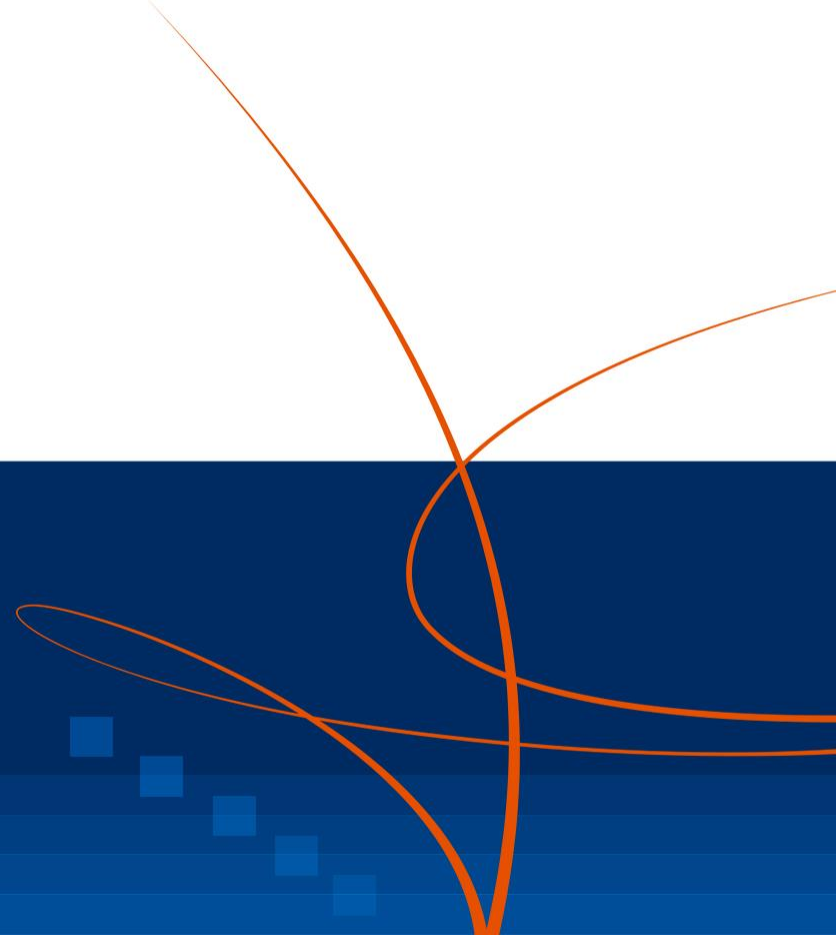


Cross-Industry Unit

Yutaka Ukegawa, Senior Vice President

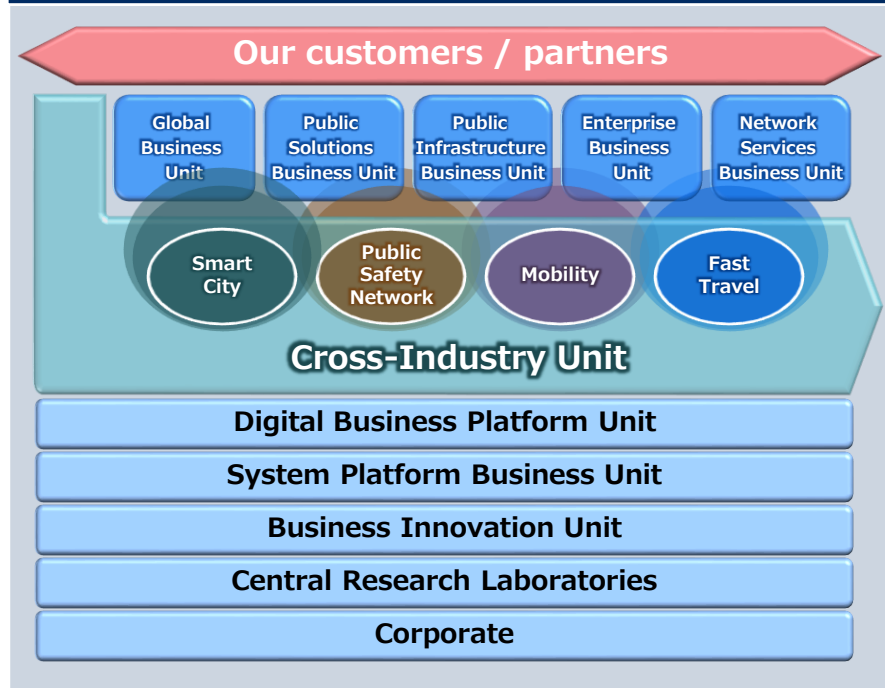


Overview of Cross-Industry Unit





Mission

- Company-wide and cross-sectional function to flexibly and swiftly proceed with the development of new businesses through public-private partnerships and cross-industry collaboration toward the realization of "Society 5.0"
- Focus on cross-industry markets of public-private partnerships and cross-industry collaboration with four key business domains for the time being
- Transform business model from conventional selling of equipment to subscription-based service business
- Responsible for all phases from business verification to business development and initial business deployment

Organizational Structure



Market Sizes in Key Domains (FY2025)

	Market Size in FY2025		Key Points	Presented today
	Japan	Overseas		
 Smart City	¥300bn CAGR for FY22-25: 9%	¥5.6tn 12%	<ul style="list-style-type: none">Track record in development of FIWARE, de-facto standard OS for Smart Cities, and deployment in Japan/overseas	
