

Structural Analysis of Territorial Digital Development: from Sharing Economy to Smart Sustainable Territory

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ABSTRACT

Current digitalization trends increase of relevance and diversity of sharing economy activities make all the participants of economic activity, including the state, be aware of the content of these trends.

The hypothesis of the study is that smart city technologies being a combination of digitalization, sharing economy elements for state territorial development are aimed at increasing the quality and safety of citizens' lives. Achievement of positive effects in employment and migration flows of the population; natural habitat conservation and containment of global or national environmental crisis are positive outcomes of modern technologies application.

This hypothesis determines the purpose of the study. Analysis of service economy trends, national and regional economies digitization reveals the impact of sharing economy and smart city technologies on the long-term sustainable territorial development. We took into account possible economic and environmental effects of their implementation, including positive smart city technologies in Russian million-plus cities. The authors have assessed trends in implementing government projects of digitalization and the development of smart cities and have revealed correlation between digitalization trends and real social and economic development of territories.

Research methodology includes assessment of economic digital developmental trends and the quality of digital development management. The authors use structural-rank analysis method. It shows the distribution of the analysis objects according to the service economy and digitalization level. Comparative analysis of smart city technologies implemented in Russia's million-plus cities makes it possible to assess trends in government digitalization projects implementation, smart cities development and the correlation between digitalization trends and real social and economic development of territories. Sharing economy sectors demonstrate numerous examples of smart city technologies introduction in business.

Keywords: Digital economy, sharing economy, sustainable development, smart city.

Mathematics Subject Classification: 62J20, 62G05

Journal of Economic Literature (JEL) Classification Number: B41, C19

1. INTRODUCTION

Global economy evolution (in compliance with the theory by Clark-Fisher (Clark, 1957; Fisher, 2007)) in the historical perspective consists, firstly, in transition from agrarian to industrial type of economy. It is followed by shift from industrial to service type and later from material services to non-material ones. Therewith, digitalization has also enabled us to differentiate development of national economic systems in terms of the ratio between sectors of material and non-material services in favor of the

latter. It should be noted that structural analysis of sharing economy using the authors' method of structural analysis is an additional indicator to determine the level of national economy development;
- in the context of global environmental crisis and resource shortage on a global and national economy scale, strategic digitalization techniques and solutions at the government level ensuring environment-friendly development should include:

for developed economies:

- increasing rate of digital literacy and the level of safety of sharing economy transforms mass consumer behavior introducing more information technology due to sharing economy introduction;
- encouragement of sharing economy sectors in the conditions of sharing economy growth, mass production economy incurs economic and image losses leading to labor overflow in the sharing economy;

for emerging economies

- to take into account developed countries' experience and ensure digital infrastructure development, promote digital literacy, development of consumer population in the labor market and to integrate training courses for digital economy and sharing economy;
- to increase security of sharing economy, not only in megacities, but also in municipalities of different scales, taking into account national features and interaction factors that form the model between participants of the sharing economy sectors in a different cultural, political and business environment;
- developing countries are characterized by different economic levels and perspective, various standards of living, social and religious conditions influencing the model of consumer behavior. Low social standards are typical and lead to active digitalization and increase of unemployment fraught with social inequalities and tension/ threats to social and national security of countries. Under the conditions, sharing economy has advantages (increased self-employment, affordable prices and a variety of services). It includes higher risks (high crime rates, where a positive result of consumption depends on the level of trust between the parties to the transaction).
- Global developmental trends of management system and forms of interaction of participants in any commercial transaction is the elimination of intermediaries. Transition to direct transactions takes place between the final consumer and the seller through modern informational systems. As part of the sharing economy, we are also talking about the possibility of sharing consumption through renting, resale of old goods. Digital technologies and channels of change managerial models in business and in government. Employment spheres of the urban population pass to intangible services via Internet platforms.

Structural analysis of Russian sharing economy allows us to see the problems and promising directions of the development of smart city technologies in the medium term.

