



ORIGINAL PAPER

DOI: 10.26794/2304-022X-2023-13-3-47-58

UDC 336(045)

JEL H4, H5, O3

Improving of the G2C Payment Mechanism as the Part of the Development of the Social Treasury Project Using the Russian National Payment System

S.A. Tomilina, M.L. Dorofeev

Financial University, Moscow, Russia

ABSTRACT

The purpose of the study is to consider the possibility of improving the G2C payment mechanism in the context of the digital transformation of the social sphere, as well as to develop a methodological concept for a model for implementing a centralized payment service in the social sphere. The authors reviewed the proposals of Russian and foreign researchers to standardize forms of interaction between citizens and the state. Approaches to understanding the effectiveness of the social security model have been studied; the possibilities for improving state programs for the development of the social treasury and the national payment system have been analyzed; recommendations have been proposed based on the best payment solutions in the field of social security. Based on the results of the study, the authors developed a model of the centralized payment service "SBP ZH", integrating SBP into the unified state information system for social security (USISSS), which simplifies the "client path" due to simple and convenient identification of beneficiaries of social assistance by phone number. The results of the implementation of the model will be: an increase in the number of recipients of social assistance among residents of populated areas of the country who do not have access to the Internet, and the population of new constituent entities of the Russian Federation (in the context of a lack of payment infrastructure), as well as an increase in the share of non-cash money turnover by 5–6%. The proposed measure for the implementation of the G2C payment mechanism works within the framework of such areas as the Social Treasury project and the Development Strategy of the National Payment System for 2021–2023.

Keywords: digitalization; social security; social treasury; NPS; support; state; platform; FPS

For citation: Tomilina S.A., Dorofeev M.L. Improving of the G2C payment mechanism as the part of the development of the social treasury project using the Russian national payment system. *Upravlencheskie nauki = Management sciences*. 2023;13(3):47-58. DOI: 10.26794/2304-022X-2023-13-3-47-58

INTRODUCTION

High degree of uncertainty, complex geopolitical situation, unprecedented international sanctions, as well as openly hostile actions of Western countries have become the reasons for the increased attention of politicians, sociologists and economists to the problem of ensuring social stability in Russia. Especially relevant in modern conditions is a flexible and effectively working system of social support of the population, as well as expanding the number of citizens covered by it and increasing the share of instruments of its targeted impact.

Every third Russian regularly receives payments, services or consultations in social sphere organizations — the amount of money allocated for these purposes increased in the period 2017–2022 for a number of objective reasons, including a series of crises (including the coronavirus pandemic), as well as planned measures to implement the constitutional guarantees of Russian citizens (*Fig. 1*).

Optimization of expenditures (for example, gradual reduction of the share of benefits in accordance with the strategy of development of the Russian pension system), as well as the introduction of innovative technologies, the use of new public administration mechanisms and the development of results-based budgeting allow to cope with the increasing volume of social liabilities and commitments of the state. Innovative solutions at the intersection of various digital government platforms contribute to the transparency of the budget system and the growth of citizens' satisfaction with the work of state and municipal financial management bodies [1]. Digital transformation of the social sphere is one of the most important directions in the development of the social security model and increasing the accessibility of public social services [2].

The events of this year have shown the strength of the established national payment system, so its integration into the process of

social security financing is reasonable and has a number of advantages for solving problems in this area. This article formulates the author's concept of implementing the G2C (Government-to-Citizens) payments mechanism as part of the development of digital transformation projects of the social treasury and the national payment system (NPS) of Russia [3].

LITERATURE REVIEW

Large-scale digital transformation is necessary to improve the efficiency of the social security mechanism. Yu.V. Timofeev and K.A. Tumanyants, in their work [4], conducted a comparative analysis of the values of modified elasticity by the cost-effectiveness method (CEA), taking into account the growth of subsistence minimum, revealed that the categorical nature of payments is to the detriment of targeting and negatively affects the rate of poverty reduction in the regions.

L.A. Gladkova and A.A. Chetverkina in the course of the analysis of social support, social insurance and social security of the population of the Moscow region revealed that not all the resources of the budget system are targeted and represent a wide range of social support measures [5]. In their opinion, the direction to improve the efficiency of the social protection system is to bring the average payments to socially vulnerable segments of the population to the level of the average wage in the region.

V.E. Makarov sees the problem of inefficiency of the social security system in the insufficiency and untimeliness of information provision, and recommends to establish access of social workers to "banks of social technologies", as well as to fill legal reference information systems. [6].

