



Improvement of the Quality and Availability of Public Services of Multifunctional Centers based on Lean Manufacturing

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Abstract

The paper discusses methodological and practical approaches to the use of lean technologies in the work of state institutions. Reveals the principles of the mechanism for the provision of public services in multifunctional centers (MFC). The authors substantiate the need to use lean manufacturing to improve the quality of the provision of state and municipal services taking the MFC of the Lipetsk region as an example. Since 2019, a pilot project "Lean Region" has been launched in the Lipetsk region, aimed at optimizing the internal processes of organizations by minimizing losses through the introduction of lean technologies. Presents results of the experiment on mapping the current state of the services: payment of the state duty for the applicant and by the employee of MFC. Analysis of the process of providing state and municipal services in the Multifunctional Centers made it possible to identify various problems of the MFC's work related to the gaps between online and offline communication channels, the complexity and multiple visits for different services; with an outdated MFC monitoring system; the need for the technical optimization of the MFC service, etc. To solve the identified problems, a set of measures is proposed aimed at introducing a knowledge management system, an MFC monitoring system, modernizing the "one window" principle, and technical optimization of the MFC.

Disciplinary: Public & Service Management, Technology Management.

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1 Introduction

The quality and availability of public services have been an important priority in public policy in recent years. The basic principle of providing services within the framework of this mechanism was the principle of "one window" on the one hand, and an effective tool for its development was lean manufacturing technologies borrowed from the entrepreneurial sphere, but have been used for several decades, including in the field of public administration [4,6,7].

The relevance of this study lies in the fact that they need to guarantee high standards of quality of life and economic growth at the national level requires the creation of conditions for the effectiveness of public administration, a scientifically based administrative reform, and a competent transition to a service state. In these conditions, it is advisable to refer to the foreign and domestic experience of using various methods of quality management and the use of methods for obtaining feedback from the consumer [5,11,12].

The study aims to analyze the results of the work of the multifunctional center for the provision of state and municipal services in Lipetsk in the context of the implementation of lean manufacturing technologies. To solve it, it is necessary to substantiate methodological approaches to assessing the quality of the provision of state and municipal services in Russia, to consider as an example the activities of the Multifunctional Center for the provision of state and municipal services in the city of Lipetsk, to assess the main indicators of the MFC and to characterize the quality management of services in the context of implementation pilot project "Lean Region". As an example, we will consider an experiment in which the authors were directly involved.

The practical significance of the research results lies in the development of recommendations for improving the quality of the provision of state and municipal services by the Multifunctional Center based on lean technologies.

2 Regulatory and Methodological bases for Assessing the Quality of State and Municipal Services on the Principle of "One Window"

The main problem in creating a stable quality system for the service sector is the variability of service performance. In the service sector, it is difficult to control the quality-of-service delivery, especially during rush hour or during high demand. The relationship with the consumer accounts for up to 70 percent of the total time of service delivery.

The introduction at the legislative level of the concept of "public services" in Russia, in the process of the administrative reform, made it possible to consider the state as a service provider. However, by that time, public services have been one of the main forms of relationship between a citizen, a legal entity and government for a very long time. That is, at present, there is a certain lag in the use of the instruments of market relations that have proved to be positive.

In its most general form, the term "service" can be defined as a product of labor, the beneficial effect of which appears not in the form of a thing, but the form of activity directed at a thing or a person [4]. In turn, the definitions of state and municipal services are clearly formulated

in the Federal Law of 27 July 2010 No. 210-FZ "On the organization of the provision of state and municipal services." There we also find the definition of the quality of public services as a set of characteristics of a service that determine its ability to meet the needs of the recipient in relation to the content (result) of the service [1].

By the Decree of the President of the Russian Federation dated 7 May 2012 No. № 601 "On the main directions of improving the public administration system" identified the main indicators that must be achieved by the executive authorities and local government [2].

The basis for ensuring and guaranteeing quality is the standardization and regulation of services, both in business and in the field of government work. In these conditions, the standards of state and municipal services and administrative regulations for their provision by the executive authorities are the basis for quality management.

The next step in managing and ensuring the quality of public services is to create a mechanism for their provision and provide conditions for assessment. In our study, we will touch upon one of the actively used mechanisms for the provision of state and municipal services - "one window" with the use of lean technologies.

