

A business balance model of interaction between structures participating in sustainable development of cities

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Abstract. The paper considers the following components: business and problems of modernization of former industrial areas, as one of the important trends forming urban development stability. It is revealed that the social factor is not considered, which also prevents city are as from transforming and business from developing. Reconstructing urban space while handling former industrial areas is becoming a growing problem of cities and requires that business community should be involved in this sector. The specific role of business here is that these objects are located in residential neighborhoods and are closely connected with the social factor (population). It implies that the social factor need to be considered and leads to additional costs. Business does not want to participate in bearing these costs, there is no attractive model, and authorities can not fully cover all the costs by themselves. Citizens protest if the transformations violate their interests, which is accompanied by risks for capital, business and government bodies. Within a market economy, citizens are a business structure too, since they have an impact on capital. To solve the problem it is necessary to search for a new form of interaction between the three structures: business, state and citizens. The author suggests a new model of interaction between the participants of the process, which, in her opinion, if applied in practice, is able to activate business development and accelerate the transformation of depressed areas, thereby contributing to the sustainable development of a city.

1 Introduction

This research study substantiates the importance and necessity of taking into account the social factor in business activity in the urban development, modernization of former industrial areas and the search for new forms reflecting both the interests of business and the interests of sustainable development of cities.

The process of modern urban development must be considered strictly in connection with business technologies and problems of sustainable urban development.

Sustainable development of a modern city is an extremely acute problem that should be addressed by all citizens and the city's government. Sustainable urban development is a very

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complex social, natural and economic system, which ensures economic growth, economical equilibrium, security and a high living standard for citizens. Today sustainable development of cities can hardly be imagined without active participation in their processes and without solving current and strategic problems in the course of their business activities. The main mechanism for ensuring sustainable development of cities is business. However, business technologies that would meet modern requirements have not been formed in this sphere yet.

There has been an unprecedented growth of cities in Russia in recent decades. The peculiarity of the modern stage of urban growth is that today both in Russia and in the rest of the world there is a collision of two trends: firstly, the rapid growth of new construction and, secondly, the aging (physical and moral) of previously constructed buildings, which leads to serious problems in modern cities. In this regard, the process of city-planning regulating measures is continuous in the field of sustainable urban development. The problems of growth of cities and their modernization as stages of its development must be addressed simultaneously. A special issue here is areare-profiling. This is a serious task requiring special consideration.

Sustainable urban development is a process of economic and social changes, whose aim is to maintain the achieved level and ensure further sustainable development of the city. Achievement of sustainable development of cities implies joint efforts of all structures ensuring this process. What are the tendencies and laws of business development as a real element in the implementation of all transformations? What are the problems and ways of their solutions? The earlier we focus on these issues, the better and faster we will find new forms of business support for sustainable urban development.

2 Problem statement of the need to take into account the social factor in business

While there are distinctive characteristics of different types of areas and differences in the policies of their management, all areas have a common characteristic, which is the need to take into account the social factor when analyzing projects in urban areas. However, today this factor is not properly analyzed, which leads to an increased risk of loss of capital investments.

A good example of risk growth in the implementation of capital investments, as well as the threat of disruption of the terms and cost of a project due to the social factor is the case of the public and business district "Okhta Center" project in St. Petersburg. The project was to be implemented by the JSC "Public and Business Center Okhta" on a land plot taking 47,253 square meters. This project came under resistance. First, the arguments of experts and residents concerned the deviation from the limiting parameters of the permitted height of a skyscraper. Secondly, the archaeological finds were discovered in the construction site. Public activists and city defenders got involved in these disputes. In December 2010, it was decided to stop building the public and business center on the bank of the Neva River and to start the negotiations to find an alternative land plot for the project.

It should be noted that at the time the construction was cancelled, the investments in the public and business center project were estimated as 7.2 billion rubles by the investor. Hence, the losses, or risk of capital amounted to 7.2 billion rubles. No decision was made on the abandoned site. The project, which is today called "Lakhta Center", was moved to a different land plot, and the construction on this other site is already about to be completed.

