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Improving urban infrastructure through the implementation of the Moscow “Smart City — 2030” programme

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Abstract. This study examines key aspects of urban infrastructure modernization through the lens of the strategic initiative Moscow “Smart City — 2030”. The author substantiates the necessity of transitioning to the smart city model as a response to contemporary challenges such as rapid urbanization, mounting environmental pressures, and rising citizen expectations. It is emphasized that modern urban development is unattainable without profound digital transformation grounded in the application of big data analytics, artificial intelligence, and blockchain technologies. The study outlines core principles underpinning smart city development — human-centricity, sustainability, energy efficiency, and cross-sectoral collaboration. Particular attention is devoted to the three-tier architecture of the smart city, which integrates physical and digital infrastructure, digital services, and end-user solutions for residents and businesses. Drawing on the Moscow case, the article provides a detailed analysis of successful practices, including intelligent transportation systems, digitalization of healthcare (via the Unified Medical Information and Analytical System — EMIAS) and education (through the Moscow Electronic School — MESH), smart housing and communal services (HCS), environmental monitoring, and e-democracy platforms (“Active Citizen,” “Our City”). Moscow’s role as a pilot region is highlighted, especially in light of its certification under the international standards ISO 37120 (“Sustainable Development of Communities — Indicators for City Services and Quality of Life”) and ISO 37122 (“Indicators for Smart Cities”). The study also presents findings from the 2024 “City IQ Index,” illustrating the dynamic progress of digital transformation in Russian municipalities such as Kazan, Saint Petersburg, and Tyumen. Finally, the study identifies key prospective directions for further development: scaling proven solutions, refining the regulatory framework, enhancing human capital, and advancing digital literacy among the population. The analysis concludes that the effectiveness of a smart city hinges not only on technological deployment but equally on citizen engagement, governance transparency, and interdepartmental coordination — factors that collectively foster a secure, sustainable, and livable urban environment for the future.

Keywords: digital transformation, metropolitan development, innovative solutions, technological platforms

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Совершенствование инфраструктуры городов на примере реализации программы Москвы «Умный город — 2030»

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Аннотация. Проанализированы ключевые аспекты модернизации городской инфраструктуры на примере реализации стратегической инициативы Москвы «Умный город — 2030». Автор обосновывает необходимость перехода к модели «умного города» как ответа на вызовы урбанизации, экологической нагрузки и растущих ожиданий населения. Подчеркнуто, что современное городское развитие невозможно без глубокой цифровой трансформации, основанной на использовании больших данных, искусственного интеллекта и блокчейн-технологий. Рассмотрены принципы построения «умного города» — ориентация на человека, устойчивость, энергоэффективность и межсекторное взаимодействие. Особое внимание уделено трехуровневой архитектуре «умного города», объединяющей физическую и информационную инфраструктуру, цифровые сервисы и конечные услуги для граждан и бизнеса. На примере Москвы детально проанализированы успешные практики: интеллектуальные транспортные системы, цифровизация здравоохранения (ЕМИАС) и образования (МЭШ), «умное» ЖКХ, экологический мониторинг и платформы электронной демократии («Активный гражданин», «Наш город»). Отмечается, что Москва, получившая международные сертификаты по стандартам ISO 37120 и ISO 37122, выступает в роли пилотного региона, чей опыт тиражируется в других городах России. Приведены результаты рейтинга «IQ городов» 2024 г., демонстрирующие динамику цифровизации в Казани, Санкт-Петербурге, Тюмени и других муниципалитетах. В заключение определены перспективные направления развития: масштабирование передовых решений, совершенствование нормативно-правовой базы, развитие кадрового потенциала и повышение цифровой грамотности населения. Анализ показывает, что эффективность «умного города» зависит не только от технологий, но и от вовлеченности граждан, прозрачности управления и межведомственной координации. Эти факторы в совокупности способствуют формированию безопасной, устойчивой и комфортной городской среды будущего.

Ключевые слова: цифровая трансформация, урбанистическое развитие, инновационные решения, технологические платформы

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Introduction

The Moscow “Smart City — 2030” program was implemented starting in 2018¹. In 2021, changes were made to the program in accordance with Moscow Government Decree No. 391-PP dated March 30, 2021 “On Amending the Decree of the Moscow Government of August 9, 2011 No. 349-PP”².