Relationship between the digital economy, sharing economy and the paradigm of sustainable development of the economy is justified at the conceptual level in the paper. A way to overcome the crisis is suggested. A high correlation between the level of service, result and potential of the national economy digitalization is proved. Structural analysis results are complemented by systematized global ratings of countries indices of the digital economy, cyber security. The algorithm of introduction of a

single business platform of digital services and sharing economy is substantiated. Such a platform would ensure accessibility, security and control of actions of all parties and include feedback for the formation of a bidder rating on the digital and sharing services market. Key priorities of strategic planning and management of digital territorial development were formulated. The aim is to ensure systematic approach to resource conservation and to introduce new culture of consumer behavior and the model of interaction between business, society, government and social institutions in communities, regional and national levels.

2. GLOBAL ECONOMY TRENDS AND DIGITALIZATION

2.1. Sustainable Economy Paradigm and Digitalization Trends

Globalization trends in economy require monitoring countries economic development results since colonial policy formats of economically developed countries has changed from open conquests and Crusades to the active use of political and economic influence on the course of development of less powerful economies. Sanction regimes, strengthened protectionist measures, double policy standards and public consciousness manipulation are applied in technological information wars. Global problems and crises, including overpopulation of the planet, global environmental crisis, terrorist threats and security issues in the global network should also be taken into consideration.

Since its foundation in 1960-1970 the Club of Rome (see (Peccei, 1977; Pestel, 1988)) has recognized that the economic model is to be actively adjusted, transformed not to the needs and plans of large capital and multinational companies, but to the needs and requirements of the environment as depletion of its resources can not only cause economic crises and resources shortage, but also provoke more serious cataclysms arising from non-economic, but environmental and natural laws.

However, the practice of developing and introducing sustainable economy paradigm into global and national economic systems through both national government policy and international treaties and restrictions of the Kyoto Protocol formats (1998), UN conferences on problems and goals of sustainable development (materials of the UN Rio-92, Rio+10, Rio+20), has shown that at the national level there are insurmountable obstacles and difficulties in changing the economic paradigm and psychology of business, consumption, government as they are not ready and do not want to prepare for a tough regime of austerity, to reorientation of national production from energy-intensive and resource-intensive to high-tech and environmentally safe one because of high cost of new technologies or their inaccessibility due to sanctions and competition, or because of outdated psychology of public administration and business management.

An interesting source is (Randall, 2018), where the role of digitalization in achieving the effects of sustainable development of the economy is justified by the example of the regions of Northern Europe. According to K. Schwab (Schwab, 2016), the current state of society is largely determined by digitalization in the fourth industrial revolution. It affects not only the production of goods and services, but also the implementation of the activities of state institutions and organizations in various spheres of social activity and groups (mobile communications, social networks, local digital services, etc.).

Digitalization is a process of forming actual technologies that provide automation of a number of production functions and expand the possibilities for offering goods and services. Business

environment and government or municipal management systems ensure the increase in the life quality and variety of professional activities. On the one hand, the consumer is offered various goods, services, including modern payment methods, delivery or consumption.

Digitalization is implemented in two ways. Firstly, technically when analog technology is replaced by digital. Secondly, digital development of usual processes of everyday lifestyle (for example introduction of artificial intelligence in the judicial system). Those examples of sharing economy introduction and smart city technologies are relevant due to high dependence of modern economies on digital development trends being the basic condition for attractiveness growth in producers and consumers. Besides, smart cities have considerable positive environmental impact on the economic system.

The authors' definition of the digital economy includes:

- in a broad sense, these are all those market segments where value added is created using digital (information) technologies;
- In a narrow sense, digital economy is basically the economy of services, including state and municipal ones (Official website RAEC, 2017).

Taking into account digitalization trends in economy, government and municipal systems, customer service, it can be concluded that digital technologies are a solution to many economic and environmental issues. This primarily concerns "human factor" issues in various professional activities, where the use of artificial intelligence can reduce losses (entropy) from mistakes in management, performance or actions.

Secondly, this is a problem of the man-made impact of the economy on the environment in the field of mining, processing and all hazardous industries. Due to digital technologies, scientific and technological progress, quality of emission control improves, recycling facilities get more efficient, and energy source becomes environmentally safer.

