of the Russian economy in 2017-2018 (Table 1).

Table 1. Investments into fixed capital, new fixed capital formation and the share of innovative goods, works, and services in top-priority spheres of the Russian economy in 2017-18

Sphere of economy	Year	Volume of investments into fixed capital, RUB billion	New fixed capital formation, RUB million	Share of innovational goods, works, and services, %
Minerals extraction	2017	2,830.4	2,162,879	3.7
	2018	3,025.5	2,718,133	4.0
Growth, %		6.89	25.67	8.11
Processing productions	2017	2,123.7	1,753,541	10.6
	2018	1,921.2	1,767,259	10.9
Growth, %		-9.54	0.78	2.83
Production and distribution of electric energy, natural gas, and water	2017	940.2	1,088,207	0.8
	2018	940.0	944,319	2.3
Growth, %		-0.02	-13.22	187.50
Construction	2017	445.0	303,561	0.6
	2018	281.7	159,266	1.7
Growth, %		-36.70	-47.53	183.33
Communications and ICT	2017	384.2	254,422	13.2
	2018	432.4	421,634	11.9
Growth, %		12.55	65.72	-9.85

Table 1 show that the volume of investments into fixed capital in the sphere of minerals extraction in Russia in 2018 grew by 6.89% as compared to 2017. In 2018, increase of new fixed capital formation constituted 25.67% as compared to 2017, and the share of innovative goods and services grew by 8.11%. The volume of investments into fixed capital in the sphere of the processing industry in Russia in 2018 reduced by 9.54% as compared to 2017. In 2018, increase of new fixed capital formation constituted 0.78% as compared to 2017, and the share of innovative goods and services grew by 2.83%.

The volume of investments into fixed capital in the sphere of production and distribution of electric energy, natural gas, and water in Russia in 2018 reduced by 0.02% as compared to 2017. In 2018, reduction of new fixed capital formation constituted 13.22%

as compared to 2017, and the share of innovative goods and services grew by 187.50%.

The volume of investments into fixed capital in the sphere of construction in Russia in 2018 reduced by 36.70% as compared to 2017. In 2018, reduction of new fixed capital formation constituted 47.53% as compared to 2017, and the share of innovative goods and services grew by 183.33%.

The volume of investments into fixed capital in the sphere of communication and ICT in Russia in 2018 grew by 12.55% as compared to 2017. In 2018, increase of new fixed capital formation constituted 65.72% as compared to 2017, and the share of innovative goods and services grew by 9.85%. Autocorrelation of these indicators in 2017 and in 2018 is shown in Figure 1.

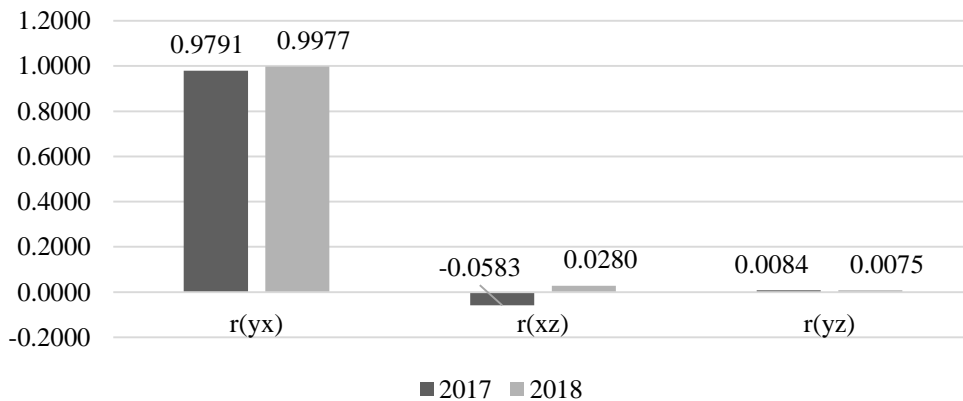


Figure 1. Autocorrelation of the volume of investments into fixed capital, new fixed capital formation, and share of innovative goods, works, and services in Russia in 2017 and 2018.

Figure 1 shows that autocorrelation of investments into fixed capital and new fixed capital formation is rather high and constitutes 0.9791 in 2017 and 0.9977 in 2018. Autocorrelation of other indicators between one another is zero (and even negative). This shows that during implementation of large investment project

(as is shown by the example of innovational projects) in modern Russia there’s a high level of risk, which requires thorough elaboration and management, as it complicates making of investment decisions, causing unpredictability of the results of investing.

