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FINANCIAL RISK MANAGEMENT OF AN INVESTMENT PROJECT IN GAZPROM DOBYCHA IRKUTSK

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In the modern understanding of project management, the probability of risks is not just statistics, but the help of project managers in decision-making. Gazprom Dobycha Irkutsk is responsible for the implementation of part of the Power of Siberia project, the tasks of which must be completed strictly within the budget and time of the project. However, the main problem of the organization is the delay of the planned tasks. On the basis of the literature, analysis of the company in the framework of project management and determination of the powers of the Irkutsk subsidiary, the author proposed the introduction of financial risk assessment of the project.

Keywords: project management, project delays, financial risks

The success of any project depends on the management, which takes into account all external and internal factors having an impact on a project. However, Gazprom Dobycha Irkutsk, being responsible for the implementation of the project does not have the authority to fully manage the project. The complex structure, headed by Public Joint Stock Company Gazprom (PJSC Gazprom), manages many projects, one of which is the Power of Siberia. Due to many external factors, namely the work of other organizations controlled by Gazprom, the project suffers delays, which are a consequence of the increase in the budget. In order to avoid unforeseen costs because of the inefficient project the unorganized project management, it is proposed to introduce an assessment of the financial risk of the project.

Literature Review

The purpose of this literature review is to determine the need for continuous assessment of financial risks in project management. With regard to this target, a literature review was conducted in the following two areas. First of all, the literature review considers how financial risk assessment tools help to control the time and budget of the project. Secondly, the author considers the problems. Based on this literature review, a company case study will be conducted that financial risk assessment is an important factor in project management, and there is a need for regular monitoring of these indicators for the effective implementation of a project or group of projects.

First, it is necessary to define the key definitions: risk, financial risk, project and project management. Risk is combination of probability and consequences of adverse events. Risk inevitably accompanies all areas of activity and direction of any organization that exists in the market. Therefore, the problem of risk management is becoming increasingly important in modern conditions. [10] Financial risk is the possibility of adverse events as a result of the financial decision. Adverse facts and events imply loss of expected benefits or additional costs. A project is a specific process for achieving certain goals and solving a specific business problem. Project management is an activity aimed at achieving the objectives, the implementation of certain plans, using available resources such as time, capital, and people. [3]

According to the theory of Norton and Kaplan, tracking the result is possible only with quantitative and measurable methods. All actions, even non-material, such as delays in the schedule, committed by the organization during the project can be estimated in financial terms. [7] Therefore, checking financial risks is the method of determining project resources within acceptable limits. Because the purpose of the project is to complete the work on time and on budget, the project manager makes appropriate decisions within the project based on financial risks. [11]

The functions of financial risk also include the financial security of the organization from external and

internal threats. In other words, with the help of financial risk indicators, the manager determines the company's readiness for unexpected circumstances. [9] There are different types of financial risks in project management. Currency risk arises from taking out loans and cannot be influenced by the company. Investment risk emerges when investors, for whatever reason, believe that the company is not financially attractive. Inflation risk reduces future earnings and increases the cost of implementing the project. External financial risk is a tax risk, which the company cannot influence (only if the company is not state-owned) and which requires revision of the distribution of funds of the project budget. [2,5,6]

Quantitative measurement of financial risks is carried out by means of mathematical calculations. For example, these measurements are a financial level of risk, dispersion showing acceptable deviations of indicators, and beta coefficient characterizing investment risks. Also «three Sigma» method is used in the assessment of financial risks, showing the probability of an event on the chart. Mathematically calculated expectation and correlation are used in risk assessment too. [9] However, these mathematical calculations require approximation, which is not appropriate for practical application. Therefore, Berny doesn't agree with simple mathematical theoretical approaches and has developed a clarifying coefficient for various fields of activity of the organization. In addition, the author denied the calculation of risk for the entire project and pointed to the effectiveness of the calculation for the short subtasks of the project. [1] To assess project risks, there is a method of risk ranking to determine the most dangerous and more acceptable risks, called a heatmap (green, yellow and red colors represent low, medium and high risks, respectively). Despite the fact that a lot of managers use this method to determine the level of different types of risk, many researchers believe that it should not be used due to many shortcomings. The main drawback is subjectivity, the lack of standards of risk factors and a clear framework for the color category, which does not correspond to the nature of risk and cannot be definitely dangerous or acceptable. Therefore, in the dispute about the use of the risk matrix, there are differences in the presence of a continuous gradient of color, the choice of criteria determining the probability of risk, and possible consequences separately and not together as it was before. [4] Mentioned methods are used for calculating, presenting, and illustrating financial risk for budget tracking. However, besides the monitoring of the budget, it is very important to manage the time of the project, the downtime of which is financial risks too.

