


The background is a night-time aerial view of a city, likely Tokyo, with numerous illuminated buildings and streets. Overlaid on this is a network of white lines connecting various hexagonal nodes. Some nodes contain icons: a cloud, a car, a heart with a pulse line, a laptop, a building, and a hand cursor. The text is centered within a dark blue rectangular box.

# Smart Tokyo Implementation Strategy

- For realization of a Tokyo Version of Society 5.0

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**MIYASAKA Manabu**  
**Vice Governor of Tokyo**  
**February 14, 2020**



A large, dense crowd of people is gathered at night, filling the frame. The scene is illuminated by artificial lights, likely from a stage or event. In the background, some structures and bright lights are visible. The year "2005" is overlaid in large white text in the upper center of the image.

2005

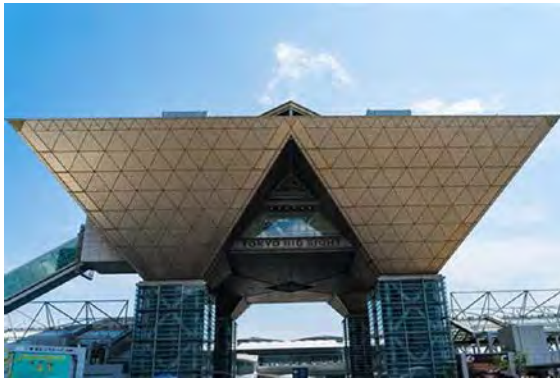
2013







# Connecting Tokyo



**Buildings**  
(Tokyo Big Sight)



**Buildings**  
(Tokyo International Forum)



**Bus Stops**



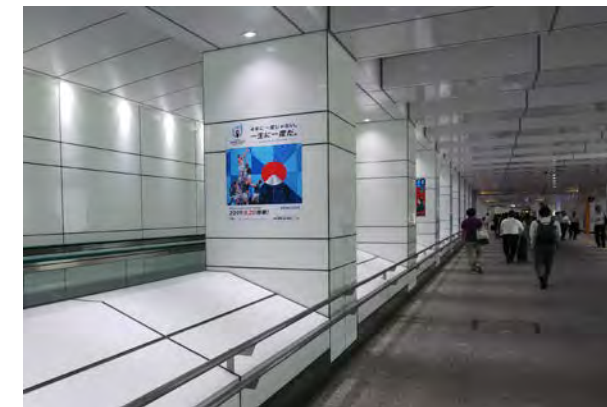
**Buses**



**Bridges**



**Parks**



**Underground arcades**



**Roads**



**Traffic lights**



**Subway  
entrances/exits**



**Subways**

**Realize a **Smart Tokyo** and  
raise the QoL of Tokyo residents**



# Overall image of Smart Tokyo

Enhancing the QoL of Tokyo residents through digital services  
Realization of the 3 cities

Safe City

Diverse City

Smart City

Disaster resilience



- Information collection by cameras and drones

Urban development



- 3D digital map

Mobility



- Autonomous driving
- MaaS

Energy



- Local production for local consumption
- Demand control

Wellness



- Monitoring robot
- Remote health care

Education



- Individualized education
- Distance learning

Work styles



- Telecommuting
- AI for simple work tasks

Industry



- IoT, 3D printers
- Automation of agriculture, forestry and fisheries industries

Output



TOKYO Data Highway



Output



Open big data platform and use of AI

Data



Data



Data

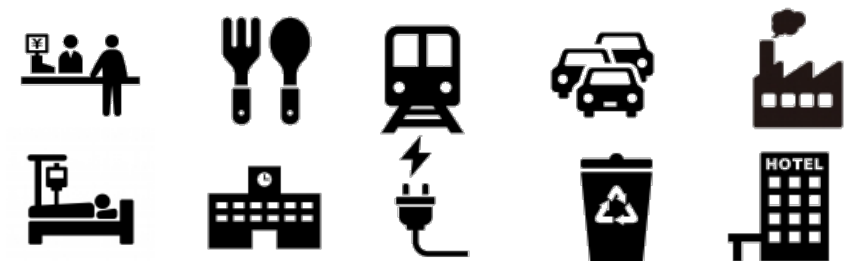
Nature and Weather



Infrastructure



Life and Economy



Digital transformation of the TMG

Digital shift

Open government

ICT professionals

# Writing a bright scenario for the future through the power of digital technology

○ We are facing four historic turning points





# **Roll out measures under three strategic pillars to achieve Smart Tokyo**

**1**

**Tokyo connected by a data highway  
(TOKYO Data Highway)**

**2**

**Digital shift in public facilities and resident services  
(Digital transformation of the city)**

**3**

**Digital shift in the Tokyo Metropolitan Government  
(Digital transformation of the TMG)**

# **1. Achieve a Tokyo in which everyone is connected anytime, anywhere through the Data Highway**

- **Anytime**
- **Everyone**
- **Anywhere**
- **Everything**
- **In any situation**



