経済産業省

METI's Contribution for Overseas Smart City Development

December 2022

Trade and Economic Cooperation Bureau
Ministry of Economy, Trade and Industry

Smart City Concept

- Along with economic growth, various social issues emerge in rapidly growing countries. **“Smart infrastructure”** is expected to provide solutions for the issues.
  - Cities are facing with a wide variety of issues. Developing various effective infrastructure services such as mobility, healthcare, security, and energy is urgently required. The ICT using data becomes a key factor in these services.
- Japanese real estate companies and trading houses are developing **"comprehensive town management"** in collaboration with local partners and domestic and foreign companies that provide individual services.

Case 1 Mobility

Traffic congestion and air pollution caused by the spread of motorcycles and private cars.

⇒ Introduction of public transportation services and sharing services, data services to support these operations, cashless payments, etc

Case 2 Health care

While the population grows fast, the supply of medical services is not keeping pace with the demand.

⇒ Telemedicine, data platforms for information sharing among healthcare service providers, etc.

Case 3 Security

As the economy expands, safety concerns increase. However, police officers and traffic monitors are not sufficient.

⇒ Surveillance systems using facial recognition and security cameras, patrol systems using security robots and drones, etc.

Case 4 Energy

Economic development and decarbonization must be compatible.

⇒ Energy-efficient buildings, renewable energy, energy management systems, hydrogen utilization, etc. are progressing.

