SMART CITY AS A DRIVER OF ECONOMIC GROWTH AND INNOVATIVE DEVELOPMENT IN UKRAINE

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Abstract. *The digital transformation of Ukrainian cities, especially in post-war reconstruction, is becoming a key factor in ensuring economic growth and innovative development. In this context, the smart city concept emerges as a strategic response to the need for sustainable, inclusive, and technology-driven urban revitalization. This study aims to substantiate the smart city concept as an effective mechanism for the reconstruction and modernization of the Ukrainian economy, as well as to identify the potential benefits and challenges of its implementation. The study is based on an interdisciplinary methodology that includes systems analysis to conceptualize urban transformation, comparative evaluation of international smart city practices, case study analysis of pilot projects in Estonia, the Netherlands, and Spain, as well as statistical review of Ukraine's infrastructure damage and demographic shifts. The findings of the research reveal that smart cities can play a pivotal role in economic recovery by optimizing resource management, integrating technological platforms for citizen engagement, and reinforcing governance transparency. Special attention is given to the role of artificial intelligence, big data analytics, and civic technologies in building resilient urban ecosystems that support both economic innovation and social reintegration. The results also highlight the necessity of tailoring smart city models to Ukraine's unique socio-political context, taking into account war-related damages, migration patterns, and the decentralization of public administration. The results indicate that a comprehensive approach to implementing smart technologies will not only effectively restore damaged infrastructure but also create new economic opportunities, attract investments, and improve the quality of life for the population. A survey of high school students revealed their deep understanding of the "Smart City" concept, their associations with convenience and technology, and their awareness of key challenges - funding and the impact of the war. The practical value of the study lies in developing recommendations for governmental and local authorities regarding the formation of state policy in smart city development, which will contribute to increasing Ukraine's investment attractiveness and economic security.*

Keywords: *Digital transformation, smart city, economic growth, innovative development, reconstruction of Ukraine, post-war economy, investments, urban infrastructure.*

JEL Classification: O31, O32, R58, F52, H84

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Introduction. Ukraine's reconstruction after the full-scale invasion is one of the most significant challenges of our time, requiring a comprehensive approach and innovative solutions. This article examines the key aspects of reconstruction, focusing on the "smart" city concept implementation as a foundation for sustainable development and Ukraine's European integration. Reconstruction involves not only the physical restoration of damaged infrastructure but also the creation of a modern and resilient foundation for the country's future. An important element of this process is the "Ukraine Recovery Plan," aimed at accelerating sustainable economic growth and integrating Ukraine into the European space. The vision for Ukraine's recovery is defined as "a strong European country - a magnet for foreign investment." Ukraine's total reconstruction and recovery needs were estimated at an unprecedented $524 billion as of February 2025, significantly exceeding available funding sources and requiring careful strategic planning *(RDNA4, 2025).* In this context, the smart city concept gains relevance as an effective mechanism for attracting investment, stimulating innovation, and improving the quality of life, which is critically important for population return and economic growth.

Literature review. An analysis of scientific works, monographs, and reports by international organizations indicates a growing interest in the "smart" city concept and its potential for sustainable development. The British Standards Institution (BSI, 2015) describes a "smart" city as "the effective integration of physical, digital, and human systems in the built environment to deliver a sustainable, prosperous and inclusive future for its citizens." Key components of a "smart" city include e-governance, intelligent security systems, a favourable environment for innovative activity, development of network and communication infrastructure, intelligent housing and communal services, smart urban transport, intelligent environmental safety systems, clean (green) energy, zero waste, and promotion of tourism and services (Smart city: "Smart city" technologies and their purpose, 2021; The best smart cities in Europe, 2025).

The experience of European cities (Smart Cities Marketplace, 2025; Bee Smart City, 2025) demonstrates the practical benefits of implementing smart technologies. Ukraine's needs for financing digitalization projects amount to $14 billion (Center for Economic Recovery, 2025), emphasizing the priority of attracting investments. However, existing research has not sufficiently focused on the specifics of implementing smart technologies precisely in post-war reconstruction and considering demographic challenges, such as mass emigration, which requires the return of up to 4.5 million people to ensure the necessary economic growth of the state (RDNA4, 2025; "Marshall Plan" for Ukraine, 2023).