4. Results

4.1. Risk and Uncertainty

The reason for risks appearance is the uncertainty typical of every project. The uncertainty very often is understood as an inexactness and an incompleteness of the information concerning the conditions (scenarios) of project implementation. The results of the uncertainty manifestation can be both positive (profit, income, some other advantage) and a negative one (damage, loss, detriment) or null result (absence of profit, absence of losses). Risk is a subjective characteristic of an investment project from the point of view of one of its participants, reflecting the opportunity of the realization of unfavorable scenarios and consequences.

There exist different interpretations of the notion "risk".

1. The risk is seen as the activity of the economic subjects connected with the overcoming of the uncertainty in the situation of an inevitable choice when there is an opportunity to assess the probability of the achievement of a desired result, failures and deviation from the goal that can be seen in selected alternatives.
2. The risk is connected with fears that the realization of a project will lead to losses.
3. The risk is seen as a measure of dispersion of the assessment indices (profit, profitability of the capital) of an analyzed project obtained as a result of a multiple forecast.
4. The risk is juxtaposed with the danger of the fact that the goal of an investment project will be achieved in the planned volume. Besides it is supposed that instead of an expected condition of the environment there arises a worse situation (for instance, the profit will be reduced at a certain amount).

4.2. Risks appropriate to territorial megaprojects

The originality of the megaproject influences the appearance of typical and specific risks including microeconomic risks, political, geographical, engineering, technical, financial, commercial, organizational and legal, tariff, taxation, competence, personnel, corruption (criminal), reputational ones and so on.

Commercial risks arise as a result of the sales of goods, works and services and the main premises are the volatility of the demand for goods, works and services, limited number of suppliers, complicated chains of supply, specificity of physical data of goods, works and services (portable character, undamaged state and so on).

The main commercial risks very often are reduced to peculiarities of price forming and the order of construction of relations between the participants of the project and the market in the whole. Such risks concentrate the attention under a contract, market conditions and their specificity. For the reduction of such risks it is necessary to structure thoroughly the liabilities of the parts and the provision of sufficient guarantees and insurance, included into the provision of the contract.

For the minimization of the risks and unfavorable changes of tariffs the managing companies of megaprojects need to construct long term relations with regional regulating authorities of the Federal Service for Tariffs, to attain the use of the mechanism of the tariff indexing. The risk of unfavorable price changes for the goods obtained as a result of projects are minimized by means of a conclusion of preliminary agreements about future supplies and also at the expense of a thorough analysis of market of supplies of a good, making channels of goods more diverse, organizing competitions of the suppliers.

Technical risks of megaprojects can be more considerable and as a rule are narrowly specialized. At the same time this group of risks remains the most numerous as it encompasses a large number of different threats that accompany the realization of investment projects at all stages: design of a project, construction, exploitation and they (threats) comprise both the organizations that finance them and the circumstances of third parties (subcontractors and others). At the same time technical risks remain the most complicated ones for their solution using the easing policy. They require a thorough structuring of contracts, efficient control, external supervision and control of works realization carried out by parties connected with investment projects directly or indirectly.

The most possible technical risks of territorial megaprojects are: 1) violation of ecological standards and in this case the risk is minimized by means of measures directed on a timely detection of the activity capable of damaging the environment and settlement in the contract with the general contractor/contractors the provisions concerning the responsibility of the violation of the ecological norms; 2) non-fulfillment of construction terms and introduction of the objects into use by general contractor/contractors. In this situation the risk is minimized by means of the increase and toughening the criteria of the selection of general contractors, project and research institutes, equipment suppliers deadlines and materials, by means of the inclusion into the contracts the bank guarantees for the return of the advance prepayment, by means of increase of fines for the breaking the works and equipment deadlines, by means of the preliminary check of manufacturers, contractors and also by means of a continuous control of the fulfillment of contract and use of the own service of the technical supervision over the quality of construction; 3) non-fulfillment of the terms of the supply of the basic production equipment by the suppliers and in this case

the risk is minimized by a thorough selection of suppliers and signing contracts with suppliers on the following terms: fixed price of equipment and deadlines of arrangements; the supplier guarantees the reimbursement of losses arising at a delay of the equipment delivery; the mechanisms of the provision of the fulfillment of the contracts by means of fines. Also this type of the risk is minimized by the fact that the suppliers of the equipment are the manufacturers of this equipment or their official dealers that helps to strengthen the control over the quality of the supplied machinery, services of suppliers at the assembling and terms of the delivery; 4) unsuccessful changes in the operation activity of the objects at the exploitation stage. The risk can appear as an excess of operation expenses: errors of the operational activity of the objects, failure to achieve the planned capacity. The risk is reduced to a minimum by the following actions; by means of a thorough selection of the stuff with a specific work and management experience in the sphere of the project realization, regular monitoring of the project fulfillment, reduction of the dependence from a single supplier.

