Research article / Научная статья

Socio-political aspects of the implementation of smart urbanism projects

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Abstract. The development and implementation of digital monitoring and management projects in leading urban centers is a current trend in urban development processes and the provision of modern municipal services. Digitalization of urban management processes based on information and communication technologies and artificial intelligence is designed to address issues of digital economy development, improving the comfort of citizens, energy efficiency, and environmental friendliness. However, the implementation of smart urbanism projects also carries significant socio-political aspects associated with a significant transformation of the system and forms of urban policy, issues of forming the public-private nature of urban management, processes related to local identity, as well as in the field of international political activities of cities. The relevance of the study is also due to the intensification of the processes of implementing smart urbanism projects in leading urban centers. Digital urban infrastructure has become almost mandatory for the successful development of global cities. Large cities and capitals of states also implement these projects to one degree or another. Thus, the objective of this research is to study the main socio-political aspects and factors inherent in the concept of a smart city in order to successfully and harmoniously implement these projects.

Keywords: digitalization, urban policy, public-private partnership, urban environment development, smart city

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Общественно-политические аспекты реализации проектов умного урбанизма

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Аннотация. Разработка и внедрение проектов цифрового мониторинга и управления в ведущих городских центрах — актуальный тренд процессов городского развития, предоставления современных муниципальных услуг. Цифровизация процессов городского управления на основе информационно-коммуникационных и технологий искусственного интеллекта призвана решать вопросы развития цифровой экономики, повышения комфорта граждан, энергоэффективности, экологичности, однако, реализация проектов умного урбанизма несет в себе и значительные общественно-политические аспекты, связанные с существенной трансформацией системы и форм городской политики; вопросами формирования государственно-частного характера городского управления; процессами, связанными с локальной идентичностью; сферой международно-политической деятельности городов. Актуальность исследования также обусловливается активизацией процессов внедрения проектов умного урбанизма в ведущих городских центрах, цифровая городская инфраструктура стала практически обязательной для успешного развития глобальных городов, крупные мегаполисы, столицы государств в той или иной мере также реализуют данные проекты. Таким образом, задачей является исследование основных общественно-политических аспектов и факторов, присущих концепции умного города, в целях успешной гармоничной реализации современных урбанистических проектов.

Ключевые слова: цифровизация, городская политика, государственно-частное партнерство, развитие городской среды, умный город

Introduction

Projects implementing smart urbanism approaches were first implemented in Western Europe, with Barcelona and Amsterdam becoming the first cities, followed by Hamburg, Copenhagen, Nice, Dubai and Singapore. In the United States, the cities of San Francisco, Atlanta, New York, Miami, Denver, Boston, Columbus, Chicago and Kansas City have become among the first smart cities in the United States.

The initiators and pioneers of the implementation of this concept were the largest multinational corporations (TNCs). So, in collaboration with the Clinton Foundation, Cisco launched the Connected Urban Development program in 2006 as part of a public-private partnership. Similarly, IBM launched its Smarter Planet project in 2008 to "make sense of the sensory world" using "sophisticated analytics and algorithms" to achieve "measurable benefits for … companies and communities" [1. P. 443].

In 2007, the Center for Regional Science of the Vienna University of Technology formulated the main directions of the "smart city" concept, such as: "smart" economy, international cooperation, "smart" transport mobility; "smart" eco-friendly environment; "smart" citizens, "smart" lifestyle, "smart" management [2. P. 62].

In the last decade, the concept of "smart city" has become an urgent trend in the development of urbanism and digital technologies — urban governance based on a wide range of data obtained in real time, seamless cities based on artificial intelligence, digital platforms for broad remote citizen participation in urban governance are increasingly being discussed in academic, political circles and in the field of municipal managers. After the United Nations ratified the Sustainable Development Goals in 2015 and the New Urban Agenda in 2016, the adoption of the Smart City agenda became a global trend at the UN, macro-regional and national levels [3. P. 7140].