I. Lebedeva and S. Gubarev note that to maximize the effectiveness of social policy and the fullest provision of social services, it is necessary to ensure the coordinated functioning of the relevant state mechanisms [7]. The trend towards accelerated introduction of digital

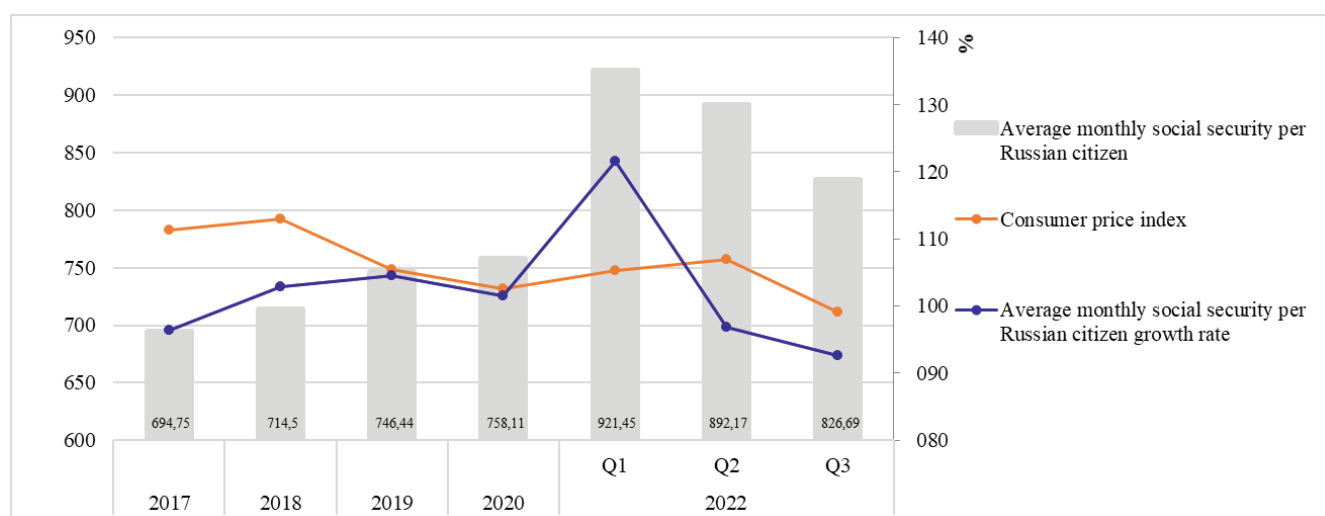


Fig. 1. Average monthly social security per Russian citizen, 2017–2022, rubles

Source: compiled by the authors based on Unified interdepartmental information and statistical system data. URL: <https://www.fedstat.ru/indicator/33993/>

technologies in the economy and social sphere is currently one of the national development goals [7].

The above-mentioned topics are also discussed by foreign researchers and international organizations. The ISSA's (International Social Security Association) 2020–2022 synthesis / consolidated report on the potential of digital transformation to create better and more resilient social protection systems notes that the bulk of social care institutions have undergone digitalization during the coronavirus pandemic, which has served as the basis for a fundamentally new working environment.¹ Global changes in the social sphere due to the accelerated introduction of digital technologies and the trend towards its full digitalization have changed the model of interaction between the state and citizens.

We understand the efficiency of social policy as its economy and effectiveness. The first is

¹ ICT response to COVID-19: Leveraging accelerated digital transformation to build better and more resilient social protection systems (Summary report 2020–2022). ISSA. URL: <https://www1.issa.int/node/236179>

mainly associated with the financing of the social security system from the budget system, the optimization of which is possible by increasing the transparency and targeting of social assistance, including by improving the mechanism of G2C payments, which implies providing access to state information through online services [8]. The Table systematizes the main results of the Russian authors' research in this area of scientific interest.

RESULTS

Best global practices in the development of digitalization in the social security system

One of the countries succeeding in the digitalization of the social security system is India. In 2021, the government introduced a new digital payment concept, e-RUPI [13], which uses a system based on electronic vouchers for social services, health benefits, etc., delivered to recipients' cell phones via QR code or SMS. Users can get the voucher from the service provider without a card, app or internet banking.

The main uses of e-RUPI include: 1) implementation of services under government

Table

**Review of proposals for improving the social sphere in the context
of the development of the social payment system**

No.	Authors	Scope of the research	Problem to be solved	Suggestions
1	Yu.V. Kuvaeva, E.A. Sedunova [3]	Improvement of the FPS as an element of the creation of a new technological basis for the qualitative functioning of the social sphere	Identification of the possibility for FPS to make payments in favor of state authorities	Improvement of interbank transfers by launching C2G and G2C services. Use of FPS in other areas - for example, introduction of a service for payment of salaries to those working not only in the budgetary but also in the social sphere
2	K. K. Gavrilov, M.A. Babenko [9]	Analysis of innovative payment solutions formed on the basis of digital technologies	Search for prospects for the development of payment instruments and payment system in the conditions of digitalization in Russia	Introduction of a universal standard of QR codes; consolidation of the right of holders of the digital rouble to exchange it for cash or non-cash funds; preparation of legal ground for the introduction of electronic payment account instruments (e-invoice); development of a universal platform using Mir.Pay
3	N.V. Mironenko [10]	Methodological aspects of evaluation of control processes in G2B and G2C electronic systems	Lack of standardized procedures and methods for efficient and fast processing of G2C services	Formation of a "feedback" mechanism by means of user voting; development of a score-rating methodology for monitoring the results of the automation of the authorities' activities
4	V.B. Morozov [11]	Essence and peculiarities of social innovations in the public sphere	The need for a public and open trustful dialog between the state and representatives of the business community and civil society	Creation of innovation cells (blocks), where the whole innovation cycle is united in one administrative and technological system
5	M. Aliyev, M. Mammadov, V. Rzayeva, A. Safarli [12]	Fast payment system as a tool to optimize payment processes in the Russian financial system	The need to introduce new types of payments in favor of the state	Distribution of payments from individuals to the government (C2G) for tax dues, government charges and duties (levies) through FPS