## 2. Enhance the quality of government services by creating schemes for data sharing and use

**Education**

× **Digital**

▶ **Smart School**

**Health care**

× **Digital**

▶ **Smart Health Care**

**Industry**

× **Digital**

▶ **Smart Factory**

**Transit**

× **Digital**

▶ **Smart Mobility  
(MaaS)**

**Community**

× **Digital**

▶ **Smart Area**

### **3. Strongly advance the digital transformation of the Tokyo Metropolitan Government**

- **Digitize administrative procedures for quicker and more convenient services**
- **Incorporate the latest working tools**



# For Tokyo and Japan to win in the global competition

- Tokyo and Japan lag behind the world in overall digitization.
- For Tokyo to win in the global competition between cities, it must accelerate its digital transformation at **a much faster speed than other cities.**

	Digitization of the City	Digital/Open Government	Mobility	Cashless
	<b>SMART CITY GOVERNMENT RANKINGS</b> <small>Eden Strategy Institute. ONG&amp;ONG</small>	<b>E-Government Development Index 2018</b> <small>UN</small>	<b>Urban Mobility Index 3.0</b> <small>Arthur D. Little</small>	<b>Cashless payment percentage</b> <small>From METI Cashless Vision                      ※Survey compares only 11 countries (2015)</small>
1st	London	Denmark	Singapore	Korea 89.1%
2nd	Singapore	Australia	Stockholm	China 60.0%
3rd	Seoul	Korea	Amsterdam	(reference values using only Alipay, WeChatPay)
4th	New York	U.K.	Copenhagen	Canada 55.4%
5th	Helsinki	Sweden	Hong Kong	U.K. 54.9%
6th	Montreal	Finland	Vienna	Australia 51.0%
7th	Boston	Singapore	London	Sweden 48.6%
8th	Melbourne	New Zealand	Paris	U.S. 45.0%
9th	Barcelona	France	Zurich	France 39.1%
10th	Shanghai	<b>Japan</b>	Helsinki	India 38.4%
11th	San Francisco	U.S.	<b>Tokyo</b>	<b>Japan 18.4%</b>
⋮	<b>Tokyo (28<sup>th</sup>)</b>	⋮	⋮	Germany 14.9%

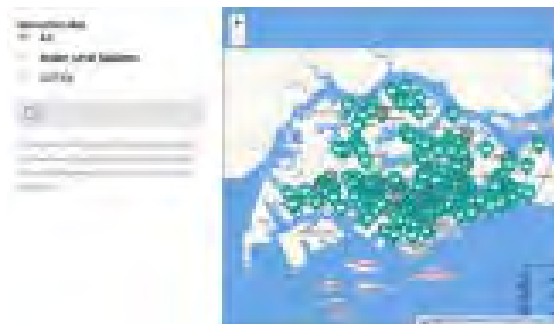
# Utilization of data in the world's cities