Aims. The main objective of this study is to substantiate the theoretical and methodological foundations and develop practical recommendations for using the smart city concept as a driver of economic growth and innovative development in Ukraine in post-war reconstruction, considering demographic challenges and the need to attract investment.

Methodology. The study employed the following methods: a systemic approach to analyze the "smart" city concept as a complex system of interconnected elements contributing to sustainable development; a comparative analysis method to study

international experience in smart city implementation and adapt best practices to Ukrainian realities; statistical analysis to assess funding needs for reconstruction and the demographic situation (*data from RDNA2, the Ministry of Economy of Ukraine, the Center for Economic Recovery*); content analysis of strategic documents such as "*Ukraine Recovery Plan*" and the EU's "*Ukraine Facility";* and case studies of specific projects like "*eVidnovlennya*" to identify effective reconstruction tools.

Results. Cities have traditionally served as crucial centers for economic, political, educational, and cultural life within a community. Annually, the global urban population continues to expand. The World Bank estimates that by 2050, 70 out of every 100 people will reside in megacities. Furthermore, UN projections suggest that by the end of the 21st century, 84% of the global population will live in urban areas. This trend implies a deepening of existing challenges, such as inefficient energy consumption, air pollution, and road congestion. Consequently, addressing the task of ensuring maximum safety and comfort for urban residents and unlocking their potential becomes increasingly critical.

The United Nations Report *(UN Report, 2022)* illuminates key trends and challenges shaping the future of cities, offering a conceptual framework for their sustainable development. The points outlined serve as a foundation for understanding the dynamics of urbanization and the role of innovation in ensuring the vitality of urban systems.

Firstly, it's asserted that urbanization is an irreversible process that will define humanity's future, with an emphasis on the diversification of urban forms beyond large megacities. Secondly, the report acknowledges the transformative yet uneven nature of urbanization, necessitating differentiated approaches to urban planning tailored to the unique context of each agglomeration.

Thirdly, the Report warns of the catastrophic consequences of a negative urban development scenario, which would encompass economic instability, environmental crises, and the exacerbation of existing social vulnerabilities. Concurrently, it underscores the growing central role of innovation and technology in shaping a sustainable urban future. This, in turn, drives the significant impact of digitalization and automation on the transformation of urban economies.

Cities are not merely passive observers of these technological transformations; rather, they serve as both the arena and key actors in how these processes unfold. Since 2020, armed conflicts have also taken center stage among the pressing challenges hindering sustainable urban development.

To view the "smart" city from a perspective different from that which dominates the Global North, it's necessary to "provincialize" smart cities. The prevailing view is problematic when smart city practices developed in Western cities with knowledge-based economies and a concentration of global capital are uncritically considered suitable for, and thus imposed upon, cities in developing countries. In response, critical studies emphasize the need to "provincialize" smart cities; that is, to develop more context-sensitive approaches to how smart city discourses and practices can emerge from the global peripheries, often in the form of small-scale projects (as opposed to the typical large-scale, capital-intensive interventions in the Global North) (*UN-habitat, 2022).*

The situation in Ukraine remains complex: the exact number of cities destroyed in Ukraine because of the war since 2022 is unknown. However, it is evident that many cities have been significantly affected, with some virtually completely ruined, especially along the front line. In total, hundreds of cities and towns have suffered severe destruction. As reported by The New York Times in June 2024, more than 210,000 buildings in Ukraine have been damaged since the start of the full-scale Russian invasion, with about half of them in the east. NYT journalists, in collaboration with scientists, analysed satellite images of every city, street, and damaged building over two years of the full-scale war.

Estimates indicate that 106 hospitals and clinics, 109 religious buildings (churches, temples, mosques, monasteries), and 708 educational institutions (schools, colleges, universities) have been damaged or destroyed in Ukraine, despite these facilities being protected under the Geneva Conventions. These figures do not include the occupied territory of Crimea and parts of western Ukraine, where precise data are unavailable, implying that the true scale of destruction is larger and continues to grow (*Hromadske, 2022).*

According to a report by the Kyiv School of Economics *(KSE, 2024),* active shelling of cities with missiles and artillery is an integral part of Russia's combat tactics, leading to significant destruction of residential areas in cities and towns, especially those near the front line. As of early 2024, over 50% of the housing stock in a significant number of cities and towns was damaged or destroyed due to the Russian Federation's military actions (Tab.1). This requires not only the restoration of individual buildings but also comprehensive urban reconstruction, the development of new urban planning documentation, and other measures. The total area of damaged or destroyed objects from shelling amounts to 88.9 million cubic meters, representing 8.6% of Ukraine's total housing stock (or 6.5% when accounting for the level of damage).

