

# Safety in construction in the field of investment in urban infrastructure

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**Abstract:** The purpose of the article is to review the theoretical foundations and practical examples of investor assessment with an integrated approach to the development of urban infrastructure. The article analyzes the conditions for reducing the investment costs of projects. For this purpose, methods of clarifying the conceptual apparatus, classification, systematization and an integrated approach are used.

The significance of an investment project depends on its positive influence on at least one of the external or internal markets: material and financial products, services and labor, on the social environment and the environment. Examples are provided of the impact on urban planning and the ecology of the urban landscape of investment projects in the field of tourism in recent years, implemented at the expense of the Federal Target Program "Development of domestic and inbound tourism in the Russia for 2011-2018." in Sarapul, Barnaul and Cherepovets. The authors conclude that in the examples cited there is a relationship between the risk tolerance of the project and the complexity of the approach to its implementation, and as a result, the amount of investment. Large projects are designed not only to solve specific problems of the investor, regions, economy, state and society, but also ensure the profitability of the state budget at various levels, create new jobs, ensure GDP growth in the country and investment in various sectors, create conditions for the development of the country's regions. The narrowly focused investment projects are fraught with great risks for the investor due to the selectivity and limited scope of the manifestation of effects.

## 1. Introduction

Currently, in a market economy, the key to the emergence and sustainable development is the efficiency of capital investment in the investment project. The investment project itself is a program of measures, according to which funds are invested in certain business

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structures, which, in turn, should ensure the process of obtaining the maximum profit for the investor. On the basis of "Methodological recommendations on the evaluation of the effectiveness of investment projects and their selection for financing," the investment project acts as a set of operations that are focused on achieving certain goals and require cash investments [1,2]. If it is necessary to implement several investment projects in order to achieve these goals, in this case the complex of these projects, which are united by one goal, the project can be called an investment program or a multi-project.

From this point of view, almost all innovative projects can be attributed to investment [3,4], as these projects represent a set of different documentation, in the required solutions for the feasibility, legal and organizational justification of the results of innovation. Moreover, the final effect of innovation involves the implementation of innovations in the creation of new or changing existing conditions of management and organization in production for a thorough improvement of the properties of the product, product or service, as well as obtaining a commercial result. Also, through the investment project, the level of economic feasibility of creating a particular unit of entrepreneurial activity is determined.

However, investments in urban infrastructure are made for different purposes from different sources. For example, through housing construction or office building, the program of development of culture are theatres, libraries, cinemas, with the aim of improving the ecology of the parks, entrepreneurs build an industrial area and a shopping area, a growing road network, create new objects of tourist display, and guests, constructed stadiums, and more. That is, we see that the multidirectional action of completely different target programs, and strategies of individual players leads to a change in urban infrastructure.

At the same time, investors have risks associated with both each specific project and their mutual influence. The purpose of the article is to consider the theoretical foundations and practical examples of determining the risks of investors in an integrated approach to the development of urban infrastructure.

This topic is reflected in the works of V. I Kushlin, V. G. Pluzhnikov, V. N. Smagin, Shishkina S. A., Matyunina L. V., Petrova V. A., Burkova V. N., Borkovskaya V. G. and other authors. However, this article focuses on the practice of implementing investment projects using both budget funds and private investment in Russian cities. The authors consider how an investment project aimed at the development of tourism can be assessed in terms of its level of risk and identify the factors affecting this assessment.

## **2. Methods**

To achieve the goal, methods of clarifying the conceptual apparatus, classification, systematization and an integrated approach are used.

The investment project is a system of organizational, legal, technical, technological, financial and legal materials that are necessary for the creation and high viability of the object of entrepreneurial activity. Such a system is approved in the form of documents that include the formulation of the purpose of the activity under consideration, as well as a set of actions that are aimed at achieving it.

In a broader sense, the investment project is a certain organizational system, assembled from the following components [5,6]:

- 1) main and secondary objectives of the activity;
- 2) tasks formulated to achieve the goals;
- 3) participants organized for the sake of joint activities to achieve their goals, as well as the basis of their relationship;
- 4) financial, material, labor and other resources that ensure the implementation of the goals;

- 5) technological processes and physical objects that need to be created or improved in the process of solving the problems of the project;
- 6) organizational and technical documentation;
- 7) decisions related to project management and activities for their implementation.

