Introduction of Technologies "Smart City" In the Republic of Uzbekistan

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ABSTRACT: "Smart" city - the concept of integrating several information and communication technologies and the Internet of things for urban property management, including information systems of local administrations, schools, libraries, transport, hospitals, power plants, water supply and waste management systems, law enforcement agencies and other public services[1] . The article discusses the features of creating a "Smart City" in the Republic of Uzbekistan. A brief description of the goals of the Smart City Technology Implementation Concept is given.

KEYWORDS: digital economy, concept, e-government, the state, innovation development.

I.INTRODUCTION

Rapid urbanization on the one hand, creates an exorbitant burden on urban services (transport communications, emergency and public services), on the other hand creates an exorbitant burden on citizens (increasing distances and lengths of time to move, environmental and psychological discomfort, safety, etc.).To solve these problems, the concept of Smart City - "Smart City" is widely spread in the world.

A smart city is characterized by high-efficiency management and economy, high quality of life, communications and mobility, active participation of the population in urban life, careful attitude to the environment. The introduction of smart city technologies improves the efficiency of urban governance by creating a single digital environment that allows you to manage the city as a single whole. The term "digitalization" is now viewed in a broad and narrow sense. In a narrow sense, digitalization is the transformation of information into a digital form, which usually leads to lower costs, new opportunities, etc. Digitalization broadly implies a trend towards global development only if digital transformation meets certain requirements: it encompasses business, the manufacturing process, the scientific sector, the social sphere and the ordinary life of citizens; if you use the results effectively, which are available not only to professionals, but also to ordinary citizens who have basic skills in working with it.[2]

II.RESEARCH METHODOLOGY

This article is analytical and research. The study is based on an analysis of key indicators of the development of the economy of the Republic of Uzbekistan. They are collected from various international and national scientific articles, the official website of the President of Uzbekistan, the ministries of foreign relations, investment and trade of the Republic of Uzbekistan, data from the official websites of national journals, etc. Analyzes the economic situation in the Republic of Uzbekistan, measures taken by the state to accelerate the introduction of the digital economy in the country. The work uses statistical and economic analysis methods, peer review method and method of calculating economic efficiency.

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[1] https://ru.wikipedia.org/wiki/Smart_City

[2] Abdurashidova Marina Sagatovna«Analysis of the introduction of digitalization in the economy of the republic of Uzbekistan» IJARSET [Electronic resource],Vol.7, Issue12, pp. 16065-16069, 2020. – Access mode: http://www.ijarset.com/currentissue.html (Date of treatment 01/25/2021.).

III.DISCUSSIONS

The concept of a "smart city" is closely linked to the concept of sustainable development, and does not refer to the universal integration of information technology. On the contrary, it is more about the needs of people and society in the first place. Therefore, the concept of a "smart city" is considered from the point of view of three categories: the development of people, society and technology.

1. Technological "smart city" is seen as a city with extensive IT integration, such as the presence of artificial intelligence, Internet government, "smart" transport, etc. (E.G.: Korean Songdo City)

2."Smart city" for people's development is seen as a concept of "creative city", a place where people become smarter. Therefore, people, education and training play a major role in the formation of this type. Here more developed people create a kind of social capital, which pushes to progress all aspects of our lives: business, art, education, economy, science, etc. The most striking examples of this type are Skolkovo in Russia, or Silicon Valley in the United States. Here the urban environment is designed in such a way as to promote the creative innovation of residents and create opportunities for communication and their personal growth, both spiritual and material.

For society

A "smart city" for society is the embodiment of a "developed society" with common interests, where members of society, private and public organizations work together and use IT to achieve common interests. It also means that a society created in a "smart city" of this type should be interested in "smart" development.

At the same time, the concept of a "smart city" is currently estimated in six dimensions. For example, the measurements of the "smart city" are already being gradually introduced in our country: in government it is "electronic government" as one of the elements of "smart government"; In the city it is an improvement of transport infrastructure, through the introduction of "smart mobility" technologies to control passenger traffic.

Unlike developed countries, Uzbekistan has its own problems and ways to solve them

The main areas of implementation of Smart City technology implementation projects[3].

Smart transport is a complex of technological solutions in which all vehicles and infrastructure systems are interconnected. Such communication allows for a more accurate definition of the situation on the roads, as well as monitoring traffic flows using data from cellular operators and GPS signals.

