



From Asia to Europe Good Practices & Key Takeaways for Timișoara Smart City

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Singapore
Singapore



Amsterdam
The Netherlands



Seoul
Korea





Singapore

Smart City

Singapore launched its Smart Nation initiative in 2014, and since has introduced a wide range of smart technologies in both its public and private sectors, e.g.

- **Contactless payment technology** has been widely adopted to efficiently easy movements and payments for passengers who use public transport modes as well for users of private transport modes
- **Digital health system** to help elevate the pressure of an ageing population, a digital health system was introduced, normalising video consultations as well as wearable Internet of Things (IoT) devices to monitor patients

Singapore announced in 2021 its plans for a new **eco-smart city in Tengah, referred to as the forest town**, that will be entirely vehicle-free. This town will be designed with buildings and precincts optimising wind flow and minimising heat, while smart lights will automatically switch off in unoccupied areas in order to reduce energy consumption. Further on automated waste collection and underground use of spaces for traffic of vehicles and parking, and waste processing.





Singapore

3 Key Smart City Pillars

1 Digital Economy

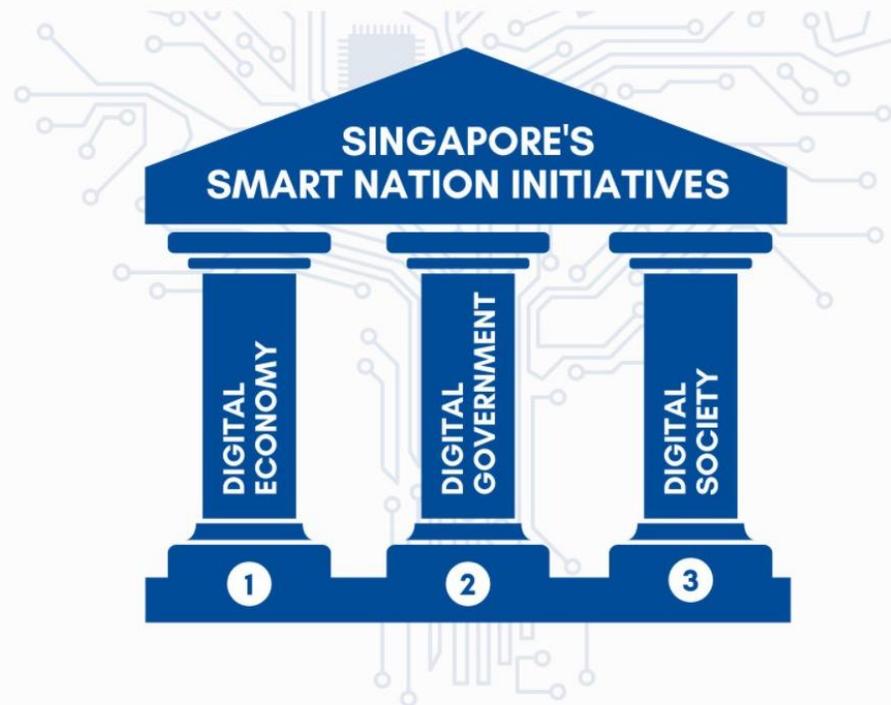
Equip businesses and the workforce with the ability to adapt to digital changes