The document addresses the implementation of the State Program of the City of Moscow “Development of the Digital Environment and Innovations”³ building upon the previous program, the Passport of the State Program of the City of Moscow “Development of the Digital Environment and Innovations”⁴.

The current stage of digitalization development in Moscow involves the implementation of measures stipulated by the State Program “Smart City — 2030” and individual measures and indicators from the Moscow programs “Open Government”⁵ and “Economic Development and Investment Attractiveness”.

The aim of the research is to analyze and evaluate the positive experience of implementing the Moscow “Smart City — 2030” program in Moscow and similar programs in other cities of Russia.

Materials and Methods

The development of cities is impossible without the introduction of modern information and communication technologies. The creation of Smart Cities is a strategic direction for improving the structure and enhancing the urban environment in all its manifestations.

A *Smart City* is an innovative city that implements a set of technical solutions and organizational measures aimed at achieving the highest possible current quality of resource management and service provision, with the goal of creating

¹ Moscow is getting smarter. *Mos.ru*. 27.06.2018. URL: <https://www.mos.ru/dit/documents/view/217258220/> (accessed: 09.10.2025). (In Russ.).

² *Decree of the Government of Moscow dated March 30, 2021 No. 391-PP “On Amendments to the Decree of the Government of Moscow dated August 9, 2011 No. 349-PP”*. URL: <http://pravo.gov.ru> (accessed: 09.10.2025). (In Russ.).

³ Resolution of the Government of Moscow dated August 12, 2011 No. 349-PP “On Approval of the State Program of the City of Moscow “Development of the Digital Environment and Innovations” (as amended by Resolutions of the Government of Moscow dated 03/31/2020 No. 323-PP, dated 03/30/2021 No. 391-PP, etc.). URL: <http://pravo.gov.ru> (accessed: 09.10.2025). (In Russ.).

⁴ Decree of the Government of Moscow dated July 5, 2023 No. 1269-PP “On Approval of the Procedure for the Development and Implementation of State programs of the City of Moscow aimed at the implementation of the State program of the City of Moscow “Development of the Digital Environment and Innovations””. URL: <http://pravo.gov.ru> (accessed: 09.10.2025). (In Russ.).

⁵ Decree of the Government of Moscow dated December 30, 2019 No. 1790-PP “On measures aimed at the implementation of the state program of the City of Moscow “Open Government””. URL: <http://pravo.gov.ru> (accessed: 09.10.2025). (In Russ.).

sustainable favorable living and staying conditions, and business activity for present and future generations⁶.

It is not a static target state of a city, but rather dynamic processes of urban management transformation using modern digital technologies; it's not just about ubiquitous Wi-Fi and mobile apps for ordering taxis.

The core of this concept is the ability to collect urban data and, based on its analysis, make decisions about what residents truly need.

The “smart city” concept implies interaction between three groups: business, residents, and the state. The Moscow government plans to implement the program by 2030.

One of the main goals of the project is formulated as follows: “Ensuring sustainable growth in the quality of life of Muscovites and favorable conditions for conducting entrepreneurial and other activities” [1].

The following system of general academic and specific methods, and techniques was used as a methodological framework for implementing a comprehensive approach to studying urban development and realizing the “smart city” concept:

- Analysis, synthesis, systematization, generalization, structuring to identify a complex of urban development factors;
- Analysis of research results by Russian and foreign scientists dedicated to this issue;
- Statistical analysis to study the dynamics of the development level of modern cities;
- Analysis of empirical data from previously conducted research on this topic.

Results

Let's consider the *architecture of a “smart city”* [2]. The necessity of forming a logical “smart city” architecture is required to ensure that services received by urban populations are of a high standard. The “smart city” architecture is a formed and managed infrastructure that supports the operation of server and sensor systems, algorithms and processes, control of service delivery units by citizens, and creates conditions for implementing convenient services. It includes three levels.

Level 1.

- Infrastructure for the functioning of “smart cities”, including a service model, a catalog of possible communications, and technological solutions used in urban information systems;

⁶Golovanov VI. *Sovremennaya strategiya upravleniya Moskvoy: uchebnoe posobie* [Modern strategy of managing Moscow: a textbook]. Moscow: Maks Press; 2024. (In Russ.). <https://doi.org/10.29003/m4322.978-5-317-07323-7> EDN: CYUJNJ

- Conceptual model, considering all information systems included in the “smart city” structure;
- Logical city infrastructure, representing an algorithm for connecting information systems with each other, and at the level of individual systems — connecting internal processes and their interaction with external structures, including standards ensuring data transmission and cybersecurity;
- Physical security, including objects for implementing “smart city” management: sensors, servers, cloud storage, networks, ICT;
- Information infrastructure, consisting of data arrays and big data.

