Japanese Super City Initiative

November 20, 2019

Tak Nagumo
Executive Director, Smart City Institute Japan

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Profile of Tak Nagumo

- Co-Founder and Director of **Smart City Institute Japan**, Not-for-profit organization promoting smart cities in Japan

- Concurrently,
  - **Regulatory Reform Promotion Council** Member, Japanese Government's Cabinet Office
  - **Information Sharing Infrastructure Promotion Council** Member, Ministry of Economy, Trade and Industry (METI)
  - **Digital Government Promotion Officer,** Ministry of Internal Affairs and Communications (MIC)
  - **Managing Executive Officer of Mitsubishi UFJ Research and Consulting, Ltd.**
  - Invited Researcher at **Artificial Intelligence Research Center, National Institute of Advanced Industrial Science and Technology (AIST)**
  - Professor of **Kyoto University** Graduate School of Management
  - Senior Visiting Fellow at **Global Communication Center (GLOCOM), International University of Japan**
  - Fellow at e-Governance Technology Lab, **Tallinn University of Technology** in Estonia.

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Smart City Institute Japan (SCI-J)

- Name: General Incorporated Association Smart City Institute Japan
- Main office: Tokyo, Japan
- Establishment: 1 October 2019

- Major Activities:
  - Research: Conduct research on the world's leading smart cities and produce regular reports
  - Training: Collaborate with universities and research institutions around the world to organize seminars, symposia and tours of the world's leading smart cities
  - Recognition: Present awards for outstanding smart-city initiatives by organizations and individuals
  - Competitions: Create opportunities for undergraduate and graduate students to deepen their knowledge of smart cities

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Smart City Institute Japan (SCI-J)

- Executive Directors
  - Noriyuki Yanagawa (Professor, Graduate School of Economics, University of Tokyo)
  - Takehiko Nagumo (Managing Executive Officer, MURC)
  - Yoshihiro Hirata (Senior Managing Director, Nikkei, Inc.)
- Executive Advisors
  - Satoshi Murabayashi (President, MURC)
  - Shojiro Nakamura (Representative Director, Open Government Consortium)
  - Shuzo Murakami (President Institute for Building Environment and Energy Conservation)
  - Takao Kashiwagi (Professor Emeritus, Tokyo Institute of Technology)
  - Takeo Kikkawa (Professor, Graduate School of Management, Tokyo University of Science)
  - Daniel A. Levine (Senior Country Officer, World Bank Group, Singapore Office)
  - Mika Yasuoka-Jensen (Founder, Japanordic)
  - Norichika Kanie (Professor, Graduate School of Media and Governance at Keio University)
  - Masato Nobutoki (Director, YOKOHAMA SDGs Design Center)


Noriyuki Yanagawa


Satoshi Murabayashi


Shuzo Murakami


Shojiro Nakamura


Takeo Kikkawa


Takao Kashiwagi


Mika Yasuoka


Daniel A. Levine


信時 正人


Norichika Kanie

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Smart City Institute Japan (SCI-J)

- Masato Nobutoki (Director, YOKOHAMA SDGs Design Center)
- Noboru Koshizuka
  (Professor, Interfaculty Initiative in Information Studies, University of Tokyo)
- Masaakira James Kondo (Chairman, International House of Japan, Inc.)
- Maki Sakamoto (Professor, University of Electro-Communications)
- Kenji Hiramoto (Chief Strategist, National Strategy Office of IT)
- Fumiko Kato (CEO, Wamazing, Inc.)
- Mihoko Sakurai (Associate Professor, Center for Global Communications, GLOCOM)
- Chizuru Suga
  (Head, World Economic Forum Centre for the Fourth Industrial Revolution Japan)
- Anjyu Ishiyama (General Manager, Secretariat, Sharing Economy Association Japan)
- Atsushi Deguchi (Professor, Graduate School of Frontier Sciences, University of Tokyo)
- Hideki Koizumi (Professor, RCAST, University of Tokyo)
- Yuji Yoshimura (Project Associate Professor, RCAST, University of Tokyo)
- Yutaka Matsuo (Professor, Graduate School of Engineering, University of Tokyo)


坂本 真樹


越塚 登


近藤 正晃ジェームス


櫻井 美穂子


平本 健二


加藤 史子


出口 敦


須賀 千鶴


石山 アンジュ


松尾 豊


小泉 秀樹


吉村 有司

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Social Challenges Require Technologies to Resolve

- **As articulated by SDGs and the WE, it has become increasingly evident that the human kind is faced with multiple challenges that are intertwined.**
- **The latest technologies, e.g., AI, IoT, robotics, Big Data, and 5G, as typically leveraged in Industry 4.0 and Society 5.0, seem to be the "last resort" to tackle these challenges human kind has faced today.**

GOAL - SDGs

https://en.wikipedia.org/wiki/Sustainable_Development_Goals#/media/File:Sustainable_Development_Goals.png

