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## Smart City: process of emergence. Interactions between governance and digital technologies

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”The emergence of the Smart City: stakes, challenges, practices and impacts for public governance”  
10th International Symposium, Luxembourg

# Smart City: process of emergence

Interactions between governance and digital technologies

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# SOMMAIRE

1. **Context of the research**
2. Problematic
3. Litterature review and research model
4. Research methodology
5. Main results
6. Contributions, limits and possible extensions

## 1. Context of the research (1/4):

- Increasing complexity of modern society
- Willingness to empower a plurality of stakeholders
- Sophistication of technological tools



Emergence of the **smart city concept**, allowing a better integration of public organizations in their **social, ecological and economic environment** (Baraud-Serfaty, 2011)

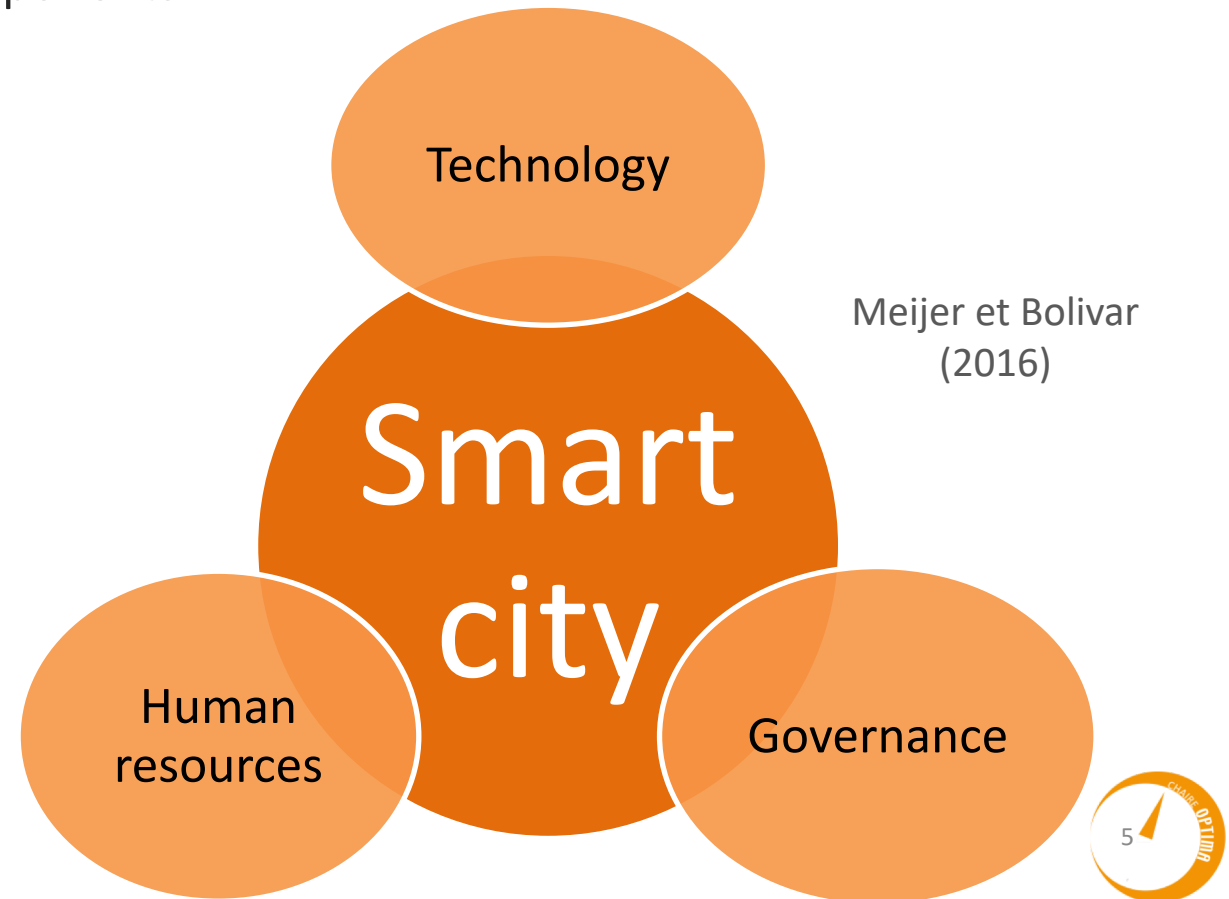
## 1. Context of the research (2/4):

- **Smart city** : umbrella concept (Silva-Morales et Gallouj, 2018)
- Concept based on ICT to meet the urban development needs in a sustainable way, crossing economic, societal and environmental aspects (Nam et Prado, 2011).