Ecological risks are closely related with *ecological risks*. In the triad “individual – production – environment” there inevitably arise difficulties connected with the overcoming of the contradictions that in reality exist between rich natural and mineral resources, unique climatic conditions and limited labor resources of a needed quality; with the creation of conditions responding to all material, cultural and public, medical and sanitary requirements, formed under the influence of natural and climatic peculiarities and the production specialization of a territory. The difficulties are also connected with the provision of the nature management that does not lead to the violation of the allowable “intrusion norms” for people and managed by them factories into the nature; with the application of such technological schemes and means of the production that would allow the development of a more

efficient strategy of their development using the labor-saving policy taking into the consideration the relationships and relations of the elements of the production forces with the component of the natural environment.

Planning in the process of the realization of the life cycle of a territorial megaproject inevitably contacts with the natural environment and it is indispensable to take into account its capability of restoring in a natural way the ecological process as well as the resource, industrial and technical capacities for the restoration of the ecological equilibrium.

Political and macroeconomic risks are subject to the influence at a lower degree. These risks are found beyond the control of the managing companies and possible measures of their minimization are limited. That's why it is important for the corporations – participants of the megaproject to interact with the governmental authorities of all the levels.

Geographical risks. A very important factor is the peculiarity of the geographical location of the objects. That's why at the planning of the activity it is indispensable to take into consideration the seasonal character of works production and seasonal risks connected with heavily accessible territories or a specific geographic location where the megaproject is being realized.

Organizational, legal and institutional risks are inevitable due the changing legal environment. The normative and legal base of the Investment Fund of the Russian Federation is permanently being corrected, changes are made in the "Law on Concessions", "Law on Special Economic Zones" and so on. The legal base of the functioning of state companies and corporations is being constantly transformed. So, for instance, the financing of the Russian megaproject "Integrated development of the Southern Yakutia" could not begin due to frequent correction of the "Statute of the Investment Fund of the Russian Federation" and administrative delays inside federal

ministries and establishments".

Engineering risks are determined by a low quality of the engineering solutions. In spite the appearance during latest years of a number of large scale engineering and construction megacompanies of an international level the quality of the serviced provided by them is considerably below the international criteria.

In Russia during the latest 20 years new enterprises and new infrastructure were not created that lead to a serious degradation of the engineering. It is indispensable to restore the engineering industry anew and to create a net of industrial designing organizations using the mechanism of the state and private partnership. But it is supposed to take place in a close interaction with the leaders of the world engineering and for that it is indispensable to liberalize many aspects in the technical regulation and the town planning policy as the technical town planning norms approved in Russia are complicated, conservative in many aspects, are constantly being sophisticated and from year to year their sophistication and not unification or simplification are taking place.

Many approvals and expertise are needed today more and more. It is necessary to bring together national engineering standards with international ones for the progress achievement in this important sphere. Transparent tools of the state support are needed for the creation of the housing and communal infrastructure. Special order of the land and natural resources disposal within the frames of the realization of the integrated megaprojects of territorial development are indispensable.

Financial risks arise in connection with the financing of contracts and agreements signed at the realization of the investment projects. Financial risks comprise currency risk, interest risk and liquidity risk. Financial risk management was supposed to be organized in a centralized way. The risk or interest rate changes is connected with possible changes of the service cost of the attracted borrowed

funds and can reflect on financial results of the corporation. Only just having perfect reputation corporations of development can attract credits only under attractive conditions using the fixed and floating interest rate.

Liquidity risk was connected with the fact that the managing company cannot pay its liabilities when the term of their payment is due. That's why, for instance the department of the economy and finance of the managing company provides a centralized liquidity management. The liquidity management is realized via the use of the procedure of the detailed budgeting, control of the payment conditions, monthly composing of a cashier plan of the budget. For the liquidity management the reserves of liquidity should be created sufficient for the organization of the activity, taking into consideration of currency and interest risks.