Table 1 Assessment of Direct Housing Stock Losses

Type of Loss	Unit of Quantity	Original Number of Objects	Number of Damaged Objects	Estimated Loss (Billion USD)
Destroyed				
Multi-apartment buildings	units	180,003	6,862	27.97
Individual houses	units	9,163,897	68,693	5.07
Dormitories	units	7,114	135	0.33
Damaged				
Multi-apartment buildings	units	180,003	19,276	21.26
Individual houses	units	9,163,897	118,480	3.01
Dormitories	units	7,114	390	0.27
Damaged and destroyed because of Kakhovka HPP disaster				
Multi-apartment buildings	units	n.d.	1,001	0.03
Individual houses	units	n.d.	35,426	1.00
Dormitories	units	n.d.	1	0.00
Total direct infrastructure losses				**58.94**

Source: based on (KSE, 2024)

As researchers from the National Institute for Strategic Studies note, "European cities have not experienced such a targeted attack since World War II. The invaders are destroying residential buildings along with their inhabitants, hospitals and schools, critical infrastructure facilities, historical buildings, monuments, churches, and enterprises." Scholars at NISS argue that such actions by Russians fundamentally constitute *urbicide.* The concepts of urbicide have been developed by M. Coward, M. Shaw, and others. (*Clements-Hunt, A., 2022)* offers a concrete definition of urbicide as mass violence characterized by the deliberate destruction of vital civilian infrastructure. Thus, the object of violence in urbicide is, in essence, not so much the city (and even less specific buildings) as the urban way of life of the community *(NISS, 2024)*.

The war, with its devastating consequences in Ukraine, continues. However, war's end, and countries recover. As human history shows, civilizations have successfully rebuilt their cities after wars and natural disasters. Examples include San Francisco after the 1906 earthquake and fire, Berlin and Tokyo after World War II, Seoul after the Korean War, and Sarajevo after the Balkan Wars (*Sych, O., Pasinovych, I., 2023*). Cities that were significantly destroyed have transformed into economic and cultural centers within a few decades (*Voxukraine, 2023)*

Ukraine faces the most extensive reconstruction effort in Europe since World War II. The fundamental principle of recovery, enshrined in the National Recovery Plan presented at the Ukraine Reconstruction Conference in Lugano *(NRP, 2022),* is "build back better." This principle means that the recovery process does not merely return what was destroyed to its previous state but uses this opportunity to create more resilient, efficient, modern, and inclusive systems and infrastructure. In accordance with that principle, reconstruction should become a driving force for implementing modern technologies, energy-efficient solutions, and "green" standards. Such an approach can accelerate Ukraine's integration with the European Union and harmonization with its key development documents, particularly the European Green Deal, which Ukraine has already committed to joining.

The scale of reconstruction tasks and the capabilities of modern technologies present unique challenges and create a favorable foundation for creative solutions. The "smart city" concept is one such creative solution. In the search for comprehensive solutions to problems associated with increasing urbanization, more and more cities are prioritizing the smart city concept.

Its position at the intersection of several crucial and contemporary trends (Fig 1.) explains the prospects of the smart city concept:

- growing urbanization;
- digitalization, particularly the use of artificial intelligence for analyzing large datasets (Big Data);
- sustainable development. This involves addressing a wide range of environmental (E), social (S), and governance (G) issues to ensure a safe and comfortable future. "Sustainable Cities and Communities" is one of the 17 goals set by the UN for 2030 within the framework of the sustainable development program.

Key tasks for its implementation include environmentally sound urbanization, strategic planning, "green" transport, etc. The "smart" city concept is an important component of sustainable urbanism.

