

Participatory projects data system development for their appropriate launch and selection

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Abstract — The relevance of the article is caused by the necessity to use information technologies and digital methods during the selection and launch of regional participatory projects. The objective of the paper is to develop technical task pattern for PIMS of LISP projects with the emphasis on launching models and appropriate selection procedure for participatory projects that are to obtain the interbudgetary transfer in the form of grant. The article gives more accurate definition of the term “participatory project” in the area under study. The study demonstrates the best examples of IT use during the launch and selection of regional participatory projects. The paper sets out the key requirements to the participatory projects data management system. The results of the study are practically relevant for the government, project managers and scientists, engaged in digital economics and management.

Keywords — *Data system, participatory project, interbudgetary transfer, grant*

I. INTRODUCTION

Participatory budgeting projects have been implemented in the Russian Federation since 2007. The local initiatives support program (hereinafter LISP) turned out to be the first experience in this area. It was implemented in the Stavropol Territory with the assistance of the World Bank.

Nowadays over 40 regions of Russia have different programs for implementation of such projects. Apart from LISP to such projects belong: “Let’s decide together”, “Your budget”, “The Yenisei shore”, “Public initiatives support program”, “Citizens budget initiative”, “Budget for the youth”, “Territories development” etc.

The LISP is the most widespread tool that combines regional peculiarities and common approaches to project financing, selection and launch.

Most implemented participatory projects, including LISP, imply interbudgetary transfers’ application. That means in particular providing grants from regional budget to the local one by tender.

As nowadays the public management digital transformation is boosting, the implementation and launch of participatory projects should be carried out by means of IT, by means of IS, (hereinafter – PIMS).

Nowadays the PIMS is mainly employed in business area, no matter how large the enterprise is, or what field it occupies. S. N. Gashigulina argues that, “It is the variety of PIMS that allows both large corporate customers and sole proprietors to use them. Many leading corporations use various PIMS (Adobe Systems, PayPal, HTC Corporation – Wrike). Local companies also employ PIMS for example, Togliatti Academy of Management (Zoho Projects)”[1].

Just a few regions of the Russian Federation have managed to create conditions, enabling proper media support for intersectoral interaction projects that include, among others, participatory projects. It means that these regions began to effectuate technological transformation of project management media support. This is considered to be the first stage of the digital transformation.

The objective of the paper is to develop technical task pattern for PIMS of LISP projects with the emphasis on launching models and appropriate selection procedure for participatory projects that are to obtain the interbudgetary transfer in the form of grant.

II. METHODOLOGY

Systemic analysis is the main method, employed during this study. It allows to regard the participatory projects data system, associated with their launch and selection as a part of managerial mechanism, involved in media support process for the corresponding project management branch.

The data sample includes information, hosted on official web sites of the regional authorities, as well as provided by Russian data systems developers and the World Bank.

III. RESULTS AND DISCUSSION

A. *The concept of “participatory project”*

Nowadays the terms “participatory project” and “participatory budgeting” are frequently used both in Russian scientific works and at official web pages of government bodies at all levels. Along with the notion in question, both sources also mention such categories as: “Initiative budgeting”, “Participatory budgeting” and “Extra- budgeting”. They are certainly interrelated, but not all of them are synonyms.

Despite the fact that “Participatory” is an English term, in Russia it sometimes has different meanings, when we speak about taking into account territorial interests of local communities. It also depends on pronunciation of this word.

To distinguish between these categories we have conducted the analysis of the corresponding definitions, mentioned in academic and methodological sources [2 – 11, 17, 18], and have made the following conclusions:

The categories “participatory budgeting”, “Initiative budgeting”, are interrelated.

The notion of “Participatory budgeting” has wider meaning in the world than in Russia, for Russia has different legal environment.

In the Russian Federation initiative budgeting is the first level of participatory budgeting.

The second level doesn’t have any notional category, it supposes that a special deliberative commission should participate in the process of regional budget funds distribution. This commission should include people, who represent local community and the local government bodies

Extra budgeting is not a synonym for the mentioned categories, but a special case of their implementation.

Participatory budgeting is the distribution of regional and municipal budget funds, in which local community of the area takes an active part in order to consider its territorial interests. In terms of territorial development, this tool helps to use budget funds to settle issues that are vital in the opinion of project results users (local communities). The participatory budgeting implementation shall result in increase of quantity and quality of public and private goods and services in demand that are provided to the population of the area as a result of development or reconstruction of public infrastructure objects.

