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CORPORATE R&D URBAN PLANNING COMPLEX FOR RECONSTRUCTION OF CITY CAPACITIES: NECESSITY OF INNOVATIVE TECHNOLOGIES IN THE CITIES

Cities are considered as the numerous generations of a human society that have thousands years of existence. Destinies of cities are various and instructive: some of them have ceased to exist for a long time, others have grown to enormous proportions; some remained oblivious, others became world-famous. In the ancient history, most cities were clearly manifested in the nature of their layout and silhouette. Each epoch and society spontaneously or deliberately transformed and adapted cities that inherited from the previous epochs certain features.

In urban planning there is a tendency for integration, both in the field of production of goods, and in the field of management; expanded reproduction leads to further increase of the level of labor division, concentration and specialization of construction production, the intensification of the exchange of results in industrial and economic activity.

The Readiness for the Future of Production Report 2018, presented by the World Economic Forum (WEF), states that the country's readiness for the future will be determined by two factors: how scaled and complex the structure of production is, and how strong the five

driving forces that can move process of production technological transformation are: technology and innovation; human capital; global trade and investment; institutional framework; sustainable resources and demand environment [1,2].

In particular, as far as human capital is concerned, the Report states that although the fourth industrial revolution provides robotics in manufacturing, human resources will continue to be decisive. The transition of the country to new technologies will accelerate a strong labor market and have long-term opportunities to train employees, open new talents and attract experts from abroad [1,2].

WEF analysts have proposed to unite Ukraine, along with Russia, Moldova and Georgia, into "Eurasia" group of countries, which have a certain industrial base, but at the same time, their drivers of production remain weak. The WEF estimates human capital for this group of countries quit well: for example, according to this indicator Ukraine's rank is 34th in the world (5.8 points). At the same time it has 52nd rank by the indicator of the training of future labor force. According to international experts, Ukraine has extremely bad position concerning introduction of technologies and innovations (3.5 points, 74th rank). Ukraine also received a low rating of technology transfer and foreign direct investment (3.5 points) and ranked 95th among the countries of the world. In our country, only 52% of the population use Internet (while in Great Britain - 94%, in Russia and the USA - 76%). The mobile communication of fourth generation (4G) is used only by 1.4% of Ukrainians, while in Germany and China 4G-networks cover about 97% of the population, and in Poland - 100% [1,2].

Smart city is a concept of urban planning that integrates information and communication technologies with the Internet. In particular, the British Standards Institute describes a smart city as "an effective integration of physical, digital and human systems in order to create an artificial intelligence environment to provide citizens with a reliable and safe future." According to scientists, in less than seven years, about 60% of the world's population will live in cities, so the issue of maintaining the appropriate comfort of modern cities has become extremely relevant today.

Let's consider three patterns of smart cities where innovative technologies are intensively used today [3].

Barcelona has a unified system for collecting all communal counters' data: light, water supply, road conditions, noise levels, and others. Urban landscapes react to passersby on the street, garbage tanks equipped by detectors which inform about the degree of overflow. Digital

bus stops inform the passengers on the special site about all buses and city transport routes, and in addition, you can charge a smart phone, listen to music and even switch to a virtual city tour at the bus stops. For drivers special touch sensors are installed on the road, which help to find empty parking spaces, reducing potential harmful emissions and traffic jams. The city is equipped with sensors, which promptly inform citizens and visitors about the quality of air in a particular point of their location.

London has a second rank in the *Pw* rating (*PricewaterhouseCoopers*, an international network of companies offering professional consulting and auditing services taking into account the technological progress). The smart city system is focused on the transport field, offering special online platforms with mobile applications. Online services help passengers plan successful trips and simplify the process of managing the inconvenient street transport scheme, as well as inform about road repairs and other situations without the help of the appropriate staff. London is equipped by efficient multi-sensor fire alarm systems and detectors, which immediately recognize fire hazard buildings and places.

Australian Sydney is the greenest smart city. Except parks, in the city there are about 150 buildings with green roofs and even green walls. Sydney has a SCATS traffic monitoring system that monitors road loading. The monitoring system of the city's atmosphere provides operative public information on the air condition in the city. This information can be obtained in the same way as weather forecast - from computers or smart phones.

