EU COHESION POLICY AS AN INSTRUMENT FOR THE DEVELOPMENT OF THE SMART CITY CONCEPT

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Abstract

The concept of smart city is a modern tool for efficient city management with emphasis on the latest trends and technological knowledge. The article analyses the concept in terms of EU, with particular emphasis on investment opportunities of the European structural and investment funds. Concept of smart city is also focused on social dimension and human capital in urban areas.

Keywords: Cohesion Policy, Smart City, European structural and investment funds.

1 SMART CITY: OPPORTUNITY FOR SUSTAINABLE URBAN DEVELOPMENT IN EUROPE

Smart city concept is closely related to the sustainable development of urban areas. It is clear that in last decades there is a massive extent of urbanization, and by a number of studies there can be expected continuation of this trend. More and more residents will live in urban areas, which also brings the potential risks associated with the concentration of such population in a relatively small area.

In 1950 just over 50% of residents of the EU lived in urban areas (classified as urban according to the country specific criteria selected by the UN). In 2010 it was more than 75% of population and prognosis for the future indicates that in 2050 it will be nearly 85% of EU population. (Cargliu, 2009)

The urbanization rate is variable depending on the economic development and spatial structure of specific countries. In the EU there are countries, according to the United Nations, which already achieved a high degree of urbanization, above 85% level in 2011. For example Belgium, Denmark, France, Luxembourg and Sweden. (United Nations, 2014) There is already urgent need to develope new smart solutions for sustainable urban grow of cities and soon it will be even more intense. It brings related issues with regard to the environment and social relations.

Smart city is a relatively new concept, for that the definition is not settled in literature. It is a multidisciplinary concept, which in itself embrace technological aspects, as well as aspects of human capital. The most common explanation of smart city term is a concept created by researchers from Vienna: Centre of Regional Science, which describes a smart city in the following six dimensions: "smart economy; smart mobility; smart environment; smart people; smart living; and, finally, smart governance". Giffinger et al. (2007) describes the various dimensions of the concept as follows:

Smart economy (Competitiveness)	**Smart people (Social and Human Capital)**
Innovative spirit	Level of qualification
Entrepreneurship	Affinity to life-long learning
Economic image & trademarks	Social and ethnic plurality
Productivity	Flexibility
Flexibility of labour market	Creativity
International embeddedness	Cosmopolitanism/Open-mindedness
Ability to transform	Participation in public life
Smart governance (Participation)	**Smart mobility (Transport and ICT)**
Participation in decision-making	Local accessibility
Public and social services Transparent governance	(Inter-)national accessibility
Political strategies & perspectives	Availability of ICT-infrastructure
	Sustainable, innovative and safe transport systems
Smart environment (Natural resources)	**Smart living (Quality of life)**
Attractivity of natural conditions	Cultural facilities
Pollution	Health conditions
Environmental protection	Individual safety
Sustainable resource management	Housing quality
	Education facilities
	Touristic attractivity
	Social cohesion

Figure 11 – Smart city dimensions. Source: Giffinger et al. (2007)

Smart city concept is widely perceived technologically with an emphasis on Information and Communication Technologies (ICT) development. Many researchers, however, recently starting to focus also on the field of human and social capital and environmental interest.

Cragliu (2009) believe a "city to be smart when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance".

In practice and scientific research exists different aproaches on each parts of the Smart city concept. The EU Cohesion Policy for the period 2014-2020 in relation to smart city underlines the dimension of smart mobility and smart environment, as will be discussed in the next section. Related to this are settings of priorities for resources from European structural and investment funds.

In contrast, for example the City of Vienna in its strategy of Smart City Wien (2014), places a strong emphasis on quality of living with focus on social inclusion, participation and healthcare. Recall that Vienna was proclaimed as the city with the highest quality of life in the world under The Mercer Quality of Living Survey in 2015.

2 EU COHESION POLICY: FROM REDUCING REGIONAL DISPARITIES TO THE ENGINE OF EUROPEAN GROWTH

Perception of Cohesion Policy as an instrument in which the richer regions help to the less developed regions is one of the foundations of the European integration process. Under the Treaty on the Functioning of the EU (2012) the main goal of Cohesion Policy is to promote overall harmonious development towards strengthening economic, social and territorial cohesion.

Hájek (2011) points out that the need for harmonious development and reducing disparities between regions were already mentioned in the Treaty of Rome relating to the creation of the European Economic Community in 1957. In the same year was established the European Social Fund (ESF). In 1974 was created European Regional Development Fund (ERDF). Establishment of the fund is closely associated to the EU enlargement on the Great Britain, Ireland and Denmark. The first two countries suffered considerable regional disparities. Bachtler et al. (2013) underlines that the emergence of the ERDF was largely a political decision. Representatives of Great Britain gained a significant financial argument to support the country's EU membership. Note that the Irish economic miracle is often attributed to interventions co-financed by structural funds. (Bachtler et al., 2013)

The real significance of Cohesion Policy is related to the approval of the Single European Act in 1986. During this time European Commission started to transform policy from an insignificant resource transfer of EU finance to real and functional tool for regional development. (Bachtler et al. 2013)

Concept of economic and social cohesion was contractually embedded according to the Single European Act. The territorial dimension had been added through the Treaty of Lisbon. Balancing regional disparities is an important precondition for the introduction of the common European currency and the creation of a Single Economic Space. The concept of structural funds (European Regional Development Fund and European Social Fund) was in 1993 extended to the Cohesion Fund. (Bachtler et al. 2013)

3 FINANCING OF SMART CITY CONCEPT FROM THE EU COHESION POLICY IN THE PERIOD 2014 - 2020

Position of Cohesion Policy in EU budget is continually strengthening. In 1975 the allocation consisted 6% of EU budget, in the programming period 2014-2020 it is almost 34%. In total payments will amount 367 billion euros. (Baun, Marek, 2014)

A strategy for smart, sustainable and inclusive growth (2010), hereinafter referred as the Europe 2020 strategy, is a long-term strategic EU document, which aims to achieve economic growth and increase of employment. Strategy is a fundamental document for the orientation of economic and budgetary policies at EU level.