## Xiong'an New Area 【China】



2017-

## Singapore



2014-

## Barcelona 【Spain】



2000-



# Implementation of measures in FY2020 to realize Smart Tokyo

# **FY2020 is the inaugural year of Smart Tokyo**

## **1 Connect Tokyo through the Data Highway (TDH)**

**Have a 5G, Wi-Fi environment  
ready at the time of the  
2020 Games**

**Aggressively open up assets  
possessed by the Tokyo government**

## **2 Digital shift of public facilities and Tokyo resident services (DX of the city)**

**Advance the digital shift of all 3 cities (Safe, Diverse, Smart) of Tokyo**

**Advance digital twins to support the realization of the 3 cities**

## **3 Digital shift of the Tokyo Metropolitan Government (DX of the TMG) )**

**Digital shift in work styles**

**Digital shift in government services**

# Rolling out multi-faceted measures throughout the Tokyo government

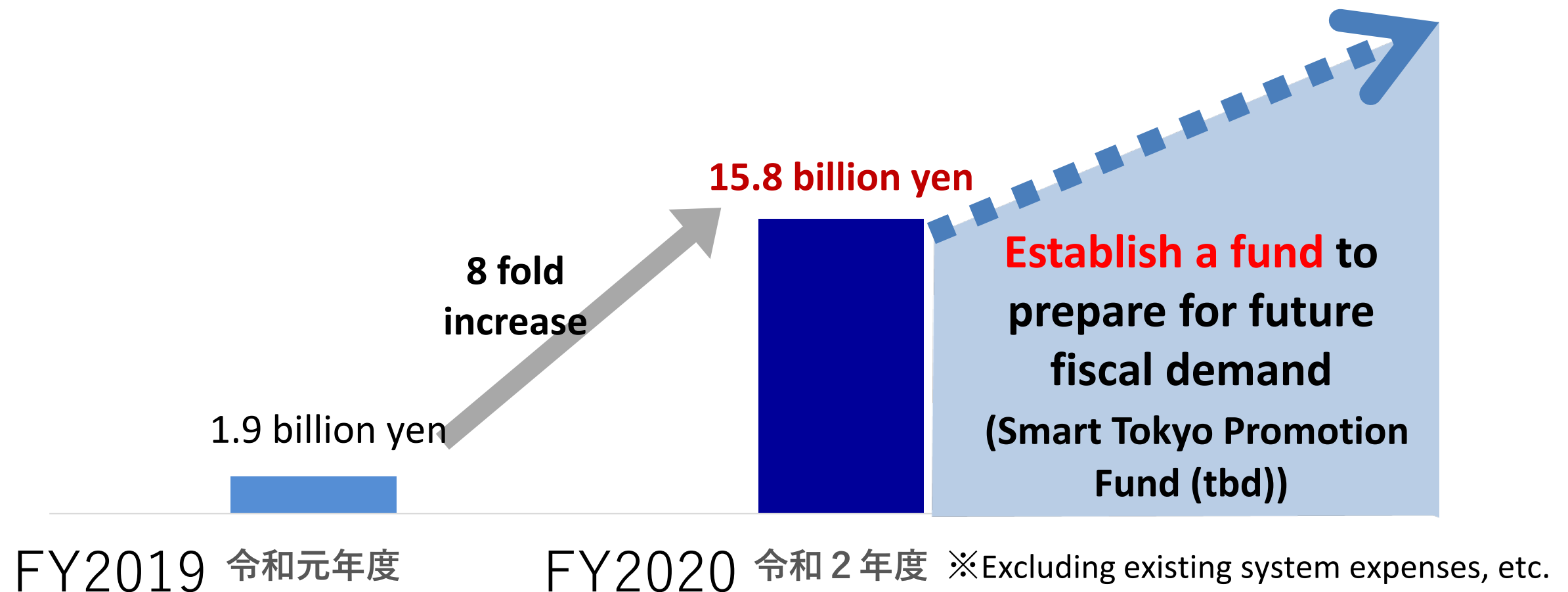
<b>Connect Tokyo through the Data Highway</b>	<ul style="list-style-type: none"> <li>▸ Provide Wi-Fi for spectators at the competition venues of the Tokyo 2020 Games, etc.</li> <li>▸ Hold meetings, etc., to build the TOKYO Data Highway</li> </ul>
<b>Digital shift of public facilities and Tokyo resident services</b>	<ul style="list-style-type: none"> <li>▸ Examine use of 5G and ICT in the field of disaster resilience</li> <li>▸ Strengthen ability to convey flood disaster information</li> <li>▸ Research technologies for investigating and making repairs at sites presenting difficulties for work, such as main lines where water levels and flow speeds are high</li> <li>▸ Trial implementation of system to share sewerage facility on-site information in real time through tablets and other devices</li> <li>▸ Implementation of an AI drive recorder monitoring program</li> <li>▸ Conduct studies concerning the efficacy, etc., of utilizing 5G communications in rescue activities</li> <li>▸ Demonstration of remote health care on the Tokyo islands</li> <li>▸ TOKYO Smart School Project</li> <li>▸ Operation of a portal site, etc., for information on accommodations and other facilities</li> <li>▸ Areas leading implementation of Smart Tokyo               <ul style="list-style-type: none"> <li>• Nishi-Shinjuku district (Program to support startups that can solve administrative issues)</li> <li>• Minami-Osawa district (Conduct cutting-edge research and social implementation using 5G, etc.)</li> <li>• Bay Area (Studies for Digital Innovation City)</li> <li>• City center (First to realize Society 5.0)</li> <li>• Tokyo islands (Project to use ICT to solve challenges)</li> </ul> </li> <li>▸ Examination and study of use of next-generation communications for summer heat measures</li> <li>▸ Next-generation air environment monitoring project</li> </ul>



