



**LogDynamics**

International Graduate School



**BIBA**



***A SYSTEMATIC LITERATURE  
REVIEW OF  
CHALLENGES IN URBAN  
LOGISTICS***

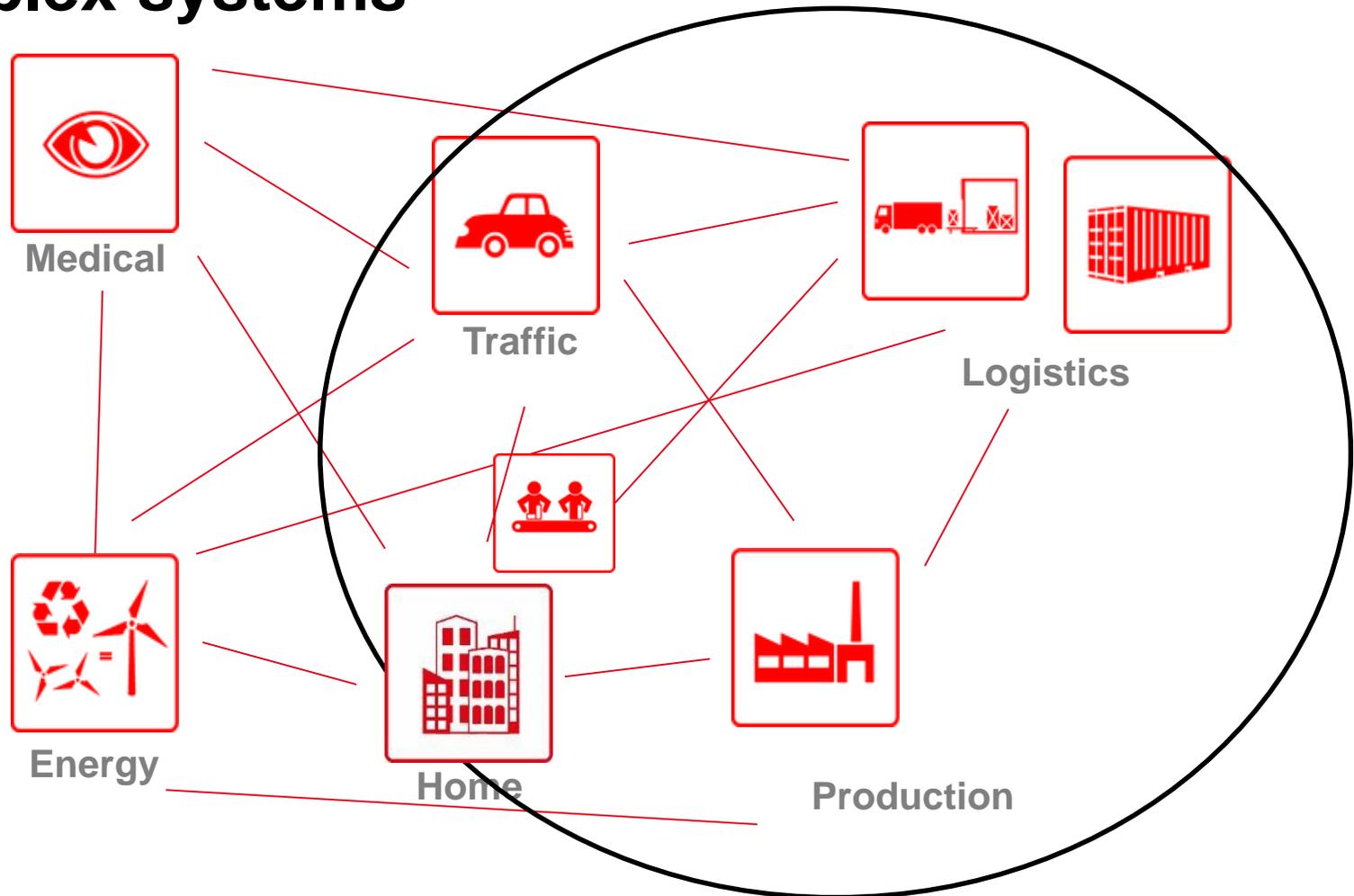
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# Outline

- Background
- Objective
- Research methodology
- Results
- Discussion
- Conclusion

