

The Management of Smart and Sustainable Urban Projects. A View into the Caransebes Public Administration Project Challenges

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Abstract – This paper aims to review the management of smart and sustainable urban projects, to generally analyze public administration and the Caransebes municipality project challenges. An effective public administration requires an intensive integration of all strategic documents available to provide a systematic and coherent approach for establishing, attaining, monitoring, and updating the public administration strategic objectives in the most instructive manner [9]. To manage the city resources efficiently, it also requires an Integrator to unite in a strong partnership the citizens, the business environment, the organizations, sharing the same common vision.

Keywords: environmentally friendly, mobility, public administration, smart city, sustainable urban development

I. INTRODUCTION

Project management has never been proven as complex as nowadays. Processes have been added, concepts have been explained and new techniques have been included so as to help projects managers to go through the increased complexity of a documented, well written project [8]. But what were considered in the past as purely theoretical concepts, now is a certainty, what were considered in the past glimpses of science, now emerged into ‘the smart communities’. These communities are defined by the Canadian Federal Government (CFG) (2002) as “those communities in which local leaders and stakeholders, by use of electronic networks and the Internet, are forming alliances and partnerships in order to innovate and extract new economic and social value” [10]. Wherever the local innovation systems, largely supported by digital networks and their applications, were contributing to the diffusion of knowledge and information, knowledgeable decision making, network cooperation, efficient interaction among various actors and intelligence gathering, the concept of smart cities emerged. But what is a smart city, and what is a smart

city within urban development? Cities have existed as a version of urban form since the beginnings of civilization and are constantly being shaped through technology and cultural trends [2].

More people certainly live in the cities as time can determine, and that is because the urban area offers more than ever: diversity, technology, efficient services, transportation, utilities, water networks, information systems, hospitals, libraries, schools, different types of electronic models it also offers to their community's interactions with the city officials, as it evolves by integrating itself information and communication technology (ICT), operations and service to connect people, enhancing quality, performance and interactivity of urban services.

This urban area uses electronic methods, devices, sensors, to collect data, dates that are then used to manage goods services, resources efficiently.

Every smart city has its own potential: a favorable geographical position, rich culture, good economy, but what is sure now, is that every city now tends to shape itself into a “smart-city” and that is because a smart city will always and totally support and integrate the Community and Municipality and the other way around.

A common vision (municipality and community) will develop every component of the Smart City: information and communication technologies to enhance quality, performance and interactivity of urban services, reducing costs and consumption, power plants, recycling waste, transport ticketing, smart parking, intelligent street lighting, physical devices connected to Internet of things (*IoT*) network, transportation system and traffic management, administrative services which allows the city officials to interact directly and find out the citizen needs, the city infrastructure, monitoring what is happening in the city 24/7, green energy sustainable urban development and education.

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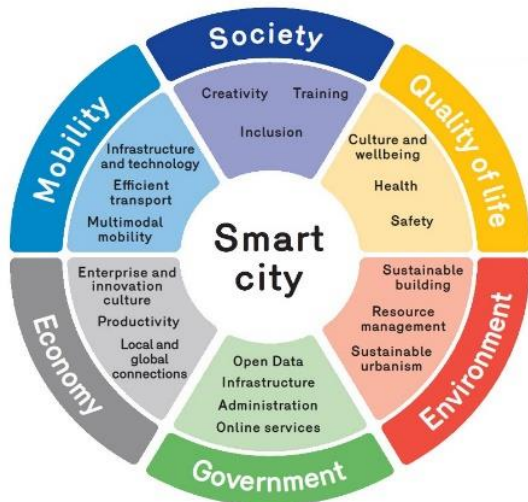


Figure 1. Synergies of a smart city
(Adapted from <https://smartcity.brussels/the-project-definition#>, Accessed June 10, 2021) [11]

The World Commission on Environment and Development defines Sustainable Development as “Development that seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs” [1]. The principle behind this definition is the well-known fact that natural resources must not be consumed beyond their capacity to regenerate.