All the megaprojects using the mechanism of the state and private partnership were structured on the basis on the official matrix of macro indices that were approved by the Ministry of the Economic Development of the Russian Federation. However the inflationary reality very often is higher than official forecasts and its average predictions of independent analysts from the banking sector differ considerably with the official forecasts. That's why it is important to take into consideration the inflationary risk. The inflation affects the nomenclature of goods and services that are consumed at the realization of megaprojects and the rate of inflation can be even more critical.

In the regions of the realization of megaprojects the inflation can reach 30–50% per year. Before all this situation deals with the production of construction materials, services and works of engineering and construction companies and so on. The real amount of investments that will be needed for the realization of the largest part of megaprojects can be obviously higher than that was announced in the beginning. The cost of territorial megaprojects, especially

the infrastructural ones, should be adjusted for the inflation rate.

Legal risk can arise due to the inconsistency of normative and other legal acts of the managing company to federal and regional legislative norms and requirement or as a result of their non observance. The external factors of violations of the state norms and standards that present legal risks are: imperfect character of the legal system, absence of sufficient legal regulation, contradiction of the legislation of the Russian Federation, its susceptibility to changes implying the imperfect mechanism of the state regulation and (or) supervision, wrong use of the legislation of a foreign state and international laws).

In order to minimize these risks the company managing the megaproject needs to monitor the information and legal system for the purpose of the timely registration of the prepared laws and the draft of the federal laws capable of influencing the activity of the firm responsible for a project.

Legal risks can also be displayed as an opportunity of the generation of losses as a result of the non observance by the contractors of the requirements of the legal acts and the signed contracts. In connection with the impossibility of the solution of single contradictory questions arising in the process of contracts implementation, by means of negotiations there exists the opportunity of the lawsuits emergence and as a result the appearance of the risk of the unfavorable verdict for the company managing the megaproject.

Consequences of the violation of the laws and standards in the activity of every legal entity are the following: legal sanctions or the fines of the regulatory authorities; considerable financial losses and (or) reputational losses as a result of the non observance of laws, instructions, rules and conduct norms.

Taxation risks are connected with potential changes in the taxation laws. The basic principles of taxation and the order of the

calculation and the payment of typical taxes are written into the Taxation Code of the Russian Federation. Taxation reform in Russia is found at the final stage: changes introduced into laws are the current ones deal only with single problems of taxes calculations and do not lead to a considerable increase of the tax burden. However at the same time the potential risk of the difference of the interpretation of the norms of the tax laws between the tax authorities and tax payers exists and this fact can also be referred to legal risks.

Administrative and managerial risks. Both international practice and the national experience of the megaproject implementation proves that the most considerable failures of large scale project on the basis of the state and private partnership is the logical consequence of use of inefficient managerial schemes. The megaprojects realized in Russia today and specifically the most complicated ones from them integrated territorial megaprojects suffer from non optimal managerial organization.

There exists the problem of the plurality of responsible executors from the part of the state. Thus, for instance, the megaproject “Integrated development of the Southern Yakutia” is a typical example where from the part of the state there are four responsible executors within the industry and the curator from the Government of the Russian Federation and the region itself (Republic Sahka (Yakutia)) is its coordinator.

The initiators of the project “Integrated development of the Southern Yakutia” developed for the state the pattern “one window” that is a specialized managing company “Corporation of the development of the Southern Yakutia” that remains the single executing part of the investment contract with the state. It is indispensable that there would be only one responsible executor representing the government otherwise the implementation of territorial megaprojects would be constantly inhibited

due to the absence of the elementary coordination and the responsibility in the actions of multiple state controlling authorities.

The situation for the initiators and investors of the megaprojects is aggravated by the fact that the government periodically initiates considerable administrative changes at the federal level transferring the investment authorities from one ministry to another transforming agencies into state corporations and so on that retards the stage of the implementation in the life cycle of the megaproject.

Thus, the megaprojects are confronted with administrative and managerial risks as a result of an efficient management, a plenty of responsible executors and so on. For the investors it is important that both initiators representing the business and the government there would be only one responsible executor (the “one window” principle) (Mitrofanova et al., 2015a; Mitrofanova et al., 2015b).

4.3. Manifestation of corruption risks and competence risks during the implementation of current Russian megaprojects

The analysis of the implementation of current Russian territorial megaprojects proved that the reason for their rebranding could become *the risk of competences*, that showed as an extremely incorrect of forecasts and this fact even at the pre project stage can become the reason for a negative multiplicative effect and can lead to the changes of the whole concept of the megaproject, having lowered its strategic character and importance.