In July, 2018 three-dimensional digital model of Virtual Singapore should be used in Singapore. With thousands of sensors and cameras this online platform will allow authorities to observe and analyze in real-time mode what occurs across the territory of entire country. For the first time namely in Singapore intelligent technologies will be used on such a big scale and with such a high level of penetration into all spheres of life. For example, already in the city there is a voluntary monitoring program for the elderly, which monitors the movement of the person to the apartment, and sends these data to the state authorities. The danger of potential interference of authorities into private life of citizens does not stop the majority of Singaporeans - about 74% of citizens completely trust the government and authorities. "Virtual Singapore" becomes the part of the Smart Country project, for which realization the government already in 2017 planned to spend \$ 1.7 billion. According to forecasts, the Asian technology market of smart cities by 2025 will grow to \$ 1 billion. And thanks to such projects as Smart Country, Singapore could play its important role among other developed economies in the future.

Odessa realizes a city program "Electronic Open City" [5]. The general objective of the Program is to create by local authorities the single informational infrastructure of the Odessa City Council through the introduction of a unified management system in the information and television sphere of the Odessa City Council, in executive authorities, municipal enterprises and institutions of the City Council.

The implementation of the program is aimed to achieve European standards for the efficient provision of administrative services, openness and transparency of the city's authorities, satisfying the needs of the inhabitants of Odessa. The program provides the informational support for realization of city development strategy and solving economic, social, environmental, R&D, cultural and other problems in the spheres of activity of local executive and local self-government bodies.

The program provides the diffusion of information technology into the field of tourism. Tourism is one of the main spheres of the modern economy, which has a positive impact on the development of other sectors, including the hotel economy, transport and communications, construction, retail trade, production and trade in souvenirs, etc., and can be considered as a key driver for their development. In addition, such activities are aimed at meeting the needs of people, getting to know the history, culture, customs, spiritual and religious values of different countries and their people.

According to the forecast of the World Tourism Organization (WTO), the tourism industry will continue to grow, and by 2020 about 1,561 million international tourist trips would be reached.

Tourism as a branch of the economy is the fundamental basis of many developed countries of the world. According to the WTO, the contribution of the global sector of travel & tourism to the economy is estimated at 10.9% of the total amount of world gross domestic product. Travel and tourism sector provides over 11% of international investment and bring \$ 302 billion of tax revenues to countries' budgets.

The tourist-recreational zone is a strategic direction of the city's development. Objectively, in Odessa, there are all prerequisites for the intensive development of domestic and international inbound tourism: features of geographical location, favorable climate, the largest seaport of Ukraine, industrial value chains, resort and recreational capacities, transport, financial and social infrastructure. In Odessa, the Target Program for the Modernization of the City's Landscape Lighting and Outdoor Illumination is being implemented [6]. The main objectives of

the program are to increase the efficiency and reliability of the functioning the city's outdoor illumination and landscape lighting networks, to secure proper operating and maintaining lighting devices at the objects of the territories, to provide implementation of energy-saving technologies and equipment into different spheres of city functioning, and to install new networks.

Due to the unsatisfactory state of the existing housing stock, traffic system and engineering communications, worsening of the comfort of living and the overall loss of perception of the integrity of the historical environment in the central historical district of the city, as well as the deterioration of tourism and investment attractiveness a comprehensive target program "Preservation of authentic buildings and development of the historical center of Odessa " was worked out [7, 8].

In modern cities the various complexes operate as one of the most promising integration forms in the urban planning system. Working out programs of economic and social development of large cities, the financial, material and personnel efforts are used to improve efficiency, as well as to find new progressive forms of organization of construction production. It is advisable to offer in Odessa the creation of "Corporate R&D Urban Planning Complex for Reconstruction of City Capacities" as an innovative organizational structure that will use locally an accumulated R&D potential for the reconstruction of historical buildings in Odessa on the basis of energy efficiency standards.

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КРАУДФАНДИНГ ЯК ІННОВАЦІЙНИЙ ІНСТРУМЕНТ ФІНАНСУВАННЯ КРЕАТИВНОГО ПІДПРИЄМНИЦТВА

Культурні індустрії та креативне підприємництво – це відносно нові поняття в українському контексті, проте не нові явища (визначення "культурні індустрії" запровадили Адорно та Горкгаймер у своїй праці "Діалектика просвітництва" 1947 р.). У визначенні ЮНЕСКО цей термін застосовується в тих сферах, які поєднують у собі створення, виробництво та комерціалізацію змістів, які є нематеріальними і мають культурний характер.