

Digitalizing Central Union of Consumer Cooperation as a Means of Improving Living Standards of Russian Rural Population

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Abstract — In Russia an economy based on digital technologies has been created over the last years. Various technologies including both information and communication are becoming an element of national infrastructure. Consumer cooperation is also involved in this process as part of the country economic system. The topic choice is stipulated by the need to analyze the status and possibilities of implementing digitalization projects in consumer cooperation organizations with regards to the existing infrastructure both in the field of software and hardware, and in the field of telecommunication networks. After the collapse of the USSR, consumer cooperation organizations were located in rural areas, where currently a quarter of the country population lives. The use of information and communication technologies (ICT) by consumer cooperation organizations is possible only through the Internet and related Internet technologies. Access to the Internet has technical limitations, as not the entire territory of the country is covered by the network, especially rural areas. The relations of the Central Union bodies with the institutional macro-environment in the field of digitalization of certain processes do not provide better living conditions for rural residents. This can happen only by implementing the achievements of ICT in the daily activities of cooperatives, aimed at relations within the micro-environment: cooperative members, villagers, suppliers, buyers, etc. The authors gave their own definition of a consumer cooperation digitalization.

Keywords — *consumer cooperation, digitalization, information and communication technologies, IT-technologies, Internet, service COOP, living standard*

I. INTRODUCTION

In Russia an economy based on digital technologies has been created over the last years. A number of legislative acts and program documents for example, Federal Law of July 27, 2006 No.149-FL “On Information, Information Technologies and Information Protection”, Decree of the President of the Russian Federation of May 9, 2017 No.203 “On the Strategy for the Development of the Information Society in the Russian Federation for 2017–2030,” Decree of the Government of the Russian Federation of March 2, 2019 No.234 “On the Management System for the Implementation of the National Program “Digital Economy of the Russian Federation”, etc. are aimed at it. These documents define the following: the

digital economy is an economic activity, whose key factor of production is digital data, which contributes to the formation of the information space with regards to the needs of citizens and society in obtaining high-quality and reliable information, development of the information infrastructure of the Russian Federation, creation and application of Russian information and telecommunication technologies as well as formation of a new technological basis for a social and economic sphere.

Scientists of the Department of Economic Informatics of the Faculty of Economics of Moscow State University have their original definition: “Digital economy is an economic activity in which a significant part of the results are information products developed without direct human involvement. Digitalization is characterized by a “change of milestones”: not information technologies start playing the main role, although no one doubts their primacy but new business models that effectively use new technologies” [1].

According to scientists, digitalization is not a random step. It can be proven by the fact that falling GDP and economic sanctions force Russia to find ways to move from a raw material model of the economy to an innovative, digital and competitive one. Thus, the Government encourages domestic organizations to increase efficiency and introduce innovations based on the adopted strategy and programs of digital economy [2, p. 379]. Various technologies including both information and communication ones become an element of national infrastructure. Consumer cooperation being the part of the country economic system is also involved in this process.

The choice of the topic is stipulated by the necessity to analyze the status and possibilities of implementing digitalization projects in consumer cooperation organizations with regards to the existing infrastructure both in the field of software and hardware as well as telecommunication networks. The crisis state of the economy of the Central Union emphasizes the relevance of such an analysis, which enables to identify and justify the ways to solve priority problems. The main objective of our study is to assess the possibility of achieving this goal with regards to the prevailing trends and determine the factors for further development of the system.

II. METHODS AND MATERIALS

Three main topics of this study being consumer cooperation, digitalization of the economy and improving the living standards of rural population were studied in terms of their relationship and mutual impact. It is based on the method of system analysis and the principle of continuity as well as comparative, abstract-logical, monographic and economic-statistical methods.

Information materials are presented by legislative acts, works of domestic and foreign scientists, and other publications on this subject obtained via the Internet and published in printed periodicals, as well as statistical materials of the Federal State Statistics Service and reports of the Central Union.