Level 2.

- Supporting the activities of “smart cities” through services enabling information processes, controlling deadlines, and the quality of public service provision;
- Public services, including the digitalization of specialists’ routine activities to reduce service acquisition times;
- Control over public service execution through feedback from the population and legal entities, as well as internal control over performance results;
- Economy, including services for financial control and planning to execute services and ensure the operability of “smart cities”.

Level 3.

- Services for individuals and legal entities, including electronic services: public services, e-education, healthcare, ITS, utilities, security, social support, ecology;
- Services including everyday public services, such as obtaining or renewing driver’s licenses, passports, submitting meter readings, filing declarations, apartment registration, obtaining certificates, etc.;
- Services for obtaining emergency assistance and filing complaints, including services for residents to monitor the condition of public spaces, receive city services, report emergencies, and receive 24/7 assistance.
- E-democracy services, involving polls, voting, and citizen initiatives.

The development of a “smart city” proceeds in 6 directions [3]:

1. Urban Environment.
2. Digital Mobility.
3. Security and Ecology.
4. Digital Government.
5. Human and Social Capital.
6. Urban Economy.

In Moscow it is possible to receive over 200 services in digital format. They are actively used by 6.5 million people. Among all digital capabilities, the “Gosuslugi”

portal leads. In second place is digital payment in transport, and in third are applications for trip planning.

The effects of applying “smart city” technologies [4]:

1. Reduction of environmental impact by 20–40%.
2. Savings on law enforcement and emergency services maintenance due to the video surveillance system up to 20%.
3. Reduction of waste disposal costs due to separate waste collection systems up to 30%.
4. Electricity savings on maintenance using energy-saving devices and motion sensors up to 70%.
5. Resource savings through “smart” electricity and gas meters up to 30%.
6. Savings in capital and operational costs through the use of energy-saving technologies in construction (BIM technologies).
7. Reduction of traffic travel time by 20%.
8. Reduction in the number of traffic accidents due to traffic and transit control systems by 30%.

In 2020, Moscow ranked 56th in the Smart City Index by the Swiss business school IMD. In 2021, the Russian capital rose by 16 positions and surpassed Brussels, Paris, and Tokyo. In the Smart City Index, Moscow neighbors Riyadh, Kuala Lumpur, Warsaw, Ankara, and Tallinn. The top 5 of the ranking included Singapore, Helsinki, Zurich, Auckland, and Oslo. The change in the Russian capital’s position in the Smart City Index is further confirmation of the effectiveness of the Moscow Government’s digitalization policy.

In 2021, Moscow was recognized as a “smart city” according to the international ISO standard. The city received certificates of conformity to international standards ISO 37120 “Sustainable development of communities — Indicators for city services and quality of life” and ISO 37122 “Sustainable cities and communities — Indicators for smart cities”. ISO 37120 is an international standard that establishes key indicators for quality of life and service provision in cities. In 2021, the group of cities conforming to this standard included over 100 metropolises in 32 countries — besides Moscow, these are Los Angeles, Buenos Aires, London, Dubai, Johannesburg, Oslo, Warsaw, etc.

In the list of the 200 most attractive innovation centers for 2024, cities are ranked by 90 indicators grouped into 21 sections and distributed across three blocks: “Technological Development”, “Creative Industries”, and “Urban Environment”. Moscow took 9th place, rising one position over the year. The top 5 spots in the ranking were taken by London, New York, Tokyo, Beijing, and San Francisco.

In the overall 2024 ranking, Moscow placed above cities such as Hong Kong (12th), Singapore (14th), Berlin (15th), and Madrid (17th). This ranking was ensured

by the high positions of the Russian capital in technological development (7th place), creative industries (15th), and urban environment (6th).

Moscow, Dubai, and Singapore have become pioneers in metaverses. Moscow also entered the top three cities in the ranking with the lowest tax burden for entrepreneurs.