<b>Digital shift of public facilities and Tokyo resident services</b>	<ul style="list-style-type: none"> <li>▶ Model project for a smart factory through 5G</li> <li>▶ Project to spread and promote SME use of 5G, IoT and robots</li> <li>▶ Study on the feasibility of introducing the latest technologies using a 5G environment at the Central Wholesale Market</li> <li>▶ Experience conducting a virtual orchestra</li> <li>▶ Promotion of universal tourism in nature parks</li> <li>▶ Use of ICT in water supply business (study of ICT use in next-generation communications, such as 5G, and for big data, etc.)</li> <li>▶ Tokyo model support project for private vacant houses</li> <li>▶ Study on 5G use in Toei subways and buses</li> <li>▶ Showcasing 5G on the occasion of the Tokyo 2020 Games</li> <li>▶ Showcasing the latest technologies for the Tokyo 2020 Games</li> <li>▶ Early implementation of efforts to benefit society using data (Model project to advance cashless transactions from the perspective of promoting the SDGs; project to support social implementation of MaaS)</li> <li>▶ Raising and securing ICT personnel, etc.</li> <li>▶ Promotion of initiatives for social implementation of autonomous driving</li> <li>▶ Promotion of digital twins <ul style="list-style-type: none"> <li>• Studies for 3D digital mapping of the city</li> <li>• 3D visualization demonstration project</li> <li>• Building a public-private data platform</li> </ul> </li> </ul>
<b>TMG digital shift</b>	<ul style="list-style-type: none"> <li>▶ Office reform (improvement of the staff's ICT environment through Web conferences, assignment of smartphones, etc.)</li> <li>▶ Examination of use of ICT to improve child welfare center services</li> <li>▶ Introduction of AI chat bot services on the Bureau of Taxation website</li> <li>▶ Implementation of new public relations and public hearing programs for development of the 5G environment</li> </ul>

# Initiate budget investment for creation of innovation and cultivate a Tokyo government-wide movement

- The FY2020 budget is the **first step** to realizing Smart Tokyo



# Overview of Key Programs

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1

# Become a Tokyo where everyone can be connected anywhere through the Data Highway

**Provide all visitors to the 2020 Games with a stress-free “connected Tokyo” environment**

- Games venues, etc.
- The “last mile,” shuttle bus stops, etc.
- Live sites

**Make Tokyo’s assets readily available for a connected Tokyo**

**Existing 4G base  
stations**

**67**

Possibilities  
increase by  
230 fold

**Released assets**

**15,033**

\*as of Jan. 24, 2020

2

## Build schemes for data sharing and utilization to enhance the quality of government services

### Safe City

**Strengthen the ability to convey flood disaster information**



**Use of 5G/ICT for disaster management**



## Diverse City

### TOKYO Smart School Project

- Build a Wi-Fi environment in metropolitan schools
- Conduct empirical research on the use of advanced technologies

Learning reform: More proactive and  
dialogue-based learning

Teaching reform: Improved classwork  
through ICT

Work style reform: Efficiency in school  
duties





# Smart City

## Preparing pilot areas for implementation of Smart Tokyo

Nishi-Shinjuku



Minami-Osawa  
(Tokyo Metropolitan University)



City Center



Bay Area



Tokyo Islands



# Smart City

## Pilot areas for Smart Tokyo (Nishi-Shinjuku)

### Building the infrastructure

- Establish antennas
- Establish smart poles

### Key initiatives

- Establish hubs gathering startups
- Pitch events for startups

### Provide opportunities to experience 5G to raise awareness and popularity

- Plan events where the Tokyo residents can experience 5G to raise awareness and popularity
- Event to experience 5G in everyday life
  - Event to experience 5G entertainment