The most common reason for the increase in the cost of the project is delays. According to statistics, the implementation of any project starts when there are no funds to perform the entire project; usually start the project and implement it under conditions of

restrictions. [13] Delay is a consequence of increasing the cost of the budget because the funds that had to be but not spent on the planned task lose value. This means that the use of funds under the plan is the result of earnings in the form of additional value. Further, when this money is required to perform other tasks, the company will have to look for additional «more expensive» money to implement the overdue task. Delays are common financial risk that is necessary in management. It is also worth noting that ahead of the schedule leads to an increase in the project budget for the same reasons as delays is unscheduled budget implementation. [12]

But still, whatever modern project methods of evaluation managers use, they receive the data of a non-one hundred percent event. Before implementing the project, managers and project managers, using the principle of Deming, plan their activities. [8] It is not uncommon that they deliberately overestimate or underestimate the budget or the duration of the project. Overstatement is necessary to ensure that managers receive an award after the early completion of the project. Understatement is necessary for greater attractiveness of the project for investors. The calculation of financial risks is useless because of inefficiency caused by inaccurate or inadequate information. [5]

Therefore, financial risks are an important part in controlling project management. To carry out this activity, there are many ways to calculate, demonstrate and compare risk criteria. However, these methods are controversial and the authors have conflicting views on their application. Nevertheless, only those companies that have unlimited resources of funds and time can ignore the use of financial risk assessment of the project, but this cannot be possible in the modern world.

Context and Methods

There is no doubt that risks are an integral part of any activity of the company. Risks are divided into many types, but the most measured is the financial risk. Financial risk is also divided into different types, but the essence is it evaluates from the point of view of finance other types of risk and prevents possible losses in monetary terms. Irkutsk Gazprom is responsible for a third of a large investment project together with contractors and the design company. At the meeting in August of the last year, these subsidiaries, which, according to the project plan, carried out joint work with Gazprom Dobycha Irkutsk, reported on the overdue stages of implementation. The main problem was that there is no clear system of interaction between the companies: one of the companies does not have time to meet deadlines, which makes the second company late, and this causes a cyclic delay. Not only is there a risk of being late in the execution of the entire project, but there is also an equally significant risk of going beyond the budget through these delays. The less time is left to complete the project, the more money the project budget requires. Additional costs may be caused by hiring additional specialists,

purchasing more equipment, or additional maintenance of existing equipment as fuel.

The purpose of this report is to improve the management system of investment projects through continuous risk assessment in Gazprom Dobycha Irkutsk. The topic is relevant to this organization because the project is not running as planned. Thus, the objectives of the report are as follows:

- identify the causes of deviations from the project plan;
- analyze the company's project management;
- suggest recommendations on improving the project management system.

Before starting the research, I studied the successful and disadvantageous experience of project management of other similar large-scale companies. After that, I analyzed the project management of the company based on interviews with heads of departments and risk management specialist asking about the project documentation on the interaction of employees and analytical requirements for the project. The main reason for the frequent delays in the project is that managers do not constantly use tools to calculate financial risks, which help to assess the status of the project, to determine the factors affecting the delay in the project and the degree of influence of these factors by quantitative methods.

The research method includes study of literature on project management, financial management, experiences in the implementation of large-scale investment projects; interviewing; and observation. I conducted an interview with open-ended questions with the heads of departments, as they actually manage the project. The powers of Gazprom Dobycha Irkutsk do not allow to manage the entire project, for example, postpone the implementation date or set their own budget without obtaining the appropriate permits by the employees of the PJSC Gazprom. The Heads of departments of the PJSC Gazprom analyze the strategic portfolio of all projects and determine tasks for subsidiaries, the study of which is presented in this report. That is, project managers in subsidiaries must manage the project at the operational level. However, it also requires the same knowledge as at the strategic level. During the interview, it was found that the operational management of the project is not quite structured, and the managers don't receive data on the current implementation of the project in real time automatically. With the help of the last research method, observation, I analyzed the ways of reporting on the project and the components of the finished reports. In addition, it was found that the complexity of the interaction of staff to perform tasks caused by the unclear distribution of responsibility. After the interview and observation, I compared the way of project implementation in Gazprom Dobycha Irkutsk and companies from the literature, as well as with the postulates that must be carried out in the course of the project. This comparison showed that the organization needed additional tools to monitor the project plan.