For its implementation in Russia, a category of state institutions was created, which were called multifunctional centers (MFC). These organizations provide state and municipal services on the principle of "one window" after one application of the applicant with a suitable request.

The function of the MFC is carried out based on the Federal Law of the Russian Federation of 27 July 2010. N 210-FZ "On the organization of the provision of state and municipal services." According to the current legislation, state and municipal services provided by the MFC are provided free of charge [1].

Analyzing the methodology for monitoring the quality of the provision of state and municipal services on the principle of "one window". The indicators of the quality of the services provided by the MFC included in the assessment system include reports in a specially developed form [11]. To assess the quality of service delivery at the MFC, the following formula is used:

$$S = \frac{In}{TIn} * 100\% \quad (1),$$

where:

S - the share of the requirements for the provision of services based on the MFC, of the total number of requirements contained in the table (the share of compliance of the actual values of indicators with the normatively established ones);

In - the number of indicators for which the requirements are met in the MFC

TIn - the total number of indicators contained in the table.

One of the key indicators of the quality of the service provided is the recipient satisfaction rate with the quality and availability of services provided at the MFC (hereinafter - the "satisfaction rate"). The satisfaction rate is defined as the proportion of applicants who rated the work of the MFC as "excellent" (grade 5) and "good" (grade 4) in the total number of applicants surveyed.

Describing the results of monitoring, the reasons for the dissatisfaction of the recipients of state and municipal services are also identified, and ways to overcome them are developed.

3 Analysis of the Conditions and Ways to Improve the Quality of Service Delivery by the MFC based on Lean Manufacturing Technologies

As an object of research, we considered the regional budgetary institution "Authorized multifunctional center for the provision of state and municipal services of the Lipetsk region."

Since 2014, the MFC began to work online, but already under the brand - "My Documents" [10]. The goals of creating this service include:

1. Increasing the availability and quality of public services;
2. Reducing business costs for the transition of administrative barriers;
3. Increase the efficiency of the activities of interdepartmental coordination bodies and executive power;
4. Increasing openness and transparency for society.

The functionality of institutions is carried out in the fields of science, health protection, education, culture, social protection, construction, employment, sports and physical culture, registration of rights to real estate and transactions with it, determination or confirmation of the civil status of the applicant, regulation of entrepreneurial activity, housing and communal services, as well as in other areas in similarity with the subject and functionality of the work established by federal law, other legal act of the Russian Federation and regulations of the Lipetsk region [10].

The centers "My Documents" provide more than 300 states, municipal and related services. The number of requests increased by 8% over the year. According to the results of the last rating of the Ministry of Economic Development of Russia, the activity of the supreme executive body of state power of the Lipetsk region in organizing the provision of state and municipal services on the principle of "one window" was assessed as highly effective. At the same time, the level of citizens' satisfaction with the quality of services provided in 2018 in the region significantly exceeded the national level and amounted to 99.4% [10].

Since 2019, a pilot project "Lean Region" has been launched in the Lipetsk region, aimed at optimizing the internal processes of organizations by minimizing losses through the introduction of lean technologies. As part of this event, at the site of the Lipetsk central department of the UMFC of the Lipetsk region, a project was launched aimed at reducing queues, creating comfortable conditions for staying in the MFC for both the applicant and the staff.

An important condition for the formation of the value chain (VC) of the work performed in the framework of the implementation of lean manufacturing technologies is the definition of internal and external criteria for the quality of service provision. To assess the quality of the center and its staff, we identified groups of criteria and compared them, see Table 1.

Table 1: Internal and external criteria for assessing quality management

Internal evaluation criteria	External evaluation criteria
Timely registration of incoming documentation	Service speed; correctness (error-free) execution of documents
Timely notification of MFC employees about changes in legislation and regulations of the Russian Federation	Quality of consultation; skill level of specialists, professionalism
Registration of proposals for improvements from employees in the prescribed form (service notes for improvements)	quality of service for the applicant; continuous improvement of work
Creation of conditions for effective work of employees	Fast service
Applicants have the right to apply with suggestions, complaints and statements through the book of complaints and suggestions, the MFC website, the contact center	Constant "work on mistakes"; Desire to help the applicant; Ability to listen to the opinion of the applicants
The application meets the requirements for the consideration of the written applications of citizens under the federal law of 02.05.2006, No. 59-FZ "On the procedure for considering applications of citizens of the Russian Federation"	Correct paperwork; Clear record keeping; Fast service for applicants
Presence of an agreement of interaction between the authorities and the MFC for the provision of services based on the MFC	Quality of services; Service speed; Accuracy of service delivery; Ease of obtaining services; A wide range of services
Presence of regulations for the provision of services based on the MFC	Service speed
Presence of administrative regulations for the provision of services	Service quality control
Service quality assessment is carried out in the IAS system of MQPS	Interest in good and timely service to the applicant