Thus, basically the Russian megaproject “Ural Industrial – Ural Polar” included a number of the interrelated steps in the creation of three basic parts: transport segment, energetic one and the natural and resource one. The transport and the geological prospecting segments were

closely related. The basis of the project was developed by the Western Siberian Scientific and Research Geological and Prospecting Oil Institute. However the forecasts of the deposits capacity that cost the state RUB 8 billion (USD 250 million) proved to be considerably overestimated. In the result of the costly geological prospect dealing with the check of the forecasted reserves it became obvious that the forecasts were incompetent and were greatly overestimated. This situation leads to the rebranding of the whole concept of the Ural megaproject (Mitrofanova et al., 2015b).

During the implementation of the current Russian territorial megaprojects the corruption (criminal) and reputational risks appeared. The *corruption (criminal) risk* is connected with the influence of the black economy, the use of dark (illegal, unclear) schemes in the financial and economic activity. The *reputational risks* were caused by the attraction of the company with a doubtful reputation. The order for the construction was entrusted to the organizations and the managers who showed themselves as inefficient fund users that could discredit the whole project and avert the investors. That's why the Administration of the President of the Russian Federation created a special inspecting group that compiled the resume for the potential project executors.

Specific questions the project inspector had the construction and assembling group "Yamaltransstroy" which obtained yearly more than RUB 0.5 billion (USD 15.6 million) from the Public Company "Gazprom" for the construction of the railroad main. But this company set only 7–10 kilometers of the railroad into exploitation yearly. Despite a sufficient financing almost all the enterprises that were the part of the group turned out to be debtors or bankrupts, the worker did not get the salary for a year. The accounts payable of the "Yamaltransstroy" accounted for RUB 1 billion (USD 31.2 million) and 200 000 of which amounted the debts before the state.

The determining role in the struggle of the company for the contract within the Ural megaproject had the family and commercial relations. In 2006 with the help of influential lobbyists the father and son V. Nak and I. Nak who purchased almost 80% of shares of "Yamaltransstroy", won the tender for the prolongation of the construction of the railroad "Obskaya – Bovanenkovo". The contract of almost RUB 80 billion (USD 2.5 billion) was concluded with the public company hastily registered in Moscow "Yamaltransstroy" and which did not have necessary specialists and machinery for the implementation of the project. The subcontractor became the public company "Motostroy-13". The new segment of the road of 260 km long was expected to become a "golden" road. A simple calculation show that cost of every kilometer of the road will amount RUB 268 mln. (USD 8.4 mln.). In the opinion of the experts the cost of one kilometer of the road was overstated more than 10 times. The experts think that the Naks (the father and the son) earned doubly 150–200 million dollars.

In March 2011 evident for experts and investors financial violations became interesting the law enforcement structures. The complaint against general directors of the companies "Mostostroy-13" and "Sigma" was laid. Since September 2009 till March 2010 they misappropriated money using false contracts. The amount of damage was about 844 million dollars (USD 26.4 million) 743 million dollars of which were legalized via false companies. The bringing of similar actions negatively influenced the attractiveness of the Ural megaproject for the potential investors.

Another example is the Russian Olympic megaproject "Sochi 2014". The largest part of this sum within the implementation of which (about RUB 1.33 trillion or USD 4,2 billion) was invested into the infrastructural development of the city of Sochi and the Krasnodar kray: roads, energy system, property and so on.

However not all the expenses were based: 1) the construction of the roads in Sochi cost more than RUB 500 billion (USD 15.6 billion). Besides the road in the center of the city and its main road as well as the city long road “Lazarevskoe – center – Adler” in fact was not affected by the road construction that can lead to a transport collapse during the high season; 2) instead of the construction of the new road “Krasnaya Polyana – Adler” the suggestions were made to enlarge and to renew the old road leading to Dagomys through the settlements Azhek and Medoveevka. Besides the obvious gain of the company consisted in the withdrawing the “Olympic” transport flows from the overdriven streets in the center of the city of Sochi. But a more costly project dealt with the cutting the road through the mountains.

Besides the cost of the construction “Krasnaya Polyana – Adler” proved to be extremely high. This project was complicated and included 27 kilometer of the tunnels, 35 kilometers of bridges and trestles. However the most valuable world experience show that even the most complicated tunnels and bridges cost about USD 140 mln. and USD 50 mln. per kilometer. This means that the construction of the road was expected to cost the government USD 4 billion (USD 125 million) but judging from the construction estimate it was two times more expensive.

