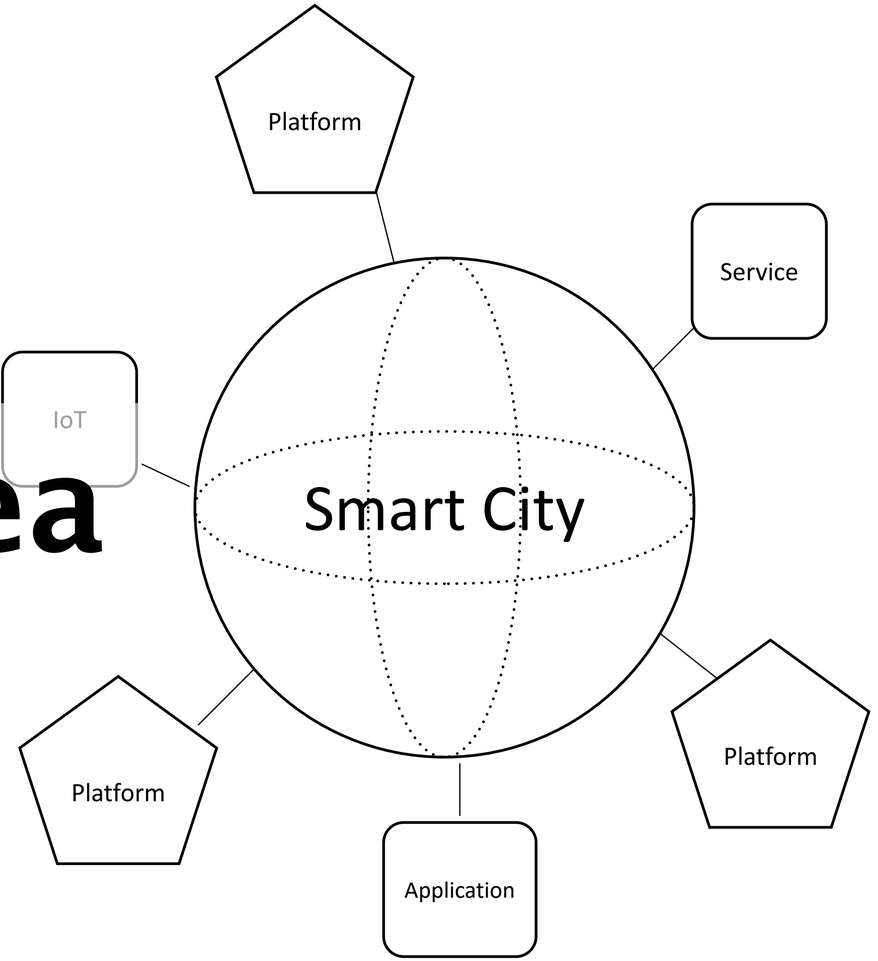
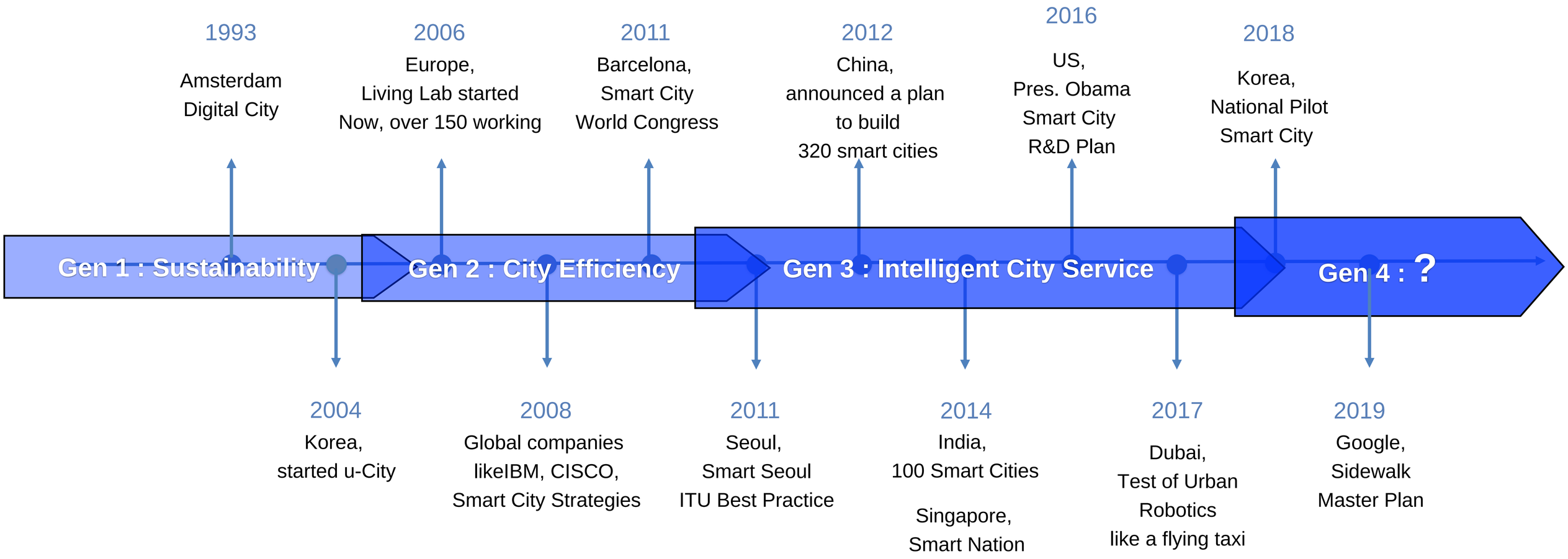
World Bank Korea Week 2020