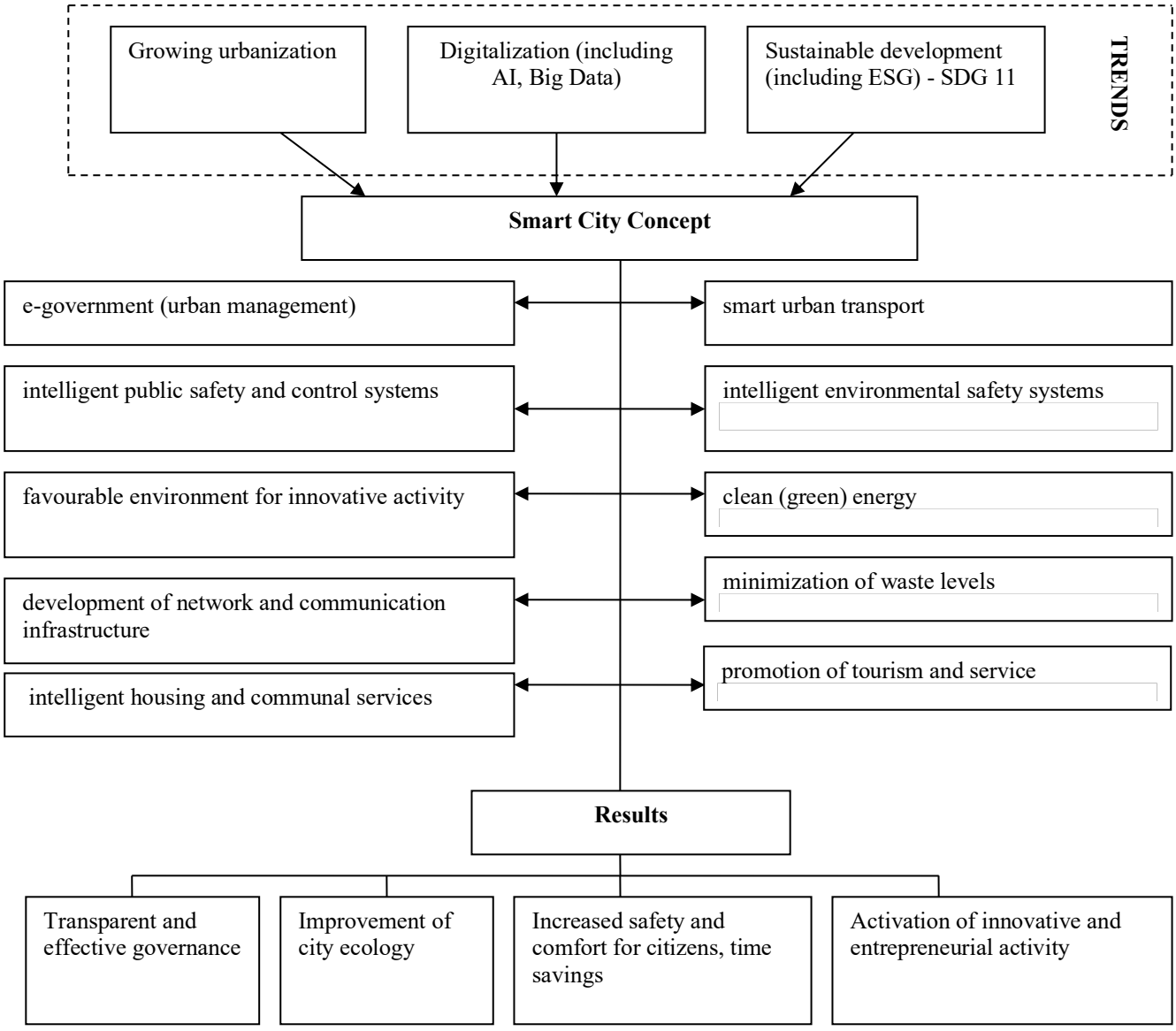

Figure 1. Smart City Concept - Trends and Results

Source: created based on literature review

Ukraine is at the center of these global trends. For instance, over 70% of Ukraine's population lived in cities before the 2022 Russian invasion *(WWB, 2022).* As noted in the study "Post-war Reconstruction of Ukraine. New Market and Digital Solutions," *(KSE, 2024)* " digitalization has become important in Ukrainian society as one of the evolutionary issues in the development of state institutions. Public demand is also driven by the presence of a powerful professional IT community that understands the problem and provides high-quality human resources." Since 2019, the Ministry of Digital Transformation of Ukraine has been responsible for the digitalization of the economy and public administration in Ukraine. The importance of stable development and strengthening digital solutions in the public administration system is enshrined in

the Strategy for Digital Development, Digital Transformations, and Digitalization of the Public Finance Management System until 2025.

