

The phenomenon of the sharing economy: Development problems and prospects in the context of the digital revolution

El fenómeno de la economía colaborativa: Problemas de desarrollo y perspectivas en el contexto de la revolución digital

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ABSTRACT:

The explosive growth of digital technologies that have greatly accelerated the exchange of information content and reduced the degree of information asymmetry, contributed to the development of the sharing economy, which has become a subject of today's scientific research and discussions. The novelty of the approach presented in this paper consists in the fact that the authors identify two classes of phenomena with regard to the category of "sharing economy". These phenomena are: 1) the shared use of similar or complementary resources for commercial purposes; and 2) the revival of communal economy traditions, i.e. the promoting "reciprocity economy". The article reveals characteristic features of the two components of the "sharing economy" concept, and presents their classification. In the framework of the first component two classes of relations are distinguished, namely strategic alliances without clearly defined central core, and concentric (focal) networks, where the platform plays the role of

RESUMEN:

El explosivo crecimiento de las tecnologías digitales que aceleraron enormemente el intercambio de contenido de información y redujeron el grado de asimetría de la información contribuyeron al desarrollo de la economía colaborativa, que se ha convertido en un tema de investigación y debate científicos de hoy. La novedad del enfoque presentado en este trabajo consiste en el hecho de que los autores identifican dos clases de fenómenos con respecto a la categoría de "economía colaborativa". Estos fenómenos son: 1) el uso compartido de recursos similares o complementarios para fines comerciales; y 2) la reactivación de las tradiciones de la economía comunal, es decir, la promoción de la "economía de reciprocidad". El artículo revela características características de los dos componentes del concepto de "economía colaborativa" y presenta su clasificación. En el marco del primer componente se distinguen dos clases de relaciones, a saber, alianzas estratégicas sin núcleo central claramente

the central core. In the framework of the second component, the authors distinguish pooling of resources for shared use and mutual concession of rights on resources. The article places a priority on the reciprocity economy, which involves a radical change in the way of interaction between social agents, i.e. the transition from market to communal forms of relationships, as well as moving from the price method of coordination of activities to mutual agreement. The reciprocity economy is seen as an expected result of the transformation process of forms of ownership: the transition from the historically first communal property to private and public ownership eventually has led to the revival of community relationships, which have incorporated elements of the communal ownership and reciprocal exchange. Much attention is paid in the article to the consequences of the "sharing economy" development for the world economy.

Keywords: Sharing economy, strategic alliance, concentric network, reciprocity economy, reciprocal exchange, communal property, information technology

definido, y redes concéntricas (focales), donde la plataforma desempeña el papel del núcleo central. En el marco del segundo componente, los autores distinguen la agrupación de recursos para el uso compartido y la concesión mutua de derechos sobre los recursos. El artículo prioriza la economía de reciprocidad, que implica un cambio radical en la forma de interacción entre los agentes sociales, es decir, la transición del mercado a formas de relaciones comunitarias, así como el cambio del método de precios de la coordinación de actividades al acuerdo mutuo. La economía de reciprocidad se ve como un resultado esperado del proceso de transformación de las formas de propiedad: la transición de la propiedad comunal históricamente primera a la propiedad privada y pública finalmente condujo a la reactivación de las relaciones comunitarias, que han incorporado elementos de propiedad comunal y intercambio recíproco. Se presta mucha atención en el artículo a las consecuencias del desarrollo de la "economía compartida" para la economía mundial.

Palabras clave: Economía compartida, alianza estratégica, red concéntrica, economía de reciprocidad, intercambio recíproco, propiedad comunal, tecnología de la información

1. Introduction

The existence of humankind and the history of shared use are inseparable. Since prehistoric times, there was a common hearth, common land, common tools and hunting.

The concept of collaborative consumption is not new for contemporary stage of society development. Many public and private organizations for decades have resorted to various options of shared use, such as libraries, car sharing, joint camping sites, etc.

Dissemination of digital technologies, which greatly accelerated the exchange of information and reduced the degree of its asymmetry, contributed to the rapid growth of the sharing economy. According to experts, the global market for sharing economy with an average annual growth rate of 33% will reach 335 bln dollars by 2025. (The sharing economy, 2015; Sharing economy: how it works in Russia, n. d.).

The emergence of the contemporary collaborative consumption is associated with the idea of Brian Chesky and Joe Gebbia, the graduates of the Rhode Island School of Design, who created in 2008 the Airbedandbreakfast.com website for advertising vacant spaces (later known as the Airbnb). As subsequently was claimed by the entrepreneurs: "We never imagined that we are participating in shaping the new economy. We were just trying to solve our own problem. And once decided, we realized that this issue is relevant for many" (Geron 2013).

