

Digital Economy for the Supply Chain as Indicator of Competitiveness of the Cities

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Abstract— The current state of development of world urbanistic community shows that the main accents in competitive interdependence between basic subsystems of territories are transferred from nationwide - the national level on more local-regional and local: cities and city systems. One of the main technology management for supply chain is digital technology. The digital economy which key factor of production data in a digital form - digital technologies act gives great opportunities for the development of the city, acts as a factor of increase in its competitiveness. In relation to the cities of the Russian Federation, the main, most objective indicators of competitiveness are productivity (efficiency), employment, the standard of living, quality of the urban environment. Introduction of the digital economy is accompanied by a number of risks. In relation to the cities and agglomerations, it is necessary to provide actions for minimization of the risks connected with a problem of creation of the corresponding infrastructure. Digitalization potentially influences the majority of parameters of quality of the urban environment and promotes improvement of quality of life of citizens: welfare and employment, level of expenses, education level and human capital, existence of free time and nature of its use, level of environmental pollution, existence and quality of social communications, general satisfaction with life.

Keywords— city, competition, digital economy, supply chain, risks, quality of life.

1. Introduction

The concept of competitiveness of the cities represents one of the relevant directions in geourbanistics and urban economy now. However, among modern researchers, there are opinions that the competitiveness should be considered as a factor, "attribute of the companies", but not the cities [1]. Integration of the cities by means of expansion of international trade and the capital, influence of multinational corporations, development of the industry causes transformation of the traditional cities to "cities businessmen" which increase the competitiveness from the point of view of economic and social processes, the safe

environment for the purpose of attraction of investments and the population [2, 3].

Both the scientific and practical value is of interest in studying of competitiveness of the cities. An objective of this research - consideration of opportunities of the digital economy as a factor of the increase in competitiveness of the city and improvement of quality of life of citizens.

2. Methods

I. Begg who considers it on the one hand - as the extent of development of city economy gives rather a wide concept of the term "competitiveness", and with another - the competitiveness defines when comparing similar indicators of the different cities. The appeal and the possibility of successful competition of the city are predetermined by a set of unique properties and features. Also, the ability of the city to attract or create a profitable economy is important, relying on competitive advantages [4, 5, 6].

It should be noted that most scientists in the researches on questions of competitiveness of the cities compare the cities among themselves that finds reflection in a large number of definitions of the competitive city.

According to A.N. Valvashov [7] the competitiveness represents some "competitive and competitive" processes of various cities seeking to create the most favorable conditions for the population, managing, investment investments that affects formation of positive image of the city and interest from various social groups of the population, representatives of government institutions and the international organizations. The population, the enterprises, and the organizations, investors, tourists can act as subjects to the competition of the cities [8].

V.V. Dzhegutanova [9] who considers that the city is competitive in case of creation in it of the conditions allowing citizens to satisfy versatile requirements, such as social and economic, political, cultural, administrative and others, and besides, has the potential for their further dynamic positive change has similar ideas of competitiveness of the city.

In our opinion, the appearing opportunity at the city to attract various new resources is an important

consequence of the high level of competitiveness of the city.

Researchers allocate a broad set of indicators characterizing the competitive (successful) cities. So, S. Jansen-Butler [10] among others refers the innovative processes developing in city boundaries, creation of hi-tech production, the concentration of highly qualified personnel, the quality urban environment including objects of green infrastructure, the optimum transport system, etc. to a number of characteristics of the competitive city.

According to Lever V.F., as a result of competitive processes growth in incomes in the city and the creation of new jobs acts [11].

The competitiveness according to I. Begg [4] can be reached during an increase in productivity and employment of citizens and also as a result of the most effective use of resources.

Thus, in relation to the cities of the Russian Federation, the main, most objective indicators of competitiveness are productivity (efficiency), employment, the standard of living, quality of the urban environment.

3. Results and Discussion

The powerful driver of the increase in competitiveness of the cities which, certainly, will be reflected in all its indicators is the digitalization of various spheres and systems. The concept "digital economy" arose in the 90th years of the XX century. Its ideology was designated for the first time by the information scientist Nicholas Negroponte. Since then use it around the world. There are very many definitions of this concept, however, all of them come down to the fact that the digital economy is the economy based on use in the production of digital technologies. The digital economy opens before society big advantages and ample opportunities which have to promote improvement and growth in all spheres of life of society [12-18].

So, in the "Digital Economy of the Russian Federation" program approved by the order of the Government of the Russian Federation of July 28, 2017 No. 1632-r it is told: "the realization of the present Program is enabled according to the purposes, tasks, the directions, volumes and terms of realization of the main measures of state policy of the Russian Federation for creation of necessary conditions for development of digital economy of the Russian Federation in which data in a digital form are a key factor of production in all spheres of social and economic activity that increases the competitiveness of the country, quality of life of citizens, provides the economic growth and national sovereignty" [13, 19-23].

