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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)

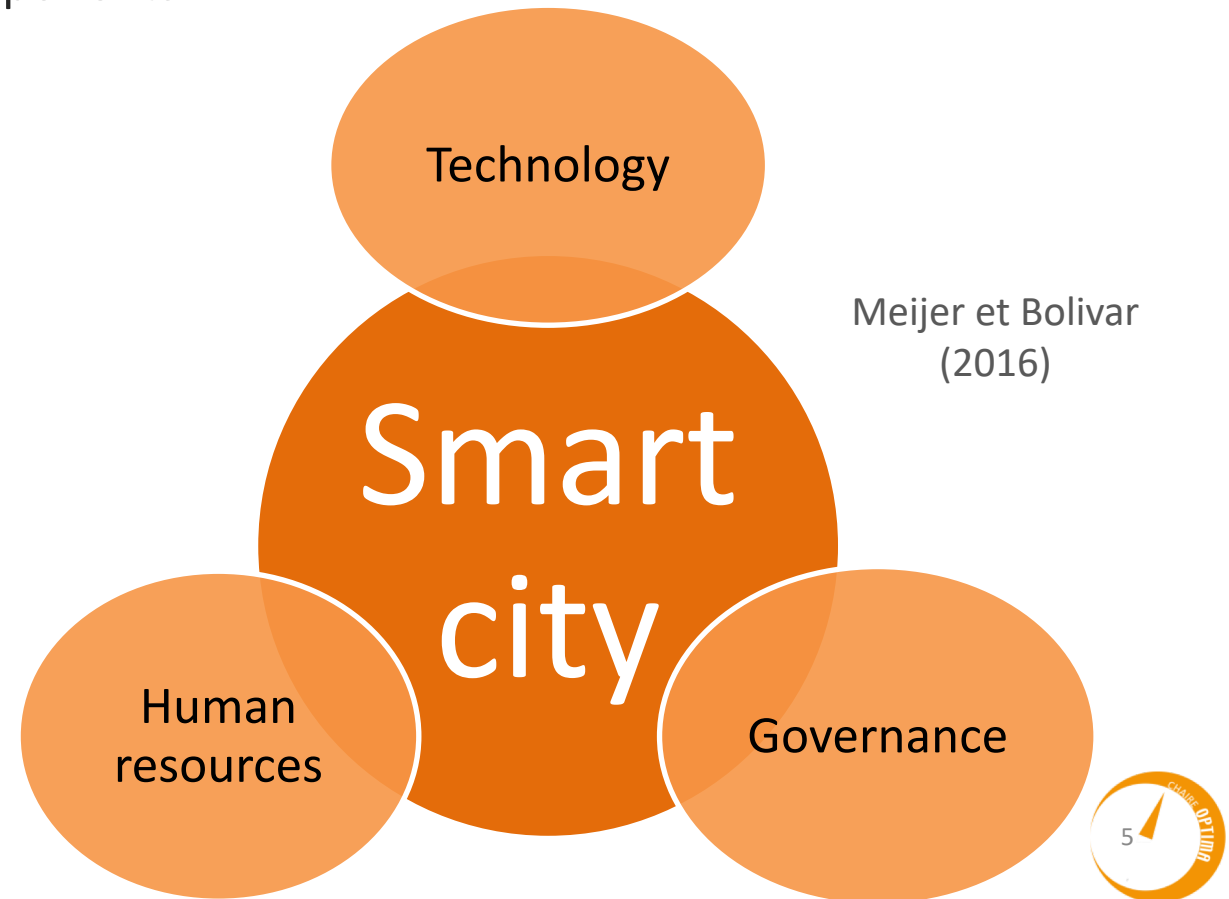
1. Context of the research (2/4):

- **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)