Smart Cities of Korea

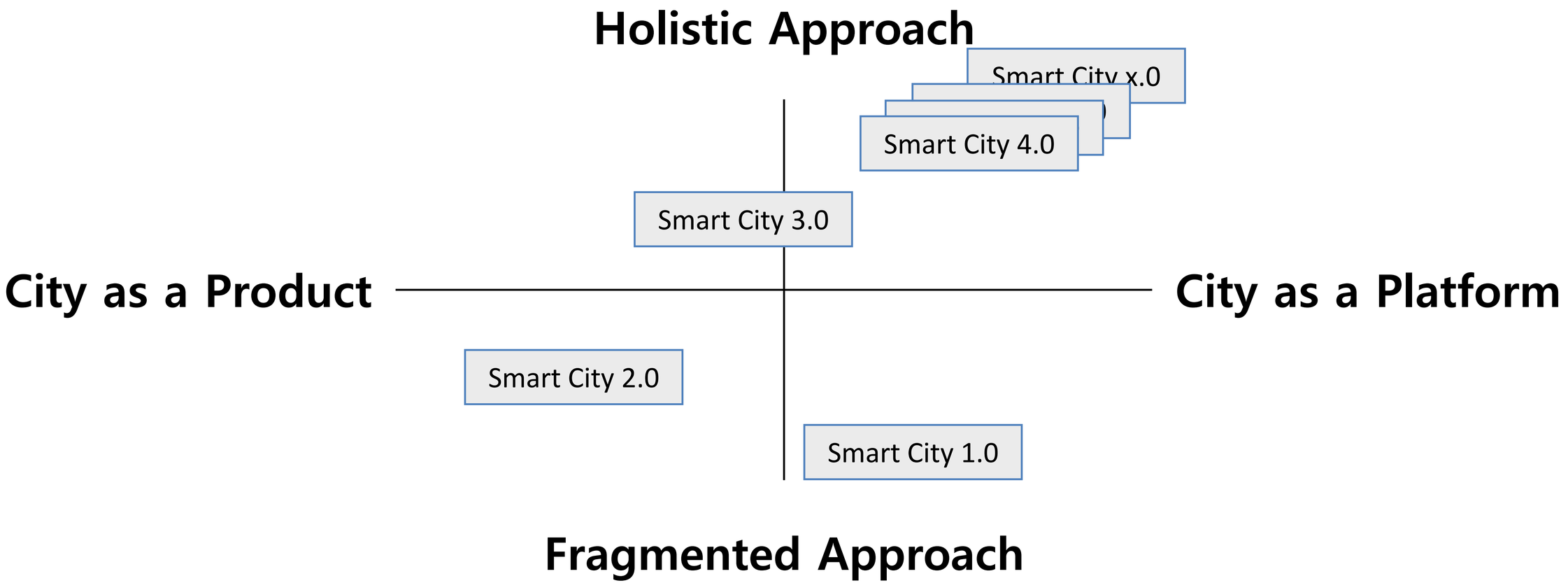


Trends

Development of Smart City

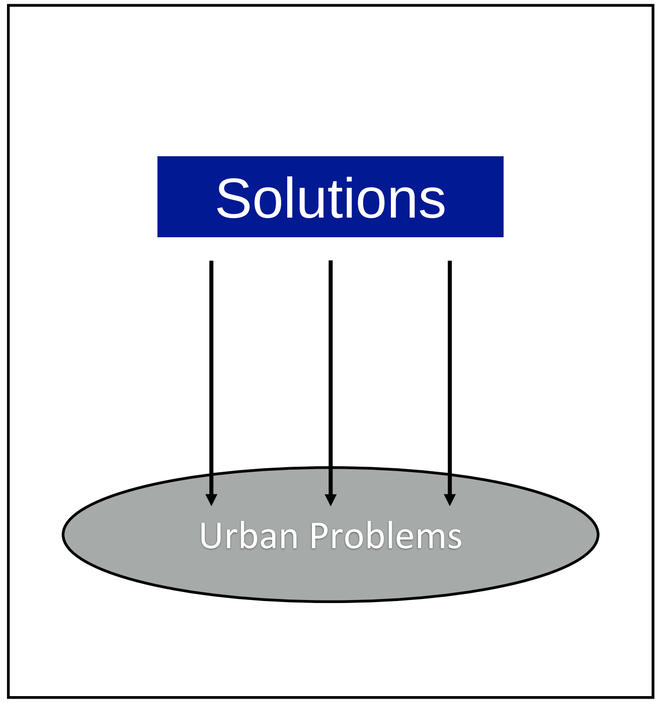


Approaches to Smart Cities

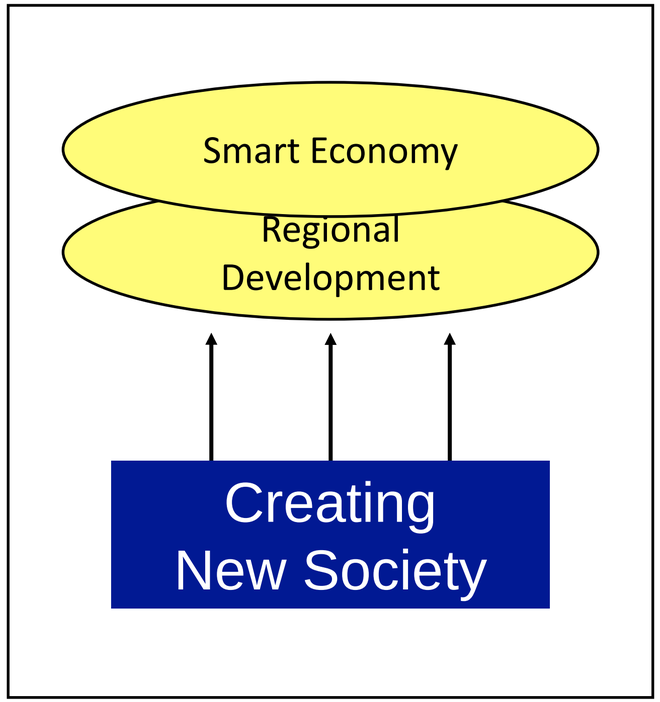


Smart cities are …

Urban Development Strategy?