III. RESULTS

After the collapse of the USSR, consumer cooperation organizations were located in rural areas, where, as of January 1, 2019, 25 % of the country population lived. In just over 100 years the shares of the urban and rural population have changed diametrically. Specifically, in 1913, the rural population was 83 %. The reasons for the outflow of residents from the countryside are as follows: the First World War, revolution, civil war and consequential famine. Then was the time of collectivization, which destroyed the structure of traditional rural communities. Industrialization which started in the 1930s required a lot of labor. Rural population moved to construction sites and cities trying to find a job. Subsequently, the factor of a higher quality of life in urban areas than in rural areas also played a significant role.

The Irish co-operator George Rassel considered the problem of rural migration at the beginning of the 20th century. He wrote that, when it goes about fleeing a village, all governments around the globe are equally inept and powerless. He asked the following question: “How to keep the rural population in villages, how to make it quite their fate and not try to escape from the land?” And then he offered the following answer: “The miracle that needs to be created is to create a rural civilization. Civilization implies a certain degree of prosperity and affluence as a necessary precondition. It is possible where people are organized and therefore able to maintain a certain excess beyond what they need to satisfy basic necessities of life for their needs” [3, p. 7.14].

Despite the measures taken by the Government of Russia aimed to develop rural territories and agriculture, the standard of living in rural areas is still lower than the one in urban areas. This is characterized, for example, by the following indicators:

- wages in agriculture, forestry, hunting, fishing and fish farming in 2018 amounted to 28,185 rubles or 64.9 % of the average Russian wage (43,445 rubles);
- energy supply infrastructure does not meet modern requirements, i.e. 59.9 % of rural settlements are non-gasified, 50.5 % do not have a water supply system (separate water supply network), and 76.4 % do not have a sewage system (separate sewerage network);

- the number of libraries in rural areas decreased by 30.2 % in 2017 compared to 1992. The library stock declined more rapidly than in cities and urban-type settlements. So, in the period 1992–2017 it decreased by 37.1 % in urban settlements and by 14 % in the cities, and the number of copies of the library fund on average decreased in villages by 34.5 % and in cities by 14 % per 1,000 population
- only 24.4 % out of 154 thousand settlements (villages, farms, auls, etc.), are provided with cultural and leisure organizations;
- TV coverage in cities and villages is significantly different. Most of the rural population was deprived of the opportunity to receive part of the all-Russian mandatory publicly accessible channels in 2017, namely, the Russia-Culture television channel was available to 25.7 % of rural residents and 64.2 % of city residents, the Russian information channel Russia was available to 8.3 % and 32.1 %, respectively, the children and youth channel Karusel to 24.6 % and 55.7 % respectively, NTV broadcaster was available to 33.7 and 78.2 % respectively;
- data from sample surveys of the population on the use of information and communication technologies show that the rate of Internet access of households in rural areas is lower both in general to the network Internet (67 %) and broadband Internet (about 61 %), unlike the urban one being 79.7 % and 77.3 % respectively (Table 1).

TABLE I. INTERNET ACCESS IN HOUSEHOLDS (BASED ON SAMPLE SURVEYS OF POPULATION ON THE USE OF ICTS; % OF THE TOTAL NUMBER OF HOUSEHOLDS)

	Households.			including					
	totally			cities			Rural areas		
	Years			Years			Years		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Households with access to the Internet, including	74.8	76.3	76.6	78.5	79.5	79.7	63.6	66.5	67.1
Broadband access	70.7	72.6	73.2	75.2	76.8	77.3	56.9	59.6	60.7

The use of information and communication technologies by consumer cooperation organizations is possible only with the help of the Internet and related Internet technologies. However, access to the Internet has technical limitations while not entire territory of the country is covered by network, especially rural territories. Although the principle of public access to universal communication services is guaranteed by Art. 57 of the Federal Law of July 7, 2003 N 126-FL “On Communications”, in fact, small and remote rural settlements are deprived of the opportunity to use ICT.

To tackle this problem, the Program “Eliminating Digital Inequality” is being implemented. It aims to provide high-speed Internet connections to settlements where 250–500 people live. According to the results of 2018, high-speed Internet was available to 16 thousand settlements out of 18 thousand with the population from 500 to 10 thousand people.

