

DOI: 10.37930/2782-6465-2026-5-3-33-44

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NOOPOLIS AS A STRATEGIC RESPONSE TO THE CHALLENGES OF GLOBAL COMPETITION FOR KNOWLEDGE IN THE ERA OF NOONOMY

Abstract: This article examines noopolis as a new form of urban space organization in the context of the emergence of noonomy. It is shown that the accumulation of technological solutions within the smart city model does not ensure a transition to a higher quality of urban life, as the development of smart cities is accompanied by a growing digital divide, focusing exclusively on practical, economic functionality at the expense of comfort, ecology, and the social environment, and achieving development goals through technology, engineering solutions, and digital systems. Efficiency becomes the primary criterion for success, and residents are viewed as users who must adapt to the system. The concept of noopolis is explored as a qualitatively different type of urban system, in which knowledge, culture, science, public intelligence, and the reproduction of human potential become the fundamental sources of governance. The article interprets noopolis as the spatial basis of noonomy, an environment in which the very nature of social reproduction is transformed: from the production of things to the production of knowledge, cultural meanings, social connections, and conditions for human development.

Keywords: noopolis, noonomy, noosphere, human capital, urban development, knowledge economy, smart city, public intelligence, sustainable development.

For citation: Shushunova T. N. (2026). Noopolis as a Strategic Response to the Challenges of Global Competition for Knowledge in the Era of Noonomy. *Noonomy and Noosociety. Almanac of Scientific Works of the S. Y. Witte INID*, Vol. 5, No. 3, pp. 33–44. DOI: 10.37930/2782-6465-2026-5-3-33-44

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智慧型城市是对智慧经济时代全球知识竞争挑战的战略回应

摘要: 本文探讨了在智慧经济形成背景下作为城市空间组织新形式的“智慧型城市”。文中指出, 在智能城市模型框架内积累技术解决方案并不能确保城市生活质量的提升, 因为智能城市的发展伴随着数字不平等的加剧, 只注重实用性和经济功能而牺牲了舒适度、生态与社会环境, 且发展目标的实现完全依赖于技术、工程解决方案和数字系统。效率成为成功的主要标准, 而居民则被视为必须适应系统的用户。本文探讨了“智慧型城市”概念, 将其视为一种本质上截然不同的城市系统, 其中知识、文化、科学、社会智慧以及人类潜能的再生产成为管理的基本要素。本文将“智慧型城市”视为智慧经济的空间基础, 即社会再生产本质发生转变的环境: 从物质生产转向知识生产、文化创作、社会关系构建以及个体发展条件创造。

关键词: 智慧型城市、智慧经济、智慧圈、人力资本、城市发展、知识经济、智能城市、社会智能、可持续发展。

引用注释: 舒舒诺娃 T. N. (2026). 智慧型城市是对智慧经济时代全球知识竞争挑战的战略回应//智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 5, No. 3, pp. 33–44. DOI: 10.37930/2782-6465-2026-5-3-33-44

Introduction

The modern city is undergoing a profound transformation. Until recently, urban modernization was primarily focused on digitalization through the implementation of platform services, intelligent transport systems, sensor networks, data processing algorithms, and monitoring systems. However, the deeper the modern city becomes embedded in its digital shell, the more clearly its developmental contradictions emerge: technological saturation in itself does not yet create meaningful development, social cohesion, or a new quality of human life. We have learned to see the city better, but we do not always understand it better. We have learned to make decisions faster, but we have not necessarily become wiser in choosing our goals. This is precisely where the true scientific problem begins.

Today, the city can no longer be described merely as an administrative unit, a territory with a high concentration of population and capital, or a set of infrastructural systems. The modern metropolis represents an intricate socio-economic system where flows of energy, information, capital, symbols, cultural practices, institutions, and human expectations converge and intertwine. If this is the case, urban development can no longer be evaluated solely by classical growth parameters. A city cannot be considered successful simply because it transports faster, collects more efficiently, gathers more effectively, or provides services more conveniently. While these indicators are necessary, they fail to answer the fundamental question: what exactly does human life become in such an environment? Does it become richer, freer, more cultured, or more meaningful? Does such a city expand the space for human development, or does it do an opposite thing – merely turn the individual into a more adapted element within a perfectly tuned system?