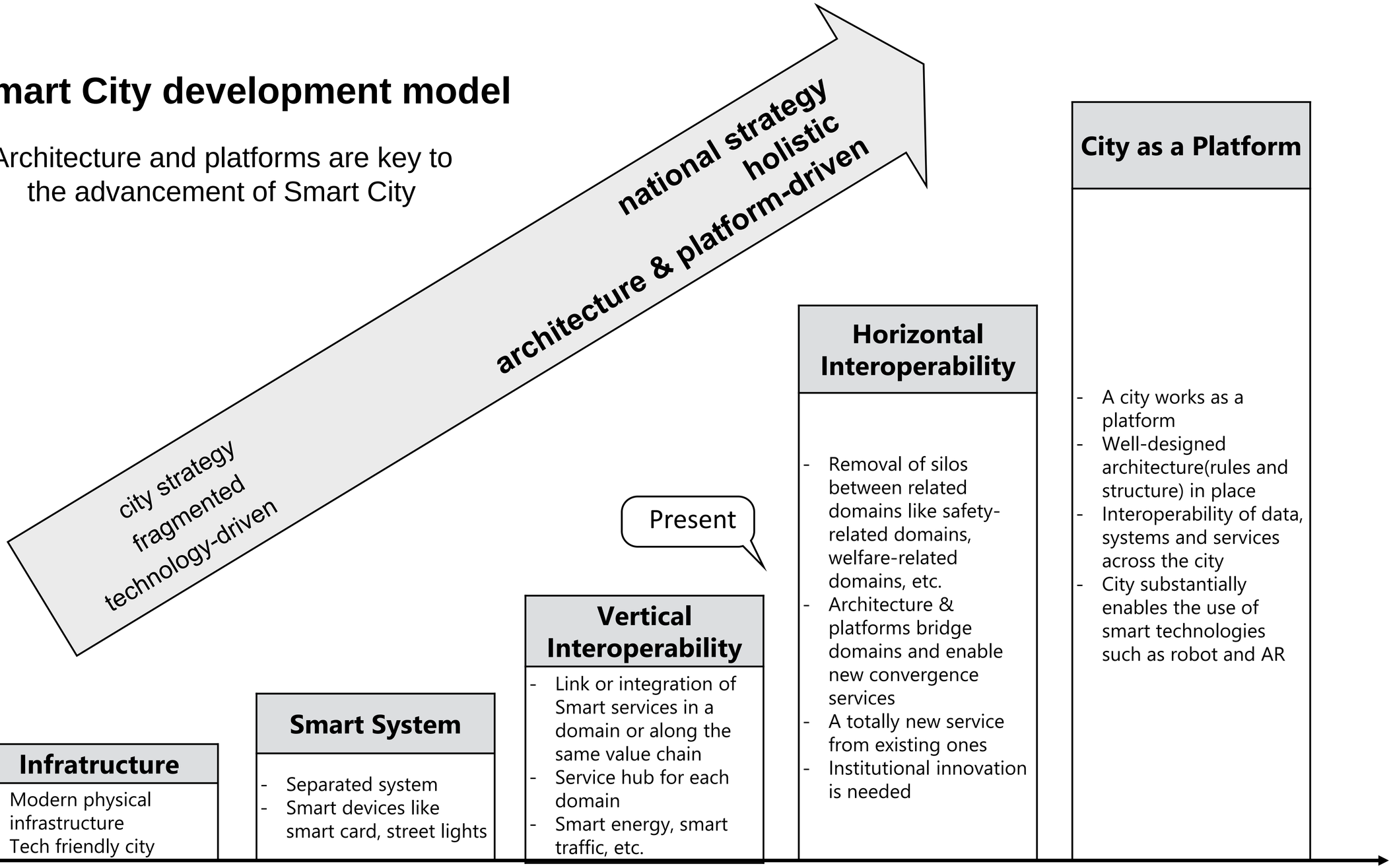


National Development Strategy?