Within the framework of Moscow's urban space development by 2050, the *key trends* have been identified⁷:

- Shift from ownership to service provision. Multifunctionality of the environment while preserving identity. The urban environment is flexible, actively changing to meet various citizen needs while considering the established identity of the place.
- Environmental diversity. Customization of the city for communities, growth in environmental diversity. The city as a “patchwork quilt”.
- Small-area high-tech housing. With the development of virtual reality technologies, housing area is decreasing, becoming more efficient thanks to “smart home” technologies.
- City as an intellectual corporation (City.inc). A city where all spaces are adapted for work, employment, and leisure activities. Characterized by flexibility, the ability to rearrange places according to the needs of citizens and communities.
- “Smart redevelopment”. Increasing the attractiveness and efficiency of using industrial zones and vacant territories within the city by creating facilities needed by the city and districts.
- New apartment typology. Due to the new, more atomized lifestyle of young citizens, housing market offerings will change: smaller area for those who prefer to live alone, larger for those who find it more convenient to live in co-living spaces and work remotely.
- Pilot projects as a tool for environmental customization. Testing various urban solutions proposed by experts or initiative residents in the space of a courtyard, district, or area.
- Multifunctional spaces for work and leisure. Coworking spaces are transforming into “third places” tailored to the needs of the citizen-user: spaces for both work, leisure, and receiving other services.
- Flexible construction. Transformer buildings are erected with the possibility of further modification. For example, parking lots that can be transformed into offices. Every 3–5 years, a building may acquire a new function.
- Social atomization. Growth in the share of citizens who consciously choose solitude to reduce social interaction, achieve maximum independence, and self-realization.

⁷ Nikolaev VP. *Smart cities — the future today*. URL: <http://www.jetinfo.ru/stati/umnye-goroda-budushee-segodnya> (accessed: 12.09.2025). (In Russ.).

- Decrease in the share of indigenous residents. Their share will decrease due to increased mobility and the development of remote technologies.
- Departure from urban sedentariness. Muscovites no longer live their entire lives in one place but seek housing that suits their current needs.
- Growth in the variability of public spaces. Rethinking public spaces, increasing the degree of variability of their functions allows gathering more and more territories into such spaces. For example, a river as a public space, a factory as a public space, etc.

We can highlight the TOP 3 large-scale projects being implemented in Moscow with an eye to the future, as the Russian Federation and its capital look ahead and plan the development of their territories for many years to come. Among the largest projects, the following can be noted⁸.

1. Development of New Moscow

The territory of New Moscow was acceded to Moscow in 2012, due to the city's constant development requiring new territories. Significant funds are invested in developing these territories; in 2024 alone, 3.7 trillion rubles were allocated in the form of private and state capital. New Moscow continues to develop as an investment object, providing an impetus for the joint development of Moscow and the Moscow Region as an integrated agglomeration.

2. Moscow Housing Renovation Program

The renovation of the capital's housing stock is the largest urban development project. The implementation of the project, which started in 2017, will last 15 years. Within its framework, the demolition of about six thousand dilapidated residential buildings, comprising over 350 thousand apartments — mainly five-story buildings, and the construction of 16 million square meters of new housing are planned. According to the plans of the Moscow government, renovation should be completed in 2032, although there are risks that this process may be extended over a longer period.

3. Integrated Territory Development (ITD) Program

The strategy for the comprehensive development of Moscow's industrial territories is based on a balance of interests of private developers, society, and the state. The goal of this strategy is to create a comfortable urban space for living and business activity, a favorable investment environment, as well as infrastructure development and attracting innovative projects.

The ITD Program is carried out through the reorganization of abandoned territories and former industrial zones, as well as if they are

⁸ Golovanov VI. *Sovremennaya strategiya upravleniya Moskvoi: uchebnoe posobie* [Modern strategy of managing Moscow: a textbook]. Moscow: Maks Press publ.; 2024. (In Russ.). <https://doi.org/10.29003/m4322.978-5-317-07323-7> EDN: CYUJNJ

used inefficiently, covering an area of about 2450 hectares. 188 projects will be implemented, over 14.5 million sq. meters of social and public facilities will be built, including 85 educational centers, 45 sports facilities, 19 medical institutions, and 9 churches. For city residents, the introduction of 14.5 million sq. meters of modern housing, including social housing, is planned. The creation of new high-tech and environmentally friendly production facilities, jobs, social and engineering infrastructure, as well as creative public spaces is planned.