2 Digital Government

Transform the public sector and the way citizens and businesses are being served

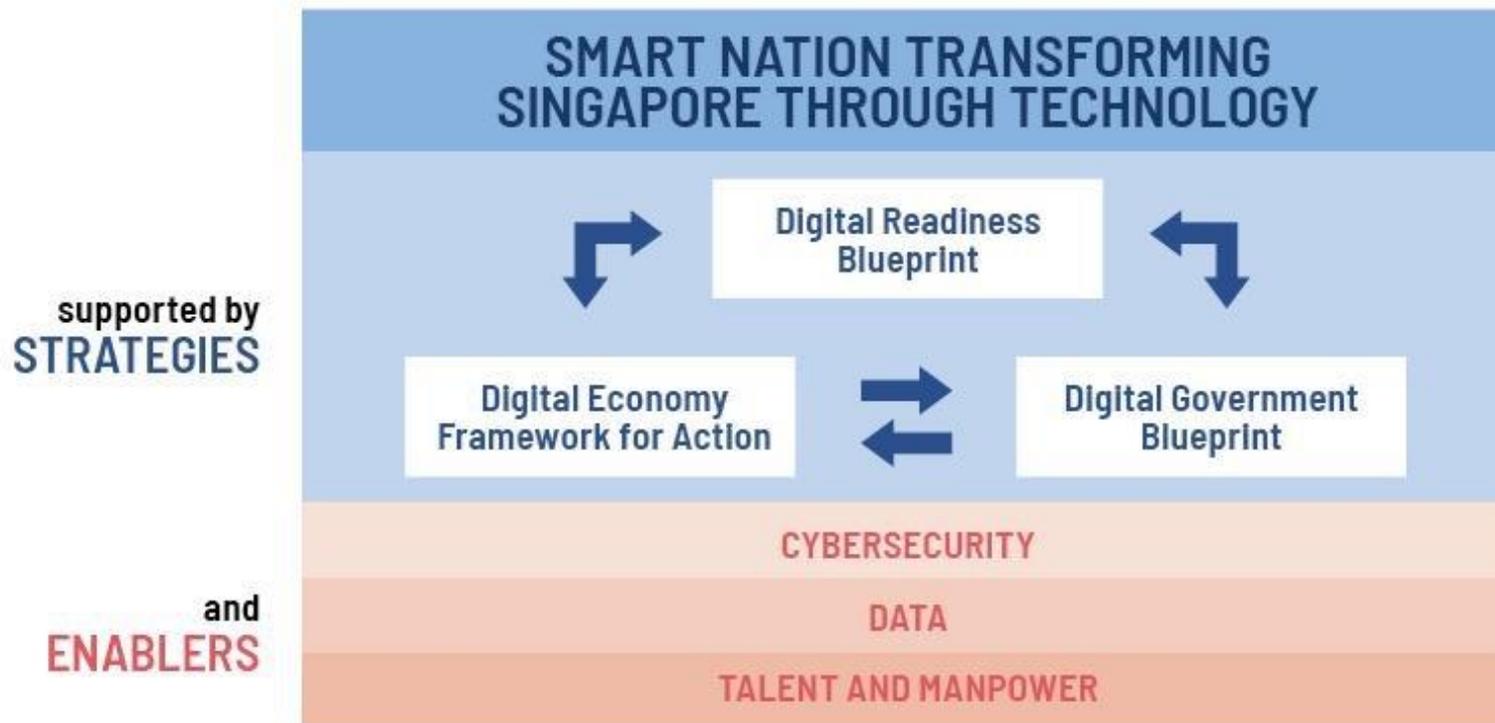
3 Digital Society

Develop the ability to use technology safely and ensure equal access for all



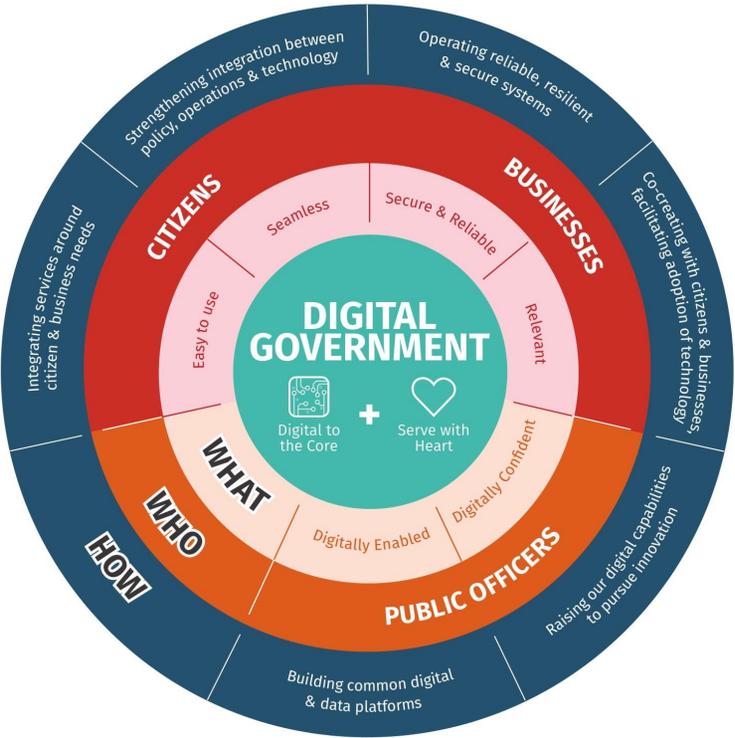
Singapore

Smart City Framework



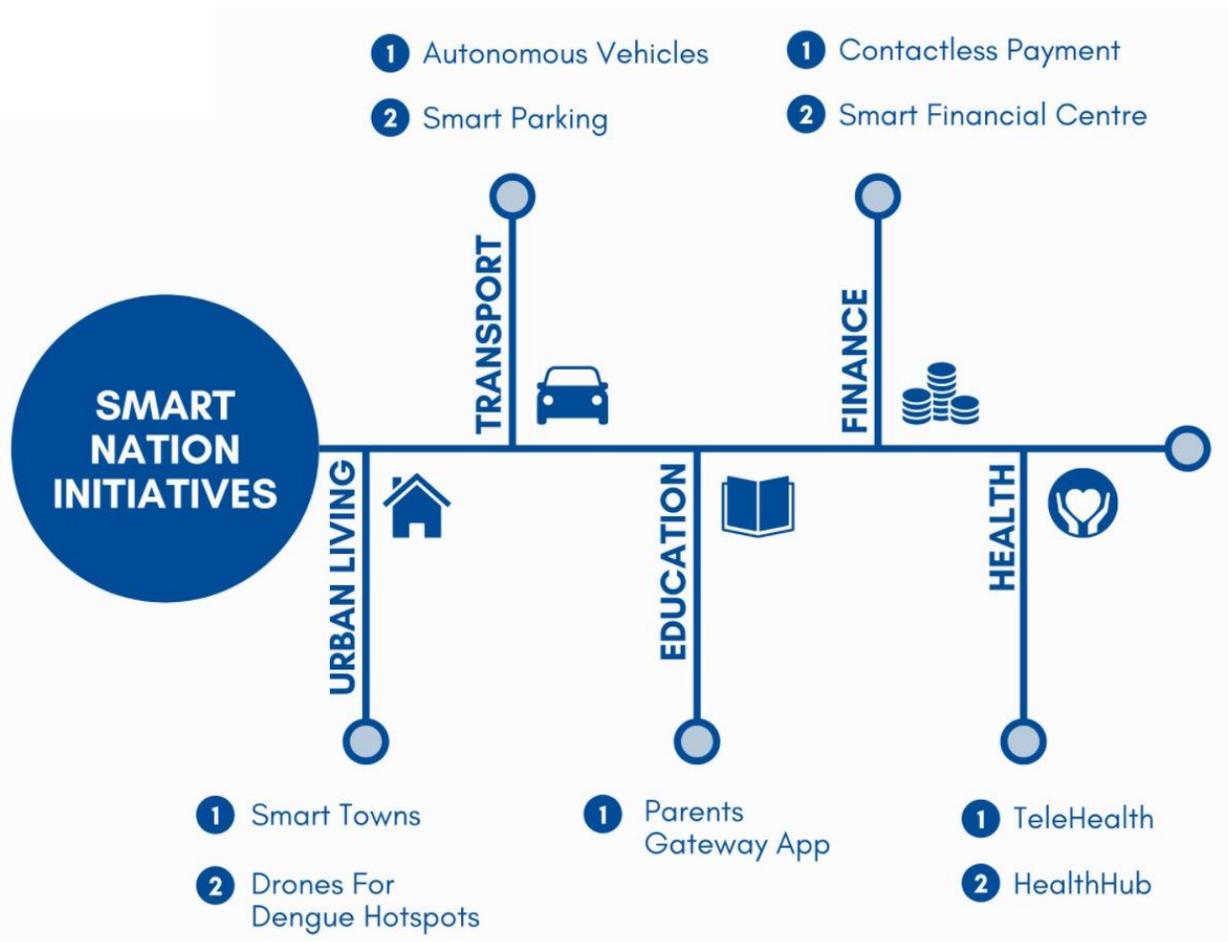
Singapore

Digital Government Blueprint



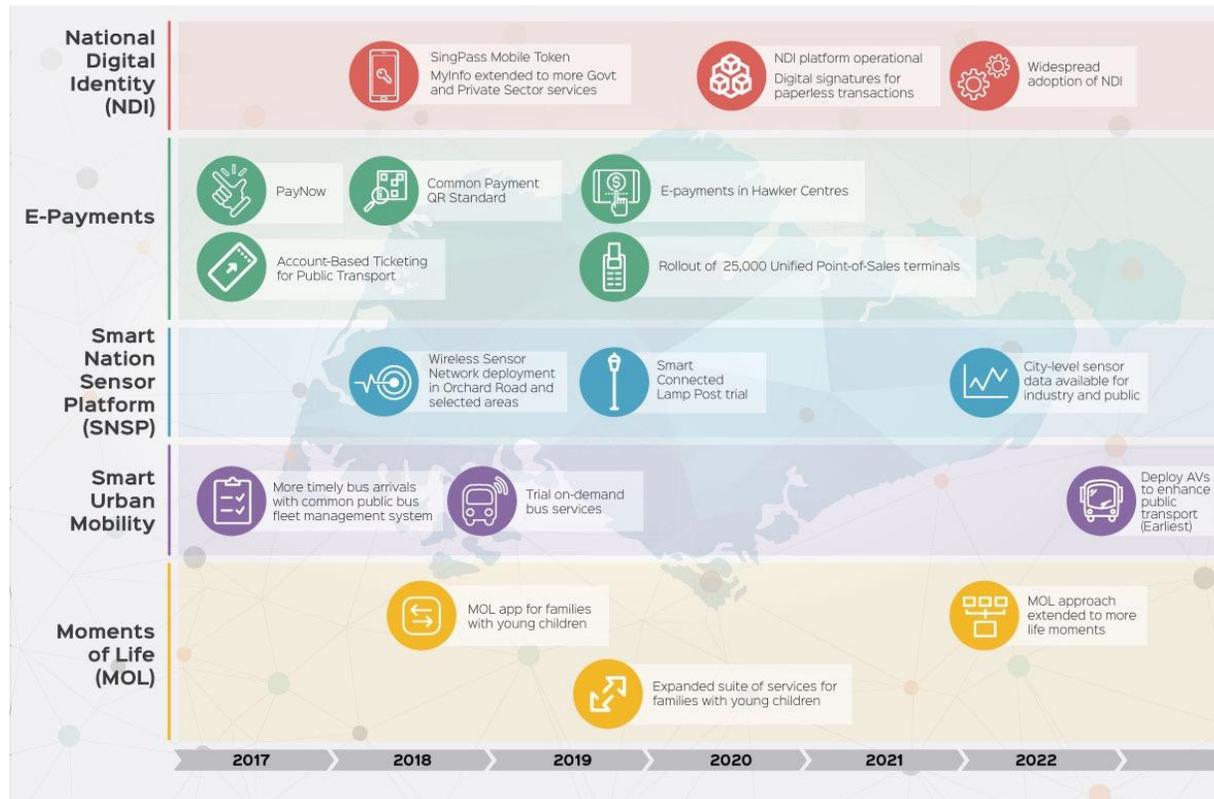
Singapore

Smart City Initiatives within 5 Focus Areas



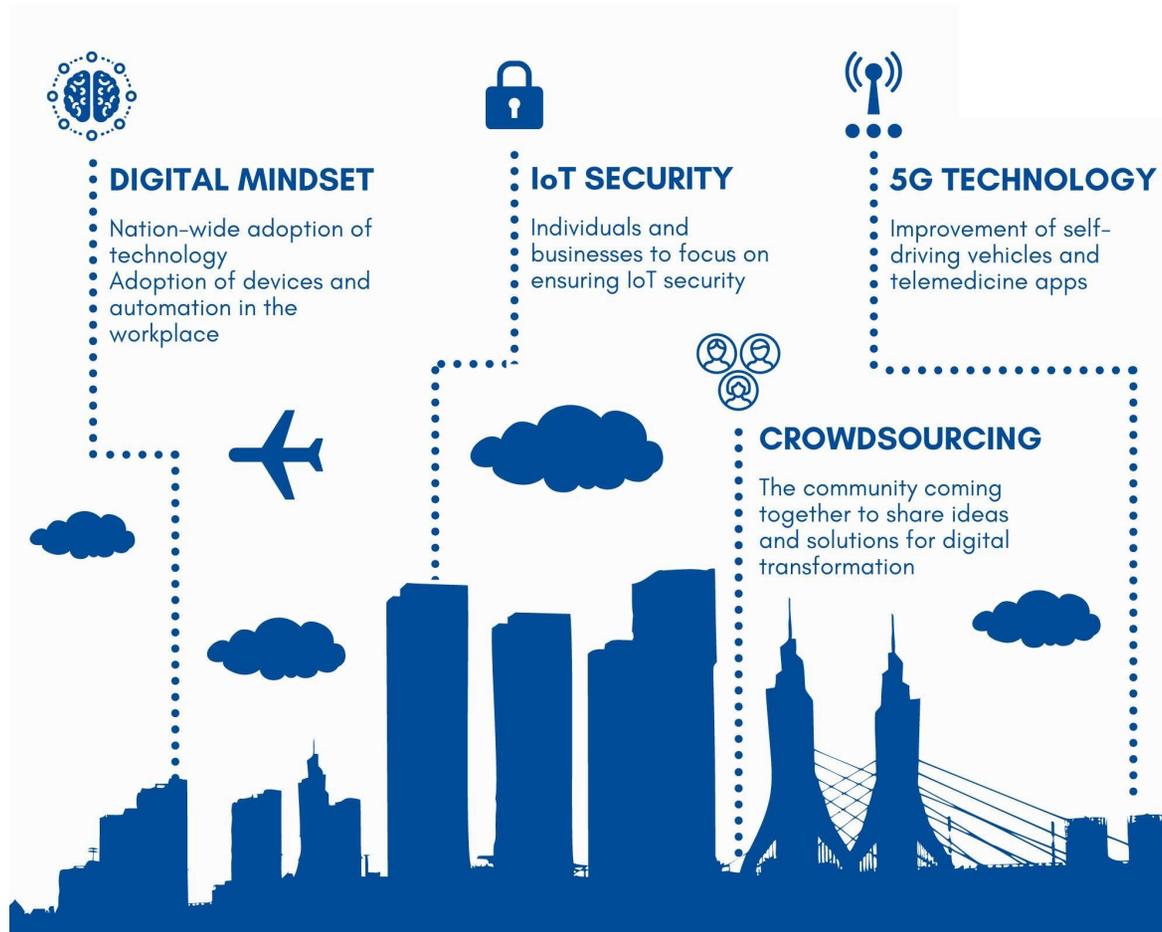
Singapore

5 Key Smart City Projects



Singapore

Smart City 3.0: Citizen Co-Creation

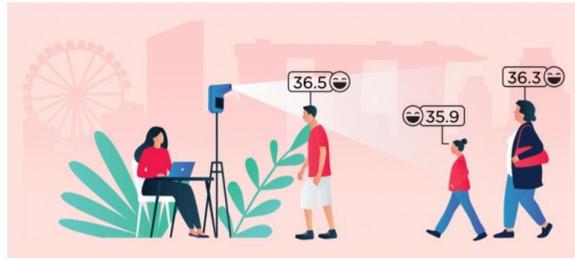


Singapore

Smart City and COVID-19 Pandemic



Speed and Accuracy of Contact Tracing



Community Preparedness and Confidence



Flow of Verified Information



Economic and Social Support



Singapore

Smart Urban Co-Innovation Lab (Co-Creating Smart Cities)

The **Smart Urban Co-Innovation Lab**, the first industry-led lab for smart cities solutions development in South-East Asia, aiming to drive collaborative development of smart city solutions.