Smart City development model

Architecture and platforms are key to the advancement of Smart City



Smart City Winter

AI Winter

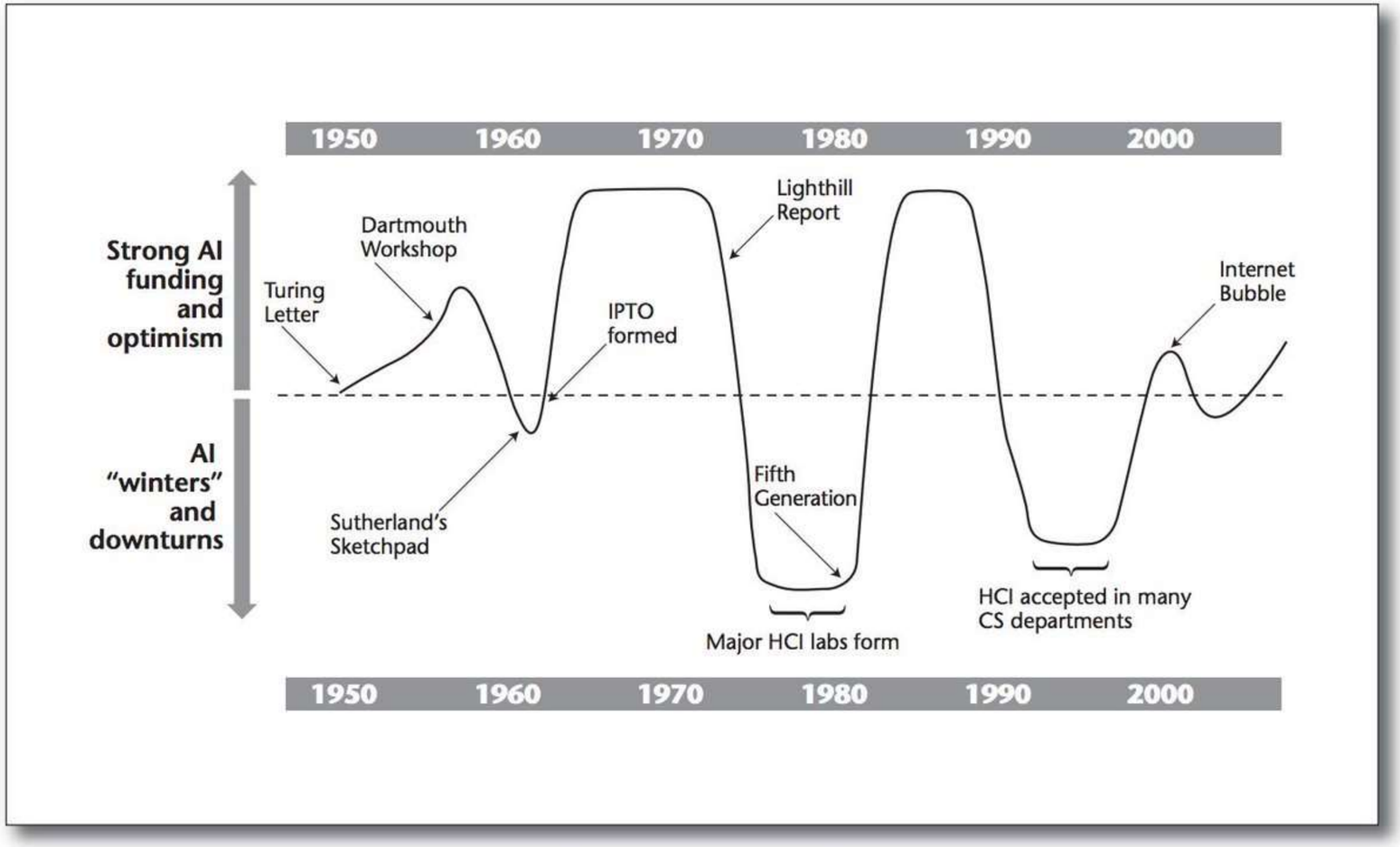
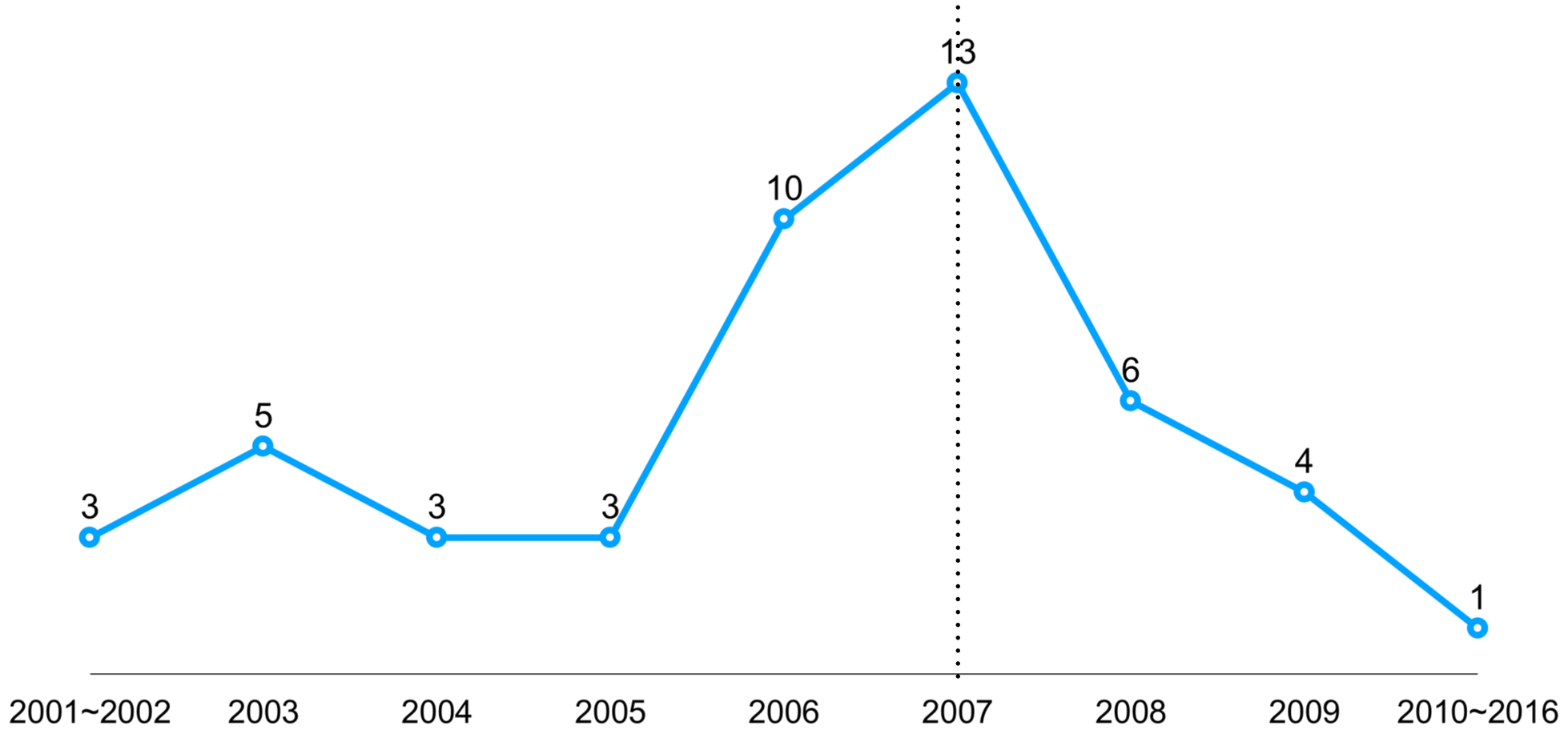


Figure 1. The Changing Seasons of AI and HCI.