MEANS - Society 5.0

https://www.gov-online.go.jp/cam/s5/eng/

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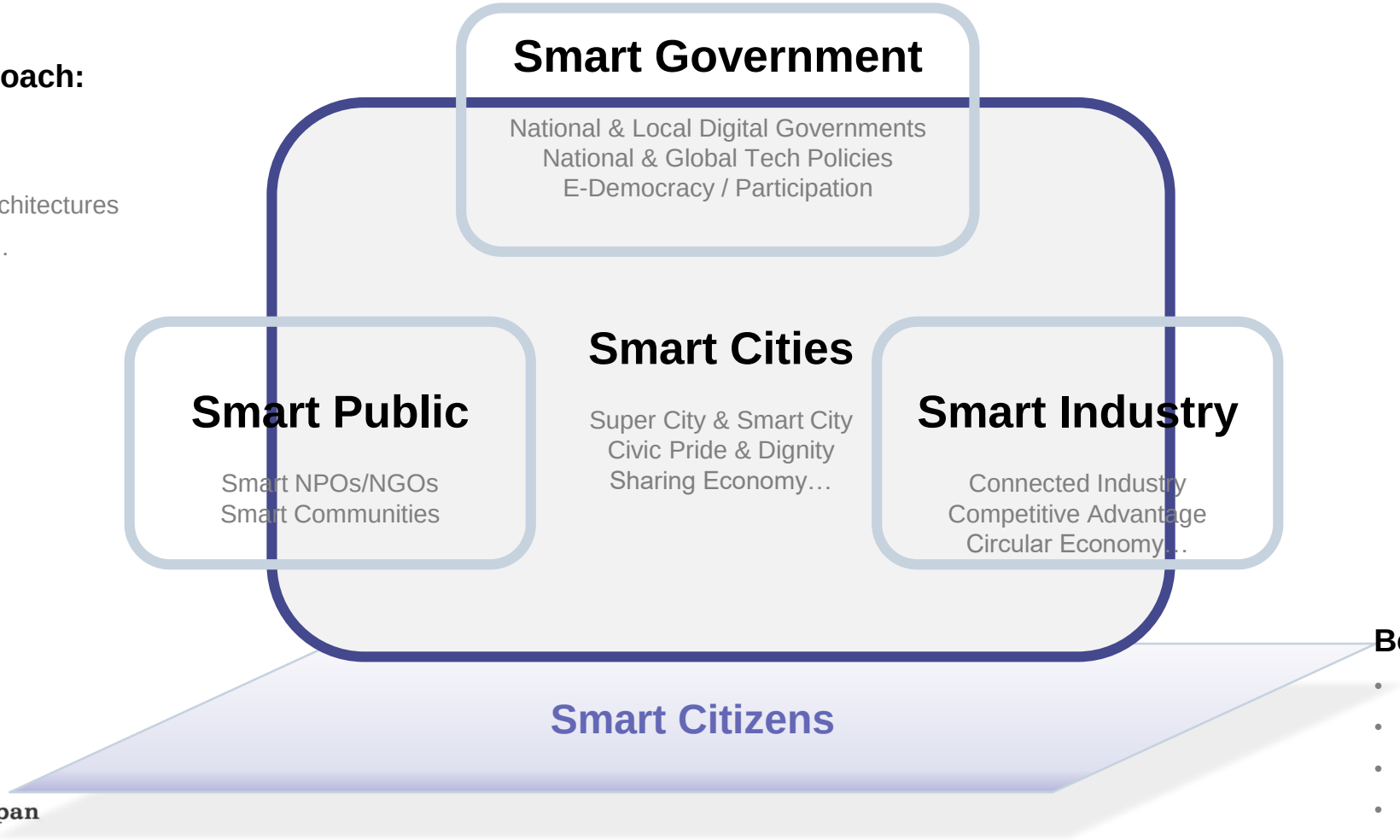
REALIZATION - Creation of Smart Cities

- **Cities are physical locations where digital transformation of governments, industries, and other public/social institutions occurs.**

Top Down Approach:

- Public Philosophy
- Social Contracts
- Data & System Architectures
- System Thinking…



Bottom Up Approach:

- Individual Needs & Wants
- Specific Digital Solutions
- Startups & VCs
- Design Thinking…

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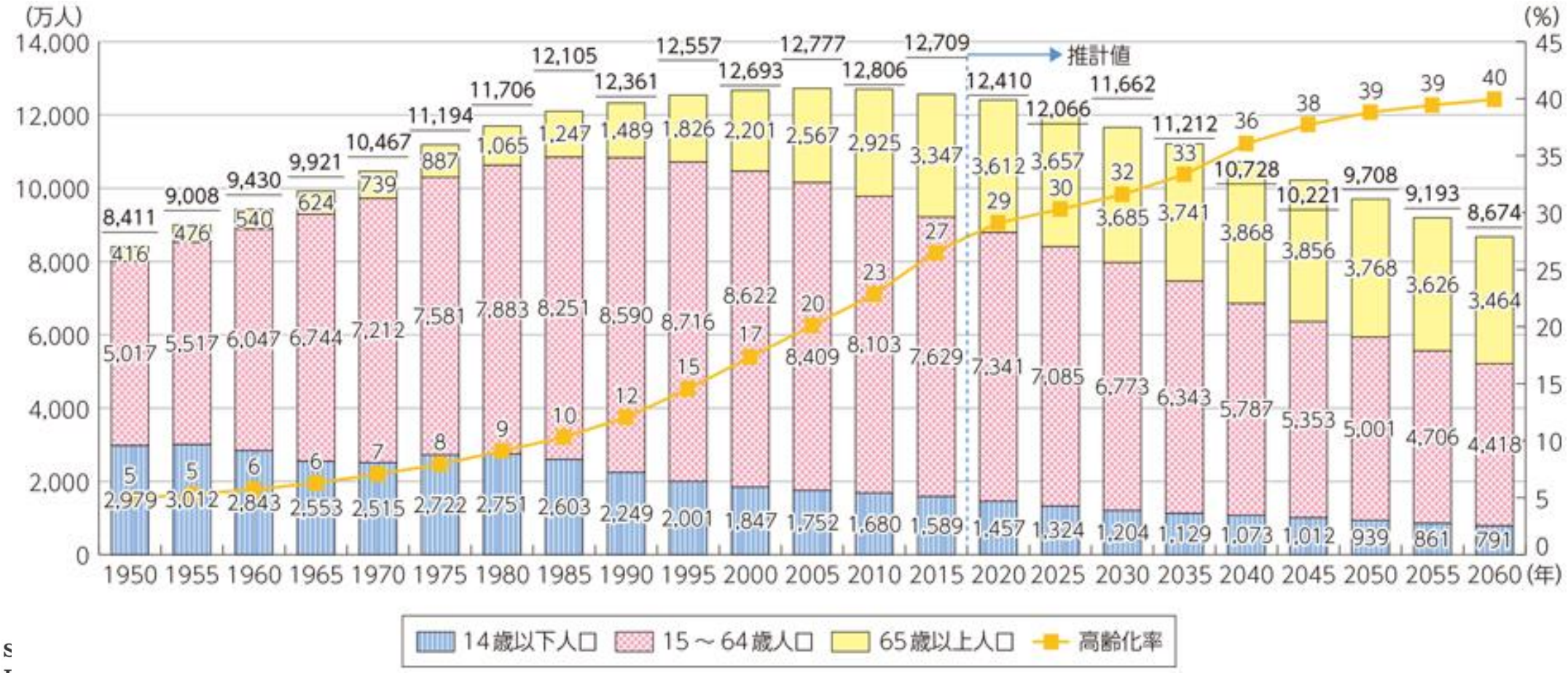
Specific Challenges of Japan