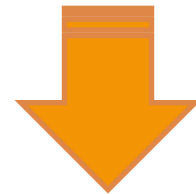
SOMMAIRE

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



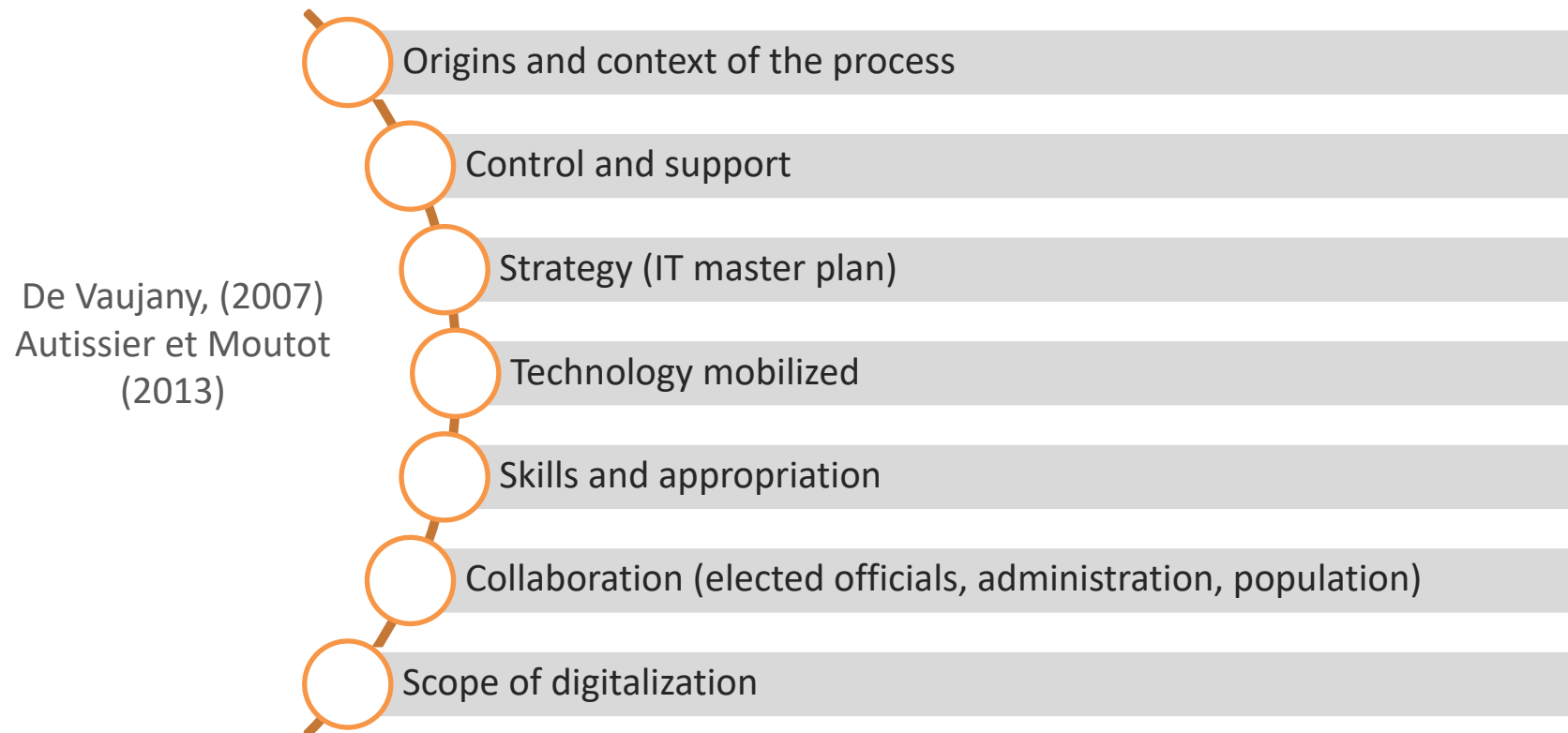
- **Exploratory approach:** analyze Smart City ungoing processes, focusing on the interactions between digital technologies and territorial governance