 Mobility	¥540bn 2%	¥3.7tn 20%	<ul style="list-style-type: none">Advanced ICT infrastructure for roads incl. signals with use of 5G, security and image analysis technologies	
 Fast Travel	¥140bn 71%	¥2.6tn 71%	<ul style="list-style-type: none">ID for inside/outside airports based on the world's No.1 face recognition technology	Presented today
 Public Safety Network	¥600bn 36%	¥5.8tn 30%	<ul style="list-style-type: none">Advanced commercial-use wireless systems making the most of reliable LTE base station technology	

Focus on marketable domains

* Figures based on NEC estimates

Smart City Initiatives by Japanese Government and NEC

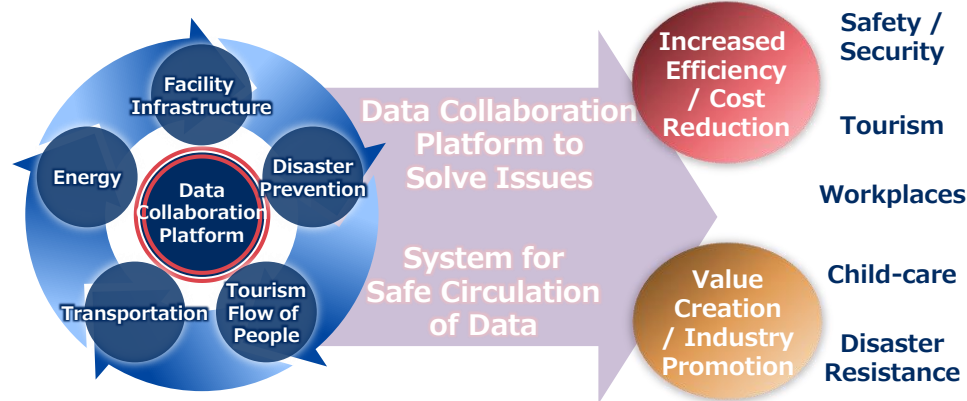


Council on Investments for the Future (2018): Advocate establishing smart cities as part of its growth strategy

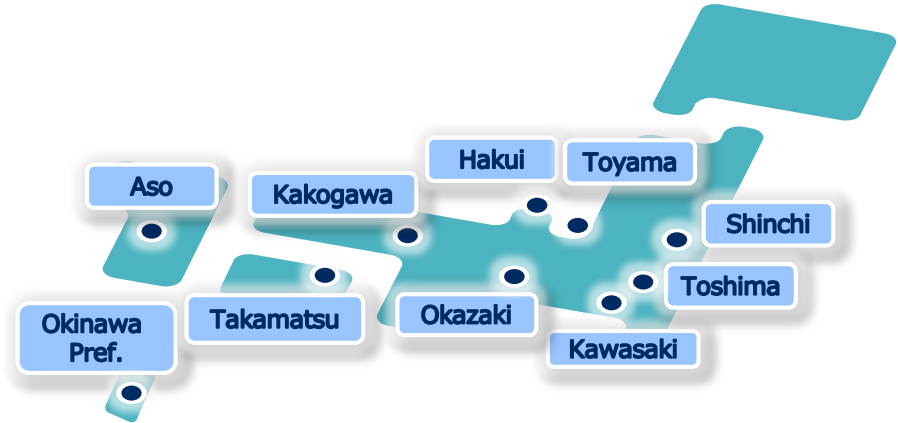
- Smart City Task Force was established (December 2018)
- Promote initiatives through collaboration across the government ministries based on the decision at the Integrated Innovation Strategy Promotion Council (March 2019)
 - G-20 themes, design of common architecture according to Strategic Innovation Program (2019)