Thus, we can conclude that the smart city concept represents an urban model that leverages digital technologies to address current urban challenges, foster sustainable development, and enhance the quality of life for citizens.

Amsterdam's approach. Amsterdam exemplifies a modern approach to urban management. The Amsterdam Smart City portal (amsterdamsmartcity.com) provides access to diverse initiatives and projects aimed at improving urban living, actively engaging both citizens and businesses in these processes. Key smart city domains include transportation, public safety, access to government services, and healthcare. From the perspective of residents, the primary benefits of a Smart City are high living standards, convenient transportation, a clean environment, a developed economy, and a safe environment. Additionally, a Smart City enhances the transparency of local governance, making urban decision-making processes more open, which is crucial for the development of civil society. These advantages are achieved through the integration of previously isolated urban systems (e.g., transport, waste management), high-quality management, and advanced information and communication technologies.

A smart city involves maximizing the use of electronic services and minimizing the time and effort required for stakeholders to interact with the city. Here, technology serves merely as a tool to achieve strategic objectives, as well as a means for data collection and processing. From a technical standpoint, a Smart City is a system that gathers large volumes of data for effective urban management. Data sources can include mobile operators, transportation networks, water supply systems, power grids, waste containers, cameras, and even traffic lights or streetlights. By utilizing real-time integrated sensors, collected data from residents and devices are processed and analyzed, with this information becoming key to the city's efficiency. Therefore, the technological foundation of a smart city is analytics, upon which management decisions are made, and the collection and processing of large data arrays. Based on these data, the technical and business communities develop relevant services. Thus, smart cities rely on data-driven decision-making, utilizing cutting-edge technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), Big Data, and cloud computing to create an efficient and sustainable urban environment. AI is a powerful digital tool that effectively addresses a wide range of tasks, from consulting residents on current issues to large-scale integration into e-services. Implemented technological solutions help optimize processes and efficiently allocate resources.

Barcelona's Data Management Model. Barcelona has rationally organized its data operations. The city collects data and shares it with partners. These partners, on a commercial basis, perform high-quality analytics using technologies and services from tech giants. The city, by applying quality analytics, makes quality decisions. As a result, all parties benefit - businesses generate profit, tech giants receive fees for service usage and are thus incentivized to maintain a presence in the city/country, for example, by building data centres. Residents receive high-quality services provided by the city.

Tallinn's Digital Transformation. Tallinn is a global model for a "smart city," having achieved a high level of digitalization after the collapse of the USSR and a 2007 cyberattack. Currently, 98% of Estonian citizens have a digital identity, and most

government services, including medical prescriptions, are available online *(Bee Smart City, 2025)*. Tallinn's key principles are the decision-making through digital surveys, budget voting, and the AvaLinn app. Tallinn continuously expands its range of 86 fully digital services and aims for complete digitalization, leveraging open data and new technologies. In 2020, the city was recognized as the "Smart Community of the Year" for its digital achievements and sustainable development efforts (in Tab.2 the cases are compared).

Table 2. Analysis of "Smart City" Cases and Recommendations for Ukraine

Aspect / City	Amsterdam (Netherlands)	Barcelona (Spain)	Tallinn (Estonia)	Recommendations for Ukrainian Cities
Concept	Comprehensive "Smart City" approach with citizen and business engagement, transparent governance.	Partnership with the private sector for quality data analytics.	Deep digitalization of public services and user-centric approach.	Integrated, transparent, and citizen-centric approach combining technology, partnerships, and public participation.
Key Tools / Technologies	Amsterdam Smart City portal, Big Data, AI, IoT, cloud computing, integration of urban systems.	Data collection, transfer to partners for analytics, use of tech giants' services.	Digital identification (e-ID), broadband internet, online services (medicine, voting), mobile apps (AvaLinn).	Widespread implementation of "Diia", expansion of broadband access, development of proprietary IT solutions (mobile apps, platforms), active use of AI, IoT for management.
Role of Data	Collection of large volumes of data from various sources for effective urban management and data-driven decision-making.	Data collection by the city, commercial analytics by partners for quality decisions.	Open data, shared infrastructure for data exchange, use of data for effective IT solutions.	Creation of a centralized system for collecting and analyzing data on destroyed infrastructure, resources, and resident needs. Partnership with analytical companies.
Stakeholder Engagement	Active engagement of citizens and businesses through a unified portal, increased transparency.	Mutually beneficial cooperation between the city, businesses, and tech giants.	Surveys, voting (participatory budgeting), planning registry, feedback apps (AvaLinn), dialogue with officials.	Development of a unified digital platform for communication and cooperation among all reconstruction participants. Implementation of electronic tools for public participation (surveys, voting on projects).
Benefits for City/Residents	High living standards, convenient transport, clean environment, developed economy, safe environment, transparent governance.	Quality municipal services, investments in IT infrastructure, business profits.	Accessible and convenient digital services, effective urban planning, free public transport, sustainable development, clean air.	Creation of a transparent management and reporting system, improvement of quality of life through digitized and accessible services, attraction of investments, formation of a sustainable and inclusive urban environment.
Conclusions for Ukraine	Integration of systems (transport, communications, security) and transparency in governance.	Engagement of the private sector (especially IT companies) for data analysis and service development.	Systematic state policy of digitalization, accessibility and convenience of e-services, active citizen participation in decision-making.	Formation of public-private partnerships for data processing and innovation implementation, prioritizing digital inclusivity and mechanisms for public participation.