Mapping is used to implement lean manufacturing tools. Mapping allows you to:

- 1) Form unified approaches to study and improve the processes;
- 2) Visualize and establish connections between all elements of the value stream (VS);
- 3) Identify problems, bottlenecks, possible (potential) risks for analysis, subsequent solution (elimination) and identification of areas for improvement of the VS;
- 4) Increase the involvement of participants by improving communication between different departments:
 - visualization of the way to achieve a common goal;
 - even distribution of work between the participants and the rational use of the resources involved;
- 5) analyze changes in the current situation and make operational decisions;
- 6) develop and implement an action plan to improve the efficiency of the VS and monitor the progress of its implementation;
- 7) create a database of standard (typical) fragments of processes, previously mapped and optimized, and use them for parallel and future work.

The process of providing state and municipal services on the principle of "one window", in turn, consists of key elements and procedures. The procedures of this process include: consulting, receiving an application, processing documents and registering them, interdepartmental (intradepartmental) interaction, informing the applicant about the result of the service, issuing the result of the service, monitoring the applicant's satisfaction [9].

The main problems of providing state and municipal services in the Multifunctional Centers include:

- the presence of gaps between online and offline interaction channels, the complexity and frequency of visits for different services;
- problems in the internal organization of the work of the MFC;

- problems in interaction with the executive authorities - MFC service providers;
- outdated MFC monitoring system;
- the lack of a unified system for assessing the executive authorities and the local government's quality of provision of state and municipal services
- the need for the technical optimization of the MFC service;
- the need to increase the scale and speed of legal consultations;
- a complicated service request system and ready status acquirement.

Examining the scheme's current condition of service provision: payment of the state duty by the applicant and by the employee of the MFC (Figure 1).