Benefits of smart cities

Realization of safe and secured life, and affluent and sustainable cities



NEC's involvement in smart cities



Initiatives for smart cities in Japan are accelerating

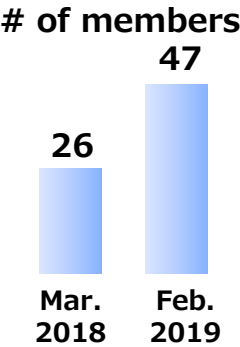
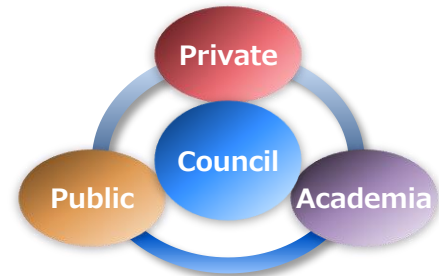
Example of Smart City Initiative: Takamatsu City

Basic agreement was signed among Takamatsu City, NEC, STNet, Kagawa University and National Institute of Technology - Kagawa Collage on the establishment and utilization of smart city (February 2018)

Increased members sharing local issues / Expansion of data-utilization

Local Council to Discuss "Local Issues"

Smart City Promotion Council, Takamatsu



Promote utilization of data with communities

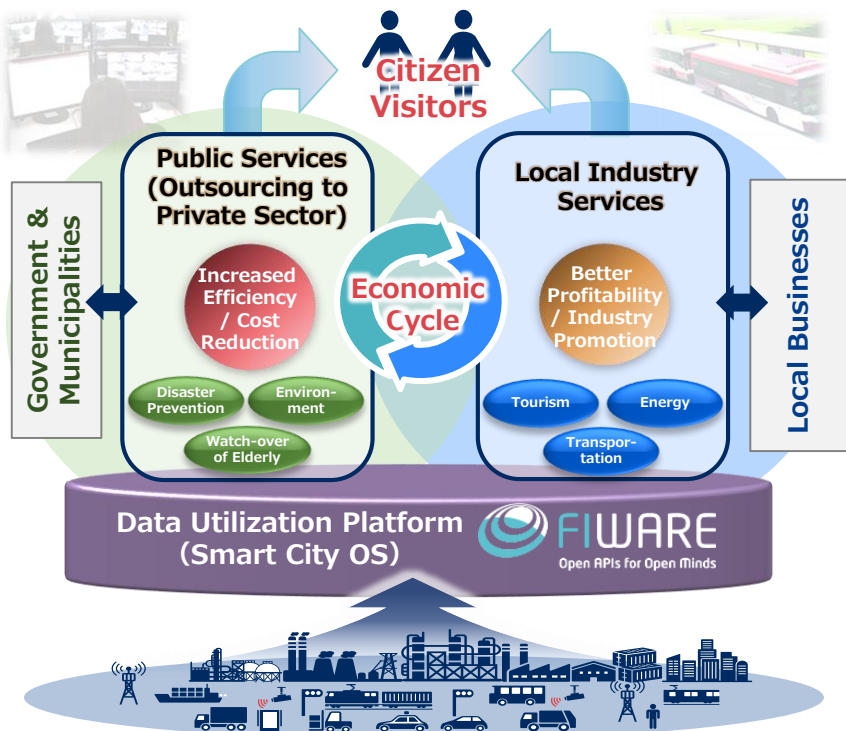
Common Platform for Gathering and Analyzing "Local Data"

Data-utilization areas (2 areas→ 4 areas)

