SMART CITIES - NEW URBAN AREAS

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ABSTRACT

According to forecasts provided by the UN by 2050, approximately 70% of the world's population will live in cities. In digital terms, urban areas will have 6.5 billion inhabitants, compared to 3.5 billion people in 2010. In recent years, the terminology that attempts to describe the "Smart City" has become more and more pronounced. Intelligent technologies, the development of the Internet system - as a global network for all kinds of communications and a range of other innovations - provide opportunities for the development of a smart urban environment in this direction. Improving the quality of life of a much larger number of inhabitants in urbanized areas will be a priority by applying to a great extent the new technologies. Concentration and movement of the population's needs in all forms will be the subject of intelligent technologies that support life in cities.

Till now there is no precise definition of "Smart City". Improving the way of life in urbanized areas at this stage, as a key element emerging the introduction of new technologies. Challenges will be based on several areas - ecology, social and economic activities, administrative governance, infrastructure development and social mobility.

Key words: Smart City, Urban Area, Urban Environment and Innovation.

INTRODUCTION

The purpose of the publication is to examine the concept of Smart Cities, their future importance for the development of human civilization. How this new urban environment would have a positive impact on the development of settlements and the growth of the human population not only in Europe but also in the world.

METHODS

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RESULTS

Improving lifestyles in urbanized areas and in particular in Smart Cities at this stage, as a key element emerging the introduction of new technologies. Challenges will be based on several strands of life, such as: ecology, social and economic activities, administrative governance, infrastructure (social) development - residential construction and mobility of the society.

Factors directly influencing the development of Smart Cities can be classified together into several large groups with relevant accompanying elements - social, economic, geodemographic, geo-ecological and geoclimatic:

Social factors: labor and educational migration, unemployment, development of health, sports, cultural, tourist and educational institutions, formation of green infrastructure.

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Economic factors: infrastructural development-formation of urban transport according to the location and needs of agglomeration, creation of financial institutions, creation of business parks, development of administrative, commercial, insurance Networks and activities.
Geodetic factors: birth rate, mortality, natural and mechanical growth, ageing of the population, migrations-internal and external.
Geo-Ecological factors: seasonal and trans-boundary pollution, fires, earthquakes, floods, landslides, soil contamination, water, air.
Geo-climatic factors: abrupt change in seasons-temperature anomalies, rainfall and droughts; Typhoons, hurricanes, tsunamis, volcanic activity, etc. (1)

According to the authors of the article, without claiming the circumstantiality and accuracy of the issues, they offer their definition of a "smart city" – a *"network of connected objects and technology activities based in administrative boundaries supporting companies and residents easier to make decisions that improve their quality of life. These decisions relate to traffic management, energy efficiency, environmental activity and other services while reducing costs cleaning and purification"*.

In fact, each and every one of us has probably asked himself a variety of questions:
  -What is smart city?
  -What do you mean, talking about smart city?
  -What new technologies will be used and implemented? (2)

Questions respond to the foreseeable future of human development. Increasing the quality of life of a much larger population of urbanized areas will be a priority, applying to a large extent necessarily new technologies. The concentration and movement of the population its needs in all forms will be the subject of intelligent technologies supporting urban life. Connecting all the technologies that control the city's systems will be a mandatory process. Controlling Socio-economic activities will be a key point in the whole spectrum of what is "smart city": (3)

Smart road infrastructure – using cameras and sensors to analyses and track traffic in the city. Traffic lights assess the road load. Monitor the speed of individual cars or the overall movement. Monitoring of ambient air pollution from road traffic. Creation of special additional

lanes for movement, in case of workload and change of direction if necessary.

Smart buildings – The architectural approach should be aimed at introducing or embedding solar panels in the buildings. Optimization of energy consumption and air conditioning is also needed. Improving lighting is essential for optimum use of electrical energy.

Energy – The most important structural unit in the smart city. Using the latest technologies for energy production and storage. Application of alternative sources for electricity extraction.

Social activity – Smart cards for citizens with whom all kinds of payments can be made in the city. All social institutions – hospitals, schools, kindergartens, administrative buildings are accessible and electronically connected in one system. (4)

Economic activities – the entire economic and production cycle of production activities will be controlled by systems interconnected and the amount of harmful emissions falling into the atmosphere will be monitored. A basic rule will be the observance of environmental rules of different types of production. (5)

Administrative management – All administrative activities must be related to all types of administrative activities within the city boundaries. Accessibility to all types of services electronically.

Municipal waste Management – electronic system will monitor ecological environment in urban space on horizontal and vertical level. Recycling of all types of waste products, whether domestic or industrial, will be compulsorily recycled.

Pioneers in this new activity is Singapore, the traffic management system in the city for example was introduced for the first time in 1975 today it already uses a network of cameras, sensors and GPS devices to anticipate and prevent congestion by changing the size of The fees that cars pay to reach different parts of the city. Pedestrians are also included. Adults and people with disabilities receive special RFID chips, through which traffic lights detect their location and leave the green light released for them.

