

# Smart City Transformation: Dynamic Process and Five stages

## Introduction

- More than four billion people live in cities, which roughly represents 56% of world's population (The World Bank, 2022)
- Due to the challenges brought by the fast growth of urbanization, the transformation to smart cities are seen as one of feasible city strategies
- There is a widely-agreed opinion in the field of smart city that there is no one-size-fits-all model for smart city development, because the definition and the path towards smart cities are ambiguous (Hollands 2008; Ben Letaifa, 2015; Ekman et al., 2019)

## Methodology

- This study adopted systematic literature review approach (Denyer and Tranfield, 2009)
- The results were synthesized from the 125 selected research articles

## Data Analysis

- Through VOSviewer, six key themes of current smart city research were identified: 1) Technology, 2) Stakeholder relationship, 3) Strategy, 4) Project, 5) Framework of transformation, 6) Feedback

## Conclusion

- As shown in the figure below, the development of smart city is a dynamic process, including two levels and five stages
- The first three stages are at the strategy level, of which the main target is to promote establishment of a common goal regarding how technological solutions can advance the integration of economic, environmental and soci(et)al smart-associated outcomes into the smart city strategy
- The other two stages make up the project level, focusing on the implementation of smart city projects and the review and adjustment after completing a series of projects

### 1. SMART CITY GOAL DEFINITION

**Driver:** Relevant authorities  
**Lead stakeholders:** Firms, citizens  
**Key initiatives:** Identifying development issues and understanding the national or regional context of including cities  
**Smart city factors:** Size of a city; Economic status of a city; Communication among stakeholders

### 5. SMART CITY PLAN EVALUATION

**Driver:** National and local governments  
**Lead stakeholders:** Technology firms  
**Key initiatives:** Evaluating the overall performance of projects and deciding to go back to which stage and making an adjustment plan  
**Smart city factors:** Tool and model for evaluation

### 4. SMART CITY PLAN IMPLEMENTATION

**Driver:** Project teams  
**Lead stakeholders:** Local governments, communities, firms  
**Key initiatives:** Clarifying the appropriate kinds of projects for reaching specific goals and delivering project  
**Smart city factors:** Resource; Type of projects



**Feedback:** Based on the result of smart city projects' evaluation and the innovation of technologies, the smart city strategy needs to be redefined to meet the new requirement of citizens.

### 2. SMART CITY TECHNOLOGY INNOVATION


**Driver:** Private firms as technology suppliers  
**Lead stakeholders:** National and local governments, citizens, research institutions  
**Key initiatives:** Developing innovative technologies to provide more possibilities for the urban issue solving  
**Smart city factors:** Data management; Citizens' knowledge; Budget; Potential environmental damage

### 3. SMART CITY STRATEGY DEVELOPMENT

**Driver:** Local governments  
**Lead stakeholders:** Firms, research institutions, civic engagement  
**Key initiatives:** Balancing the needs of stakeholders and forming local smart city governance  
**Smart city factors:** Formation of governance; Degree of technology integrated

Two Levels of five-stage smart city development

Strategy level: 

Project level: 

## References:

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## Corresponding author

Yuxi Dai  
Division Breakthrough Technology & Sustainable Innovation, Faculty of Science,  
Vrije Universiteit Amsterdam,  
1081 HV Amsterdam, The Netherlands  
Tel.: +31644093654  
E-mail: y.dai@vu.nl

## Authors email address

Yuxi Dai: y.dai@vu.nl  
Sandra Hasanefendic: s.hasanefendic@vu.nl  
Bart Bossink: b.a.g.bossink@vu.nl