Due to the fact that the investment project should not contradict the system of existing socio - economic relations, its mandatory participants are [7-9]:

- Executive authorities (municipal, regional, Federal);
- economic subjects of activity of different orientation (municipal, transport, communication, construction, design and survey, industrial, resource-providing, etc.).

Characteristics of the investment project are considered to be the following indicators [10-12]:

- orientation of project activities, which is determined by the objectives of its participants;
- the scale of the project, determined by the level of its impact on the social situation;
- commercial and economic efficiency of the project and its inherent risks.

Investment projects may have different directions depending on the current economic situation in the regional market, socio-economic situation and the goals of the participants. The activities of the projects with relevant examples are presented in the table. 1 [compiled by the authors from 1 to 12]:

**Table 1.** Possible activities of investment projects

<b>Direction</b>	<b>Example of execution</b>	<b>In the field of tourism and hospitality</b>
Creation of manufacturing	Market launch of a new product; Development of new market segments; Implementation of research results	Creation of tourist clusters; Construction of accommodation facilities
Rationalization of existing production	Loading of unused production facilities and equipment; Reduction of raw materials costs; Energy saving; Use of waste	Reconstruction of objects of tourist infrastructure; Reorientation ineffective round objects to another segment of the market
Improving the quality of product competitiveness	Improving the safety of products; Improvement of its environmental performance, persistence, and expiration date; Improving packaging	Personnel development; Improvement of service delivery mechanism, organizational structure; Service quality control
Expansion of production and sales market	Production of import-substituting goods; Increase in exports; Develop new markets	Entering new markets; Development of new tourist destinations, recreation; Opening of new representative offices in other regions
Improving the social performance of the company	Creation of new and preservation of existing jobs; Supply of goods and services to markets for vulnerable groups; Measures for the protection of the environment	Preferential conditions for vulnerable groups; Training and retraining of young specialists
Development of social infrastructure of municipalities, districts and cities	Construction of health, education and sports facilities	Construction of tourist, recreational and cultural centers

The importance of an investment project depends on its positive impact on at least one of the external or internal markets: material and financial products, services and labour, social and environmental conditions. Investment projects on the scale can be divided into [12,13]:

- largescale;
- regional;
- city;
- sectoral;
- local.

Each of these indicators has an impact on the assessment of investment efficiency.

### **3. Results and Discussion**

Investments in the development of the urban landscape always have several ways of assessing their effectiveness. Thus, creating a residential district, the city receives a new local market for services, food, an additional burden on the transport infrastructure, and also creates an epicenter of concentration of labor, which is beneficial for local enterprises, new homes which require the renovation of roads, heating infrastructure, sanitation, replacement of power grids with more powerful, the creation of social facilities and recreation areas. This, in turn, improves the quality of life of local residents, activates small business.

On the other hand, the creation of industrial facilities will also have a diverse impact on the city and its inhabitants, both in a positive and negative way. We will try to illustrate the positive effects and existing risks in the implementation of investment projects in the field of tourism. In the tourism sector has its own characteristics for investment projects. Such projects for the development of tourism and hotel industry in various regions contribute to the formation of a highly developed tourism industry that meets international standards. This creates jobs and improves the appearance of the city by developing its image. At the same time, with an excessive degree of development of the tourist segment, local residents begin to suffer from rising prices, traffic saturation, queues to cultural facilities, adverse environmental consequences of exceeding the recreational load on the area, and an increase in the number of diseases due to overcrowding.

An example is offered of the impact of investment projects in the field of tourism in recent years, implemented at the expense of the Federal target program "Development of domestic and inbound tourism in the Russian Federation for 2011-2018" on urbanism and the ecology of the urban landscape is indicative [14-17], We take three projects of construction or renovation of tourist and recreational areas in the cities of Russia: in Sarapul, Barnaul and Cherepovets [18]. We will trace the positive effects of the implementation of these investment projects and the possible risks [19-20].