Many of today's dominant social, economic and environmental challenges are the result of rapid economic growth that exceeds our capacity for analysis and control. For this reason, it is necessary to identify ways to explore and co-create solutions that exploit the potential of innovation at the local level.

Each mayor makes it a priority for the construction and implementation of a smart city, from a public administration perspective. It is one of the biggest challenges because it is targeting the future. Our world is constantly changing, and we are facing pressing and undeniable facts: environmental degradation and climate change, the digital revolution, the demographic transition, migration and social inequalities.

Cities often lead the way in finding solutions. Their importance in ensuring the transition to a way of a life sustainable development for all citizens is the Urban Community's Agenda. Thus, the strategic documents of the city become the solutions to complex challenges. But it is not enough. At least not without strong and comprehensive partnerships between citizens, civil society, industry and relevant levels of governance.

Cities are essential in bridging the gap between people and public institutions. New forms of governance to improve the policymaking and investment process are already in place introduced in many cities, by encouraging cooperation between urban and rural areas on the basis addressing functional areas, through long-term strategic planning or involvement citizens at all stages of policy making.

This requires a strategic, integrated and inclusive approach [6]. To understand what needs to be done, the city must be understood from the standpoint of its five dimensions:

- Technique;
- Economic;
- Social;
- Environmental;
- Jurisdictional.

As well, as a social and technical system. A dynamic system in which people or groups of people interacting with technology. All these concepts of defining the structural elements of a city, form a unitary whole, by the fact that all systems interact with each other. For instance, the economy affects infrastructure, infrastructure affects life (social, political - economy). Traditionally, cities have two main layers: the infrastructure layer and the service layer.

Smart cities combine the best aspects of infrastructure technology with collaborative technologies, allowing citizens to take control of themselves through digital technology [6].

For the period 2021-2027, the European Commission proposes an urban and territorial stronger dimension, by introducing a new policy objective, namely “*A Europe closer of citizens*”, to support an approach based on the reality of the territory and involvement local authorities, civil society and citizens in addressing local challenges. Additionally, the Commission proposes to launch a new European urban development initiative, which will support cities through capacity building, innovative solutions, knowledge, development policies and communication. The funds allocated for sustainable urban development have also increased to 6% of the total European Regional Development Fund [5].

But it's sort of the culmination of efforts if we were to think about it in the late nineties when the European Union focused on urban development. Regular meetings between ministers responsible for urban development have led to the consolidation of an "EU perspective" on the urban oasis (the “urban oasis”), which can be translated into a development approach sustainable urban development at EU level.

This approach has been refined over the years within the framework of EU cohesion policy and other initiatives with a specific focus on the urban dimension.

A new programming period (2007-2014), and sustainable urban development policies have been fully integrated into funding schemes of the EU following the positive evaluation of URBAN initiatives; in other words, they became part of "central" cohesion policy.

II. RESEARCH METHODOLOGY

The research methodology of this paper is based on the information structured in Fig. 2. and Fig. 3. The aim of this paper is to select publications that focus on the urban development.