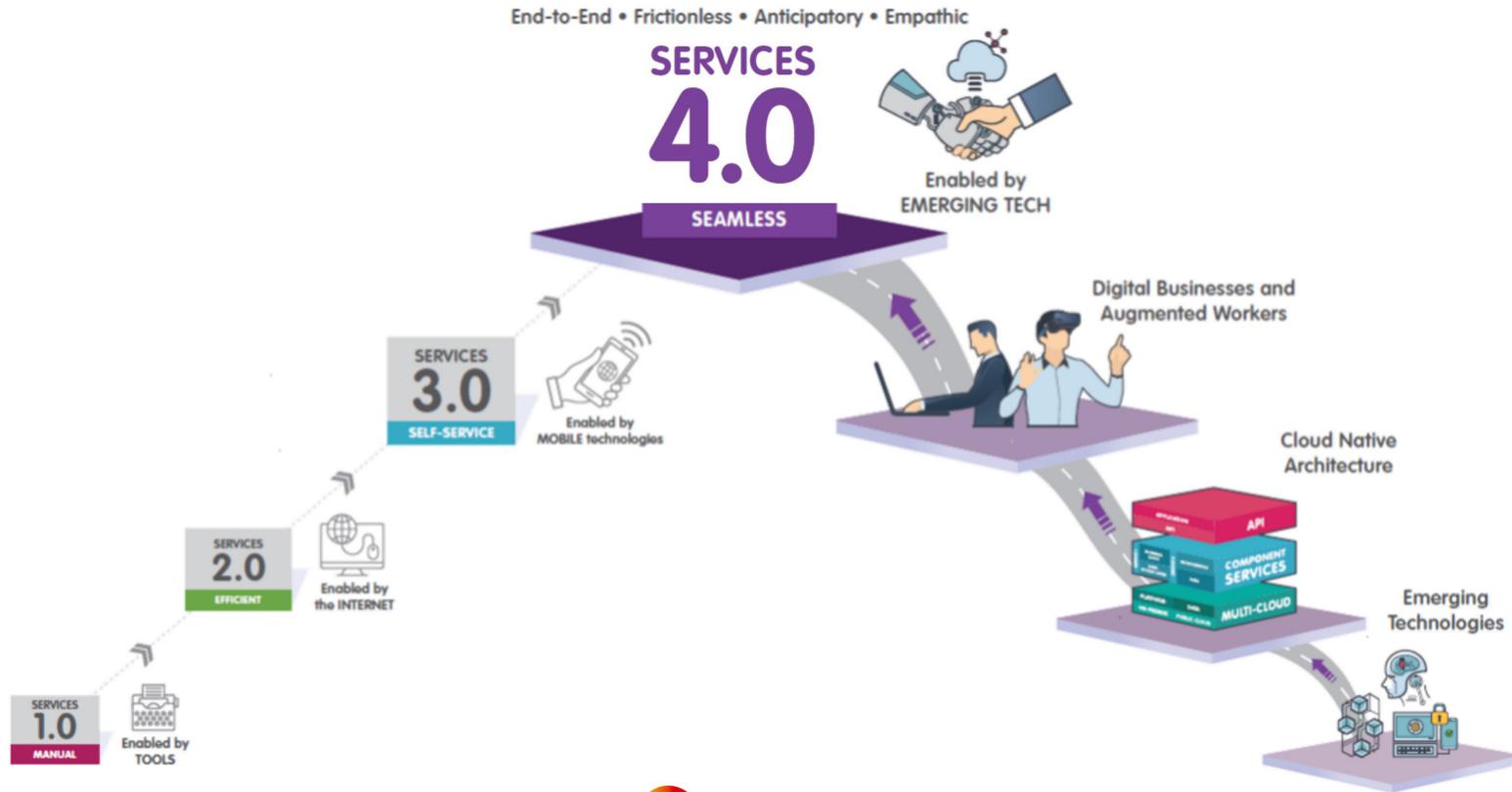
The 5 focus areas are:

- Advanced manufacturing
- Digital wellness
- Intelligent estates
- Smart mobility, sustainability
- Urban agriculture



Singapore

Technology Roadmap – Smart Services and Digital Economy



Singapore

Smart City 4.0 Enabled by emerging tech

SERVICES 4.0

AN EVOLUTIONARY
JOURNEY



SERVICES
1.0

MANUAL

Enabled by
TOOLS



SERVICES
2.0

EFFICIENT

Enabled by
the INTERNET



SERVICES
3.0

SELF-SERVICE

Enabled by
MOBILE technologies



End-to-End • Frictionless • Anticipatory • Empathic

SERVICES
4.0

SEAMLESS

Enabled by
EMERGING TECH





Amsterdam

Smart City

Amsterdam's smart city project started in 2009 and features thousands of operations across the city through deployment of small-scale solutions.

What particularly stood out for Amsterdam is its ability to stay innovative!

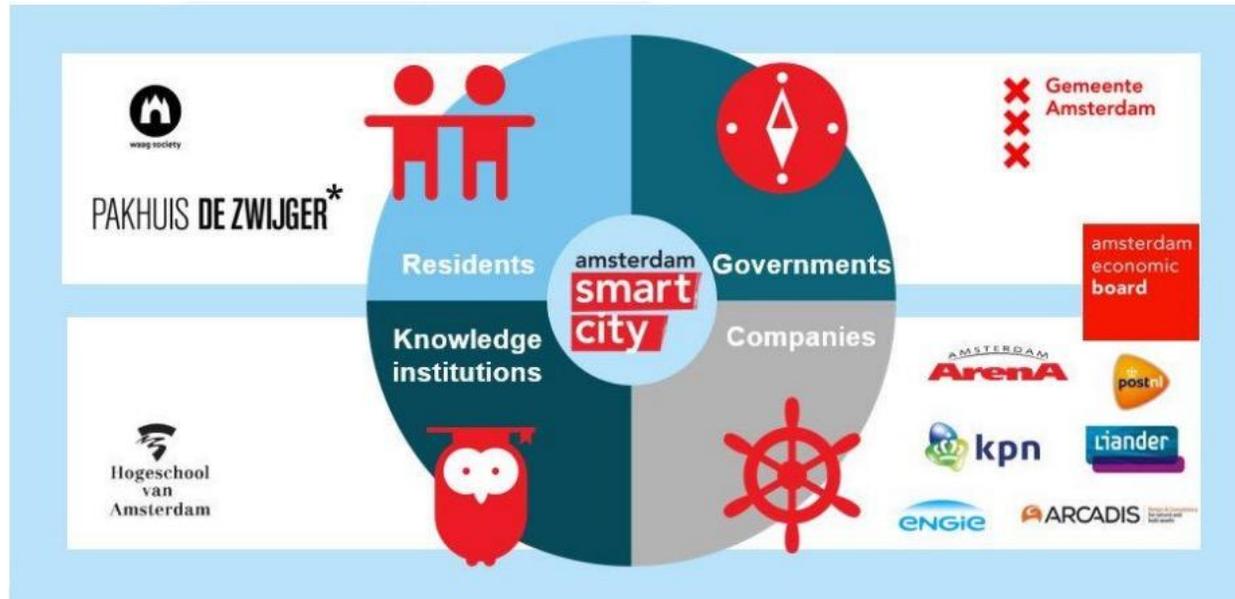
- **Utilisation of renewable energy for electric garbage trucks**
- **Instalment of solar-powered bus stops, billboards and lights**
- **Construction of floating villages and offices** to combat overcrowding and provide an alternative to land reclamation