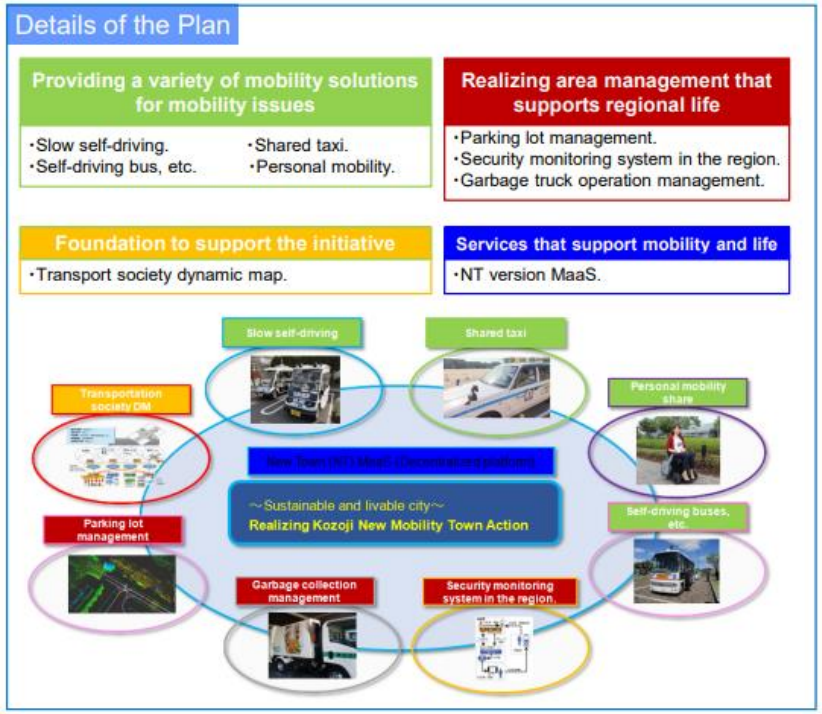
Case 1　Mobility

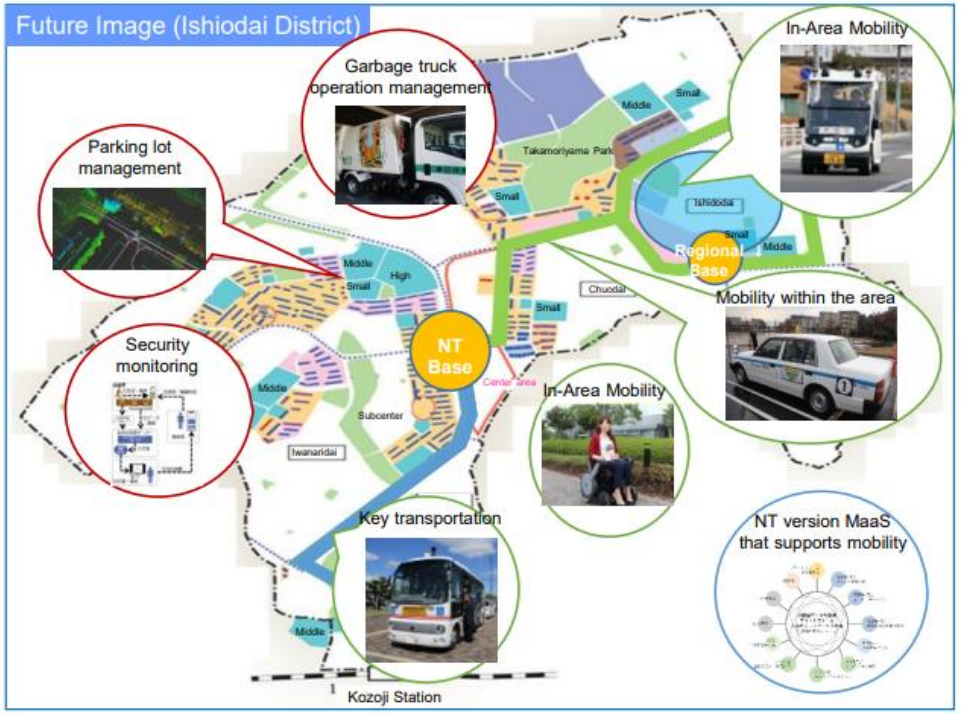
Several ASEAN cities are introducing public transportation and MaaS system to mitigate issues such as traffic congestion and air pollution caused by the increase of motorcycles and privately owned cars.

Elements: Eco-friendly shared buses and shared cycles, road monitoring systems to detect traffic congestion, apps to provide residents with the status of these operations, cashless payments, etc.

Model case（Kasugai City, Aichi Prefecture）

In Japan, Kasugai city is pursuing a sustainable and livable smart city by introducing MaaS, parking lot management, garbage truck management, etc. Participants to develop the city include a rail company, a telecom company, a real estate developer, an electronics manufacturer, an energy utility, etc.





(Source) Cabinet Secretariat Japan's Smart Cities

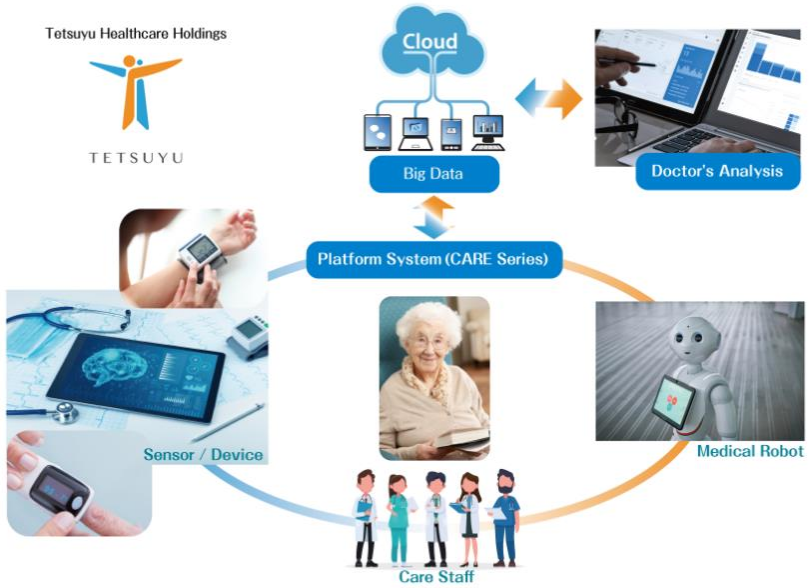
Case 2 Healthcare

Heavy demand for smart healthcare services is observed in countries facing with the rapid increase of population and the shortage of medical services.

The smart healthcare system is composed of medical robots for household, online medical services, platform of diagnostic information for medical workers. The system is used among healthcare industry.

Remote healthcare platform with medical robots

Sojitz, a trading house, has invested in a startup in Singapore Healthcare Holdings, which has developed a remote healthcare system utilizing ICT and AI capabilities.



