3rd ASEAN–Japan Smart City Network High Level Meeting

Keynote Speech

Smart Cities in Japan
~ Achievements and Challenges ~

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Self Introduction

- ISHIDA Haruo Dr. of Engineering
    - Prof. Emeritus, the University of Tsukuba
    - Chair of the Board, Japan Research Institute of Roads and Streets

- Profile
    - 1951   Born in Osaka
    - 1974   Graduated at the Dept. of Civil Engineering, Tokyo Univ.
    - 1978   Assistant Prof. at Dept. of Civil Engineering, Tokyo Institute of Technology
    - 1982   Prof. at Institute of Social Systems and Management, the University of Tsukuba

- Public services
    - Cabinet Office
        - Member of Committee on Green Innovation Strategy Development and Driving
        - Chair of Committee on Smart City Guide Book
    - Ministry of Land, Infrastructure, Transport and Tourism
        - Chair of Advisory committee on SMART JAMP
        - Chair of Committee on Road Policy , Infrastructure Policy Council
    - Ministry of Economy, Industry and Trade
        - Member of Council on Industry Policy
        - Member of Committee on Autonomous Driving Business

Contents

- My Questions about Smart City
    - What is Smart City?
    - Real and Cyber

- Smart City Achievements in Japan

- Japanese Challenges and Collaboration with ASEAN Cities

1ˢᵗ Question: What is Smart City ?

- We have a formal definition of SMART CITY
  - A comprehensive showcase of Society 5.0 where we try to urban/regional problems and create new values through advanced ICT and management
- There are already so many smart cities in the world,
  - Aiming at different values/objectives
  - Having various areas of concerns; mobility, environment/CN, living, healthcare, disaster prevention/resilience , tourism, city management/administration, ….
  - Using different data, applications, data platforms,….
- My answer;   "No SINGLE/SIMPLE Definition is possible."

- Easier answer would be Technical/Methodological Definition
  - Applying various ICT to make cities and communities better
  - Applying various ICT to improve daily lives and working conditions
  - Applying various ICT to improve public administration
  - Applying various ICT to encourage innovation
  - Applying various ICT to ……..

Possible Scene of Smart City Attempt

- A mayor wants to make his/her city better through SAMRT CITY Concept and request staff to develop plans.

- The easiest way for staff is to follow the technical/ methodological way : Smart City Flavor and to employ IT consultant.

- But, this is definitely not right ways.

- Smart City should aim at solving urban/regional problems, being human-oriented, being demand/needs oriented and so on.

2nd Question The Relationship between REAL and CYBER

- Modern economics has a problem of same structure; MORALITY and ECONOMY
  - Adam Smith 1723.6.5 – 1790.7.17
    An Inquiry into the Nature and Causes of the the Wealth of Nations
    Theory of Moral Sentiments
  - Max Weber 1864.4.21—1920.6.14
    Die protestantische Ethik und der 'Geist' des Kapitalismus
  - Ninomiya Sontoku   1787.9.4—1856.11.17
    Morality without economy is talking in sleep
    Economy without morality is crime

