СМАРТ-ШАҲАРЛАР ТАЙЁРЛАШ ТЕНДЕНЦИЯЛАРИ

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Абидова Дилфуза Муратджановна,
етакчи ўқитувчи, Тошкент педиатрия тиббиёт институти академик лицейи, Ўзбекистон

Аннотация. *Шаҳар муҳити мураккаблашган, келажак шаҳари ривожланиши йўлидаги ижтимоий ва сиёсий консенсус аста-секин заифлашиб бормоқда. Оқибатда моддий ва маънавий қарашлар, мақсадлар ўзгариб, қулайликларни манфаатли ҳамда арзон амалга оширишнинг асосий тамойиллари ҳам ўзгариши кузатилмоқда. Мазкур мақолада XXI асрда тараққиёт исботи сифатида тан олинаётган смарт-шаҳар, смарт-таълим, смарт-жамият ғоялари ҳақида сўз боради.*

Калит сўзлар: *смарт-шаҳар, смарт-жамият, смарт-фуқаро, смарт-таълим, келажак тенденциялари.*

ТЕНДЕНЦИИ СОЗДАНИЯ УМНЫХ ГОРОДОВ

Абидова Дильфуза Муратджановна
Ведущий преподаватель, Академический лицей Ташкентского педиатрического медицинского института, Узбекистан

Аннотация. *Городская среда стала более сложной, и общественный и политический консенсус в отношении будущего развития города постепенно ослабевает. В результате меняются материальные и духовные установки, цели, а также основные принципы выгодной и доступной реализации объектов. В статье рассматриваются идеи умного города, умного образования, умного общества, которые признаны свидетельством развития в XXI веке. В статье также рассматриваются вопросы обучения умных граждан, входящих в умное сообщество.*

Ключевые слова: *умный город, умное общество, умный гражданин, умное образование, тенденции будущего.*

TRENDS IN CREATING SMART CITIES

Dilfuza Muratjanovna Abidova
Leading Lecturer, Academic Lyceum of the Tashkent Pediatric Medical Institute, Uzbekistan

Abstract. *The urban environment has become more complex and the public and political consensus on the future development of the city is gradually weakening. As a result, material and spiritual attitudes, goals, as well as*

the basic principles of profitable and affordable implementation of objects change. The article examines the ideas of a smart city, smart education, smart society, which are recognized as evidence of development in the 21st century. The article also discusses the issues of educating smart citizens who are part of a smart community.

Keywords: *smart city, smart society, smart citizen, smart education, future trends.*

Introduction. Today, the development of new ideas about the best urban planning has become a real hobby for designers, architects, urbanists and environmentalists. Since the beginning of the 21st century, the concepts of green, green, compact, creative and smart cities have attracted a lot of scientific interest and attention from the media and local authorities. Over the past twenty years, this concept has become more and more popular in the scientific literature and international politics.

Smart cities. A smart city is an urban planning concept for integrating various information and communication technologies (ICTs), including for the management of urban infrastructure: transport, education, healthcare, housing and utilities, security, and more. The goal of creating a «smart city» is to improve the efficiency of services and improve the quality of life of urban residents using IoT to meet the needs of the population [2].

What is a smart city and what features does it provide? The British Standards Institute (BSI) defines a smart city as «the effective integration of physical, digital and human systems in an artificially created environment to ensure a sustainable, prosperous and inclusive future for citizens.» ICTs enable city governments to interact directly with communities and urban infrastructure, monitor what is happening in the city, how the city is developing, and ways to improve the quality of life. Data received from city residents and devices is processed and analyzed using sensors in real time. The collected data is the key to solving complex problems [3].

The application of smart city technology is being developed with the aim of improving urban flow management and quick response to complex tasks. Therefore, the «smart city» is more prepared to solve problems than with a simple «operational» relationship with its citizens. However, the term itself remains unclear in its specificity, and, therefore, involves many interpretations and discussions [2].

Materials and methods. In this article were used methods of abstraction and concretization, statistics, comparative analysis, work with documents and forecasting.

Results and discussion.

Smart city properties. Components and functional areas of Smart City

projects:

- Video surveillance and video analytics
- Video recording cameras (photo and video recording)
- Situational centers, EDDS
- System 112
- ITS - intelligent transport systems
- Public transport safety
- Professional radio communication and broadband access (LTE, 5G)
- IoT - Internet of Things
- Unmanned vehicles
- Biometrics
- Processing of unstructured data
- Decision support technologies
- Augmented and virtual reality
- Distributed databases
- Geoinformation technologies and navigation
- Machine learning
- Cloud / Fog / Edge Computing

As Boris Glazkov, Vice President for Strategic Initiatives of Rostelecom, explained in the spring of 2018, end-to-end technologies affecting the development of Smart Cities include those technologies that simultaneously cover several trends or industries, in this particular case from the point of view of city management. Consequently, the emergence and development of cross-functional and intersectoral solutions depends on them. It is from the contact and mutual enrichment of different areas of knowledge that new effective technologies and applied solutions emerge that determine the prospects for the development of «Smart Cities». The competent use of end-to-end technologies will ultimately stimulate an increase in the quality of life, the comfort of the urban environment, management of various sectors of the urban economy while reducing resource consumption.

«Behind each end-to-end technology with a complex name are concrete solutions to improve the quality of life. For example, geographic information technologies and ultra-precise navigation, together with 5G, are the basis for the emergence of unmanned public transport. Digital technologies for decision support and processing of unstructured data, machine learning are needed to create smart systems for managing road transport infrastructure, including traffic forecasting, smart traffic lights and even control of bus driver fatigue. That is why end-to-end technologies should be the focus of attention in the development and implementation of Smart Cities concepts, noted Boris Glazkov.