Among contemporary studies of the sharing economy phenomenon, we should call the works of economists such as R. Botsman, R. Rogers, B. Cohen, A. Peters, and A. Fremstad.

In a joint book by R. Botsman and R. Rogers, "What's mine is yours. How Collaborative Consumption is Changing the Way We Live" (Botsman, Rogers, 2010) the authors mean by the sharing economy an economic model based on sharing underutilized assets from spaces to skills to stuff for monetary or non-monetary benefits.

Later, at a conference R. Botsman has stated that thousands of examples of collaborated consumption, which have been studied in the course of writing this book, have allowed her to identify "three clear systems" of sharing economy:

The first is redistribution markets. Redistribution markets, just like Swaptree, are when you take a used, or pre-owned item and move it from where it's not needed to somewhere, or someone, where it is.

The second is collaborative lifestyles. One of examples of collaborative lifestyles is called Landshare. It is a scheme in the U.K. that matches Mr. Jones, with some spare space in his back garden, with Mrs. Smith, a would-be grower. Together they grow their own food.

The third system is product-service systems. This is where you pay for the benefit of the product – what it does for you – without needing to own the product outright. And that can be anything from baby goods to fashions. For example, a power drill will be used around 12 to 13 minutes in its entire lifetime, because what you need is the hole, not the drill. So why don't you rent the drill, or, even better, rent out your own drill to other people and make some money from it? (Botsman, 2010)

Similar approach is taken by other researchers (B. Cohen and Yan, Kitzman Kietzmann, 2015), A.Fremstad, 2014, and A.Peters, 2010), who have updated and supplemented the basic approach.

In particular, A. Fremstad, in his work pays much attention to key characteristics of the sharing economy objects – shared benefits, which are close in essence to club goods, i.e. are excludable but non-competitive in consumption, because people can share their use.

This vision of sharing is perceived by leading economists of the international consulting company PricewaterhouseCoopers, who carried out a global study of the sharing economy presented in their work entitled "The Sharing Economy" (2015): sharing economies allow individuals and groups to make money from underused assets. In this way, physical assets are shared as services. For example, a condo owner may rent out his condo while he's on vacation.

Arun Sundararajan, Professor at New York University Stern School of Business, defines the sharing economy as a new kind of capitalism, namely "crowd-based capitalism" and identifies the following key features of sharing economy:

- it is based mainly on market interaction;
 - it involves the placement of underused assets;
 - it covers a large network of people;
 - it blurs the boundaries between both personal and professional activities, as well as between occasional and permanent employment (Sundararajan, 2016).
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2. Methods

The scientific novelty of the conducted research methodology lies in the combination of the neoclassical theory (the proprietary theory, and the theory of economic welfare), new institutional theory (transactional theory and transaction cost theory), and economic sociology (theory of reciprocal relationships and social fields).

Case-study method, structural analysis, and comparative analysis were used as the research methods.

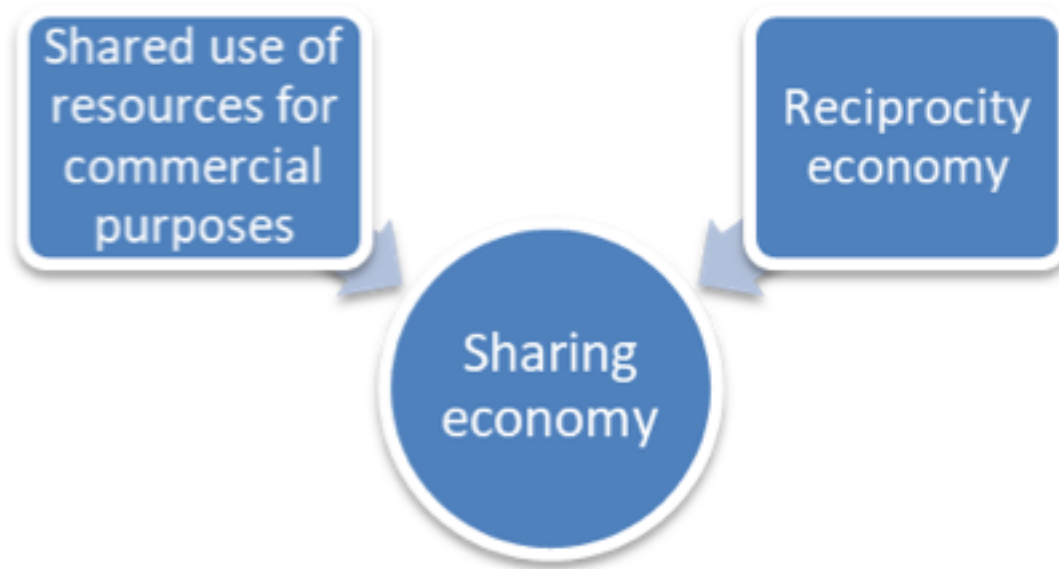
3. Results

In our opinion, the sharing economy represents a "fuzzy set", which includes two classes of economic phenomena (Figure 1):

- 1) shared used of common or complementary resources for commercial purposes;
- 2) the revival of the communal economy traditions, i.e. building the reciprocity economy.