Funding climate and public perception with three HCI high points.

u-City had a good start and produced best cases in the early 2000s

u-City lost momentum and Korea fell into smart city winter



Number of Greenfield u-City in Korea

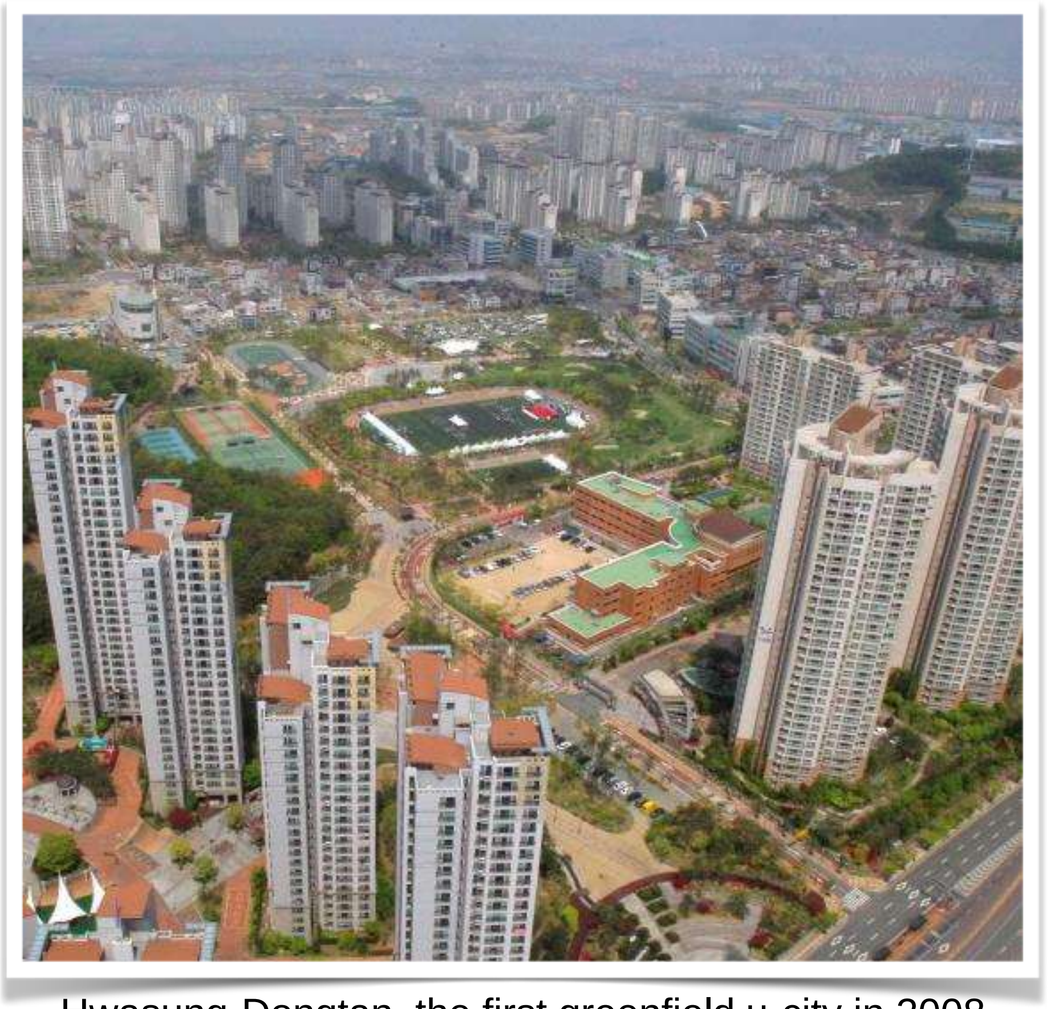
What’s wrong with u-City?

City as a Product

- Separation of build and operation
- Lack of continuous innovations
- Reliance on developer for investment

Fragmented Approach

- Focus on service without common platform
- Missing the power of architecture and platform



Hwasung-Dongtan, the first greenfield u-city in 2008

Retry

The Korean government adopted the 4th Industrial Revolution as a new development strategy in 2017.

Smart City was regarded as an integral part of the 4IR.

New Smart City Strategy of Korea in 2018

1. Technology-driven → Human-oriented Smart city
2. Urban development → City as an engine for innovation-based growth
3. Investment in infrastructure → Value for citizen from service
4. One-size-fits-all service → Customized city
5. One-off development → Sustainable city as a platform
6. Supplier and public led → Customer and private led open city
7. Fragmented policy and projects → Converged and linked city

Approaches to Types of Cities

Type	Direction	Key policy
New city	Apply new technologies and establish new infrastructures	National pilot cities Regulation-free regions
Growing city	Develop services promptly by using mature technologies	Data hub Specialized services zones
Shrinking city	Apply smart solutions under the government’s leadership	Regenerate a city based on smart city strategies

Law & Plan

Special Act

- **Act on u-City Constructions & etc.**

  - enacted world first smart city act in March 2008
  - approached smart city as a product

- **Act on Smart City Creation & etc.**

  - revised in July 2018
  - approached smart city as a platform

Comprehensive Planning

1st Plan (2009~2013)	established Nov. 2009	Focused on construction & vertical data integration
2nd Plan (2014~2018)	Sep. 2013	Focus on service & horizontal data integration
3rd Plan (2019~2023)	Jun 2019	Focus on innovation & platform