Throughout the city, thousands of operating businesses and households have already been modified with energy efficient roofing insulation, automatically dimming light switches, smart meters, and ultra-low energy LED lights.



Amsterdam

Smart City Actors



Amsterdam built its smart city on a wholistic approach modelled with participation of governments, businesses, universities & research institutions, and citizens. And adopting a **bottom-up methodology** based on **smart growth, startups, social inclusion and quality of life.**

Amsterdam

Smart City Platform

connect

accelerate

strengthen

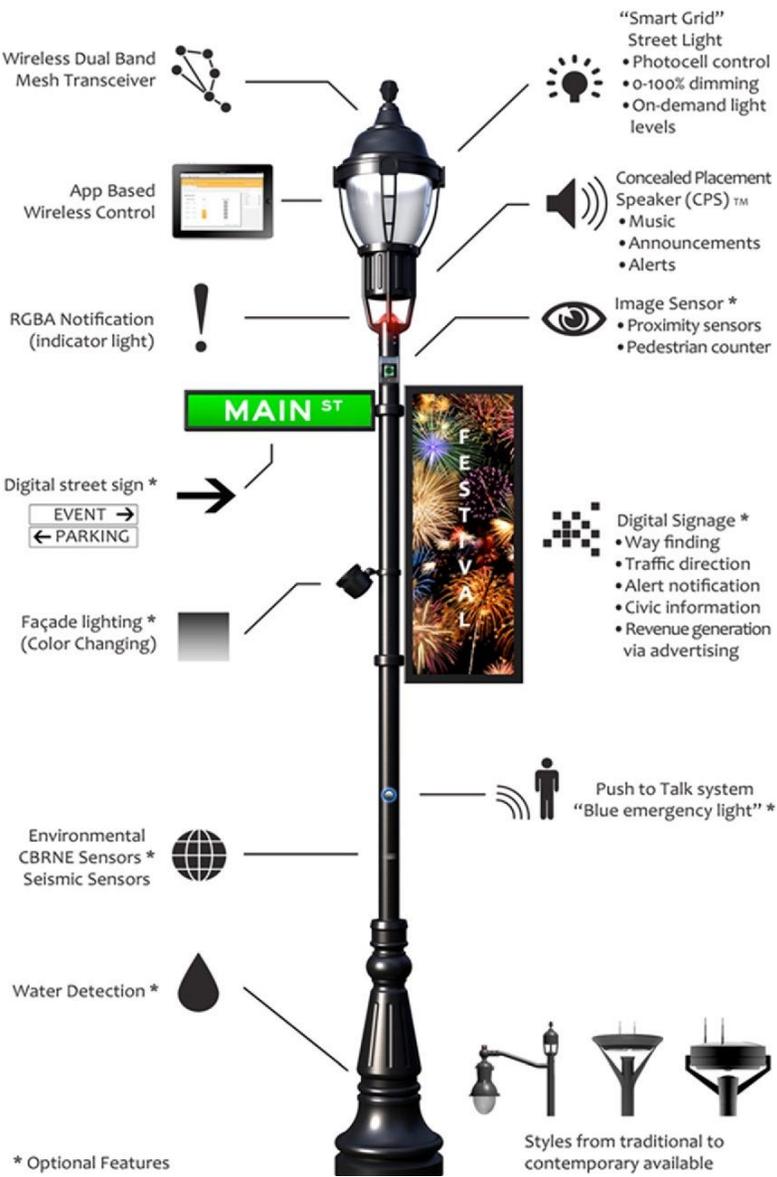


Amsterdam

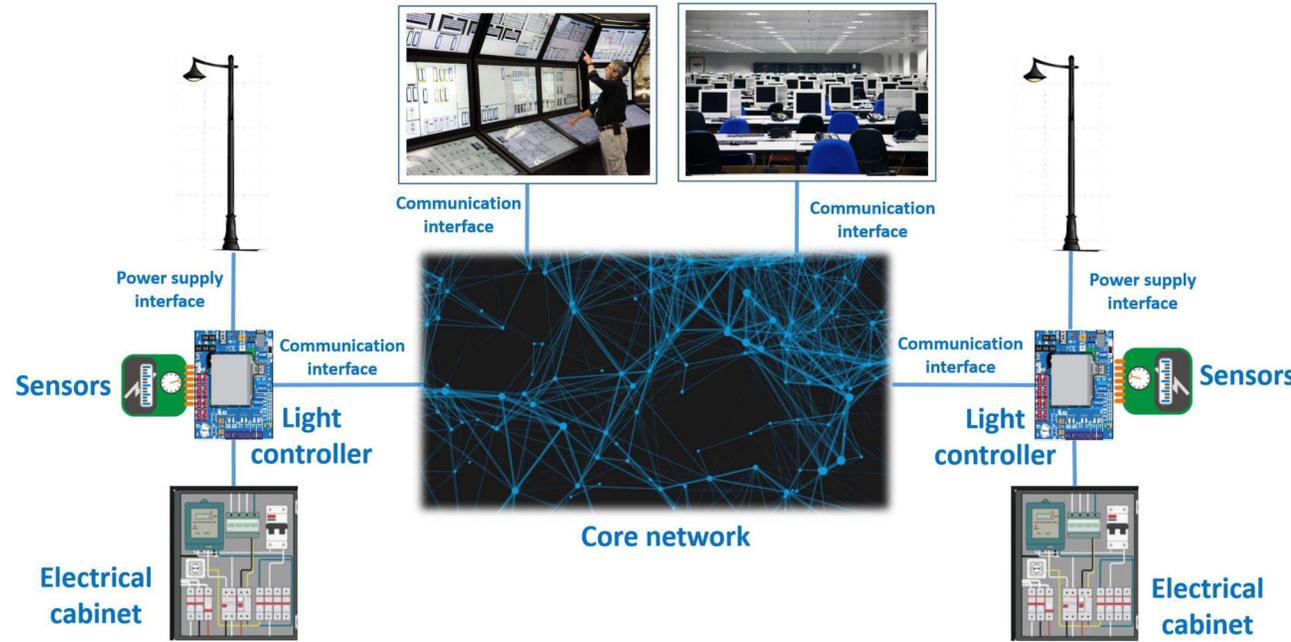
4 Smart City Pillars