## 1. Context of the research (3/4):

- Smart cities are conceptualized through 3 components:
  - Smart people
  - Smart governance
  - Smart technology
- And different objectives (Giffinger et *al.*, 2007) :
  - Smart economy
  - Smart mobility
  - Smart environment
  - Smart living



## 1. Context of the research (4/4):

- Many researches focused on :
  - **Conceptualization** of this notion (Cocchia, 2014; Giffinger et al., 2007; Nam et Prado, 2011; Dameri, 2017)
  - **Analysis of one of its 3 components:**
    - IT infrastructure and technologies (Cowan, 2013 ; Lee et al., 2013)
    - governance issues related to the multiplicity of stakeholders (Gooch et al., 2015 ; Mayangsari et Novani, 2015 ; Thomas et al., 2016)



# SOMMAIRE

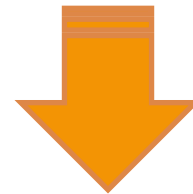
1. Context of the research
- 2. Problematic**
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## 2. Problematic

**What are the connexions between governance and digital technologies as part of a smart city ungoing process?**

- **Objective of the research:** Exploring the relationships between two components of the Smart City: digital technologies and governance



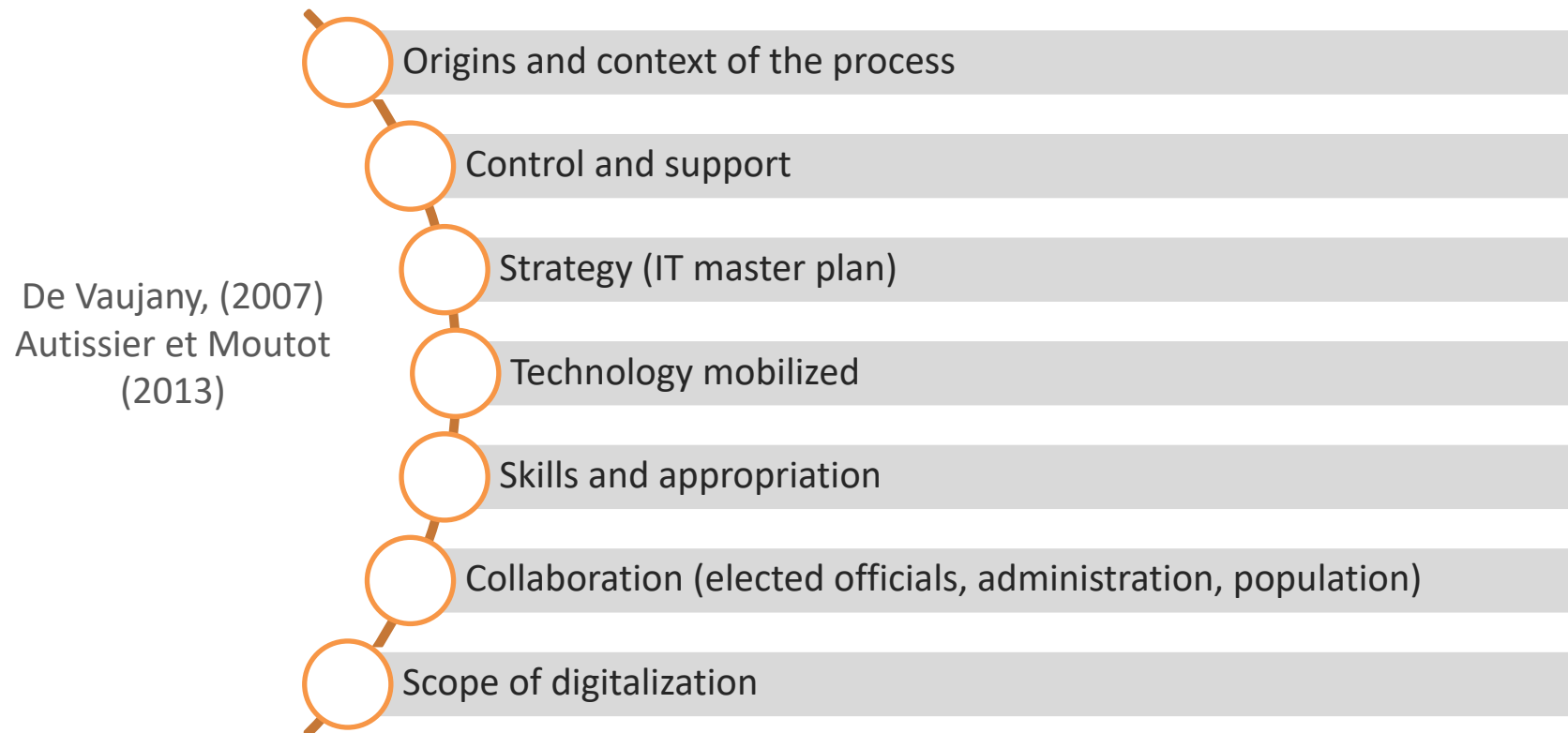
- **Exploratory approach:** analyze Smart City ungoing processes, focusing on the interactions between digital technologies and territorial governance