This is precisely why a shift from a technocratic model to an anthropocentric one is gaining momentum in contemporary urban management theory and practice [Shushunova, 2024, p. 271]. Increased attention is being paid to human capital, the quality of the social environment, sustainability, participatory institutions, urban knowledge, cultural saturation, and – most importantly – to the very goal-setting of management itself. The idea is gradually coming to the fore that technology should not be a source of pride in itself, but rather a higher-order tool – a tool for harmonizing the development of society, the economy, and nature. This implies that the city of the future should no longer be viewed merely as a smart city, but as a more complex form: the noopolis.

The concept of the noopolis allows us to transcend the dichotomy between the “digital” and “non-digital” city. A noopolis does not represent a rejection of technology; rather, it represents the subordination of technology to the goal of creating an urban environment in which knowledge, science, culture, and technology serve not themselves, but the comprehensive development of the individual, collective intelligence, and the harmonious reproduction of nature and society. It is not simply a “city of knowledge,” a “sustainable city,” or a platform for the creative economy.

It is a city where science, education, culture, collective thinking, open knowledge, and the environmental responsibility of residents become the internal logic of the entire system. In other words, a noopolis is a city where development is subordinated not to the acceleration of urban economic processes as such, but to the development of the human being and collective intelligence [Castells, 2010, p. 99–101].

This understanding of the city is based, on one hand, on the Russian intellectual tradition associated with V.I. Vernadsky's teachings on the noosphere, and on the other, on modern economic thought, primarily the theory of noonomy by S.D. Bodrunov. V.I. Vernadsky demonstrated that humanity is entering a phase of development where scientific thought and intelligent activity become a geological force of planet scale [Vernadsky, 1991, p. 148]. In other words, humanity has reached a stage of development where the collective scientific thought and activity of people have become a factor capable of transforming the biosphere on a global, planet scale. He termed this stage the noosphere – the “sphere of reason.”

S. D. Bodrunov, expanding this idea from a political-economic perspective, substantiates society's movement toward noonomy: a stage in which knowledge, culture, creativity, and human development begin to displace the narrow logic of things production and market utilitarianism [Bodrunov, 2019, p. 9].

Noonomy, as a new stage of social development, marks a historical shift where knowledge, creativity, education, culture, and comprehensive human development start to supplant a strictly market-driven and utilitarian logic of economic management. In this context, the noopolis acts as the spatial expression of the noonomy – as its territorial and institutional form. Within the noopolis, it becomes possible to transform the city from a space of capital accumulation into a space for cultivating collective intelligence. This represents an urban organization in which the production of knowledge, collective intelligence, human capabilities, and cultural codes becomes more important than the mere accumulation of services and physical infrastructure. Consequently, the question of the noopolis is not only an urbanistic issue but also a political-economic one. This reflects an understanding of a new type of social reproduction and the urban environment that corresponds to it.

Therefore, the study of the noopolis has not merely theoretical, but also practical meaning. This is not about constructing a utopia, but rather about identifying existing trends that provide a new perspective on the development trajectory of modern metropolises. Currently, several world cities exhibit elements of urban environmental planning that cannot be reduced to the standard logic of a Smart City and increasingly indicate the emergence of a different development model. Analyzing these elements allows for a better understanding not only of the city's future but also the future of the economy itself.

This defines the objective of the present article: to demonstrate that the noopolis should be understood as the spatial form of the noonomy, and to identify, through specific urban examples, those elements that already suggest movement in this direction.

Research Methods

Methodologically, this work proceeds from the premise that a city cannot be analyzed as a mere sum of sectors, functions, and services. Such a perspective proves insufficient for capturing contemporary urban dynamics. Instead, the city must be viewed as a holistic reproductive system, within which economic, cultural, ecological, technological, and political processes are far more

closely intertwined than conventional sectoral analyses suggest. For this purpose, a systems approach is combined with political-economic, and comparative-institutional approaches in this article.

Systems approach allows for viewing the city not as a set of autonomous subsystems, but as an organism where changes in one element inevitably affect others. This is particularly crucial for analysis of the noopolis: transport, digital infrastructure, education, governance, and ecology cannot be considered in isolation, as it is the specific manner of their integration that forms a qualitatively new type of urban integrity.

Political-economic approach is necessary to avoid diluting the problem within fashionable “digital transformation” rhetoric. The question of the city is always a question of the mode of social reproduction. When technologies change, it is not just tools that evolve, but also the relationships between people, between labor and knowledge, between society and nature, and between government and residents. Therefore, the noopolis interests us not as an improved administrative model, but as a space where the dominant logic of development itself is transformed.