Source: created based on case analysis

Since the early 2010s, rankings of the world's best Smart Cities have been established. In 2021, the Smart City Index evaluated 118 cities, using economic and technological indicators, as well as citizens' opinions on how "smart" their cities were. The Smart City Index assesses only the Ukrainian capital. In 2021, Kyiv rose 16 places in the global Smart City Index ranking, reaching 82nd place, surpassing Tokyo (84th place).

Applying the smart city concept is advisable in the post-war reconstruction of Ukrainian cities in accordance with the "build back better" principle.

There are two primary approaches to creating a Smart City: either building a "smart city" from scratch, incorporating the Smart City concept into its initial design (e.g., Masdar in the UAE, Songdo in South Korea), or gradually integrating smart technologies into already established urban systems. Both options can be utilized for post-war reconstruction (Fig.2).

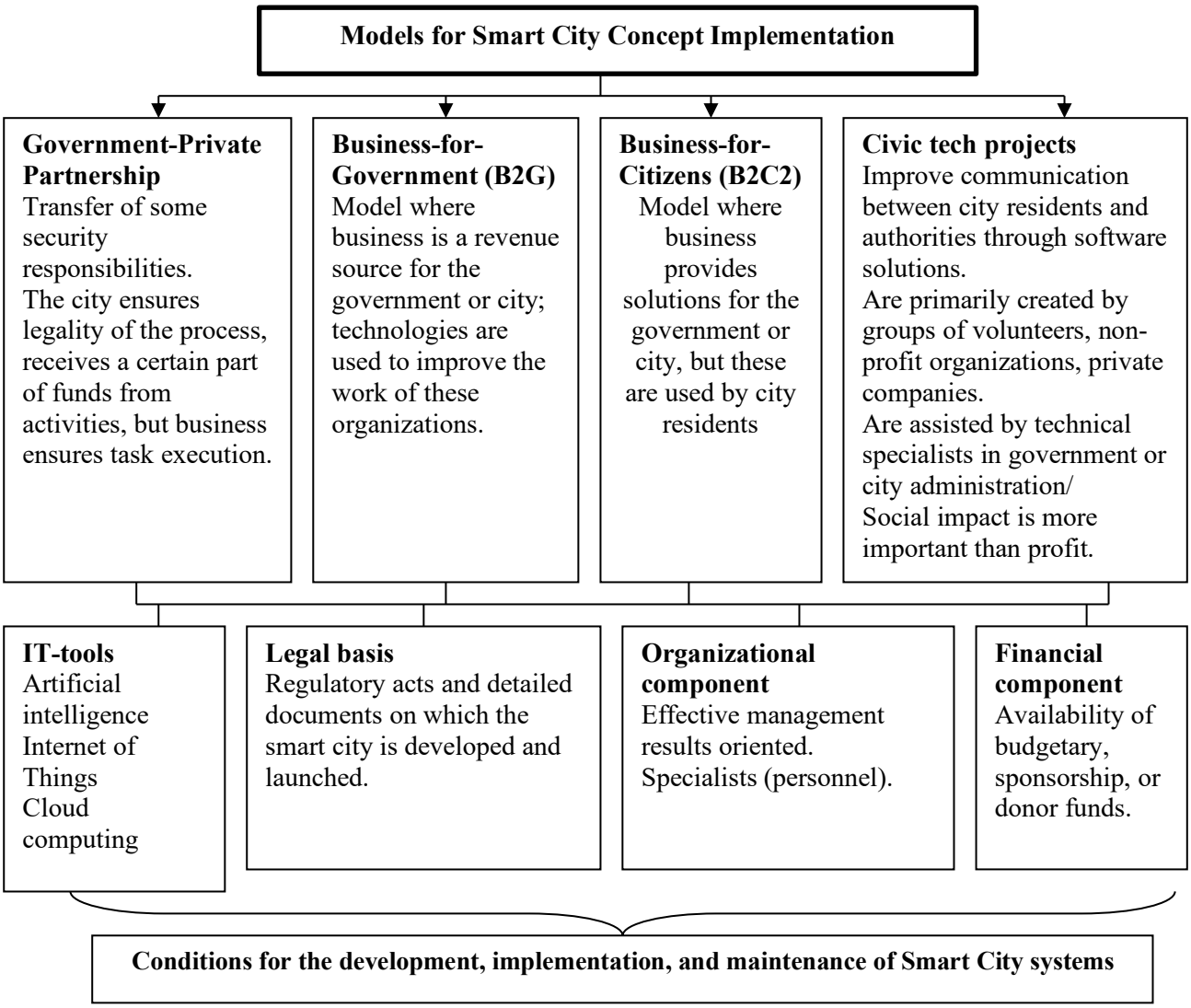

Figure 2. Models and Condition for Smart City Concept Implementation

Source: created by the authors

In the first stage, cities need to define their positioning. Cities can be oriented towards tourism, entrepreneurial development, or industry. There are also multicultural cities and satellite cities. While basic needs are universal across all cities (e.g., clean air, safety, parking), all other needs may vary.

The second stage involves selecting technological solutions. Many smart city technological solutions already exist; that is, there are ready-made and accessible products in various sectors of urban management (transportation, e-government, energy, healthcare, construction, public life). It is significantly more efficient, faster, and cheaper to select ready-made technological solutions *(Mind.ua, 2022)*.

A crucial role in implementing the smart city concept is played by human capital (specialists) who configure, launch, maintain, and service the system – in other words, smart solution professionals. Specialists who ensure the development of "smart" cities and buildings include those listed in Table 3.

Table 3. Examples of Specialists Ensuring the Technological Aspect of a Smart City

Specialist	Description of Main Tasks (Functionality)