The introduction of technology solutions in the field of "smart transport" provides:

An automated traffic management and traffic control system, including real-time monitoring of traffic conditions;

Software for public transport management;

automated system of informing road users about road conditions and situations, on public transport schedules;

Public transport safety system;

Introduction of information-assisted technologies: 5G executive devices and communications, broadband Internet networks, and other elements that transmit data to where it is stored and stored;

introducing urban Internet of Things platforms for a smart city;

Smart parking technology, which determines the location and remoteness of vacant parking spaces;

Electronic payment systems for the use of transport and roads;

Continuous monitoring of the situation in the conduct of passenger traffic.

Smart Education is an innovative technology that includes a suite of technology solutions in the form of educational online platforms and massive open online courses, advanced imaging and remote access technologies, augmented virtual reality, and others.

The introduction of smart education technology solutions means:

Artificial intelligence-based educational systems with the ability to test learners;

Intelligent Facial Recognition System

Distance education and e-learning;

Electronic journals at all levels of education;

Online and offline integration systems

adaptive and mobile learning technology.

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[3]https://mininnovation.uz/ru/activities/measures-to-implement-the-concept-of-introducing-technology-smart-city-in-the-republic-of-Uzbekistan

Smart Medicine is a centralized system that automates the full cycle of information support for the provision of health services to the population.

The introduction of smart medicine technology solutions means:

Unified databases of patient biomedical data;

Networked medical records

remote diagnosis. Remote monitoring systems for human health based on the medical Internet of Things and mobile applications;

Virtual dispensary;

Virtual hospital services

E-recipes

Home health care using telemetry and wireless communication;

Scientific and evidence-based medicine (using devices based on artificial intelligence and technical innovations in telecommunications);

payment of services based on the results of treatment (paid not the number of visits to the doctor, and the achieved result);

introduction of artificial intelligence technologies to analyze medical data, predict morbidity, disease and recovery;

integrated medical facilities (with GPS and mobile platforms) to track medical supplies in real time.

Smart energy system

The Smart Energy System is a sustainable, cost-effective and reliable energy system in which energy production, infrastructure and consumption are integrated and coordinated through service, consumer and technology incentives.

The introduction of smart energy technology solutions means:

Data collection and operational dispatch management system;

Emergency outage management system

Customer relationship management system

Geo-information system;

Autonomous sensors to monitor voltage

Digital Internet of Things platforms that integrate devices of different types, collect and predict data analytics;

Hybrid batteries, superconducting drives, next-generation lithium batteries;

"smart" measurement systems, consumer activity analysis.

The introduction of smart water and drainage technology solutions includes:

a single information system by introducing a geographic information system;

Consumer accounting system and volumes of water and wastewater services;

Electronic versions of water and sewerage route maps;

Water and wastewater systems by installing electronic sensors and pressure controllers in networks;

automation systems - central dispatch services and online monitoring.

Smart Housing and Utilities is a sustainable and cost-effective system of housing and utilities, in which the provision and consumption of utilities and services through intelligent accounting, monitoring and control is coordinated through a service that also takes into account the interests of consumers and the development of technologies.

The introduction of smart housing and utilities solutions includes:

Automating the process of taking meter readings and then transferring them to the appropriate authorities;

Systems of transmission of information to the user's devices about the state of power supply at home;

a system of special services and private offices to monitor the quality of public services;

information systems, the introduction of smart meters ("smart metering devices") to ensure the exchange of data between utility users and their suppliers;

Payment monitoring systems

Infrastructure management systems

Energy efficiency systems and methods

systems to reduce water consumption, reduce the cost of water supply through the use of water-saving technologies;

open consumer service platforms.

Smart Construction is an innovative construction technology that includes organizational, exploration, design, construction and start-up works related to the creation, change or demolition of a facility.

The introduction of smart construction technology solutions means:

Monitoring and operational management system during construction;

systems for simplifying the construction process and shortening the construction of facilities;

Standards for the construction of modern and efficient housing;

New building materials

Project documentation system for construction;

visual modeling of construction processes.

Smart Home is an intelligent control system that combines all communications in the home into one, controlled by artificial intelligence, programmable and customizable based on the needs and wishes of the homeowner.