Amsterdam Smart Lighting

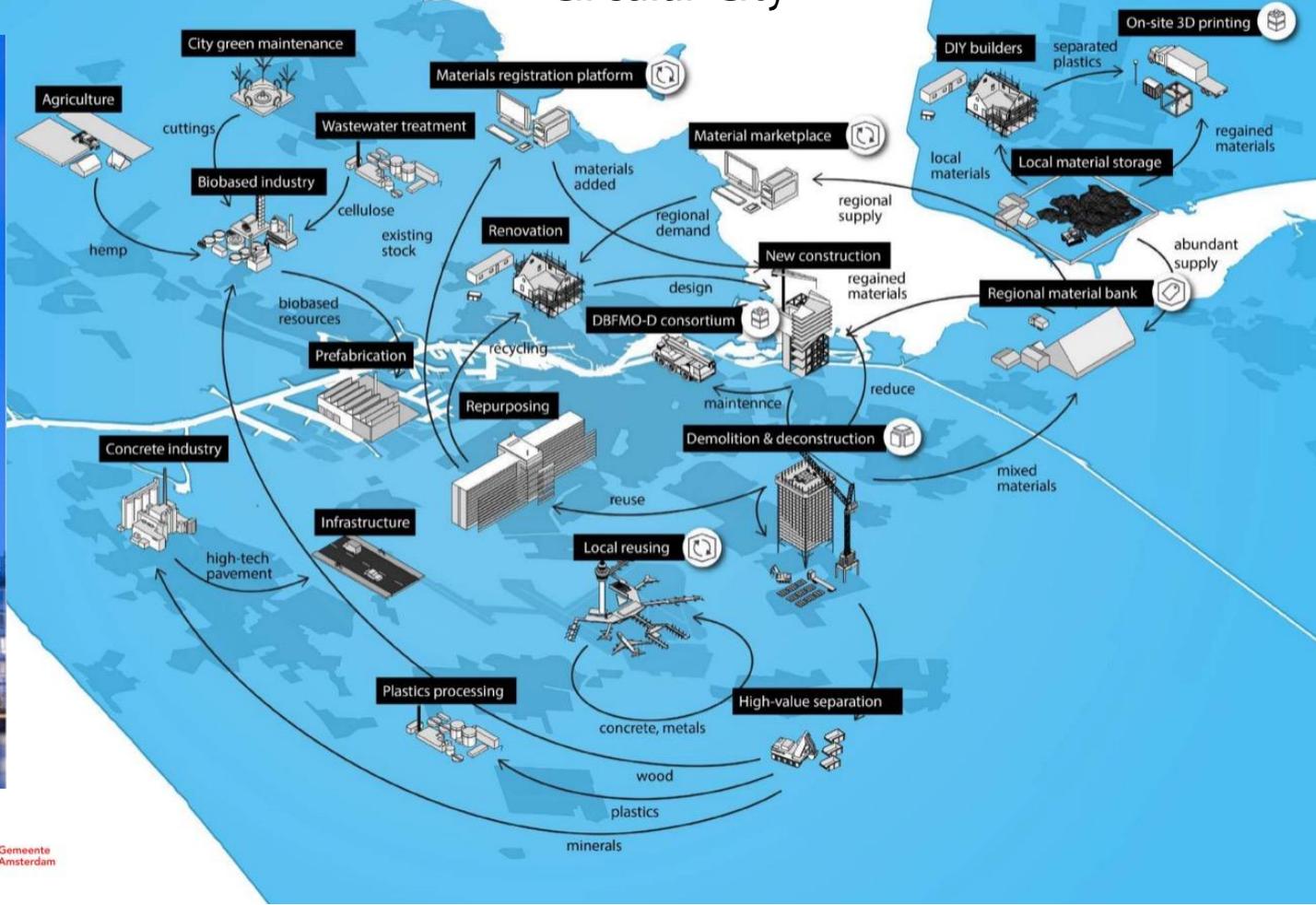


Control Center (street light management) Other Applications (IoT services)



VISION OF A CIRCULAR CONSTRUCTION CHAIN

Amsterdam Circular City



CIRCULAR AMSTERDAM

A vision and action agenda for the city and metropolitan area



Amsterdam

Start Up Platform: Innovative Start-ups and Scale-ups

StartUpAmsterdam is dedicated to nurturing start-ups and scale-ups, strengthening the **start-up and scale-up ecosystem** by promoting innovative and sustainable entrepreneurship.

The 5 pillars are:

- **Talent and diversity**
- **Emerging technologies**
- **Access to markets**
- **Stimulate network connections**
- **Development of innovation districts**