Smart City without ICT / Data is talking in sleep
Smart City without REALITY is・・・・?
　might be super effective,
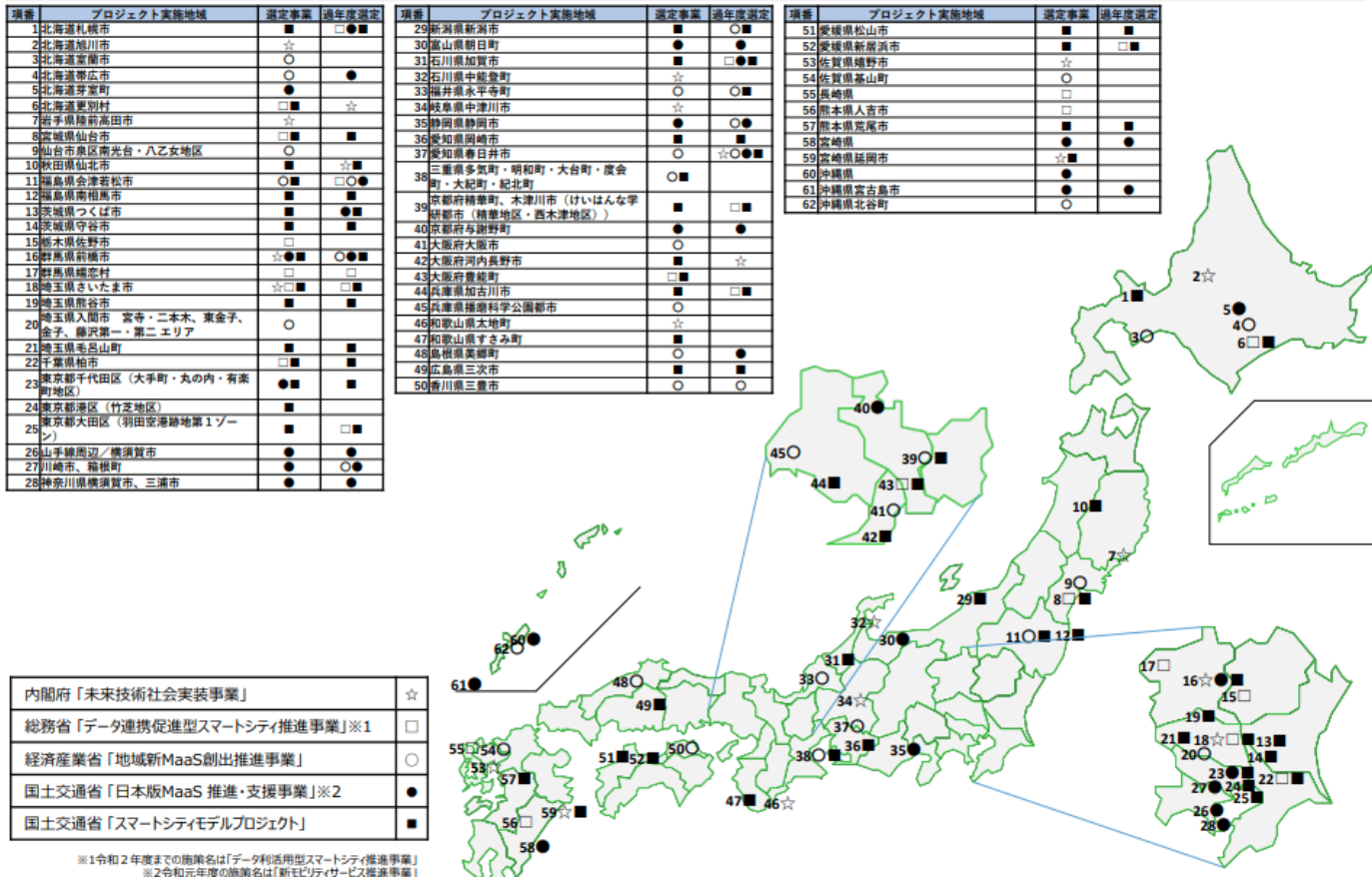　but might be unhappy, uncomfortable, unhealthy ,unequal,

Ninomiya Sontoku's statue
of his young age
In an elementary school garden
Phot by TSUYOSHI/Y

Achievements of Smart City Projects in Japan

- Smart City Projects in Japan

- Challenging and Distinctive Trials
  - Aizu Wakamatsu   Comprehensive Smart City
  - Maebashi   EBPM and Fast PDCA Cycle
  - Kakogawa   Protecting Citizens against Disasters and Crimes

- Two Guidebooks based on Shared Experiences and Recognitions
  - Smart City Architecture Reference Book
  - Smart City Guidebook

- Short Summary

Smart City Projects in 2021

FACTS

Assistance are given to 62 projects in 42 cities

Project Category

METI: MaaS, MLIT: MaaS, MLIT: Smart City,

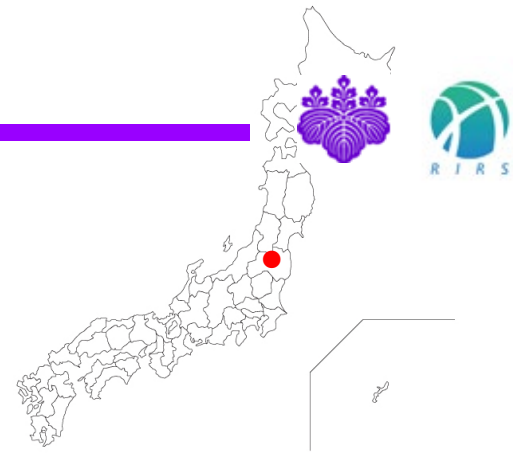MCI: Smart City, CO: Future Technology

Achievements

Good cooperation/collaboration between
Local gov. and National gov.