- **Decreasing and aging population**
- **Excessive concentration in Tokyo / Needs to rural revitalization**
- **Complex regulatory regimes**



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http://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h29/html/nc135230.html;

Society 5.0: Vison for Digital Transformation

- **"Be the World's Most Advanced IT Nation."**
- **Resolve economic and social problems with new technologies such as IoT, AI, and robotics, in a human-centric manner…**

Human Centricity

Economic advancement	Resolution of social problems
• The demand for energy is increasing • The demand for foodstuffs is increasing • Lifespan is becoming longer, and the aging society is advancing • International competition is becoming increasingly severe • Concentration of wealth and regional inequality are growing	• Reduction of GHG emissions • Increased production and reduced loss of foodstuffs • Mitigation of costs associated with the aging society • Promotion of sustainable industrialization • redistribution of wealth, and correction of regional inequality

Incorporating new technologies such as IoT, robotics, AI, and big data in all industries and social activities, provide goods and services that granularly address manifold latent needs without disparity

to balance economic advancement with the resolution of social problems

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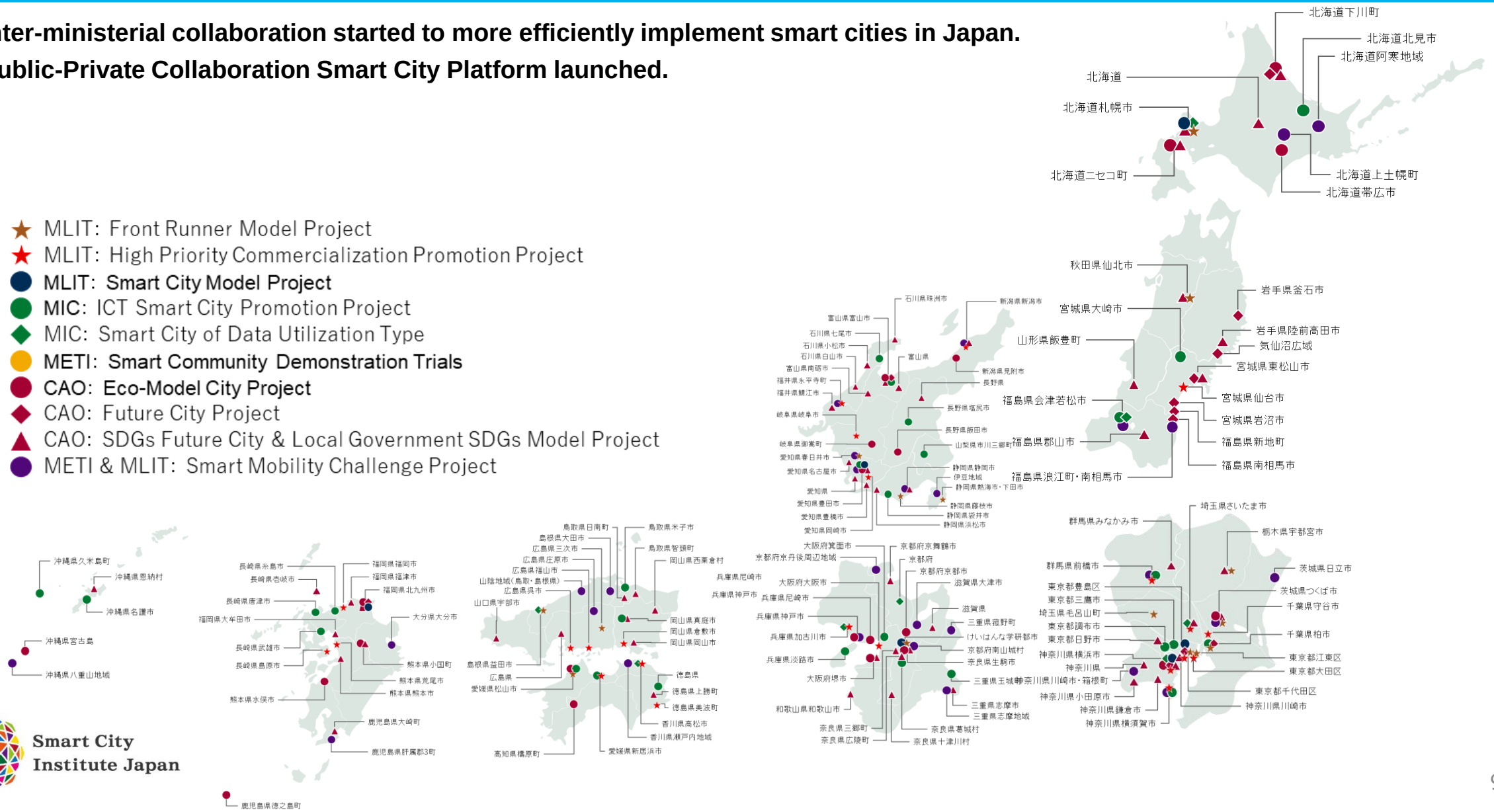
https://www.gov-online.go.jp/cam/s5/eng ; https://www8.cao.go.jp/cstp/english/society5_0/index.html