Smart pole  
Source: Link NYC



Smart office



Projection mapping



## Smart City

**Implement projects to promote the spread the use of 5G, IoT, and robots by SMEs**



**Conduct studies to expand use of next generation mobility**





# **Strongly advance the digital transformation of the Tokyo Metropolitan Government**

## **Digital shift in work styles**

### **Improve the system environment to support work style reform**

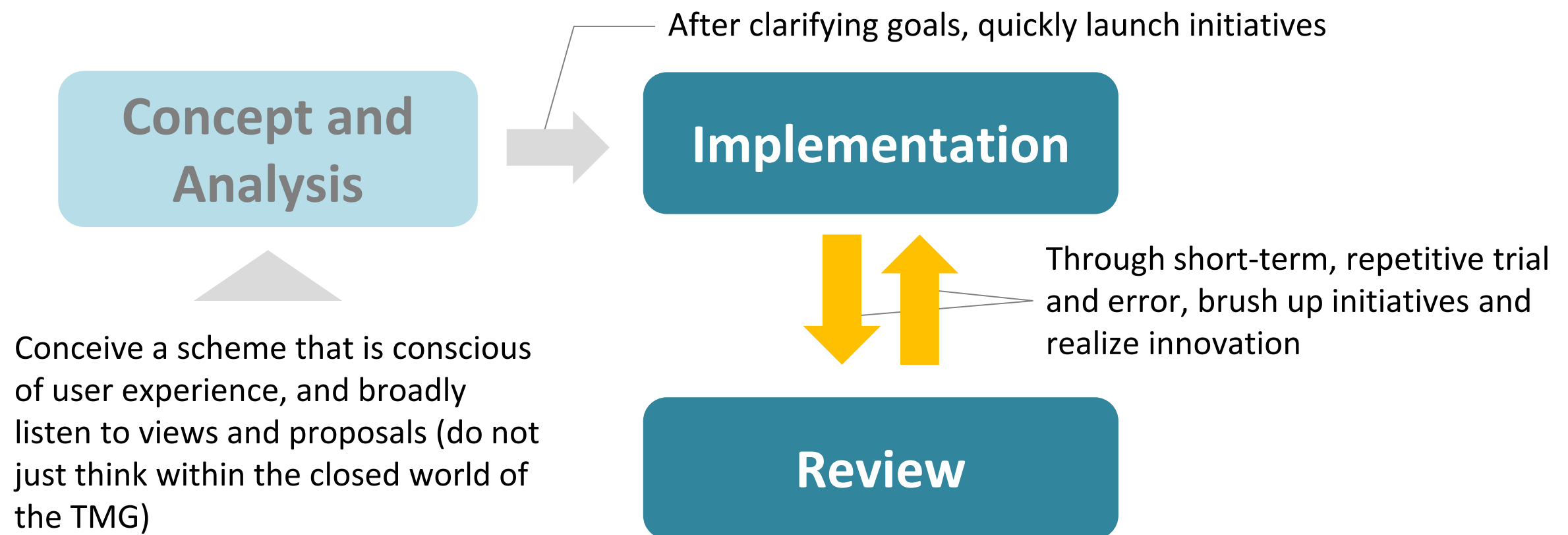
- **Strengthening the functions of the TMG system infrastructure network**
- **Improve the ICT environment for the staff through introduction of Web conferences, assignment of smartphones, etc.**

