Chapter 1
Conceptual Foundations of Creating Sustainable Development Strategy of Smart Cities:
Environmental Aspect

Olga Burmatova
Institute of Economics and Industrial Engineering of the Siberian Branch of the RAS, Russia

ABSTRACT

This chapter is devoted to the study of the role of ecological subsystem in the structure of the sustainable development program of smart city. The author suggests the logic of building the environmental strategy of the city as a long-term landmark of its sustainable development including the environmental mission, vision of the future, goals and priorities, programs and their implementation, target indicators for assessing results, and consequences of realization programs. Certain attention is paid to the city as an object of research with a focus on environmental problems. The characteristics of the factors affecting the development of the ecological situation in the city are shown. A system of criteria and indicators that can be used to assess the impact of the planned environmental activities is proposed.

INTRODUCTION

Smart City Concept combines various factors of development of the city into one system, including economics, management, energy, transport, environment and population. At the same time it relies on the increased role of human capital and the strengthening of the importance of information technology in the urban environment. The obligatory feature of any Smart City is its long-term sustainable development that can be achieved, if the balance of the three spheres - economic, social and environmental – is enforced complied. That means that any administrative decision shall be without prejudice to any of the components of the city subsystems - society, the economy, environmental conditions, etc. Therefore, for a Smart City is extremely important to have effective management and analytical tools to promptly predict potential negative externalities, as much as possible to internalize them and manage them. One of these tools is able to serve, in particular, strategic planning and management. More and more cities are on the path of development strategy, which is based on the concept of a better future and available opportunities and threats.

Obviously, the easiest way to create a Smart City from the ground up on a single project. It is much more difficult to transform an existing city, especially large one, in the Smart City. Most often within existing cities projects for creating "smart" blocks are being developed and being implemented, and these or other elements of the "smart" cities are gradually introduced. In world practice of the functioning and development of cities such attempts are quite numerous (mart Cities, 2014; Hollands, 2008; Songdo, n.d.; In Japan, 2014). For example, Vienna, Barcelona and Copenhagen are included to the category of Smart Cities.

Usually in existing cities the idea of "smart" cities are being introduced gradually and consistently, from "smart" solutions to improve the urban environment and the mobility of the population with further coverage of the various spheres of the city, including economics, management and ecology, to create ultimately in the long term Smart Model of life in the city.

Attempts to create a Smart Cities are undertaken in Russia as well (The Smart Cities, 2014), in particular, in Novosibirsk. For example, under the Program re-industrialization of the Novosibirsk Region's economy until 2025 (Program, 2009) the concept of Smart Region is proposed. It is aimed primarily at improving the quality of the urban environment and mobility through the use of information and communication technologies. The concept is aimed at improving the urban environment, and assumes management of the city and its economy, social sphere, transport system, the environment and life through smart technology (Program, 2009, p. 44-48). The aim of the concept is to make the people living in the city as

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