



## ***Exploring the stakeholders' dynamics of "Smart City" projects: the case of Belgium***

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## Introduction

- The goal of this research is to ***study the interplay between stakeholders in "Smart City" projects***
- This paper explores a ***multiple-case study of eleven "Smart City" projects*** in Belgium.
- Some ***concrete practical recommendations*** for key stakeholders are made
- Plan of presentation:
  - Theory: Smart City: a definition / Governance / Stakeholder's Theory / Triple and Quadruple Helix model
  - Case Study : Belgium / Methodology / 11 Smart Projects / Analysis / Conclusion: Key recommendations

## Smart City: a definition

- The smart city concept has become a central idea to face the challenges of cities, many definitions are available for the smart city label.
- The term is used in a prolific fashion and strongly connected towards **technology** as an end and **not as a facilitating tool** to promote **social, economic and environmental development**, and sustainability of cities.
- A complete definition of the concept has been developed:
- *“We believe a city to be smart when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance.”*
- (Caragliu, Del Bo, Nijkamp, 2009)

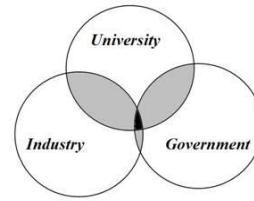
## Governance...and stakeholder management theory

- **Evolution of the concept of governance:**
  - Necessity of efficiency, effectiveness, and transparency of governments' intervention
  - Empowerment of citizens and stakeholders
    - (Santinha and Castro, 2016)
- **Cities are governable within the framework of coalitions of actors** and institutions.
- According to the **Stakeholder Management Theory**, a stakeholder for an organization is any group or individual who can affect or is affected by the achievements of the **organization's objective**.
  - (Freeman, 1984).
- The **city is a system of stakeholders** with competing power and interest. Incorporating **multistakeholders into the smart city management means balancing interests** and opens new range of participation, new nature of communication and new dimension of power allocation among stakeholders.
  - (J. Roy, 2005)
- The multi-stakeholder analysis is a process of systematically analyzing qualitative information **to determine the position and rank of the stakeholders**
  - (J. Bryson, 2004).

## Stakeholder's theories

### The Triple and quadruple helix model

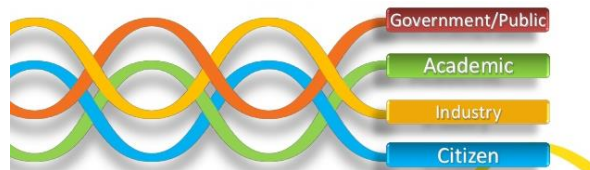
- The THM is the relationship between:
  - **university–industry–government**
- The THM has emerged as a reference framework for the analysis of knowledge-based innovation systems
  - (Etzkowitz and Leydesdorff , 1997)
- **The quadruple helix model:** THM is modified with the add of another unifying factor to the analysis: **Civil society**
  - (Etzkowitz and Zhou, 2006)
- The **advanced model** presupposes that the four helices operate **in a complex urban environment**
- **Civic involvement with cultural and social capital shape** the relationships between the traditional helices



## Stakeholder's theories

### The quadruple helix model

- The **interplay between these stakeholders determines the success of a city** in moving on a smart development path, moving to a Smart City



- From PPP Public Private Partnership to PPPP: **Public Private Particular Partnership**
- The introduction of the stakeholders' dynamic into the smart city constitutes a **new paradigm that is closely linked with the interpretation of 'open innovation'** and directly relevant to **'stakeholder engagement'**
  - (Paskaleva, Cooper and all, 2015)

## Methodology

- **Sample:** 11 projects Smart City in Belgium
- **How were the projects retained ?**
  - Projects identified in networks or scientific programs led under the EU.
  - Projects branded "Smart City" during specific juries (Belfius and Agoria Smart City Award)
  - Projects identified in a review of press articles (Databank of newspaper)
  - Projects presented on the institutional sites and Belgian cities
- **Criteria of sampling:**
  - Geographical distribution: an initiative by province + Brussels
  - A balance in the sizes of municipalities
  - A diversity in the Smart domains (Giffinger) (Smart Economy, Smart Mobility, Smart Environment, Smart People, Smart Living, Smart Governance)
  - Projects using new technologies (ICT)

## Methodology

- **The Collect of data**
  - Series of **semi-directive interviews** with two key players for each project
    - 22 interviews lead from February 18th till May 27th, 2015
    - A diversity in the functions of the interviewee
  - **Triangulation of data** with a series of secondary data
    - Strategic plans, business plans, budgets, diverse presentations and information available on websites and press articles.
- **The data analysis**
  - Thematic treatment on base of the principles of **the qualitative analysis of contents**
    - (Glaser and Strauss, 1967) (Mayer and Ouellet, 1991)
  - **Vertical analyses (intra-case) and horizontal (inter-cases)**
  - The qualitative analysis presents, nuance and compares the perceptions of respondents concerning the studied projects.

