

# Exploring the Pillars of Business Models for Smart Cities and their Applicability in Serbia

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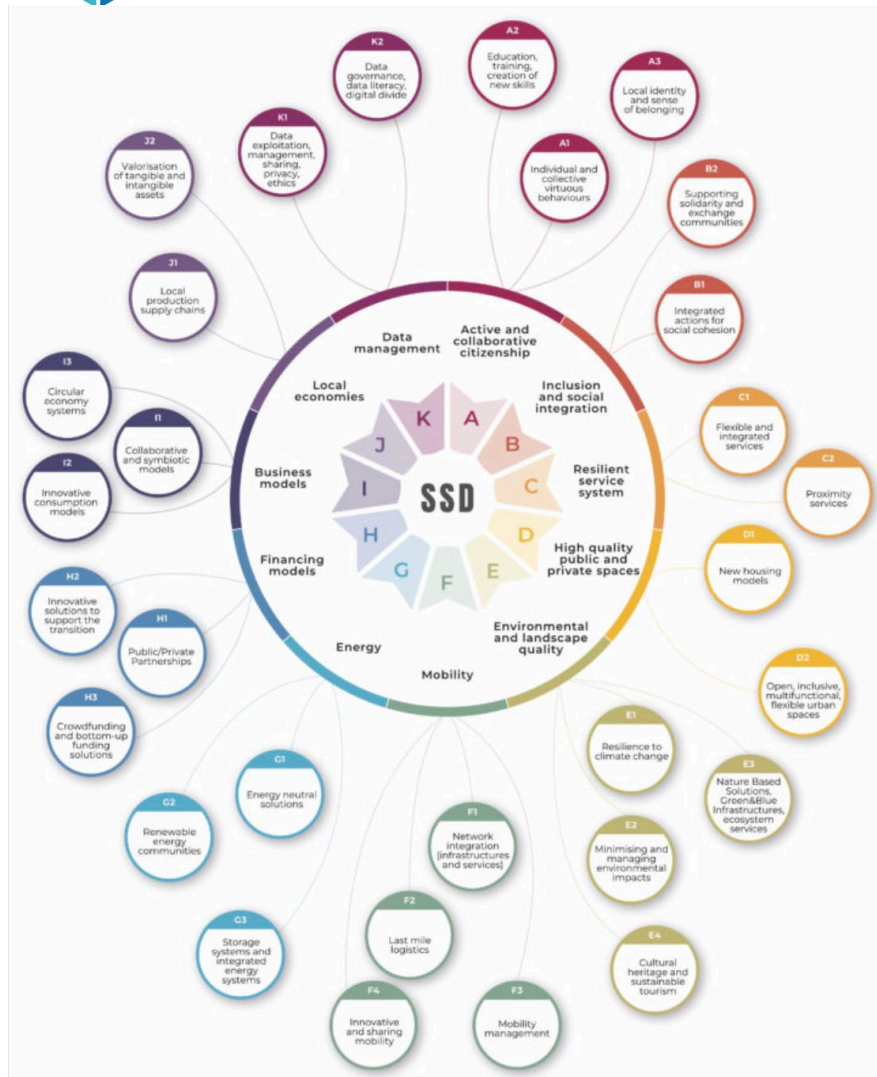


## Vision and aims of the research

- This paper focuses on the **pillars of business models for smart cities**.
- The paper is based on the project **Smart Sustainable District**, and outlines what the opportunities and limits of application of some guidelines are in an extra-EU country, Serbia, through the Horizon Europe project UR-DATA.
- The Smart Sustainable District project started in 2021 and one of its outcomes was the publication of a 'white paper' that aims to describe principles, solutions, tools for the realisation of the SSD model in urban areas, constituting a methodological and operational support to public and private actors involved, for urban transformations in the SSD key.



# Smart Sustainable District



- SSD - Smart Sustainable Districts project started in 2021, involving more than 100 researchers from all the departments and consortium of the University (*Polimi System*). In particular, it speaks to local authorities and all the different figures active in urban and districts regeneration.
- The project is one of the research activities that the Politecnico di Milano undertakes to contribute to the achievement of sustainable development and, in particular, is among the activities related to the Sustainable Development Goal number 11 of the UN 2030 Agenda: [“Sustainable Cities and Communities”](#).
- The **White Paper [SSD - Smart Sustainable Districts](#)** has been published: the project, promoted by Politecnico di Milano and coordinated by [Consorzio Poliedra](#), aims to suggest actions for the **sustainable development**, the **ecologic transition** and the **resilience of places and communities** at a local scale, by defining a series of paths, actions and tools to deal with urban transformations at a local scale, considering sustainable and smart solutions.