Current SDGs & Smart City Projects

- **Inter-ministerial collaboration started to more efficiently implement smart cities in Japan.**
- **Public-Private Collaboration Smart City Platform launched.**

★ MLIT: Front Runner Model Project
★ MLIT: High Priority Commercialization Promotion Project
● MLIT: Smart City Model Project
● MIC: ICT Smart City Promotion Project
◆ MIC: Smart City of Data Utilization Type
● METI: Smart Community Demonstration Trials
● CAO: Eco-Model City Project
◆ CAO: Future City Project
▲ CAO: SDGs Future City & Local Government SDGs Model Project
● METI & MLIT: Smart Mobility Challenge Project



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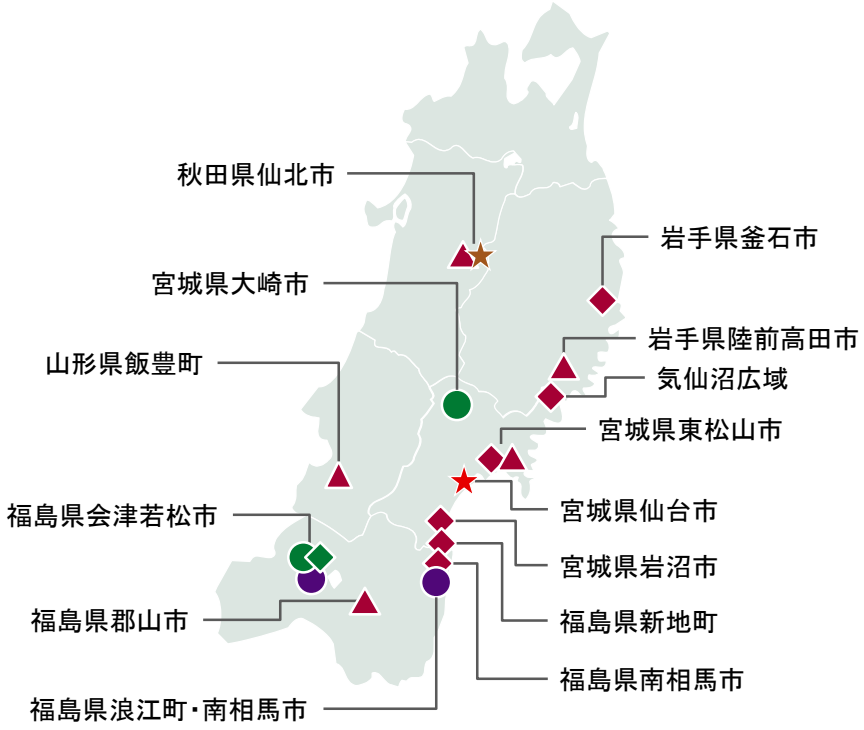
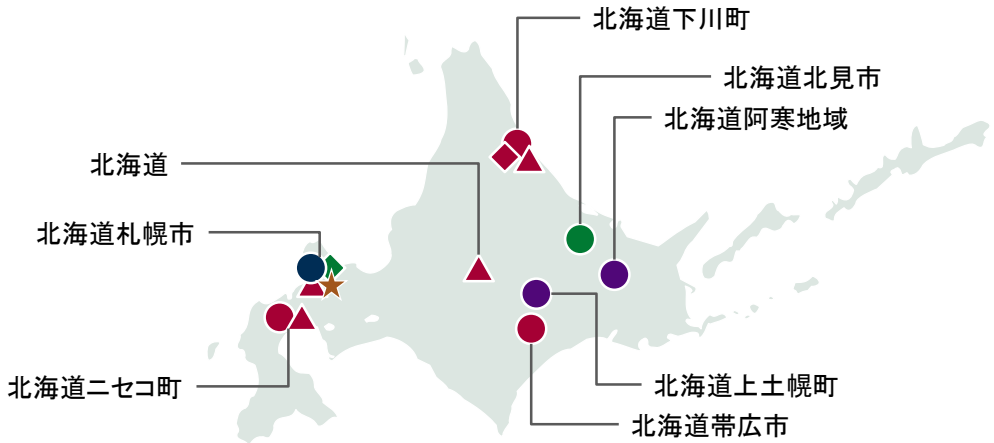
North - Hokkaido and Tohoku