The energy system of the city of Sochi was subject to the modernization as the total wear amounted to 70%. About 50 objects with the total capacity of more than 750 megawatts were erected and USD 1.1 billion were spent on them. But every new kilowatt of energy cost the investors almost USD 1.5 thousand that is 2 or 3 times higher than the average price of every kilowatt of every new capacity in steam and gas and gas turbine power stations.

The construction of the Olympic objects in the mountains and coastal clusters cost about RUB 220 billion (USD 6.9 billion). However neither in the process of the design works

nor in the process of the Olympic construction the peculiarities of the Sochi climate were not fully taken into consideration (Mitrofanova et al., 2015a). Meanwhile the Olympic object of the mountains cluster is constantly threatened by the landslides that’s why the State Corporation “Olympstroy” was fined for the violation of the safety requirements. Due to the tunnel constructions and large scale objects the local inhabitants suffered the losses whose houses were destroyed due to landslides.

The risk of competence and the corruption risk contributed in the authors’ opinion to the situation that the factual cost of the Olympic megaprojects “Sochi 2012” exceeded the planned cost almost 4 times.

5. Conclusion

One of the reasons for the economic crisis in Russia in the early 1980s became in the opinion of many foreign specialists the increase of the quantity of large scale projects such as, for instance, a further development of raw material resources of heavily accessible resources of the Siberia and the Far East under the conditions of the considerable drop of oil prices in the world market. This was the technological paradigm of the soviet period.

The problem of the differentiation of the approaches to the assessment to the efficiency of “small” and “large scale” investment projects taking into consideration the factor of the uncertainty remains. The methodology in this problem has not been positioned so far and the practice of the assessment uses the easiest way: large scale investment projects are estimated using the same formulas as well as the small scale projects. But from the methodological point of view this situation is a nonsense.

The general culture of projecting, planning and implementation of megaprojects in Russia is not good. The commercial aspect of the project basing, partisanship of the

expert community prevents from having an independent assessment of risks and the efficiency of the investment projects and the desire to save up money at different stages of scientific basing and research and development checks often leads to risky decisions and unpredictable consequences.

The detection at the pre project stage of possible corruption risks, taking into consideration the reputational risks, the elimination of the risk of low competence is a very important task dealing with the uncertainty reduction of the final effect obtained from the implementation of the integrated megaproject.

The most important ones are the following measures: 1) all the existing legal and methodical materials that regulate the assessment of large scale territorial megaprojects were expected to be certified in respect of the reflection in them scientifically based methods of taking into account the uncertainty and risks; 2) at the presence of any form of the state and private partnership the regulating materials are expected to contain clear instruction of the methods of selection and the assessment of the configuration of mechanisms of the projects realization and risks division between the business and the state; 3) criteria of the quality of the certified materials are supposed to be elaborated by the Russian Academy of Sciences as well as the bodies making decision concerning the certificates for the use of corporate methodologies.

That's why at a thorough analysis of the attractiveness of megaprojects (not only of the commercial but also the social ones), their promotion in many situations are based on the resources consolidation (not only financial ones but also the intellectual ones) of different countries. Different alliances, for example, technological ones that allow uniting resources, avoid doubling the functions and reducing risks should be created.

The Russian state today is not always in the state of assessing the commercial attractiveness of megaprojects. Under the conditions of the absence of the risk of the money loss the state is not able to calculate correctly the strategy and tactics, to assess the market capacity and to construct a flexible management of the implementation process and the exploitation of the megaproject. That's why the most important task remains the modernization of the state economic strategy, the creation of a flexible environment for the private business, indirect encouragement of companies participating in the implementation of the national strategy, the strategy of the regional (spatial) development, and therefore, having the common goal – the strengthening of the common economic space of the country. The determined influence of universal and specific risks on quality management during implementation of large-scale Russian investment projects in the conditions of uncertainty formed the scientific and practical basis for risk management of this process.

It should be concluded that unlike the existing studies of the risks of implementing large investment projects in the conditions of uncertainty, the authors of this paper pay main attention not to management of risks (external factors) but management of quality (internal factors), which expands and raises the effectiveness of risk management, as external factors cannot be managed, unlike internal factors. This determines wide perspectives of practical application of the authors' conclusions and the offered recommendations.

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