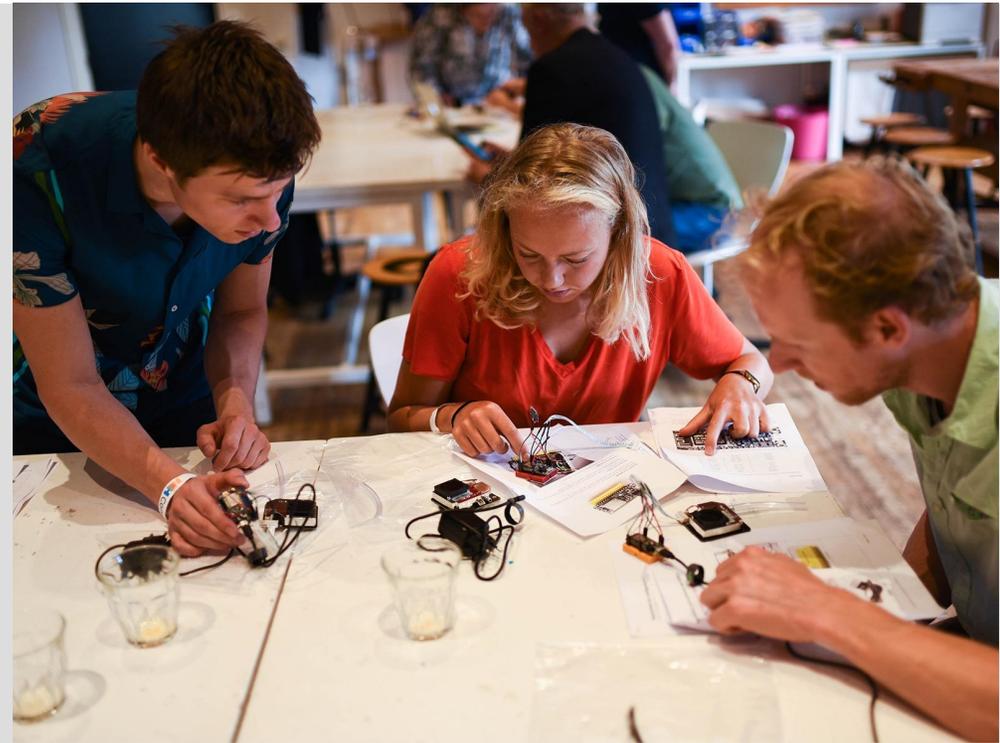


Amsterdam

Smart Citizens Lab / Smart Citizen Kit (open source device that monitors the environment)

The **Smart Citizens Lab** empowers a vivid community of committed citizens to use inexpensive, open source technology to understand their environments (the air they breathe, the noise they hear, the water they drink & swim in, and the soil they grow on) better and to take action based on their findings.

Citizens are coached by **experts and hackers** who put their knowledge to use in helping them to measure, analyze, and interpret data that would have been beyond their reach a few years ago. This is expected to lead to more engagement, more insight, better-informed dialogues between citizens and their governments, and in the end to more enjoyable, liveable, and creative cities.





Seoul

Smart City

Seoul launched its initiatives as early as 2014, with **data** at the heart of its smart city projects. The **accumulation and analysis of urban patterns** e.g. traffic flow, speed and air quality measured by sensors and CCTV deployed across the city, form a strong basis for a **smart infrastructure and services**.

- Focusing the technology towards the city's ageing population, a **safety initiative** was launched in aid of senior citizens who live alone; with no movement detected over a certain period of time or if abnormal temperature, humidity, or lighting are picked up by environmental sensors, relevant case workers and emergency services would be contacted immediately
- Using the data platform creating an **AI detective** to flag up potential crime patterns
- Amongst the first cities to utilise **5G technology** in mobility and transportation



Seoul

4 Smart City Strategies

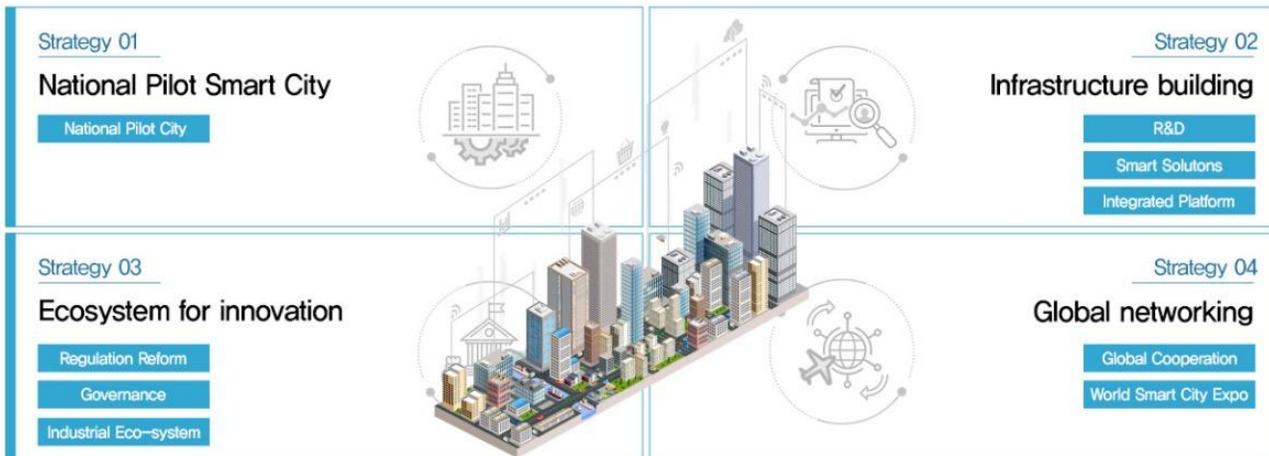
VISION + Quality of Life
01 Offer location & data-based services to solve urban problems



VISION + Inclusive Smart City
02 Build a city that embraces all citizens



VISION + Smart Eco System
03 Spur global collaboration by creating an innovation eco system