However, sharing economy and digitalization of economic activity and availability of a large volume of goods and services laid ensure viable and efficient sustainable development (see Figure 1).

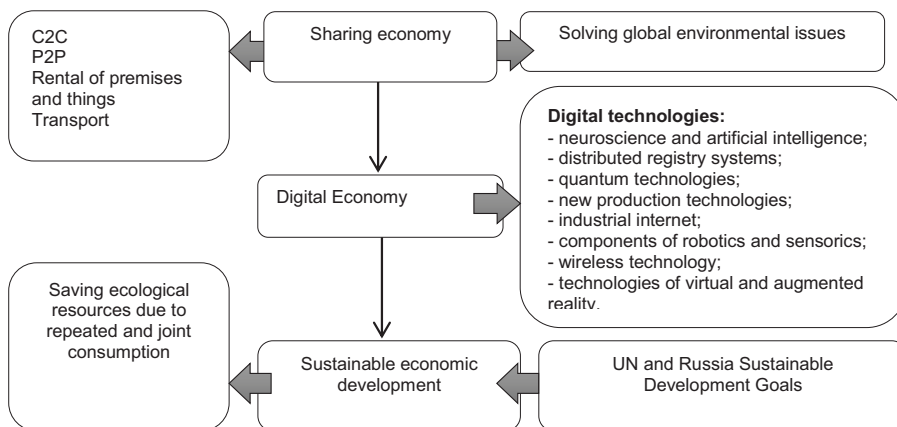


Figure 1. Correlation of digitalization, sustainable development and joint consumption

Growing scale of sharing economy is observed in both economically developed and developing countries, when the Internet and particularly mobile Internet, high competition for the customer or absence of intermediaries (C2C example) and large-scale demand for rental, resale, sharing, and co-financing services are actively growing against the increasing number of urban dwellers, instability of household financial situation, high unemployment rate and expensive credit resources for purchasing new goods and services.

Economic incentives to participate in the sharing economy, strong environmental effects in the form of resource savings and reuse in the economic turnover, a steady trend to reduce the growth rate of mass production, all these factors suggest that the state should look for potential growth and develop sharing economy in order to ensure national economy growth, government is interested in accounting and regulating self-employed, socially active participants of sharing economy as potential taxpayers, self-employed, socially active population.

2.2. Smart City Technologies and Digital Economy

Experts distinguish between two levels of digitalization in the society. The first type refers to infrastructural availability and quality. The second one depends on the intensity and proficiency of existing infrastructure use, nature of services and “digital competencies” availability (Khalin, 2018).

Positive trend in both national and regional economic systems can be expected. Modern digital infrastructure, active and efficient public administration aimed at using digital technologies for economic development and life quality growth ensures high employment rate despite automation of the production process. Nevertheless, in practice, firstly, it is necessary to distinguish between digital development management models for economically developed and developing countries. Secondly, an algorithm should be developed to evaluate the digitalization level and to determine the effectiveness of public administration and to update public digital economy programs.

There is a clear need to conduct different digital developmental strategies regarding priorities of economically developed and economically developing countries. Such factors as lack of resources against the background of growing mass production and consumption, various levels of availability and quality of digital technologies for different age and social groups of the population – determine the need to differentiate between global economies (see Table 1).

Table 1: Strategic Priorities of Digitalization for Economically Developed and Economically Developing Countries.

Implementation areas	For developed economies	For developing economies
Society	Growing digital literacy and safety level of the sharing economy are not only the results of integration of information technology, but also due to the transformation of the behavior of the mass consumer towards sharing economy	It is necessary to take into account the experience of developed countries and to ensure simultaneously with the development of digital infrastructure the promotion of literate behavior of the population as a consumers. Introduction of training courses of digital economy and sharing economy bases into the national educational system
Infrastructure and labor market	Sharing economy encouragement is the condition of its growth, the economy of mass production will incur	Increasing development rates and security systems of sharing economy not only in big cities, but also in municipalities of different scales. national features and factors need to

	economic and image losses, which will lead to the overflow of labor in the sharing economy	be taken into account the model of interaction between participants of sharing economy sectors in different cultural, political and business environments
Public administration and security	Continuous improvement of both the sharing economy infrastructure and the cyber security system	Use the benefits of sharing economy (increased self-employment, affordable prices and a variety of services) and creation of national cybersecurity system.