SOMMAIRE

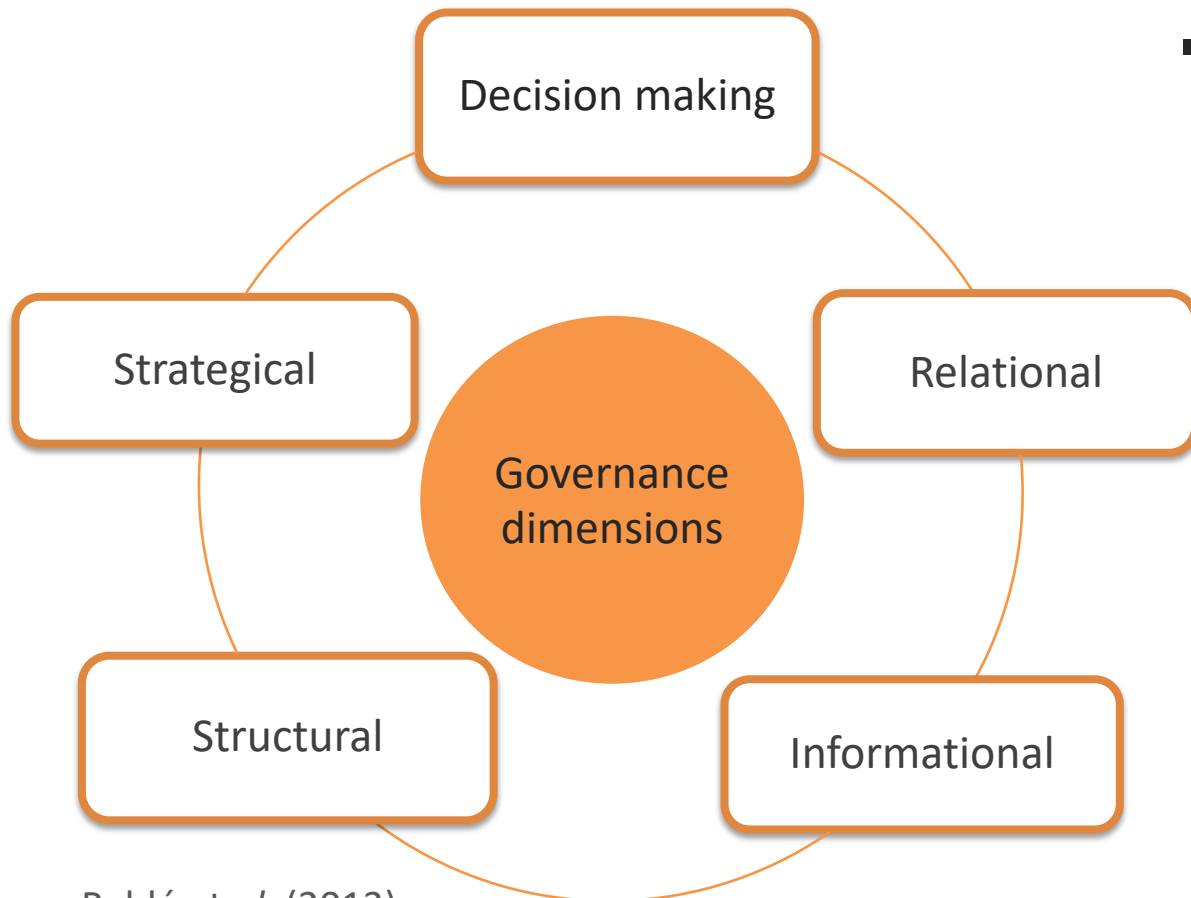
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3. Litterature review and research model (1/2)