European Union, according to the Strategy Europe 2020 (2012), lays down a five ambitious objectives concerning the employment of the population (75% of the population aged 20-64 years should be employed); investment in research and development (3% of EU GDP); achieving the goals "20-20-20" in climate and energy; education level (the share of early

school leavers should be under 10% and at least 40% of the younger generation should have a tertiary education) and the threat of poverty (the number of affected persons should fall by 20 million).

Within the Europe 2020 Strategy we find virtually no mention of purposeful development and the importance of urban space for the development of the EU. However, the connection with the implementation of smart city concept is obvious. At least in the area of climate and energy, in which should be achieved "20-20-20" goals. By this is meant decreases in greenhouse gas emissions by 20% compared to 1990 levels, increase the share of renewable energy sources in final energy consumption to 20% and a shift to increase energy efficiency by 20%. This strategic objective cannot be achieved without implementing smart solutions at urban space in EU.

Cohesion Policy for the period 2014 - 2020 still offers a variety of options to promote the development of the concept of smart city. The Europe 2020 Strategy provides a framework for the eleven thematic objectives of the EU, which are more fully developed and embedded in the Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013.

In terms of thematic relevance to the promotion of the concept of smart city must be mention the following thematic objectives:

- thematic objective 1) strengthening research, technological development and innovation;

- thematic objective 2) improving the access, use and quality of information and communication technologies

- thematic objective 6) preserving and protecting the environment and promoting resource efficiency,

- thematic objective 7) promoting sustainable transport and removing obstacles in crucial network infrastructures.

Indicative focus of Member States to achieve the thematic objectives of the Europe 2020 Strategy are defined in the Partnership Agreement, which are prepared at national level, subject to approval by the European Commission. Dominant interpretation of smart city concept in relation to ICT is worth attention to Regulation (EU) No. 1301/2013 of the European Parliament and of the Council of 17 December 2013 on the European Regional Development Fund. Regulation clearly defines the need to implement measures to tackle the economic, environmental, climatic, demographic and social challenges affects urban areas. Legislative safeguard for realization of the investment amount directly to the development of urban areas requires at least 5% of the ERDF resources allocated at national level. This has to be determined to integrated actions for sustainable urban development.

Supported activities from the ERDF related to smart solution are focussed especially on information and communication technologies to support low-carbon economy and developing transport solutions. A variety funds for the development of smart city are also available in the ESF and Cohesion Fund.

4 OPERATIONAL PROGRAMME ENVIRONMENT IN THE CZECH REPUBLIC: A SPECIFIC EXAMPLE OF SOLUTIONS FOR THE SMART CITY CONCEPT THROUGH THE EUROPEAN STRUCTURAL AND INVESTMENT FUNDS

Operational Programme Environment 2014-2020 (2015) is one from the sectoral operational programs for the implementation of funds from the European Regional Development Fund and the Cohesion Fund for the current programming period in Czech Republic. The total allocation for the program is a € 2.6 billion. Managing Authority of the programme is Ministry of the Environment.

Operational Programme (2015) focuses on a investments in the following areas:

1) Improving water quality and reducing flood risks,

2) Improving air quality in human settlements,

3) Waste and material flows, environmental burden and risks

4) Protection and care for nature and landscape,

5) Energy savings.

Most relevant to the smart city concept is supported area 5) Energy savings. Elaborate in more details on activities under specific objective 5.1) Reduce the energy demands of public buildings and increase the use of renewable energy sources. This is a typical example of a project measures contributing to the fulfillment of the concept of a smart city. Filling defined specific target 5.1 is achieved through specific projects that are listed in the following overview. Introduced measures are intended primarily for local authorities and other public administration authorities.

Operational program, the total allocation:

Operational Programme Environment 2014-2020, 2.6 billion €

ESI Funds:

Cohesion Fund

Priority axis, the total allocation:

5) Energy savings, 529.6 milion €

Specific objective, the total allocation:

5.1) Reduce the energy demands of public buildings and increase the use of renewable energy sources, 509.6 milion €

Project measures:

- reducing energy consumption by improving the thermal properties of building structures, including additional measures to reduce the energy performance of buildings

- implementation of technologies on a utilization of waste heat

- implementation of low-emission and renewable heatRecipients: local authorities and other government agencies, nongovernmental organizations

Grant support:

Maximally 45%

Link to the smart city concept:

Smart environment - sustainable resource management

5 CONCLUSION

The concept of smart city is a modern tool for sustainable urban development, which can be financed by the EU Cohesion Policy. Implementation of the concept is expensive, and for the cities it is difficult to find investment funds from their own limited resources. European Structural and Investment Funds represents appropriate instrument for the financing of smart solutions. However, cohesion policy has its limits. The main issue is in excessive focus on supporting infrastructure projects. These activities fulfilling dimension of smart mobility and smart environment, but smart city concept is much broader and also consists an investment in human capital and social relations.

For cities considering the implementation of the smart city concept, it is important to look for other external sources beyond EU Cohesion Policy and overall support for the development of smart city. It offers a reflection on the larger role of the city as moderator of development on its territory with the supportive role for inhabitants themselves and other as a main holders of smart solutions.

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