In order to address the issues of digital economy development managing of the, serious analytical work is required. Using the example of the Russian statistics service (Rosstat) it can be stated that the state statistics system does not provide analysts with the necessary database on the state and structure of the sharing economy sectors. The examples of statistics provided by Rosstat are the result of a public survey on the use of Internet resources (ICT-2017). Russian independent organizations specializing in analytical activities (for example, the Russian Association of Electronic Communications and their analytical reports) provide more details on the state and structure of sharing economy.

Another problem in assessing digitalization and sharing economy in Russian regions is weak municipal and regional statistics. There is a strong imbalances and inequalities in regional infrastructure, demand and solvency of consumers of digital services and services in a number of sharing economy sectors, megacities and municipalities.

Nevertheless, government and business ensure the development of digital infrastructure and information security on the Internet and in transactions. Such a problem is solved with the help of such tools and technologies as training, stimulating investment in technological innovations, accessibility and quality of internetwork traffic for urban and rural residents at affordable prices, development of digital literacy and digital skills of the population.

For instance, Russian population survey which analyses and identifies the dominant factors affecting the use of the Internet by the population, found a negative trend for 2015-2017. Namely, in 2015, the proportion of the population who chose the answer "No need to use digital technologies" (unwilling to use, no interest) was 67.95, and in 2017 it was already 70.1%. The second factor is lack of Internet skills. So, over the period 2015-2017 the share of Russian population that chose this answer increased from 21.8% in 2015 to 29% in 2017 (Rosstat, 2017).

The role of the State in creation and promotion of smart city technologies is implemented in the framework of the passport of digitalization project "Smart City". The document was approved by the Ministry of Construction and Housing and Communal Services of the Russian Federation of 31.10.2018 No. 695 / pr. This project is implemented in the framework of national projects "Digital Economy" and "Housing and Urban Environment".

The project "Smart City" should solve the following tasks:

- to increase the rationality of urban infrastructure use;
- to implement an integrated approach to the improvement of the environment;
- to establish communication between the city managers and the inhabitants.

Currently, the Smart City Solutions Bank is operating in the region. It is an open database of the best technologies and solutions in the urban sector. According to the official Smart City website, it provides

online information about smart city projects implemented in Russian cities. The areas of projects implemented with the support of the Ministry of Construction of the Russian Federation include:

- 353 projects in Information City and Infrastructure;
- 243 projects in Energy efficiency;
- 131 projects in Security, etc.

We should be aware that that urbanization and climate change are global trends forcing government to invest massively in digital technologies, in particular into smart city technologies aimed at improving the quality of life and security. At the same time, there are research results showing that biomass and population decreases due to climate change intensified by unplanned urbanization (Agarwal, 2019). Unplanned urbanization increases spending of resources, unemployment and causes overpopulation of urban territories. The issue of accessibility and implementation of smart city technologies is getting more important for obtaining positive economic effects such as new jobs creation, innovative types of economic activities, increasing the availability of services. At the same time, it contributes to environmental goals such as saving resources due to encouragement of responsible resources use.

The full spectrum covers ten areas, besides those listed, including construction, ecology, energy saving, heat supply, transport, waste and water supply. Russian regional comparison reveals disproportions and unevenness in technologies implementation. So, as of May 18, 2019, 84 projects were implemented in Moscow in all the 10 areas. Whereas, in the city of Volgograd only 20 projects were implemented in just 4 areas: Information City and Systems; Energy Efficiency, Water Supply and Transportation.

There are reasons for restrictions on the areas of implementation of smart city technologies in such million-plus cities as Volgograd, Krasnoyarsk (19 projects), Omsk (18 projects), Ufa (20 projects) (Materials Ministry RF). On the one hand, there is a dependence on federal programs and projects that provide financing for introduction of smart city technologies into the infrastructure and basic services to city residents. On the other hand, low involvement of local business elites in investing and engaging in similar technologies and their implementation. The demand from the population is high determine the level of development of smart city technologies. This demand in provincial cities is ensured by solvency and income level of population.

