Smartainability and mobility strategy:
The case of Belgian local governments

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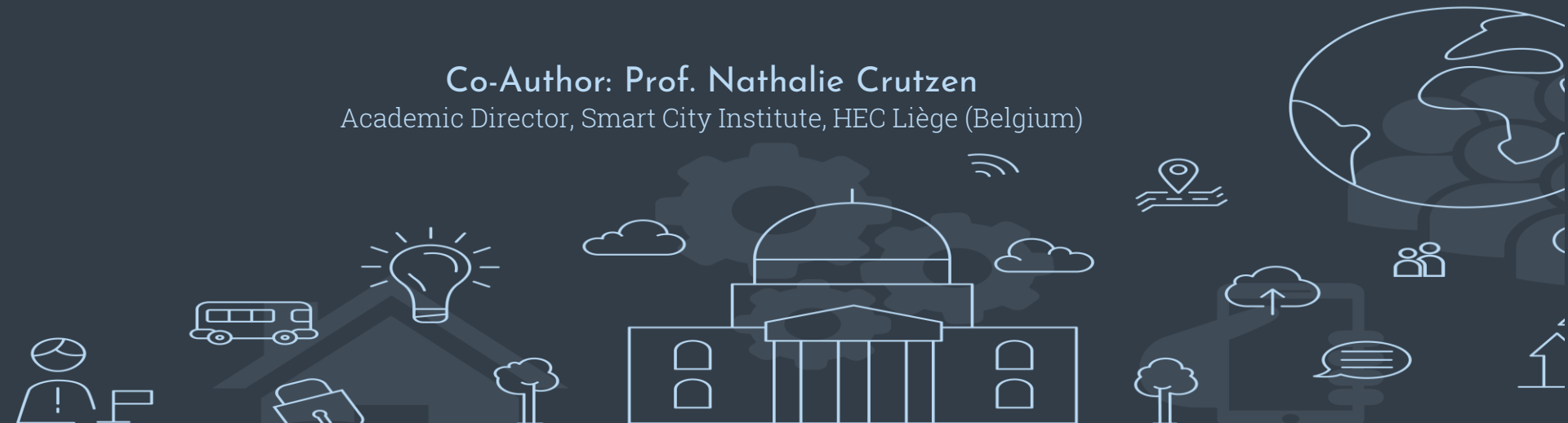

Introduction

In order to be smarter and more sustainable, cities have to face mobility challenges

Mobility strategy
Top-down initiatives and bottom-up initiatives

Smart approach
Digital, tech and IT solutions to increase connectivity

+

Sustainable approach
Multimodality transports - Soft solutions - Development of sustainable mobility plans and strategies

+

Understanding the impact of different combinations of smart and sustainable approaches on the development of mobility strategies in Belgian local governments.

The alternative Venn diagrams of urban mobility developed by Lyons (2016) are used as a theoretical lens to explore the link between smartainability and mobility strategy.

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AGENDA

1. Litterature review
   - 1.1. Smartainability and mobility strategy
   - 1.2. Motivations from a smartainability paradigm
2. Research method
3. Results
   - 3.1. Identification of different combinations between smart and sustainable approaches for mobility
   - 3.2. Smartainability and mobility strategy in belgian local governments

Urban mobility requires the integration of smart tools with a sustainable way on different matters

- Intelligent transport
- Apps and *"datafication"*
- Sharing systems
- Mobility 4.0

Local governments have to identify the best combination between urban sustainability challenges and needs of digital development to facilitate the development of mobility strategy

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The smartainability is an approach combining different alternatives of sustainable and smart visions to facilitate the deployment of smart technologies in sustainable actions

Developed and tested on the Expo Milano 2015

Combination between functionalities, benefits and KPI for smart cities

Even if mobility strategy tens to integrate sustainable and smart approaches, it is difficult to distinguish between the definition of a smart mobility, a sustainable mobility and a "smartainable" mobility.