Local Needs, Problems based

National Financial, Technical and Human
resource assistance

Platform for sharing needs, problems and results

300+ consortiums to discuss, plan and implement
Smart City Projects across Japan
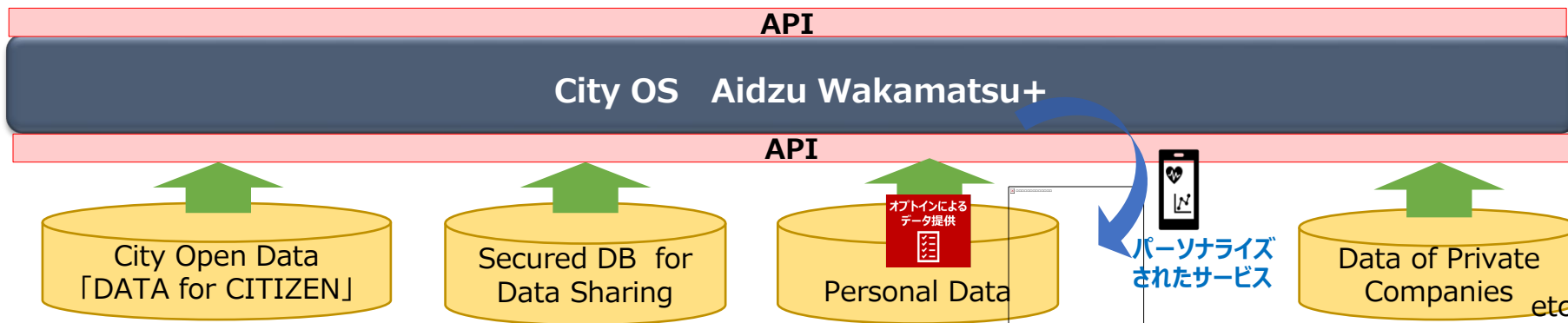
Comprehensive Smart City   Aidzu Wakamatsu

Wide varieties of Services
Collaboration among various Stakeholders
City OS

Pop. 121,000
Area 383km2

| Mobility | Settle bills | Education | Healthcare | Energy | Agriculture Food | Tourism | Industry | Resilience | Administration | Infrastructure |

Collaboration with AiCT and Local companies

Citizen Involvement

Collaboration with Aidzu Univ.