On the example of the Skolkovo "Digital Life of Russian Megalopolises" rating, one can see considerable differences in digitalization and funding of Russian federal district capitals and cities distant from federal centers (see Table 2).

Table 2: Position of million plus cities according to Skolkovo index "Digital Life of Cities".

Federal district	Cities	Digital City Life Index	
		2014	2015
<i>A</i>	<i>B</i>	<i>1</i>	<i>2</i>
Ural federal district	Yekaterinburg	1	1
	Chelyabinsk	7	11 (-4)
Northwestern Federal District	St. Petersburg	2	2
Central Federal District	Moscow	3	3
	Voronezh	13	15 (-2)
Volga Federal District	Kazan	8	4 (+4)
	Nizhny Novgorod	10	8 (+2)

	Permian	4	7 (-3)
	Ufa	11	9 (+2)
	Samara	5	12 (-7)
Siberian Federal District	Novosibirsk	9	5 (+4)
	Krasnoyarsk	6	6
	Omsk	14	13 (+1)
Southern Federal District	Rostov-on-Don	12	10 (+2)
	Volgograd	15	14 (+1)
Far Eastern Federal District	-	-	-
North Caucasus Federal District	-	-	-

The uneven distribution of the population and large agglomerations across the country can be observed. For example, the Volga Federal District has five million plus cities. Whereas the Far Eastern Federal District and the North Caucasus Federal District do not have a single metropolis. Initial different conditions are the reason for unevenness in introduction and development of digitalization across Russian cities, towns and communities. The financial capacities of the population in these territories are also factors of digitalization and sharing economy development in the Russian regions. This explains different results of economic policy implementation in the field of digital development. Main sharing economy activities are traditional for entrepreneurs and consumers. Implementation of digital technologies is a way to popularize, distribute and promote them. Besides, due to the "Smart City" project, the state and business have the opportunity to create new jobs, innovative services, another round of economic development and growth.

3. SHARING ECONOMY AND SUSTAINABLE DEVELOPMENT: FACTORS, RISKS AND TRENDS

3.1. Sharing Economy Evolution across Sectors and Structural Analysis Assessment of Trends

The author's approach to the intersectoral structural study of the national economy dynamics is based on the following conditions and order:

1) The sectoral structure of gross value added (GVA), 5 traditional for macro statistics and national accounts is applied. It includes the division of GVA by Agriculture, hunting, forestry, fishing (ISICA-B), Mining, Manufacturing, Utilities (ISICC-E), Construction (ISICF) и сектор услуг, включающий Wholesale, retail trade, restaurants and hotels (ISICG-H), Transport, storage and communication (ISICI) and Other Activities (ISICJ-P) (according to the UN data); we applied sectoral structural classification of gross value added (GVA), traditional for macrostatistics, national accounts including the division of GVA by Agriculture, Hunting, Forestry, Fishing (ISIC A-B), Mining, Manufacturing, Utilities (ISIC CE), Construction (ISIC F) and Service sectors, including Wholesale, Retail Trade, Restaurants and Hotels (ISIC GH), Transport, Storage and Communication (ISIC I) and other activities (ISIC JP) (according to the UN data).

- Aggregation of the elements presented in the GVA has been carried out according to the following scheme:

- Agricultural sector (D_A) includes ISIC A-B;
- Industrial sector (D_I) includes ISIC C-E;

• Service sector (D_S) consists of sections that follow in succession within the GVA structure: ISIC G-H, ISIC I and ISIC J-P.

It should be clarified that Section F “Construction” is not included in any of these sectors, but is a part of D_G , an additional indicator of our analysis which accumulates in itself all goods produced within the national or regional economy (Buletova, 2018).