Source: compiled by the authors based on [3, 9–12].

schemes for dispensing medicines, nutrition and diagnostic support, tuberculosis eradication, mother and child protection under certain health and social programs, fertilizer subsidy; 2) implementation of employee welfare and corporate social responsibility program in the private sector [14].

The technological side of the innovation emphasizes the reliability of e-RUPI. Public institutions and corporations can generate vouchers through partner banks [15]. Contacting the latter is necessary to transmit information about specific individuals and payment purposes. Beneficiaries are identified by their

mobile number, and a voucher issued by a bank to a service provider in the name of a specific person will be delivered only to that person and no one else.

The main advantage is that e-RUPI connects service sponsors with their providers and beneficiaries digitally without a physical interface. This innovation has led to a true digital revolution in India's social security sector through widespread use during the pandemic (to provide cashless payment for COVID-19 vaccinations) [16].

The system was developed by the National Payments Corporation of India (NPCI) based on the UPI interface and was widely spread among the population due to the fact that SMS can be received even on an old-fashioned push-button phone [13]. This makes the system as accessible as possible to all segments of the population, which is especially important for countries and regions with medium and low per capita incomes.

Many countries are exploring the field of digital currencies issued by central banks. Currently, 135 countries are already engaged in research in this area, developing a concept and methodology, and have launched a pilot or, on the contrary, canceled a digital currency project (Fig. 2); however, only a few countries are thinking about the possibility of using the latter for the development of social security systems.

In Russia, the digital rouble project is still under development, so there is an opportunity to adapt its use for social finance, following the example of India. The main problem in this case is the high cost of implementing such technology and the irrationality of its use without the possibility of spreading it throughout the economy.

That is why it is much less resource-intensive to modernize and improve the G2C payment mechanism in order to solve the problems affecting the efficiency of the social security system, in particular, to develop its information

transparency and targeting. New solutions in this area will provide additional opportunities for effective interaction of citizens with relevant social institutions through a set of digital and physical channels.

Development of the Russian social security system on the basis of original digital solutions: description of the author's model of operation of the centralized payment service "FPS HC"

The "Concept of Digital and Functional Transformation of the Social Sphere within the Sphere of Activity of the Ministry of Labor and Social Protection of the Russian Federation until 2025" documents the intention to create a unified digital platform "Social Treasury", which will unite 30 thousand measures of social support.² In the context of the development of the social security system in the digital direction, we propose to simplify the system of settlements between the state and recipients of services and budget transfers (Fig. 3).

Improvement of the payment system can become a key element in the creation of a new technological framework that will help improve the quality of functioning of the social sphere in Russia. According to the authors, it is necessary to activate the mechanism of centralized payments through the inclusion of the Fast Payment System (FPS) in the chain of social support measures. The proposed innovation requires integration into the unified state information system EGISSO (Fig. 4).

FPS is a service of the Bank of Russia's payment system that allows for quick transfers and payments by phone number or QR code. It is the main driver of NPS development, realizing, among other things, scenarios of payments by individuals to the budgetary system of the

² Concept of Digital and Functional Transformation of the Social Sphere in the Sphere of Activity of the Ministry of Labor and Social Protection of the Russian Federation until 2025. URL: <http://static.government.ru/media/files/i2keGFnJGgf832zbAW9tQ7yDDLuEe3Ru.pdf>

