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Going to be an intelligent city

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Abstract

The diversity of theories analysing intelligent cities brings some misunderstandings as well as fragmented interpretation of this phenomenon. The common approach is linked to focus on ICT infrastructure, being digital, virtual, and innovate via technologies. However, in social sciences the concept of intelligence is quite different and more complex compared to technological sciences. Therefore the article suggests that an intelligent city primarily should concern about creating knowledge by gathering it from external environment (not only internal) and applying it into decisions. Information communication technologies are important but only in the role of helping tools for more successful development. The article discusses various concepts of an intelligent city, the essence of the concept of intelligence and stress key aspects of being an intelligent city.

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1. Introduction

In the rapid changing environment cities are naturally searching for successful developmental directions. Some are concerning about creating of information communication technologies infrastructure and becoming digital; some are searching for creation of more innovative environment to force successful changes and become more competitive; others are stressed about knowledge management, etc. An intelligence approach is also discussed in scientific literature. However, the concept of intelligence in social sciences is quite different and more complex compared to technological sciences. The diversity of theories analysing intelligent cities brings some

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misunderstandings as well as fragmented interpretation of this phenomenon. Therefore the aim of the paper is to stress the key aspects of being an intelligent city.

2. Method

The method used to prepare this paper is critical analysis of scientific literature. In the article there are analysed various concepts of intelligent city, different aspects and the essence of intelligence itself; some key aspects of being an intelligent city are provided.

3. Results

In this section there are provided theoretical results of the critical analysis of the recent scientific literature on the concept of intelligence and intelligent cities. Different aspects of the same concept of intelligence as well as of intelligent city are highlighted trying to fill the gap in the fragmentary understanding of the phenomenon.

The book edited by Lipman, Sugarman and Cushman (1986) is probably the first one analysing intelligent cities. Intelligent cities were analysed in the context of the concept of teleport which was understood as combination of telecommunication and real estate developments as well as flexible communication nodes. The intelligent city linked to be more digital and virtual then. Komninos (2002) suggested that intelligent cities should be understood as the learning and innovation environment in physical and virtual levels. The components of an intelligent city consists of island of innovation (which is located in physical level and involving research and development, technology transfer, financing of innovations, product development and networking), virtual innovation system (virtual level, involving the same elements) and their integration (ibid.). In later researches Komninos (2006) stated that 'intelligent cities are territories with high capacity for learning and innovation, which is built in the creativity of their population, their institutions of knowledge creation, and their digital infrastructure for communication and knowledge management' (pp. 13). In 2011 Komninos suggested the concept of spatial intelligence of the city, which referred to 'the ability of the community to use its intellectual capital, institutions and material infrastructure to deal with a range of problems and challenges' (pp. 174). Long term researches in the area of intelligent cities provide with quite a different understanding of an intelligent city. Not only virtual dimension but also material infrastructure and intellectual capital emerge as important dimensions.

Some specific characteristics of an intelligent city are provided by Santinha and de Castro (2010). The internal characteristics of an intelligent city involve providing of high-quality services; planning the territory to be attractive; encouraging creativity and efficiency both among the citizens and firms by promoting social, cultural, organizational and technologically innovative environment; developing, maintaining, and attracting qualified and talented human resources. The external characteristics involve the capacity of participating in thematic networks; collecting the necessary information to sustain the production of knowledge useful to its development; the ability to disseminate information in a strategic way (ibid.). In this case the city is interpreted through two dimensions of the environment: internal and external. Most of the internal characteristics are very close to those seen as major of the knowledge-based city (see more del Rosario González Ovalle, Alvarado Márquez and Martínez Salomón, 2004; Ergazakis, Metaxiotis, Psarras, and Askounis, 2006) or even of the learning city (see more Longworth and Osborne, 2010), whereas the external characteristics refer to some important aspects of the concept of intelligence itself.

In scientific literature there is also an approach interpreting an intelligent city as a combination of knowledge and digital cities (Rodrigues and Tomé, 2011), which means that such a city contains characteristics of knowledge-based city as well as of digital city.

Intelligent Community Forum distinguishes five main indicators of an intelligent community (including the city as a community)*:

* Intelligent Community Indicators:
https://www.intelligentcommunity.org/index.php?src=gendocs&ref=Research_Intelligent_Community_Indicators&category=Research

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