2) intersectoral structure analysis using coordination indices allows to apply two structural characteristics in order to describe these systems

$$t_\alpha = D_I/D_A$$

$$t_\beta = D_S/D_I$$

where t_α is the degree of industrialization showing how many units created in the industry account for such units created in the agricultural sector of the GVA;

t_β is the degree of service-oriented economy indicating how many units made in the services sector account for such units in industry structure of the GVA

3) calculated values of t_α and t_β over a period of time allows building and assessing trends. An evolutionary graphical field is built for the analyzed national economic system or group of systems, on which the identified evolution vector for the analyzed period is estimated. The data are compared with empirical assessment of structural changes quality of the national economy and its individual territories.

In the course of the study, it has been determined that the more basic values of t_α and t_β exceed 1, the more developed the economy is according to its structural changes over the period of time and therefor can be referred to as developed industrial and service sectors economy.

This method provides a second level of analysis. The subject to the ratio between the subsectors of tangible and intangible production in the services sector. Another correlation is between the mining sub-sectors and the manufacturing industry for the same purpose of measuring the degree of difference between them. The third level of the ratio is within the manufacturing industry by 4 subspecies (according to Rosstat classification) and within the intangible services in order to identify the share and place of financial services, the sharing economy services, etc.

In (Netter, 2019), the authors write about the new framework sharing economy, but this study deals with organizational characteristics of sharing models (membership, rules, monitoring, sanctioning, and hierarchy). In our paper the authors have determined the composition of the sharing economy sectors, which traditionally include rental of premises and things, use of shared consumption in transportation services, etc. Based on the theory of the three-sector economy by Clark-Fisher, the authors justified the logic of the evolution of individual sectors of the sharing economy in the sequence the emergence, development and dominance of sharing economy in GVA structure (see Figure 2).

We have divided all types of services within the framework of the sharing economy into six sectors, and determined the trajectory of their development. We took into account the simplicity and complexity of their mass distribution, capacity and efficiency in the current economic conditions. According to Table 3, it is possible to see differences in the scale of implementation and the role that these sectors play in the national economy structure. There are no data available on B2B sector, therefore it is assumed to be equal to 0.

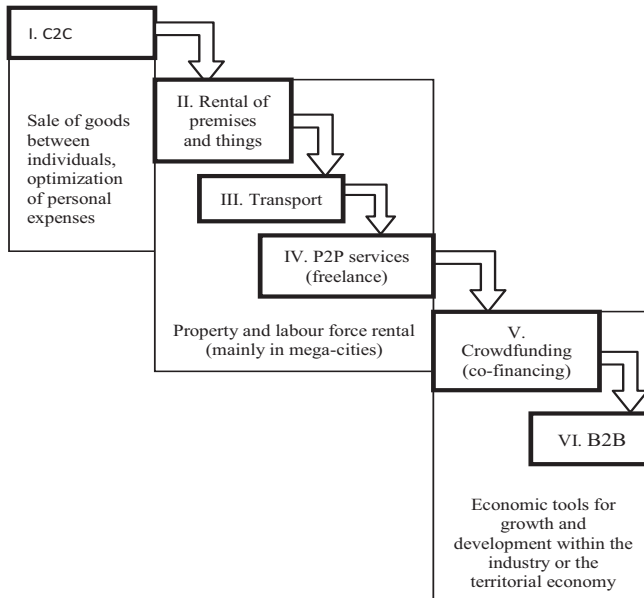


Figure 2. Evolutionary transition by sectors sharing economy

Table 3: Volumetric Indicators of the Sharing Economy Sectors Development over 2017-2018

Sharing economy Sectors	Units of Measurement	2017		2018	
		Number of services	Amount of transactions, mln. rub.	Number of services	Amount of transactions, mln. rub.
I.C2C sale	number of transactions, mln.	90	295000	116	370000
II. Rental of premises and things					
2.1. Short term rental of accommodation facilities	number of guests, mln	1,2	5800	1,6	9800
2.2. Office sharing					
- co-working	-	-	2600	-	3500
- ready offices (OaaS)	-	-	1700	-	2200
2.3.Rent of things	number of transactions, thous.	25	80	60	180
III. Transport:					
3.1. Car-sharing	number of trips, mlr	12	5100	37	13000
3.2. Carpooling	number of trips, mlr	24	8100	39	13700
IV. P2P services (freelance)	number of transactions, mln.	49	73000	64	98000
V. Crowdfunding (co-financing)	number of fundraising campaigns, units	1020	300	1333	400