Comparative-institutional approach is utilized to analyze the practices of various metropolises. The cities selected for this study are significant not because they rank as “the best” in any universal rating, but because each demonstrates distinct yet illustrative forms of departing from a strictly technocratic model. In one instance, this manifests as cooperation between science, administration, and citizens; in another, as the combination of digital governance with mediation and participation institutions; and in a third, as the construction of open urban digital infrastructure as a public good. It is within these differences that the empirical meaning of the noopolis concept is revealed.

The conceptual and theoretical analysis of works by V.I. Vernadsky, S.D. Bodrunov, D. Bell, M. Castells, T. Schultz, G. Becker, and others has allowed this research to be integrated into the logic of evolving social thought – progressing from notions of post-industrial and information societies to an interpretation of modernity in terms of noosphere and noonomy.

The empirical basis of this article includes materials from official urban platforms, documentation on citizen participation in metropolitan management, and the websites of urban innovation clusters and open data services. The use of these sources is critical not only for reasons of verifiability; it allows for an analysis that moves beyond the external image of cities to examine institutionalized mechanisms – the real, rather than merely declared, elements of the transition to a new model.

Theoretical Foundations of the Noopolis Concept

The Noopolis is not merely a variety of the smart city; it is a distinct historical form of urban organization. This necessitates a shift in research approaches to study of the city. While most literature on cities of the future focuses on digital efficiency, environmental sustainability, or innovation capacity, this article shifts the focus to what can be termed the transformation of the city’s social function. The Noopolis is understood as an environment in which knowledge, culture, science, and human development are not external factors of the economy but its internal drivers of development.

The novelty lies in the emphasis that, within a noopolis, the object of management includes not only the flows of transport, energy, water, and data, but also the conditions for the reproduction of collective intelligence. In other words, it is not simply about managing the “urban

machine,” but about organizing the urban critical thinking. This perspective reveals that the contemporary crisis in urbanism is linked not only to ecology or infrastructure but to the fact that cities are often poor in social and cultural content, even while being rich in technological solutions.

It is impossible to understand the noopolis if the city is viewed merely as a technical device. The city has never been a mere aggregation of buildings, roads, pipes, and regulations. Even an industrial city—which might seem closest to a mechanical metaphor—was, in reality, a far more complex form. It organized not only production but also a way of life, a hierarchy of time, the rhythm of labor, cultural discipline, modes of socialization, and even a specific personality type. This is even more applicable to the modern city. The more complex society becomes, the more evident it is that the city is not merely a background for economic processes, but the form of their historical existence.

This is precisely why the concept of noopolis demands a civilizational approach rather than a technical one. Its original sources are to be found in V.I. Vernadsky’s theory of the noosphere. The noosphere is the stage of biosphere development in which the intelligent activity of humanity becomes the determining factor of its transformation [Vernadsky, 2013, p. 17]. However, a crucial point must be made: this is not merely about the accumulation of knowledge. The reason begins to change the world not as a sum of private efforts, but as an organized, historically significant force. Science, communications, technology, new energy sources, and global connections – all of these restructure the very fabric of human existence and raise the question of reason’s new responsibility toward the world.

Translating this thesis into the urban dimension reveals that modern cities are, in essence, the nodes of noosphere concentration. There are vast volumes of knowledge, technology, organizational forms, cultural codes, and social interactions compressed into a single space within these nodes. Yet, at the same time, it is within the city that the contradictions of this new era are most acute: environmental overload, social inequality, digital segregation, managerial opacity, the collapse of shared meanings, loneliness, and a deficit of time and attention. In other words, the city becomes a spatial node where reason is simultaneously empowered and at risk of self-destruction. Therefore, a city in the noosphere is not merely a city with a high concentration of scientific and educational institutions. It is a city where reason becomes the organizing principle of the system. It is not a trendy addition or a superstructure atop the administrative machine, but the foundational principle itself. And this is where the concept of the noopolis emerges. A noopolis is a stage of urban development in which management is built neither on the automatic reproduction of established interests nor on the blind optimization of flows, but on the scientifically and socially meaningful coordination. It is oriented toward the long-term consequences of decisions, the quality of life of its residents, the cultural and ecological reproduction of the environment, and the formation of a collective capacity within urban communities to think and act strategically rather than situationally.