The implemented State Programs for city development predict that by 2050, through the use of modern information and communication technologies, including “smart city” technological solutions, Moscow will become a more modern, comfortable, and convenient city for living with advanced transport and engineering systems, unique high-rise buildings, and cozy residential complexes.

As part of the “Smart City — 2030” project in Russia, the “IQ of Cities” index is determined annually in four categories: major, large, and medium cities, as well as administrative centers. When calculating the indicator, the work of intelligent heat, water, and gas supply systems, air quality control sensors, etc., is considered. These solutions are aimed at creating an effective urban infrastructure management system, as well as comfortable and safe living conditions for Russians. In 2023, the index was calculated for 235 cities. Its average value reached 61 points out of 120 possible, which is 11% higher compared to the previous year. Compared to the baseline year 2018, the level of digitalization of Russian cities has grown by 55% [3]⁹.

The “IQ of Cities” index assessment system includes evaluation across 10 directions, comprising a number of indicators:

1. Urban Management (5 indicators).
2. Smart Utilities (5 indicators).
3. Innovations for the Urban Environment (6 indicators).
4. Smart Urban Transport (11 indicators).
5. Intelligent Environmental Security Systems (4 indicators).
6. Tourism and Service (4 indicators).
7. Intelligent Social Service Systems (4 indicators).
8. Economic State and Investment Climate (2 indicators).
9. Network Connectivity Infrastructure (1 indicator).
10. Intelligent Public Security Systems (5 indicators).

⁹ *Trends in the development of smart cities in 2024*. Department of Information Technology of the city of Moscow 2024. URL: <https://smart.mos.ru> (accessed: 09.12.2025). (In Russ.).

Let's consider **IQ of Cities Index in 2024**. *Maximum score 120 (for 247 cities)*

Major cities (over 1 million people)

Moscow — 120

St. Petersburg — 85

Kazan — 84.78

Yekaterinburg — 82.4

Perm — 80.81

Large cities (from 250k to 1 million people)

Tyumen — 118.92

Vladivostok — 110.5

Sevastopol — 106.6

Grozny — 89.45

Kaluga — 85.77

Medium cities (from 100k to 250k people)

Yuzhno-Sakhalinsk — 118.32

Neftekamsk — 116.32

Reutov — 114.6

Veliky Novgorod — 114.26

Artemovskiy urban district — 111.7

Administrative centers:

Chernushinsky urban district — 116.94

Koltsevo urban settlement — 116

Dubna — 115.63

Ivanteevka — 114.59

As examples, consider the best “smart cities” in Russia as of 2024¹⁰:

Moscow remains the leader in terms of digitalization and implementation of smart city technologies implementing the “Moscow — Smart City 2030” program since 2018. As we noted, in 2021, changes were made to the program in accordance with Moscow Government Decree No. 391-PP dated March 30, 2021 “On Amending the Decree of the Moscow Government of August 9, 2011 No. 349-PP”.

The document, building upon the previous program, addresses the implementation of the State Program of the City of Moscow “Development of the Digital Environment and Innovations”, as well as the Passport of this program. Key directions of this project are already being implemented through the city-wide contact center. In healthcare, the Unified Medical Information

¹⁰ *Effective domestic practices based on artificial intelligence technologies in the “smart city”*. URL: https://www.tadviser.ru/images/1/19/AI_smart_city.pdf (accessed: 09.12.2025). (In Russ.).

and Analytical System (UMIAS) has been created; in education, the Moscow Electronic School (MES) program is widely used. In the utilities sector, a project for automated management of building-wide meters is being implemented. Infrastructure changes include: a data center, video surveillance, free Wi-Fi. The electronic government addresses the tasks of implementing individual platforms: “Active Citizen”, “Smart Home”, “Our City”, “Crowdsourcing”, data.mos.ru (thematic datasets). In the cultural sphere, the following directions are actively developing: “Discover Moscow”, “I’m Going to the Museum”, “Window to the City”, “Museum Moscow”. In all areas, digital “Muscovite cards” are widely used.

Furthermore, within the framework of the “smart city” program, the Moscow implements:

- A developed system of online services: through “Mos.ru” one can make a doctor’s appointment, pay for parking, receive city services without the need for a personal visit.
- Intelligent transportation systems: traffic regulation through traffic lights that adapt to traffic flow in real-time.
- Active development of public transport: electric buses, integration of transport cards, and the “Moscow Transport” app.
- Smart utilities: automated energy and water metering, as well as a digital platform for managing housing services.
- Obtaining certificates through MFCs.

