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**THE PRINCIPLES OF THE “SMART CITY”  
CONCEPT AS A DETERMINANT OF URBAN POLICY**

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**ZAŁOŻENIA KONCEPCJI „SMART CITY”  
WYZNACZNIKIEM DLA POLITYKI MIEJSKIEJ**

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**Summary:** The paper presents the principles of a "smart city" as an innovative approach aimed at managing public affairs in a city. First, selected definitions related to the concept of smart governance are presented, and then the thematic areas that are part of the principles of this concept are characterised. Further considerations focus on demonstrating that smart governance in the case of Polish cities requires redefining urban policy objectives, otherwise urban governance will be of a conservative nature, not responding to the needs of present and future generations of urban space users. The main directions of actions that should be reflected in the principles of urban policy so that Polish cities could make more dynamic their development processes, were also presented. One of them is the requirement of the continuous education of society towards the ability to use ICT techniques.

**Keywords:** “smart city” concept, urban policy, urban development.

**Streszczenie:** Artykuł prezentuje założenia koncepcji „smart city” – jako nowatorskiego podejścia ukierunkowanego na zarządzanie sprawami publicznymi w mieście. Na wstępie przedstawione zostały wybrane definicje odnoszące się do koncepcji inteligentnego zarządzania, a następnie scharakteryzowano obszary tematyczne wpisujące się w założenia tej koncepcji. Dalsze rozważania koncentrują się na wykazaniu, iż inteligentne zarządzanie w przypadku polskich miast wymaga redefinicji założeń polityki miejskiej. W przeciwnym wypadku zarządzanie w miastach będzie miało charakter zachowawczy, nieodpowiadający potrzebom współczesnych i przyszłych pokoleń użytkowników miejskich przestrzeni. Przedstawiono także główne kierunki działań, jakie powinny znaleźć odzworowanie w założeniach polityki miejskiej, aby polskie miasta mogły w długim okresie dynamizować procesy rozwojowe. Jednym z nich jest wymóg ustawicznej edukacji społeczeństwa w kierunku zdobywania umiejętności korzystania z technik ICT.

**Słowa kluczowe:** koncepcja „smart city”, polityka miejska, rozwój miasta.

## 1. Introduction

The basis of all actions and progress of civilisation is human curiosity, ingenuity and activity, which results in the emergence of inventions and the use of various innovations in the economic sphere. Thus, the development of the economic sphere translates into the ability to meet the needs of numerous social groups, both material and non-material.

The civilization of the 20th and 21st century is characterised by intensified urbanisation processes, and the accumulation of multifaceted phenomena and processes occurs especially in urban structures. It is in cities that a new dimension of the economic sphere has emerged and an increase in the importance of knowledge in organising production processes and providing services can be seen. These processes result in the transformation of the economic base of industrial cities towards specialised services and creative industries, which in the economic dimension is seen as a transition from Fordism to Post-Fordism [Scott 2011]. Globalisation of the economy, manifested by the growth of capital and labour force mobility, the intensification of international exchange, the flexibility of accumulation, the new international division of labour as well as the intensity of development of new technologies and innovations, has fundamentally reorganised the structure of the economic base of many contemporary cities [Anders-Morawska, Rudolf 2015; Błaszczuk 2015]. Information about new products, technologies and organisational innovation is generally available. Urban communities are naturally striving to meet their needs using the latest advancements. Only then it is possible to benefit from the effects of the development of civilisation occurring on a global scale.

The aim of the paper is to present the assumptions of the “smart city” concept and to show the relationship between smart city governance (consistent with the assumptions of this concept) and urban development. The content of the paper focuses on indicating that specific social, relational and cultural determinants impact on the existence of smart governance skills. It is also important to show that the achievement of compatibility between state policy towards cities and their development strategies is a prerequisite for the dynamic stimulation of the development processes. State policy is connected not only with the government’s declarations regarding the importance of the adopted priorities, but also with the financial resources that can support the implementation of development trajectories prepared at local level.

The paper was written as a result of a literature review regarding the assumptions of the “smart city” concept, analyses of research reports referring to the applicability of this concept in the conditions of Polish cities, and an analysis of the state policy objectives in terms of strengthening smart governance in Polish cities. In strategic documents on urban development policy (particularly after

2010), there is an emphasis on making decisions rational from an economic point of view, which calls for introducing elements of smart governance into the practice of managing public affairs in cities.

