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A Sustainable View of Public Administration for a Bucharest Smart City

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Abstract: Bucharest city needs a strategic sustainable change, which requires the involvement of the public administration, as well as, the academic institutions, the private and non-governmental sector, in order to create a new smart vision of the city. The paper is based on the experience gained as an editor of a Smart City magazine, for a decade, and on European and international research. Through this work, we want to highlight the importance of the collaboration between the public administration and the stakeholders, as well as the role of the public sector in transforming the capital city into a Smart City.

Keywords: Smart City; sustainable national law; social processes.

1. Sustainable Development and Public Administration

The sustainability is a philosophy that nations, organizations, individuals adopt, according to the social context they find themselves. The complexity of this notion is determined by the phenomena and processes under the sustainability concept. These are numerous and in continuous movement, evolution, multiplication and differentiation (Movanu, 2021).

Sustainable development and sustainability concepts have become important topics for strategies, programs, as well as other normative acts of the public administration in the last decade. The concept of sustainability plays “a significant role in administrative planning, through long-term planning, intergenerational equity, risk reduction and resource conservation” (Leuenberger, 2006).

The authorities, institutions, as well as other stakeholders have an important role in the implementation of sustainable development in order to achieve the desired goal - Bucharest Smart City. It is necessary that public administration to have a realistic and pragmatic vision of Bucharest - as a Smart City, the change must be strategic and sustainable, in order to respond to social and environmental imperatives.

The sustainable change of Municipality of Bucharest refers to the large-scale adoption of social processes and tools to support the ecosystem of a Smart City. Public administration can take steps to incorporate a longer-term perspective or sustainability lens into its design and implementation processes and thus maximize the potential for sustainable impact (Choi-Fitzpatrick et al, 2014). A national sustainability policy could significantly increase the efficiency and effectiveness of complex initiatives involving multiple institutions and stakeholders.

2. Introduction about the Bucharest City. Smart City Programs and Strategies

The Bucharest city has the largest population among the Romanian cities and, of course, it has the largest inhabited area. Bucharest has a special status in the Romanian administration because it does not belong to any county, it comprises six districts (National Institute of Statistics website, 2017) and it generates approximately a quarter of the country’s GDP (Municipality of Bucharest website). Having such an importance, the management and development of the city are not exactly easy to achieve. There are

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many political interests in this regard, conflicts and misunderstandings often arise between the interested factors. At the central level, the Municipality of Bucharest deals with programs and strategies and it subordinates several institutions, administrations, companies, etc. At the local level, the capital is divided into six districts that allow a distribution of power and the management of the city. There are also some discrepancies between the districts' development because of the different involvement of the public administration.

The Municipality of Bucharest and the World Bank signed a form of technical assistance project in 2019 for local development and increasing the quality of life in the Bucharest city, for a period of three years (The Municipality of Bucharest website). As part of the partnership between The Municipality of Bucharest and the World Bank, the Capital's Integrated Urban Development Strategy (SIDU), known as the Bucharest2050 Strategy was developed. The purpose of this document is "to identify the necessary solutions for aligning the capital to the standards of the main European and global metropolises" (Integrated Urban Development Strategy of Bucharest).

We can find several sectoral strategies over different time horizons. Unfortunately, the strategy for the development of an intelligent city "Bucharest Smart City" 2018-2025 was not approved by the General Council of Bucharest.

"The main directions for the Smart City referred to projects in the fields like local government - e-administration, traffic management, parking, lighting, infrastructure, the emergency system at the city level, computerization of the public transport system, telecommunications, tourism and green energy. The implementation of the Smart City Strategy brought benefits in the area of access to education, improvement of medical services, easy identification of jobs, reduction of import energy and pollution, as well as increase of public safety. The four applications proposed and implemented by the Municipality of Bucharest within the Smart City program are:

- Bucharest Parking – identification of publicly managed parking lots and the possibility to pay online;
- Bucharest Traffic Alert – reporting of irregularities encountered by traffic participants to PMB;
- Bucharest Social Alert – facilitating the intervention of the crews of the General Directorate of Social Assistance and Child Protection;
- InfoSTB – transmission of real public transport traffic data."

Three of them have been checked by the author and they are not working on some newer versions of Android. The fourth mobile application which can be used, it is not intuitive for a citizen and certainly does not help very much a tourist / a foreigner who does not know the stations within the city. From this point of view, we propose to focus on smart mobile applications that can be intuitive for all ages and that can be used for a long time to gain trust and to justify the costs or efforts of developing of such applications.

The project "Modernization and expansion of the intelligent traffic light system in order to increase road safety, streamline traffic and reduce pollution (Bucharest-Ilfov Traffic Management)" (implemented from February 2023) has the Municipality of Bucharest as beneficiary. Thus, "the Bucharest-Ilfov region will have a transport network with integrated software applications, which will contribute to the configuration of routes and traffic schedules for transport lines in Bucharest and Ilfov".