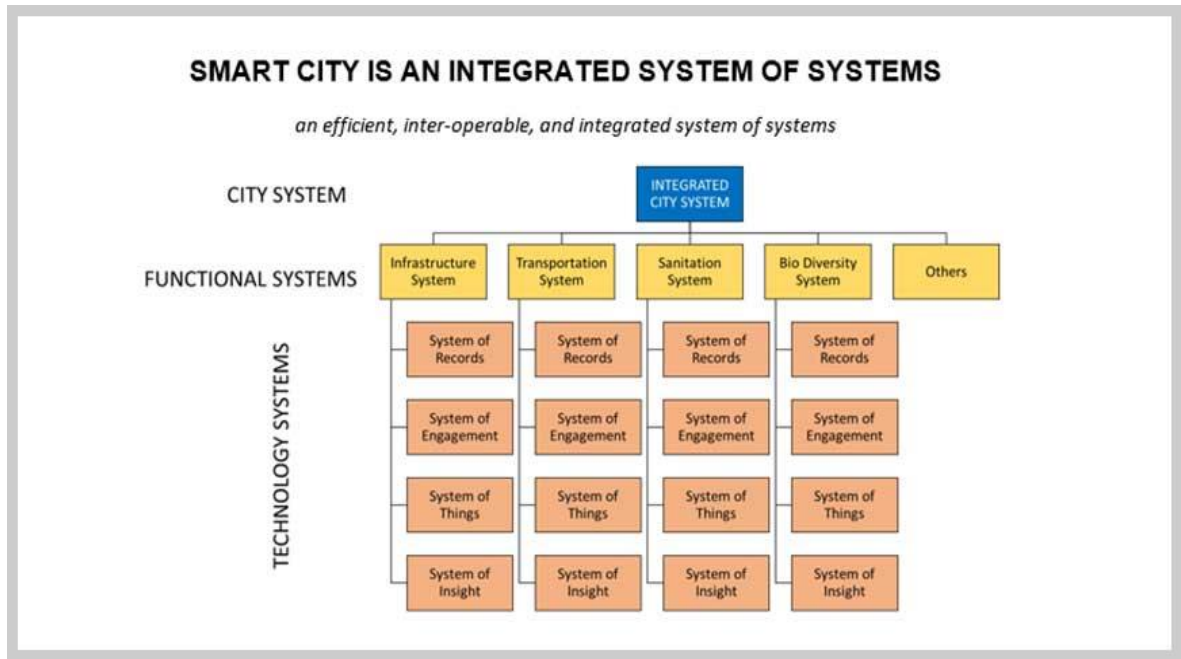


Figure 2. Integrated city system
 (Adapted from <http://www.businessworld.in/article/Smart-City-Is-A-Complex-System-Of-Systems/28-04-2019-169768/>, accessed, June 10, 2021) [12]

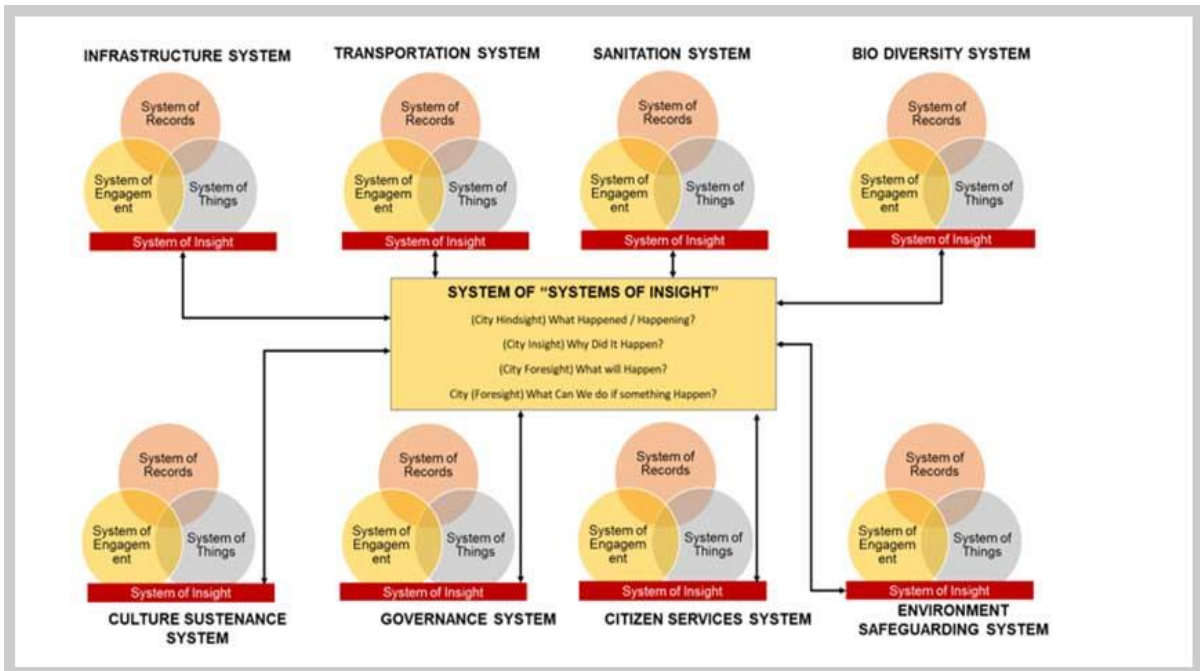


Figure 3. System of "SYSTEMS OF INSIGHT"
 (Adapted from <http://www.businessworld.in/article/Smart-City-Is-A-Complex-System-Of-Systems/28-04-2019-169768/>, accessed, June 10, 2021) [12]



