Formation of the Housing Services Affordability Mechanism in Russia in the Context of Digitalization and Digital Transformation

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Abstract

The article presents the results of a long-term study of the housing services affordability mechanism to the needy. As a result of this research, the concept of socially significant categories of citizens was introduced into scientific circulation, as well as the mechanism of state and entrepreneurial (innovative) activity formation was revealed. This activity was formed during the last few years in the context of digitalization and digital transformation and has received a steady development vector.

Keywords
The Organizational and Economic Mechanism, Business Model, Affordable Housing, Socially Significant Category of Citizens, Digital Products, Platform Services.

Introduction

The statement of the actual conditions in the current legislative, institutional, organizational, and digital composition of the housing affordability mechanism in Russia puts this issue on a par with the problems most discussed by the scientific community,
but, as it turned out, little studied. This is especially noticeable when significant laws in
the field of construction and real estate are adopted without proper scientific study and
discussion by the society. Against this background, studies of the formation of housing
services affordability in Russia in the context of digitization and digital transformation is
particularly relevant, not only in terms of the meeting social needs of people in housing
but predominantly related to the social policy of the state and exercise of constitutional
rights of citizens. Thus this issue addresses the problem of meeting the housing needs of
the state’s human capital.

Positive component of the present day is the opportunity to bring the issue of the housing
affordability to the plane of digital technology and platform solutions of online services,
where a consumer is subject to problems rather than an object. This opportunity emerged
in a period of redistribution of the housing market and expectations of major changes in
price indices (from production cost to implementation) due to digital technology which
allowed transferring the tools to solve the problem to customer’s hands.

Methods

The present study was conducted using the methodology of the economic and sociological
approach since to solve the problem of housing affordability, social modeling without
predicting the behavior of the "economic person" will not lead to results, as well as no
hypothesis will be confirmed if not considering a person with his need for housing as an
object of social relations and at the same time a subject to economic relations (Ash, 2012).

The social way to satisfy the need for housing, i.e. to give everyone an apartment from the
state was already used in the Soviet Union. And it worked, but with a temporary delay of
ten or more years and on the terms usually determined by a person’s employment.
Housing was considered without a choice of place, quality, and other characteristics, and,
first of all, as the satisfaction of the minimum need.

The economic way, which is purchasing an apartment that suits a person's need, is quite
possible, but a larger category of citizens (especially target audience) cannot afford this
due to unavailable cost. Mortgage can be attributed to the socio-economic way to solve
the problem. But it also needs to be reformed, since economic factors directly depend on
social ones. Today, many things have started to change. Market relations and the market
are already considered as a social category, while the social object is already considered
as a subject of the market. With the development of information and communication
technologies, customer-focused approach (customer-centric approach) has become an indispensable attribute of the competitiveness of economic agents.

Professor V.V. Radaev (2008), Head of the Department of Economic Sociology at the Higher School of Economics, has conducted research on the market as an object of economic and sociological approach, using the methodology of system analysis of economic theory from the standpoint of methodological pluralism, which makes it possible to look at the same object from different sides.

In the digital space, these concepts are modeled into software devices that shorten the path to the market by treating it as a target audience, and institutionally, as an electronic trading platform where different business models compete for the same target audience.

And here a prerequisite for entering the market of a digital product is testing it by the customer development method, i.e. conducting a sociological study of the target audience for its needs in such products.

The economic method of evaluating a product entering the market is *unit economics*, where the profit is determined per customer, who determines whether it makes economic sense to enter the market.

The third indicator is an analysis of data on competitors and their ability to attract a target audience to their products. Using the comparative analysis of competitor’s data one can determine the strengths and weaknesses of the given product, and take them into account when finalizing the business model.

The advantage of the economic and sociological approach, according to the authors, is that it comes from the need for methodological pluralism and allows using a variety of analytical methods. The phenomenological method through the interaction with market actors helps to grope the object, and pre-acquaint with it. The historical and genetic method leads to the generic concept of the market by analyzing the emergence and evolution of the most stable organizational forms. The theoretical modeling method completes this initial concept with additional prerequisites, from which the mechanism that coordinates the actions of market actors is derived.

The statistical method using marketing strategies brings back to the empirically observed object, helping to define (redefine) its external and internal boundaries, opening the possibility for the empirical use of theoretical models. The appeal of such a pluralistic
approach is obvious since life is deliberately richer than any particular model (Sekerin et al., 2018).

**Results**

1. The authors have introduced the concept of *socially significant categories of citizens* into scientific circulation and formulated a proper definition: *categories of citizens socially significant for the state are subjects to social and economic relations that constitute human capital, which by virtue of their professional qualities and skills are related to its reproduction* (Radaev, 2008).

At that, the category of socially significant citizens, according to the authors of the thesis research, is divided into three groups: scientists, athletes, and people of creative professions. Moreover, civil servants are not included in this category, while specialists are included indirectly (Radaev, 2008).