Smartainability and Mobility strategy

Brings behavioural changes on dynamic signalisations, traffic management systems, urban control driving and on eco-driving

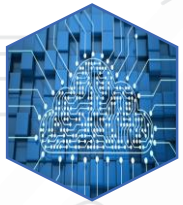
The orientation of a "smartainable" mobility strategy is adapted

City building planning (shopping centres, strategic infrastructures, companies)

Local challenges & objectives

Budgeting (municipal budget, indirect funding, municipal public debt)

Supported by coordinated data and information, monitoring and evaluating system



Facilitate how mobility strategy is planned, administrated and controlled

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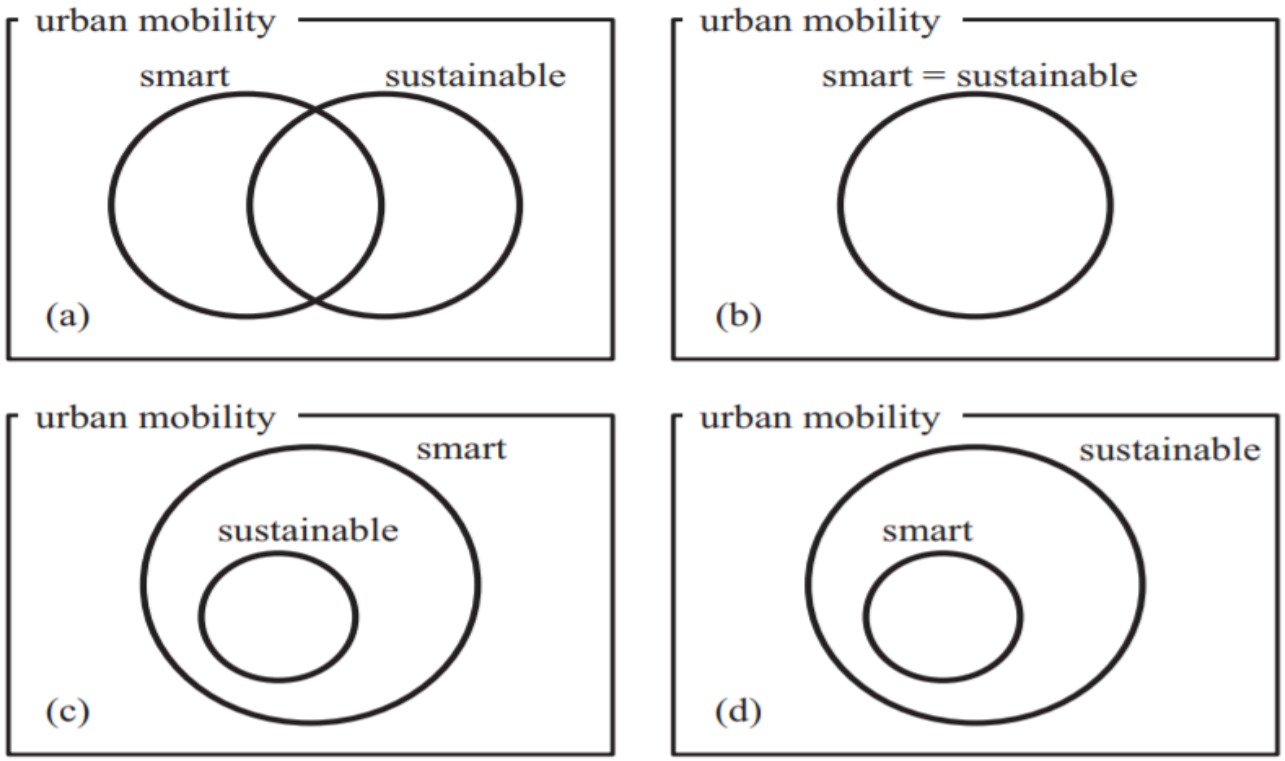
The link between smartainability and mobility strategy is well defined in a framework developed by Glenn Lyons (2016)



"Getting smart about urban mobility :Aligning the paradigms of smart and sustainable" published in Transport Research Part A

Different alternatives of the alignment between smart mobility and sustainable mobility paradigms in the four alternatives of Venn diagrams for urban mobility.

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Exploratory qualitative case study of ten local governments in Belgium based on documentary analysis and interviews with mobility managers.

- Top-down actions to strengthen mobility strategy with an integrated smart and sustainability vision.
- Based on regional division (Flanders, Brussels and Wallonia) and on the list on the fifteen biggest local governments.
- All regions are represented (one for the capital, five in Flanders and four in Wallonia)
- All the local governments selected for the study develop projects and strategies to be more sustainable and smart