Source: compiled by the authors on materials of Russian Association of Electronic Communications (2018)

Assuming with the analogy of the order of the ratio of sectors of the national economy according to the Clark-Fisher model, that for intersectoral analysis the six sectors listed will be grouped as in Figure 2, then we obtain the following result of measuring the proportions D_i :

The theory of structural economic changes by Clark-Fisher and fundamentals of economic evolution towards complication - in this case from the C2C sector to sectors 5 "Co-financing" and 6 B2B were the condition of aggregation presented in Figure 4 and Table 2 of the sharing economy sectors in D_i ; as a result, the formation of D_i values was as follows:

- D_1 included only C2C sector 1;
- D_2 included sectors 2, 3 and 4;
- D_3 included sectors 5 and 6.

It is the correlation between these aggregated sectors of sharing economy that will be the basis for measuring structural proportions and their changes. In order to do this, we will use formulas (1) and (2) in the following edition: $t_\alpha = D_2 / D_1$; $t_\beta = D_3 / D_2$.

Table 4: Structural Analysis Results of sharing economy in the Russian Federation over 2017-2018

	D1, %	D2, %	D3, %	$t_\alpha = D_2/D_1$	$t_\beta = D_3/D_2$
2017	75,3%	24,6%	0,077%	0,33	0,00311
2018	72,4%	27,5%	0,078%	0,38	0,00285

The calculations of the structural analysis indicators allow to identify an exact development vector for the sharing economy and to justify the need for developing a digital, legal and ideological base to ensure the increase in the rate of evolution according to the target vector: to the growth of aggregated shares of D_2 and D_3 in comparison with D_1 .

The authors compared each sector of sharing economy with the previous one and found out that the proportion of sharing economy in the overall economic activity at the current stage must be greater than at the previous stage: $D_3 > D_2 > D_1$.

Table 4 shows that in Russia the state of intersectoral proportions does not fulfill the specified ratio. It can be argued that the vector of evolution of this economy is aimed at increasing D_2 share and fulfilling the first condition, $D_2 > D_1$. The next stages of economic development is the increase in the share of D_3 and the fulfillment of the second condition $D_3 > D_2$. This is possible due to active involvement of businesses in digital economies in Russian regions. It ensures creation of new jobs and government support for all technologies of the smart city, including those related to sharing economy.

3.2. Current Trends in Sharing Economy for Ensuring Sustainable Economic Development

Table 5 presents the author's version of the sharing economy evolution matrix, which can be used to conduct an expert survey of all participants in such economic activities listed in Table 4.

Table 5: Evolutional Matrix of Sharing Economy

Conditions	Agricultural type of economy (on the example of Pakistan)	Industrial type of economy	Service-industrial type of economy	Service type of economy (on the example of the USA)
Evolution scale, points (from 0 to 10)	Min.0			Max.10
1. 1. Internet Coverage (mobile Internet coverage)	Inaccessible High cost	Used mostly by city dwellers	Affordability for all population groups	Most widespread coverage Affordable cost
2. Consumption style	Low purchasing power	Mass consumption	Mindfulness regarding consumed resources	Mindfulness regarding consumed resources and openness to joint consumption
3. The sphere of the maximum integration	In the agrarian sector	In the industrial sector	In the service sector	In the service sector
4. Risk level in the sphere of joint consumption.	Illegal sector	Legalization and development of sharing economy activities	Institutionalization of sharing economy norms and rules	Protection from risks. Insurance
5. Distribution of types of sharing economy	C2C sales	+ Rent of premises and things	+ Car-sharing + Carpooling + P2P services (freelance)	+ Crowd funding + B2B

In the Volgograd region, such a survey was conducted among businessmen and government officials involved in the development and implementation, distribution, and support of smart city technologies and the sharing economy sectors. In total 43 experts were interviewed, the ratio of business representatives and government was 13/30. Results obtained indicate general perception of current state of Russian sharing economy. It is typical for most Russian regions (with medium development level indicators) including the Volgograd region. The average indicators for the Russian Federation and the Volgograd region differs slightly (see Table 6). Level by Experts: Business experts (30.2%), Public officials Experts (69.8%).