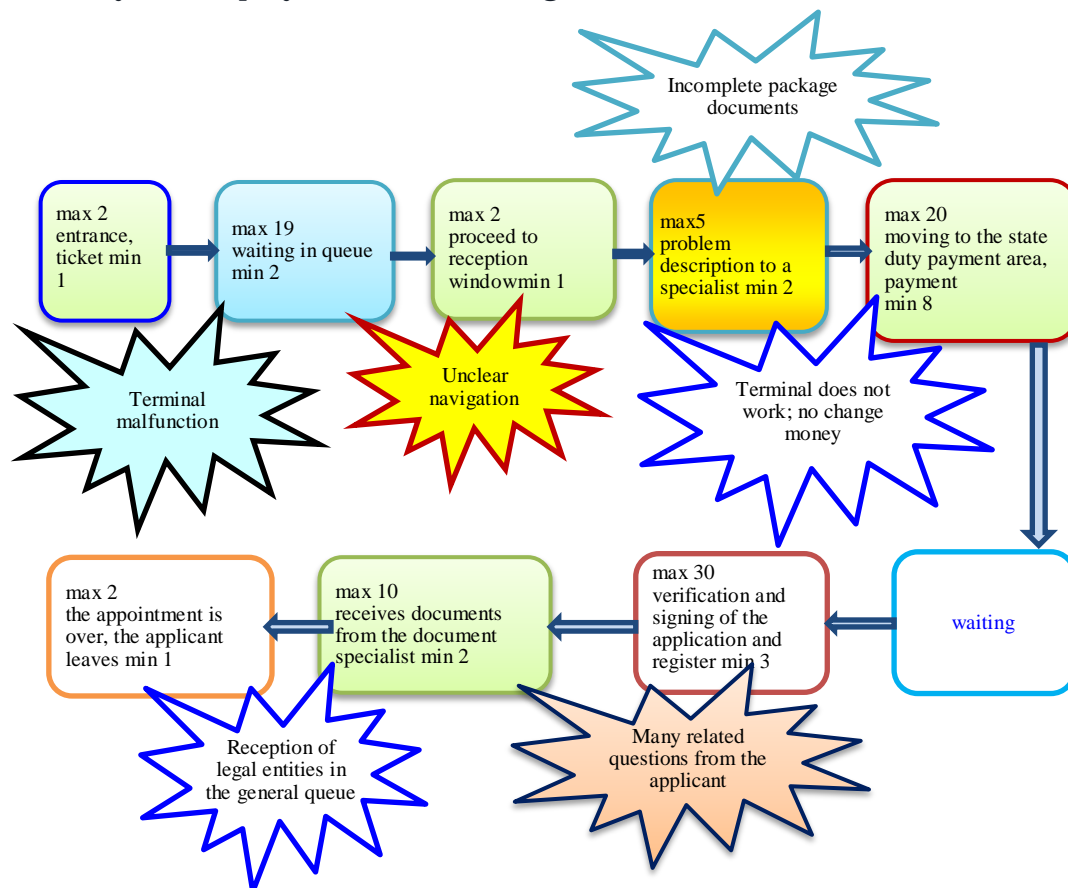


Figure 1: Map of the current state of the "payment of state duty" process (actions of the applicant in the process of receiving a service) as of 01.09.2019

Figure 1 shows the main actions of the applicant and recorded the losses that arise when receiving the service. The stars represent time, organizational and technological costs.

To achieve the ideal condition of the process under consideration, it is necessary to break down the process of improving service quality management into a number of stages. Initially, it was necessary to consider a number of problems that should have been resolved by September 1, 2019. Table 2 shows three problems that can be solved at the initial stage of optimizing the work of the centers "My Documents", as well as suggestions for solving these problems. These include insufficient qualifications of the specialists of the Centers "My Documents" and incomprehensible navigation for the client, which accordingly increases the time of service to applicants.

The next step is the elimination of the next group of problems of a technical nature: terminal malfunction and low-performance equipment. To solve these problems, we offered to

sign a contract with a third-party company that provides information technology support services. Also, proposed to hire one employee who would be able to accept payments at acquiring terminals and exchange money for the applicant.

Table 2: Proposals to optimize the provision of services in the Centers "My Documents"

Problem	Solution	Result	Date
Help from a colleague	Conducting training courses for specialists	provide service competently, reduced service time	01.09.2019
Employee types with one hand	PC training for employees	Reducing the time of service for the applicant	01.09.2019
Unclear navigation	Improvement of the navigation system	Applicant spends less time searching for the right specialist	01.09.2019
Terminal malfunction	Signing a contract with a reliable supplier	Fast payment at the terminal, satisfied applicant	01.11.2019
The terminal does not work, there is no change	Hiring a person responsible for work at the checkout, installation of acquiring terminals	Reduction of the applicant's wait time, the convenience of payment	01.11.2019
Outdated, low-performance equipment	Work station replacement for specialists	Reduced time of service of the applicant by MFC specialists	01.11.2019
Reception of legal entities in the general queue	Dedicated employee to service legal entities	Reduction of queues	01.01.2020
Incomplete package of documents	Informing on the MFC website about the correct package of documents for each service	Applicants apply with a prepared package of documents	01.01.2020
Excessive movement of employees during workflow	Creating an effective workplace for MFC specialists using the 5S system	Reduced applicant service time	01.01.2020

Optimization of the work of the Center "My Documents" based on the introduction of lean manufacturing technology that aims to achieve the future (target) state, and in the future, the "ideal" state of the process. The future (target) state of the process of providing the service "payment of state duty" was achieved by 01.01.2020 (Fig. 2)