2. The housing services affordability mechanism, consisting of two integral components, namely, organizational-economic and organizational-technical, comes into unity as a paradigm of economic development. The formation of an organizational and economic mechanism for the products and market development and the creation of digital ecosystems of affordable housing takes place at the basic levels of state and business (innovation) activities.

In the context of the organizational and economic mechanism, the *affordability* is considered as *demand*, and therefore the elements of this mechanism immediately become “gears” in the material and technical mechanism. The authors consider problems that have developed in the housing market after entering into force of legislative acts, government decrees, and departmental orders of 01.07.2019, which directly affected both the processes in the construction complex of Russia and the housing market in general (Zhukova, 2017; Resolution of the government of the Russian Federation No. 480, 2019).

3. The authors have ascertained the factual conditions that have developed in Russia in the legislative, institutional, organizational, and digital composition of the housing affordability mechanism of socially significant categories of citizens, which in the future will be the human capital of the state. At that, the topic of housing affordability is fully investigated not as the satisfaction of the social needs of people (this is more relevant to the social policy of the state and the execution of the constitutional rights of citizens). Here the policy in Russia will always catch up and fall behind. The mechanism consisting
of organizational-economic and organizational-technical integral components immediately becomes a unified paradigm of economic development.

4. Within the framework of these studies, practical steps were taken in accordance with the previous studies conducted under 215-FZ (Federal Law No. 478-FZ, 2018; Federal Law No. 215-FZ, 2014; 2015). Thus, several business models and working prototypes were created, namely: Bi-Platform, Co-Op, and Apartment as a Service business models at the MVP stage, as well as the robotic service Robot-Ipoteka (mortgage robot) developed by Marketplace. On the one hand, these digital products meet the current legislation, while on the other hand – due to digital technologies the issue of affordable housing services can be brought to the plane of digital technology and platform solutions of online services, where a consumer is subject to problems rather than an object.

**Discussion**

The scientific and practical significance of the research is to create a competitive market environment in the provision of mortgage housing services based on public-private partnership using differentiated models as a market mechanism for providing social mortgage innovative services. It is noted that economic and social stability in society depends on the effectiveness of solving the problem of housing affordability, including that for socially significant categories of citizens (Merchant, No. 37015, 2015).

The current stage of social and economic development of Russia is characterized by the involvement of the state and society in market relations, which causes their nonlinear, intersubjective, institutional nature. The development of scientific and methodological, as well as organizational and economic prerequisites to form affordable housing services mechanisms in Russia turned out in the course of change of the external environment and internal contradictions, 2015).

The tasks facing the scientific community are to create an economic portrait of the main participants in mortgage transactions, especially young socially important categories of citizens, as well as to form mechanisms and guarantees that they could use.

External factors of the world market situation, including those in the real estate sector, have developed in such a way that the digital technological revolution, which has engulfed the entire world economy, began to look for points of application in new markets (Zhukova, 2015a).
A three-pronged problem had to be solved in the real estate sector, namely: management, maintenance, and sales. To solve them, the best approach was to use programmable application interfaces or simply API management platforms in their multisided version and their variety – the so-called SaaS platforms (Software as a Service).

The self-organization as a basic principle of nonlinearity worked. Companies brought to bankruptcy (bifurcation stage) began to look for a way out in the digital field and reorganize their structure so that the main processes could be robotized by means of programmable services. At that, many companies have gone further, i.e. started to create a digital ecosystem of a group of holding type enterprises, and to diversify services (Zhukova, 2015b). So far, these processes are not very noticeable, since large companies do not have enough entrepreneurial activities and many of them are buying them in the form of ready-made high-tech products. But the digital platform-based companies that take over the organization of individual processes have already emerged. A number of such companies in the technology market has become so big that companies working in the real estate sector, and first of all, real estate developers need a system architect of information and communication technologies (ICT), which would create a digital ecosystem of the enterprise (Zhukova, 2015c; 2015d).

Positive component of the present day is the opportunity to bring the issue of the housing affordability to the plane of digital technology and platform solutions of online services, where a consumer is subject to problems rather than an object. This opportunity emerged in a period of redistribution of the housing market and expectations of major changes in price indices (from production cost to implementation) due to digital technology which allowed transferring the tools to solve the problem to customer’s hands.

In Russia, in the context of digitalization and digital transformation, the time has come for entrepreneurial (innovative) activity when forming the housing services affordability mechanisms (Gryzunova et al., 2018; Zhukova, 2015e).

Within the framework of these studies, practical steps were taken in accordance with the previous studies, and several business models and working prototypes were created, such as Bi-Platform, Apartment as a Service business model, as well as the Robot-Ipoteka robotic service and Co-Op at the MVP stage.