## Pillars of business models for smart cities

In the paper, objectives, trends, solutions, tools and some good practices are presented for the following three pillars of business models for smart cities:

- Collaborative models and symbiosis, promoting outcome based PPPP (public-private and people partnership), and sustainable co-production and co-management of both material and immaterial resources and goods
- Innovative consumption patterns, including for instance attention to sustainability and local needs, sharing practices, collaborative consumption of goods and services, new “prosumption” practices.
- Modular systems for circular economy, an economy based on the maximization of resources over time through the re-design of both the property concept and products and services through their whole life-cycle, including processes and consumption models.



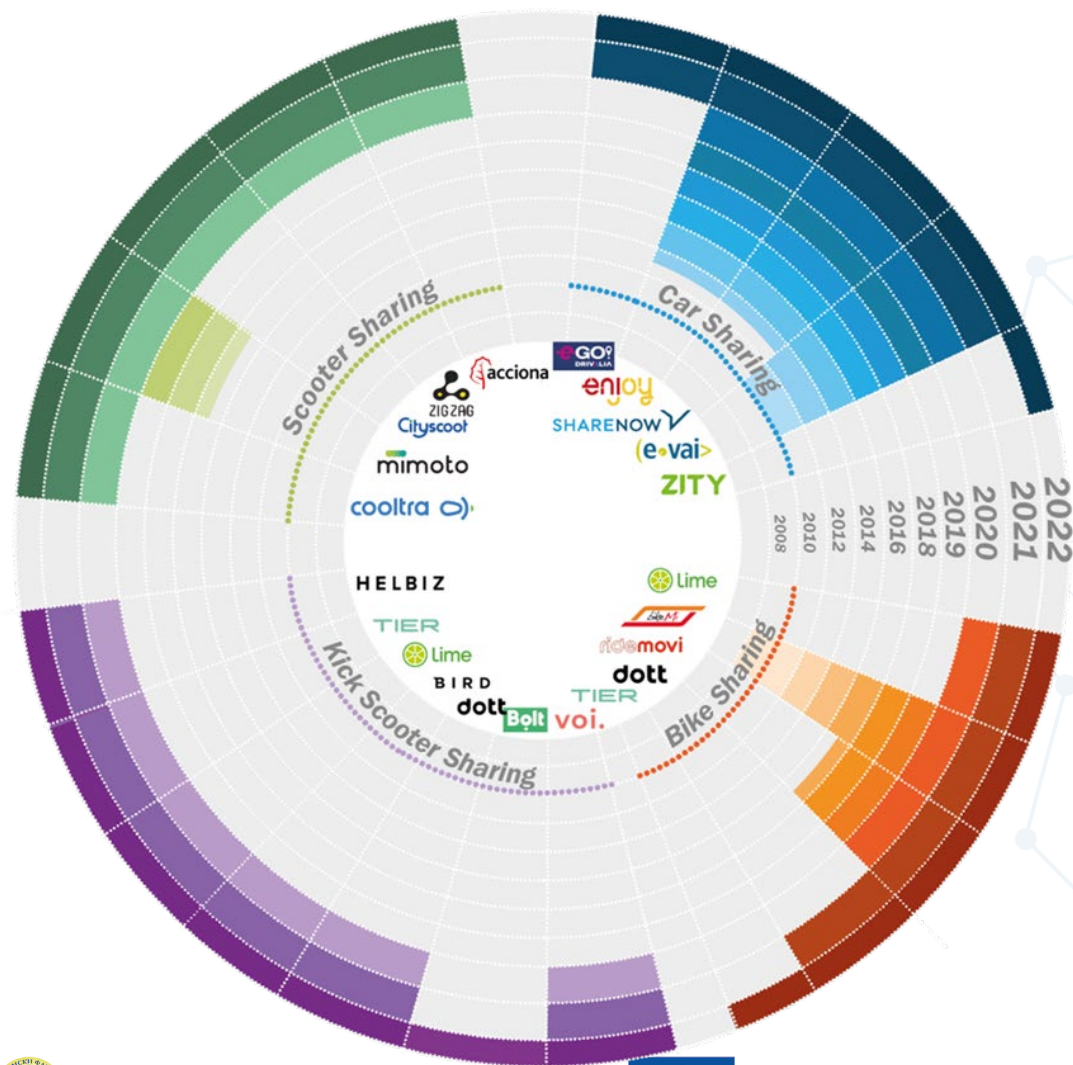
## Collaborative Models and Symbiosis

- Collaborative models and symbiosis play a crucial role in the development of business models for smart cities. These models promote outcome-based PPPP (public-private and people partnership), as well as sustainable co-production and co-management of both material and immaterial resources and goods. The implementation of new business models that foster collaboration is essential for the activation of economic dynamics that are mission-driven and innovative in nature.
- In the context of smart cities, collaboration is deeply integrated into the fabric of these new models. It is not just a means of enhancing the management of services but also a value that drives local economies. By fostering mechanisms of symbiosis between enterprises and promoting shared management of tangible and intangible assets and resources, collaborative models contribute to the overall sustainability and efficiency of smart cities.
- Through collaborative models, various stakeholders, including public and private actors, citizens, and community organizations, come together to address urban challenges and create innovative solutions. These models facilitate the pooling of resources, knowledge, and expertise, leading to the development of holistic and integrated approaches to urban transformation. By leveraging the strengths and capabilities of different actors, collaborative models enable the efficient and effective delivery of services, infrastructure, and solutions that meet the diverse needs of a smart city.

## Collaborative Models and Symbiosis in Serbia

- In the Serbian context, the application of collaborative models and symbiosis in the city of Niš, for example, can bring about significant benefits. By forging partnerships between the public sector, private enterprises, and the local community, Niš can harness the collective intelligence and resources necessary for sustainable urban development. This collaboration can lead to the co-creation of innovative solutions that address pressing urban challenges, such as mobility, energy, and waste management.
- By embracing collaborative models, Serbia can tap into the experience and best practices of other countries, such as Italy, which has implemented successful collaborative models in its smart cities initiatives. Benchmarking against these reference strategies and policies can provide valuable insights and guide the adaptation of collaborative models to the Serbian context.

## Potential transfer of good practice - Milan sharing mobility services



### CAR SHARING

2.165 cars, 18% electric

### BIKE SHARING

16.930 bikes, 40% electric

### SCOOTER SHARING

4.313 scooters, 100% electric

### KICK SCOOTER SHARING

5.250 kick scooters, 100% electric

# Innovative Consumption Patterns

- The adoption of innovative consumption patterns is another essential pillar of business models for smart cities. These patterns involve rethinking traditional consumption practices and embracing more sustainable and efficient approaches to meet the needs of urban residents. By focusing on sustainability and local needs, smart cities can create consumption patterns that promote resource optimization and environmental responsibility.