As of 13 November 2019





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（出所）各府省の公表資料をもとに当社作成

East and Mid - Kanto and Chubu

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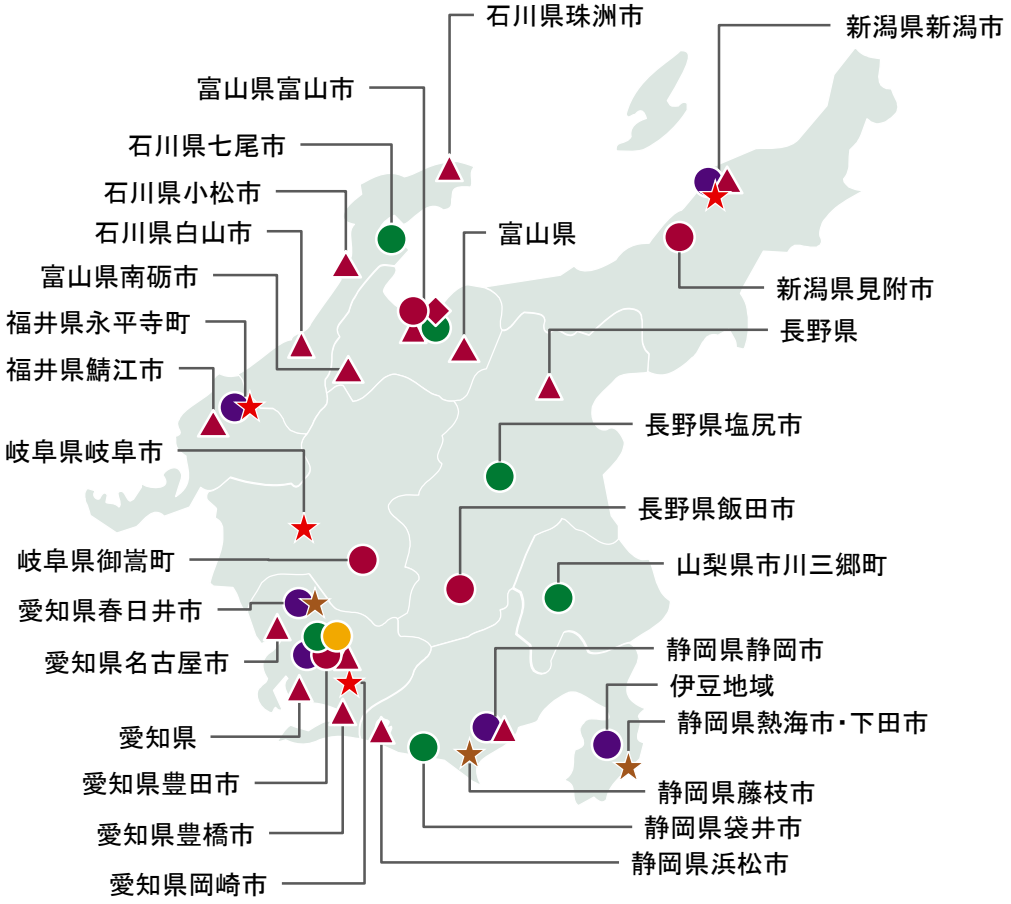