Moscow is a prime example of implementing “smart” technological solutions in other Russian cities.

In recent 5 years, *Kazan* has strengthened its status as one of Russia’s most technologically advanced cities, implementing the following “smart” technologies:

- Implementation of the “Open Kazan” portal allows residents to report city problems and receive prompt intervention.
- Smart lighting that automatically adjusts based on time of day and weather conditions.
- Maintaining environmental sustainability through waste disposal systems and optimized public transport.
- Smart parking system: implementing a system that allows drivers to find available parking spaces and pay for parking via a mobile app.
- Smart video surveillance: installation of cameras with license plate recognition capabilities, aiding in security.

In *Saint Petersburg* digital platforms are actively used to improve management and service provision:

- Smart traffic management through a unified monitoring center.
- A large number of services for tourists and residents through mobile applications.
- Enhanced cybersecurity through the implementation of threat monitoring centers.
- Smart bus stops: Installation of stops with electronic displays showing real-time public transport arrival times.
- Integration of mobile applications: applications for navigation and trip planning on public transport.

Sochi stands out not only as a tourist center but also as a city implementing smart technologies:

- Systems for monitoring the environmental state of the resort, especially important in areas near the Black Sea.
- Automation of transport options and creation of convenient logistics solutions for tourists.
- Development of smart utilities systems in resort areas.

The city of *Tyumen* is actively implementing solutions for optimizing municipal and urban services:

- Development of intelligent water and electricity control systems.
- Automation of fire protection systems in public buildings.
- Cooperation with large IT companies to implement innovative technologies.
- Electronic queues: Implementation of electronic systems for appointments in municipal institutions, reducing wait times.
- Smart roads: Use of technologies for monitoring road surface conditions and optimizing traffic flows.

The city of *Izhevsk* is distinguished by rapid progress within the national “Smart City — 2030” program:

- Automated public transport route planning systems.
- Convenient city applications for contacting utility services.
- Smart lighting and an increase in the number of energy-efficient buildings.

The conducted analysis of the experience of implementing Smart City technologies globally and in Russia in 2024 showed that the implementation of the following solutions in municipal practices is most promising [5]¹¹:

1. *Smart Lighting*, allowing control of street lights depending on time of day or weather conditions, reducing electricity consumption, and increasing street safety.

¹¹ 10 main smart city trends in 2023. URL: <https://tenchat.ru/media/1451576-10-osnovnykh-tendentsiy-umnogo-goroda-v-2023-godu> (accessed: 09.12.2025). (In Russ.).

2. *Intelligent Traffic Management*, using data from sensors and surveillance cameras to optimize traffic flow, reducing congestion and improving air quality.

3. *Environmental Monitoring System* carried out by installing sensors to monitor air pollution levels, noise, and other environmental indicators. Collected data can be used to develop environmental improvement programs.

4. *Smart Parking Systems* use applications that allow drivers to find available parking spaces.

5. *Digital Platforms for Citizens*: creating online services and apps allows city residents to report problems, leave feedback, and interact with local authorities, increasing transparency and citizen engagement in city governance.

6. *Smart Waste Management Systems* operate by using sensors to monitor trash can fill levels and optimize waste collection routes, reducing costs and increasing the efficiency of utility services.

7. *Development of Electric Vehicle Infrastructure* through the installation of charging stations in public places and developing programs to incentivize the transition to eco-friendly transport.

8. *Integration of IoT Technologies* for monitoring various components of urban infrastructure, such as bridges, buildings, and transport, helping to predict repair times and reduce costs.

9. *Educational Programs* can be implemented by launching initiatives aimed at educating citizens and students about smart cities and the IT technologies used in them, their advantages, including startups, which can increase awareness and activity of the local population.

10. One of the key elements of this concept is *Artificial Intelligence*, which enables the creation of more intelligent, adaptive, and efficient management systems at all levels.

Conclusion

The above-mentioned proposals can serve as a basis for creating a more effective and sustainable city management system that is convenient for residents.

In XXI century, the concept of a “smart” city has gained wide popularity, becoming an integral part of the sustainable development strategy of modern metropolises. Smart cities represent the integration of information and communication technologies that allow for the optimization of urban resource management, improvement of residents’ quality of life, and ensuring the sustainable development of urban infrastructure.

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