Organization

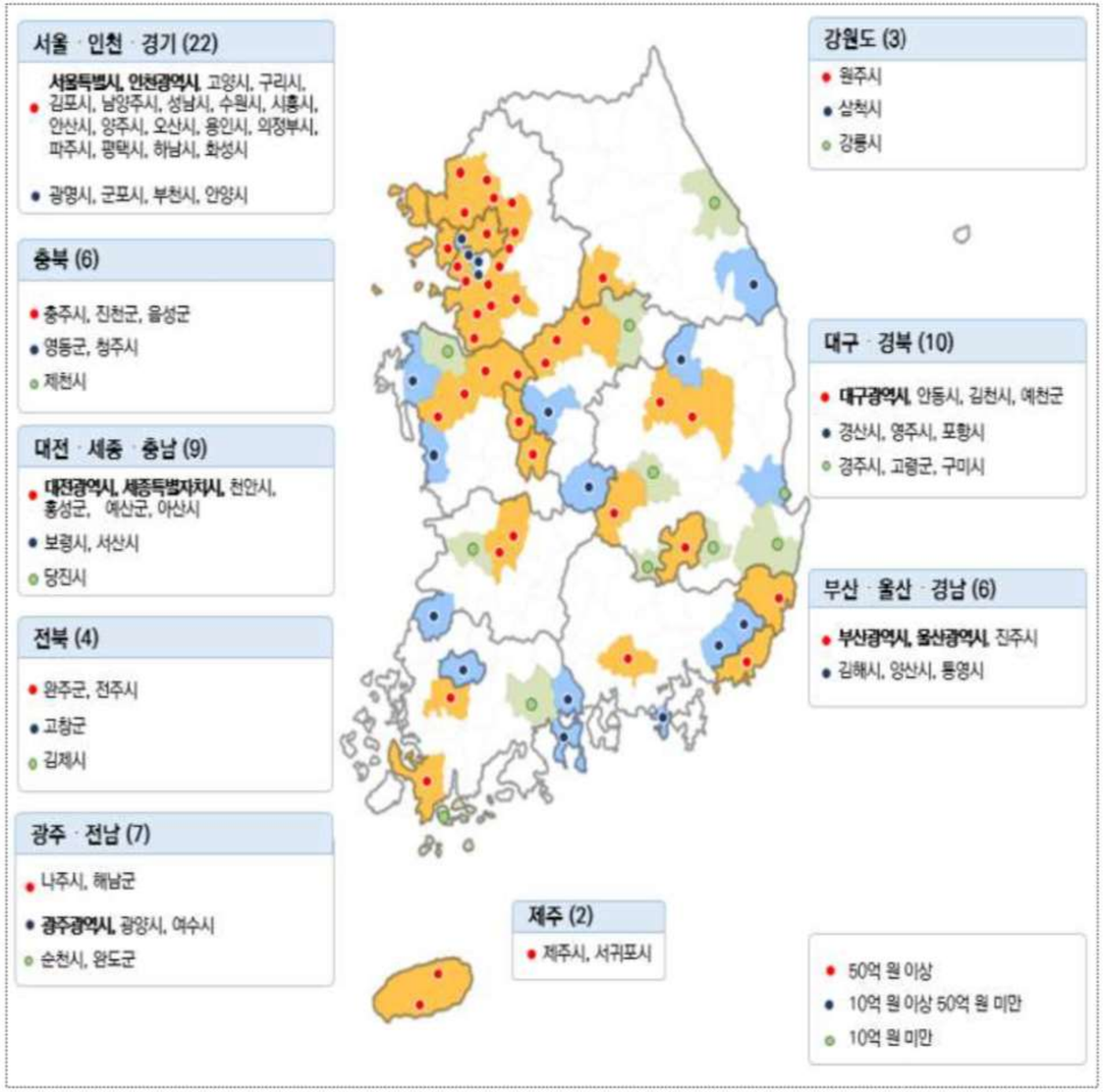
- **At a National Level**

  - Special Committee on Smart City
    Nov. 2017
  - Government Committee on Smart City

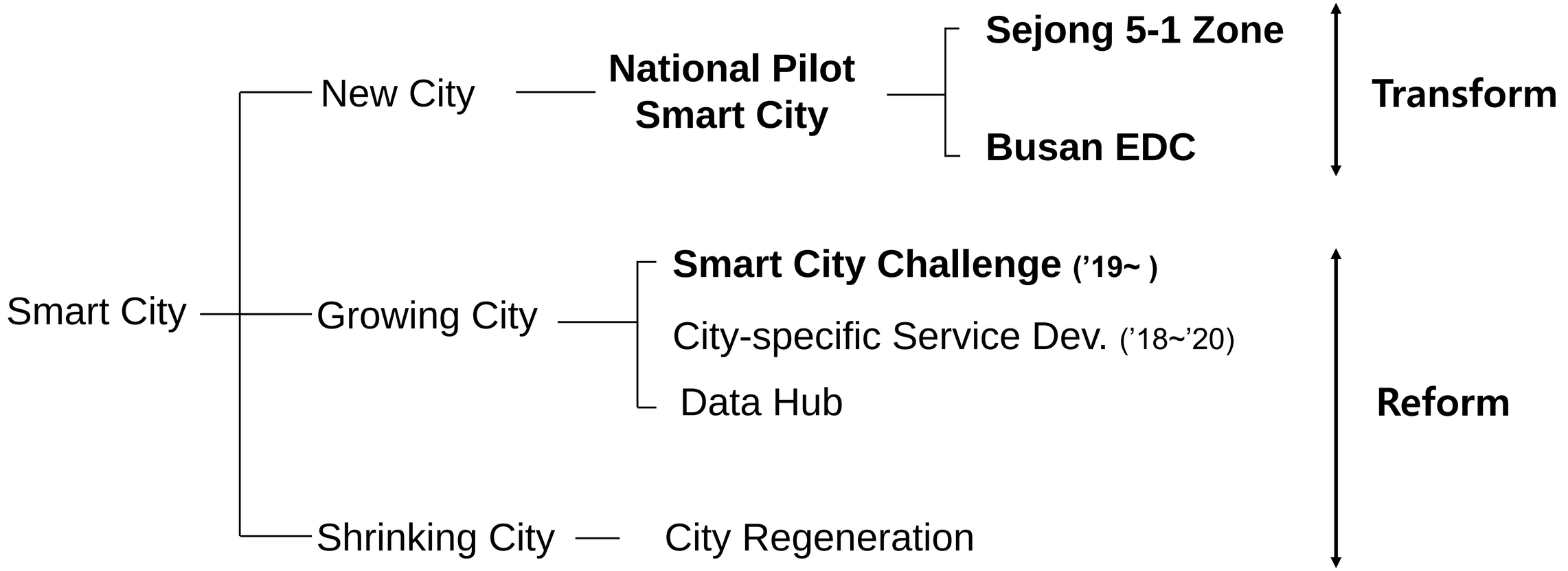
- **At a City Level**

  - 84 Cities have smart city projects
    (as of Jun 2019)
  - No. of cities with dedicated SC squad