The definition of a smart city is interpreted ambiguously by experts. Yet

their wording converges on one thing: a smart city is driven by data, and data management enables municipal services to improve the quality of life of the population. The data cover such spheres of citizens' life as security, transport, medical services, utilities, landscaping, etc. The sources of data are video cameras, various sensors, sensors, information systems, etc. [3].

According to UN estimates, by 2050, 67% of the world's population will live in cities. Already, some of the world's megacities are overpopulated. Municipalities do not always cope with garbage collection, the supply of utilities and electricity from district to district is not uniform, etc. In order to provide the population with high-quality urban services, administrations are increasingly introducing various information systems.

This term, along with the term «smart city», is suggested to be used by PwC analysts. However, there is also a problem here: there is no single standard or benchmark by which it would be possible to unequivocally determine how well or poorly a city is governed by data. Experts explain this by the fact that the technological landscape of megalopolises is constantly changing, and there is more and more heterogeneous information that becomes the basis for the implementation of the DDC concept.

Uzbekistan. Tashkent. «Shvabe» will take part in the project of creating a «smart city» in the administrative center of the Tashkent region.

On April 5, 2021, Shvabe Holding of Rostec State Corporation announced its participation in the project to create a «smart city» in the administrative center of the Tashkent region - the city of Nurafshan. More details here.

All settlements in Uzbekistan will be safe by 2023

One of the Safe City projects is working in Tashkent: smart CCTV cameras are operating at 120 crossroads to record violations. The information from the cameras is transmitted to the crime monitoring center, which was launched in July 2017. Until 2019, this project will fully cover Tashkent, and then the regions [5].

The Center for Information Security and Assistance in Ensuring Public Order will be engaged in further development of the software complex. The post of Deputy Minister for ICT Development, responsible for the implementation of Safe City projects, will also be created.

The first stage of the project will be implemented in 2017–2019. During this time, it is planned to create video analytics systems, install video surveillance and automate the reception of messages about incidents in Tashkent. In 2019–2021, the Safe City will be implemented in all regional centers, and in 2021–2023, it will cover the entire country.

The complex will be integrated with information systems of government agencies, video surveillance systems, analytics sensors, data processing centers. A unified dispatch service will be created for the Ministry of Internal

Affairs, the Ministry of Emergency Situations, ambulance, fire safety, which will receive calls to 112 and SOS-button signals, and decide who to call to the scene. The installation of SOS buttons will continue until September 1, 2019 in Tashkent, and until 2021 in all regions. All incidents recorded by sensors and video cameras will be reflected in the situation center. Then it will be possible to analyze the state of security in the capital on an interactive map online.

An analytical video surveillance system in public transport will be introduced in Tashkent by the end of this year, and parking lots with online payment and a license plate recognition system will be created in 2018-2019.

IBM partner of the government of Uzbekistan in the implementation of «smart cities». IBM Eastern Europe / Asia will render assistance to the republic in the deployment of the «smart cities» program in Uzbekistan. This was reported in the summer of 2017 on the official website of the Ministry for the Development of Information Technologies and Communications of Uzbekistan.

During negotiations to establish cooperation, the parties identified the main areas of interaction as the development of smart cities technology, training highly qualified IT specialists, software development, cloud technologies and support and funding for startups. It is expected that soon a corresponding agreement will be signed between IBM Eastern Europe / Asia and the Ministry for the Development of Information Technologies and Communications of the republic.

In July 2017, the Ministry for the Development of Information Technologies and Communications of Uzbekistan signed a memorandum of understanding and cooperation with SAP CIS. The document allows the vendor to train specialists and participate in projects to improve conditions for the development of information technologies in the republic. The company itself can count on benefits, which are determined by the presidential decree «On measures to radically improve conditions for the development of the information technology industry in the republic» [6].

The capital of Uzbekistan will be turned into a «safe city»

In July 2017, the President of Uzbekistan Shavkat Mirziyoyev made a proposal to turn the capital of the country into a «safe city». In the near future, the government will prepare a decree on the creation of a new subdivision in the structure of the Ministry of Internal Affairs of the republic, which will work with video surveillance systems installed in public places. [2]

In his address to the head of the Ministry of Internal Affairs, the President stressed: «You will create one system that will implement the concept of» Tashkent is a safe city «. One deputy minister and his team will deal exclusively with this matter. An experiment will be conducted in Tashkent from September 1, 2017 to 2019. Beijing has created such an excellent system, they are close to our mentality. «

According to the head of state, the control center will be tested for

two years, and then the system is planned to be introduced in all cities of the country. Tashkent University of Information Technologies and Inha University in the capital of Uzbekistan will train specialists with appropriate qualifications to work in this structure.

ICTs are used to improve the quality, productivity and interactivity of urban services, reduce costs and resources, and improve communication between the urban population and the government. But ICTs used in smart cities differ from conventional hardware and software in complexity. Of course, competent professionals in this field are needed to manage this type of ICT. This, in turn, opens the way for the development of the concept of intellectual education. In the next step, the agenda will include a requirement for individuals who are residents of smart cities to properly take advantage of the opportunities provided by smart cities. And that means acting like a community-organized citizen of a smart community.

Conclusion. Smart citizens are people with higher education who use modern technologies all their lives, work in a team and participate in management.

According to Professor Gianmarco Chifaldi, smart citizens are high-tech people who use modern technologies for their entire lives, in a sense, smart citizens are an integral part of a smart society. However, the professor notes that often in a smart society only smart technologies are understood (smart transport systems, smart housing, «greenhouses») [4]. It can make people forget.

In our opinion, it is advisable to include in the content of smart education, which prepares smart citizens, materials that develop more personal qualities, such as the possession of universal human values, humanity. Only then will it be possible to educate future citizens who are well developed and have no shortcomings.

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