The described example shows that the city's population had not been involved at all in the discussion process before the decision on the project was taken. The unaccounted social factor in this case is clearly demonstrated. The negative result was predetermined by the lack of analysis of public opinion and preliminary assessment of social consequences, which lead to unprecedented financial losses for the investors, as well as the suspension of the project

and, as a consequence, a longer construction period and the need for additional capital investments. In the circumstances, it is necessary to ensure the conditions for effective involvement of business, taking into account the significance of the social factor[8,9].

Accounting for the social factor in the reconstruction of former industrial areas in the current conditions of business and society development is a pre-requisite for a transition to modern industrial society. In practice, if the social factor is considered, the risks of project implementation can be reduced. The problems of risk management at all stages of a project are considered in works [13, 14].

3 Modernization of industrial areas - a condition for sustainable development of cities and a promising sphere of business

Reconstruction of urban space is possible with modifying former industrial facilities. Prospects of such types of municipal facilities are predetermined by a number of reasons.

First, along with the tendency to reduce costs for the development of industrial facilities in cities and the reorientation of urban economy to capital-forming investments in other prevailing industries, there is a regular process of moral and physical ageing of capital assets of industrial enterprises. At the same time, reconstruction of these assets on former scales and in former areas, which are mostly located in the central parts of cities, is very commonly not required due to the use of new technologies that allow reducing the area, occupied by enterprises.

Secondly, ageing industrial enterprises do not comply with the environmental standards imposed on such facilities. Due to the mentioned reasons, the shifting of enterprises outside the city center is a logical step on the way to transforming cities.

The transformation of urban areas is relevant for St. Petersburg. A lot of industrial facilities are located on its territory, many of which have a variety of capital construction projects and large-scale land plots.

The main characteristics of the industrial fund of the city are shown in Fig. 1.

Social revitalization and provision for the efficient use of industrial areas located in the center of St. Petersburg are possible only through their makeover and reconstruction.

The Law of St. Petersburg as of 22.12.2005 No. 728-99 "On the General Plan of St. Petersburg" (hereinafter referred to as the General Plan) establishes the following ratio of areas occupied by functional zones (by types of zones), as a percentage of St. Petersburg's total area:

- residential areas - 23%;
- public and business areas - 7%;
- production areas - 13%;
- areas of engineering and transport infrastructure - 12%;
- agricultural areas - 8%;
- recreational areas - 29%;
- special purpose areas - 4%;
- water resource area - 4%.

Production areas occupy 13% of the total surface of the city and account for almost 1/3 of the total surface of non-residential areas in St. Petersburg. The total surface of industrial areas in St. Petersburg, called the "gray belt", is 6100 hectares.

The total surface of non-residential areas in St. Petersburg is 13530.07 Ha.

At the same time, 56% of industrial areas within the boundaries of the "gray" belt, which is about 1265 land plots with a total surface of 1289.78 hectares, do not correspond to functional zoning.