As part of the program, 8 thousand out of 14 thousand small settlements with a number of residents from 250 to 500 people were connected to the network. A WiFi hotspot in such villages is installed with a network access speed of 10 Mbit/s. However, its coverage often does not exceed 100 m. Thus, not all rural residents can use the Internet at home or in the workplace. In addition, the program does not include settlements with the population of less than 250 people. It is necessary to expand the program with regards to the scale of Internet distribution as well as to increase the number of access points in a village or establish a base station that enables to use the optical datapaths potential.

Therefore, innovative incompleteness leads to stagnation. However, not only macroconditions are to blame but also the outdated methods of organizing activities. As for consumer cooperation, it is rather a change in understanding of priorities than a matter of structure, sales, production [4, p. 13.15]. In modern conditions, consumer cooperation is forced to develop as an innovative system that preserves social orientation and functions according to market laws. Innovation is manifested in the introduction of advanced technologies including ICT [5, p. 380].

Macro environment requirements, i.e. the implementation of legislative actions on transferring information to automated data tracking systems have included consumer cooperatives in the digital economy. Consumer cooperation organizations of the Central Union are already working with several systems, for example, with the Unified State Automated Information System (USAIS) on sales volumes of alcoholic and alcohol-containing products, with USAIS "Marking" on the turnover of natural fur products, with a system in the field of veterinary medicine "Mercury". In addition, cash registers with Internet access transmitting fiscal data in real time to the tax authorities are used. The Center for Advanced Technology Development monitors mandatory identification of tobacco products, footwear, clothing, tires, and cameras to identify counterfeit products in the country. From June 1, 2020, dairy products also fall under the mandatory identifying marking.

However, the cooperation of Central Union organizations with the institutional macroenvironment in the field of digitalization of certain processes does not improve living conditions for rural residents. This can only be achieved with the introduction of ICT achievements into the daily activities of the cooperatives, aimed at relations within the microenvironment (members of cooperatives, villagers, suppliers, buyers, etc.)

In recent years, the Central Union has been working to promote the COOP digital services system operating through the end-to-end COOP ID. Together with the Senty payment system and the IT Company Evotor, it launched the COOP ROS application for payment by QR code (square barcodes). The application allows accepting payments from the users of the cooperative digital service COOP PAY. When paying for a purchase or service, a cashier scans a buyer's personal QR code from the phone screen and the buyer confirms the payment in the COOP PAY mobile application. Using the COOP ROS application, you can issue the refund of goods or services paid for using the QR code [6].

In the post-Soviet period, such important elements of infrastructure that keep a favorable living environment like post offices and savings banks, which provided services for crediting and issuing funds, ceased to operate in rural areas with the exception of regional centers. It is unprofitable for modern banks to open branches (representative offices) or to establish ATMs in sparsely populated villages. Therefore, the residents at a walking distance are deprived of the opportunity to use banking services. Using modern telephones, for example, you can find out some information about the state of a bank account, pay for services of individual organizations, etc. However, a full range of services can be obtained at a bank office. It should also be taken into account that, as a rule, the inhabitants of such settlements are the people of the "third" age who use smartphones and their capabilities not as actively as young people do.

The population dispersal and the difficulties in its maintenance are not only the problem of Russia. Thus, the Central Union of Consumer Societies of Estonia (Coop Eesti Keskühistu) and Coop Bank (Coop Pank) have developed a package of financial services. Coop Eesti unites 19 consumer cooperatives with 80 thousand client owners and approximately 600 thousand loyal customers and owners of 350 Coop stores in Estonia. In addition to trading together with Coop Bank, they offer simple banking services throughout their country in their stores, namely, withdraw cash at the store cash desks, open bank accounts and issue bank cards in stores [7].

Coop Eesti management has added a cash withdrawal service to its business in accordance with Coop's mission being to support life in every corner of Estonia. In recent years, large banks are constantly reducing the number of their ATMs in small towns in Estonia. However, it is known that cash is especially in demand outside the capital cities. Therefore, the union created a nationwide cash withdrawal network in an innovative way directly at COOP stores. This Coop Eesti project shows that consumer cooperatives continue to play an active role in the development of local life. Despite the fact that many organizations close their offices in small towns, consumer cooperatives fill these gaps in local communities [7].