Results

To obtain the results of the study, the author used such methods as observation and interview. After analyzing the interviews received from the heads of Irkutsk division of GaspromDobycha about project management and the tools they use to control the schedule, and therefore the project budget, certain results have been received. Project management cannot exist without control, and modern project management requires a lot of attention because of the ever-changing environment. The project will always be exposed to internal and external risks. Gazprom

Dobycha Irkutsk external factors are PJSC Gazprom (total dependence on the funding and areas of responsibility), a subsidiary of Gazprom, contractors, suppliers, government authorities and shareholders of Gazprom. All of these have a direct impact on both the activities of Gazprom Dobycha Irkutsk and the project for which the company is responsible. The complexity of the project management of the Irkutsk subsidiary is that the responsibility for a certain block of the project lies with this company, but the powers are very limited. Figure 1 shows how much responsibility organizations have to fulfill in the project plan.

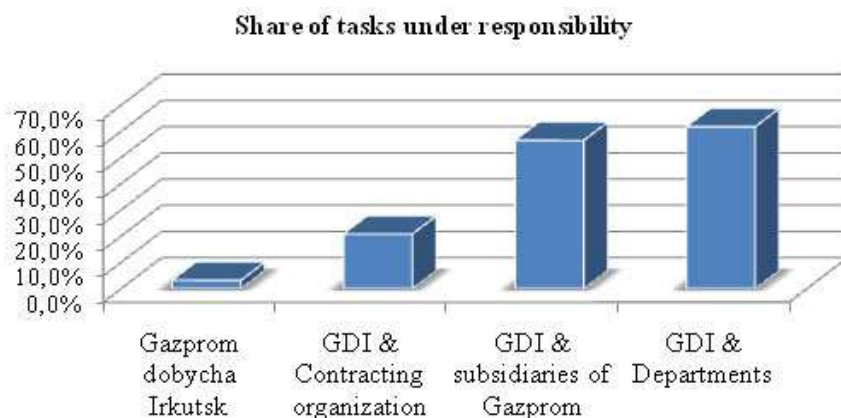


Fig. 1. Part of the responsibility of the tasks in the overall action plan of the project

Together with Gazprom Dobycha Irkutsk works contractors, which are selected on a competitive basis. To choose any contractor, company needs to spend enough time to comply with the rules, because this company is state-owned. Therefore, in case of discrepancy in practice of the implemented services of the selected contracting company, it is impossible to quickly replace this company. The share of tasks of the project plan of joint work of Gazprom Dobycha Irkutsk and contractors is 20,8 %. This not only increases the risk of delaying the project plan but also affects the project budget.

As for the influence of other Gazprom subsidiaries, the activities of the Irkutsk division also depend on these companies. The tasks in the general plan of the project are interrelated with the subsidiaries; Gazprom design has the greatest impact on the company. The two subsidiaries must perform 56,6 % of the plan tasks together.

It is also worth noting that the company is dependent on PJSC Gazprom in terms of financing and the timing of inspections. Irkutsk division constantly has to report and send to check the activities of the organization, and PJSC Gazprom, as the parent company, checks the compliance of the desired result. However, it is rather common for departments to delay the approval of the Irkutsk division. This fact is one of the most inhibitors of the project, because the share of the project plan tasks to be performed under the leadership of Gazprom is 61,8 %.

The tasks for which only the Irkutsk division is fully responsible make up only 3,2 %. Thus, these

figures suggest that project management, which covers only activities within the Irkutsk company, is not sufficient. Managers should consider the impact of contractors, subsidiaries of Gazprom and of PJSC Gazprom. Of course, the company will not have influence on these organizations and authority over their activities. Nevertheless, the Irkutsk organization at the General meetings has the right to voice the data obtained by statistics and calculation of financial risks, which will inform about the present and future costs due to the delay of the project by other organizations that need to stop or plan extra expenses.