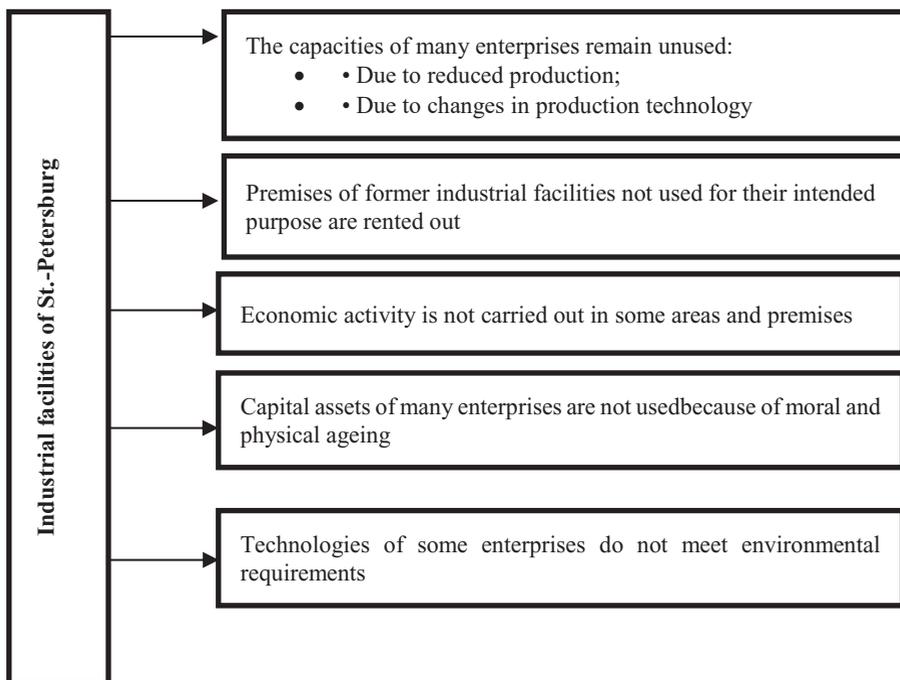


Fig. 1. Characteristics of the current condition of the industrial facilities in St. Petersburg.

The master plan regulates the conceptual principles of dealing with the released industrial areas. Thus, according to the general plan, it is intended to preserve in historically established central districts some manufacturing enterprises, which have a high social or economic significance, provided that they do not have a negative impact on the environment. [10]

As for the areas occupied by industrial facilities, as well as objects of engineering infrastructure and railway transport, which do not comply with the economic, social, ecological and architectural conditions for their development, their total area should be reduced by 3.5-4 thousand hectares via changing their functional purpose from industrial to public and business and residential, and consequent liquidation, shift, relocation or conversion of the objects located on them, including a total area of 2-2.5 thousand hectares within the estimated period of the General Plan. [10]

According to the General Plan, relocation of enterprises and the development of there leased are as of the industrial belt along the rivers and major highways adjacent to the city center is the basis for the development to the center of St. Petersburg, which implies more efficient use of St. Petersburg cultural heritage sites by means of withdrawal of industrial enterprises from the protection zones of objects of cultural heritage, to be achieved by change of functional purposes, which do not comply with the purposes of the objects of cultural heritage of St. Petersburg and the conditions of their preservation, in accordance with the St. Petersburg target programs[10].

The General Plan does not ignore the role that measures aimed at converting the areas of the "gray" belt play in maintaining the ecologically sound environment of the city and observing public safety standards. Actions are being planned to improve and protect the environment of St. Petersburg. In order to maintain the quality of atmospheric air, it is planned to reconstruct, converse, eliminate or relocate harmful enterprises from the center of St. Petersburg and recover (garden) the released areas. Environmental safety of soils should be achieved by recovery of the areas of industrial enterprises in the center of St. Petersburg, which are supposed to be liquidated and relocated. The Plan includes measures to develop

green spaces and provide the population of St. Petersburg with green spaces of public use: at least 12.8 square meters per person for central districts, not less than 16 square meters per person for non-central districts, which is to be achieved by increasing the number of verdured areas as of the central districts of St. Petersburg through urban transformation of industrial enterprises, planned for liquidation, relocation, or conversion [10].

26 industrial zones that are part of the "gray" belt and subject to redevelopment are located in 12 administrative districts of St. Petersburg, with 35% of enterprises being located in the city center. The transformation processes are still in the initial stage. The area of the already converted areas is no more than 11%, which is about 600 hectares.

Today, most enterprises have already been removed outside the historic center of the city. This process was carried out mainly at the expense of investors; at the same time, the issue of further use of the areas was not given due attention.

The only current line in reorientation of the functional purpose of former industrial areas is residential projects made at the expense of investors and without any participatory interest of the city. Other released areas do not receive any funding, neither from public nor private sources.

The current situation indicates that:

- 1) modernizing industrial areas is an important factor and condition for sustainable development of cities;
- 2) modernizing industrial areas is a promising field for business development;
- 3) modernizing industrial areas requires new forms of business organization.

As the current practice shows, the existing forms of business organization do not work here. It is necessary to search for new forms to organize interaction between parties in the process of modernizing industrial areas of the city. It should be noted that the technological and spatial capabilities of new industrialization of industrial regions have a great potential for implementation [2].

4 Business balance - a new form of interaction between participants in sustainable urban development

Currently, the business community most often participates in urban projects based on the private-public entrepreneurship model (PPE) and its principles.

