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DIGITAL TRANSFORMATION AS A TRIGGER FOR THE EMERGENCE OF A NEW ECONOMIC GEOGRAPHY: CHALLENGES FOR DIGITAL URBANIZATION

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The development of the digital economy and the platform economy has a fundamental impact on traditional urbanization processes. The main feature of the digital economy is the technological specificity of economic relations, and the digital economy is the totality of these relations regarding the production, distribution, marketing, sale of goods and services. The techno-digital form of implementing economic relations has served to build the corresponding infrastructure affecting the social sphere of the economy. The digital platform economy creates new economic models that change the structure of employment, the geography of the location of productive forces and the nature of economic activity in cities.

The main transformational effects of digital platforms include: disintermediation and re-intermediation [1]; distributed production and consumption [2; 3]; gig economy and new forms of work [4; 5]. Disintermediation and re-intermediation are the elimination of traditional intermediaries and the emergence of new platform intermediaries in the urban economy. Platforms such as Uber, Airbnb, Delivery Club and other shared consumption services are changing traditional sectors of the urban economy (transport, hotel business, retail) and creating new opportunities for economic activity. Distributed production and consumption – digital platforms allow for the coordination of distributed production chains and provide customized production, which changes logistics flows in cities and contributes to the formation of a new spatial organization of production. Gig economy and new forms of work – the development of freelance and gig economy platforms (Upwork, TaskRabbit, YouDo) creates new employment models characterized by flexible labor relations and changing patterns of labor mobility. Platformization of urban services – the integration of digital platforms into the provision of urban services (transport, medicine, education, public services) transforms the interaction of citizens with urban infrastructure and institutions.

Digital platforms and services are transforming the spatial organization of cities and the relationship between the city and the suburbs. Decentralization and recentralization are taking place – simultaneous processes of distribution of economic activity (remote work, distributed production) and concentration of managerial and innovative functions in central business districts. The

possibilities of remote work are changing the requirements for housing and the location of residence, which affects real estate markets and settlement patterns. Public spaces are being transformed – the integration of digital services into public spaces changes the nature of their use and social functions [6; 7]. In the context of digital transformation, a new economic geography is emerging – a change in the spatial distribution of economic activity as a result of a decrease in the influence of traditional location factors (proximity to raw materials, transport hubs) and an increase in the role of digital infrastructure and human capital.

The digitalization of the economy is transforming the labor market, business models, and value chains, which can lead to the marginalization of rural areas and their residents who are not integrated into the digital economy. The loss of competitiveness of traditional rural industries, job losses as a result of automation and digitalization, limited access to new opportunities in the digital economy, and increased economic dependence on urban centers are among the potential consequences of the digitalization of the economy. The digitalization of social relations, public services, and public life creates risks of social isolation for rural residents who do not have full access to the digital environment. As a result, access to digital state and municipal services is limited, difficulties in obtaining education are becoming more acute, which increasingly integrates digital formats into learning processes, and barriers to access to telemedicine and other digital healthcare services are becoming more noticeable. Limited access to information resources and new forms of media can lead to information isolation of rural residents and limit their ability to make informed decisions. Unequal access to up-to-date information about the labor market, educational opportunities, government programs, as well as limited access to cultural and educational resources and difficulties in mastering new knowledge and technologies in the professional sphere exacerbate inequality within the country.

Digital urbanization is a multidimensional process of socio-spatial transformation characterized by the integration of digital technologies and information systems into urban infrastructure, management, and everyday practices of residents, leading to the formation of new forms of social interaction, economic relations, and spatial organization under the dominance of digital services and platforms. Unlike classical urbanization, which is based mainly on industrialization and mechanical movement of the population from rural areas to cities, digital urbanization includes: (1) digitalization of urban systems (the introduction of “smart” solutions into urban infrastructure, transport management systems, energy, security, and other aspects of the urban economy); (2) platformization of the urban economy (the development of urban economic relations based on digital platforms and services); (3) virtualization of social interactions (the transfer of a significant part of communications and public activity to the digital environment); (4) hybridization of urban space

(creation of mixed physical-digital environments where physical objects are complemented by digital layers of information and functionality); (5) algorithmic governance (use of data, algorithms and artificial intelligence to make decisions regarding the development and functioning of urban systems).

One of the directions of digitization of the territory is the formation of a network of "smart" cities, namely, a complex innovative digital, social-technical, informational and communication system of the urban territory. A "smart" city is an innovative city that implements a complex of technical solutions and organizational measures aimed at achieving the highest possible quality of resource management and service provision at the present time, in order to create stable favorable conditions for living and staying, business activity of current and future generations. The smart city presupposes the development of a "digital twin" of the city. Digital Twins is a virtual model of any physical object or process that accurately reflects the shape, properties and behavior of the original in certain environmental conditions. The digital counterpart of the urban ecosystem must integrate the capabilities of most modern digital technologies: Big Data, artificial intelligence, new production technologies, sensors and robotics components, wireless communication technologies, neurotechnology, virtual and augmented reality technologies. Digital Twin City is a digital model of a real city, on the basis of which it is possible to analyze the life cycles of various urban infrastructure objects, its reaction to all kinds of changes and external influences. A digital twin of a city can solve the following issues: increasing the city population; providing residents with various benefits at an acceptable cost (rent, water, garbage removal, transport, energy); demolition or reconstruction of problem areas and infrastructure (issues related to the modernization of the territory; issues related to environmental pollution, climate change, consumption of natural resources, etc.); obtaining greater returns with a limited budget. The digital investment potential of the city is a set of information and communication technologies that contribute to improving the quality of investment decisions and increasing investment opportunities.

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