The answers of businessmen were determined by their professional experience and the degree of involvement in economic activities related to the sharing economy, including consumer services. Public officials responses were influenced by their status and responsibility for the assessments given, taking into account their position in the government. The regional executive branch involvement in the digital development and the level of introduction of smart city technologies in regional projects are also important.

Table 6: Distribution of Average Assessment Rates of Sharing Economy Development

<i>Evolution scale, points (from 0 to 10)</i>	For the Russian Federation		For the Volgograd region	
	Business experts (30,2%)	Public officials Experts (69,8%)	Business experts (30,2%)	Public officials Experts (69,8%)
1. Internet coverage (mobile Internet coverage)	5	6	5	7
2. Consumption style	4	7	5	8
3. The sphere of the maximum integration	6	7	6	6
4. Risk level in the sphere of joint consumption	5	7	6	6
5. Spreading of sharing economy activities	7	5	7	6
Integral estimation (According to Weighted Average formula)	6,1		6,4	

Creating a single platform for digital business services in the model of strategic management of sharing economy is another critical issue in digital conception development and implementation. The tendency of streamlining and unifying governments digital services and portals to a unified public electronic platform allows to avoid duplication of functions and data, guarantees information security and accessibility. There is a principle of “one window” in the form of a single portal to order and get government digital services. The authors consider that a similar unified platform for digital business services should be created. It would contribute to systematization of the digital economic activities and sharing economy sectors by type of functioning. The unified platform for digital business services is to be characterized by:

- mandatory registration of all the participants;
- “listing” procedure for all services offered;
- introduction of monitoring systems from the state statistical organizations or special research institutes for assessing the state and development trends of each segment and type of service.

4. DISCUSSION AND CONCLUSION

Digital development of the economy has become a way to institutionalize sharing economy, to make it an important segment of the national economy. It includes interaction between enterprises (B2B). Sharing economy growth and trends are key factors for ensuring sustainable economic development. The society gets effective tools to improve the quality of life due to the accessibility and promotion of “rights to use” but not the “rights to own”, accessibility and prevalence of rental, sharing, exchange services according to the list of Sharing economy sectors presented in the article.

The state is institutionalizing the sectors of the sharing economy, and business is actively investing its channels in the digital economy and technologies of smart cities, smart homes.

Digitalization and sharing economy can reduce man-made industrial impact on the environmental, make intermediate consumption safer and more cost-effective. It is achieved by R&D, B2B development, and by redistribution of the gross value added in the services sector (and labor force).

The unified platform for digital business services and sharing economy ensure accessibility, security and transparency of participants' transactions. It would also provide feedbacks and form ratings of players in the digital and sharing services markets.

It partially solves the problem of trust ¹, which obviously slows down new trends development in the global and national economies. However, it is important both in the educational and legal systems to build guarantees of the security of such operations, which is fully the responsibility of state. An example of crowdfunding (co-financing) indicates that in the future, in the economy as a whole and in the financial market, cardinal changes in the raising capital system solving urgent social and economic, environmental problems of a territory. The solution is based on trust unifying Internet users voluntarily contributing their financial or other resources into their projects and business ideas. The US example of JOBS Act implementation (Jumpstart Our Business Startups Act) aimed at using crowdfunding startup companies to collect registered capital as an alternative to share issue, confirms that this is a current trend for economically developed countries which could be adopted by other global economies with limited resources.

Acknowledgment

We thank the Volgograd Institute of Management (branch of the Russian Academy of National Economy and Public Administration) for support which enabled to prepare the presented paper (Project 02-2018 VIU "Implementation of a multidisciplinary approach to research on social and economic systems for long-term sustainable development of territories")

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¹ "The real magic and the secret source behind collaborative consumption markets like Airbnb isn't the inventory or the money, it's using the power of technology to build trust among strangers." Rachel Botsman "What's Mine is Yours"

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