The tourist and recreational cluster (TRC) "Kamsky Bereg".is located of the Udmurt Republic, Sarapul. The project was implemented during 2013-2018. The elements of the project include: construction of the hotel "Sarapul" on the embankment of the river Kama; reconstruction of the dispensary, "Ozone," to create a medical and diagnostic center and SPA-complex; a restaurant and hotel complex arranged on the waterfront near the river port; the complex of buildings, "house of the Tower;" and the construction of a multifunctional sports center on Kalinin street, 28. Moreover, these facilities were created on extra-budgetary funds of private investors. And, budget for the project was used to create the supporting infrastructure: reconstruction of the embankment of Kama river, reconstruction of the Central square of the gas network to the hotel on the street Opalina, reconstruction of roads and pedestrian areas, water supply and drainage, gas supply

network, reconstruction of power supply networks and the construction of the heating plant. [18-20]

The volume of investments amounted to more than 1 billion rubles, the lion's share of which was private investment (see table.2).

**Table 2.** Amount and sources of funding for the creation of tourist and recreational cluster "Kamsky Bereg", Udmurt Republic, mln. RUB.

Source of financing	2011-2018 yy., Total	2011	2012	2013	2014	2015	2016	2017	2018
Capital investments-total	1 049,2					120,0	278,8	441,7	208,7
Among them: Federal budget (inter-budget subsidies)	205,8	-	-	-	-	-	35,4	120,8	49,6
Budgets of subjects of the Russian Federation and local budgets	83,9						11,8	49,8	22,3
Extra-budgetary sources	759,5	-	-	-	-	120,0	231,6	271,1	136,8

Sarapul is now transformed, the embankment has become not only a favorite place for walks of citizens, but also attracts tourist steamers during the navigation season. The city has new monuments, new traditions, new cafés and restaurants. The old Sarapul lived a different life, thanks to the improvement of housing and communal infrastructure.

As a result of the creation of the shopping Mall "Kamsky Bereg created 160 additional jobs, taking into account the need for human resources; tourist flow to the Republic of Udmurtia increased by 36.3 thousand tourists per year. The forecast of tourism development is favorable, is reflected in Table 3.

**Table 3.** Forecast of the development of the tourism industry of the Republic of Udmurtia, taking into account the contribution of the investment project "Kamsky Bereg"

№	The name of the target indicators	Measure unit	Index Target values	
			2014 y.	2018 e.
1	The tourist flow in the Republic of Udmurtia	thousand people	360,0	550,0
2	Number of tourists accommodated in collective accommodation facilities	thousand people	265,5	332,8
3	Area of the room Fund of collective accommodation	thousand sq m	69,7	89,0
4	Number of beds in collective accommodation facilities	units	9 689	11 777
5	Number of persons working in collective accommodation facilities	people	4 142	4 800

6	Number of persons working in travel agencies	people	462	562
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However, local residents note that the creation of tourist display facilities is not the main goal of improving the quality of life of the population. Local residents are gradually losing the opportunity to use the city beach because of the docking of ships. There is an opinion that the money would be better spent on the construction of kindergartens and hospitals, road repairs, the creation of an industrial enterprise that would give jobs to local residents. The risks are also associated with the short seasonality of river cruises. As a result, hotels and cafes are empty most of the year.

The following example describes Cherepovets in the Vologda oblast. Here, as a tourist attraction, the city embankment is also improved and, in a similar way to Sarapul, the project is focused mainly on tourists arriving by river vessels. Created are a museum complex of the metallurgical industry, the exhibition complex of samples of wooden housing construction, the passenger pier with restaurant, construction of hotel, tourist and recreational complex, construction of public and trade and sports and improving complexes. In addition, the construction of a road on the site from Milyutina street to the lane was made. Also created are a tourist and recreational complex, "Manor Gali," network engineering infrastructure, a beach area, and a water park.

**Table 4.** Volume and sources of funding for the creation of tourist and recreational cluster "Central city embankment", Vologda region, Cherepovets, mln. RUB.

Source of financing	2011-2018 yy., Total	2011	2012	2013	2014	2015	2016	2017	2018
Capital investments - total	1 043,7					66,1	136,6	330,7	510,3
Among them:									
Federal budget (inter-budget subsidies)	194,1	-	-	-	-	-	-	80,0	114,1
budgets of subjects of the Russian Federation and local budgets	119,0	-	-	-	-	16,1	20,9	29,0	53,0
extra-budgetary sources	730,6	-	-	-	-	50,0	115,7	221,7	343,2

**Table 5.** Forecast of the development of the tourism industry in the Vologda region, taking into account the contribution of the investment project of the Central city embankment».