The paradigm of smart urbanism has been perceived by many researchers, experts and politicians as a panacea for the development of the urban environment, as a "utopian antidote to the dystopian urban form", smart urbanism is described as a "technotopia" [4], as a "fashionable label" [5. P. 2], "an attractive and normative vision of the future" [4], "a silver bullet for solving urban problems and realizing its economic opportunities" [6. P. 501].

The researchers note that the prospects for "smart" urbanism are great, as rationalization, digitalization and energy efficiency can potentially make the processes of economic growth and management of public services and resources much more efficient, productive and sustainable. However, such opportunities have not been fully realized in practice now and are therefore interpreted by several researchers as a marketing ploy and visualization of a possible image of the future rather than as a fully developed and prepared concept for practical implementation [7].

At the same time, it should be noted that the approaches of "smart urbanism" conceptually contain paradoxes, due to the internal contradiction between the concepts of "smart" and "urbanism", abstract and real, technology and society, between global capital and local citizens, between targeted top-down development and proactive participation from below [8. P. 691], thus, when implementing these

projects, it is not possible to develop simple universal algorithms to achieve effective multidimensional results, but individual verified solutions are needed, considering the specifics of the micropolitics and the structure of the urban community of each urban center being transformed into a smart city.

As noted by a number of researchers, despite the fact that the concept of "Smart City" has been included in scientific discourse since the 1980s, it should be noted the incompleteness of its formation, the lack of clarity of terms and the completeness of the study of all aspects, phenomena and dimensions [9. P. 105].

Critical researchers criticize the concept of a "smart city" for being an "empty urban imaginary in search of meaning" [6. P. 504], emphasizing that most of the discourse is based on abstraction. In addition, the technological foundations of smart urbanism have made this discourse technocratic, based on the assumption that "complex social situations can be broken down into clearly defined problems that can be solved or optimized using computing" [8. P. 681].

At the same time, it should be noted that along with infrastructural, information, economic, environmental, socio-humanitarian directions, the smart city concept, which are designed to increase energy efficiency, convenience and environmental friendliness of urban infrastructure based on digitalization and the use of information and communication technologies, make the processes of economic growth and management of public services and resources more efficient. This concept significantly transforms approaches to the formation and implementation of urban policy in terms of the introduction of new mechanisms and forms of citizen participation in urban governance, the provision of municipal services, the transformation of the nature of political decision-making and resource allocation.

Due to their diversity, multidimensional nature, and non-linearity, research on the implementation of the smart city concept is interdisciplinary and is conducted at the intersection of the scientific disciplines of urbanism, political science, public and municipal administration, and international relations.

Thus, an urgent research task for the implementation of the smart city concept is to study the socio-political aspects of this concept related to the formation of new forms of urban governance, the depoliticization and introduction of artificial intelligence into state and municipal government, the formation of public-private character of urban governance, and the degradation of local identity.

At the same time, the influence of the smart city concept on the international political activities of megacities in a transnational urban network is of research interest.

Thus, the research question of this study can be formulated as follows: what are the main socio-political aspects of the implementation of the "smart city" concept? How does the status of a "smart city" affect the position in the hierarchy and the activities of megacities in a transnational urban network?

Transformation of the urban management system

The implementation of the "smart city" concept determines the formation of new forms and approaches to the implementation of urban policy, types of citizen participation and increased inclusivity in city management, the introduction of artificial intelligence in the management of social systems, as well as in public administration.

It is important to note that the prospects for smart urbanism go beyond creating transparency and improving the efficiency of urban processes, but also include more collaborative forms of governance with citizens. The technocratic foundations of smart urbanism provide an opportunity to suppress the role of the political factor in municipal governance and the provision of public services, ensuring equal access of citizens to them. The allocation of resources in such a structure is supposed to be optimized on the basis of objective data and logical algorithms, including the use of artificial intelligence technologies, and not on the basis of decisions of politicians, which in theoretical and hypothetical concepts will lead to the creation of the so-called "post-political world of justice and equality" [10. P. 487].