However, the theory of the noosphere alone is insufficient. While it defines the scale, it lacks full political-economic certainty. This is where S. D. Bodrunov’s theory of noonomy comes into play. In this concept of economic development, modern society is passing a historical milestone: productive forces, based primarily on knowledge and new technologies, are increasingly undermining the old logic of the economy as a system focused on commodities, value, resource scarcity, and the subordination of human development to external economic expediency. This creates both the possibility and the necessity for an alternative mode of social development, where knowledge,

creativity, culture, and human development take on priority significance [Bodrunov, 2024, p. 17]. In this sense, noonomy is not merely a theory of the “knowledge economy.” It is a much deeper thesis: knowledge ceases to be just a factor for increasing productivity within the old economic system; it becomes the foundation for a new quality of social existence. Instead, it becomes the foundation for a new quality of social existence. The very function of the economy changes: it must work not for the endless expansion of the commodity form, but for the development of human capabilities and the creation of conditions for the full disclosure of the individual’s personality [Bodrunov, 2022, p. 37]. This leads to a simple but crucial thought: if the nature of reproduction changes, its spatial form must also change. This form is the noopolis.

In other words, the noopolis is a city that corresponds to the noonomy. It does not merely serve it from the outside; it expresses its internal logic. If the industrial city was built around the factory, the warehouse, the railway, and quarters for disciplined workforce; if the post-industrial city was built around the office, the service sector, the university, the financial center, and platform infrastructure; then the noopolis is built around the reproduction of collective intelligence. Its center consists not just of “objects of knowledge,” but the very environment where knowledge is generated, exchanged, criticized, practically applied, and socially distributed.

It is crucial here not to fall into the illusion that this refers only to universities, technology parks, and startups. That would be too narrow. A noopolis is not a technopolis or a campus-city. Science and education cease to be a “sector” there. They become the organizing principle for the entire environment. The library, the research lab, the cultural center, the public space, the civic platform, the open database, the medical network, the system of lifelong learning, and the ecosystem of urban experiments – all of these form a single cognitive infrastructure. The metropolis begins to thrive by developing not only its transport infrastructure, energy efficiency, and budget optimization, but also by exchanging meanings, competencies, project ideas, and interdisciplinary connections.

In this regard, the concept of the noopolis builds upon classical works regarding post-industrial and information society. As early as the 1970s, Daniel Bell pointed out that knowledge and theoretical information were becoming the central resources of a new social structure [Bell, 2004, p. 145]. Later, M. Castells demonstrated that in the network society, information flows and networked forms of organization begin to determine economic and social dynamics [Castells, 2000, p. 82]. However, it is here that noonomy takes the next step. It does not limit itself to merely recording the increasing role of knowledge. Instead, it raises the question of how the very goal of social development changes when knowledge, creativity, and culture become its primary content.

This leads to a new understanding of human capital. In the works of T. Schultz and G. Becker, human capital was viewed as a stock of knowledge, skills, education, and health that increases future income and productivity. This was a fundamental step in economic thought, as it moved the individual beyond the role of a mere labor bearer. However, despite its progressive nature, this concept remained within an instrumental framework: human education and development were justified primarily through future economic returns. For the noonomy and the concept of the noopolis, this is no longer sufficient. Human capital must be understood more broadly – as a form of human development itself and as a social goal, rather than just an economic resource [Schultz, 1971, p. 78; Becker, 1962, p. 12].

A fundamental shift is taking place. In the noopolis, the city no longer invests in the individual solely to boost territorial competitiveness or the tax base. It invests in the individual because

human development becomes the core purpose of social reproduction. Education in such a system is not a supplier of diplomas or a factory of competencies tailored to current market demand. It is a continuous process of forming the capacity for critical thinking, cooperation, creativity, and responsible participation. Culture is not a leisure sector, but a mechanism for the production of meanings and social connectivity. Healthcare is not just treatment, but a vital condition for full human development. Open data does not just provide data for apps, but creates an environment of transparency, participation, and collective understanding of the urban reality.

This leads to a new logic for evaluating the city. If we continue to measure a city's success solely through GRP, investments, real estate values, transport speeds, or the number of startups, we inevitably remain within the old rationality. The noopolis requires different indicators, even if they are currently less familiar. How effectively does the city expand access to lifelong learning? How well does it bridge the gap between science and everyday life? How well does its environment facilitate interdisciplinary contact? Does it successfully include the elderly and residents with disabilities in its digital and cultural ecosystem? Does it work to lower cognitive barriers? Does it create spaces not just for consumption, but for critical thinking? These are the authentic questions of the new urban development.