10(’14) → 34(’18) → 46(’19)



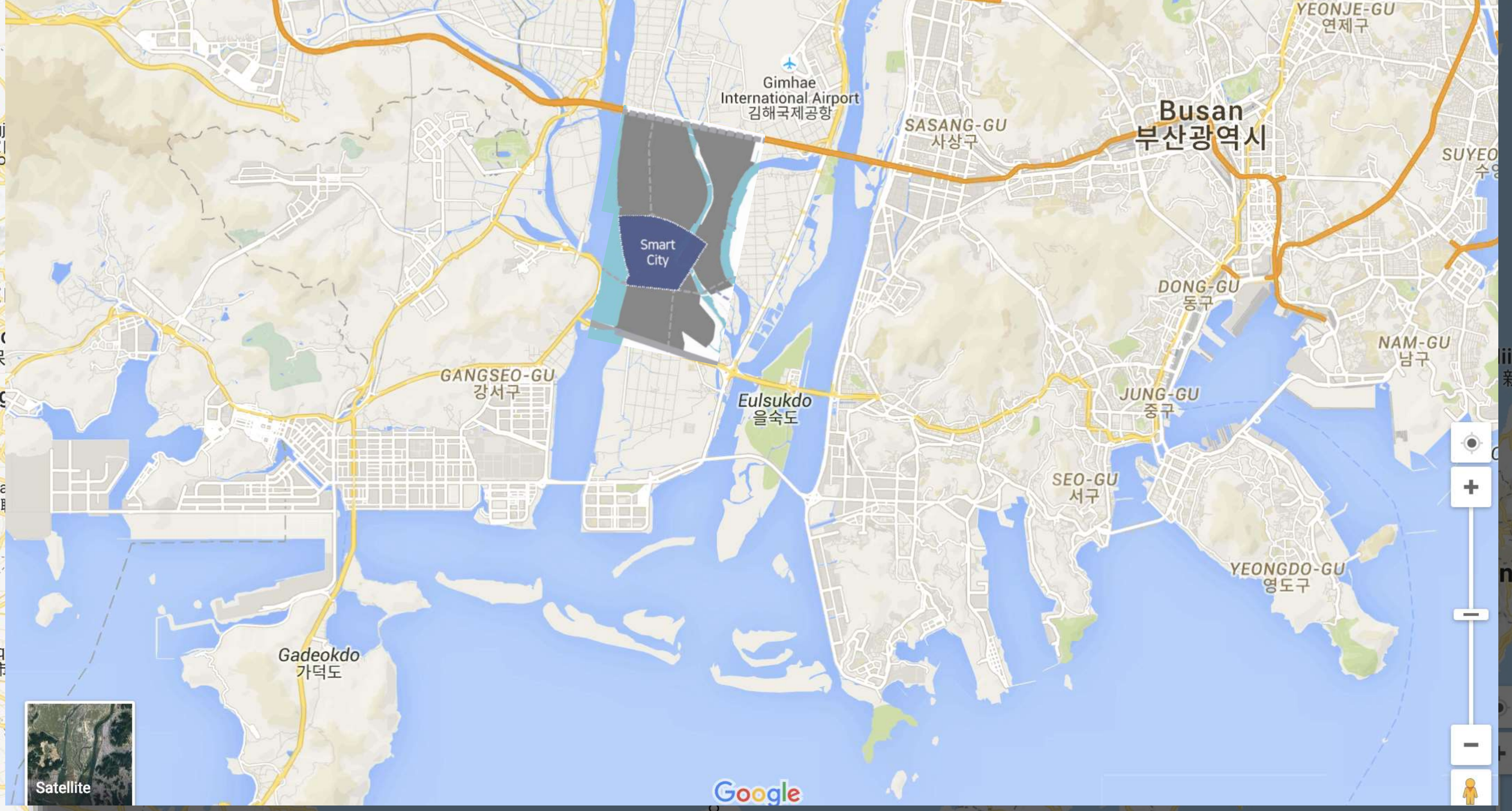
Korea’s New Smart City Strategy



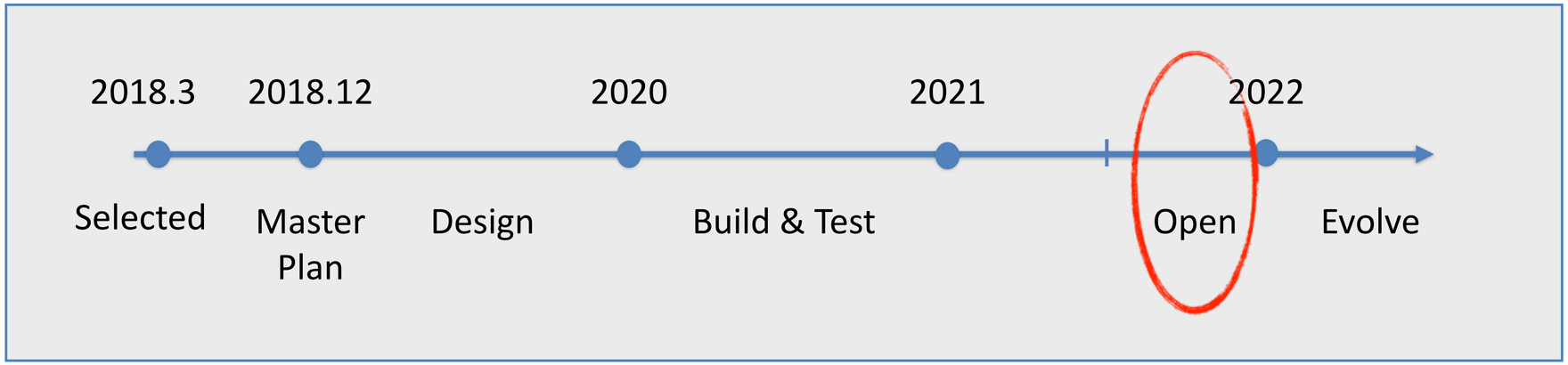
Busan Pilot Smart City

Digitalization → Digital Transformation

Smart City → Smart Transformation


Gimhae
International Airport
김해국제공항
SASANG-GU
사상구
Busan
부산광역시
YEONJE-GU
연제구
SUYEO
수영
Smart
City
DONG-GU
동구
NAM-GU
남구
GANGSEO-GU
강서구
Eulsukdo
을숙도
JUNG-GU
중구
SEO-GU
서구
YEONGDO-GU
영도구
Gadeokdo
가덕도
Satellite
Google
JIANGSU
Nanjing
Hefei
Nagasaki
長崎