(Source) Sojitz corporation

Case 3 Security

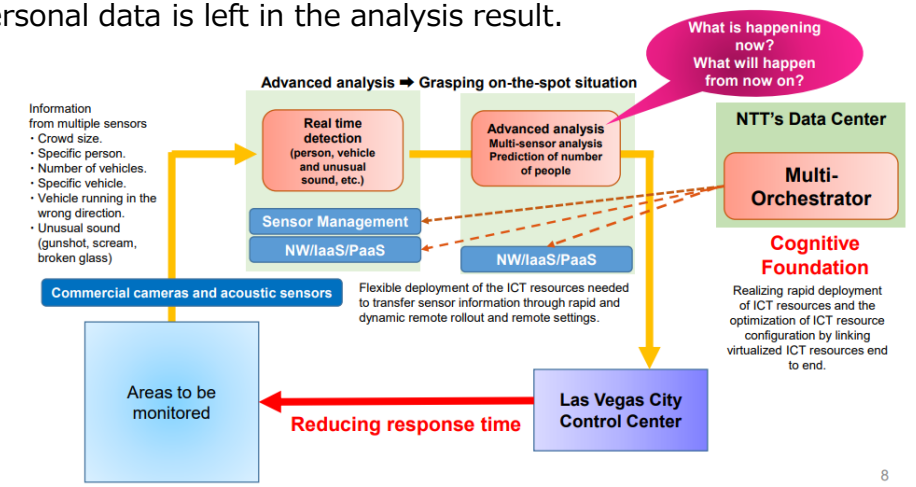
With population growth, safety and security concerns are growing in some cities. However, the shortage of police officers and traffic inspectors is a serious problem. A comfortable living environment will be ensured through the introduction of smart security.

Elements: Surveillance systems using face recognition and security cameras, patrol systems using security robots and drones, etc.

Model case (Las Vegas, U.S.)

NTT, a Japanese telecommunications company, demonstrated and commercialized a public safety solution in the city of Las Vegas, U.S.

- After the model case in Las Vegas, NTT is rolling out the similar solutions in the U.S. and Southeast Asia.
- The collected data is managed by the Las Vegas city authority. No personal data is left in the analysis result.



(Source) Cabinet Secretariat Japan's Smart Cities

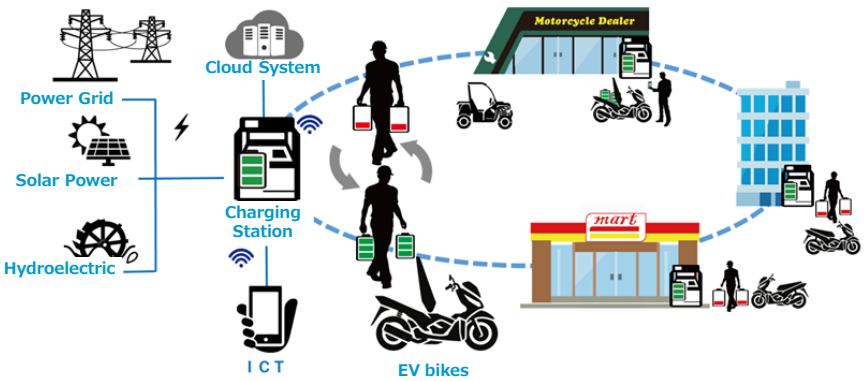
Case 4 Energy

①Distributed Energy Utilization

A smart city that comprehensively manages energy supply and demand by combining distributed energy such as solar energy with an energy management system based on technology such as IT and storage batteries.

<Model Case in Indonesia>

- Demonstration of Indonesia's first business model to utilize mobile batteries as a distributed energy resource through battery sharing of EV bikes.
- The project verified the use of mobile batteries and charging/discharging devices for improving power usage, peak shifting, and backup power sources.
- The project aims to contribute to the Indonesian government's electrification promotion (production target of 2.1 million EV bikes and 400,000 electric four-wheeled vehicles including HVs by 2025).



<Battery sharing system image>

②ZEB（Net Zero Energy Building）

A building that significantly reduces energy consumption while maintaining a comfortable environment by introducing energy-saving technologies such as solar shielding, high thermal insulation, and high-efficiency air conditioning, lighting, and integrated systems, as well as by supplying energy through solar power generation and other means.

<Model Case in <Malaysia>

- In cooperation with SEDA (Sustainable Energy Development Agency), a feasibility study is underway towards the demonstration of ZEB renovation of Malaysian government office buildings.Japan is supporting the formulation of ZEB guidelines in Malaysia.
- Also, Japan is promoting international standardization, including an ISO technical specification on ZEB, which was approved in September 2021.
- Japan aims to spread and create a market for ZEB by expanding the model project in Malaysia to the rest of Malaysia and ASEAN countries.