# SOMMAIRE

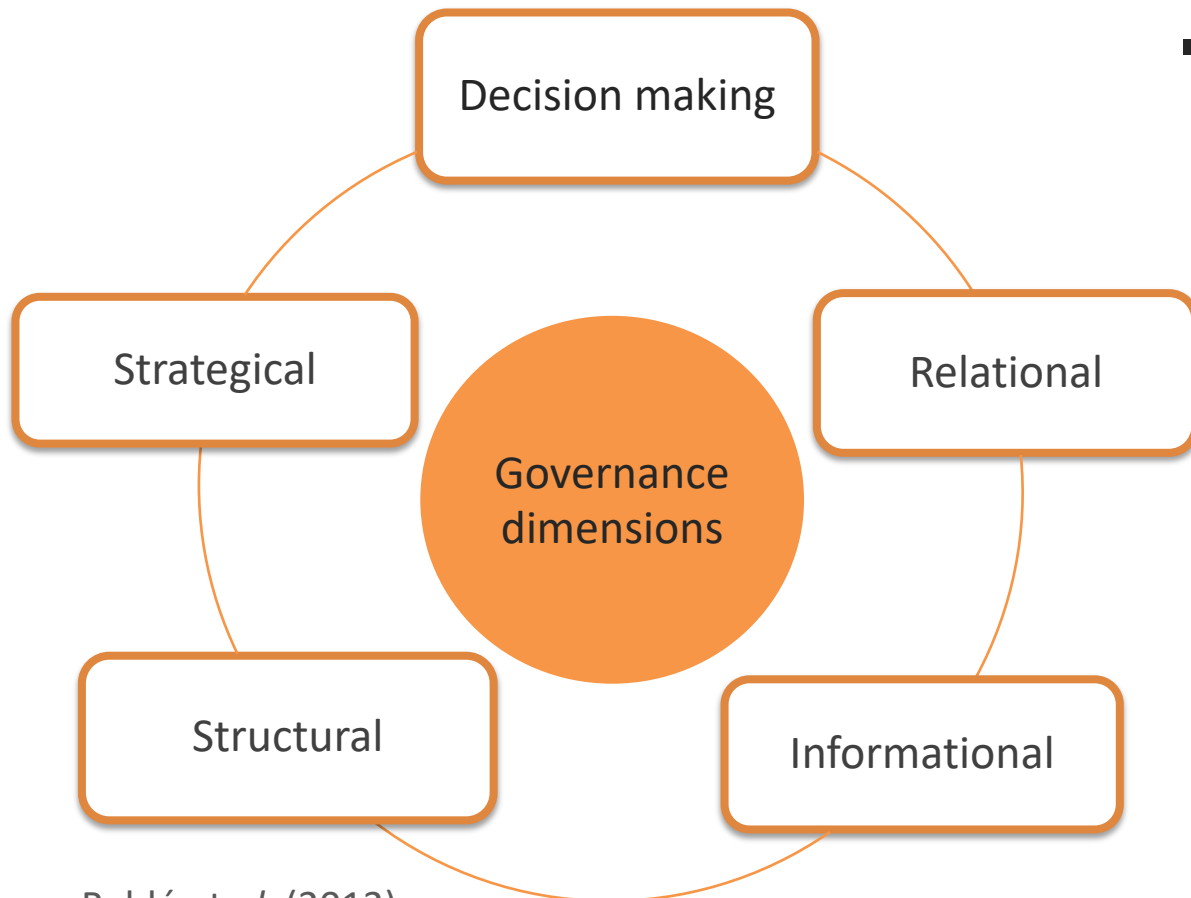
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### 3. Literature review and research model (1/2)