The noopolis, therefore, transforms not only the object of management but also the very type of rationality underlying urban policy. The traditional city was managed through the control of material, resource, financial, and information flows. Management was reduced to their distribution, accounting, regulation, and standardization. The smart city added algorithms, digital dashboards, and real-time analytics to this mix. The noopolis goes further. Its primary object of management is not the flow itself, but the society's capacity to rationally organize its own development. This means that governance must work with trust, attention, participatory institutions, the cognitive accessibility of the environment, the cultural complexity of space, and the dialog between science and citizens.

This introduces another vital aspect: attention as a resource. In the industrial city, the primary deficits were labor time and energy sources. In the post-industrial city, it was access to information and mobility. In modern society, attention has become the scarce resource. A city may be superbly digitalized, but if it overwhelms the individual with noise, signals, interfaces, intrusive advertising, endless transactions, and fragmented solutions, it exhausts the capacity for conscious action. A noopolis must not only disseminate knowledge but also preserve the conditions for focus, comprehension, and collective thinking. In this sense, it must be more than just high-tech; it must be cognitively ecological.

Finally, we must remember that a noopolis is a "living" city. In V.I. Vernadsky's framework, the noosphere cannot exist without the biosphere. Consequently, a noopolis cannot be a machine that merely consumes resources and exports waste. Its maturity is defined by its ability to reduce the entropy of its own system: developing circular processes, transitioning to cleaner energy, reducing redundant material flows, and designing an environment that supports health rather than destroying it. But again, this is not just a matter of developing technical systems and technology. In a noopolis, ecological rationality is a function of culture, knowledge, and collective responsibility. Environmental policy, therefore, is not a separate area of policy but a characteristic of the entire system.

The noopolis can thus be defined as a stage of urban development where science, knowledge, culture, human development, environmental responsibility, and participatory institutions merge

into a single logic of management and reproduction. It is a city where technology does not disappear but takes its proper place – as a tool. It is a city where the economy is not abolished but ceases to be an end in itself. It is a city where reason is not an external reflection upon urban chaos, but the internal principle of its organization.

The Noopolis and Overcoming the Limitations of the Smart City

To be fair, it must be acknowledged that the Smart City concept has played a historically positive role. It broke the inertia of old bureaucratic approaches to municipal management and forced a fresh look on data, feedback loops, and the integration of urban systems. It allowed us to view the city as a dynamic entity rather than just a set of static reports. Thanks to this concept, it became possible to work far more precisely with transport, utility networks, urban safety, load balancing, and numerous other sectors [Song, 2023, p. 170].

However, the smart city has an internal limit to its development, and that limit is reached where efficiency replaces development. The smart city is very good at answering the question: “How can we make it faster, more accurate, cheaper, or more convenient?” But it is much weaker at answering the question: “Why?” One can perfectly optimize traffic flows without reducing the alienation between neighborhoods. One can collect colossal volumes of data without creating public transparency in the city’s management system. One can provide a resident with dozens of digital services while failing to let them participate in strategic decision-making. One can reduce waiting times and increase transaction density without moving any closer to a more mature, cultural, and sustainable urban life [Chang, 2018, p. 17].

That is why the noopolis should not be understood as “Smart City 2.0.” It is not simply the next version of the same product; it is an entirely different logic. In the smart city, technology often sets the framework within which comfort, sustainability, and participation are subsequently discussed. In the noopolis, it is the other way around: first, a social goal is defined – oriented toward human development, collective intelligence, and cultural and ecological integrity – and only then does technology find its place within that system.

From this perspective, the difference between a smart city and a noopolis is the same as the difference between calculative efficiency and reason. Calculative efficiency can be extremely high without leading to genuine development. Reason, however, implies the ability to see the whole, to account for long-term consequences, and to maintain a moral and cultural horizon without dissolving into immediate gain. The noopolis is an attempt to transform the urban system from a calculative mode to a mode of reason.

The Emergence of Noopolises

Analysis of the development of global metropolises reveals that elements of the noopolis already exist. While they do not yet form a finished model, they are forming a recognizable concept.