Coop Eesti and Coop Pank have developed the terms of the Coop client program, which includes the following types of cards:

- Coop Säätukaart (Säästu) customer card is a customer card of Coop Eesti organizations and cooperation partners that have joined the client program. It provides the opportunity to receive discounts at Coop Eesti stores as well as from partners and participate in the Coop client program;
- Säätukaart Pluss card (Säästu card) is issued by Coop Finants AS in cooperation with Coop Eesti and has a payment card function valid in any territory;
- Coop Pank payment card issued by Coop Pank AS in collaboration with Coop Eesti, has the function of a Säästu card [8].

Thus, the Estonian client program of the Central Union of Consumer Societies and its partners provides the right to receive discounts, accumulate bonuses from your purchases, using them in the future when paying for next purchases, use cards as payment, withdraw cash, etc.

Introducing the digital service COOP PAY, the Central Union of the Russian Federation also aimed to remove the gaps in providing banking services to the rural population. The service is a full-fledged payment system that rural residents can use to pay for goods and services, housing and communal services. COOP PAY carries out certain banking operations, for example, receiving cash and crediting it to accounts and bank cards through a network of cooperative stores.

However, the capabilities of COOP services are wider. Thus, they enable consumer cooperation organizations to work with collectors of wild-growing products. When registering in the COOP application, a user selects the “Collector” status and receives information about the possibilities of collecting wild plants, a map of the raw materials growth and instructions for collecting, and also signs an agreement on the delivery of collected wild plants to authorized collection points. After that, the user is assigned an identifier in the form of a QR code, an electronic wallet is opened and an optional card is issued. The QR code works as an identifier for external authorities in the collection and transportation of wild-growing products. When wild plants are delivered to a collection point, payment is made after deduction of 4 % tax on self-employed. A collection point plays the role of a tax agent and transfers the amount withheld to the Federal Tax Service. The database for collecting wild plants is available to all interested authorities, specifically, the Federal Tax Service, the Ministry of Internal Affairs, the Health Inspection Services, Federal Service for Supervision of Natural Resource Usage, etc., as well as the consumer society itself.

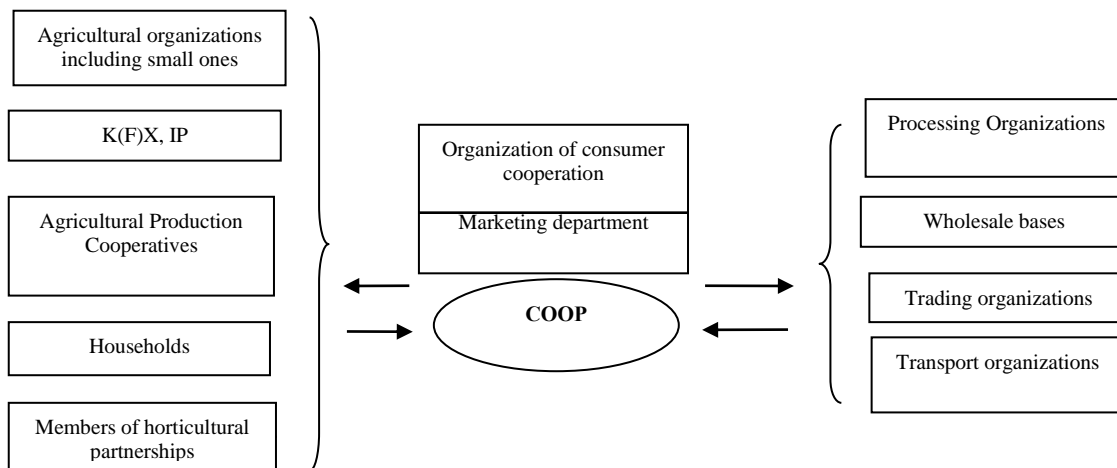
Collecting and processing wild plants seems to be a promising area in the market for organic products. Our country is both a supplier and a consumer of these products [9, p. 226]. The practice of organizing the activities of wild pickers using electronic services shows that their potential is not fully

realized by consumer cooperatives. This scheme can be applied for expanding the entire sphere of preservation.