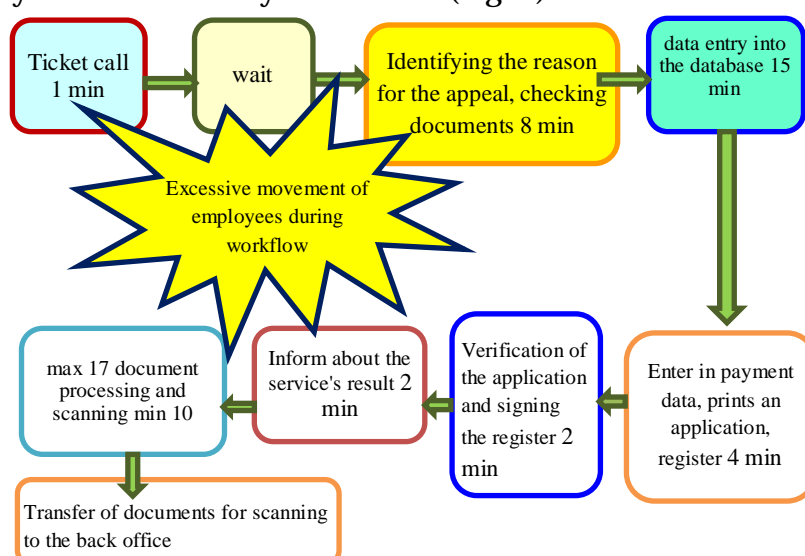


Figure 2: Map of the future (target) state of the process (actions of a specialist in the process of providing service: payment of state duty) (as of 01/10/2020).

By this date, it was planned to improve the procedure for accepting applicants, namely, to allocate one employee to receive legal entities; improve the workplace of employees on the 5S system; to improve the quality of the content or content of the site, that is, to provide complete

and easily accessible information for applicants on the required package of documents for each service.

Optimization of the workflow led to an increase in labor productivity, reduced the average waiting time for receiving documents from 14 to two minutes - by seven times. It was possible to reduce the time for issuing documents by seven times due to the introduction of lean technologies in the multifunctional center. Reduction of costs - unnecessary actions of employees, elimination of non-core work for them, optimization of the working space, made it possible to achieve an increase in labor productivity.

Within the framework of the study, the following set of measures is proposed to solve the indicated problems:

1. The implementation of a knowledge management system, which includes:
 - the implementation of an integrated approach to the collection, updating and dissemination of all information assets of the MFC (databases, documents, requirements, procedures, as well as the knowledge and experience of individual employees);
 - the formation of mechanisms of a new global information resource, including the formation of a community of practitioners on certain issues of the MFC.
2. The improvement of the MFC monitoring system:
 - the introduction of uniform performance indicators;
 - the creation of a joint end-to-end monitoring system;
 - the formation of a change management system.
3. Technical optimization of the MFC service:
 - the renewal of office equipment with the modern and high-performance model;
 - the introduction of an acquiring system for payment of state fees at the reception window;
 - implementation of QR codes on receipts of payment of state duties for payment through the Online mobile banking applications.

The great dissatisfaction among citizens receiving state and municipal services is caused by failures in the work of the electronic queue and the long wait for a free specialist.

This series of problems is caused by:

- the applicant, as a rule, provides an incomplete package of documents required to receive the service;
- there is an intense load on the working specialist in the window;
- outdated approach to the principle of "one window"

Modernization options for the "one window" principle are shown in Figure 3.

Also, in order to effectively meet the needs, work should be continued to form the internal market for MFC specialists, develop a system of professional orientation for young people to work in the MFC, create conditions for the adaptation of specialists and expand the mentoring system.

Lipetsk region is among the regions actively introducing lean technologies. However, among the new employees of the centers "My Documents" there is a low percentage of knowledge of the concept of lean manufacturing. Therefore, as one of the areas for improving activities, it is

necessary to offer a training program for new employees. The purpose of this program is to teach students the basic principles and methods of the concept of lean manufacturing [4, 6, 12].