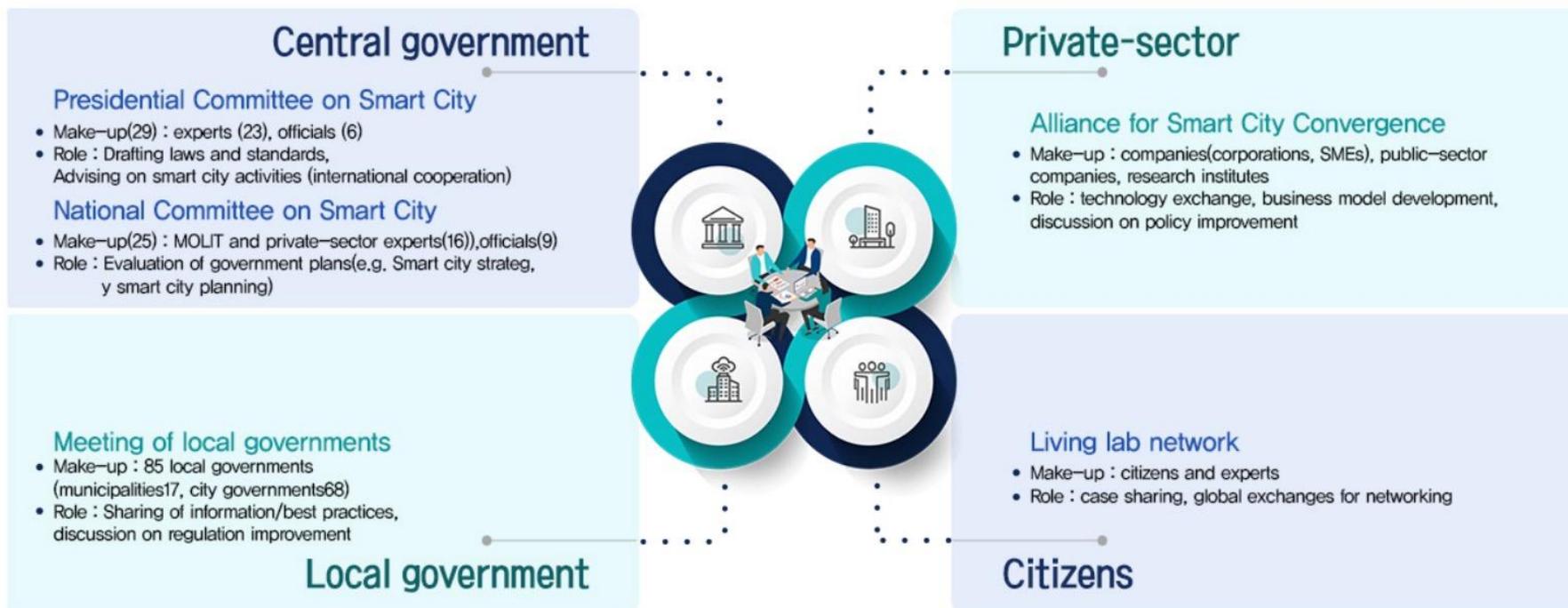
Seoul

7 Smart City Focus Areas

	Mobility Shared mobility(car sharing, ride hailing) Automated driving(self-driving shuttles, C-ITS)		Governance Digital Twin, M-Voting(block chain based) Living lab(citizen-led initiative)
	Health Care Telemedicine, AI medical examination, Smart emergency call, Drone rescue		Culture Personalized cultural recommendations Community currency payment, Unmanned delivery
	Education Edu-tech, On-line education, Personalized education, Making Space		Job Creation of start-up incubators Global cross-experiment program
	Energy CEMS, Neighborhood Electricity Trading Zero-energy building		

Seoul

Smart City Governance



Seoul

Smart City Network

- ✓ Cooperation with World Bank, Inter-America Development Bank, and the OECD
Project discovery, co-financing, knowledge sharing

- ✓ Expansion of G2G cooperation with countries in Asia, America, Europe
Policy/institution sharing, joint forums, staff exchange
- ✓ Joint smart city projects(development & implementation)
Cross-testing of smart city solutions
Work plan/MP development, cross pilot project

- ✓ International seminars/academic conferences to share study results and foster interest in the field
Archive for research sharing, open lectures
Publication of studies/research



Seoul

Smart Bus Shelter

Smart Bus Shelter: designed to protect passengers from monsoon rains, summer heat and coronavirus in Seoul:

- **Temperature-checking doors:** automated thermal-imaging camera, and the door will slide open only with registered temperature below 37.5 °C (separate camera installed to test children)
- **Air-conditioning systems:** ultraviolet disinfection lamps installed to kill viruses at the same time as cooling the air (also free Wi-Fi included)
- **Dispensers with hand sanitisers** (users advised to wear masks and keep 1 m distance)



Seoul

Night Bus or Owl Bus

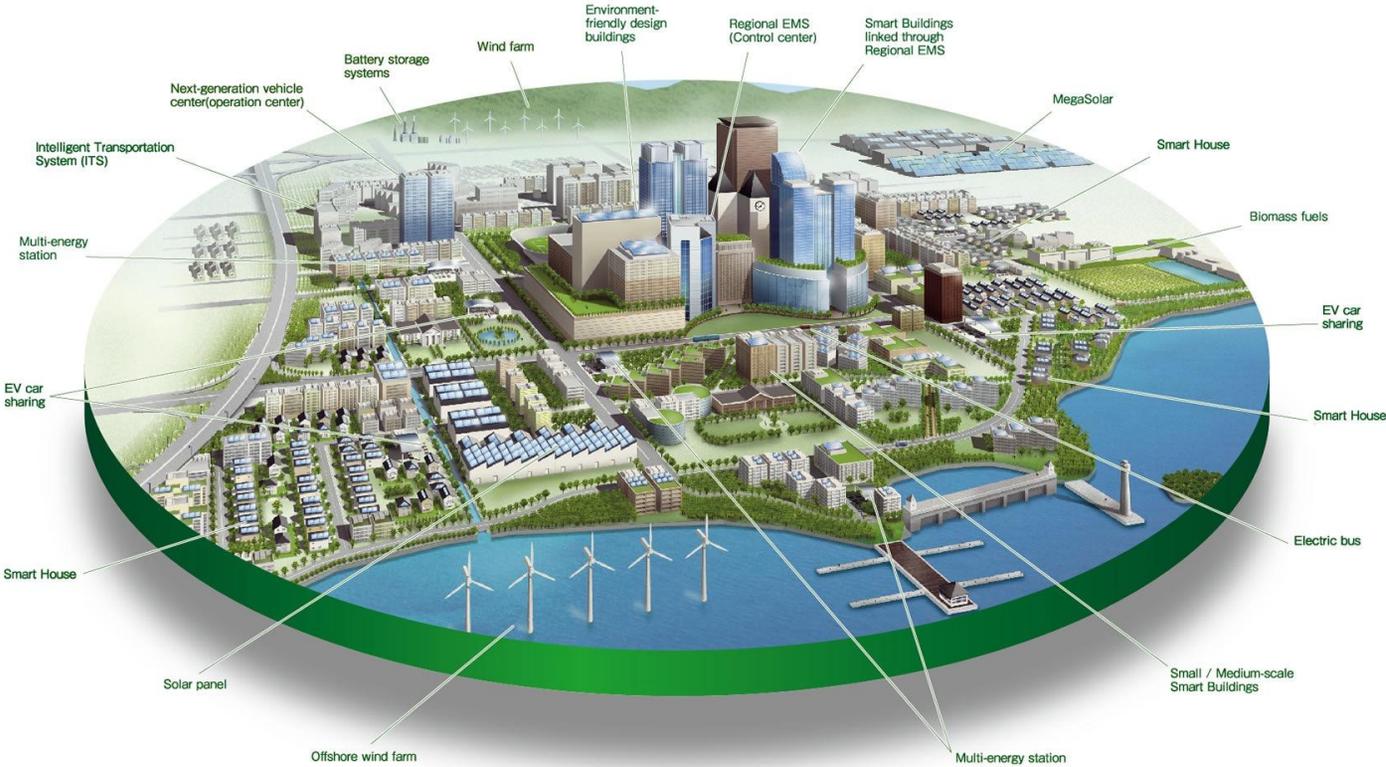
The **Night Bus or Owl Bus** makes Seoul's public transportation service ceaseless for the city's late night commuters. Seoul uses the location of mobile users as a proxy for the movement patterns of commuters.

In order to allay the private sector's concerns on data protection, the city government and telecommunications providers agreed to remove all personal information tied to the provided data.

Seoul's Owl Service has reduced the use of passenger cars by more than 2 million trips per year. Also resulted in savings, passengers save about \$5 per bus trip, instead of a taxi trip.



Smart City Solutions



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