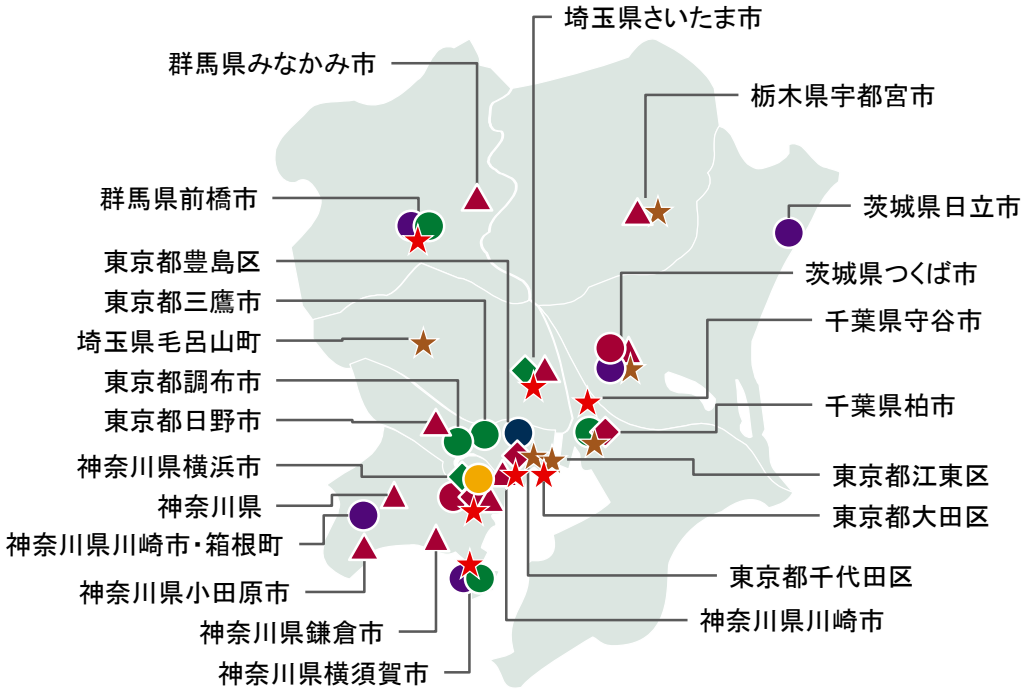

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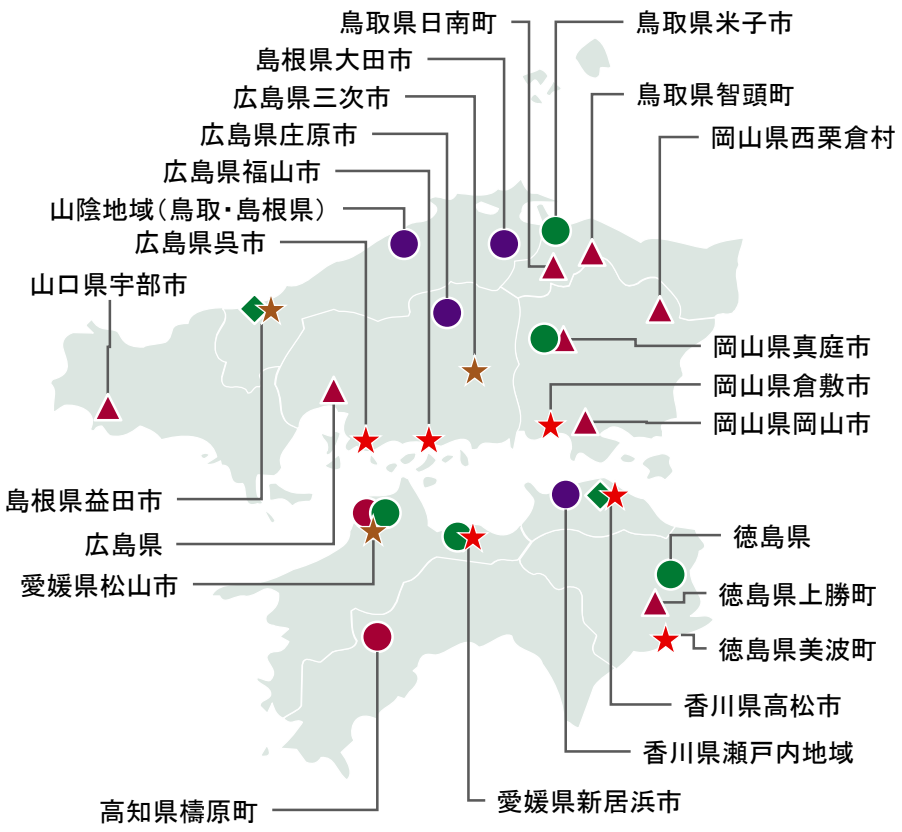
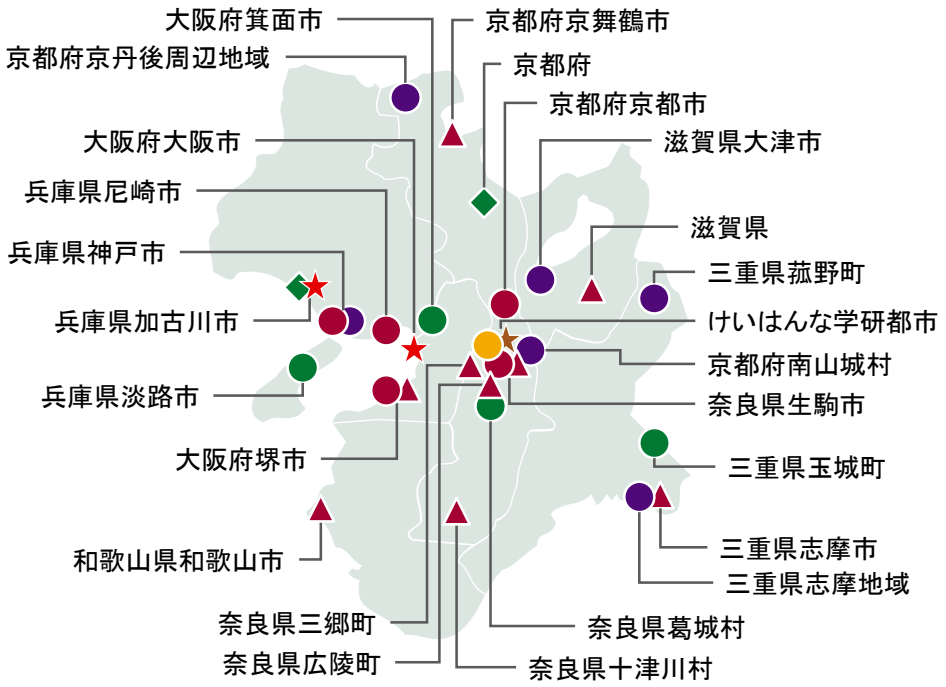
West - Kansai, Chugoku and Shikoku

- As of 13 November 2019





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South - Kyushu and Okinawa

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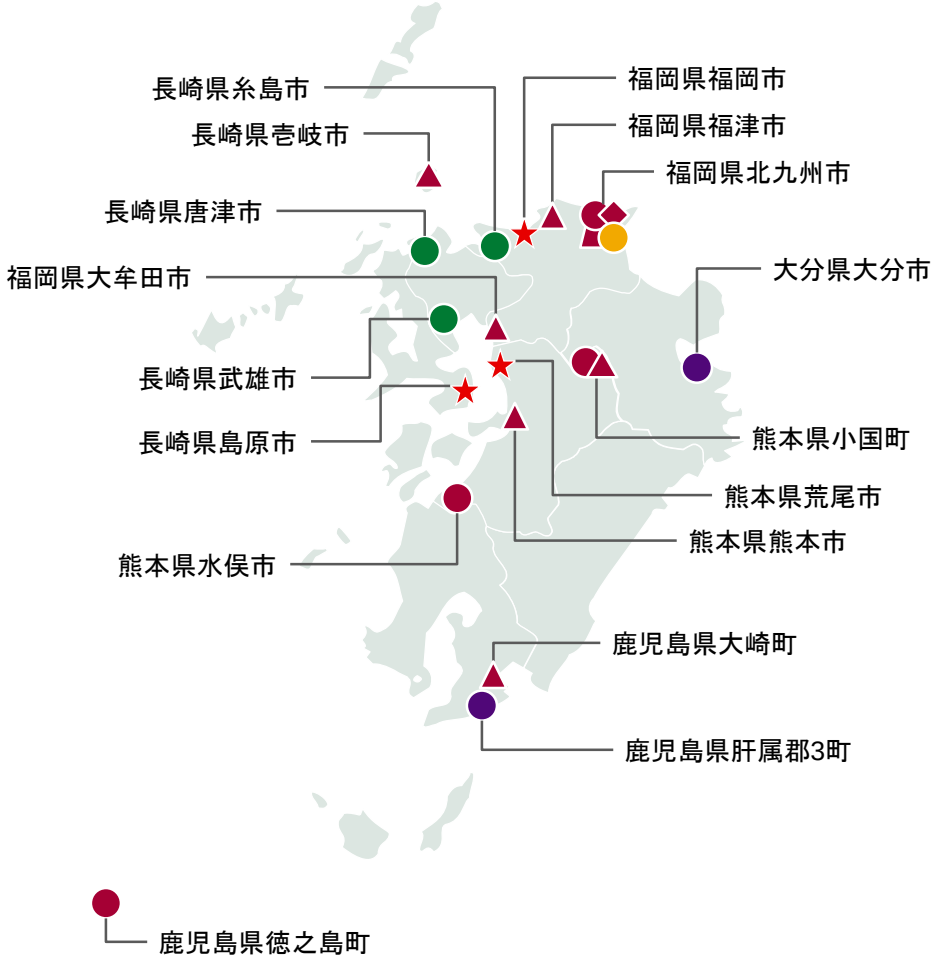