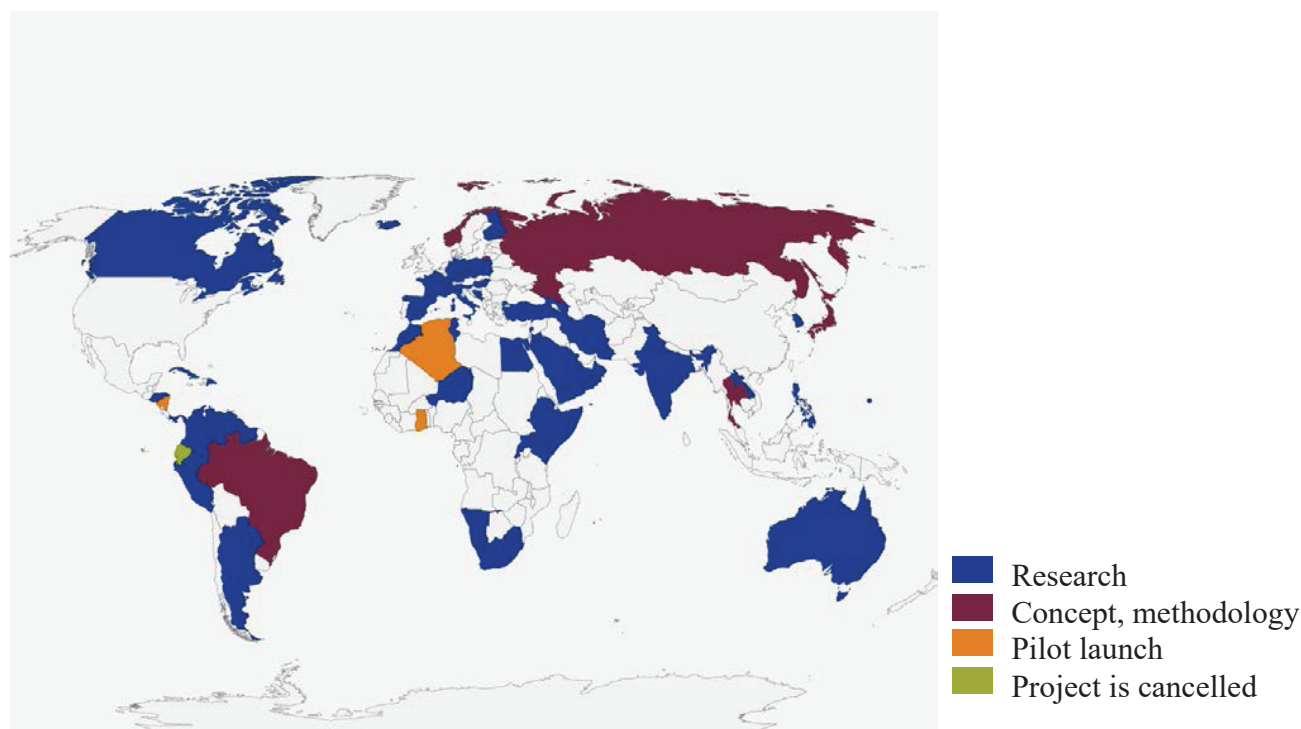


Fig. 2. Visualization of the spread of digital currency in the central banks of the world

Source: составлено авторами на основе данных CBDC. URL: <https://cbdc.ru/cifrovaya-valyuta/strany-uchastniki/> / compiled by the authors based on the CBDC data. URL: <https://cbdc.ru/cifrovaya-valyuta/strany-uchastniki/>

Russian Federation (C2G transfers). Integration of FPS into Unified State Information System of Social Security (EGISSO) will allow the relevant agencies to promptly exchange data on payments, allowances and benefits, as well as identify recipients of social assistance by phone number.

As one of the ways to implement the presented mechanism, let us consider a scenario approach on the example of allocation of funds for the purchase of medicines by privileged categories of citizens [Art. 6.1. Federal Law of 17.08.1999 No. 78-FL “On State Social Assistance” (hereinafter — No. 78-FL)]³ and other population groups, in the outpatient treatment of which (depending on the category of disease) medicines and medical devices are dispensed

on doctors’ prescriptions free of charge.⁴ At the moment, in order to get a drug from the list of preferential provision, you need to collect all the necessary documents in the hospital and with them, as well as with a paper confirmation of the appointment of preferential medical drugs to come to a pharmacy participating in the program of state social assistance.

To improve the efficiency of the procedure for obtaining this type of benefits we offer a new form of financing (Fig. 5) — the service “FPS HC”, or “FPS HealthCare”, contributing to a fundamental improvement and acceleration of the process of payment for discounted medicines. Confirmation of the buyer’s right to purchase the drug is carried out by phone number.

³ Federal Law No. 78-FL of 17.08.1999. “On state social assistance”. Art. 6.1. URL: https://www.consultant.ru/document/cons_doc_LAW_23735/

⁴ Annex No. 1 to the Resolution of the Government of the Russian Federation of 30.07.1994 No. 890 (ed. of 14.02.2002). URL: <https://base.garant.ru/101268/>