<A Building under consideration for renovation to ZEB>

<Cyberjaya: Considered as a relocation site for SEDA's building>

Support for Overseas Smart City Project

(1) Study for the demand

⇒ "**Feasibility Study Project for Overseas Deployment of High-Quality Infrastructure**"

(METI)

- Survey on the current state of partner country infrastructure, Study needs and issues of stakeholders in the partner country, Environmental impact assessment, etc.

(2) Partnering with local partners

⇒ "**Japan Association for Smart Cities in ASEAN（JASCA）**" (Lead by MLIT)

- Information sharing between public and private shareholders, supporting business matching for participating members, etc.

⇒ "**J-Bridge**" (JETRO)

- In order to promote collaboration between Japanese companies and overseas companies, domestic and overseas JETRO offices and coordinators (local VCs and consulting companies) work together to introduce foreign companies and startups to Japanese companies.
- Support for cross-border collaboration and M&A in digital and green transformation area in Asia, Europe and the United States, etc.

(3) Demonstration

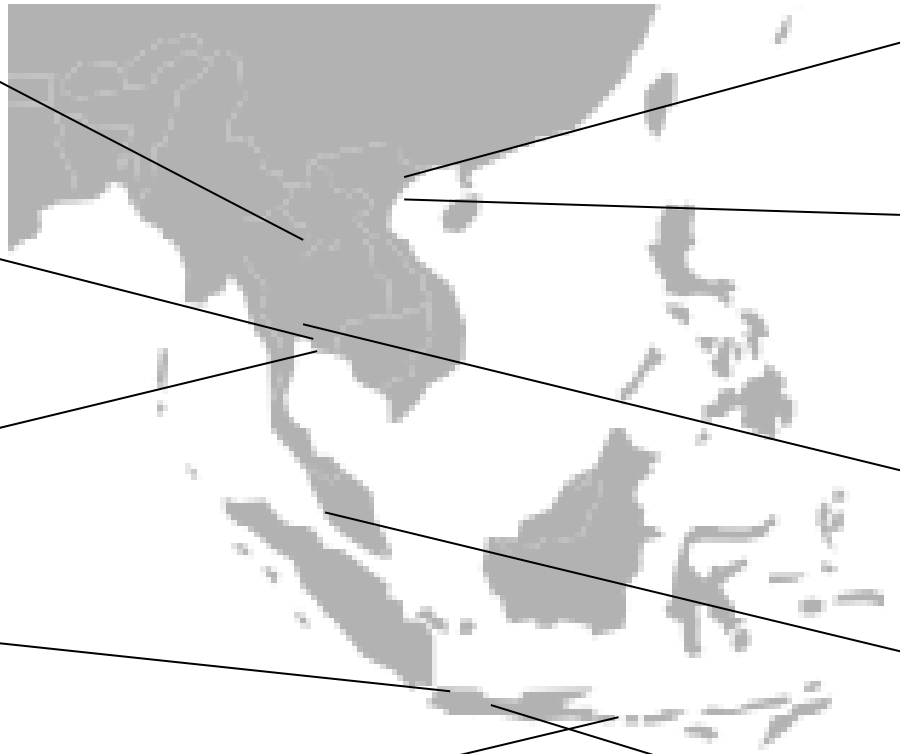
⇒ "**International Demonstration Project on Japan's Energy Efficiency Technologies**"

(NEDO)

- With the aim of contributing to the spread of Japan's energy-related industries' technologies as well as domestic and overseas energy transitions and decarbonization, the project supports in stages, from pre-demonstration studies to demonstration research.

Examples of METI's Support for Smart Cities

- METI supports smart city development by Japanese companies through assisting **feasibility studies** and **demonstration projects**.



(2020) Study on agricultural business using ICT in Laos

(2020) Study on Chonburi R&D Hub

(2021) Study on infrastructure needs using clean energy in Map Ta Phut industrial estate

(2020) Study on the show case smart city in Deltamas

(2021) Smart mobility infrastructure development study project for smart city development in Bali

(2020) Master Plan for Ha Long Smart City Projects

(2021) Research for the development for North Hanoi Smart City

(2021～) Study on smart energy and mobility in Bang Sue area

(2022～) Demonstration of ZEB technologies to achieve carbon neutrality in the building sector (Malaysia)

(～2020) Mobile Battery Sharing Demonstration as a Distributed Energy Source (Indonesia)

: Feasibility Study Project for Overseas Deployment of High-Quality Infrastructure
: International Demonstration Project (NEDO)