Participatory budgeting regional procedure is the program, developed and implemented by the region of the Russian Federation, within the framework of which various municipal projects are being carried out that are intended to consider and meet territorial interests of local communities.

Participatory budgeting project – development or reconstruction of public infrastructure object that is determined by municipal unit local community. This development or reconstruction is to be funded by regional or municipal budget with financial or non-financial support of local community.

As for interrelation between the categories “local community”– “territorial interest” – “participatory budgeting” the authors of this paper support the views of D. Allegratti, A. Röcke, Y. Sintomer, C. Herzberg. In their study these scientists describe 6 different participatory budgeting patterns. The patterns constitute concept map, on which one can set and mark empirical events. At the same time the authors point out that specific participatory budgeting projects are subject to hybridization and fluctuate from one pattern to another [4].

Patterns distinctive features analysis proves that regional mechanisms of participatory budgeting implementation in the Russian Federation are likely to be the combination of two: “Participatory upgrade” and “Communities development”. If we combine them, then we should devise specific rules and procedures to involve the most active population groups that have common needs in terms of area development management.

Thus, participatory project is the tool of participatory budgeting implementation.

B. *Participatory projects launch and selection procedure: fundamentals*

Speaking about the essence of the notion. “Project launching” S.G. Lukin points out that there are several approaches to the project launching stages [12].

In particular, D. Shepelyavy distinguishes 7 stages of project launch: to define issue that is to be settled, to establish measurable expected result of the project, to assess, whether it is possible to reach the project goals or not, to decide, whether to launch the project or to cancel it, to set degree of priority for the project, to appoint project manager, to schedule project launch date. The expert emphasizes that all the mentioned stages can be effectuated both consecutively and simultaneously [13].

S. G. Lukin supports the approach of V.S. Karpova, and defines the launch as “the formal approval of a new project or the transition to the new stage of the project that has been already launched” [14].

Let’s summarize the information on the participatory projects’ launch, as exemplified by the most common type – LISP that is implemented in at least 40 regions of the Russian Federation. Here are some of them: Kirov region; Tver region; Nizhny Novgorod region; Sakhalin region; the Stavropol Territory; the Khabarovsk Territory; the Republic of Bashkortostan; the Republic of North Ossetia-Alania, the Republic of Sakha (Yakutia).

TABLE I. CATEGORIES OF SUBMITTED APPITATIONS FOR LISP PARTICIPATORY PROJECTS IN TVER REGION

Categories	2019		2018		2017	
Improvements and repair	14	6%	6	3%	17	7%
Child and sport playgrounds	32	13%	20	9%	31	13%
Public utility services	0	0%	1	0%	3	1%
Waste bin grounds	7	3%	8	3%	0	0%
Cultural events	14	6%	21	9%	26	11%
Burial sites	14	6%	24	10%	19	8%
Roads	27	11%	27	12%	35	15%
Water delivery systems	58	24%	57	25%	68	29%
Fire safety	1	0%	10	4%	9	4%
Illumination	54	23%	56	24%	29	12%
Special-purpose vehicles	18	8%	0	0%	0	0%
TOTAL	239	100%	230	100%	237	100%

Participatory projects have the so-called pre-implementation stage. The submission of project tender documentation to the executive body that is responsible for LISP implementation in particular region is the culmination of this stage. Then the launch of the process in question takes place.

At the pre-implementation stage it is necessary to perform the following actions: to organize meetings of the citizens, who live in the area, where the project is to be implemented; to define the object of the project, taking into account citizens' interests and limitations of the Federal Law No. 131 "About the general principles of the organization of local self-government in the Russian Federation"

Before launching LISP participatory project, you should submit project tender documentation to the executive body that is responsible for LISP implementation in particular region of the Russian Federation. Then your project will be enrolled in tender to receive the grant from the budget of the respective region of the Russian Federation

Regional budget grant is the main co-financing source for participatory projects, it is provided pursuant to the results of the selection procedure as an interbudgetary transfer. The project should be co-financed: the regional budget funds should be used along with the funds of the end users – people, who inhabit the area.

Each region sets its own criteria for LISP projects selection procedure.