/	Region	Car users	Carpooling	Train	Bus	Bike	Walkers
Antwerp	Flanders	53,8%	2,7%	10%	11,9%	14,8%	2,1%
Brugge	Flanders	56,3%	1,5%	10,5%	3,8%	25,4%	0,9%
Brussels	Capital	31,1%	0,8%	43,8%	19,6%	2,2%	1,5%
Charleroi	Wallonia	83,8%	3,2%	6,1%	4,3%	0,4%	1,6%
Ghent	Flanders	60,2%	4,0%	10,6%	5,7%	15,6%	1,3%
Hasselt	Flanders	68,5%	2,5%	7,6%	4,5%	14,5%	1,3%
Leuven	Flanders	58,8%	1,6%	13,2%	5,9%	17,7%	1,5%
Liege	Wallonia	75,4%	1,3%	6,4%	12,5%	1,5%	2,4%
Mons	Wallonia	78,0%	1,7%	12,1%	3,0%	1,7%	2,1%
Namur	Wallonia	70,2%	2,6%	13,4%	7,7%	1,8%	3,4%

Data collection

Ten semi-structured interviews- Mobility managers

2 hours (planning, implementation and control)

Interviewees were informed on prior axes of our research

Documentary analysis (publicly-available reports on sustainability, smart city strategies, urban mobility) – before and after interviews

Data analysis

Principles of the qualitative content analysis

Classification 1: six categories to determine how mobility is planned, organised and controlled

Classification 2: development of mobility strategy

Classification 3: four approaches of smartainability

Classification 4: differences and similarities

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Smart Vs Sustainable

- Smart projects (Technology, digitalization, smart lighting, smart traffic control)
- Sustainable projects (reducing pollution, congestion and c02 emission)

Smart and sustainable projects are dissociated

- projects are developed by different departments – Silo work
- The link between smart and sustainable mobility is developed only for strategic axes (important financial, infrastructural and human support)

Different regions, different visions

Wallonia

- Mobility apps and platforms support sustainable mobility
- Bike and public transport (soft mobility) as smart integrative solutions
- Promoting entrepreneurship and bottom-up initiatives (inclusive citizen participation)

Flanders

- Neutral climate and shared accountability on sustainability
- Mobility 4.0 (fleet & ride sharing, autonomous transport system, smart parking and connected vehicle)
- Cooperation and complementarity between sustainable modes of transport
- Sustainable values support integrated mobility platforms.

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Axes	Alternative B: Smart means Sustainable approach	Alternative C: Sustainable as a part of smart approach	Alternative D: Smart as a part of sustainable approach
Planning	-Obsolete mobility plans -Mobility projects are mainly focused on traffic and cycling -Anticipation of congestion challenges	-Mobility projects are updated according to sustainable challenges. -Mobility projects are mainly focused on sustainable solutions to support integrated mobility platforms. -Anticipation of future digital challenges	- Obsolete mobility plans -Mobility projects are mainly focused on bottom-up smart initiatives proposed by citizens and start-ups -Developing a strong sustainability culture
Smart city vision	-Starting to integrate a smart city vision	- Integration of smart city strategy	-Integration of smart city strategy
Collaboration and management	- Weak formal collaborations and decision-making - Strategic and organisational limits	- Formal collaborations based on coalition and interdependencies -Decentralisation is an enabler and a constrain	- Complex formal collaborations and decision-making - Strategic and organisational limits
Project monitoring	- Obsolete measurement systems and indicators -Informal controls on the use of bike, cars, parking and mobility applications	-Adapted measurement systems and indicators - Formal controls on the impact of mobility projects on sustainability -Formal controls based on digital platforms and tools	- Obsolete measurement systems and indicators -Formal controls on traffic congestion and on the use of sustainable transport.
Awareness campaigns	- Sensitizing citizens to sustainability and digitalization	-Focus on integrated mobility platforms (mobility 4.0)	- Sensitizing to inclusive citizen participation -Sensitizing to datafication and digital apps
Citizen participation	-Citizens perceive mobility projects as a danger for their routines and habits -Slow positive behavioural change	-Citizens are initiated to smart and sustainable solutions -Citizens are eager to contribute in the development of mobility projects	-Raising citizen collaboration and participation - Sustainability is perceived as a long-term solution -Slow positive behavioural change
Observed in	-Local governments in Wallonia	-Local governments in Flanders -Local governments in Brussels	- Local governments in Wallonia
Level of development	Weak	Strong	Medium

Conclusion

Direct link between the vision of smartainability and to how mobility strategy is defined and developed

Different approaches combining sustainability challenges (pollution, CO2 emission) and digital solutions (integrated mobility platforms) to face mobility issues in Belgian local governments.

Importance of active collaborations between public, private and civil actors

New insights on the link between smartainability, strategy and active collaborations

- Impact of citizen participation on mobility platforms
- Testing the Venn diagrams on other strategic smart city dimensions (governance, living and economy)

Thank you for your attention

Questions?