- Framework for analyzing of the **Technology Component**

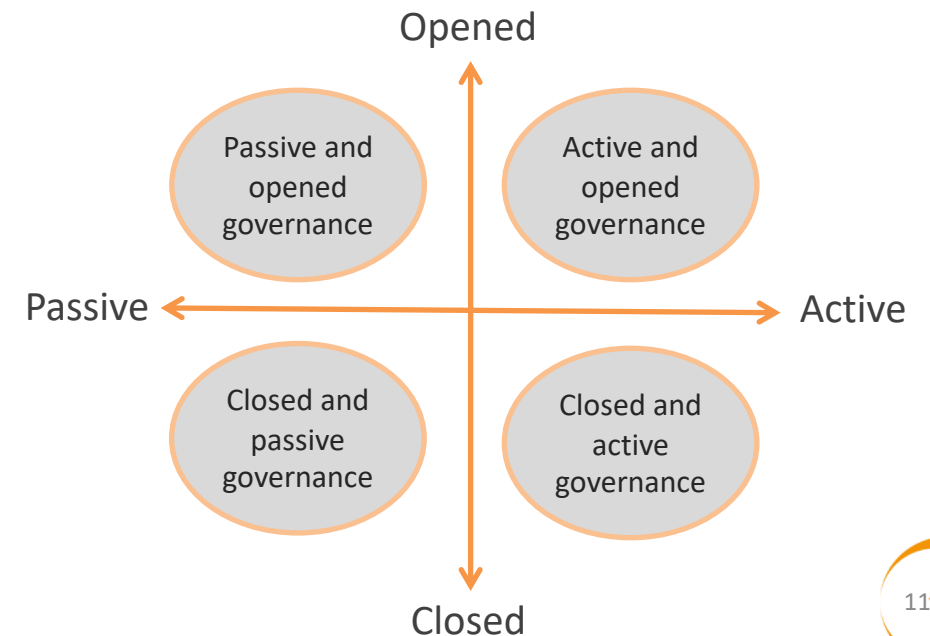


### 3. Litterature review and research model (2/2)



Baldé et *al.* (2013)

- Framework for analyzing the **local public governance component** (Baldé et *al.*, 2013)
  - Characterization of 4 modes of governance:



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## 4. Research methodology

### ▪ A qualitative methodology based on 2 case studies

- Exploratory approach via a qualitative methodology based on several case studies (Yin, 2008), to characterize the relationship between technology and governance in a process of emergence of a Smart City

#### • Data gathering :



- Semi-directive interviews



- Research intervention (David, 2002)

- Access to internal documentation

#### Case 1

- A municipality of medium size
- Committed to innovation (several innovation awards)

#### Case 2

- A medium-sized EPCI
- Process of rebuilding the administration for 3 years

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## 5. Main results (1/4)