Copenhagen, for instance, is significant for analysis primarily because its innovativeness is built not as a showcase of technology, but as a form of cooperation. The Copenhagen Solutions Lab explicitly describes itself as an incubator that develops and implements solutions in partnership with businesses and research institutions in the interests of urban development¹. It operates on the principle of an integrated space for science, administration, and practical experimentation rather than a closed expert machine. Equally illustrative is the Copenhagen Citizens’ Assembly,

¹ Copenhagen Solutions Lab. Official site. 2026. URL: cphsolutionslab.kk.dk (accessed on: 19.04.2026).

where a representative group of residents discusses the city's future and develops recommendations¹. This is an institutionalized form of involving citizens in meaningful strategic discussion rather than a simple public opinion poll. Furthermore, Innovation District Copenhagen demonstrates that an innovation environment is understood as a territorial ecosystem. It unites over 500 companies and approximately 40,000 researchers, students, and employees in a shared space of interaction². All this gives us the reason to speak of Copenhagen as a city where knowledge is gradually becoming the very fabric of urban life, rather than remaining the exclusive property of isolated institutions.

Seoul represents a different trajectory toward the noopolis. Of particular interest here is the combination of high-tech urban infrastructure with mechanisms for participation and mediation. An analysis of official city websites shows that the participatory budgeting system has been operational in Seoul since 2012, ensuring the stable inclusion of citizen proposals in the budgetary process over several years³. The mere fact that this practice has been institutionally established means the city has begun to view the resident not just as a service recipient, but as a co-participant in the distribution of public resources. Even more importantly, Seoul has created a unique conflict management system: the city recognizes conflict not as a "failure" to be quickly suppressed, but as an inevitable element of a complex society that requires procedures for coordination and mediation⁴. Even the implementation of IoT solutions and digital monitoring tools is presented not merely as a means of control, but as a way to enhance public safety and the quality of the urban environment⁵. Thus, Seoul demonstrates a vital point: noopolis elements can grow even from a highly digitalized urban environment, provided that technology does not replace social logic but is instead integrated into it.

The example of Barcelona most vividly illustrates how technology can serve urban humanism. The Decidim platform is positioned as a free, open, and secure technology for citizen participation; in official documentation, it is explicitly referred to as an infrastructure for the common good⁶. This is a crucial formulation: a digital platform is understood not as a private service or a tool for administrative mobilization, but as a public good. The Barcelona City Council's open data portal (Open Data BCN) maintains a vast catalog of open datasets, making information accessible for public use⁷. Similarly, the Sentilo platform is defined as an open-source platform for sensors and actuators, designed for openness and seamless interactions⁸. In other words, the very architecture of the city's digital environment is built on compatibility and openness rather than enclosure. Finally, the 22@Barcelona district is not merely an innovation hub, but an example of how research and entrepreneurial activity can be embedded into the living fabric of the city, rather than being isolated within a corporate enclave⁹. The example of Barcelona is particularly

¹ OI DP. Copenhagen Citizens' Assembly. 2024. URL: oidp.net (accessed on: 19.04.2026).

² Innovation District Copenhagen. Official site. 2026. URL: innovationdistrictcopenhagen.dk (accessed on: 19.04.2026).

³ Seoul Metropolitan Government. Participatory Budget System. 2026. URL: world.seoul.go.kr (accessed on: 19.04.2026).

⁴ Seoul Metropolitan Government. Introduction to Conflict Management of Seoul. 2016. URL: english.seoul.go.kr (accessed on: 19.04.2026).

⁵ Seoul Metropolitan Government. Voluntary Local Review 2025. URL: gold.uclg.org (accessed on: 19.04.2026).

⁶ Decidim. Official platform documentation. 2026. URL: decidim.org (accessed on: 19.04.2026).

⁷ Open Data BCN. Barcelona open data service. 2026. URL: opendataajuntament.barcelona.cat (accessed on: 19.04.2026).

⁸ Sentilo. Official site. 2026. URL: sentilo.io (accessed on: 19.04.2026). 22@Barcelona, the innovation district.

⁹ Barcelona, 2009. URL: bcnroc.ajuntament.barcelona.cat (accessed on: 19.04.2026).

important because it highlights the core principle: technology should not replace the citizen, but rather expand the field of their meaningful participation.