Overview of Busan National Pilot Smart City



Pilot Smart City is …

Model House

- Future City Concept
- Basic City Platform

Development Lab

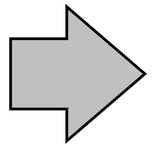
- Common Services for all Cities
- Living Lab

Test bed

- Real Environment Test bed
- Open Innovation

Busan aims to be the world first Augmented City

Digital (Data, AI)
+
AR/VR
+
Robotics



Augmented City

Digital Platform	① City Computing (Super-Computer) ② Intelligent Communication ③ City-wide Cyber Security ④ Data Hub
Augmented Reality Platform	① Dynamic Digital Twin ② Precision Location ③ Data with Geo-context
Robot Platform	① Robot Management at the City Level ② City Design for Robot Use ③ Robot Risk Management

Lessons

The Power of Architecture & Platforms

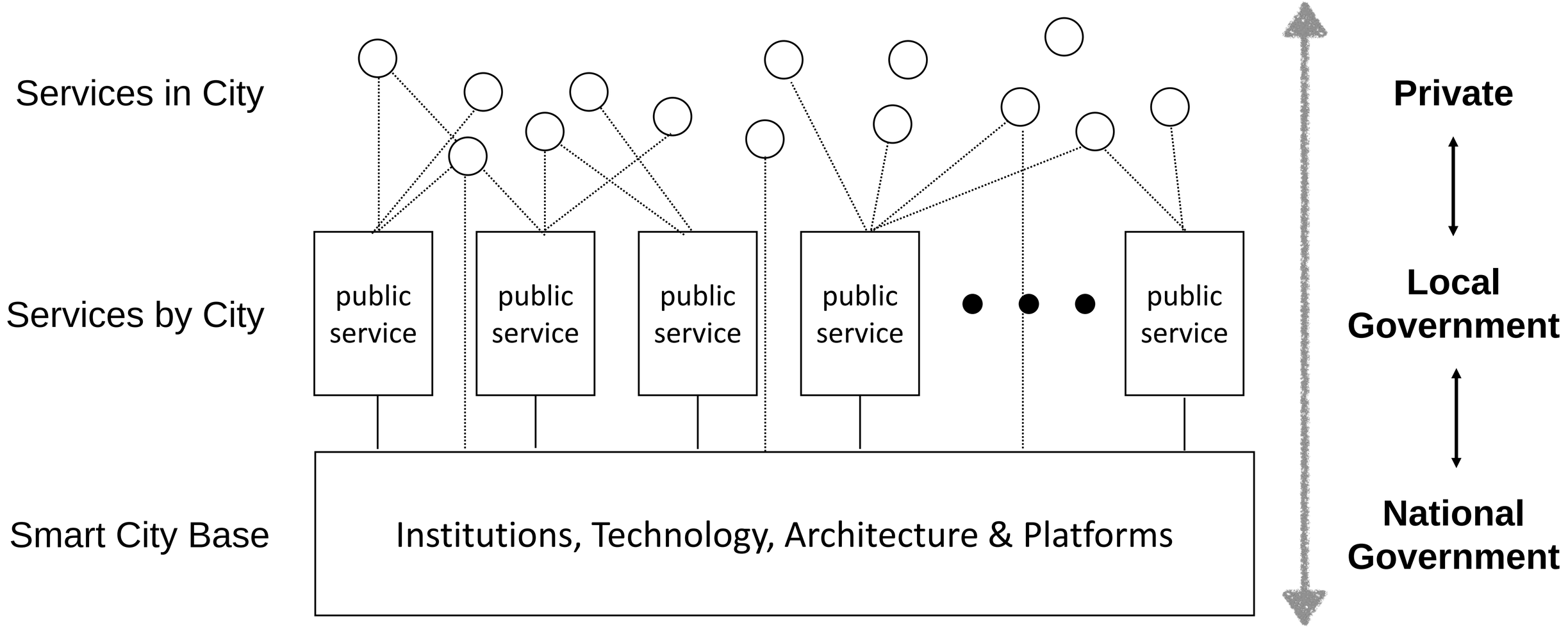
Without A&P

- Investment-driven development
- Silos of Services & Infrastructures
- Short term effects

With A&P

- Innovation-driven
- Democratization of technology
- Connected city and sharing of Infra
- Long term effects

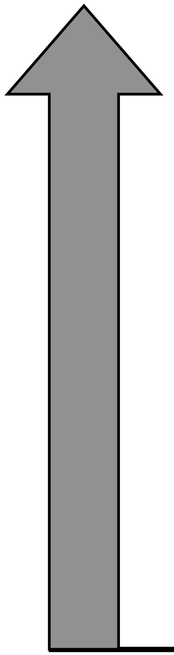
The Role of Governments



The Role of Governments

Top-down

- Active role of national government
- Architecture of smart city platform
- Interoperability between cities



- Promotion of citizen engagement
- Private investment and service development
- Testbed for creative ideas

Bottom-up

Smart City Guidelines

One of big contributions by The World Bank and the Korean government is to develop guidelines together for cities and policymakers around the world

Smart City Guidelines

- Concept & Structure
- Policy & Organizational Framework
- Key Steps
- Best Practices
- Financing & Business Model
- Evaluation ….

- Common Language & Process
- Long-term & Holistic Perspective
- Systematic Approach
- Knowledge Sharing
- Leap frogging of developing cities

Thank you

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Lead Researcher at National Information Society Agency
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