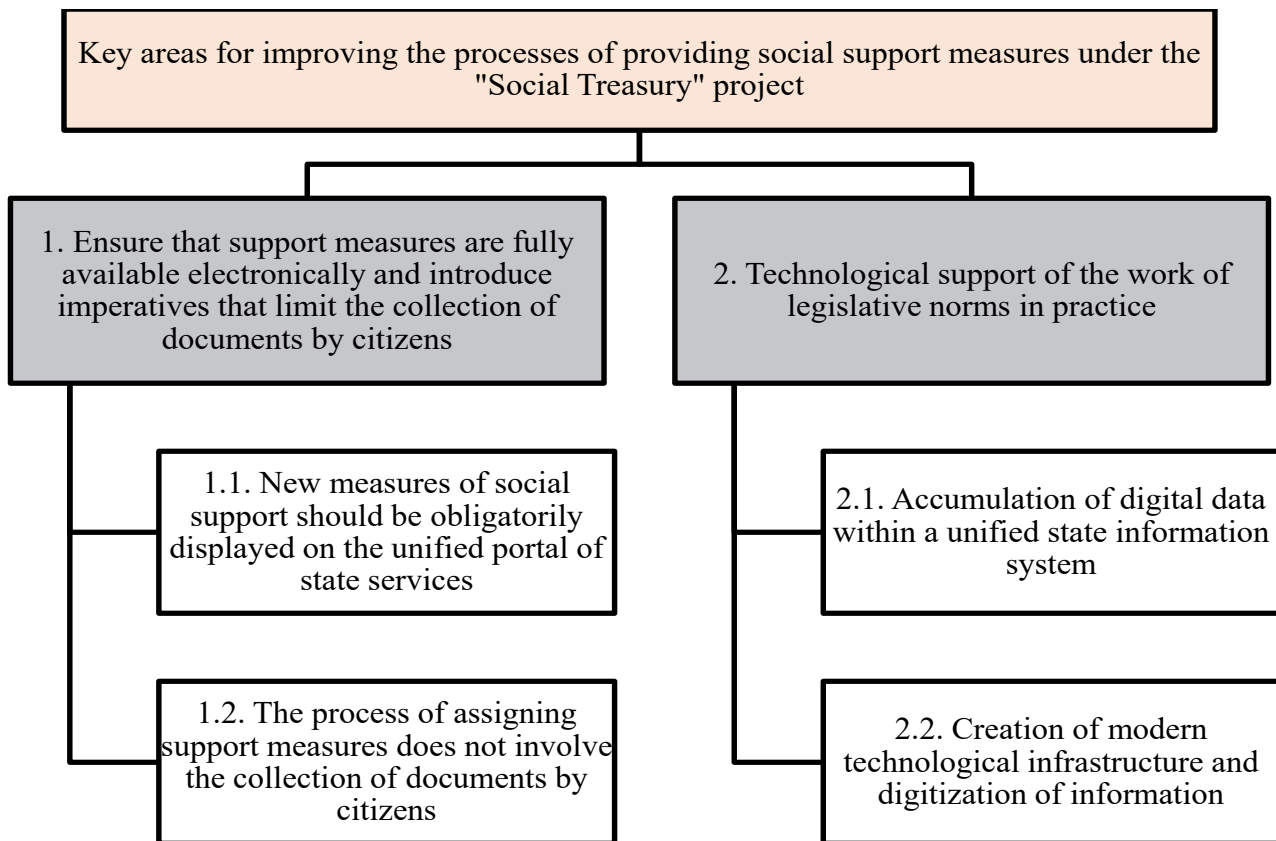


Fig. 3. Key directions for improving the processes of providing social support measures within the framework of the Social Treasury project

Source: compiled by the authors based on the Government Order N 3144-r dated November 6, 2021. URL: <http://publication.pravo.gov.ru/Document/View/0001202111090005>

This is possible if three databases are combined within one payment system: discounted medical drugs from the list No.178-FL, state medical institutions (StateServices/Gosuslugi, EMIAS) with data on patients, their phone numbers and names of drugs prescribed to them and FPS database with information on payment accounts of pharmacies and phone numbers of customers.

The centralized service model for drug payment will work as follows:

Step 1. After choosing the necessary drug in the pharmacy, the beneficiary (purchaser) initiates the purchase in the “FPS HC” service by calling a special number (allocated by the telecommunication operator for each pharmacy). The process is organized according to

the principle of “missed call” — a missed call without voice response.

Step 2. The “FPS HC” service, having received information from the incoming number, identifies the user and checks whether the purchased drug is included in the list specified in the Federal Law No. 178.

Step 3. The system checks to see if the purchaser is actually eligible for the requested drug and if the prescribing information is available from a public health agency.

Step 4. If steps 2 and 3 are successfully completed, the payer (i.e., the state) will be willing to fund the purchase of the drug product.

Steps 5, 6. As confirmation, the Buyer receives a short SMS code and tells it to the pharmacy salesperson.