## Smart Cities in Belgium: The 11 projects

Smart Environment	Smart Mobility	Smart Economy	Smart Governance	Smart Living	Smart People	Globale Vision
			<i>Energy Performance Contracts</i>			
						<i>Courtrai City Vision</i>
				<i>Hackaton</i>		
	<i>City Depot</i>					
					<i>Ecocampus Residence</i>	
	<i>The Coursier Mosan</i>					
		<i>Creative Hub (Plug R)</i>				
<i>Network of heat</i>						
						<i>SmarTournai</i>
<i>Smartnodes</i>						
			<i>Fix My Street</i>			

## Analysis: Triple and quadruple helix model

- Only five projects counts **stakeholders representing the "four helix"** in their ecosystems.
  - Hackathon, Kortrijk City Vision, Creative Hub, SmartNodes and SmarTournai.
- **A single initiative developed a "triple helix"** approach:
  - Contracts of Energy Performance.
- The low participation of **universities and research centers** within the projects explains this low rate.

## Analysis: Interplay between stakeholders in projects

- Some actors involved in the projects have or taken **a specific role of expertise** and support in the management of projects
  - Six projects:
    - Rural foundation (FRW) in the project of Heat Network,
    - Leidal an intermunicipality agency in the Kortrijk City Vision
    - Open Knowledge an association for the project Hackaton
    - Private external consultant for three projects: Fix My Street, Ecocampus Residence and SmartNodes.
- These stakeholders, private or public, play a **role of integrator or facilitator**
  - They accompanied the realization of the project "Smart City" (for all or partially)
  - They bring a specific expertise, coordinate the set of actors or bring various actors to participate in the project.

## Analysis: Initiators of projects

- "Who is the initiator of the project ? " Is the dynamics at the origin of the project Top-Down or Bottom-up? (Leydesdorff, Deakin, on 2011)
- Double flow, is a hybridization of Top Down and Bottom Up

Projects	Top-down	Bottom-up	Double flow
Fix My Street			Politics
City Depot		Private initiative	
Ecocampus Residence	Administration		
Hackathon			Ecosysteme
Courtrai City Vision	Politics		
Creative Hub (Plug'R)			Ecosysteme
SmartNodes	Politics		
SmarTournai	Politics		
Contracts of Energy Performance		Ecosysteme	
The Coursier Mosan		Association/Citizen	
Heat Network	Politics		

## Analysis: Citizen participation

- The citizen participation and its implication in the projects are a whole piece of the dynamics to smarter a city.
- Three levels of participation is considered:
  - **Active participation**
    - Citizens participates into workshops, scenario, trainings
    - They have the possibility to co-create the project and can change the orientations of this one.
  - **Passive participation**
    - Citizens exchange their points of view with the authors of projects.
    - They participate in information sessions and project visit
    - The citizens have a specific interlocutor to response to their questions and to interact
  - **No participation**
    - Absence of specific approach towards citizens.
    - They are only informed and not involved in the project.

## Analysis: Citizen participation

Projects	Active participation	Passive participation	No participation
Fix My Street		Final Users	
City Depot			B to B
Ecocampus Residence	Workshops		
Hackathon	Co-creators		
Courtrai City Vision		Final Users/ testers/ Living lab	
Creative Hub (Plug'R)		Open Lab/ Users	
SmartNodes		Informations meeting	
SmarTournai	Workshops		
Contracts of Energy Performance		Users	
The Coursier Mosan		Interaction with citizens	
Heat network	Piloting Committee		

## Preliminary insights :

- **Politics mainly initiates** the projects “Smart City” analyzed.
  - Majority of the projects are developed on a top-down approach from cities / municipalities.
- The local administration has a **role of support, stimulation and watch** on smart city initiatives on its territory.
- The **integration of universities** is already present in a majority of projects, but a **wider implication is needed**.
- **International companies** and big groups are perceived as **actors difficult to reach**.

## Preliminary insights:

- Numerous **ecosystems of actors** are created (sometimes **very complex**) in the “Smart City” projects
- To facilitate the relations within these ecosystems **an integrator of project or a facilitator of project** (public or private) is beneficial for the running of projects.
- The 11 initiatives comprise **a participation of citizens**
  - Civil Society participation remains still passive
  - But some projects are bottom-up
- Civil society must be seen as (1) **a client to be satisfied** (2) **a source of innovation** and (3) **a partner in the project**.



## Limitations of the study:

- The qualitative methodology and the subjectivity of the interviewed people.
- The wealth of this study comes from the aggregation of these projects containing diverse characteristics.

## Next steps:

- Extra interviews to reach 4-5 other stakeholders in the project ecosystem
- Deeply analyze the value and interest of each actors in the ecosystem
- Establish a gradation of involvement of stakeholders into the projects
- Compare the different stages of involvement of actors across the process of the project
- Construct a analysis framework based on the different cases using the stakeholder's management theory

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