Figure 1

The sharing economy structure (elaborated by the authors).



4. Discussion

4.1. Shared Use Of Resources For Commercial Purposes: The Basic Characteristics

The shared use of resources for commercial purposes is a modification of market interaction method with the following identifying features:

- the formation of specific forms of value-creating network;
- the transition from the exchange of goods to exchange of powers;
- the replacement of classical contracts by neo-classical ones;
- the entrance of the households to the end-use market as suppliers.

Value-creating networks based on sharing economy can be divided into two classes: strategic alliances without clear central core, and concentric networks (hubs), where the information platform is a central core.

Strategic alliance involves the pooling of independent agents towards shared use of resources (including infrastructure) and market power strengthening. For example, sharing practices, such as site sharing, sharing of antenna mast structures (AMS), and Radio Access Network (RAN) elements gained a widespread practice in the field of communications.

A synergistic effect in the framework of the strategic alliance is achieved through:

- joint R&D activities, based on the exchange of technology, knowledge, and know-how;
- pooling production capabilities and achieving positive economy of scale;
- pooling financial resources to implement costly projects.
- specialization in performing various functions or stages of the production cycle at product development.

Concentric network (network hub) is a group of agents connected with each other by cooperation relationships, in which there is an explicit central core – the online networking platform, such as Uber, Airbnb, Profy.ru, Avito, etc.

These platforms control the network participants at all stages of market interaction:

- before the exchange (ex ante) they provide a rigorous selection of the network participants, generate the information profiles for potential clients;
- during the exchange (ex interim) they provide legal support and conclusion of a deal;
- after exchange (ex post) they control enforcing of obligations, and if necessary, force the parties to enforce obligations, assess the network participants after the execution of the obligations, and conduct their rating.

At the bottom of transition from exchange of goods to the exchange of powers is the collective use rather than ownership of any resource. As stated by the American entrepreneur and supporter of the sharing relationships Lisa Gansky: "We are moving away from the model, where everything is tied up to the ownership, and approaching to the model that is based on access to property" (Geron 2013).

The transition from classical to neoclassical contracts is caused by the fact that in the sharing we clearly see the presence of social coercion. The relations involve only economic agents included in "their" network. In this type of economic relations, the informal conditions begin to prevail over the formal conditions; this proves the need for cooperation and trust-building between partners.

At present, the production of a significant proportion of consumer goods and services, such as cooking in households, cleaning and repairing clothes, cosmetic procedures and much more, is returning to the household frameworks. Specialized services and communities, allowing households to independently produce a variety of benefits, are combined into the production and trade chains, contributing to the involvement of households in entrepreneurial activities and turning them into full-fledged suppliers of goods and services. Such networks are beginning to strongly compete with companies producing similar products, because they offer goods and services at much lower prices.

Despite the fact that examples of this kind of relationships are not new, the rapid dissemination of the resource sharing practice is made possible only owing to development of digital technology, which significantly simplifies the interaction of economic agents and allows extending the boundaries of this interaction to a global scale.

4.2. The Reciprocity Phenomenon: Altruism Or Selfishness

Unlike shared use of resources on a commercial basis, the sharing economy implies a fundamental change in the way of interaction between social agents, namely the transition from market as the main field of interaction to community-based forms of relationships, from the price-based method of coordination to mutual agreement (crowdsourcing, Landshare, Skype, UTorrent, and Mutual Aid Networks). Here we can find both examples of pooling resources for joint use (a system of communal use of resources) and examples of mutual concessions of rights to resources (private use).

We can say that relationships formed in the framework of the sharing economy lie at the intersection of reciprocal exchange and shared use (communal property).

