Development of the sharing economy in Russia

G M. Galeeva¹

¹Kazan Federal University, 4, Butlerova St., Kazan, 420008, Russia

E-mail: g.m.galeeva@mail.ru

Abstract The article discusses the main approaches to defining the sharing economy in Russia and abroad. The factors of development of sectors of the sharing economy in Russia are highlighted. The analysis and assessment of the prospects for the development of the sharing economy in Russia is presented.

1. Introduction

A scientific review of research in the field of sharing economics has shown that interest in this topic has increased significantly in recent years. In particular, the dynamics of the number of publications found through the search for the keywords "sharing economy" on the elibrary website, and "sharing economy" in the scopus database, indicates the growing interest of researchers in this issue. In works published in 2018, many authors (Katre Eljas-Taal, Neil Kay, Lucas Porsch, Katarina Svatikova) define the sharing economy as a collaborative economy, meaning activities supported by digital platforms that create an open market for the temporary use of goods or services provided by individuals [1]. Important characteristics of the cooperation economy, according to the authors, are the absence of a change of ownership (which is in line with the definition of the European Commission, 2016), as well as the rapidly growing platforms that have entered sectors such as transport and housing, with the exception of e-commerce and social media. At the same time, the authors identify four main segments of the joint cooperation economy: transport, housing, finance and services.

In some studies, the sharing economy is considered as a business model (Iya Churakova, Liudmila Serova, 2018), which distinguishes itself by the following features: a network model of business organization, core competencies are focused on software, the predominance of liquid assets in the structure of property, the company's strategy is focused on experience customers, the need for labor resources is not fixed as in traditional business models, but is attracted as needed. The traditional model is represented by models such as B2B, B2C, B2G, and the sharing economy is complemented by P2P peer-to-peer communication.

The systematization of the main approaches to the definition of the sharing economy has revealed the presence of common features: the presence of peer-to-peer communication (P2P) between individuals; providing temporary access to underutilized goods and services, which promotes recycling and more efficient use of goods and services; availability of a digital platform and networking via the Internet; the exchange of goods and services can be free of charge or for a specific payment. Some researchers (Nicholas A. John, 2017) consider the economy of sharing as a social exchange process that implies social connections based on values such as trust, openness, equality, participation, care.
2. Materials and methods

One of the main advantages of developing the sharing economy as a new business organization model is to benefit from large-scale network effects, access to a global audience, which allows achieving high rates of market share growth. The sharing economy is the result of the concurrent action of long-term megatrends driven mainly by advances in technology, resource scarcity and social change (Robert Vaughan, PWC, 2015) [26]. This model of organizing business processes can be extended to other areas of the economy, such as energy, telecommunications and retail trade (John Hawksworth, PwC, 2015) [38].

It should be noted that companies operating in key sectors of the sharing economy (P2P financing, crowdfunding; online staff, freelancers; coworking; real estate; transportation; food sharing; digital content) are startups funded by venture capital. Investments are limited to the costs of building, delivering and maintaining an IT platform, a mobile application and an easy-to-use and secure payment system. The investment is relatively small and represents a manageable fixed cost. To break even, the platform needs to reach a critical mass of transactions, for which firms typically charge a commission of 1-10 percent of the value of the product or service used. Once the critical mass is reached, each new user and transaction will increase the margin. Thus, investors should first look at the resilience and potential size of a company's user base, and how often users access the platform when analyzing the value of a newcomer to that market.

The use of online platforms in various sectors of the sharing economy destroys traditional models of competition, since they do not bear the costs associated with the operation and maintenance of assets, their costs are determined only by the cost of transactions, the cost of which tends to zero. In particular, players such as Airbnb and any other platform in this area can grow much faster than the traditional hotel chain: their development is no longer constrained by the possibilities of construction and material resource management (Jeffrey Parker, Marshall van Alstin, Sanjit Chaudary).

The Russian Association for Electronic Communications identifies such sectors of the sharing economy as: C2C; P2P - services (online freelance exchanges); transport (carsharing, carpooling, means of individual mobility); rental of premises (residential and office); crowdfunding (co-financing of projects); rent of things.

Since statistical data characterizing the dynamics of the development of sectors of the sharing economy in Russia are presented only for 2017-2019, the construction of a regression model that makes it possible to assess the growth in employment in the field of information and communications under the influence of investments in the sharing economy seems to be incorrect. However, statistical data on investments and employment in the sector of the sharing economy for foreign countries made it possible to build a regression model that allows one to assess the impact of investment in the sharing economy on the growth of employment in this sector. All calculations were carried out in the Ipython Notebook program in the Python programming language. The graphs were built using the Matplotlib.pyplot module, and the Scipy, Numpy, SkLearn modules were used to build the regression model.

The resulting indicator was employment in the sectors of the sharing economy, and the free variable was the sum of venture investments attracted by these companies. The development of the model was based on data from 50 companies operating in the sharing economy.

The correlation coefficient for variable X1 (the amount of venture capital investments) was 0.795.

To build a regression model, we will find a linear approximation by the least squares method:

\[ B1 = 7.28 \]
\[ B0 = 2522.13 \]

The regression model has a general form:

\[ Y = B0 + B1 \times x1 + B2 \times x2 + \ldots + Bn \times xn \]

The resulting regression model is:

\[ Y = 7.28 \times x1 + 2522.13 \]

The coefficient of determination was \( R^2 = 0.91 \).

Combining model and data plots:
Fig. 1. Combining regression model plots and data

Let's try to predict the result for 2019 using data on the number of companies and data on the amount of venture capital investments:

We get employment = 29474 people.

Fig. 2. Graph of the regression model reflecting the dependence of the number of employees in the companies in the sharing economy sector on the amount of investment in this sector

Indicators characterizing the significance of the model:

Determination coefficient $R^2 = 0.91$

Root mean square error $MSE = 4956428.82$

Thus, the correlation-regression analysis showed that investments in the development of the sharing economy lead to an increase in the number of people employed in this sector of the economy. In turn, the rapid dynamics of growth in the number of people employed in companies operating in the sharing economy sector leads to structural shifts in labor markets in those countries where investments in this sector are made, primarily China, the USA, Germany, and France.

The first large companies in the sharing economy emerged from 2006-2007. So, in the world in 2007, there were about 40 companies that attracted $43 million venture capital investments. Then, until 2015, there was a sharp increase in the number of companies, both in Russia and in the world. In 2010, their number more than doubled compared to 2007 and amounted to 85, and in 2013 the number of companies was about 271. It should be noted that since 2015, the growth rate of the number of companies in the sharing economy has slowed down, and also the amount of venture capital investments attracted per company on average in 2019 decreased to $4.8 million.

Conclusion.

Currently, 96.7 million people living in Russia actively use the Internet, which is a factor in the further development of the industries of the sharing economy. In addition, an important condition for
the development of functioning and new sectors of the sharing economy is infrastructure support and the operation of digital online platforms. The high growth potential of companies in the sharing economy requires the formation of a certain institutional structure and improvement of the regulatory framework for their functioning both at the national and international levels. In 2019, the international non-governmental non-profit economic organization Global Alliance of Sharing Economy (GLASE) was established, the main goal of which is to unite the business communities of the sharing economy, to facilitate the exchange of resources and business opportunities. Revenues for companies working in the sharing economy will grow, according to forecasts of international analytical and consulting companies such as PWC, BCG, as well as forecast data presented on statista.com.

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