Discussion

Stakeholders in the implementation of systematic monitoring of financial risks caused by overdue project tasks are a primarily PJSC Gazprom shareholder, that is the state. The Power of Siberia project is strategic not only for the company but also for the country as a whole. The contract with China has already been signed and failure to implement the project on time may have a negative impact on the country's prestige and further business relations with China. Gazprom Dobycha Irkutsk is responsible for the main part, which consists in the development of the field. Therefore, project management should take into account all risks. The limitations of the study are that the status of the task was not taken into account; all the tasks of the project plan were used. However, the difference between those responsible for the plan and those responsible for the implementation is minimal because companies responsible for task cannot be changed, the organizations strictly correspond to the profile of

activities. Limitations of the introduction of risk data calculation, which assesses the current and future costs caused by project downtime, there are unavoidable and might be erroneous. Risk is a degree of uncertainty, so it is not reasonable to rely on these calculations entirely. The introduction of risk assessment in monetary terms is primarily necessary in order to remove the full responsibility of Gazprom Dobycha Irkutsk for the downtime of other organizations that did not allow the Irkutsk subsidiary to start or complete the work on time. It is also necessary to report and describe the possible consequences for the main management of the project, which, according to its full powers, may decide to adjust the work on the project of subsidiaries and contractors.

Conclusion

Thus, in this paper it was determined that a possible reduction in the number of delays in the project is the introduction of a system for assessing financial risks. Due to the fact that Gazprom Dobycha Irkutsk is a subsidiary, the calculated data on financial risks will have to be transferred to the PJSC Gazprom. Initial purpose of the proposal is protection the employees of the Irkutsk division from reprimands for unfulfilled obligations due to the fault of other organizations, on which Gazprom Dobycha Irkutsk has no authority to influence. Therefore the main project management department of PJSC Gazprom will be able to reorganize the interaction of organizations for the implementation of the project much more effectively. ■

1. Bery J. A. New Distribution Function for Risk Analysis/J. A. Bery - Taylor & Francis: The Journal of the Operational Research Society, 1989 - 40(12), 1121-1127.

2. Boateng P. An Analytical Network Process model for risks prioritization in megaprojects/P. Boateng, Z. Chen, S.O. Ogunlana - Elsevier: International Journal of Project Management, 2015 - 33(8), 1795-1811.

3. Bringing Discipline to Project Management [Электронный ресурс] // Harvard Business Review, 2016 – URL: <https://hbr.org/1998/03/bringing-discipline-to-project-management?autocomplete=true> (Дата обращения: 05.10.2018)

4. Entacher M. Improving risk matrix design using heatmaps and accessible colors/ M. Entacher, P. Sander - Mundo Press: Journal of Modern Project Management, 2018 - 30-37.

5. Lichtenberg S. Successful Control of Major Project Budgets/ S. Lichtenberg -MDPI: Administrative Sciences, 2016 - 6(3), 1-14.

6. Manage risks for trans-country pipeline projects: India case study--Part 2 [Электронный ресурс] // Gulf Publishing Holdings LLC, 2017 – URL: <http://www.gasprocessingnews.com/features/201710/manage-risks-for-trans-country-pipeline-projects-india-case-study—part-2.aspx> (Дата обращения: 02.09.2018)

7. Norton D. The Balanced Scorecard: Translating Strategy Into Action / D. Norton, R. S. Kaplan - Boston, Mass: Harvard Business Review Press, 2006

8. Popesku C. R. The assessment methodology pdca/pdsa – a methodology for coordinating the efforts to improve the organizational processes to achieve excellence / C. R. Popesku, V. A. Popesku – Nicolae Titulescu

University: Challenges of the Knowledge Society, 2015 - 5(1), 693-696.

9. Probability methods for assessing financial risks for enterprises [Электронный ресурс] // Business Management, 2018 – URL: <https://dlib.univishtov.bg/bitstream/handle/10610/3898/96b4bdbc294372247e7ad762a1e737a5.pdf?sequence=1&isAllowed=y> (Дата обращения: 05.11.2018)

10. Risk analysis and management a vital key to effective project management [Электронный ресурс] // Project Management Institute, Inc., 2008 – URL: <https://www.pmi.org/learning/library/risk-analysis-project-management-7070> (Дата обращения: 11.11.2018)

11. Tinoco R. A. Responsible project management: beyond the triple constraints / S. E Yamasaki Sato, R. Hasan - Mundo Press: The Journal of Modern Project Management, 2016 - 4(1), 80-93.

12. Vu H.A. Evaluating Impacts of Financial Risks on Schedule Delays of International Highway Projects in Vietnam using Structural Equation Model / H.A. Vu, C. C. Vu, J. Wang, L. Min - Totem Publisher, Inc.:International Journal of Performability Engineering, 2018 - 14(2), 363-375.