API

City OS   Aidzu Wakamatsu+

API

City Open Data 「DATA for CITIZEN」

Secured DB for Data Sharing

オプトインによる データ提供

Personal Data

パーソナライズ されたサービス

Data of Private Companies
etc

Source
Aidzu Wakamatsu City
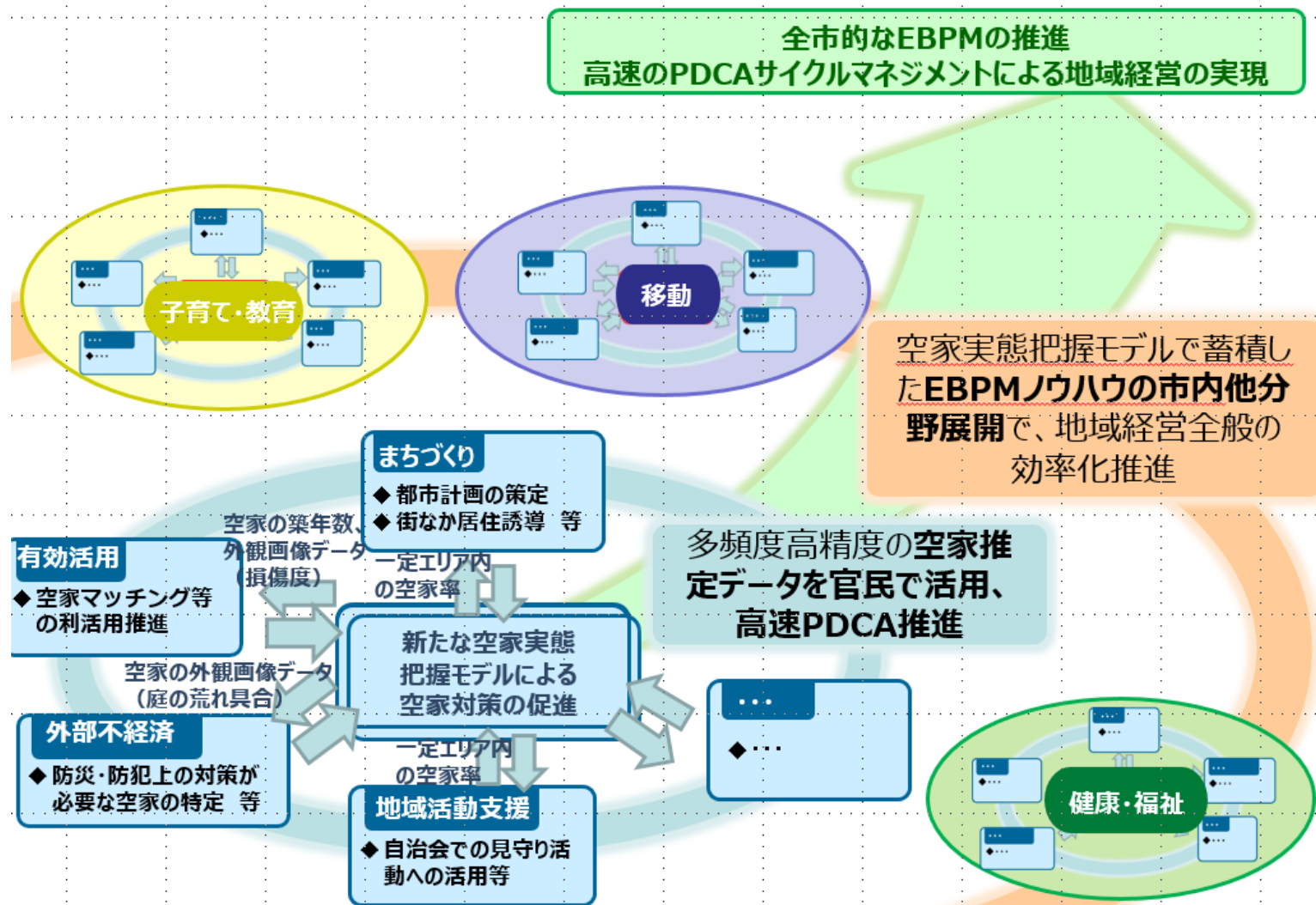Modified   by   Ishida