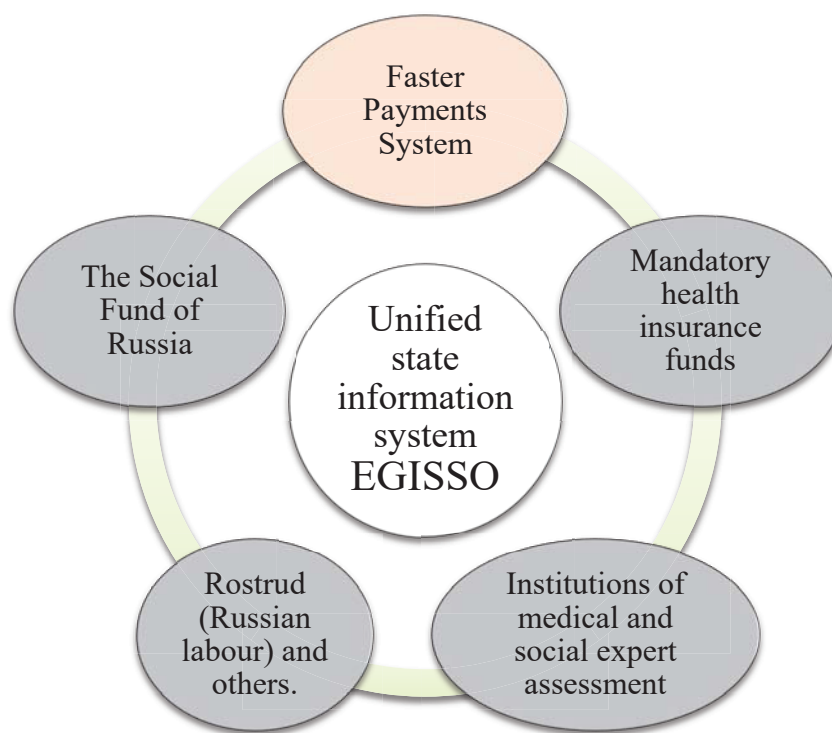


Fig. 4. Composition of the unified State information system of social security (USISSO)

Source: compiled by the authors based on [8].

Step 7. The vendor sends the code to the “FPS HC” system for verification.

Steps 8, 9, 10. If the verification is successful, the funds are directly transferred from the “state account” to the pharmacy’s account.

Step 11. The seller gives the drug/ medication to the buyer.

The above scenario is only one of the possible options for using this method of integrating the payment system into the social sphere.

The effectiveness of the proposed model can be assessed by comparing the costs of its implementation and maintenance with the economic effect of reducing related administrative costs caused by the existing social security system. The quality of social services provision will reach another, much higher level.

The introduction of such solutions, which help to increase the efficiency of the system of administration of state and municipal finances, will provide savings of up to 20 billion roubles

per year,⁵ so the development of digitalization processes in the social security sector in most cases is economically feasible.

The proposed measure to improve G2C payments will make it possible to increase the targeting of social support measures by increasing access to FPS for more than 20% of the population. Mobile identification will ensure the involvement of poorly covered groups of citizens and business units:

1) residents of settlements without Internet access but with cellular communication;

2) business structures and residents of new constituent entities of the Russian Federation, which are in the conditions of lack of payment infrastructure;

3) all those who do not use a smartphone (20% of the Russian population — 30 million people.).

⁵ The Social Treasury will save the Russian authorities 142 billion roubles. Izvestia (online). URL: <https://clck.ru/WjDQC>