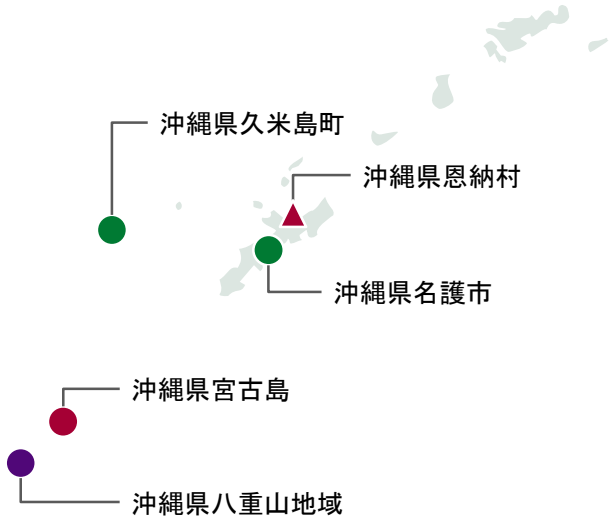

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What “Super City” Initiative?

https://nettv.gov-online.go.jp/eng/prg/prg6204.html?nt=1

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From Single to Multiple Ditigal Solutions

- Smart Healthcare (e.g., Remote Healthcare)
- Smart Logistics (e.g., Automated Delivery, Drone)
- Smart Education (e.g., Remote Education)
- Smart Payment (e.g., Cashless Payment)
- Smart Mobility (e.g., Automated Driving)
- Digital Government (e.g., “Once-Only Data Registration)
- Smart Energy Management
- Smart Waste Management
- Smart Crisis Management
- Smart Crime Prevention
- Etc., …

More than 5 digital solutions must be implemented concurrently to be qualified as “Super City.

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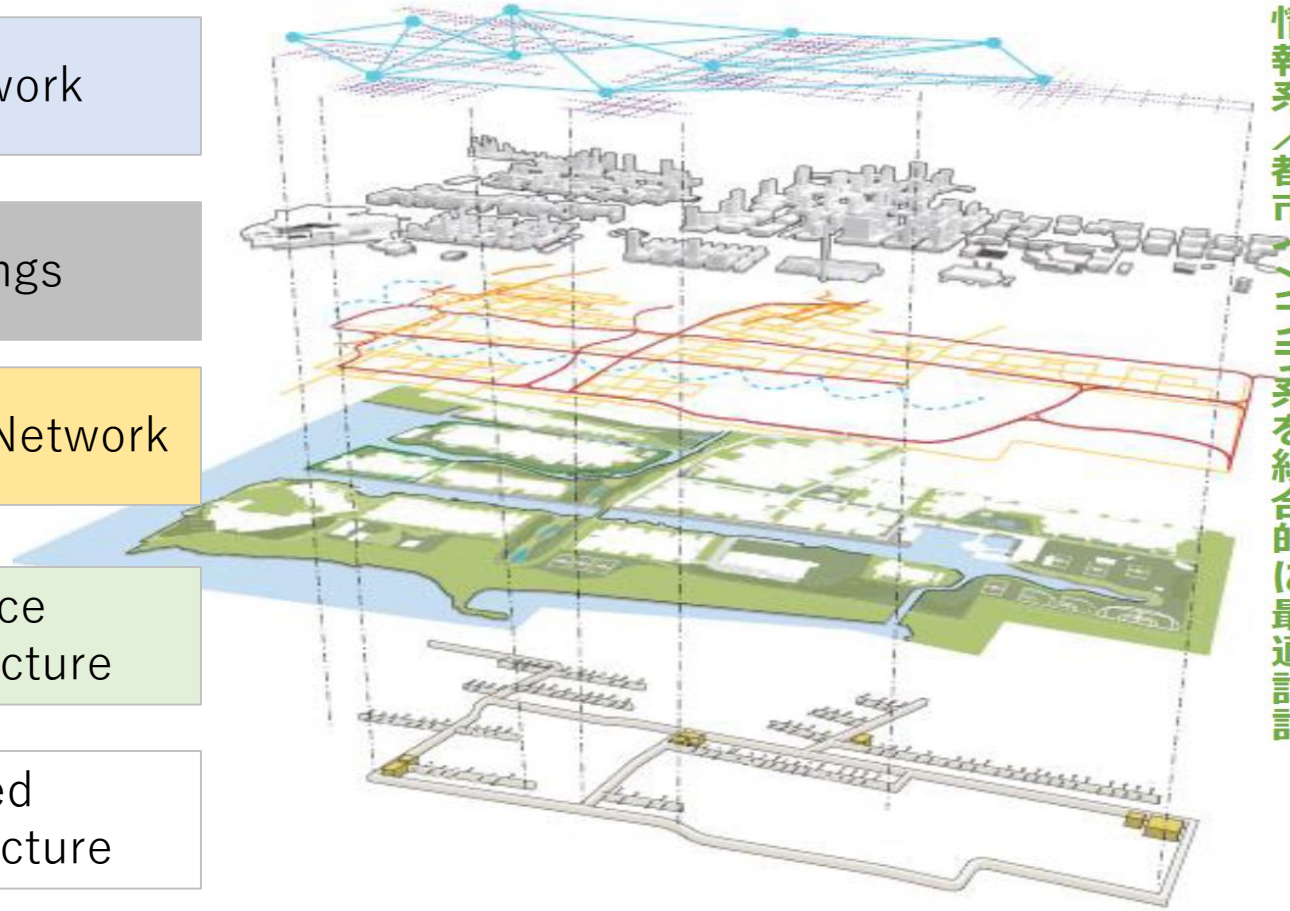
Transition to More Integrative Approach