EBPM City Management　Maebashi

Evidence-based Policy Making and Fast PDCA Cycle Management
Urban Regeneration, Healthcare, Community activities,…
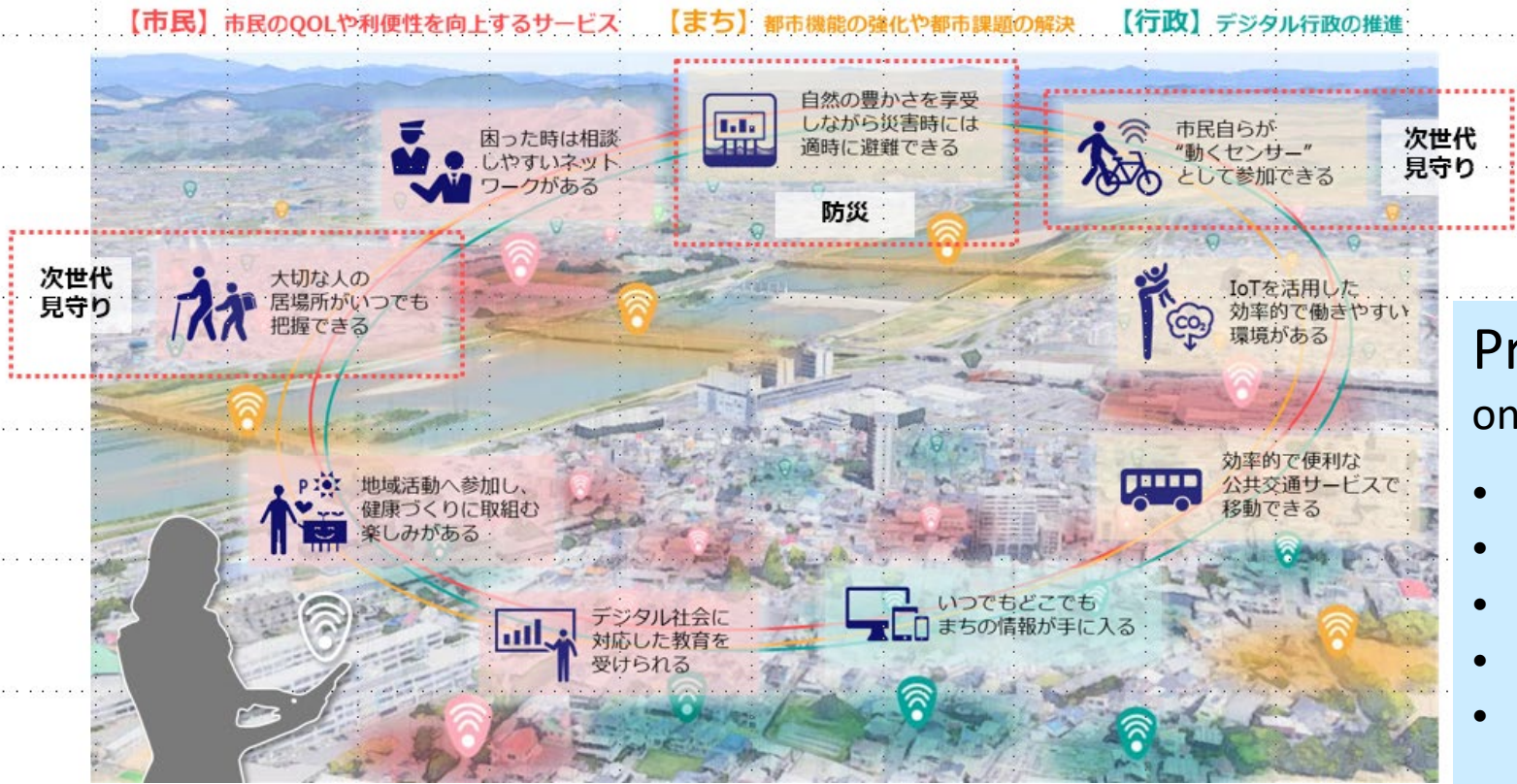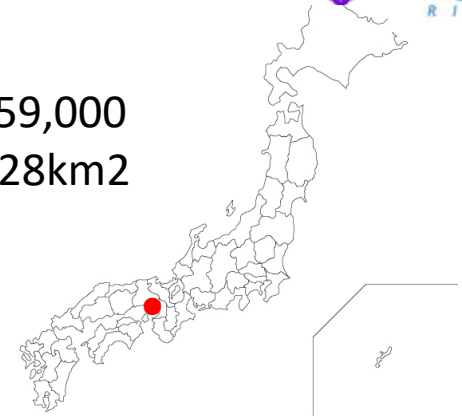
Pop. 341,000
Area 312km2

Source Maebashi city

Protecting Citizens against Disasters, Accidents and Crimes Kakogawa

Disaster prevention/ Resilience
Warm watch over elderly peoples and children

Pop. 259,000
Area 128km2

Private observation
on achievements in 3 cities

- Ambitious visions
- Needs/Problems driven
- Active/close co- working in teams
- Rich technologies and products are available
- Good Leader/ Architect

- In many Smart Cities various, various things are tried, achieved and failed
- These experiences and lessons are shared through the Smart City Pratform

Smart City Guidebook

Cabinet office, MIC, METI, MLIT,
Smart City Public-Private Partnership Platform

2021.04 ver.1.00

スマートシティガイドブック

内閣府・総務省・経済産業省・国土交通省
スマートシティ官民連携プラットフォーム事務局

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Purposes

- To extend the significances and needs of SMART CITY
- To encourage and support local public organizations, consortiums by providing them basic ideas, theories, methods and good/advanced practices

SMART CITY is not only for Special Areas such as center of metropolis, but for any places including rural/local areas

- Japanese Version Only . Not yet translated into English

Philosophy of SMART CITY

- Three Basic Concepts
  - Starting from Citizen and User Demands/Needs/Wants
  - Focusing on Issues and Visions
  - Cooperating/Collaborating across Sectors and Neighbor Cities

- Five Basic Principles
  - Fairness and Inclusiveness
  - Privacy Protection
  - Sustainable Operation and Funding
  - Interoperability, Openness and Transparency
  - Security and Resiliency

These are TRUE.
But,　How to START, DRIVE, CONTINUE, IMPROVE SMART CITY?

