Belgrade: Smart Solutions for the Climate Change Challenges?

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The concept of smart city, targeting efficiency, liveability and sustainability of urban systems, has become one of preferred options for urban development...
INTRO

GLOBAL WARMING AND SMART RESPONSES

serbia – toward the smart solutions?

BELGRADE AS A SMART CITY?

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MODERN cities – MODERN PROBLEMS  SMART cities – SMART SOLUTIONS

Modern cities, as the nodes of highest concentration of people and activities, represent both the generators of environmental problems, as well as the innovative hubs addressing their solution.

Low-carbon/eco-smart/sustainable/resilient/healthy city

urban efficiency, environmental awareness high quality of life
GLOBAL WARMING AND SMART RESPONSES
Climate change impacts living environment, generating numerous problems in cities affecting their *activities, spatial typologies, urban systems and public health*. 

initiatives in order to mitigate the effects of global warming

The 'smart approach'
GLOBAL WARMING AND SMART RESPONSES

Climate Change Impacts

ICT

SMART city concepts

The relationship between the sustainability of cities and their level of 'smartness' is enabled by the ICT, and its role in climate change mitigation and adaptation becomes more important every day.

- To increase accessibility of services
- To balance the use of available resources
- To increase use of renewable energy resources
- To decrease GHG emissions
- To increase energy efficiency
GLOBAL WARMING AND SMART RESPONSES

Climate Change Impacts  ICT

SMART city concepts

The smart elements introduced in cities are not only related to local development, but also influence regional networks and their functioning.
GLOBAL WARMING AND SMART RESPONSES

Climate Change Impacts \[ \longleftrightarrow \] ICT

SMART city concepts

Six key factors define level of urban city 'smartness':
- smart economy
- smart citizens
- smart city government
- smart mobility
- smart environment
- smart living (Giffinger et al, 2007).
GLOBAL WARMING AND SMART RESPONSES

‘Smart City Vienna’

The initiative ‘Smart City Vienna’ was launched in 2011 and its main idea was to use advanced technological support in order to decrease consumption and production of energy until 2050, without limiting any mode of mobility and consumption.

The objectives of this initiative are related to the problems of global warming aiming at the decrease of CO2 emission, the reduction of energy consumption and the promotion of multimodal transportation and public participation.
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The general application of the smart city concept in Serbia is still in the initial phase, but the issues of global warming and CCA have been in the focus of professional and legislative attention during the last decade. (Pucar, 2013; Bajić Brković, 2013).
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Problems

- Insufficient application of CCA documents
- Weak administrative support
- Low level of implementation
- The lack of the national GHG inventory
- No integration of SMART elements in the CCA strategies*
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Potentials

- Several strategies for CCA
- Novi Sad, “smart city” concept, 2015
- “Smart traffic” analysis
- Information and knowledge exchange via web sites, social media, applications, e-magazines, etc.

- web-site of the Serbian Environmental Protection Agency (SEPA) and National Register of Pollution Sources.
- Digital platforms with GIS technology
- Blogs and platforms, e-magazines, etc.. (e.g. BUDIEKOFINa.COM)
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BELGRADE AS A SMART CITY?

Belgrade - Introducing **SMART** elements

Apps, web sites, portals...

**The first group** includes internet sites and applications for more efficient coordination and orientation.

**The second one** provides information and online services for the citizens of Belgrade.

“belgrade Guide”

“e-uprava/e-government”
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Sites and apps related to wayfinding

'Airport Nikola Tesla'

'Belgrade Talking'

'Belgrade Map'

'Belgrade City Guide'

'Belgrade Travel Guide'
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BELGRADE AS A SMART CITY?

Sites and apps related to wayfinding and monitoring

'Osmatrač' – Observer

'Beograd uživo' - Belgrade live
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Sites and apps related to urban mobility and transportation

- Belgrade Plan Plus
- Bus Plus
- BG voz
- Red voznje
- CAR:GO
BELGRADE AS A SMART CITY?

Sites and apps related to **urban mobility and transportation**

'StartStop Parking Servis Beograd'

'BelParking'

'Parkiraj Beograd PS'

'Moj Parking'
BELGRADE AS A SMART CITY?

Sites and apps related to urban mobility and transportation do not link environmental effects of transportation and its efficiency, but it could be used as a starting point for the introduction of more integrated services and tools.
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Center for environmental improvement has developed several apps regarding environmental sustainability: which include information about weather, precipitation, UV radiation, the ozone layer or natural resources.

“MORECAST”
“UV indeks Srbija”
“Blue Green Map Serbia”
BELGRADE AS A SMART CITY?

‘Libelium World - EkoBus Project’
- an attempt to integrate an urban system (transportation) with environmental monitoring.

The system utilizes public transportation vehicles to monitor a set of environmental parameters, and provide information for user.

it provides data on six parameters - temperature, relative humidity, Carbon Monoxide (CO), Carbon Dioxide (CO2), Nitrogen Dioxide (NO2) and GPS location.
CONCLUSION
CONCLUSION

SMART cities – SMART SOLUTIONS

The integration of smart features into the process of urban development is still in its initial phase in Serbia and Belgrade, but some examples demonstrate a number of possibilities for their use, especially in the process of adaptation to climate change. The advanced technology - ICT, represents the basic foundation for the necessary upgrading, which should be conducted both on the institutional and non-institutional level, via national strategies and programs, as well as by local governments and urban policies.

urban efficiency and environmental awareness
THANKS FOR YOUR ATTENTION