Just as the existing technological infrastructure needs to be updated when implementing the smart city concept, citizens of all walks of life must be prepared for the transformation of their lifestyle and socialized — both ideologically and technically — to provide new ways of governance. At the same time, as much as citizens need to adapt, governments need to transform their work models so that they are effective and suitable for cities, citizens, and technology partners [8. P. 687].

The digital space leads to the creation of new power structures and political relations that are radically different from their traditional predecessors. The growing number and influence of hacker groups in the world and the hiring of professional programmers in corporations and government agencies reflect the fact that the digital sphere has led to such a restructuring. The cultures of special programming and hacking have rethought the possibility of managing the city, creating opportunities for subversive activities — leaking important information, influencing city politicians, or blocking the activities of the smart urban infrastructure. Thus, power is increasingly intertwined with the product of the

activities of digital professionals, thus, the digital space "destabilizes traditional power structures and creates opportunities for power to become a much more equitable, verified result of urban interaction, thereby decolonizing the urban space relative to the elites" [8. P. 699].

Indeed, it has been suggested that in the modern environment, "power no longer belongs to the traditional institutions of representative democracy and a market economy, instead power has become a matter of logistics, infrastructure, and expertise. The destabilization of traditional power structures by media organizations such as WikiLeaks and hacker groups such as Anonymous shows how power is increasingly being transferred to those who could access, use and distribute data for their own purposes" [11. P. 539].

At the same time, it should be noted that such opportunities for political participation of citizens are provided by smart urbanism projects, such as electronic voting, as in elections, the creation of various platforms to identify necessary landscaping facilities, select priorities for urban development, form feedback forms on urban issues or initiatives of city authorities, and form city budget directions. This shows a gradual shift from a bureaucratic model of exercising power to a decentralized model that includes management based on social interaction networks based on specialized platforms. Management through platforms not only promotes anti-hierarchization, but also allows using the potential of citizens in the development of the city, building relationships of trust and cooperation between the government and civil society. Citizens, organizing their actions based on platforms, are able to solve specific urban problems, while simultaneously acting as a kind of sensors for government agencies, for example, through the production of content [9. P. 109].

Thus, the transformation of the urban management system as a result of the introduction of the smart city concept is characterized by the following main aspects: the provision of public services, the allocation of key resources is based on digital approaches based on information and communication technologies and artificial intelligence technologies, thereby depoliticizing these processes, and the "decolonization" of urban space from the influence of elites. The processes of ideological and technological socialization of citizens into a new digital "smart" lifestyle are being formed, which make it possible through various platforms to increase the level of participation in urban governance processes, primarily in a remote format. However, at the same time, there is an increase in the influence of hacker groups and, consequently, the need to introduce teams of professional programmers, who are becoming an important link in the city government system.

Along with the emergence of new forms of urban governance, increasing citizens' opportunities to participate in city governance, a sensitive issue arises about the specifics of the implementation of the "smart city" concept in authoritarian regimes, related to issues of confidentiality, the use of collected data to strengthen control and coercion, identify dissenters, and suppress protest sentiments [12].

Formation of the public-private nature of urban governance

As forms of smart urbanism become more entrenched, the roles and functions of the public and private sectors will increasingly overlap. Considering this, the coordination of goals and interests between stakeholders of smart urbanism projects is important and at the same time forms a number of sensitive areas related to politics and privacy — from the point of view of who has access to private data and their use, the security of this data and the organization of the monitoring and information collection process [13].

In this regard, the structures of digital companies are notable not only for their important role in making decisions about the future of digital markets, but also for the fact that they form a public-private partnership in the system of implementing smart urbanism projects in urban governance. In this sense, not only sociotechnical representations of nation-states form the conceptualization, implementation and management of a smart city, but also the worldviews and visions of digital platform leaders such as Elon Musk, Mark Zuckerberg and Jeff Bezos [1. P. 447].

In addition, digital technologies are turning many urban environments into digital markets, because of which aspects of daily management are becoming more and more privatized, the so-called "corporatization" is forming — a phenomenon that potentially risks jeopardizing the orientation of smart urbanism projects towards city authorities. This highlights the importance of the data being collected, both as the lifeblood of smart urbanism and as the ability to manipulate it. The researchers note that smart urbanism involves a transition "from vertical, government-controlled digital infrastructure to environments that include a combination of many public, private, and quasi-private organizations that manage urban infrastructure systems" [13. P. 20–21].