Five Stages of SMART CITY

- Preliminary Action Stage   vision making, organization setup,

- Preparatory Stage   vision sharing, appointment of leading organization and architect,

- Planning Stage   consortium setup, road map,

- Implementing Stage   verification-demonstration

- Continuous Development   wider, deeper, more effective and everywhere, every things

- Good practices are given to first 4 stages to start actions easier

Five Important Points of SMART CITY Projects

- Building Functional and Flexible Driving Entities   Organizations
- Ensuring Financial Sustainability   Financial Power
- Proactive Citizen Involvement   Public Acceptance and Support
- Introduction of City OS   ICT
- Appropriate monitoring and evaluation of Project Evaluation and Fast PDCA

- Good practices are given in this guidebook
- And representative good practices will be presented today in the evening sessions

SMART LOCAL

- Japan is now facing difficult problems, esp. in rural areas
    - Decreasing and aging population
    - Deteriorating Public Transport
    - Deteriorating industries
    - Many communities/municipalities are said to disappear

- Local cities need SMART CITY much more than big cities. But, many of them think SMART CITY is special and only for big city
- Good but few practices are introduced

Necessity and Importance of CITY OS

Healthcare | Disaster Prevention | Mobility | Industry | Smart Agriculture | Energy | Smart house

Huge number of PF combinations

Payment | Mobile | Communication | AI | Cloud | PF of each company

Source: Prof. N Kosizuka Univ.of Tokyo

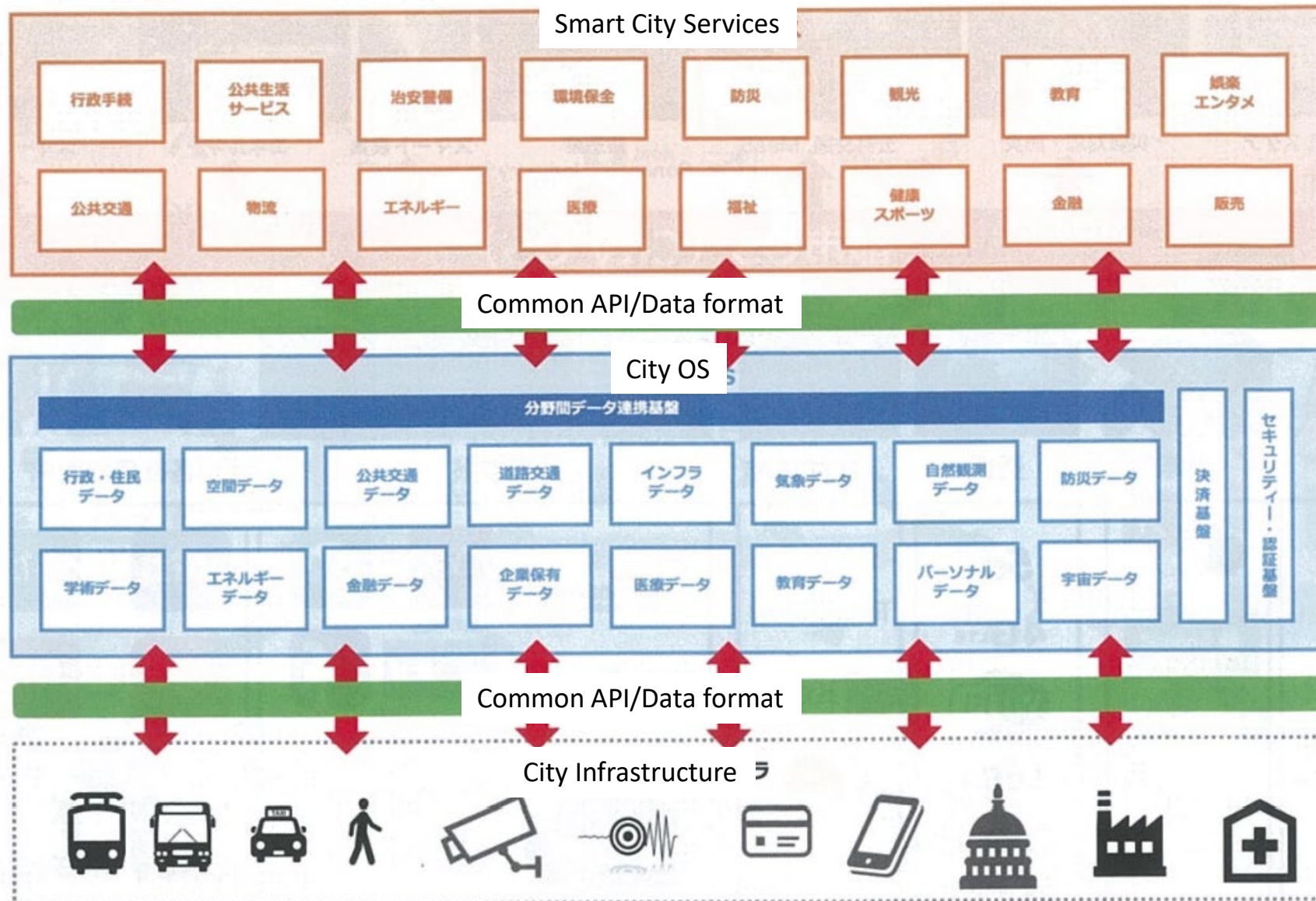Many Services in cities
Many PF and Apl. in cities