It is worth saying that so far there are no forms of business participation in the system of private-public entrepreneurship (PPE) in the Russian economy. They are still being formed and developed. The dual nature of such a partner as state is subject to the fact that the state is both a participant to public-private partnership and its external environment, which always imposes certain difficulties in exercising power. Now we are actively searching for an optimal model of interaction of partners of this system in private-public entrepreneurship projects implemented in a wide range of areas, given their specific and unique features. At present, a new major field for this activity is the modernization of the released industrial areas of cities, which plays an important role in addressing the issues of sustainable urban development.

There are the following reasons for this. Since the 1990s, for example, in St. Petersburg, large-scale actions have been carried out to remove enterprises from the central districts of the city. As a result enormous industrial areas were abandoned, buildings have been dilapidating and representing a dispiriting view contrasting with the status of the cultural capital of Russia. The cause of this situation is that enterprises were removed in a hurry and in a short time, without methodological support, without any projects on modernizing these areas. Under these circumstances, the only way to solve this acute problem is to get business involved on a large scale via public-private partnership (PPP) projects on modernizing former

industrial areas. The specific feature of PPP projects is the need to take into account the social factor, which entails additional costs. However: government bodies cannot be cover these costs fully, investors do not want to participate in them and, as a result, the problem does not have a proper solution. This shows that there are not enough management mechanisms and it is necessary to improve the current system to make private-public enterprise projects effective, as the basic framework of business development in the sphere of modernization of former industrial areas and sustainable development of cities.

In this regard, finding new approaches to organizing PPP projects in the field of modernization of released industrial areas is an important scientific and practical problem calling for proper business technologies for sustainable urban development.

At present, there is no clear and unambiguous definition of business technologies [15]. However, it should be noted that this concept is rather blurry and applicable to a wide set of activities. In general, as it is well known, this is a combination of methods, techniques, innovations, technical and mental solutions that contribute to the development of business, expand its capabilities and create new prospects for it. If the social factor in the sphere of business activities with regard to the modernization of released industrial areas is considered it will expand the boundaries of commercial activities and help to increase business profits, which is the main goal of any business. Participating in the sustainable development of the city, the business ensures a state of its own sustainable development.

Projects should be managed based on a specific concept of partner interaction. Today it is based mainly on the interaction of business and the state.

As practice shows, there are three interacting parties in public-private partnership projects while managing the sustainable development of the city: the state, business and social factor. In this regard, the conceptual approach to managing this type of projects has to be changed. In our opinion, it should have the following model, which is given in Fig. 2.

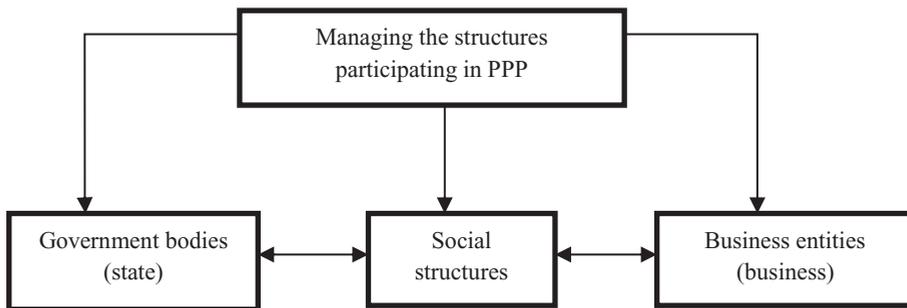


Fig. 2. The conceptual business balance model of interaction between the structures participating in sustainable urban development.

The presented interaction of participating structures should become the basis for creating an organizational and economic mechanism for PPP projects.

All participating structures interact with each other. All of them have direct and backward ties, through which their interdependence is formed. All participating structures are directly linked to the out of both business and sustainable development of the city and are "in balance" with each other. It should be noted that the population in this system literally is not a business structure. But it is the population that "accepts" or "does not accept" (rejects) the project, that is, the population is one of the capital risk factors of business and government bodies. Its activities are equis ignificant to business: it is enough to have a look at the consequences and large losses of business and government capital in connection with the Okhta-Center project. From this perspective, the population is also a business structure, as well as business and the state. Moreover, it acts as a balance between them and the

requirements of sustainable urban development in terms of market relations and a balance of interests.