## 2. The assumptions of the “smart city” concept

The smart city (i.e. “the intelligent city”) is a new approach aimed at modern city governance using the latest technical solutions offered by technologies (including ICT) in accordance with the principles of ecology, maintaining the trend to save resources while achieving the expected results. Innovative technologies used in various spheres of human activity, primarily information and communication, allow for a significant improvement in the functionality of urban space and a reduction of the costs of public services offered by the city. They foster “smart” governance in the organizations in the public sphere, although it is obvious that it is the people (authorities, politicians, society, users, decision-makers) who determine the implementation of the principles of this concept.

The concept of a “smart city” is not clearly defined and interpreted, different authors emphasise its various aspects. For example:

- N. Komninos and F. Florida define a smart city as a territory with high learning and innovation capacity, creative, with research and development institutions, higher education, digital infrastructure and communication technologies, as well as a high level of management efficiency [Komninos 2002, pp. 1-2; Florida 2005].
- A.M. Murray, M. Minevich, and A. Abdoullaev [2011] point to the ability of cities to attract and maintain top-class specialists as well as entrepreneurs.
- R. Hollands [2008] indicates the approaches that emphasise: (i) the existence of a transport and telecommunications infrastructure, (ii) the use of information and communication technologies (ICT), and/or (iii) the role played by digital media, creative industries, and cultural initiatives.

Therefore, a smart city is one that in the long term shows sustainable economic growth (high economic efficiency) and offers high quality of life, promotes investment in human capital and social capital, introduces and uses the latest ICT techniques as well as technical and technological solutions determining the quality of public services, and is governed based on the principle of co-governance [Stawasz, Sikora-Fernandez 2016, pp. 50-59].

Global development trends are related to the transition of developed societies to the era of digitalisation. The fundamental manifestations of this process, occurring on a large scale in urban structures, are [Korenik 2004, p. 107; *Polska 2015* 2000]:

- an increase in the importance of science and education in the economy,
- a direct transformation of knowledge into a production resource,
- a radical and complete transformation of the functioning of all sectors of human life,

- the emergence of new professions in which the importance of the ability to collect, process and use information increases.

In line with these trends, the principles of the functioning and development of cities are naturally evolving towards the principles of sustainable development and the “smart city” concept. Beneficial solutions applied in a given city are disseminated through benchmarking and, as far as local opportunities allow, introduced in other urban areas.

### 3. Urban areas that make up a “smart city”

Cities can be defined and assessed as smart if positive changes occur in them under the influence of ICT techniques in the framework of the following six components:

- economy (smart economy),
- transport and communication (smart mobility),
- environment (smart environment),
- people (smart people),
- quality of life (smart living),
- governance (smart governance).

**Table 1.** Areas of activity in the framework of individual smart city components

<i>Smart city</i>	
Economy	Productivity and innovativeness. Local and global connections. Flexibility of the labour market. Creativity. Entrepreneurship. Creative industries. Knowledge-based services.
Transport and communication	Zero-emission transport. Integrated traffic management. Intermodal communication projects. Advanced communication technologies.
Environment	Renewable energy sources. Optimisation of energy consumption. Reducing CO2 emissions to the atmosphere. Resource management. Waste management. Development planning and spatial management.
People	Education. Participatory activity. The power of diversity. Multi-skilling. Openness to technical innovations. Socialisation. Development of human capital. High level of innovation absorption.
Quality of life	Health and safety. Access to public services. Infrastructure efficiency. Integration of the public sector. The level of well-being. Culture.
Smart governance	Online services. Digitisation of public administration. Contact with residents. Participation. Partnership. Cooperation. Civil society.

Source: own elaboration based on: [Bendyk et al. 2013, p. 8; Stawasz, Sikora-Fernandez (red.) 2015, p. 23; *Twoje miasto...* 2018].