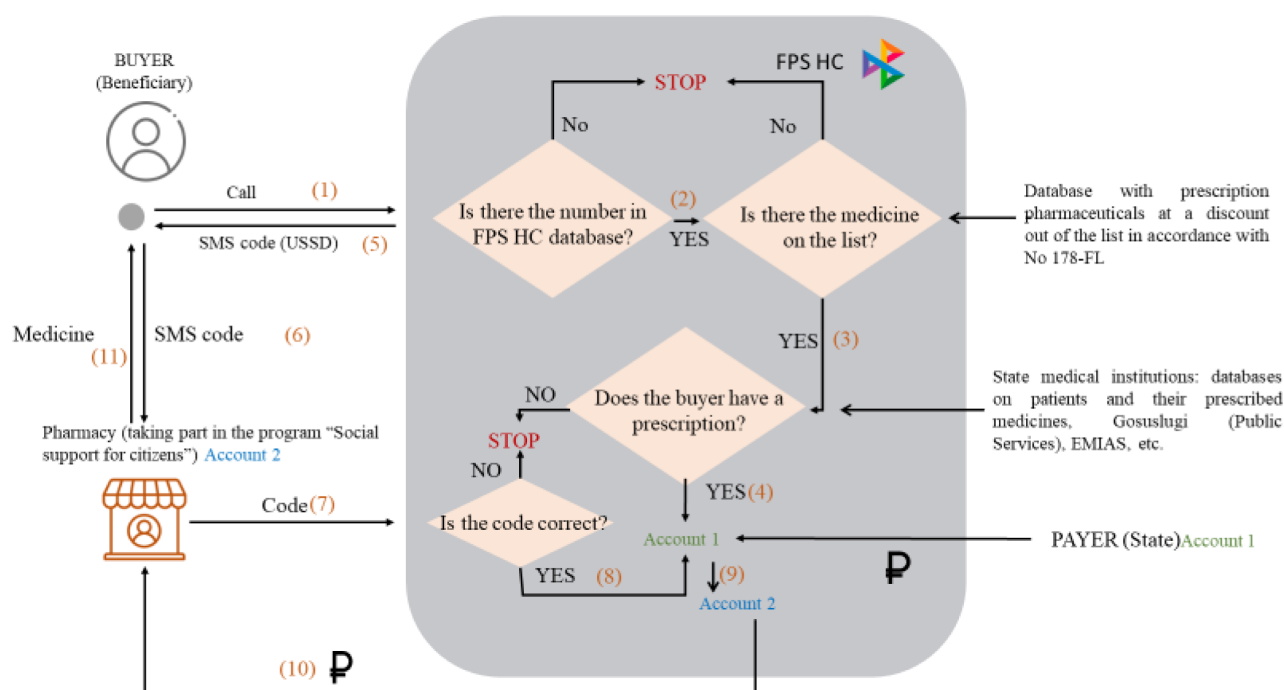


Fig. 5. The model of the centralized service for payment of medicines “FPS 3X”

Source: compiled by the authors.

The number of potential FPS users is 10–30 million people. The selected categories are presumably the target beneficiaries; at least one third of them will receive social assistance. Due to the increase in the number of FPS users, the volume of transactions in non-cash turnover will also grow (tentatively — by 6%). According to data for 2022, the share of non-cash payments in trade turnover amounted to 62% (or 877 billion roubles).⁶ The receipt by 10 million citizens of social payments in the amount of RUR 826.69 per month⁷ will increase the volume of payments by RUR 99 billion (+5–6% to the non-cash turnover).

This simultaneously corresponds to the goals of improving the efficiency of the social security mechanism and the development of the

NPS. As a special advantage, it is worth noting the relatively low costs of implementing the proposed model due to the fact that the technologies used in it already exist and work successfully in Russia. The unification of databases will also reduce the cost of maintaining disparate information systems.

The result of the digital transformation of the social sphere will directly affect the targeting of the assistance provided, so the effective implementation of the project is extremely important.

CONCLUSIONS

The study showed that the development of unified mechanisms for the provision of public services (regardless of the region) to implement measures that promote proactive receipt of social support is among the priorities of digital transformation. In this regard, the authors developed a model of operation of the centralized payment service “FPS HC”, the main idea

⁶ Share of non-cash payments in trade turnover. SberIndex (online). URL: <https://sberindex.ru/ru/dashboards/dolya-beznala>

⁷ Average monthly amount of social support per user. EMIASS (online). URL: <https://www.fedstat.ru/indicator/33993>

of which is to integrate FPS into the structure of Unified State Information System of Social Security (EGISSO).

The proposal strengthens the targeting of work with the population and simplifies the “client path” through simple and convenient identification of beneficiaries of social assistance by phone number.

The result is an increase in the number of FPS users and, accordingly, an increase in the accessibility of social services for 20% of the population.

The use of the scenario approach in the construction of state information systems makes it possible to solve the problem of increasing the personalization of the provided assistance and the timeliness of informing about social payments. The authors see the following advantages for the state in the measure proposed in the article for the development of the “Social Treasury” system by improving the mechanism of G2C payments:

1. Development of the social security system through:

- increasing accessibility of state services in conditions of lack of payment infrastructure (for such recipients of social assistance as residents of settlements without internet, population of new constituent entities of the Russian Federation);
- reducing the number of documents required to obtain services;

- increasing transparency of data on the quality of human capital, targeting and need verification;
- increasing the updatability and integration of state systems;
- reducing the cost of maintaining disparate databases.

2. Development of the national payment system through:

- increase in the efficiency of budget funds management, increase in the transparency of the financial system;
- increase in the volume of budget funds transferred through FPS;
- increase in non-cash turnover by 5% by 2025.

Among the risks and factors that may hinder the implementation of the described idea, the authors highlighted the increasing role of digital currencies in the mechanism of social financing. The study considers the best foreign payment solutions in the field of social security in recent years. Particular attention is paid to the Indian project “e-RUPI”, which created a real digital revolution in the country in 2021. Russia is also actively engaged in research on the digital rouble. Digital currencies are a technology that could become a serious competitor to other payment instruments in the social security sector. Nevertheless, according to the authors, it is much less resource-intensive to improve the G2C payment mechanism by integrating social treasury with FPS to solve the problems affecting the efficiency of the social security system.

REFERENCES

1. Misuraca G., Van Noordt C. AI watch — artificial intelligence in public services: Overview of the use and impact of AI in public services in the EU. Luxembourg: Publications Office of the European Union; 2020. 96 p. DOI: 10.2760/039619
2. Henman P. Improving public services using artificial intelligence: Possibilities, pitfalls, governance. *Asia Pacific Journal of Public Administration*. 2020;42(4):209–221. DOI: 10.1080/23276665.2020.1816188
3. Kuvaeva Yu.V., Sedunova E.A. Improving the system of fast payments as an element of creating a new technological basis for high-quality functioning of the economy and social sphere. In: Financial and legal aspects of socially oriented investing. Proc. 5th All-Russ. sci.-pract. conf. (Yekaterinburg, November 18, 2021). Yekaterinburg: Ural State University of Economics; 2022:35–41. (In Russ.).
4. Timofeev Yu.V., Tumanyants K.A. Analysis of the effectiveness of state social spending in the regions of Russia. *Finansy i kredit = Finance and Credit*. 2012;(37):9–18. (In Russ.).