At the same time, the implicit mismatch between the scale of operations (local and global), the stakeholders involved (citizens and shareholders), and the comprehensive powers (governance or profit) of the public and private sectors forced, for example, the Stockholm City Council to develop its own infrastructure networks independent of private sector participation [8. P. 686].

At the moment, private players collect big data about the urban population and infrastructure much more widely and their intellectual analysis tools are superior to the capabilities of any municipality. Therefore, it is especially important to integrate the interests of large private aggregators of big data and local governments. However, such integration can lead to discontent among the broad strata of society (a vivid example of this is the rumors about the cooperation of the Yandex.Maps service and the GKU Moscow "Traffic Management Center of the Moscow Government", which caused a wide response among drivers of the capital) [14. P. 5].

Several researchers note that a significant concern is that a smart city, as a set of tools integrating a large amount of heterogeneous data, may become a system of rigid vertical, algorithmic control in the hands of local governments, as well as commercial organizations with business interests in a particular city [15]. Accordingly, when developing and implementing smart urbanism projects, customers, represented by the city authorities, should take these threats into account. It is possible to consider the formation of combined public-municipal-private companies, where the interests of city authorities and business will be balanced, and information processes will be under the necessary control.

Degradation of local urban identity

The technocratic approaches of the smart city concept are implemented based on approaches and tools developed with the participation of multinational companies and based on the interests of these campaigns in obtaining a developed digital infrastructure, digitally advanced smart citizens, placing residents near production sites, focusing the focus of residents and their vital resources on the activities of digital companies. In this regard, the issues of taking into account urban specifics, historical aspects, the specifics of urban culture and the development of local micropolitics, that is, the issues of preserving and developing local identity have not been thoroughly studied and are not a priority in the implementation of smart urbanism projects.

The researchers note that the universalist approach of the smart city concept ignores the specifics of each urban environment in which these projects are implemented, therefore, the thesis that a smart city is "a universal, rational and depoliticized project that is largely implemented in accordance with the conditions of profit-maximizing multinational technology companies" is criticized [16. P. 14].

There is a lack of emphasis in smart cities on cultural and historical traditions, opportunities for meaningful cultural communication in high-culture centers such as theaters, concert halls, exhibitions and museums (they will never be completely replaced by the so-called digital culture), and the nearest cultural center is quite far away — as a result, cultural, political and social are ignored. the specifics of each individual city [17].

It should be noted that real smart city projects are located within existing social, public and spatial urban structures, and, consequently, urban policy and approaches to the implementation of smart urban projects should take into account comparative studies analyzing the development of various smart cities in different regions. Researchers state that currently insufficient attention is being paid to the specifics of political systems, the preservation and development of local identities of cities in which smart cities are embedded [18. P. 131].

Thus, cities that are a space for the preservation and formation of local identities, when implementing the smart city concept, are subjected to powerful transformational influences based on universalist approaches of digital technologies, without taking into account the specifics of local micropolitics, historical aspects and local traditions, which on the one hand can lead to the degradation of this role of cities, and on the other — to cause negative trends in the acceptance of smart urbanism projects by the urban community.

International political aspects of smart urbanism projects

Digital management approaches based on information and communication technologies and artificial intelligence technologies in the modern world are a factor of competitiveness in the economic, scientific, industrial, and military spheres, respectively, the influence of these technologies has an impact on international relations and world politics in general. Of course, for global and global cities that are leaders in one area (s) of international activity, this is also relevant and even vital for maintaining or enhancing their status in the transnational urban network.

Thus, smart technologies are discursively positioned as having the potential to develop the areas of international activity of megacities: improving logistics efficiency, increasing productivity and competitiveness of export sectors of the economy, forming a digital urban infrastructure necessary for the successful operation of multinational companies, and, as the researchers note, there is a formation of a smart urban community with digital skills and involved in the processes of smart management and smart economy, There are also processes of forming more transparent and apolitical

forms of urban governance, which in turn form a stable political and legal environment [8. P. 683].