Digital
(情報系)

Physical
(インフラ系)

- Services
- IT Network
- Buildings
- Transport Network
- Surface Infrastructure
- Buried Infrastructure

Digital Services (Business Apps)



情報系／都市インフラ系を統合的に最適設計

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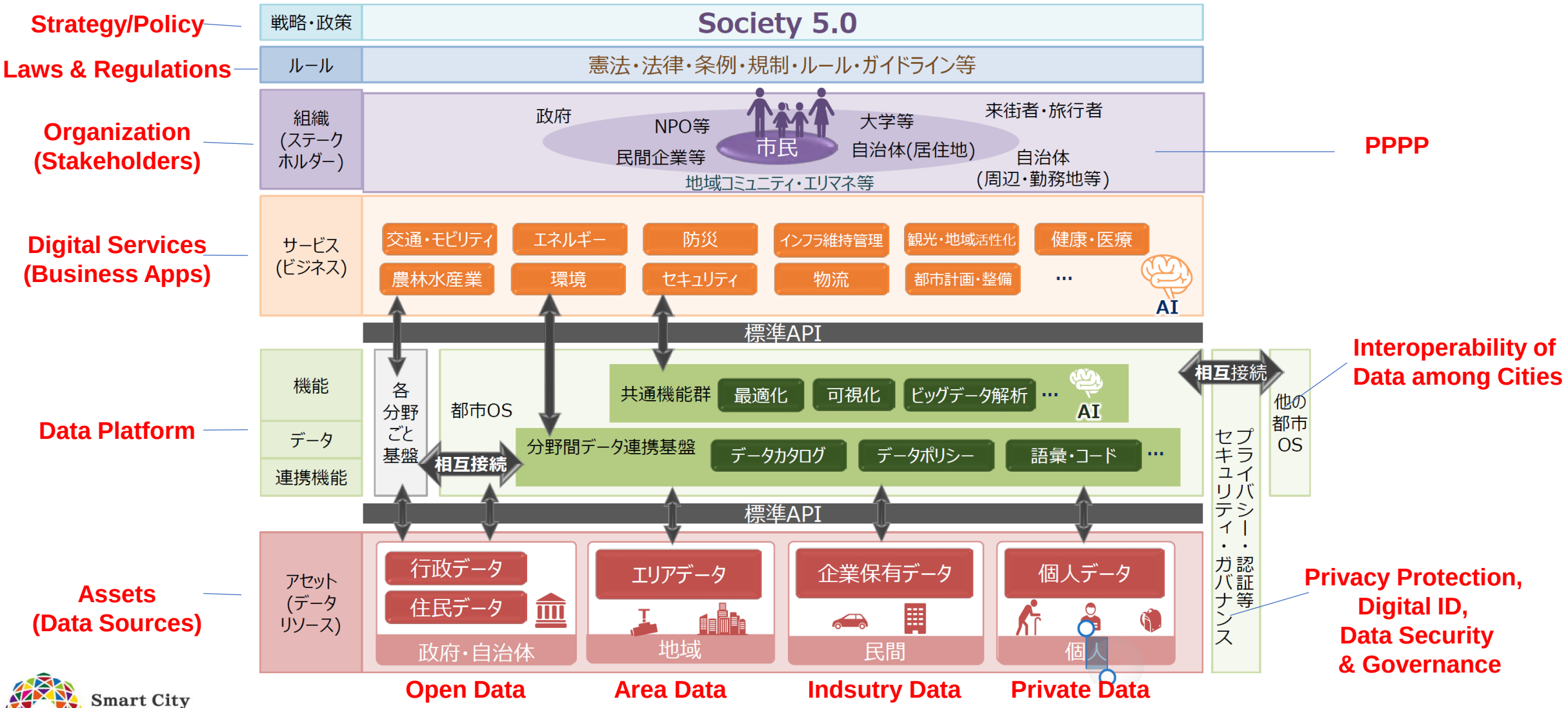
https://www.kantei.go.jp/jp/singi/tiiki/kokusentoc/supercity/dai3/shiryou2.pdf (English translation by SCI-J)

Holistic Architectural Design Required



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（出典：「府省連携によるスマートシティの推進」 平成31年4月　内閣府省察統括官（科学技術・イノベーション担当）English Translation by SCI-J
https://www5.cao.go.jp/keizai-shimon/kaigi/special/reform/wg6/190418/pdf/shiryou3-2.pdf

Public Private People Partnership Required

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Enhanced National Strategic Special Zone

- Designed to fast-track regulatory changes necessary for implementing super cities.

- On the condition that citizens consensus exists regarding local policies for designing and implanting “super cities,” local authorities should be able to override national laws and regulations and introduce a locally designed laws and regulation for their own.

Super City in Summary

- Showcase “holistic future state” of cities in Japan in 2030
- Shift from silo-based approach to platform-based approach
- Use integrative reference architecture to efficiently enable data interoperability
- PPPP as fundamental means to achieve citizen needs-based governance
- Enhance national strategic special zone to facilitate implementation of new technologies
- At least initially, only about 5 cities will be named as “super cities”
- Accept both brown- and green-field approaches from all over Japan
- **Legislation expected in effect spring next year** (cabinet decision completed)

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Thank you - Any Questions?

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- Smart City Institute of Japan (SCI-J)

  https://www.sci-japan.or.jp/English/index/html

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