- In the context of smart cities, innovative consumption patterns encompass a range of practices. This includes attention to sustainability, where individuals and communities are encouraged to make conscious choices that minimize their environmental impact. It also involves sharing practices, where assets and resources are shared among residents, reducing the need for individual ownership and promoting a more efficient use of resources.
- Furthermore, collaborative consumption of goods and services is a key aspect of innovative consumption patterns. This concept entails sharing economy models, where individuals have access to goods and services on a shared basis, rather than owning them outright. Through platforms and technologies, smart cities can facilitate peer-to-peer sharing, allowing citizens to access resources as and when needed, thereby reducing waste and maximizing resource utilization.



## Innovative Consumption Patterns Implementation in Serbia

- In the Serbian context, embracing innovative consumption patterns can contribute to the sustainable development of cities like Niš. By promoting sustainable and efficient consumption practices, Niš can reduce its ecological footprint and enhance the well-being of its residents. The integration of local needs with supra-local consumption systems can ensure that innovative consumption patterns are tailored to the specific context while also facilitating collaboration.
- Moreover, new "prosumption" practices are emerging as part of innovative consumption patterns in smart cities. Prosumption refers to the blurring of the boundaries between producers and consumers, where individuals become active participants in the creation and provision of goods and services. This concept enables citizens to engage in activities such as co-design, co-creation, and co-production, fostering a sense of empowerment and ownership within the community.

## Conclusion

- The exploration of business models for smart cities and their applicability in Serbia, as presented in this paper, provides a solid foundation for further activities and research in the field. It highlights the importance of collaborative models and symbiosis, innovative consumption patterns, and modular systems for circular economy as key pillars for sustainable urban development.
- Moving forward, it is crucial to focus on the practical implementation of these business models in Serbian cities, particularly in the case of Niš. This requires fostering partnerships between public and private stakeholders, community organizations, and citizens to drive collaboration and co-creation of innovative solutions.
- Research efforts should aim to identify and adapt successful business models and best practices from other countries, such as Italy, to the Serbian context. Benchmarking against reference strategies and policies can provide valuable insights and inform the development of tailored approaches for smart city initiatives in Serbia.
- Future activities should also emphasize the importance of sustainable consumption patterns. This includes raising awareness about sustainability, encouraging the sharing of resources, and promoting new "prosumption" practices where citizens actively participate in the creation and provision of goods and services.
- Further research directions should explore the integration of technological advancements, data management strategies, and financial models within the framework of smart city business models. Understanding the synergies and interactions among these elements is essential for creating holistic and effective solutions for urban transformation and enhancing the overall resilience and sustainability of Serbian cities.



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