Individual elements of the noopolis can also be observed in Moscow. While they have not yet coalesced into a comprehensive model, the trend is clear. The expansion of green spaces represents more than just landscaping; it is the formation of the city's ecological backbone. Similarly, the modernization of public transport impacts more than just convenience – it improves air quality, reduces noise levels, and enhances connectivity of districts. Improving the availability of social services is also part of the broader mission to enhance the quality of life. In recent years, Moscow has successfully implemented projects to create a comfortable urban environment. Active projects to develop pedestrian infrastructure and improve public spaces are currently underway. The city is also actively integrating digital solutions into transport, healthcare, and urban services. A notable example is the data-driven traffic management system, where flows are regulated based on real-time sensor data rather than rigid schedules. The “Active Citizen” platform represents an attempt to embed resident feedback into the decision-making process. While not always perfect, the principle itself is significant: the city is moving away from viewing citizens as passive service recipients. Furthermore, a unified digital system has been implemented across the healthcare sector. This system enables the coordination of medical institutions, reduces waiting times, and increases the access to care. Collectively, these solutions demonstrate a shift from fragmented digital services toward an integrated management system. However, they still largely rely on technological solutions. This is neither good nor bad; rather, it reflects the transitional nature of the current stage. Moscow is moving toward a more complex model, but the final transition is still ahead.

Currently, none of the metropolises examined can be considered a noopolis in the full and final sense; they are instead proto-noopolises. Each of them faces its own limitations, contradictions, zones of exclusion, and remnants of old management logic. However, the important point is this: they all prove that a move toward a new developmental model for the metropolis is possible. Moreover, this transition does not begin with the purchase of a new platform or the deployment of another set of sensors. It begins at the point where the city ceases to view itself merely as a service mechanism and starts to understand itself as an environment of collective reason.

Analysis of research results

The obtained results lead to a vital methodological conclusion. A noopolis cannot be found using formal checklists. It cannot be defined by a simple set of attributes, such as the presence of “open data,” “advanced digital infrastructure,” “sustainable transport,” or “citizen participation.” All these elements can exist in a city that remains deeply embedded in the old economic and administrative logic. A noopolis emerges only when both the toolkit and the very meaning of urban policy undergo a fundamental shift.

This is perhaps the most difficult challenge for management practice. It is easiest to modernize urban services; it is far harder to change their underlying goals. It is simpler to implement a feedback platform; it is far harder to transform it into a real mechanism for collective thinking. It is easier to speak of human capital as a territory's competitive advantage; it is far harder to acknowledge that human development must become the goal itself, rather than a mere means. But without this transition, the noopolis is impossible.

Here, S.D. Bodrunov's theory of noonomy becomes indispensable, as it demonstrates that the problem of the city of the future is not reduced solely to improving the mechanisms of municipal

management. The question is broader: in what direction is the entire system of social reproduction moving? If knowledge, culture, creativity, and human development are indeed becoming the central content of the new post-industrial era, then the city is obligated to restructure itself accordingly. It must cease to be a mere container for labor, capital, and services; instead, it must become an environment for cultivating collective intelligence. In other words, the noopolis is not merely a new urban model. It is a form of civilizational transition.

A noopolis should be understood as a qualitatively new type of urban system emerging under the transition to a noonomy. It is neither a simple modernization of the smart city nor a mere combination of the “sustainable city” and the “knowledge city.” Its uniqueness lies in the fact that knowledge, science, culture, human development, public participation, and environmental responsibility form the internal foundation of its management and reproduction. The noopolis emerges not as a neutral space for economic activity, but as a form of organizing collective reason and a spatial basis for a new quality of social life.

The transition to a noopolis is a fundamental shift in the logic of urban policy. The focus moves beyond mere efficiency toward human development; beyond the management of flows toward the cultivation of conditions for thinking, participation, trust, and cultural growth; and beyond digitalization for its own sake toward the subordination of technology to socially significant goals.

The analysis of Copenhagen, Seoul, Barcelona, and Moscow demonstrated that individual elements of the noopolis already exist in modern practice. This is evident in the institutionalization of citizen participation, open digital infrastructures, the integration of science into urban governance, the development of innovation districts, and the alignment of technology with the public good. Yet, the most significant takeaway from these examples is not the toolkit itself, but the shifting logic: the city is learning to perceive itself not as a “machine for people,” but as an environment for the development of reason.

This is perhaps the primary conclusion. The future of the city does not depend on the quantity of smart solutions. It depends on whether the city can become a space where technology serves people rather than things, development rather than control, and the long-term, rational history of urban communities rather than short-term gain. In this sense, the noopolis is not merely a vision of the city of the future – it is a vision of a more mature civilization.

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