Figure. 4. The Leipzig New Charter
 (Adapted from <https://ec.europa.eu/futurium/sites/futurium/files>, accessed, June 10, 2021) [13]

Publications concerning EU's cohesion policy and under the other initiatives specifically oriented towards the urban dimension, were considered important. For example: 2007 was a defining year in this process. During the German Presidency of the Council of the European Union, The Leipzig Charter was launched. Leipzig Charter offers two key principles for sustainable urban development: implementing a policy of holistic, integrated development and a particular focus on disadvantaged communities [1].

2007 also marked the beginning of a new programming period (2007-2014) and sustainable urban development policies have been fully integrated into funding schemes of the EU following the positive evaluation of urban initiatives; in other words, they became part of "central" cohesion policy.

The EU Urban Agenda was another important document, in 2016. Based on the Leipzig Charter (fig.4), the Urban Agenda emphasizes the importance of an integrated approach to urban development, which have the following characteristics

- Goes beyond the sphere of sectoral policy;
- Must be supported by cooperation between different levels and stakeholders;
- Exceeds administrative limits;
- Targets cities of all sizes.

III. SUPPORTING A COMPETITIVE ECONOMY, ENTREPRENEURSHIP AND INNOVATION THROUGH PROJECTS FOR CARANSEBES MUNICIPALITY

The future of smart city lies under supporting the high value-added economy, innovation and entrepreneurship, so as all the citizens live in a healthy habitat, an energy-efficient green urban environment accessible and safe. The need for investments in the city's business infrastructure must be considered. It

could support the development of competitive economic activities, but also the need to support entrepreneurs from various economic sectors (creative industries, agriculture).

In this view, project names proposals as:

- Arranging industrial parks;
- Creating an industrial platform in the airport area and attracting investors from the aeronautical sector;
- Establishing an association to promote local initiatives at micro-regional level;
- Providing facilities to entrepreneurs in the creative service sector;
- Center for the collection and distribution of agricultural products and simulating the development of short supply chains;
- Creation of structures/networks for promoting traditional products from Caransebes and its area of influence;
- Creation of a commercial consultancy center, in order to facilitate the connection between local producers and potential buyers;
- Development of an efficient transport system and utilities, accessible and sustainable, well connected to national traffic infrastructures.

For the smart development of Caransebes municipality, the development of an efficient transport and utility system, accessible and sustainable, well connected to the national traffic infrastructures is a major desideratum.

The expansion, rehabilitation and modernization of transport infrastructures is and must be supported by specific priority projects due to the imperatives related to increasing urban mobility and encouraging alternative transport systems (bicycle lanes, pedestrian arteries, public transport ecological means of transport).

The commissioning of the airport (first phase of charter plane) will play an important role in connecting the city to the national and international transport flows, also.

At the same time, the densification of utility networks, especially the deficient neighborhoods in this regard, is based on a series of projects aimed at expanding the sewerage network, water and gas supply, modernization of the field of household waters.

The energy efficiency of buildings, as well as the creating of modern waste collection systems and increasing their recycling is another set of priority projects.

Modernization of the public transport system to increase the urban mobility by the rehabilitating the sidewalks, the streets of local importance, logistic plans or regulations for the traffic, will definitely lead to an integrated sustainable urban mobility system: arrangement of bicycle lanes, modernization and optimization of public transport and the related infrastructure; purchasing of environmentally friendly means of transport and establishing of new routes and extensions of the existing public transport routes to the city's tourist objectives.