The data from this section is based on the analysis of (sustainable) development strategies/programs for Bucharest city and for each district - of the Smart City concept, where we could find information with this mention in the documents. Through this analysis, we want to highlight the importance given to the Smart City concept within the six Districts of the Bucharest. We also set out to view the level of understanding of the concepts of sustainable development and sustainability by the institutions.

Regional Operational Program for the Bucharest-Ilfov Region 2021-2027 "aims to contribute to the fulfillment of the strategic vision of the Bucharest-Ilfov region through a few priorities based on the priorities of the Regional Development Plan BI 2021-2027 and those of the Smart Specialization Strategy BI 2021-2027". Through the strategic vision of the Bucharest-Ilfov Region it is desired "to

improve its capacity to provide citizens and businesses with an attractive, sustainable, clean and inclusive environment, in which they will want to live and invest, by promoting innovation, digitalization, equitable access to modern public services, education and business opportunities, constantly taking into account the efficiency of energy consumption, the reduction of CO2 emissions and the adaptation to climate challenges” (Regional Operational Program for the Bucharest-Ilfov Region 2021-2027). The interventions of Bucharest-Ilfov region level are correlated with the strategic objectives of the Cohesion Policy 2021-2027.

Table 1. EU Cohesion Policy – policy objectives / Regional Operational Program Bucharest-Ilfov 2021-2027 priorities

PO1 - A more competitive and smarter Europe	Priority 1 - A competitive region through innovation, digitalization and dynamic enterprises Priority 2 - A digitalized region 2.1. Support for the digitalization of public administration through innovative digital solutions and Smart City applications.
PO 2 - A greener, low carbon transitioning towards a net zero carbon economy	Priority 3 - An environmentally friendly region
PO 3 - A more connected Europe by enhancing mobility	Priority 4 - A region with high mobility Priority 5 - An accessible region
PO 4 - A more social and inclusive Europe	Priority 6 - A region with modern educational infrastructure
PO 5 - Europe closer to citizens by fostering the sustainable and integrated development of all types of territories	Priority 7 - An attractive and inclusive region

Source: Development Strategy of District 4 – Bucharest for the period 2020-2024/Regional Operational Program Bucharest-Ilfov 2021-2027/ New Cohesion Policy 2021-2027

According to the “Development Strategy of District 4 - Bucharest City for the period 2020-2024”, this district implemented 18 projects (“2 - Smart Economy, 7 - Smart Mobility, Smart Environment, Smart People, 5 - Smart Living and 4 - Smart Governance”). Also, District 4 has implemented the concept of urban e-Mobility through: “digitalized public parking and residence service; location of charging stations for electric cars; setting up an extensive network of Park & Ride (Development Strategy of District 4 – Bucharest City for the period 2020-2024). The development directions of District 4 are the following:

- “The mobility area - the workplace, the home, the commercial area will become easily accessible.
- Suitable environment for healthy living. At District 4 level health infrastructure is supported by local public administration and by health partnerships. The social services system is oriented towards social inclusion of vulnerable categories of citizens.
- Deep urban regeneration / responsible urban development implies the energy rehabilitation of buildings, the change of the lifestyle and the consumption behavior of the inhabitants.
- High-performance public administration - digitization of public services (smart-city interventions for public safety, public services and utilities, energy monitoring, environment, public lighting, GIS systems, etc.) including cyber security, interoperability. The local public administration has the role of creating the optimal conditions for the District 4.”

The development vision of District 4 in 2024 is centred on three strategic initiatives that support the development of public administration, the development of tourism and the development of the “smart” city through urban digitalization. Some of the strategic objectives of the District 4 Development Strategy that we emphasize in these works refer to:

1. “Promoting the responsibility and sustainable development, involving measures to promote the principles of responsible development, solutions and practices that take into account the sustainability and the sustainable development for the area and for the community of the district.
2. Modernization of the public administration by increasing the administrative capacity and digitizing the administration.

3. “Smart” solutions for the benefit of urban communities - “urban digitalization” is placed in the context of the conception of cities as ensembles of modernized and streamlined urban IT infrastructures, functionally and technologically connected with new technical solutions for communication and access to current public services”.

The Local Council of District 5 decided to extend the Local development strategy of District 5 approved in 2016, until the date of approval of a new Local development strategy of District 5. Among the ongoing projects of the local public administration in this district: “Intelligent administration in the context of digitization”, “Digital solutions for District 5 of Bucharest” and “A city hall closer to people, just a click away”.

District 6 has an Integrated Urban Development Program of District 6 Bucharest 2021-2030 with 5 strategic priorities (Integrated Urban Development Program of District 6 Bucharest 2021-2030): “Smart and competitive growth; High-performance and inclusive social development; Accessibility and sustainable, inclusive and intelligent mobility; Clean environment, urban regeneration and quality housing; Smart local governance.” The last priority aims digitalization of public services and implementation of the “Smart City” concept.