Russian cooperator M.N. Sobolev wrote in 1919: “Cooperation can fully adapt its trading organization to the purchase of goods that vary greatly in quality and perishable goods. To do this, you only need to make the control apparatus more mobile and the control bodies closer to trading operations. The dispersed population does not prevent the emergence of private trading enterprises that are able to adapt to this feature of the rural population. And cooperation can obviously develop such methods of supplying its members with the goods they need or methods of collecting products from members that meet the conditions of dispersal of their residence” [10, p. 99].

His remark is relevant nowadays as well. Consumer cooperation has lost its importance as an infrastructure distribution channel for agricultural producers of the following categories: agricultural organizations and small forms of farming (peasant (farmer) households, individual entrepreneurs). Thus, it buys not more than 0.2–4 % of agricultural output, depending on the type. Especially low marketability is in households because it produces, for example, up to 80 % of all fruits and vegetables in the country. Moreover, most of them do not enter the market [11, p. 91].

Using COOP services, consumer cooperatives could combine the interests of producers, procurers, processors, traders and consumers. In real time, the consumer society accumulates varying information from manufacturers (volumes of manufactured products, delivery time and methods, etc.), processes it and reports feedback on the location of procurement points, types of procured products, prices, payment periods, requirements to quality, etc. Using the COOP PAY service, funds for delivered products are instantly transferred and credited to manufacturers’ accounts. The same way of information circulation is possible with processing organizations, wholesale bases, and trade organizations, i.e. those entities for which consumer cooperation organizations are suppliers (Fig. 1).



Source is compiled by the authors

Fig. 1. ICT coordination of market entities and consumer cooperation organizations

The relationships between consumer cooperative organizations and agricultural production cooperatives are of particular importance as they have a common environment for development (rural areas) and market interests (find their niche). In 1919, M.N. Sobolev believed that "... agricultural cooperation should come not from consumer societies but from agricultural cooperation, which is associated with the sale of its products to consumer cooperation and thus provides the latter with the most important food items" [10, p. 103]. However, in the Soviet period, cooperation developed through collectivization and consumer cooperation. And if, after the collapse of the USSR, collective farms ceased to exist or transformed into other forms of ownership, then consumer cooperation organizations still managed to adapt to new market conditions. Therefore, consumer cooperation being a network organization can use its COOP services not only reaching a new level of development but also becoming a motive power for other types of cooperatives.

Consumer cooperation has a significant mission providing rural population with paid and domestic services, e.g. repairing and sewing shoes, garments and fur products; repair and maintenance of household appliances; manufacture and repair of furniture; dry cleaning, laundry, photo studio, baths, hairdressers, etc. In addition, the following services are included: housing, utilities, medical, sanatorium, veterinary, travel, physical education and sports, and education systems. In 2018, consumer cooperation organizations provided paid services in the amount of 5,044.4 million rubles, and household ones in 312.4 million rubles.

Although this area of consumer cooperatives activity is smaller in terms of proportion to the total turnover than trade and catering, however, in terms of social significance it is of the same importance. This is explained by the fact that in the 1990s the state destroyed the centralized system of public services for the population, imposing compulsory privatization in this area. Households fell into small units: dress-making and tailoring establishment, shoe and watch shops, photo shops, etc., which did not manage to consolidate their position in the marketplace. As a result, the district centers were deprived of consumer services centers, and now the population has to go to the regional centers for domestic services. Providing household services in district centers, consumer cooperatives save time and money of the villagers [12, p. 270].

Using COOP services, you can simplify the work in the service sector. Service calls, holiday centers and health resorts packages, ordering drugs in pharmacies, paying for housing and utilities, etc. can be implemented via the Internet. With the use of remote access, the provision of educational services is also possible. So, when creating cooperatives, many questions which the teachers of educational institutions of the Central Union system could answer arise.