Machine Learning Specialist	To train computers to solve complex problems that are difficult to solve algorithmically, such as recognizing human faces or other objects, or managing autonomous vehicles and "smart" traffic.
Cloud Architect	To rationalize various applications and create a potentially unified platform for integrating the city with selected applications (regarding parking, lighting, sensor monitoring, water management, etc.).
Virtual Reality (VR) Designer	VR designers in the field of "smart" cities create and ensure the functioning of an accurate online digital replica of the city. Through the virtual city, its residents can learn about pollution levels in a particular area, traffic jams, and available parking spaces.
Net-Zero (Active) Building Architect	Net-zero buildings are not only energy-efficient but also capable of producing more energy than they consume. Such specialists need knowledge not only in civil engineering but also, for example, in energy auditing.
Energy Efficiency Engineer	Management of energy consumption in buildings; optimization of energy resource use to reduce costs, decrease environmental impact, and increase overall system efficiency; implementation of innovative solutions that promote energy savings.

Source: created by the authors

The training of smart solution specialists can take place not only in universities but primarily through specialized courses.

The formation of smart cities aligns with documents outlining basic approaches to Ukraine's post-war recovery. One such document is the report "Ukraine: Sustainable Economic Recovery for People and Nature," prepared by WWF Central and Eastern Europe, WWF-Ukraine in collaboration with the Boston Consulting Group (BCG) (September 2022). This report formulates 10 recommendations for international and Ukrainian state actors, donors, and businesses involved in Ukraine's post-war recovery. These recommendations primarily concern ecological sustainability. Notably, the smart city concept fully complies with these recommendations. For example:

- In planning the reconstruction or replacement of buildings and infrastructure, ensure increased resilience to climate change (Recommendation 5);
- Apply the best available technologies in accordance with EU standards (Recommendation 7);