### Case 1

Innovations focused  
on internal issues

Technological  
approach of  
innovation

Limits of the process  
because of the  
governance system

### Case 2

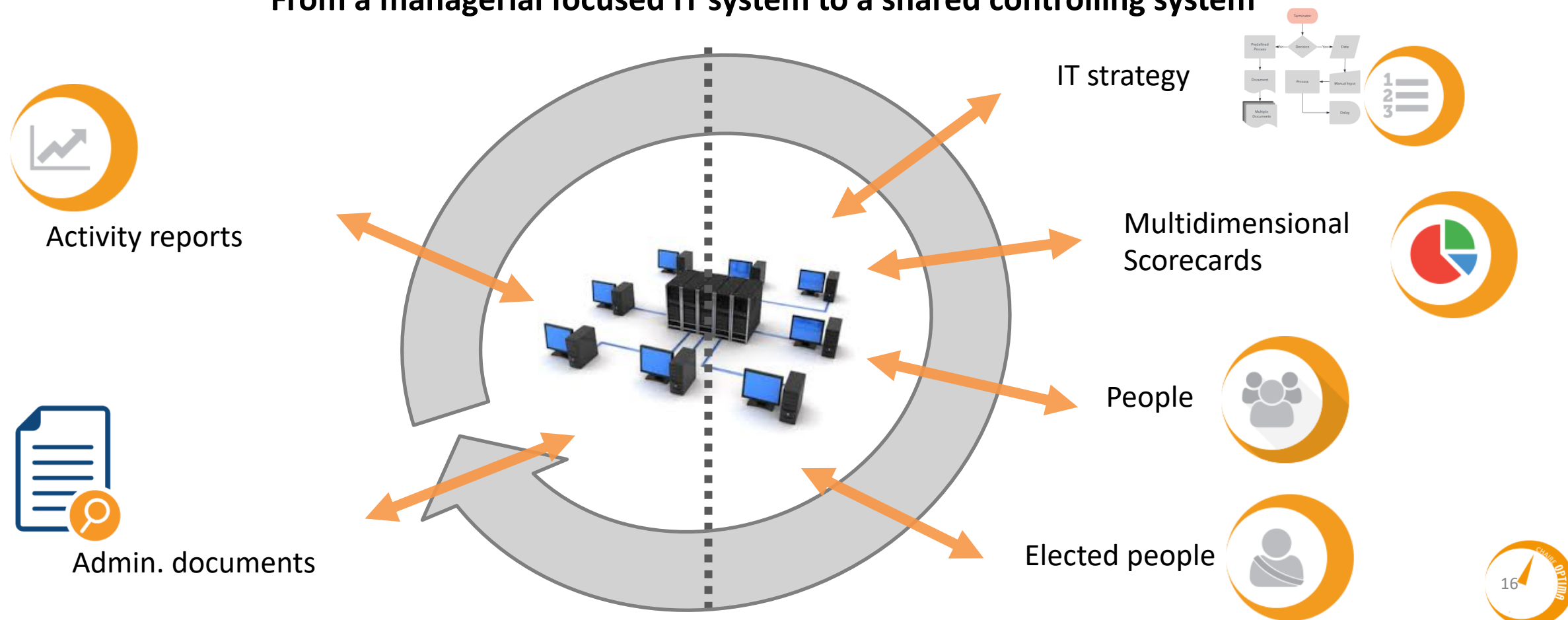
Governance changes with  
integration of external  
stakeholders

Technological constraints  
to proceed with the  
smart city development



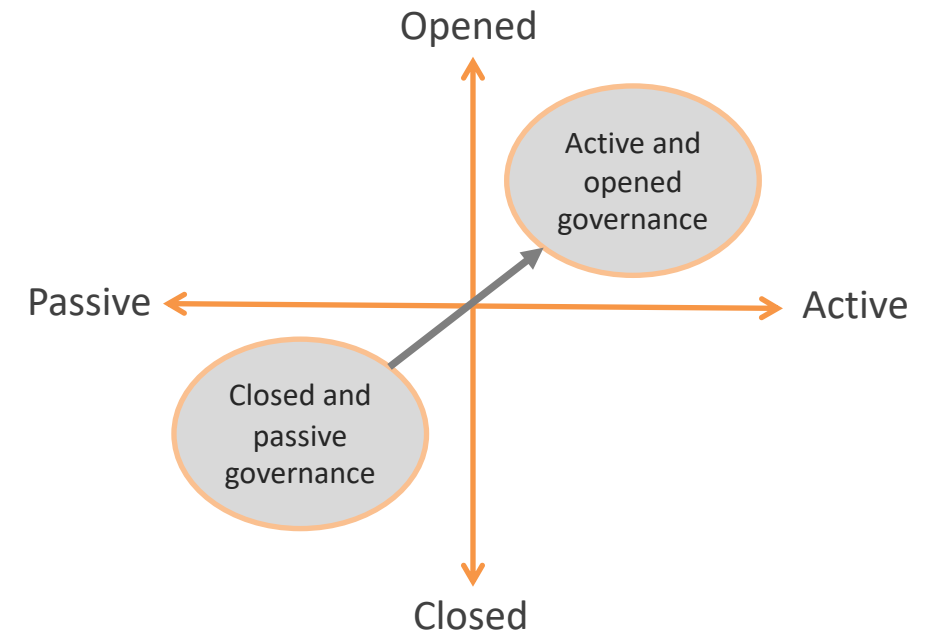
## 5. Main results (2/4)