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

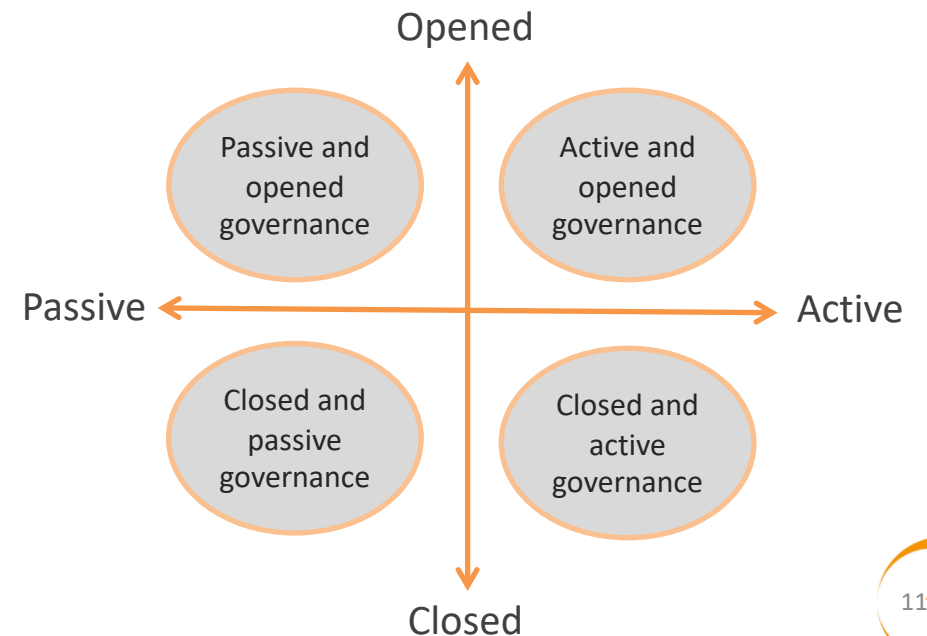


3. Litterature review and research model (2/2)



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

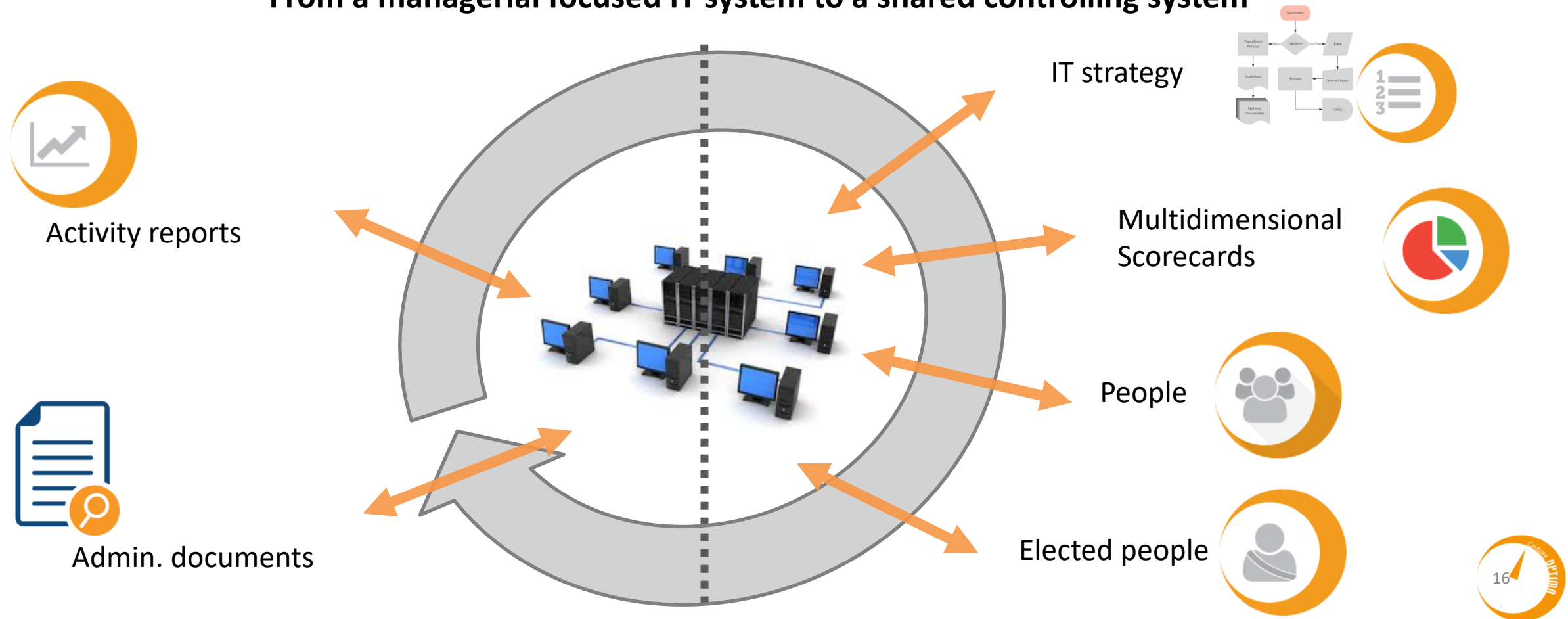
Case 2

Governance changes with
integration of external
stakeholders

Technological constraints
to proceed with the
smart city development

