

The Smart Cities Concept in the conditions of the Slovak Republic

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Abstract: *Innovation is a key approach to the advancement and functioning of smart cities, a way to address their challenges and meet the goals of the Smart Cities Concept in various social areas, which form, through their interconnection, a system represented by public administration bodies, the private sector and civil society. Individual states follow their smart concepts and strive to integrate smart elements into the activities of cities to achieve sustainable development. The aim of this paper is to analyse the Smart Cities Concept in terms of sustainable development with focus on innovation and reporting smart information that meets the definition of non-financial information in the annual report in the conditions of the Slovak Republic.*

Keywords: *Smart Cities Concept, non-financial information, innovations, efficiency, Corporate Social Responsibility*

JEL codes: M10, O30, P40, R10, R11

1 Introduction

The current process of shaping and developing the urban way of life and population growth in the city requires the application of city policy to achieve sustainable development and meet the needs of its population at all levels (local, regional, global) while preserving natural resources for future generations. The enormous development of the urban way of life brings the need to solve challenges and issues in the city using innovative methods. Smart cities and regions represent a new economic area in the Slovak Republic that, according to the goals of the Smart Cities Concept, can ensure an increase in quality of life in cities as well as in the business environment by applying innovative solutions (MoE SR, 2017) and become a key tool against poverty, unemployment, inequality (European Parliament, 2014). The topic of smart cities is one of Slovakia's priorities when preparing the partnership agreement for the new 2021-2027 programming period (MIRRI SR, 2019).

In view of these facts, the annual reports of public administrations and the private sector must also include information on innovative approaches to solving problems and improving the quality of life in smart cities as part of published non-financial information in all areas of social responsibility for sustainable development.

2 Methodology and Data

In this paper, we focused on information from the area of the Smart Cities Concept, which can be included in the category of non-financial information on social responsibility for sustainable development. To that end, the aim of the paper is to analyse the Smart Cities Concept in terms of sustainable development and the legal regulation on disclosure of non-financial information in the annual report with emphasis on smart information that may meet the characteristics of non-financial information in the conditions of the Slovak Republic. The analysis of information from the area of the Smart Cities Concept in terms of sustainable development in the conditions of the Slovak Republic focused on Act No. 431/2002 Coll. on Accounting, as amended (Accounting Act) and measures issued by the Ministry of Economy of the Slovak Republic (MoE SR), which is responsible for innovations and supporting the implementation of innovations in the smart city.

3 Results and Discussion

There are a number of factors that define and characterize a smart city. According to Aldegheish (2019), a smart city is the one marked by its own smart economy, smart environment, smart governance, smart safety, smart energy, smart living, smart technology, smart buildings, smart education and smart people. The characteristics of a smart city can be compared to the characteristics of sustainable development. The interconnectedness of the characteristics of a smart city and sustainable development is manifested when state administration bodies, e.g. municipalities, face major challenges in eliminating many adverse events, such as environmental pollution, noise or traffic jams, in ensuring sustainable development of the city and improving the quality of life of its inhabitants, and trying to organize an urban space where negative phenomena prevention processes can be implemented, to optimize the consumption of urban resources through a network of cyber links that make equal use of advanced technologies and social capital. This creates a smart and sustainable environment from the social, economic and environmental point of view, known as „smart cities“. (Dewalska – Opitek, 2014)

The Smart Cities Concept must be seen as a comprehensive approach connecting several areas. This comprehensiveness is the distinguishing factor of the smart city, which integrates a number of physical, institutional, and digital components (Sujata et al., 2016). For the sustainable development of smart cities and regions, the systematic management of the Smart Cities Concept must be ensured and the competencies of relevant stakeholders from the public and private sectors must be defined, together with the involvement of the population in individual areas. The interconnection of the six basic areas of the Smart Cities Concept can be characterized by components with their subcategories that fulfil the nature of the Smart Cities Concept (table 1).

Table 1 Characteristics of the basic areas of the Smart Cities Concept by components and their subcategories in the conditions of the Slovak Republic

Area of the Smart City Concept	Subcategories of components of individual areas
Government / Self-government	- digital public administration - participatory governance - e-services
Health	- telemedicine - integrated health information systems - advanced care for the disadvantaged persons
Education	- urban education platforms - digital learning formats - digital skills
Energy and Environment	- smart energetics - smart water management - smart waste management
Buildings	- interconnected device management - smart homes - smart construction
Mobility	- smart systems - traffic management - smart urban logistics

Source: MoE SR, 2017

Innovation should reach all areas of the Smart Cities Concept (Anand & Navío-Marco, 2018). The assessment of success in applying smart city innovation varies considerably (Shamsuzzoha et al., 2021). Companies have a deep understanding that their actions when disclosing information can affect investor sentiment directly related to their investment decisions (Nguyen & Kimura, 2020). One of the ways to facilitate the implementation of

innovative solutions in cities and the setting of priorities is to support the use of the capacity of research and development organizations to address problem areas of the Smart Cities Concept. Cities can establish these organizations to manage government offices more efficiently. These organizations can directly contribute to the development of the city and urban regions by implementing sustainable innovative solutions. Through such organizations, cities can cover, inter alia, areas of environment, road maintenance, public transport, waste management, etc. Innovations with smart solution features can be technological, organizational, collaborative and experimental innovations. Technological innovations introduce new technologies, products and services. Organizational innovations take place within the organization of a specific city, and they are based on projects. Collaborative innovations seek to link the public and private sectors. Experimental innovations have the character of smart city initiatives (Nilssen, 2019). In general, smart cities actively use new technologies to achieve the desired urban outcomes. Although sustainability is often claimed as a desired outcome of smart city initiatives, there is little evidence of how sustainability outcomes are integrated or achieved through smart city initiatives. (Yigitcaniar et al., 2019)

The topic of Smart City in the conditions of the Slovak Republic represents an area falling within the competence of several ministries and central state administration bodies, and effective implementation of innovative solutions requires the cooperation of all relevant parties in transforming Slovak cities and regions into smart cities and regions. The implementation of company innovations is reflected in activities in which the population of cities and regions also participates.