Figure 1 shows a scheme of real estate development company with a digital management system that has proved itself practically in the performance of the story centrgrup holding company and was presented as a universal business model in the digital version.
The **Robot-Ipoteka** is a business model of a platform company integrated under a mortgage housing product. The **Robot-Ipoteka** business model is an algorithmic diversified API platform integrated with all participants in a mortgage transaction. The main difference from the banking model of mortgage lending is that while the buyer of an apartment, i.e. a mortgage borrower, is an object of lending, in the proposed business model he is the subject to mortgage housing and insurance businesses, which include all participants of the transaction in real-time mode (Sekerin et al., 2017) (Fig. 2).

**Figure 1** The universal business model of an enterprise with a digital socio-economic management system (SEMS) and interaction framework (digital ecosystem)

**Figure 2** B2C solution: financial flow through the bank operator
The development of cooperation as a socially affordable housing institution is obvious, as soon as it is the only institution that allows one to really reduce the market value of apartments for cooperation shareholders by 20% or more. It is possible to develop cooperation in the form of the accumulative cooperative in the trend of the digital economy since the application of an algorithmic digital multilateral platform allows creating a digital ecosystem of cooperation as an open economic system that can be integrated with all participants involved in the creation of a product (Zhukova, 2015f; 2015g).

This significantly reduces the cost of shareholders to pay for additional staff and rent space for their office work. A virtual model of the digital platform called COOPERATIVE (Co-Op) is possible as well, since the risks of customers are excluded due to the fact that they make mutual and other share contributions by transferring money to a bank account, and have the right to terminate the contract and take the paid share or assign it to another shareholder. Digital culture assumes democratic work with money and provides guarantees of the operator bank.

Digital diversified platforms Co-Op and Robot-Ipoteka are integrated with each other through IP addresses and satisfy the need for shareholders to choose an apartment and a mortgage loan. The B-PLATFORM project involves integrating two platforms, namely, Robot-Ipoteka and Co-Op (Fig. 3).

![Figure 3 Mathematical model of B-Platform integration platform](http://www.webology.org)

The Robot-Ipoteka digital service platform provides direct interaction of clients—shareholders of the Co-Op digital platform – with the primary lender, whose mortgage loans provide 100% of the share contribution, and the conclusion of the co-investment agreement by cooperative in the interests of the shareholders. The client receives savings in the price segment from 20% and above, while the real estate developer gets a venture investor in the face of a housing savings cooperative that represents the interests of shareholders. In addition, Co-Op is integrated with the real estate developer or general constructor, who builds on the land where the COOPERATIVE acts as the developer.
Apartment as a Service is an affordable apartment rental business model, built on the SaaS digital platform.

In the developed countries of the world, the sharing economy has been developed, which fills the niche of young citizens' housing needs. The sharing economy is a temporary measure that should be of interest not only to consumers but also to legislators, as well as private business executives and other investors, who should consider human capital as an object to invest financial resources with subsequent incremental profits (Zhukova, 2009).

Figure 4 presents Apartment as a Service business model based on the SaaS platform.

The online service called Apartment as a Service is created on a SaaS platform with payment for software rent. Functionally it is simple and reliable. A distinctive feature of the service includes availability for tenants, as well as guarantees for apartment owners. The cost of rent is leveled by the market, while the apartment is offered based on the live-and-pay principle. Under the agreement, the company blocks the first rental payment as a security deposit for the last month of the lease. No additional fee is charged. If the payment is not received on time, then at midnight the electronic lock blocks the apartment.
Conclusion

1. All robotic services presented in the present article are useful models protected under copyright. All of them offer the client affordable housing services online.

2. By integrating the seller, buyer, investor, bank, certification center, Rosreestr, and data providers on one platform, the authors create conditions for legal and secure online transactions under the state guarantee.

3. The client, being a digital housing services consumer, independently solves the housing issue due to the values of the proposed S.M.A.R.T. affordability mechanisms which are Specific, Measurable, Achievable, Relevant, and Time-bound technology. At the same time, the client is subject to mechanisms for housing services affordability and has the right to choose.

4. The housing affordability function is of a government category being at the same time at the entrepreneurial activity level.

5. The organizational and economic mechanism is presented in all digital business models and works comprehensively through the implementation of the nonlinear type of control and cost reduction; at that, the main sources of income of the business platforms are commission fees from the transactors with the exception of the borrower client.

6. The development of integration by directing client activity to the digital space will reduce the cost of the apartment purchased by the shareholder by more than 30%.

7. The development of the Sharing Economy institution with the state subsidizing the cost of living for families with children in case if they took advantage of the opportunity to solve the housing issue by signing a co-investment agreement at the construction stage, will lead to confidence in the state (legislative) activity.

8. The initial contribution which is a key issue is proposed to be reduced down to 5% both by state and business since it constrains the entry of young families into the market. The opinion that the initial contribution can be made using maternity capital and an additional payment for the third child (similarly as when joining a cooperative) will definitely solve this problem.

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