The social factor is a consolidating factor of PPP. Taking social factor into account is the key to the execution of the PPP and the acceptance of the project itself by the population. Without considering the social factor, the execution of PPP projects entails chaos in management.

Experience shows that the acceptance of PPP projects begins with the population and ends with the population. PPP always has a social motivation. The objectives of any project, which are introduced at the concept development stage, should be oriented on the needs of the public. Conducting social surveys, public hearings, informing the media and other types of public work and analysis of public opinion are intended to adjust the key indicators of the project at the preparatory stage. The end user of services provided at the operational stage of a project is also population, which, first of all, gives qualitative assessment of the facility operation. Thus, the social factor is present at all stages of PPP projects and coordinates the activities of the public and private parties to the partnership.

Given the deep essence of the social factor, PPP acts as an innovative mechanism for modernizing industrial area [8].

The social factor is one of the most important factors affecting business. The population here acts as a public partner [12]. Therefore, the existing management system of PPP projects requires changes.

Thus, for the purpose of introducing approaches to assess the social factor in the PPP process, it is necessary to clarify the concept itself.

The process of public-private partnership is a specific form of relations between the state and private entrepreneurship. It is a mechanism for solving specific tasks, which is based on involving the third party, the social structure (general public), in the process of making managerial decisions, through which the influence of the social factor is realized. Therefore, one of the basic principles of managing PPP projects in sustainable urban development should be consideration of the social factor. The mechanisms, currently developed and adopted for making managerial decisions, do not include the principles of its evaluation. There is no assessment of the connections between the structures participating in sustainable development of the city.

However, in a living system (which is the city and its sustainable development), not only its elements are important, but also the connections between them. It is connections that contain information determining the properties of the system [5, p.572]. According to academician S. Glazyev, "... to understand the development process, its elements are not as important as the connections between them" [5, c.582]. Identifying the connections between structural elements plays a decisive role in search for technologies for sustainable urban development.

In the author's opinion, the business balance model of the interaction between the structures participating in sustainable urban development is a new form of business organization based on new principles of interaction between the participating structures involved in the sustainable development of the city, including the social factor. Such an approach will help to intensify the process of sustainable urban development. It will also contribute to a balanced growth in a model of decentralized economy [1]. The business balance model tackles another important issue – reducing environmental stress. Due to the participation of the general public, the problem of achieving an ecological and economic balance – a problem of the 21st century – is thus being solved [6]. As experience shows, concessions and contractual relations change the world [3,7].

5 Mechanisms for the implementation of the business balance model of the interaction between the structures-participants to the sustainable development of cities

The implementation of the business balance model can be carried out on the basis of the following mechanisms.

1. To manage the process of introducing a social factor, we must be able to evaluate it.

To do this we need:

1) To assess the effect of social factors by the degree of impact on the risks of disrupting project deadlines. Efficiency is evaluated on the basis of the following social factors:

- coherence of interests of the public and private partners in the framework of the planned project;

- consideration of social factors;

- compliance with environmental standards;

- compliance of the technologies used with the best available technologies.

The considered qualitative social factors can be divided into groups according to the degree of their impact on the risks of project disruption, if they do not meet the requirements (high, medium, low). The social factor acts as a criterion for assessing how efficiently thereleased industrial areas are used [9].

2) To develop methodology for assessing the efficiency of PPP projects aimed at modernizing the released industrial areas with the use of integrated assessment, based on qualitative and quantitative criteria and taking into account the social factor.

If we want to take into account the social factor more in projects of conversion and usage of released industrial areas, it is necessary to develop methodology and assess the efficiency of the use of former industrial areas, based on the principles of the application of public-private partnership mechanisms and considering the characteristics typical for projects related to conversion of industrial areas.

Within the framework of the proposed methodology, an integrated assessment is carried out to reflect the advantage of the planned project of conversion and usage of the area given the social factor, in comparison to its current usage, with the project participants achieving their goals to a maximum degree and having no contradictions among themselves, i.e. on the basis of a balance of interests. The integral assessment is based on the consideration of the qualitative and quantitative characteristics of a reconstruction object.