## **Digital shift in government services**

### **Implementation of new public relations and public hearing programs**

# Key Points for the Steady Promotion of Smart Tokyo Implementation Strategy

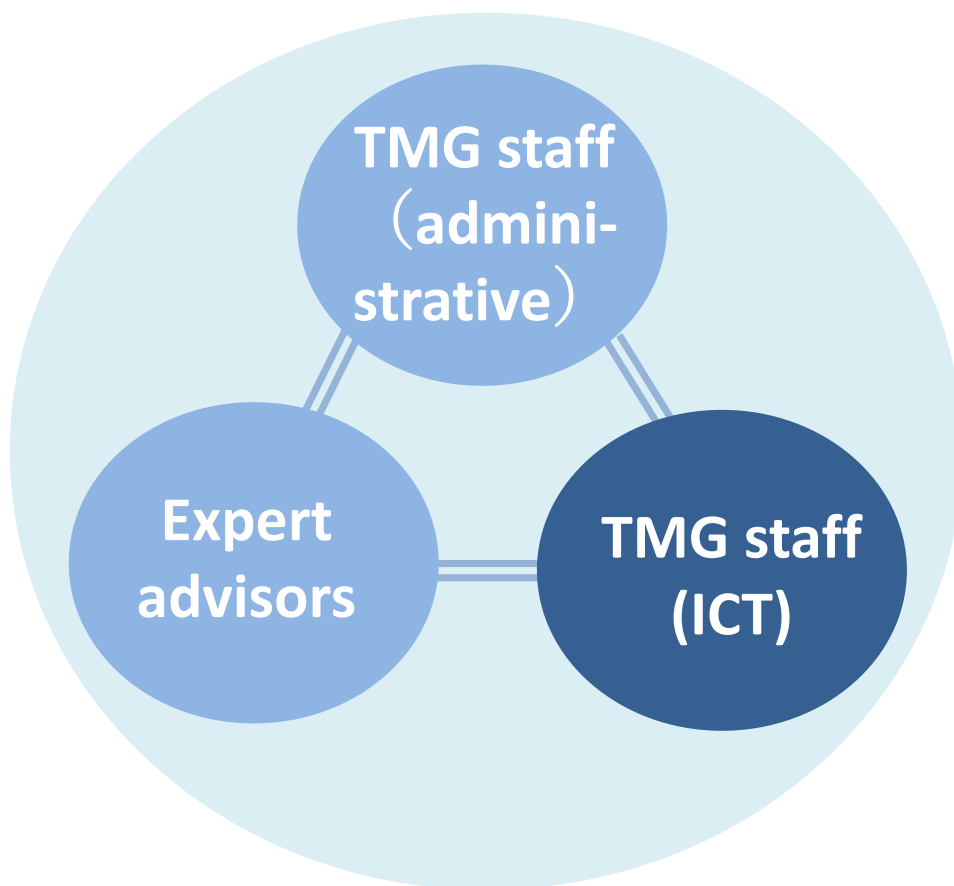
**Team up with the private sector and, while maintaining a long-term perspective, roll out strategy that focuses on global standards**





# An urgent challenge is securing ICT personnel

## ■ Organization to promote Smart Tokyo



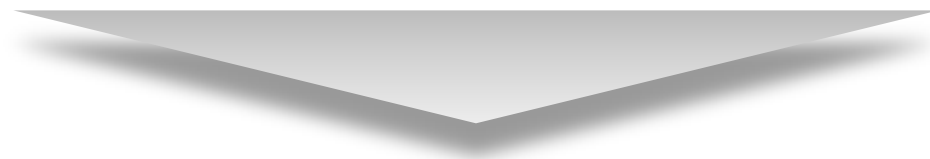
## ■ No. of ICT personnel in the world's megacities

City	Total no. of employees (approx.)	No. of personnel in the IT field	IT personnel/ total number of employees
<b>Tokyo</b>	<b>32,000</b>	<b>100</b>	<b>0.3%</b>
New York City	125,200	1,500	1.2%
Los Angeles	32,200	400	1.2%
Paris	52,600	500	1.0%
<b>Singapore</b>	<b>37,300</b>	<b>2,600</b>	<b>7.0%</b>

**Strengthen the organization even more in order to catch up with and overtake the world**

# **Urgent need to build systems focusing on global standards**

- **Everything will be connected, and autonomous driving, use of drones, etc., will become subject to examination as realistic services for residents.**
- **However, there are still various systems that cannot accommodate advanced technologies.**



**There is the urgent need to build systems that also focus on how other countries of the world are addressing 5G utilization**

# Through initiatives in pilot areas and collaboration and cooperation with the municipalities, hop, step, and jump to achieve the co-existence and co-prosperity of all of Japan

- Build models in Smart Tokyo pilot areas
- Support municipalities in Tokyo in their transformation to smart cities
- Strengthen partnership between urbanized and rural areas, and share best practices and expertise.

Through the power of digitization, revitalize areas and resolve challenges to achieve co-existence and co-prosperity of all of Japan and the sustainable development of the country.

## Hop

Initiatives in Smart Tokyo pilot areas (Nishi-Shinjuku, Minami Osawa, etc.)

Collaboration and cooperation between the Tokyo metropolitan government and Tokyo municipalities

## Step

Roll out initiatives throughout Tokyo

## Jump

Co-existence and co-prosperity of all of Japan

**For more details on this initiative,  
please visit the Office for Strategic Policy and ICT  
Promotion website (currently in Japanese only)**

**<https://www.senryaku.metro.tokyo.lg.jp/>**