When characterizing the life quality of the villagers, it is necessary to take into account not only household incomes but also access to cultural centers. So, D. Rassel wrote that the treasures of the world for many centuries flocked to the cities: "In the cities there are spectacles and entertainments; in cities there are libraries and publishing stocks where you can obtain all the knowledge of the world, and theaters where the need

for fun that lives in the soul of a person can find satisfaction" [3, p. 149]. Indeed, many cultural values are not available in rural areas, for example, concerts of symphony orchestras. However, in recent years this has not become a problem. Online broadcasts of lectures, concerts, exhibitions from museums, which help to keep abreast of the latest news; attend seminars, lectures and master classes, watch sports competitions, entertainment shows and concerts, improve qualifications in studies or work are of great popularity now.

The Central Union could undertake an educational function, especially since consumer cooperatives organizers took care of the education of their members in the early stages of cooperatives creating. The Central Union can expand the scope of its activities with the help of its COOP services by arranging online broadcasts in libraries and cultural centers for village residents who do not have computers or access to the Internet. Such a service is necessary for the age group of rural residents.

Filling niches that were outside the interests of major players in the market of all types of goods and services, Central Union organizations would strengthen their positions and have a significant impact on improving the quality of life of rural areas inhabitants. We agree with M.N. Sobolev, who believed that "the structure of cooperative enterprises can also adapt to the concentration and bureaucratization of production as capitalist industry does, and re-education of all cooperative masses is not required for such adaptation but a business reorganization of a few organs of cooperative management is sufficient" [10, p.100].

IV. DISCUSSION

A.M. Friedman believes that the historically established system of consumer cooperation can become a locomotive in many areas of activity by virtue of its advantages. He offers several factors to support his statement and they are as follows: the cooperative sector is a single diversified socio-economic complex; trade being the main industry is inextricably linked with the procurement and processing of agricultural and wild products; manufactured goods enter the distribution network without the intervention of any intermediary; diversification contributes to the efficient maneuvering of resources between sectors, taking into account market conditions. In his opinion, transition to digital technologies, ensuring the availability of electronic forms of commercial relations for small and medium-sized enterprises creates favorable conditions for expanding the spheres and boundaries of consumer cooperation without sectorial and territorial restrictions [13, p. 30].

Since there is no specific industry differentiation in the information and communication environment, there is the possibility of studying the accumulated experience of domestic and foreign organizations including those received in other industries and applied in any field. Introduction of effective IT technologies requires organizations to timely recognize and use the capabilities of ongoing business processes [14, p. 365]. This is also applicable to consumer cooperation.

Russian consumer cooperation deepens its interaction with the research and development sector, relies on the created and developing innovative infrastructure, has diversified areas of activity and long-term relationships with government bodies, population, consumer societies and unions and an extensive network, high human potential. Its own training system has all the opportunities to realize its innovative potential and expand the main types of innovations [15, p. 127].

Yakovleva E.A., Zelikov V.A. and others believe that due to the increasing intensity of world globalization, the landscape of various sectors of domestic economy is able to actively change through technologies such as the Physical Internet based on the technology “the Internet of things”; IT standards, data analysis, cloud technology, blockchain, robotics and automation, autonomous vehicles and so on [16, p. 248].

V. CONCLUSION

Using the modern capabilities of IT technologies, leaders of consumer cooperation organizations can change the location of their activities based on the needs of market demand, whether it is a product or service. Consumer cooperation organizations work in the market to meet consumer requirements and combine commercial and social components in their activities. However, currently their functioning is inextricably linked with the use of modern technologies.

The authors have developed their own definition of digitalization in consumer cooperation. Specifically, this is the use of both information and communication technologies, such as the Internet, related network technologies and various applications for their use, COOP services that enable to collect, receive, compile, exchange, distribute information and create new information in the interests of manufacturers, procurers, processors, trade and consumers and, as a result, allowing one way or another to improve the quality of life, provide welfare, meet the needs of the rural population.

Acknowledgment

The authors are grateful to the staff of the reading room, the archive of the library of the Russian University of Cooperation for the opportunity to use the golden fund being literature on cooperation of the late XIX – early XX centuries.

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