The introduction of Smart Home technology solutions means:

Security and fire alarms;

Access control system;

Control of emergencies (water leak, gas, accidents in the electricity grid);

Remote monitoring and management of all home systems over the Internet;

Transfer information about the operation of the home water system to the user's smart devices through the GSM module;

Remote control of construction site design processes in real time.

Smart Hokimiyat is an innovative solution and system aimed at developing and making relevant proposals to local government authorities on pressing issues of concern to the population.

The introduction of "Smart Hokimiyat" technology solutions implies:

The well-functioning of the system of interaction between the city's residents and representatives of the executive branch, the information openness of the city administration;

Citizens' activism in city management;

Relevance of the city's strategic planning documentation;

High attendance of official websites of the city administration;

Electronic ID with a combination of payment funds;

A widerange of applications and uses of high-tech, high-speed Internet.

IV. INTRODUCTION OF SMART CITY TECHNOLOGIES IN UZBEKISTAN

Today, Uzbekistan is in the early stages of introducing innovative Smart City technologies. Pilot projects to introduce Smart City technologies in Tashkent in the directions of "Safe City," "Smart Meters," "Smart Transport" and "Smart Medicine" are being planned and started. Comprehensive work is under way to introduce modern urban infrastructure in the city of Nurafshon, and new infrastructures are being built under the Tashkent City and Delta City projects.

Another "smart" city will be built in Kokand. This is provided by the resolution of the Cabinet of Ministers of Uzbekistan "On measures to accelerate the implementation of the investment project and industrial development of the Fergana region" of July 22, 2019.

It is planned that the project called Smart City will be implemented in the free economic zone (FES) "Kokand" created in 2017 on the territory of 700 hectares.

The project will be implemented by the South Korean company Chxong-Xe. According to preliminary data, the cost of the project will be 4.1 trillion sums ($481.1 million at the current rate of the Central Bank of RUz). Construction of the city is due to be completed by December 1, 2025[4].

The introduction of smart city technologies improves the efficiency of urban governance by creating a single digital environment that allows you to manage the city as a single whole.

In this regard, taking into account the importance of the above-mentioned tasks, the concept of the introduction of "Smart City" technologies in the Republic of Uzbekistan (further - Concept) has been developed, providing key priorities and key areas of public policy in this direction.

The main purpose of this Concept is to implement a set of measures aimed at creating modern engineering and communication infrastructures in cities by introducing Smart City technologies, in particular[5]:

Ensuring sustainable growth of quality of life and creating a comfortable urban environment for residents and guests, favorable business environment;

Improving public spending, including through public-private partnerships;

The systematic introduction of all Smart City technologies that correspond to foreign counterparts;

Improving the efficiency of urban services and road infrastructure by introducing innovative solutions.

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[4] https://kursiv.kz/news/vlast-i-biznes/2019-07/v-uzbekistane-postroyat-esche-odin-umnyy-gorod

[5] https://lex.uz/docs/

The main objectives of the Concept are:

Creating effective and effective regulatory, organizational and institutional frameworks for the introduction of Smart City technologies, including digital infrastructure;

Creating mechanisms to stimulate demand for smart services;

Formation of a system of government support for the development and implementation of smart services;

Improving the quality of services and living standardssolving problems related to the engineering and communication state of cities and updating the worn-out and obsolete urban infrastructure;

Creating a conducive environment for information and communication technology infrastructure, as well as increasing the speed and accessibility of the Internet;

Creating a Smart City platform that provides feedback to residents who can evaluate city services and share experience in any area of urban development;

The development of digital navigation around the city, including the provision of open information data to tourists, speeding up the refinement and introduction of digital technologies;

Work on planning the maximum coverage implemented by the most sought-after technologies "Smart City" of all cities of the republic.

V. CONCLUSION

At the same time, one of the main problems hindering the effective implementation of Smart City technologies is the undeveloped infrastructure of information and communication technologies and the significant wear and tear and moral obs dweller of urban infrastructures. All of this requires measures to modernize telecommunications networks and to find significant investments in urban infrastructure reconstruction[6].

On this basis, an important task is to conduct an in-depth analysis of the most rational solutions on this issue implemented in foreign countries, and their practical testing in laboratory and testing and in the framework of relevant pilot projects, as well as to find possible options available and generate new proposals for flexible business models and attractive investment schemes applicable to these conditions.

The way to solve these problems is developed in the world practice and involves private business in solving socially significant problems, establishing public-private partnership.

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[6]https://regulation.gov.uz/ru/document/932