5. Gladkova L.A., Chetverkina A.A. Evaluation of the effectiveness of social protection of the population of the Moscow region. *Biznes. Obrazovanie. Pravo = Business. Education. Law*. 2021;(2):83–89. (In Russ.). DOI: 10.25683/VOLBI.2021.55.221
6. Makarov V.E. Improving information support as a factor in improving the efficiency of social work. *Sotsial'naya politika i sotsiologiya = Social Policy and Sociology*. 2013;(3–1):32–41. (In Russ.).
7. Lebedeva I.S., Gubarev S.V., Beloglyadova I.A. Trends in digitalization of the economy and social sphere. In: Experience of an educational organization in the field of developing digital skills. Proc. All-Russ. sci.-method. conf. with int. particip. (Cheboksary, December 31, 2019). Cheboksary: Sreda; 2019:135–139. URL: <https://phsreda.com/e-publications/e-publication-128.pdf> (In Russ.).
8. Bushnev A.E. E-commerce. In: Research and practice in the socio-economic and humanitarian sphere. Proc. All-Russ. sci.-pract. conf. (St. Petersburg, June 13, 2022). St. Petersburg: Humanitarian National Research Institute "Natsrazvitie"; 2022:35–37. (In Russ.).
9. Gavrilov K.K., Babenko M.A. The strategy of development of the payment system and payment instruments in the context of digitalization. In: University science for the region. Proc. VIII (65th) Annu. sci.-pract. conf. of professors, students and young scientists of the North Caucasus Federal University (Stavropol, April 15–30, 2021). Stavropol: Fabula; 2021:119–122. (In Russ.).
10. Mironenko N.V. Methodological aspects of the assessment of management processes in electronic systems G2B and G2C. *Gosudarstvennoe upravlenie. Elektronnyi vestnik = Public Administration. E-Journal*. 2012;(30):5. (In Russ.).
11. Morozov V. Innovations in the practice of public administration in modern conditions. In: Issues of improving the system of public administration in modern Russia: Annu. int. coll. sci. pap. Moscow: MAKSPress; 2021:159–164. (In Russ.).
12. Aliev M.M., Mamedov M.A.O., Rzaeva V.V.K., Safarli A. Kh. O. Fast payment system as a tool for optimizing payment processes in the financial system of Russia. *Moskovskii ekonomicheskii zhurnal = Moscow Economic Journal*. 2021;(7):47. (In Russ.). DOI: 10.24411/2413–046X-2021–10414
13. Dhamija D., Dhamija A., Ranjan R., Jha S.S., Renu. (2023). E-Rupi — recent advancement in digital payment system. In: Gupta D., Khanna A., Bhattacharyya S. et al., eds. Int. conf. on innovative computing and communications. Singapore: Springer-Verlag; 2023:205–214. (Lecture Notes in Networks and Systems. Vol. 471). DOI: 10.1007/978–981–19–2535–1_16
14. Chakrabarti B.B. E-Rupee! *Artha: A Newsletter of Finance Lab*. 2021;7(3):23–34. URL: https://www.iimcal.ac.in/sites/all/files/pdfs/artha_december_2021_0.pdf
15. Parsheera S. Understanding state-level variations in India's digital transformation. *The African Journal of Information and Communication (AJIC)*. 2022;(30):1–9. DOI: 10.23962/ajic.i30.15082
16. Agrawal S. The advent of social commerce in the light of COVID-19 pandemic. In: Contemporary research in commerce & management. Lunawada: Redshine Publication; 2022;1:98.

ACKNOWLEDGEMENTS

The article was prepared based on the results of research carried out at the expense of budgetary funds under the state assignment of the Financial University.

ABOUT THE AUTHORS

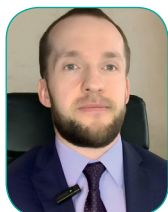


Sofya A. Tomilina — Bachelor student in the field of study “Financial markets and Fintech”, Financial University, Moscow, Russia

<https://orcid.org/0000-0002-1802-4823>

Corresponding author:

s.a.tomilina@yandex.ru



Mikhaill. Dorofeev — Cand. Sci. (Econ.), Associate Professor of the Department of Public Finance, Financial University, Moscow, Russia

<https://orcid.org/0000-0002-2829-9900>

dorofeevml@yandex.ru

Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was submitted on 23.03.2023; revised on 25.05.2023 and accepted for publication on 21.09.2023.

The authors read and approved the final version of the manuscript.