In particular, in Tver region the applied selection criteria and their values can be arranged as follows: financing efficiency (0,5 or 0,55, depending on project category); Citizens participation: rate of citizens, who participated in the meeting, meeting video recording (0,2); social efficiency (0,1 or 0,15, depending on project category); Public awareness (0,15).

Table 1 summarizes all the types of applications that have been submitted for LISP participatory projects in Tver region for the last 3 years.

C. LISP participatory project data systems for their appropriate launch and selection procedure

In Kirov region the PIMS for LISP projects can be accessed at the official page of the program for this region. PIMS for LISP projects can download project applications online pursuant to the schedule, in 3 periods. The PIMS for LISP projects can process both municipal applications and project supervisors' reports.

To ensure proper functioning of PIMS for LISP projects in Kirov region both the municipal unit authorities and LISP administrator (regional government body) should follow the following algorithm in fig 1.

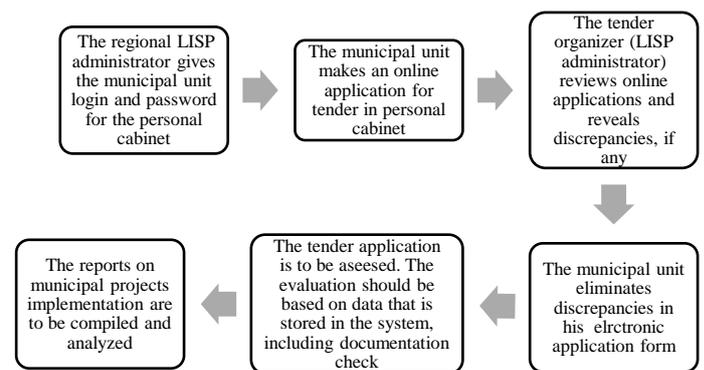


Fig. 1. Functional capacities of PIMS for LISP projects in Kirov region

PIMS for LISP projects in Kirov region is built on Java and forms part of the SiTex program that is being used by Administrator in this region (Ministry of Social Development of Kirov region).

PIMS for LISP projects in Kirov region collects, stores, manages and analyses the data set and provides processed data to the users: The regional LISP administrator and municipal units.

Nowadays there are 428 users in the system. The PIMS implementation has managed to resolve one of the burning issues in the region: municipal units remoteness. It has resulted in budget savings in terms of transport charges, as some populated areas are more than 300 km away from the regional center [16].

In Tver region there is a system "LISP-Tver" that is employed for tender documentation submission. It provides various possibilities for users:

"Local government bodies are able to make online applications. The system performs auto check of submitted applications to determine, if there are any technical errors there;

The experts of the Ministry of Finance are able to check tender documentation in distant mode; to automatize the

calculation of applications rating and the selection of winners and make these procedures more clear; to monitor the implementation of each LISP project on a regular basis, identify and eliminate accidents promptly; to provide easy access to all the instructions and regulatory documents, related to LISP, as well as to open objects data” [15].

In the Republic of Bashkortostan and the Republic of North Ossetia-Alania there are also project information management systems that collect and store all the documents that may be necessary for the LISP projects launch in these regions.

Due to the fact that systems used in different regions are not widespread and have different functional capacities, we believe that it is vital to develop corresponding technical task pattern, which regions will employ in order to enhance participatory projects implementation and selection.

D. Technical task pattern for PIMS of LISP participatory projects

While developing technical task pattern we resort to GOST guidelines 34.602-89 “Technical task for automated system”. We will pay attention to the elements that haven’t been touched upon in this paper, when we spoke about data system use for LISP participatory projects implementation in regions

PIMS for LISP projects should be based on the following principles:

Data shall be complete, relevant and reliable;

The PIMS shall be flexible in terms of changing requirements of the legislation in the Russian Federation, regional legislation and requirements of system users.

The existing PIMS modules, as well as PIMS models that are under development shall be easily integrated into other data systems and sources;

The used terms, reference data, value systems and regulations shall be unified);

The standards, technologies, formats and communication protocols for PIMS users and developers shall be unified;

Absolute data safety.