**From a managerial focused IT system to a shared controlling system**

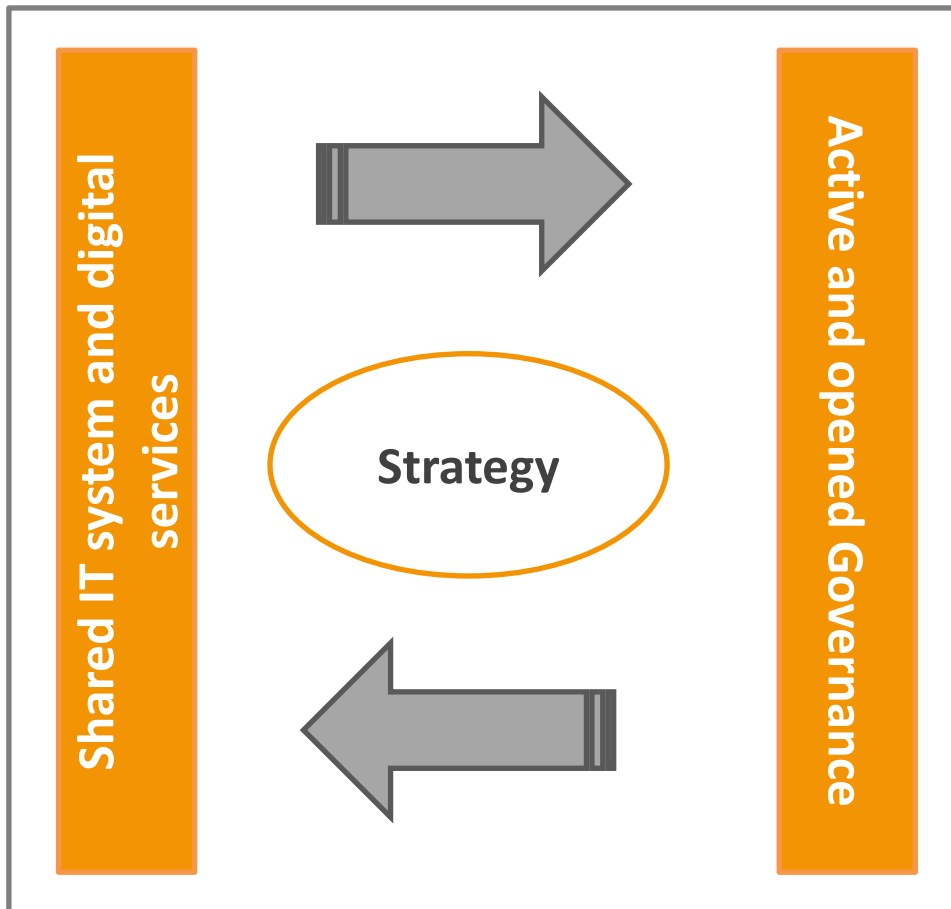


## 5. Main results (3/4)

- **From passive and closed governance to active and open governance**
  - Formalization of a strategy in coherence with the needs of stakeholders
  - Adaptation and transparency of the organizational structure
  - Transparency and integration of stakeholders in decision-making processes
  - Formalized ascending, descending and transversal relations
  - Provision of structured information to all stakeholders



## 5. Main results (4/4)



Towards the  
emergence of a  
Smart City



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6. **Contributions, limits and possible extensions**

## 6. Contributions, limits and possible extensions



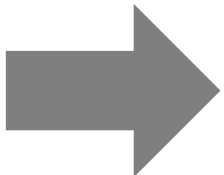
*Contributions*

- Interaction of two essential components for the creation of a smart city: technology AND governance
- Need to design governance and technology through a common development strategy
- Indissociability of the dimensions not related to the chronology of their implementation



*Limits*

- Exploratory study
- Only 2 case studies recently engaged in the smart city process with different scope, context and different modes of engagement



*Extensions*

- Engage tests concerning the human component in the process of emergence of a smart city
- Understand the engagement mechanism in the smart city process

## *Smart City: process of emergence*

*Interactions between governance and digital technologies*