№	The name of the target	Measure unit	Target values indicators	
			2014 y.	2018 y.
1	Tourist flow in the Vologda region	thousand people	2 439	2 865
2	Number of tourists accommodated in collective accommodation facilities	thousand people	621,8	785
3	Area of the room Fund of collective accommodation	thousand sq m	60,76	75,0
4	Number of beds in collective accommodation facilities	units	13 000	14 300

5	Number of persons working in collective accommodation facilities	people	2 463	3 100
6	Number of persons working in travel agencies	people	661	770

One hundred and six additional jobs were created taking into account the need for human resources; the tourist flow to the Vologda region increased by 194.6 thousand tourists per year.

The risks of this investment project are similar to the previous one, but they are assessed as lower, thanks to the versatility of the project. It can be concluded as a narrow specialization in tourism services.

Regarding the topic of implementation of projects in the field of urbanism, the most indicative experience of the Altai territory, where in Barnaul created the TRC "Mining city." The building was built on Pushkin street, 78 (a memorable place, which in the XVIII century was the estate of I. I. Polzunov), an administrative and cultural center on Pushkin street, 62, an administrative building in historical style on the street. Polzunova, 52a, a shopping and entertainment complex "Gulliver Park", a historical monument "Manor of the merchant Shadrin," the PLAZA, the museum "chocolate Factory", the museum "World of time" (an object of cultural heritage), the restaurant "Hunting yard" Socialist St., 27, a building of the XIX century by Lenin, 17, an exhibition center with a tasting room and a museum of the genesis and development of beekeeping in the Altai on the street Malotobolskaya, 8A, a public historical and cultural complex at Lva Tolstogo str., 8A, 10A, 12 (profitable house), the building at Lva Tolstogo str., 8, the eight facades of the historic buildings on the street Leo Tolstoy, the building of the market "Central", hotel complex at the Bolshaya Olenska, 34, a hotel complex on the street a Little Olenska, 31, the building at Lva Tolstogo str., 15, the memorial complex with a temple of John the forerunner, a business center "Forum" on Gogol street, 38, the beekeeping museum and crafts "city of masters". In addition, facilities have been created to provide infrastructure, such as a modular boiler house, the Nagorny Park complex, terracing the slopes of the Park with drainage, a bridge over the river. Also created were Barnaulka, the complex "commercial and cultural area with walking street," the protection of the river Ob, the heavy shower sewage in the streets of Leo Tolstoy, a Little-Tobolsk, electricity, water, gas, complex "Cathedral square", the gas network, line, external lighting and a barrier fence of the terraces of the slopes of the upland Park in the framework of the tourism cluster "Barnaul - mining city."

**Table 6.** Amount and sources of funding for the creation of tourist and recreational cluster "Mining town", Altai Krai, Barnaul, mln. RUB.

Source of financing	2011-2018 yy., Total	2011	2012	2013	2014	2015	2016	2017	2018
Capital investments - total	3 946,8					1 380,0	1 611,6	523,8	431,4
Among them: Federal budget (inter-budget subsidies)	691,6	-	-	-	-	380,0	311,6	-	-
Budgets of subjects of the Russian Federation and local budgets	492,4					100,0	100,0	192,4	100,0
Extra-budgetary sources	2 762,8	-	-	-	-	900,0	1 200,0	331,4	331,4

As a result of the investment project, 2900 additional jobs were created, taking into account the need for human resources; the tourist flow to the Altai territory increased by 224.3 thousand tourists per year.

**Table 7.** Forecast of the tourism industry of the Altai territory, taking into account the contribution of the investment project of the TRC "Mining town", Barnaul

№	The name of the target	Measure unit	Target values indicators	
			2014 y.	2018 y.
1	Tourist flow in the Altai region	thousand people	1 180	2 200
2	Number of tourists accommodated in collective accommodation facilities	thousand people	763,7	1 32
3	Area of the room Fund of collective accommodation	thousand sq m	-	-
4	Number of beds in collective accommodation facilities	units	30 994	37 124
5	Number of persons working in collective accommodation facilities	people	10 155	10 321
6	Number of persons working in travel agencies	people	905	908

This investment project is also largely focused on the development of urban infrastructure, and therefore, among the positive effects of the project are the benefits created for a wide range of people, mainly local residents. The focus on year-round operation of the created investment project helps to reduce the level of risks.

Also in the given examples there is a relationship between the sustainability of the project against risks and the complexity of the approach to its implementation, and, as a consequence, the amount of investment.