The criteria for the integrated assessment of industrial reconstruction projects are based on the following principles:

- the principle of system approach, which takes into account the costs during the entire production cycle of construction;

- the need to consider the specifics of the reconstruction object;

- the need to understand the specifics of production;

- the need to embrace the structural complexity of the reconstruction object (land, capital construction facilities, engineering infrastructure);

- the need for integrated approach (accounting for economic, environmental and social factors);

- the need to distinguish between qualitative and quantitative criteria and apply cross-cutting approach in assessing the efficiency for all project participants;

The specific feature of cross-cutting approach is that the criteria are evaluated on a unified scale, which is applicable to all objects regardless of their size and geographical location. The unified scale has a score from 0 to 1 (if necessary with splitting to tenths), which is allocated for each criterion in accordance with the achievement of certain values by control parameters of the object proposed for consideration.

The integrated assessment of the efficiency of the industrial area reconstruction project allows us to compare the planned usage of the industrial facility and the area, taking into account the social factor, and the current one.

2. A social contract is developed.

A social contract allows to recognize the rights and obligations of private and public partners on the basis of public-private partnership in terms of compliance with the regulatory values that characterize the permissible state of social factors during the operational phase of the object.

The social contract defines the rights and obligations of a Partner concerning social guarantees.

3. Within the business balance model, it is necessary to develop strategies for the government and business structures to make managerial decisions and execute industrial modernization projects. The concept of "market price of a project" should be introduced.

Since there is a great need for modernizing industrial areas and many entrepreneurs who can participate in this process, it is necessary to develop a strategy for managerial decision-making:

- An entrepreneur should develop a strategy for taking a managerial decision about participation in an industrial area modernization project;

- Government bodies should develop strategies for modernizing industrial areas in the region.

The development of these strategies should be based efficiency assessment. In our opinion, it is necessary to introduce the concept of the "market price of a project" (here in after referred to as "MPP"). The MPP reflects commitment of an entrepreneur to pay for social risks under certain conditions.

Modeling the efficiency options should go along the "state-entrepreneur-society" line. From the perspective of national economic efficiency, the concept of "quasi-effect" should be introduced, based on the effect and risk without taking into account social risk, i.e. a false effect and a "s-effect" - the systemic effect, that takes into account social risk and additional social effect. In the second option, the subject of a "s-effect" is the business community, which must receive government guarantees against the risk of losing capital when signing a social contract.

This will improve the efficiency for both the national economy and the private entrepreneur.

When calculating the efficiency of the business-balance model for the above two variants, the "quasi-effect" and "s-effect" must be achieved so that there is a variant of comparing the efficiency for making managerial decisions to both business structures and government bodies. This will lay the grounds for rational economic behavior in an entrepreneurship system on the modernization of industrial areas. This approach complies with the general requirements of the region's sustainable development strategy[4].

6 Conclusion

The evolutionary process of urban development, which is constantly evolving, has two trends: new construction and ageing of production facilities, and reconstruction and modernization because an area is being converted. Both of these trends occur simultaneously, causing positive and negative effects. The general condition in cities raises the issue of sustainable urban development as an independent problem.

Providing sustainable development of cities, for example, St. Petersburg, is the central task of the city's government bodies, and it is implemented on the basis of business technologies. Business technologies in this area have not been formed yet, and therefore, there

is a search for new forms of business that meet the requirements of sustainable urban development.

One of the problems of business promotion in this sphere is the lack and necessity to take the social factor into account by business. The current situation hinders the development of business itself and sustainable development of cities. This raises the issue of finding new forms of business here.

The paper poses the problem of the need to take the social factor into account by business. The social factor (general), from the standpoint of market relations, is also a business structure - its opposition to business and government bodies leads to great risks for the latter too. The proposed business balance model for interaction between the structures participating in sustainable development of cities is aimed at removing these contradictions.

The efficiency of business in the sphere of sustainable development of cities does not only depend on business structures, but also on their interaction. Interaction of business structures is an independent factor helping to achieve sustainable development of cities.

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