The implementation of a strategic document and the achievement of strategic objectives entails the involvement of some stakeholders in District 6: “local public authority, subordinated public institutions, universities, financiers, inhabitants of Bucharest living in District 6, non-governmental organizations, professional associations, business environment, Municipality of Bucharest and local public authorities from other districts”. District 6 has also the Integrated Local Strategy for Sustainable Development of District 6 of Bucharest for the period 2017-2023. The principles that must be respected in the planning process of local development, as well as, in the development of measures, are the following (the Integrated Local Strategy for Sustainable Development of District 6 of Bucharest for the period 2017-2023):

“Sustainability - local development will be achieved by contributing to the conservation and development of local, natural, economic and social resources, thus providing the basis for a long-term development of the local economy, and will not affect the possibility of development for future generations; Sustainability - the planning of objectives and measures is done taking into account a balanced vision of development, which takes into account the local communities, the natural and economic resources at their disposal, maximizing the results of their use; Equal opportunities; Integration; Advertising; Legitimacy; Control, monitoring and evaluation.”

Within the Integrated Local Strategy for the Sustainable Development of District 6 Bucharest for the period 2017-2023, in terms of governance and local administration, there is also the Smart City section. Thus, according to this document, for District 6 to achieve the desired goal of a “Smart City”, it is necessary to consider the following aspects:

1. “The intelligent management of cities that involves participative management, communication and collaboration between public authorities on different levels, with specialists from several fields, with businessmen and residents to solve important problems in the life of communities.
2. Intelligent management requires social union, through public-private partnerships.
3. The smart economy is based on creating connections between companies and specialists from different fields through collaboration.
4. Smart mobility - the infrastructure elements and new technologies integrate to make available to the members of the community multiple possibilities of choosing the means and the conditions in which they move.
5. The intelligent environment involves the responsible use of resources to improve the quality of life, air, water and soil, as well as the use of public utilities equipped with technologies that allow the reduction of energy consumption, costs and waste.

6. Intelligent citizens is the notion that characterizes the inhabitants who are concerned with information, training, education and public services through the development and application of the skills of using information technologies and access to them.”

In order to transform Bucharest into an “intelligent city”, The Municipality of Bucharest took the first step in this direction, by creating the “Registry of Green Spaces” in GIS (geographic information system) format, to which it then added various databases, available at <http://regver.pmb.ro>. Through this platform, The Municipality of Bucharest want to expand it to provide real-time information about other public services.

The objectives of each sector are correlated with the Regional Development Plan of the Bucharest-Ilfov Region, the Sustainable Urban Mobility Plan (PMUD) of the Bucharest-Ilfov Region, the Integrated Urban Development Strategy of the Municipality of Bucharest, as well as, with the sectoral strategies of the Capital: Bucharest Strategic Concept 2035, The Cultural and Creative Strategy of Bucharest 2015-2025, The Energy Strategy of the Municipality of Bucharest, The Integrated Air Quality Management Program, The Medium and Long Term Development and Operation Strategy of the Public Sanitation Service and the Waste Management Plan, in the Municipality Bucharest.

3. Smart City Governance

The concept of “Smart City” has gained importance in the last decade because of the public authorities that are interested in developing strategies with the aim of becoming smart (Iordache, 2017). However, the challenges they face exceed their capacities and capabilities, highlighting the need for new forms of governance to respond to complex issues. Thus, governments pay more and more attention to stakeholder participation in decision-making, monitoring city services and providing feedback on government efforts to make a Smart City. These strategic approaches of coordinating the actions of a wider group of stakeholders – public, private and civil society are sometimes difficult to implement because of diverse opinions and interests that do not always work together towards a common goal. Smart governance is essential for implementation of the smart city concept (Popova & Popovs, 2023).

Local city authorities adopt different approaches that reflect their specific circumstances, guided by some general principles that guide Smart City agendas, including integrating economic development with public service delivery plans, with a pragmatic focus on projects that are practical, achievable and financially viable, with the participation of community representatives, local entrepreneurs and residents to ensure that projects are relevant to the city’s opportunities and challenges (Bolívar, 2015). The social, political, economic, environmental contexts are different in each city, but the support of smart initiatives by public authorities and institutions shape the strategies and influence the directions of the Smart City. Smart cities use technology and innovation, facilitate participation, co-creation and co-production with citizens and other local partners (Eurocities, 2015).

A good administration of the Bucharest city and a real sustainable development strategy are essential for its future but also for the future of Romania. Smart governance is at the heart of Smart City initiatives. Chourabi and other authors (Chourabi, 2012, p. 2291) identified eight important factors in successful Smart City initiatives: “management and organization, technology, governance, politics, people and communities, economy, built infrastructure and natural environment”. Key factors such as “collaboration, leadership and championship, participation and partnership, communication, data sharing, integration of services and applications, accountability and transparency determine the success or failure of governance”.

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