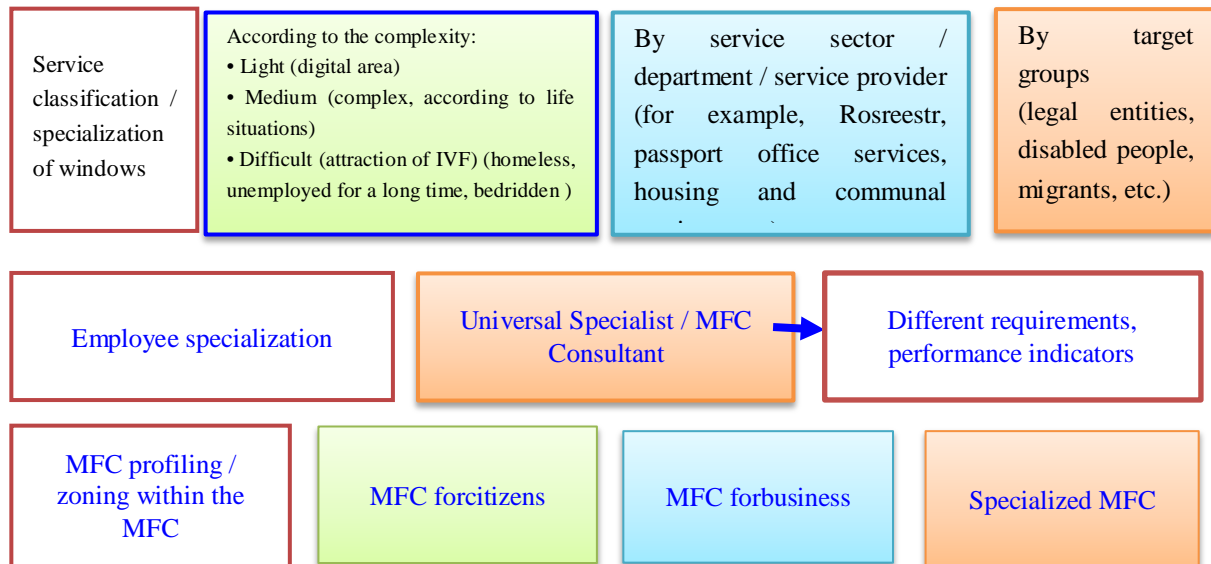


Figure 3: Modernization of the principle of "one window" in the MFC

In the course of training under the advanced training program, specialists can learn: independently: to draw up a tactical plan for the organization; organize the collection of problems and suggestions from employees; identify the most problematic processes; estimate the losses in the implementation of projects using lean manufacturing tools.

We propose to use the following principles for the formation of "lean office" in relation to the MFC: Priority object is to optimize the activity - process, not employees; formalized transfer of professional and methodological knowledge from one employee to another; detailing processes in order to improve their control and optimization; standardization of the maximum number of processes; orientation of MFC employees to identify and eliminate useless costs and losses when they arise.

As part of improving the MFC activities in the provision of state and municipal services, the authors formulated the following proposals:

1. Implementation of a knowledge management system.
2. Improvement of the MFC monitoring system.
3. Technical optimization of the MFC service.
4. Modernization of the "one window" principle.
5. Creation of a professional development program for specialists in the field of lean technologies.
6. Involvement of heads of departments and their deputies in the implementation of lean technologies;
7. Shortening the time for the provision of services - transition to electronic document management with departments, to obtain results in electronic form;
8. improving the visualization of information for applicants placed in the information and consulting area, the formation of an information standard (provision with printed products for targeted purposes, developed in conjunction with departments);
9. providing the applicant with comprehensive information on the provision of the services they wish to receive.
10. development of partnerships with authorities, signing cooperation agreements.

The proposed measures will significantly optimize many MFC processes, improve the quality of the provision of state and municipal services, and increase the satisfaction of citizens.

The use of a wide variety of methods for identifying and eliminating losses will increase the efficiency of the MFC, which is expressed in reducing the waiting time for citizens, reducing the energy consumption of the center and increasing public satisfaction.

4 Conclusion

State multifunctional center for the provision of state and municipal services became the object of implementation in the Lipetsk region of the "Lean Region" project and was one of the first to prove the relevance of this approach in order to increase the satisfaction of clients served. Lean manufacturing is a methodology aimed at systematic cost reduction. Its task is to design and implement such processes for creating value for services that can be performed in exactly the time that is really needed for this [8,9].

With the experiments in the implementation of the "one window" principle and the introduction of lean technologies lead to a steady increase in the reputation of the activities of government agencies and public confidence, based on the effective work of the branches of the MFC Lipetsk region. Performance indicators show an upward trend: the attendance of centers increases, satisfaction with the services provided increases. One MFC operator receives 8-15 people each day. One key area of marketization should be informing the population about the MFC works.

This study of the possibility of using lean technologies in the activities of the MFC made it possible to apply the mapping method to analyze and identify losses in the provision of the "payment of state duty" service. The problems in the implementation of the quality management system and the production system "Rosatom" were highlighted, which are associated with the satisfaction of the service applicants: insufficient qualifications of the specialists of the Centers "My Documents"; incomprehensible navigation for the client; long service time for applicants.

Today, a large-scale digital transformation of public services and services is being carried out, a digital public administration program has been developed aimed at introducing new principles for the provision of public services, such as proactivity and extraterritoriality [3, 6, 7].

5 Availability of Data and Material

Data can be made available by contacting the corresponding author.

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