13. Wibowo A. Financial Risk Analysis of Project Finance in Indonesian Toll Roads / A. Wibowo, B. Kochendorfer, ASCE: Journal of Construction Engineering & Management, 2005 - 131(9), 963-972.

СПИСОК ЛИТЕРАТУРЫ

Bery J. A. New Distribution Function for Risk Analysis/J. A. Bery - Taylor & Francis: The Journal of the Operational Research Society, 1989 - 40(12), 1121-1127.

Boateng P. An Analytical Network Process model for risks prioritization in megaprojects/P. Boateng, Z. Chen, S.O. Ogunlana - Elsevier: International Journal of Project Management, 2015 - 33(8), 1795-1811.

Bringing Discipline to Project Management [Электронный ресурс] // Harvard Business Review, 2016 – URL: <https://hbr.org/1998/03/bringing-discipline-to-project-management?autocomplete=true> (Дата обращения: 05.10.2018)

Entacher M. Improving risk matrix design using heatmaps and accessible colors/ M. Entacher, P. Sander - Mundo Press: Journal of Modern Project Management, 2018 - 30-37.

Lichtenberg S. Successful Control of Major Project Budgets/ S. Lichtenberg -MDPI: Administrative Sciences, 2016 - 6(3), 1-14.

Manage risks for trans-country pipeline projects: India case study--Part 2 [Электронный ресурс] // Gulf Publishing Holdings LLC, 2017 – URL: <http://www.gasprocessingnews.com/features/201710/manage-risks-for-trans-country-pipeline-projects-india-case-study—part-2.aspx> (Дата обращения: 02.09.2018)

Norton D. The Balanced Scorecard: Translating Strategy Into Action / D. Norton, R. S. Kaplan - Boston, Mass: Harvard Business Review Press, 2006

Popesku C. R. The assessment methodology pdca/pdsa – a methodology for coordinating the efforts to improve the organizational processes to achieve excellence / C. R. Popesku, V. A. Popesku – Nicolae

Titulescu University: Challenges of the Knowledge Society, 2015 - 5(1), 693-696.

Probability methods for assessing financial risks for enterprises [Электронный ресурс] // Business Management, 2018 – URL: <https://dlib.univshstov.bg/bitstream/handle/10610/3898/96b4dbbc294372247e7ad762a1e737a5.pdf?sequence=1&isAllowed=y> (Дата обращения: 05.11.2018)

Risk analysis and management a vital key to effective project management [Электронный ресурс] // Project Management Institute, Inc., 2008 – URL: <https://www.pmi.org/learning/library/risk-analysis-project-management-7070> (Дата обращения: 11.11.2018)

Tinoco R. A. Responsible project management: beyond the triple constraints / S. E Yamasaki Sato, R. Hasan - Mundo Press: The Journal of Modern Project Management, 2016 - 4(1), 80-93.

Vu H.A. Evaluating Impacts of Financial Risks on Schedule Delays of International Highway Projects in Vietnam using Structural Equation Model / H.A. Vu, C. C. Vu, J. Wang, L. Min - Totem Publisher, Inc.: International Journal of Performability Engineering, 2018 - 14(2), 363-375.

Wibowo A. Financial Risk Analysis of Project Finance in Indonesian Toll Roads / A. Wibowo, B.

Kochendorfer, ASCE: Journal of Construction Engineering & Management, 2005 - 131(9), 963-972.

Управление финансовыми рисками при реализации инвестиционного проекта в ООО «Газпром добыча Иркутск»

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Согласно современным тенденциям неопределенности экономики, вероятность наступления рисков в управлении проектами — это не просто статистика, а необходимые данные для менеджера в принятии управленческих решений. ООО «Газпром добыча Иркутск» ответственна за реализацию части проекта «Сила Сибири», выполнение которого должно быть осуществлено строго в рамках бюджета и сроков реализации проекта. Однако главной проблемой организации являются задержки выполнения плана, что неизбежно ведет к увеличению бюджета проекта. Основываясь на изученной литературе, анализе деятельности компании в рамках проектного управления и определении полномочий ООО «Газпром добыча Иркутск», автор предложил внедрение системы оценки финансовых рисков проекта.

Ключевые слова: управление проектами, задержки в ходе реализации проекта, финансовые риски