The "smartness" of a city can be indexed by its ability to efficiently rationalize city planning and management, or, in other words, to implement automated feedback loops that simultaneously respond to the current situation and learn from various cases. Therefore, smart technologies are used to create an efficient, technologically advanced, green and socially inclusive city that demonstrates smartness in all major aspects of urban space: economics, transport networks, management, and the environment, which makes it possible to effectively participate and compete in international activities and attract TNC offices and headquarters [19. P. 883].

In this regard, it is characteristic that all the world's and leading global cities are leaders in the implementation of smart urbanism systems, so the Center for Globalization and Strategy at the IESE Business School studied 174 cities around the world and analyzed them according to nine indicators characterizing a smart city: human capital development, social cohesion, digital economy, and an environmentally friendly environment. environment, smart management and urban planning, international level, information and communication technologies and smart mobility. According to the IESE Cities in Motion Index, the top ten smartest cities in the world include: New York, London, Paris, Tokyo, Singapore, Seoul, Toronto, Hong Kong, Amsterdam.

It is characteristic that Singapore has acquired the status of a world city precisely due to the development of digital spheres of international activity, such as the production and export of electronics, financial services, and active international trade in digital technologies and services [20]. At the same time, Singapore became the first megacity where the implementation of smart urbanism projects is implemented at the state level. The launch of the Smart Nation Initiative in November 2014 marked a new era of urban transformation worldwide. In 2016, Juniper Research named Singapore the "Global Smart City of 2016" in recognition of achievements made in improving mobility, digital penetration, public sector services, and open transformation for smart cities[1].

At the same time, the strategies for implementing the smart city concept of the world's leading global cities contain provisions on the development of the sphere of international activity. According to Singapore's strategy, one of the priorities is the development of the international transport system, the development

[1] Singapore Named "Global Smart City — 2016". URL: https://www.juniperresearch.com/press/singapore-named-global-smart-city 2016/#:~:text=It%20was%20found%20that%20Singapore,the%20top%20spot%20for%202016 (accessed: 20.08.2024).

of Singapore as a global financial center, the use of open data, Singapore's openness to international cooperation, exchange of experience and ideas[2]. The direction of the concept's implementation in London speaks to its desire to become a global center for innovation development, provide free access to open data, develop communication links between stakeholders, and foster openness to international cooperation[3]. According to the "smart St. Petersburg" concept approved by the Government of St. Petersburg in 2018, it provides for the formation of an internationally competitive economic space through the widespread and reasonable use of advanced intelligent information technologies[4], Dubai focuses on global strategies and the country's efforts to become a global hub in several areas of international activity based on smart technologies[5].

Conclusion

The conducted research has shown a significant number of sociopolitical aspects in the implementation of smart urbanism projects related to the transformation of the urban governance system and the "decolonization" of urban space from the influence of elites, the city is subjected to powerful transformational influences based on universalist approaches of digital technologies, without taking into account the processes of formation of local identities, the formation of public-private character of urban governance this opens up the possibility of using the urban environment as digital markets.

Of course, for the effective and harmonious implementation of smart urbanism projects, these aspects must be considered, both theoretically, when developing projects, and in the process of direct implementation. Regarding the "smartness" of the city as a factor in the international political activity of the metropolis, it should be noted that the implementation of smart urbanism projects, the acquisition of the status of a smart city, on the one hand, is necessary for global and global cities to maintain their status and influence in the transnational urban network, and on the other hand, is a prerequisite for developing cities international activities aimed at creating the necessary

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[5] Smart-city Dubai. URL: https://www.webuildvalue.com/en/megatrends/smart-city-dubai.html (accessed: 20.08.2024).

digital infrastructure, improving the digital skills of urban residents, and shaping the development of digital sectors of the economy, In order to acquire the qualities of a city as an international center of influence and actively act in the international arena, this thesis is confirmed by the fact that all world and leading global cities are world leaders in the implementation of smart urbanism projects.

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