According to provisions of the Digital Economy program, the "clever" city provides an introduction of a complex of the technical solutions and

organizational actions promoting the formation of the most quality urban environment, effective management of resources and services that will allow providing favorable conditions for accommodation, work and rest of citizens [24-26].

In the long term in the cities it is planned to carry out "mass introduction of cyber-physical systems in management of city resources" which will allow to provide high quality of services and the involvement of citizens into processes of management of the cities, to create an eco-friendly and safe environment in the cities and also to develop innovative infrastructure. In the cities, there is a request for the introduction of the products of new generation promoting the solution of critical city problems, increase in the effective management of the urbanized systems, growth of quality of life of citizens [14].

The digital transformation which is developed in the world affects key industries and spheres which, on the one hand, just concentrate in the cities, and, on the other hand, are integral parts of ensuring their activity: modern productions, transport and mobility, power, communication, housing and communal services, trade and services sector, health care, education, systems of municipal management. The satisfaction of these the requirements, major for the person, creates the qualitative urban environment [15, 16, 25].

The effect of the introduction of projects in these sectors is supposed large-scale as digital technologies give the cheapest ways for the solution of many tasks in the field of logistics, management, communications, allow the cities to compensate resource insufficiency, to increase the appeal of the inhabited environment.

From the point of view of technologies, digitalization of the cities is based on several trends in the sphere of information technologies - mobility, social communications, a cloud computing, big data, and predictive analytics, machine learning and artificial intelligence, technologies of ensuring cybersecurity, "the Internet of things" which are created for the "clever" cities.

Digitalization potentially influences the majority of parameters of quality of life [17]:

- welfare and employment - digitalization provides to inhabitants new jobs in the tertiary sector of the economy and new opportunities of employment, including a possibility of the distant work allowing to earn more, getting access to new labor markets;
- level of expenses - development of digital services, on one hand, allows to save money on goods and services, with another - stimulates consumption of new goods and services;
- education level and the human capital - access to education and information resources allow to improve knowledge and skills of users, thereby

increasing their competitiveness in the labor market;

- existence of free time and the nature of its use - digital services save the time of inhabitants by providing access to information on public transport, a possibility of the order of the taxi, goods and services on the house, remote receiving the public and other services;
- level of environmental pollution - digital services can promote optimization of movements of inhabitants and goods in the city, reducing the level of emissions of pollutants from motor transport;
- existence and quality of social communications - digital services provide users with new ways of interaction and communication, including with residents of other cities, at the same time conditions for the formation of circles of contacts on interests, but not on the basis of proximity of accommodation are created;
- the general satisfaction with life - digitalization promotes an increase in a variety, quality, and speed of the received services, increases the safety of transactions and personal security, saves time for receiving goods and services and for movements.

However, the digital economy bears in itself and some risks [18, 23, 24]. First, the question of information security: the creation of a system of reliable information security in order to avoid mass fraud in the new information environment. Another feature of this problem is the lack of necessary quantity of competent shots in the sphere of information security. Secondly, the universal transition to modern digital technologies can lead to the emergence of a negative situation in the domestic labor market. As with mass transition to the new technologies connected with the universal introduction of robotics on a number of the enterprises, there will be a situation of a surplus of workers of a number of specialties. Especially it will concern low-skilled workers. As a result, there will be a growth of the unemployment rate in the country, and, therefore, a decrease in the standard of living of the population. In some cases as a result of the transition to digital technologies, dismissal of workers it is not carried out, but the salary of low-skilled experts considerably decreases. Therefore, according to experts, as a result of the transition to the digital economy in several years, many professions will be absolutely unclaimed. Thirdly, you should not forget about the real sector of economy without which development and successful functioning it will be impossible to use digital technologies since the digital economy represents only that sector of economy which consists of electronic goods and services which include, except other, services in the choice and the order of real goods by means of electronic products. Therefore considerable attention should be paid to the production sphere and the state

support of especially important branches of production.

If to consider the risks connected with the sphere of competitiveness of the cities, then into the forefront the problem of creation of the corresponding infrastructure not only in the large cities but also in settlements performs with a population less than 500 thousand people that will involve considerable costs. It will lead to the growth of an account part of the state budget, and, therefore, to the formation of the budget deficit and growth of the state loans for its covering. All this will negatively affect the financing of other items in the budget, especially social orientation. Besides, it is necessary that the standard of living of each citizen allowed it to use services of such information space. According to the experts, it is quite often noted that citizens with income above the average level have access to new technologies [18-22].

It is possible to claim that digitalization of various city processes will promote the improvement of quality of life of citizens that in turn will affect the competitiveness of the city.

4. Summary

The cities act as the territorial systems providing public benefits at the level of territorial subjects of the federation and the economic region more and more actively now. Digitalization of economy, concentrating in the cities, influences the conventional parameters of quality of life (modern production, transport and mobility, power, communication, housing and communal services, trade and a services sector, health care, education, the systems of municipal management). Minimization of the risks connected with the development of the corresponding infrastructure allows improving the quality of life of citizens and acts as one of the modern factors of the increase in competitiveness of the cities.

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