Participation in the process of implementing the Smart Cities Concept through activities and the results of the implementation in accordance with sustainable development should be disclosed by individual participants (companies) in their annual report. In the Slovak Republic, the conditions for disclosing non-financial information in terms of sustainable development in the annual report, which may also include „smart“ information, are regulated by the provisions of Section 20 of the Accounting Act. Annual reports and other corporate social responsibility reports are an important communication tool that provides internal and external information on the social and environmental aspects of the operations of companies (Matuszak & Rózánska, 2017). Not all accounting entities are obliged to prepare the annual report under the Accounting Act, but only those accounting entities that meet at least two of the conditions as of the date on which the financial statements are prepared and for the immediately preceding accounting periods (Section 19 para. 1 of the Accounting Act). It should be noted that the size criteria specified in the provisions of Section 19 para 1 point a) have been doubled since 2020 for the total amount of assets and net turnover (Krišková & Užík, 2020). The size criteria for the audit of companies and cooperatives according to the amendment to Act No. 198/2020 Coll. of 9 July 2020 amending certain acts in relation to the improvement of the business environment affected by measures to prevent the spread of dangerous infectious human disease COVID-19 is increased as follows:

- a) for accounting period starting from 1 January 2021:
 - the total amount of assets exceeds 3 000 000 €,
 - net turnover exceeds 6 000 000 €,
 - the average recalculated number of employees exceeds 40;
- b) for accounting period starting from 1 January 2022:
 - the total amount of assets exceeds 4 000 000 €,
 - net turnover exceeds 8 000 000€,
 - the average recalculated number of employees exceeds 50.

For many small entities, the obligation to have their financial statements verified by a third party is limited (Domaracká & Kňázková, 2019).

An accounting entity that is obliged to prepare an annual report within the basic scope of disclosure should include, in particular, information about the entity's development, its current condition and the significant risks and uncertainties to which the entity is exposed. The information shall be provided in the form of a balanced and comprehensive analysis of the condition and forecast of developments and shall include important financial and non-

financial indicators, including information on the impact of the entity's activities on the environment and employment, with reference to the relevant data in the financial statements, on events of special significance that occurred after the end of the accounting period for which the annual report is prepared, the expected future development of the entity's activities and the costs of activities in the field of research and development (Section 20 para. 1 point a), b), c), d) of the Accounting Act).

A public interest entity (except for an entity pursuant to Section 17b) with average recalculated number of employees for the accounting period exceeding 500 employees is obliged to disclose non-financial information in a wider scope in the annual report in connection with the Smart Cities Concept, and such accounting entity shall also disclose in the annual report non-financial information on the development, operation, position and impact of the entity's activities on the environmental, social and employment areas, information on respect for human rights and information on the fight against corruption and bribery (hereinafter referred to as the "the area of social responsibility"). In particular, it shall state the following non-financial information in connection with the implementation of various processes within the Smart Cities Concept pursuant to Section 20 para. 9 of the Accounting Act:

- a) brief description of the business model;
- b) description and results of the application of the entity's corporate social responsibility policy, including due diligence procedures;
- c) description of the major risks of the entity's social responsibility effects arising from the entity's operations that could have adverse consequences and, where appropriate, a description of the business relationships, products or services that the entity provides, and a description of how the entity manages these risks;
- d) significant non-financial information about the entity's activities by individual activity;
- e) reference to information on the amounts reported in the financial statements and, where appropriate, an explanation of those amounts in terms of the effects on social responsibility.

By these provisions, the Accounting Act allows accounting entities to disclose non-financial information on participation in the fulfilment of objectives of the Smart Cities Concept in the conditions of the Slovak Republic in terms of social responsibility and thus fulfil the obligation to disclose non-financial information in the annual report. There is some flexibility for entities when disclosing information, as well as international, European or national frameworks (Pakšiová, 2016).

Without quality and useful information, modern smart services cannot be provided to the population in cities and regions. The information that companies can provide in their annual reports as part of the disclosure of information related to the Smart Cities Concept includes information on the adoption of innovative solutions and conditions motivating the creation of innovative ideas, information on the support of sustainable solutions for the creation of a smart city with new job opportunities and improved public services, information on mutual cooperation and interaction of companies when implementing the Smart Cities Concept, not only in the planning phase, but also in the implementation phase, information on instruments for financing innovation together with the addition of information on specific activities with the most effective use, information on how to motivate and increase the interest and participation of population and key representatives of cities in building a smart city. (MoE SR, 2017)

Conclusions

Smart cities are more efficient, provide more opportunities to create jobs and ensure their growth through innovative problem-solving approaches, along with the involvement of their residents. Smart cities can achieve an increase in the level of their functionality, long-term sustainability and living standards for the residents by applying the Smart Cities Concept.

The Accounting Act allows accounting entities, as participants in the creation of a smart city and region, to disclose non-financial information on the fulfilment of objectives of the Smart Cities Concept in the conditions of the Slovak Republic in terms of social responsibility in all its aspects and thus fulfil the obligation to disclose non-financial information in the annual report.

Due to the increasing interest in applying the Smart Cities Concept in the conditions of the Slovak Republic, the annual reports of public and private sector entities should be characterized by „smart“ information and should be presented to facilitate the assessment of improving the quality of life of the population and business environment through the Smart Cities Concept in terms of social responsibility for sustainable development to a wide range of users of information in the annual report.

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