In general, investment activity is quite risky because its effectiveness affects the future results of the business. At low economic efficiency of investment activity of the enterprise and, as a consequence, low investment attractiveness the investment process is possible. This is especially true for small and medium-sized enterprises.

The decision on the economic feasibility of investment, as a rule, is closely dependent on the goals of the investor:

- profitability (profitability) of the investment activity;
- growth of the company through annual increase in the share of the controlled market;
- maintaining a high reputation among consumers;
- the creation and testing of innovation in the framework of the investment project.

The effectiveness of the project reflects the correspondence of the costs and results of the investment project to the interests and goals of the participants. The interests of the state and the population are also taken into account. In the issue of making a management decision on the possibility of implementing an investment project, special attention is paid to the effects of its implementation: economic, social, scientific and technical, environmental, etc. [8,9,21].

The main effects of the implementation of investment projects include:



- social (socio-economic) efficiency is related to the effectiveness of the investment project from the point of view of the interests of the whole society, while the company covers the costs associated with the implementation of the project. These indicators show the appropriate expenditure of resources in the implementation of the investment project;
- commercial efficiency of the project-efficiency directly related to the problems in the integrated assessment of the efficiency of capital investments, as the project in a particular case is considered as an object of investment;
- the budget efficiency of the investment project is estimated by the orders of the state or regional authorities; [12]
- economic efficiency reflects the ratio of costs in the implementation of the project and the results in accordance with the interests and objectives of the participants of the investment project;
- environmental efficiency of the project-reflects the relevant costs and results from the point of view of the state and society; [11]
- social efficiency-reflects the correspondence of costs and social results of the investment project to the goals and social interests of its participants; [16]
- other types of efficiency.

Large-scale projects are designed not only to solve the specific problems of the investor, regions, economy, state and society, but also to ensure the profitability of the state budget at various levels, create new jobs, ensure the growth of the country's GDP and investment in various sectors, create conditions for the development of the country's regions. Given the scale of such projects and their results, the impact of their implementation should be taken into account. [3.22]

In practice, there is no standard mechanism of quantitative assessment of projects with regard to bring the effect to participants of investment activities. Below, as an example, we consider the main types of performance indicators for the implementation of the investment project by the main groups of participants in tourism activities (table. 8):

**Table 8.** Types of performance indicators from the implementation of the investment project by the main groups of participants

From investors	<ul style="list-style-type: none"> <li>- Expected profit (profitability of invested funds)</li> <li>- Payback period</li> <li>- The level of risk the investor</li> </ul>
From the state and Executive authorities in the field of tourism	<ul style="list-style-type: none"> <li>- Increasing the tourist attractiveness of the region</li> <li>- Growth of tourist flow</li> <li>- Tallage</li> <li>- Business development</li> <li>- Employment growth</li> <li>- Raising funds</li> </ul>
From the participants of the tourist market	<ul style="list-style-type: none"> <li>- The absence of unfair competition</li> <li>- Increasing the attractiveness of the region</li> <li>- Reduced competition</li> </ul>
On the part of the consumer of tourist services	<ul style="list-style-type: none"> <li>- Improving the quality of services provided</li> <li>- Increasing the transport accessibility</li> <li>- Information about the tourism services</li> </ul>

From local communities	<ul style="list-style-type: none"><li>– Increase jobs</li><li>– Improving the environmental sustainability of</li><li>– Availability of infrastructure for the local population</li><li>– No restrictions on access to resources for the local population</li><li>– Enforce rational recreational load</li></ul>
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Depending on the specific investment project indicators may vary and be supplemented. An example of taking into account the effect of the implementation is the project "Great Ustyug – the birthplace of Santa Claus". Thanks to him, the tourist flow to velikoustyug district increased 74 times from 1998 to 2014[23]. This project has a positive impact on the economic and social situation of velikoustyug municipal district. The developing infrastructure of the Great Ustyug include: the renovation of the historic city center, the construction of roads, the opening of new shops, trade and exhibition centers and supermarkets, the emergence of cellular communication and taxi services. [24,25]

## 4. Conclusions

We conclude that, in order to reduce the risks from investment activities in the construction and reconstruction of social infrastructure of cities, it is necessary to take into account several factors: the complexity of the approach to the implementation of the project; the scale of the project, determined by the level of its impact on the social situation; the focus of project activities, which is determined by the goals of its participants and the variety of indicators of the project's effectiveness.

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