- Ensure socially inclusive public governance in accordance with Principle 4 "Democratic Participation," recognized in Lugano (Recommendation 10). (*WWF, 2022).*

In Ukraine, even before the full-scale war, many cities (Kyiv, Ivano-Frankivsk, Lviv, Zaporizhzhia, Drohobych, Poltava, Dnipro, Kharkiv, Odesa) had begun implementing individual smart city tools. There are successful cases in implementing electronic document management, data-driven monitoring and decision-making, municipal registries, and regulating the work of municipal services. Ukrainian cities have implemented e-tickets, e-document management, transport management, dispatching systems, and more.

Let us highlight just a few advantages that the implementation of the smart city concept will provide in the post-war reconstruction of Ukrainian cities.

First, smart cities in Ukraine will facilitate the return of Ukrainians who were forced to emigrate due to the war. Having lived in developed countries for years, they are accustomed to a high level of urban services and will not agree to live in worse conditions,

Secondly, a basic component of a "smart" city is "smart homes" (Smart Home) – a living environment where various devices and systems are interconnected and can interact, automate processes, and be controlled remotely, providing enhanced comfort, safety, energy efficiency, and convenience for residents. Smart homes are energy-saving, contributing to sustainable development.

Moreover, smart cities will expand opportunities for citizen participation in the economy. By using technology and data, cities create more opportunities for citizens to participate in the economy, for example, through freelancing, remote work, and entrepreneurship. The key driver of economic growth in smart cities is innovation, as these cities can attract and retain talented people and companies. Companies are drawn to smart cities due to the presence of advanced technologies, access to global talent, and a favourable regulatory environment. Smart cities also offer a wide range of programs, services, and resources designed to encourage and support innovation, such as incubators, accelerators, investment funds, and government incentives.

Discussion. The results obtained confirm that the smart city concept is not merely a passing trend but a necessary tool for Ukraine's post-war reconstruction and ensuring its economic growth. The analysis demonstrates that the implementation of smart solutions will not only allow for more effective restoration of damaged infrastructure but also create an innovative environment that will attract investments and facilitate the return of the population. However, a comparison with international experience shows that Ukraine faces unique challenges, such as a large-scale demographic crisis and uncertainty regarding funding sources. Although international partners are actively providing assistance, such as through the "Ukraine Facility," the volumes and mechanisms for allocating funds still require optimization. Decentralization and the involvement of local communities, as suggested by some experts, can be an effective way to overcome bureaucratic obstacles and increase the efficiency of reconstruction projects.

Conclusions. Ukraine's reconstruction is a unique opportunity not only to restore what has been lost but also to build a new, progressive country integrated into the European and global community. The implementation of the "smart" city concept, based on the effective integration of physical, digital, and human systems, is key to achieving sustainable development, improving citizens' quality of life, and attracting investment. International experience confirms the effectiveness of such approaches, and Ukraine has every opportunity to implement this ambitious plan, despite significant challenges. The main findings of the study indicate that:

- For effective reconstruction, not only physical restoration but also the creation of modern, resilient, and innovative infrastructure, where smart solutions play a key role, is necessary.
- The demographic factor, particularly the need for millions of Ukrainians to return, is a critical challenge that can be addressed by creating a safe, comfortable, and economically attractive urban environment based on smart city principles.
- While international financial assistance (including the "Ukraine Facility") is significant, its effective use requires clear planning, transparency, and coordination.
- Ukraine's younger generation deeply understands the benefits and challenges of the "Smart City" concept, indicating society's readiness for such transformations.

Practical recommendations for implementing the smart city concept in Ukraine:

- Develop a comprehensive national strategy for smart city development in Ukraine, integrating it into the overall post-war reconstruction plan, with clear goals, indicators, and implementation stages.
- Create a favourable investment environment for private capital, specifically by developing effective mechanisms for war risk insurance and "blended finance" instruments.
- Strengthen cooperation with international financial organizations and donors to ensure stable and predictable funding for smart city projects.
- Invest in human capital development, including educational programs on digital technologies and smart city management, as well as programs aimed at raising awareness and engaging citizens.
- Strengthen institutional capacities at the local level and promote the decentralization of reconstruction processes, allowing local communities to actively participate in the planning and implementation of smart city projects.

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