Disaster Prevention	<div>Prompt decision-making in case of flooding of storm surge</div> <div><ul style="list-style-type: none">Visualize real-time disaster infoSharing disaster info among relevant personnel</div>
Tourism	<div>Promote inbound tourism</div> <div><ul style="list-style-type: none">Visualize tour routes and stay time (rental bicycles)</div>
Welfare	<div>Watch over elderly / Be prepared for swift actions as necessary</div> <div><ul style="list-style-type: none">Grasp vital info e.g. breathing, heart rate and acceleration</div>
Transportation	<div>Reduce the number of traffic accidents</div> <div><ul style="list-style-type: none">Analyze causes by joint use of municipalities' traffic accident data and private sector's drive data recorders</div>

NEC's Business Model and Future Development for Smart Cities

Business Model for Smart Cities



Strengths

"FIWARE" is spreading worldwide

- ✓ Cross-domain collaboration data platform developed in Europe
- ✓ Joined by 24 countries, 117 cities, and 993 companies
- ✓ NEC took part from the development stage and is the only platinum member among Japanese companies
- ✓ Actual cases of implementing FIWARE in Japan

Future Development

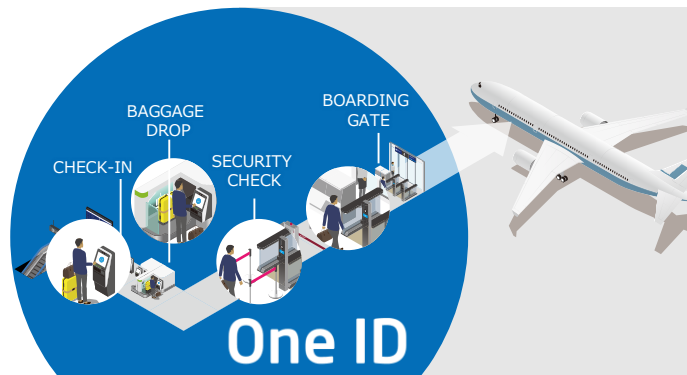
Contribute to standardizing the architecture using the government's framework along with regional business verifications

Number of cities where proposals and roll-out will be made (Target)

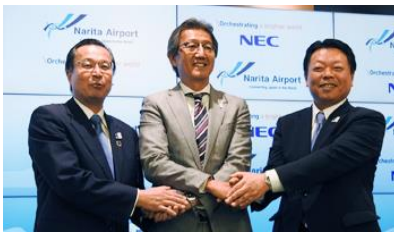
- | | |
|--------------------|-------------|
| ● FY2019 (Present) | 10 cities |
| ● FY2020 | 50 cities |
| ● FY2025 | 200+ cities |

Example of Fast Travel (One ID) and Future Development

New Boarding System at Narita Airport NEC's One ID was ad (May 2019)



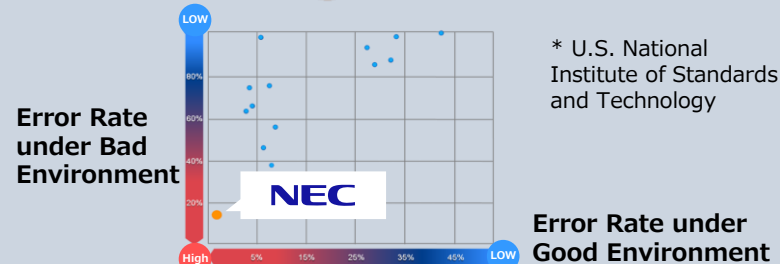
"One ID" Presentation Session in May 2019



Strengths

Face recognition for various kinds of use

NEC's video face recognition technology ranks 1st in NIST* testing



Future Development

Airports

- Penetrate into major airports in Japan and overseas

Off-Airports

- Provide services to various sites as well as airports [Transport systems, duty-free procedure, medical purposes, etc.]

Fast Travel: Off-Airports



When travelling...
Ticket/Pass purchases without long-queuing and other stresses
Speedy start of travel with document-free face recognition



At Duty-free shops...
Duty-free shopping without stresses
One-stop procedure of payment and duty-free procedures



In case of an accident...
Realization of prompt and accurate medical treatment
Able to receive reliable treatment in case of sudden illness