Governance in line with the smart city concept in the long-term perspective translates into lowering the city’s operating costs and reducing the costs incurred by its users. This results in increased efficiency of municipal resource management, increased competitiveness and quality of life in the city. The creation of public value can be also indicated as an effect of smart city governance. This

value arises when citizens (residents of the city), the main recipients of public services, achieve a satisfactory state of fulfilling their needs, accepting fully the actions of the city authorities [Rydzewska-Włodarczyk 2013, p. 481; Wiśniewska 2018, p. 29].

#### **4. Urban policy**

Policy, in the most general sense, is the ability of the governing centre, endowed with appropriate competences, to set goals and implement actions to achieve these goals. According to Regulski [1984, p. 95], the policy includes three basic phases: i) the determination of objectives (i.e. a political choice), ii) the development and adoption of an action strategy (what, where, and when should be done to achieve the goals), iii) the undertaking of specific projects that ensure the achievement of the set goals. The city authorities are the subject of the implemented urban policy, but the policy itself is largely dependent on the extent of autonomy possessed by these authorities and the influence exerted by the environment. Changing times always pose a challenge, forcing the reformulation of the principles of urban policy.

Having knowledge of what the “smart city” concept is and what benefits smart governance can bring to the city and its users, the authorities of Polish cities should redefine the principles of their development policies. This is due to the fact that after the Second World War the evolutionary process of urban development was interrupted, which is manifested in such effects as infrastructural delays, housing shortages, and lesser civilizational advancement of many social groups. The transformation initiated in the 1990s related to the shift towards a market economy, has also had a significant impact on the level of affluence of various social groups and their expectations regarding the possibility of satisfying public needs in their places of residence. The level of income of cities, depending to a large extent on the effects of activities in the economic sphere, translates into the possibility of the modernisation and renewal of urban structures.

The possibilities offered by ICT techniques are of a breakthrough nature, sometimes comparable with the invention of electricity. Their introduction requires, in addition to knowledge about their applications, as well as high investment expenditure, and above all the dissemination of these techniques among members of the urban community. Society’s acceptance is of great importance in this respect, and the role of the city authorities is to set proper priorities in urban policy. Only then can we transform cities by responding to the needs of their current residents, and having in mind the future generations.

Modern urban policy, understood as the conscious influence of the city authorities exerted on the economy, the social sphere, space and the environment, taking into account the assumptions of the “smart city” concept, should be focused on the following goals: supporting innovativeness and creativity in the context of

the development of a knowledge-based economy, stimulating entrepreneurship, supporting the liberalisation of the financial and energy, transport and telecommunications markets, fostering the rational (energy-efficient) use of resources, eliminating threats to urban communities, e.g.: air pollution, lack of access to water, supporting the development of public transport, rationalising the governance in the field of spatial management, waste management (recycling), environmental protection and adaptation to climate change, educating the public about the ability to use ICT techniques, and building social cohesion (a new social welfare model preventing social exclusion and supporting urban movements, etc.).

## 5. Conclusions

In the era of globalisation, the prerequisite for the development of a city, region and country is its openness to the world, the exchange of information, the absorption of innovation, and the creation of new foundations of the cultural development of societies. The process of urban renewal in Poland has started, although it is occurring with a varying degree of intensity. In many cities and in their different parts, one can see modern architectural solutions, new housing, systems installed to improve security in public places, e-administration, innovative communication solutions, and measures taken to reduce harmful gas emissions into the atmosphere, etc. These are examples confirming that the knowledge of modern technical and technological solutions as well as organisational solutions useful in the implementation of many functions of public utility is known and finds its application in Polish cities.

The efficient governance of city development in accordance with the smart city concept requires the formulation of a policy that meets the challenges of the modern world, the creation of a systemic approach, the identification of the problems (barriers) that are important in creating development processes and solving them, as well as indicating what results a given solution will bring in the near and distant future.

The basis of decision-makers' thinking about the future of a city should be rationality in using urban resources, as well as the ability to apply modern technical and technological solutions in practice. However, it should not be forgotten that a smart city is not only based on technology and the possibilities of its use, not just on ICT systems, but above all it is created by smart people who are able to apply ecological solutions, take care of safety and the environment, optimally plan and manage urban space, make decisions in line with the public interest, and save energy, etc. People who understand these challenges will strive to create cities and living conditions in accordance with the idea of *Cities for People* [Gehl 2014].

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