In 2016, again the city was the first among the "smart cities" in the world, according to the British research company Juniper Research. The survey includes various technology

systems such as smart grids, smart lighting, the use of technology to improve traffic, access to wireless internet and more.

The first of the cities of the Iberian Peninsula is Barcelona. In the territory of the agglomeration there is a system for traffic management for transport. The city also has an intelligent parking system, intelligent LED Street lighting, a system of sensors for monitoring air quality and volume levels. For the management of the city's water has built a system to the Controller water resources. (6)

Globally, smart cities are starting to increase their number, while older urban agglomerations are starting to introduce technologies that allow rapid adaptation to new living conditions. Smart are cities that harness new technologies to improve the quality of life and reduce the harmful effects on the environment. Based on these criteria in the first place is San Francisco currently 41% of the city's energy is produced by alternative energy sources. (7) Second is Amsterdam with large green areas, high building efficiency and a large percentage of processing of household waste, agriculture and industrial activities. In the third place is Tokyo, the idea is to turn the city into a "green island" with a million trees and the introduction of new technologies. The other smart cities that have their advantages are – Seattle, Montreal, Santiago, and again from Europe – Copenhagen, Stockholm, London and Barcelona. Of the 10 cities selected globally, five are from the old continent. Despite the fact that historically they have built their vision, but are open to new challenges and technologies. There is a basic link between the formation of smart and green cities. (8)

CONCLUSION

For the development of smart cities in the future it is necessary to introduce new standards in the infrastructural development of the city itself and it is specific for each city of this type. The new standards must meet new technological requirements based on new human ideals other than the old ways of the classical city. The new smart cities must be a kind of "green oasis" for sustainable development not only on the old continent, but also globally. The thinking of the human society inhabiting these new spaces must embrace the new environment as their personal space for life, developing and improving living

conditions based on new thinking with new technologies. In Europe, the average population density will increase, urban focus will intensify, as is the pressure from external migration. The pressure from the vast population, the environment, the infrastructure in all its varieties, the landscape as administrative territory, Socio-economic development will be greatly increased. The quality of life will change in a negative way if no adequate solution is found for the looming global problem. The creation of smart cities or the introduction of new technologies in large urbanized areas is the right direction, which will greatly alleviate the way of life, and perhaps lead to a better coexistence between the sodium and urban environmental systems. Effective urban planning is also required as there is a natural tendency to cluster over the main transport network (9).

The construction of smart cities or the introduction of new technologies will greatly facilitate the life of the population. Improving the quality of life and developing a sustainable urban environment are the two enabling processes that are key to large cities not only in Europe but also globally. Smart cities are not fantasy, they are real and existing ideas, albeit on a smaller scale on their technological development. A matter of time is the introduction of technologies covering and serving a large part of the territory and the problems of the Sodium in the city.

REFERENCES

1. Nedeva K. N., Nanev N. N., Marinov P. P., The Green infrastructure - a new approach to achieve sustainable development in the region, a scientific international Conference – „Promising problems of Eeconomics and Mmanagement-collection of scientific articles", Publishing house „BREEZE", Montreal Canada, 26-30.10.2015 y., pp. 141-145, ISBN: 978-617-7214-09-9.
2. Marinov, P., Changing the Europe, Plovdiv, Fast Print Books, ISBN: 978-619-236-104-4, pp. 290-297.
3. Bashev, H., Ivanov, B., Toteva, D., An evaluation of the socio-economic and ecological sustainability of agrarian ecosystems in Bulgaria, BAS, year LXIV, Book 2, 2019, ISBN: 0013-2993 pp. 57-81.
4. Koteva, N., Toteva, D., Methodological and methodical issues of the economic sustainability of agriculture and agricultural

farms, Economics 21, year VIII, Book 1, 2018, ISBN: 1314-3123, pp. 3-25.

5. Bashev, H., Sustainability of agricultural farms in Bulgaria, Avangard Prima, Sofij 2016, ISBN: 978-619-160-738-9.

6. Bashev, H., Ivanov, B., Toteva, D., Sokolova, E., Agrarian sustainability in Bulgaria – economic, social and ecological aspects, BJAS, 2017, ISBN: 1310-0351, pp. 519-525.

7. Marinov, P., The Smolyan region between two seas, a scientific international Conference – „Modern problems of regional development-collection of scientific articles", Scientific journal „Economics and Finance and Agricultural University – Plovdiv 2014 y., p. 39 -395, ISBN: 978-954-517-218-2.

8. Marinov, P., The regional system - A basis for rural development within the borders of the European Union, Agrarian and Rural Revitalization Issues in China and Bulgaria, 2018, pp. 176-199, KSP Books, Editors: Bachev, H., Che, S., and Yancheva, S., ISBN: 978-605-2132-57-9 (e-Book).

9. Markov N., Spatial analysis of trade activity using geographic information systems, *Economic Thought Journal*, 2019, p. 111, ISSN 0013-2993.