In the reciprocal exchange, interconnection of the relationships becomes more important than value equivalence, material imbalance is compensated by increase of the giver's authority while return gift may be made by another member of the community either immediately or with a delay in time. In this case, we are talking not about charity but about the long-term nature of the obtained benefits i.e. the formation of a system of mutual expectations. The assistance provided by one member of the community is the key to obtaining the loyalty of other members (economic aid to the satellites), the right to secure assistance in case of need (mutual funds or joint construction of houses for fire victims), the right to be involved in the community, etc. A key element of reciprocal exchange that is present in the reciprocity economy is the formation of a network of "friends", i.e. network groups, between which the exchange becomes possible.

At collaborative consumption, which is characteristic of municipal property, economic agents not only have access to shared resources, but share responsibility for their reproduction. This feature was discussed in detail in the works of E. Ostrom, in particular, in her major work "Governing the Commons: The Evolution of Institutions for Collective Action" (Ostrom, 1990). Theoretical works of E. Ostrom, confirmed by the historical data, indicate the fact that under certain conditions, the resources remaining to be of general use, can be operated and maintained in normal condition for a long time.

Based on detail studies of the communal tenure system of Törbel rangeland in Switzerland, the Japanese villages of Hirano, Nagaike and Yamanako, as well as irrigation institutions of Spain ("Huerta") and the Philippines ("Sanger"), the author deduces the basic principles, peculiar to the SHR-institutions (institutions controlling the use of shared resources) that exist for a long time. Many of them are effective even now: well-defined boundaries of SHR-system (shared resources system), arrangements of collective choice, clearly defined conflict resolution mechanism and calibrated sanctions (severity of punishment for violation of collective rules corresponds to severity of the committed act).

Turning to the issue of the revival of the community economy traditions in the current context, we would like to especially dwell on "the phenomenon of stable cooperative behavior", where the participants do not change their behavior despite the fact that circumstances may arise when "there is strong temptation to break given commitment." Agreeing with the author's conclusions, it is worth noting the existence of two regulators, such as the "reputation quotient" and the scope of measures on supervision and sanctions against rule breakers. These two components are especially relevant in the current context, because collaborative consumption is, first of all, the communication and trust between people. The trust, previously possible only between close friends or a small community of people, today can be achieved on a global scale, for example, through the establishment of information bank of trust, which will put on the black-list those individuals who show careless attitude towards communal property. Even today person's reputation in the online community is enough to many people to entrust him their property. For example, according to the latest expert estimates, 80% of sharing services' participants trust person with the established reputation profile (Lazorenko, 2016). And this level of trust to random persons (if they have positive "reputation history" or "reputation capital" in the information bank of the World Wide Web) will only grow.

The key differences between the reciprocity economy and the market economy are:

- Stable relationships between economic agents, while the market-dependent relationships are random since each party voluntarily decides to participate in the exchange in accordance with their individual assessments of benefits and costs;
- Lack of income-earning intentions (while in market exchange income is the main incentive of interaction between the exchange participants). However, the reciprocity economy does not deny the possibility of obtaining economic benefits. The distribution of operating costs between participants makes it possible to achieve savings for each individual member of the network, thereby increasing the residual income of the network participants. For example, the split-off maintaining cost of housing provided for temporary use to the agents who need it, such as utilities, minor repairs, etc., leads to a reduction in cost for each individual participant of the interaction and contributes to an increase in their residual income.

While the first component of the sharing economy concept, i.e. the shared use of common or complementary resources for commercial purposes, is already well comprehended in the scientific community, because it is a kind of market interaction, the second component, i.e. reciprocity economy, involving a fundamental change in the way of interaction between agents, requires further scientific study.

4.3. The Reciprocity Economy In The Context Of Transformation Of Forms Of Ownership

The development of the reciprocity economy fits into the logic of the historical process of transformation of ownership forms. The first form of property ownership was communal property, the object of which was first the land. The main characteristics of communal property were the social nature of the labor conditions redistribution, the right of the manufacturer for the results of its operations, and minor property differentiation. At that, reciprocal exchange was the dominant sharing method (Ustyuzhanina, 2006).

The development of the productive forces and the social division of labor has led to gradual disintegration of communities and the formation of individual households. The ownership of the certain land was usually attributed to the family living on this land. However, the ownership was based on the idea that the distribution of land between families rests on the will of the people. A perception of private property began to emerge, primarily, with regard to movable things, for example, to things produced by own labor. The reciprocal exchange was replaced by exchange of commodities.

The establishment of the state institution contributed to etatization of economic intercourse, i.e. the emergence of hierarchical and joint ownership institutions. The head of state was becoming a formal (the supreme) owner of the annexed lands and was taking the decision on their transfer in a perpetual or lifetime inheritable possession. The way to reproduce labor

conditions consisted in land transfer to vassals (granting the right of access and use the land for their own purposes). This allowed addressing two challenges: meeting the needs of users and forcing them towards reproducing the used resource.