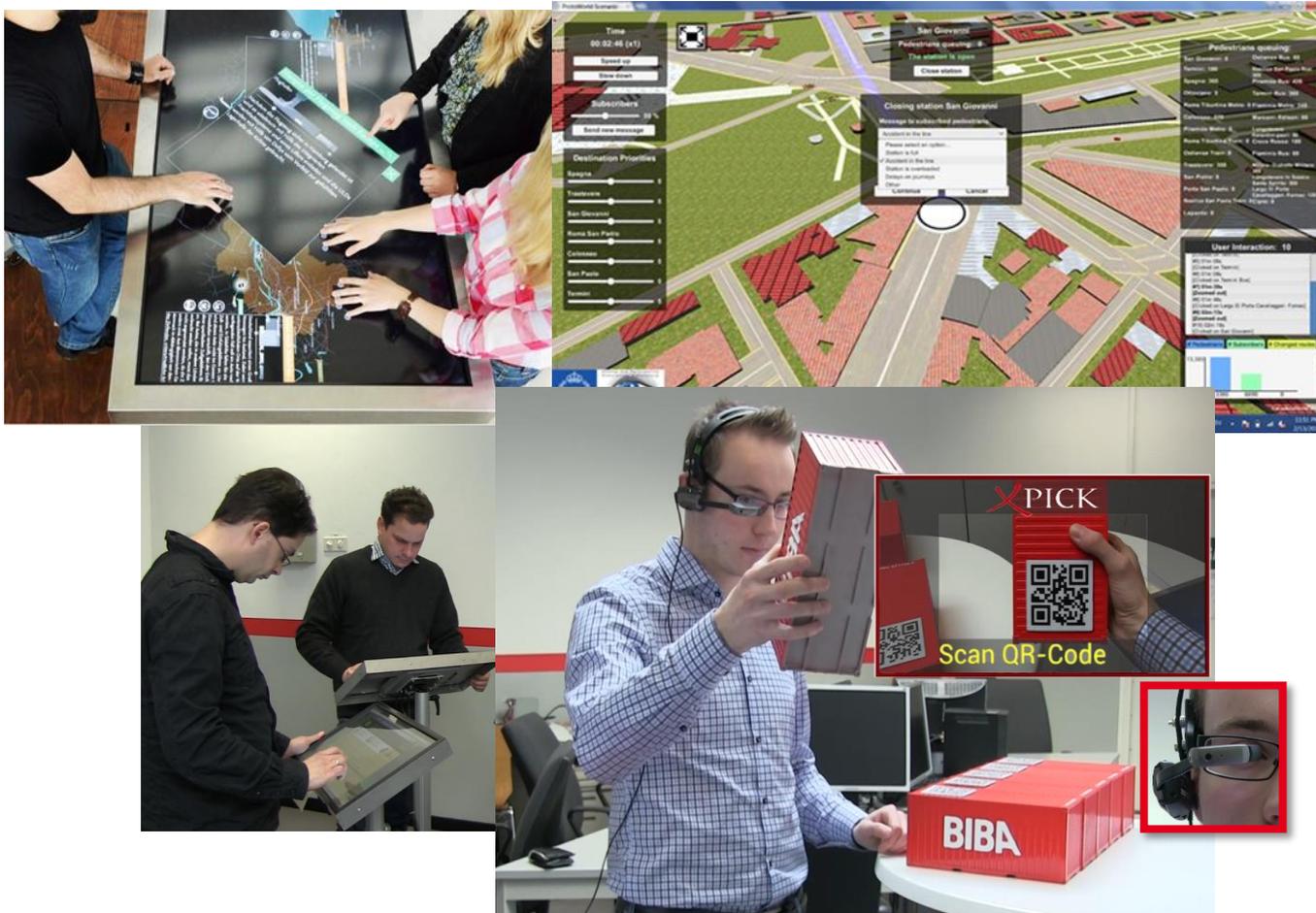
# Complex systems



# Background

- Urban Planning System
  - Cars, trains, buses and pedestrians - the vivid fabric of modern cities' transport networks.
  - Interdependence between modes of transport demands both a
  - holistic perspective, focusing on the sum and not the parts
  - collaboration between many stakeholders
- Focus so far on managerial, engineering techniques or technology
- However, the interactions between stakeholders is key for increasing the efficiency with in complex systems (Rose et al., 2016; Stathopoulos et al., 2012; Österle et al., 2015).