They are growing
 Rapidly
 Independently
 Day by Day

Harmonization among these
Services and PFs are almost
impossible without CITY OS

OS is originally for computers
OS manages all of computer system
CITY is like huge computer systems
in ICT era.
WE NEED CITY OS!!

Standard Configuration of CITY OS

Smart City Services

行政手続 | 公共生活サービス | 治安警備 | 環境保全 | 防災 | 観光 | 教育 | 娯楽エンタメ

公共交通 | 物流 | エネルギー | 医療 | 福祉 | 健康スポーツ | 金融 | 販売

Common API/Data format

City OS

分野間データ連携基盤

行政・住民データ | 空間データ | 公共交通データ | 道路交通データ | インフラデータ | 気象データ | 自然観測データ | 防災データ

学術データ | エネルギーデータ | 金融データ | 企業保有データ | 医療データ | 教育データ | パーソナルデータ | 宇宙データ

決済基盤 | セキュリティー・認証基盤

Common API/Data format

City Infrastructure

Wide and deep knowledge

Growing/Changing
Rapid correspondence to changes in services, Data PF, Apls, technologies

SMART CITY
Reference Architecture

Source: Prof. N Kosizuka Univ.of Tokyo

SAMRT CITY Reference Architecture Guide Book

Easy to read
Encouraging related/concerned persons to start
SMART CITY

Sorry, not yet translated

Short Summary

- Many SMART CITY Consortium are active and they are very important stocks
  - They provide us with valuable knowledge/experiences/lessons
- Many technologies such as ICT, OS design, Consensus building have evolved tremendously
- Collaboration among National gov., Local gov., Private firms etc. is so far good
  - Exciting wonderful reports are coming
  - Two guidebook are available (but only in Japanese)

- However, outcomes in real cities and regions are still limited
  - Further efforts to strengthen, enlarge and enrich SMART CITY are required
  - Improving / modifying Legal, Institutional, Business setup
  - Changing Mindset of related stakeholders
- International collaboration too

Challenges and Collaboration with ASEAN Cities

- Japanese cities, ASEAN cities and world cities have been trying to achieve many objectives; improvement of well-being, resilience, attractiveness, mobility services, city management, economic vitality, …

- SMART CITY can be quite powerful tool. We should collaborate further to produce, increase and share rich fruit of SAMRT CITY

Smart JAMP   Smart City supported by Japan-ASEAN Mutual Partnership

- Implementation of concrete smart city project formation
- Promotion of financial support for ASEAN smart city proposals
- Strengthening support for smart city in ASEAN countries
- Smooth information sharing and mutual cooperation through JASCA homepage

- Smart JAMP is very important for Japan, too.
  - To mobilize Japan
  - To widen, deepen and strengthen Mutual Partnership, Trust and Friendship
  - To synchronize development of Japan with ASEAN countries

We will go foreword STRONGLY and TOGETHER!!

Thank you for your attention

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