The functional requirements to the development of PIMS for LISP projects are set and amended by the government body in the region that implements LISP. For instance, in Kirov region the Ministry of Social Development hosts the selection. As a host it is responsible for managing and monitoring of application management data system (Kirov region Government Decree № 33/481, dated the 6th of December 2009 № 33/481, (amended on the 4th of October 2018) “On LISP project implementation in Kirov region”).

Each region of the Russian Federation can develop its own standards and rules in order to regulate the following issues:

1. Structure and general principles of operation for PIMS.
2. Providing access to the PIMS data and the protection of the mentioned data.

3. PIMS essential functions.
4. PIMS developers and users.
5. Rights and obligation of PIMS members.
6. PIMS enabling procedure and authorization.
7. Training courses for PIMS users

Table 2 presents description of automation projects during the launch and selection procedure of the projects in question.

TABLE II. DESCRIPTION OF AUTOMATION OBJECTS IN PIMS FOR LISP PROJECTS: LAUNCH AND SELECTION STAGES

Process participant	Process name	Automation possibility	Decision on automation during project
Municipal administration	Documents downloading	Possible	Is to be automated
Program administrator in particular region/ Municipal administration	Documents set check	Possible	Is to be automated
Program administrator in particular region	The quality check for submitted documents	Impossible	Won't be automated
Municipal administration	Making amendments online	Possible	Is to be automated
Program administrator in particular region	Giving points to evaluate submitted documents online	Possible	Is to be automated
Tender committee	Scoring (calculation and summing up taking weight indexes into account)	Possible	Is to be automated
Tender committee	Confirmation of project tender evaluation results	Impossible	Won't be automated

These processes may be identified as functions that can be further split into separate tasks. Then it is necessary to determine quality and time specifications for the performance of these tasks.

PIMS for LISP projects should be centralized, i.e. all data should be kept in central storage. The system should have 3-tier structure (the first tier is source, the second - storage, the third one – reporting).

The system should have the following functional subsystems:

- The subsystem for collection, processing and downloading data. This system should collect the data from different sources, bring this data into the proper form and send it to the data storage subsystem;
- data storage subsystem stores and sends data to the bodies that are responsible for decision-making in project tender;

- data reporting subsystem generates visual representation of data and makes reports.

To establish proper data exchange between system components the system should employ specific application protocols, such as: NFS, HTTP and its extensions HTTPS, NetBios/SMB, Oracle TNS.

To provide proper access to reports for users the system should employ presentation protocol HTTP и and its extension HTTPS.

The system shall be capable of operating in the following modes:

- basic mode, if all the subsystems perform their essential functions;
- Preventive mode, if any subsystem fails to perform its functions.
- Basic mode of PIMS for LISP projects should ensure:
- A permanent access to the system for users (24/7);
- Proper system functioning – data collection, processing, downloading and storage; providing reports

Preventive mode of PIMS for LISP projects should ensure:

- maintenance;
- hardware/software upgrade;
- Emergency handling.

Overall time of preventive actions shouldn't exceed 5% of the total operating time in the basic mode (36,5 h. per month).

It is crucial to meet diagnostic requirements to PIMS for LISP projects in order to ensure the reliability of the system and all its components

It is obligatory to keep an electronic log of accidents as well as maintenance schedule and maintenance log. The state of all technical components should be permanently checked. The maintenance works should be performed on a regular basis.

The data security of PIMS for LISP projects should meet the following safety requirements:

- The safety should be ensured by means of hardware/software tools and supporting managerial procedures;
- The safety should be ensured at all technological stages of data processing and in all operational modes, including repair and scheduled maintenance works

Besides, hardware and software security tools shouldn't exert significant negative impact on the essential system performance characteristics (reliability, operation speed, configuration variability).

Access rights differentiation for the users and System administrators should be based on the principle "what is not permitted is prohibited".

Each region should develop its own requirements to organizational and methodological support.

IV. CONCLUSION

The conducted regional experience analysis of participatory projects implementation, exemplified by the local initiatives support program drives us to the conclusion that nowadays it is too early to speak about full digital transformation of the process in question.

The regional public management structures in Russia should start with the first stage – they ought to carry out technological transformation, which can provide sufficient support for participatory budgeting projects

The authors of this paper proposed a technical task pattern for PIMS, associated with participatory projects of the local initiatives support program. It can be employed to launch and boost the process in regions.

The results of the study are practically relevant for the government, project managers and scientists, engaged in digital economics, management and IT.

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