# Participatory design tools - SG and gamification



# Research objective

- Identifying challenges of urban logistics
  - Managerial
  - Engineering techniques or technical aspects
  - Stakeholder engagement

# Research methodology

- **Database selection** : Scopus, Web of Science and IEEE (from 2007-2017 (present))
- **The main keywords in the first search:** ‘urban logistics’ or ‘city logistics’.
- **Additional three main keywords:**
  - “urban logistics with challenges”
  - “management and technical challenges in urban logistics”
  - “stakeholders in urban logistics”
- **Paper classification** as shown in Figure 1

# Paper classification

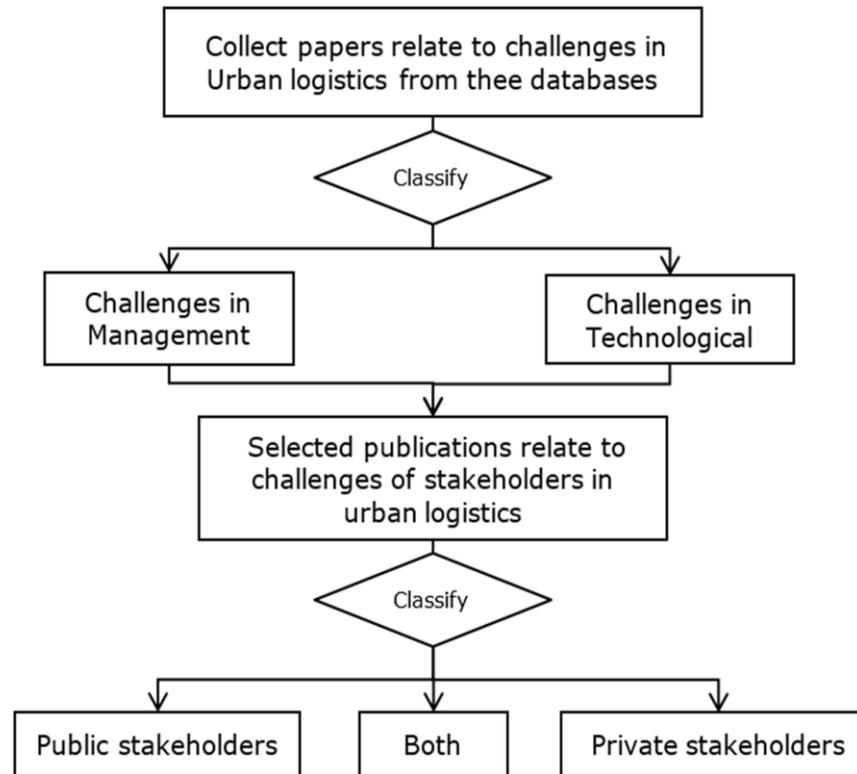


Figure 1 The paper classification flow diagram

# Results

- Out of relevant 50 papers,
  - 25 papers referring to the management aspects
  - 25 relates to technic challenges.

Database	Main keywords	With "challenge"	With 'Management challenges' and 'Technical challenges'	With "stakeholder"
<b>Scopus</b>	587 2007(16)/2016(107) /2017(8)	174	116	25 2011 (1)/2016 (8)
<b>Web of Science</b>	526 2007(6)/2016 (140) /2017(0)	188	132	12 2009 (1)/2016 (3)
<b>IEEE</b>	312 2007(3)/2016(51) /2017(3)	120	25	16 2011 (3)/2016 (2)

*\*\*Of the 53 identified papers, 3 of them were replicates, so 50 papers are considered and reviewed.*

# Management challenges related to urban logistics stakeholders

- Planning and policy in urban systems are affected by distribution activities of stakeholders.
- Stakeholders involvement in early state of urban area planning is essential for the success.
- The analysis of planning and finding methodology of interaction between public and private sectors is required.

# Technical challenges related to urban logistics stakeholders

- Combining of governmental policies and company initiatives are accomplished by technological knowledge; mathematics, algorithm, and IT system.
- Agent-based simulations are applied to observe and evaluate behavior and interactions among stakeholders in urban areas.

# Discussion

- To improve stakeholder interaction in all phases of a urban logistics system
- Implementation of supporting tools for collaboration among public and private stakeholders involvement in all phases of system life cycle.
- The understanding of the necessity of stakeholder involvement in all phases.

# Conclusion

- **Currently, researches works on**
  - Simulation, Gamification and Participatory design approaches
  - Low rate implementation
- **Next steps, focusing on**
  - Interaction of different IT systems.
  - Increasing awareness of the necessity of collaboration and stakeholders involvement in all phases (Figure 2).



Figure 2 The involvement of urban logistics stakeholders



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**Thank you for your attention!**

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