Making efficient connections and increasing accessibility in the peri-urban area of Caransebes municipality will be achieved by purchasing electric buses/minibuses and arrangement of stations for public transport in the peri-urban area through developing a traffic monitoring system.

Increasing the population's access to utility networks, modernization of the city's technical infrastructure is a must by modernization and extension of the public lighting system, by extension, of all the natural gas distribution system, of all the water supply network in the peri-urban area and sewerage network. An underground relocation of overhead cables and those located in historic buildings and energy efficiency of the public buildings.

The population is expected to grow, many challenges will be faced, and open questions will be raised to about what the future of cities can bring. Cities are expected to cover greater areas than in the past and have to optimize how the public spaces will be designated and used. The adaptation of infrastructure and service will shape differently and will increasingly use new technologies and innovation in a wide range of sectors. From transport and mobility in housing, ensuring inclusiveness and integration among communities, reducing environmental impacts.

The tools at hand to resolve the future challenges lies in educations. Ensuring a solid and the involved social-cultural environment, based on quality and performance in education, health and culture. In order to establish the priority of the projects in the education field, there is a stringent need to ensure the appropriate educational environment from the perspective of security, building sanitation, and later, the necessary directions to ensure the desired level of human resources of learning outputs.

Citizen's engagement in policy processes is growing and should become more prevalent in the future [12]. The involvement of stakeholders, political commitment and strategy development within the city is the key to the smart, durable management of the city.

Promoting quality habitat in green, energy-efficient, accessible and safe urban environment must be made by integral rehabilitation/energy efficiency of the buildings in the private property of Caransebes City Hall, urban remodeling of public markets, arranging natural parks with relaxation facilities, adequate furniture and playgrounds for children.

Improving the quality of environmental factors is aimed by several projects, some with potential of immediate implementation, other do not require a more complex approach, being achievable in the medium term. They address to pressing community issues, such as waste water treatment, air quality and direct impact on human health. Urban health advantages are not to be taken for granted. An integrated approach for a healthy community can be only possible by taking the necessary measures as: modernization of water treatment plant, purchasing of environmentally friendly means of transport, increasing the area indicator of green space, improving the ecological status of surface water quality monitoring systems and pollutants, increasing the number of quality monitoring points for discharged water, for air quality monitoring points, extending the air quality assessment parameters, decontamination and ecological rehabilitation of former industrial areas, use of alternative energy sources from renewable sources or use of ecological practices in the management of green spaces.

A healthy city is an extremely dynamic system that needs improvement and monitoring, and good urban governance is mandatory.

Increasing administrative capacity and optimizing the relationship with the social-economic environment starts from the premise that the efficient functioning of the local public administration is essential for increasing the quality of life of citizens.

As a result, priority is given to projects with inter-sectorial training effect, which increase administrative capacity by improving the internal performance of the mayor's office and related public services, respectively, by improving the interaction with citizens and social-economic efficient management of public funds, increase the openness and receptivity of the administration to innovative solutions and respond to the needs of local authorities, in line with general trends of smart sustainable development.

The hierarchical projects are grouped on three basic dimensions of the administrative activity: increasing the competence and performance of local administration; improving the relationship with citizens and the social-economic environment; strengthening inter-territorial collaboration.

Prioritization the administrative need through strengthening a high-performing team with digital skills and strategic vision for writing projects and

attracting funds for a socio-economic development, encourage participatory governance, training programs for the employees to prevent conflicts of interest and combat corruptions, joining inter-territorial associations and concluding collaboration agreements on areas of mutual interest.

V. CONCLUSIONS

Citizen engagement in policy processes is growing and, in the future, will become prevalent. New forms of governance are already being stimulated and the increase of the importance of city network is expected [10]. The future of urban and smart project management is not set in stone or predictable, but every step, and every decision that is made, will shape the future of a smart and green city. The good use of urban space will relieve many of the pressure put on a city, including reducing environmental impacts, improving social services, social cohesion and proper housing, and efficient mobility which will greatly impact on the city overall liability.

The integration of technology must be adopted in such a way that help benefit as many people as possible, cities will transform into more technological and innovative, more connected using high resolution data for a better management of urban system.

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