However, gradually, the state monopoly on the disposal of the labor conditions began to come into conflict with the developing exchange of products of economic activity that led to another round of transformation. Land was gradually transferred from state ownership to the property of the land holders. The elimination of the relationships of personal and collective dependence, as well as the abolition of class barriers and privileges contributed to the formation of the private property institution. The owner of the labor conditions became the owner of the manufactured product.

Further development of history confirms the universal nature of the dialectic law of the "negation of negation". Each new milestone in the transformation of ownership resulted from the unity of continuity and novelty, the repetition of the old at the new development level: public (communal) property → privatization → etatization → privatization → communal property.

The currently observed revival of communal relationships, which incorporate elements of communal ownership and reciprocal exchange, is characterized by the emergence of a number of new features:

- information technologies have allowed extending the coverage of participants involved in relations up to a global scale;
- access to information has reduced the problem of information asymmetry and the risk of opportunistic behavior of participants;
- digital reputation has become one of the key assets in the collaborative consumption markets.

4.4. Development Prospects Of The Sharing Economy

The choice in favor of the sharing economy is determined by the following circumstances.

- Sharing of benefits makes them more accessible to consumers, reduces the cost of purchase and maintenance of goods including those for industrial purposes for each individual participant;
- The use of the shared services gives manufacturers the opportunity to promote new products to the market: for example, using the Rentmania platform one can take the expensive robot vacuum cleaner, test it and make a final buying decision;
- Lowering transaction costs due to the fact that the interaction is taking place between the participants of a single network that leads to lowering cost of information search and processing, measurement, negotiation, and monitoring;
- The shared use of production capacity enables manufacturers to apply better and more sophisticated equipment: the shared use of radio access network (RAN Sharing) involves sharing antennas, masts, and base stations. An example of a RAN Sharing is cooperation of the Nordic Telenor and Tele2 operators when deploying LTE network;
- Shared use contributes to the expansion of aggregate demand and stimulates economic growth. This so-called "incremental effect" of the exchange economy was found by Airbnb in consequence of the study conducted in San Francisco. The essence of this effect is the following: assume that due to the sharing real estate abroad, the accommodation becomes cheaper than at the hotel. People stay in the city for a longer period and spend more money than those staying at the hotel: the average ratio is \$1,100/840. As stated by Robert Atkinson, President of the Information Technology and Innovation Fund: "In our economy, there has not yet been a case, where more rational use of assets would have lead to more jobs " (Geron 2013);
- Reducing inequalities in society: the possibility of collaborative consumption of goods and services allows a more flexible approach to the product pricing depending on the level of income of the counterpart. For example, thanks to social projects, such as "food sharing" or "collaborative consumption of food", meal is becoming cheaper and more affordable to the poor and vulnerable segments of the population.

Even now, the explosive development of the sharing economy has led to quite serious structural changes: in some branches, this has put pressure on the reputable companies, which in order to protect their businesses call for more stringent regulation of the sharing economy.

5. Conclusion

The conducted study allows concluding that the sharing economy includes two classes of economic phenomena: the shared use of resources for commercial purposes, and the revival of the traditions of the communal economy – promoting the reciprocity economy.

The shared use of resources for commercial purposes is a modification of market interaction based on building specific forms of value creation networks (strategic alliances and concentric networks), the transition from the exchange of goods to the exchange of authority, from classical contracts to neoclassical contracts, and inclusion of households into the list of suppliers of goods and services.

The reciprocity economy implies a fundamental change in the way of interaction between social agents, i.e. the transition from market as the main field of interaction, to community-based forms of relationships, from the price-based method of coordination of activities to mutual agreement.

Relationships formed in the framework of the reciprocity economy lie at the intersection of reciprocal exchange and shared use (communal property).

Conducted historical analysis has shown that the reciprocity economy resulted from the process of transforming the forms of ownership. The transition from historically first communal property to private and public ownership eventually led to the revival of communal relationships, which incorporate elements of the communal ownership and reciprocal exchange.

The currently observed revival of communal relationships is characterized by the emergence of a number of new features: 1) information technologies have allowed extending the coverage of participants involved in relations up to a global scale; 2) access to information reduced the problem of information asymmetry and the risk of opportunistic behavior of participants; 3) digital reputation has become one of the key assets in the collaborative consumption markets.

Further development of the sharing economy carries a number of positive effects (increasing availability of goods to consumers, reducing transaction costs for participants, reducing inequalities in society, etc.), though does not exclude emergence of new challenges (essential structural changes associated with possible need of reducing traditional production due to the emergence of fundamentally new services).

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