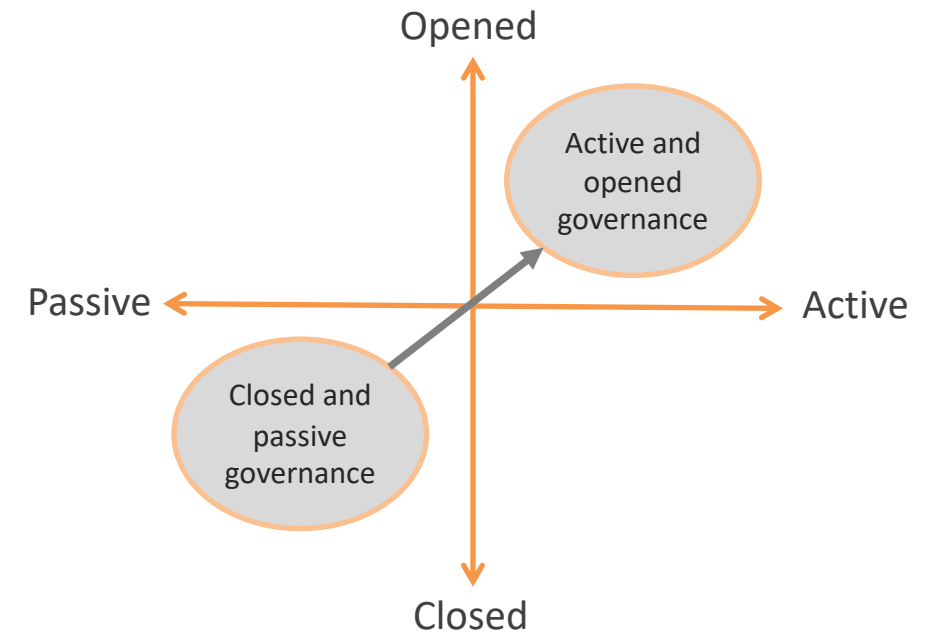
5. Main results (2/4)

From a managerial focused IT system to a shared controlling system

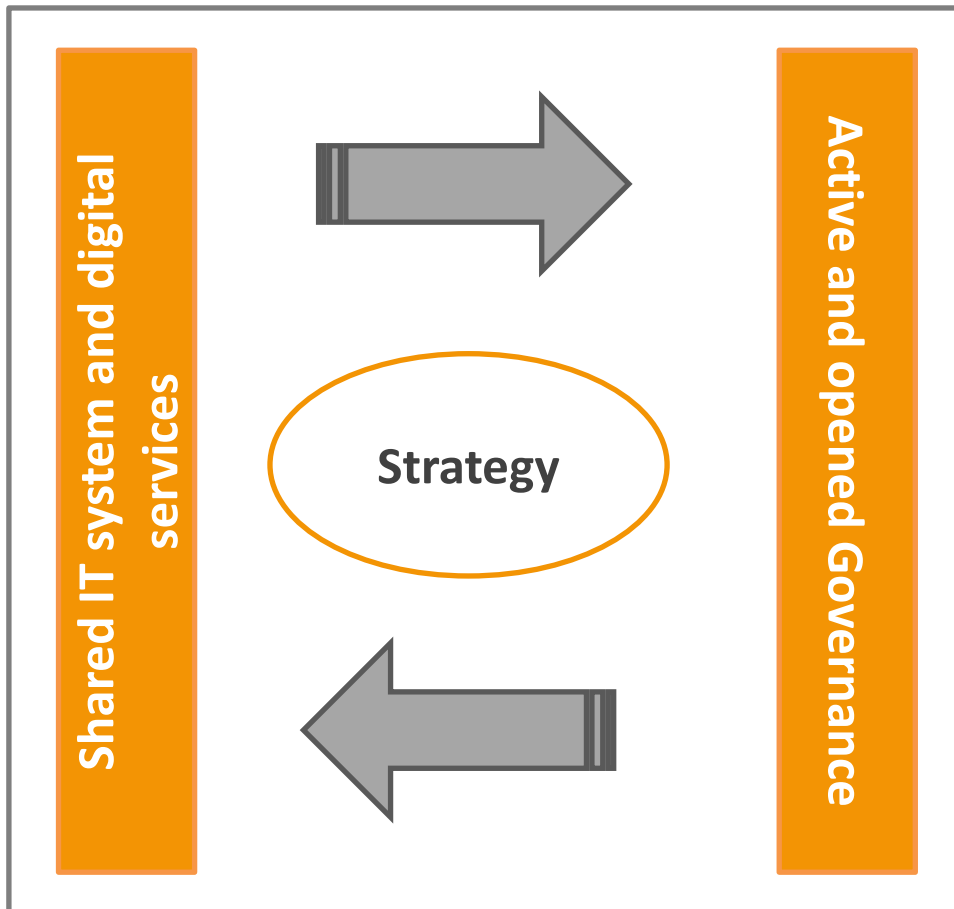


5. Main results (3/4)

- **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



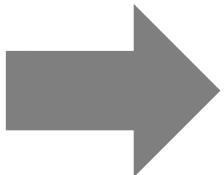
Contributions

- 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

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