

Location Powers – Smart Cities

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Tokyo

Smart City Indicators and Quality of Life - ISO

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What are Smart Cities?

Smart Cities \neq

- Energy-efficient cities with advanced technologies like smart grid
- Connected cities with “Internet of Things” and smart meters

A “Smart City” is a “**process**” or a “**means**” to solve issues associated with the sustainable growth of the cities.

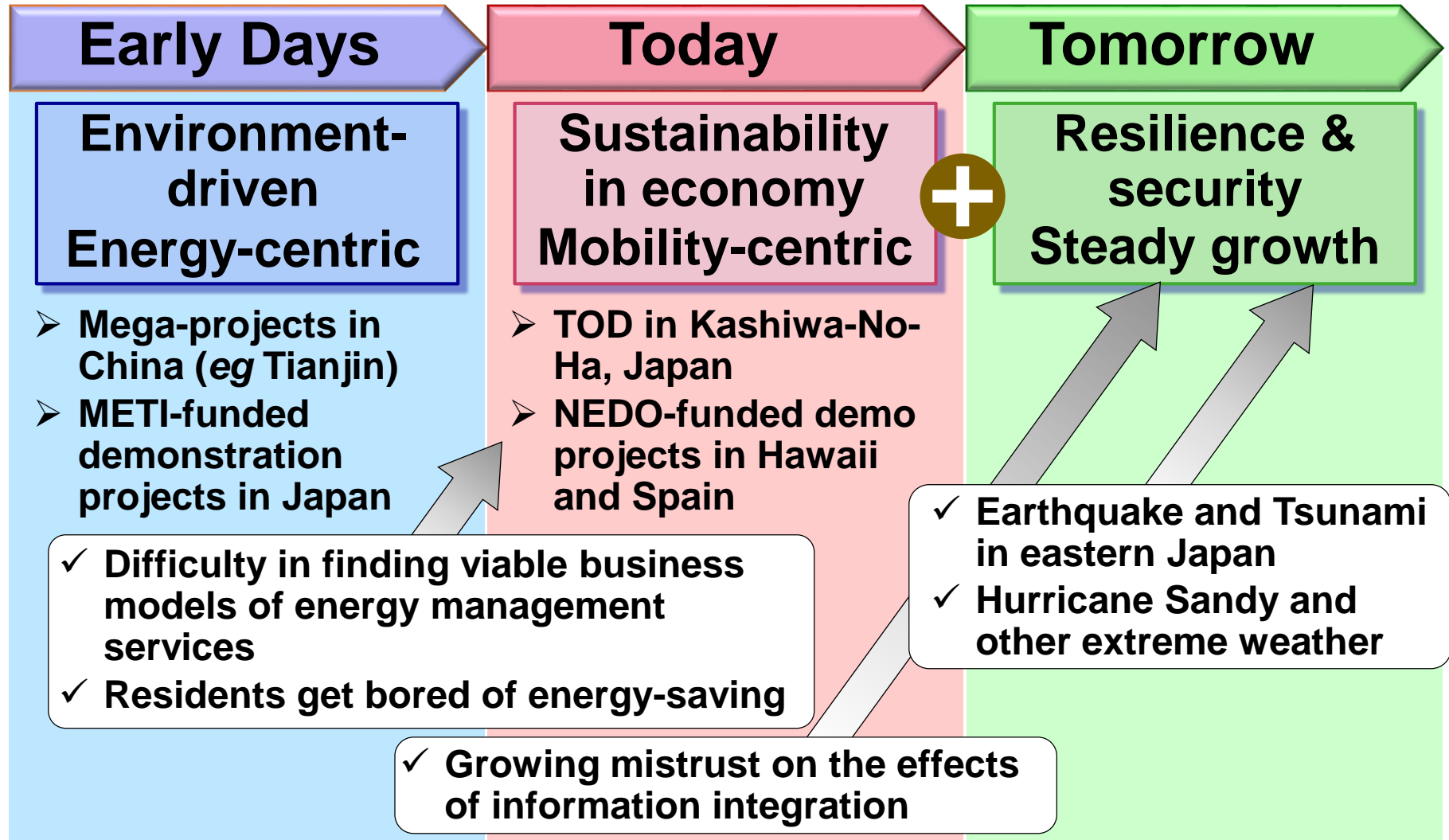
- “Smart City” is NOT a goal by itself, and the cities should have clear future vision at which they aim, and clear understanding on the issues to be solved to obtain the goal.

Common but wrong questions by mayors:

What can your smart city do for my city?

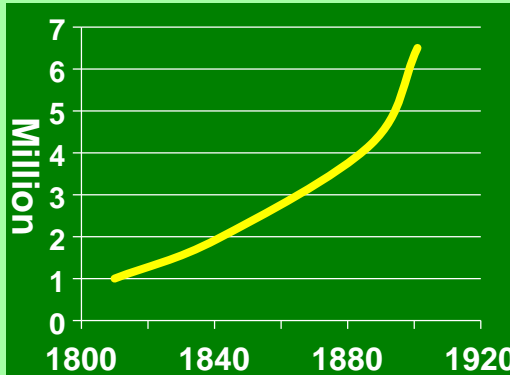
Changes in Focuses of Smart Cities

- The focuses of smart cities change over time, in accord with the lessons learnt and social & economical environments.



Does History Repeat Itself?

England, 19th – Early 20th Centuries



Rampancy of smallpox
Deterioration of hygienic environment

External pressure

Internal pressure

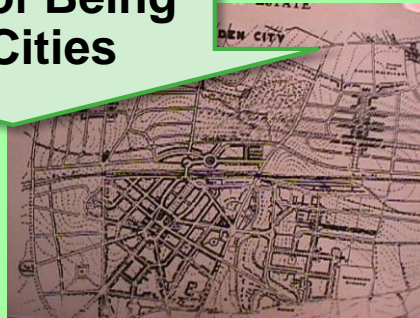
Pressure on cities

Quest for New Ways of Being for Cities

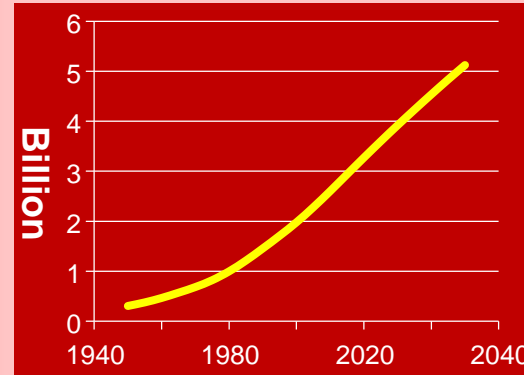
- ✓ Garden City
- ✓ Contemporary City

- ✓ Utopians
- ✓ Others

Exit!



Global, Late 20th – 21st Centuries



Global consensus towards low-carbon society

External pressure

Internal pressure

Pressure on cities

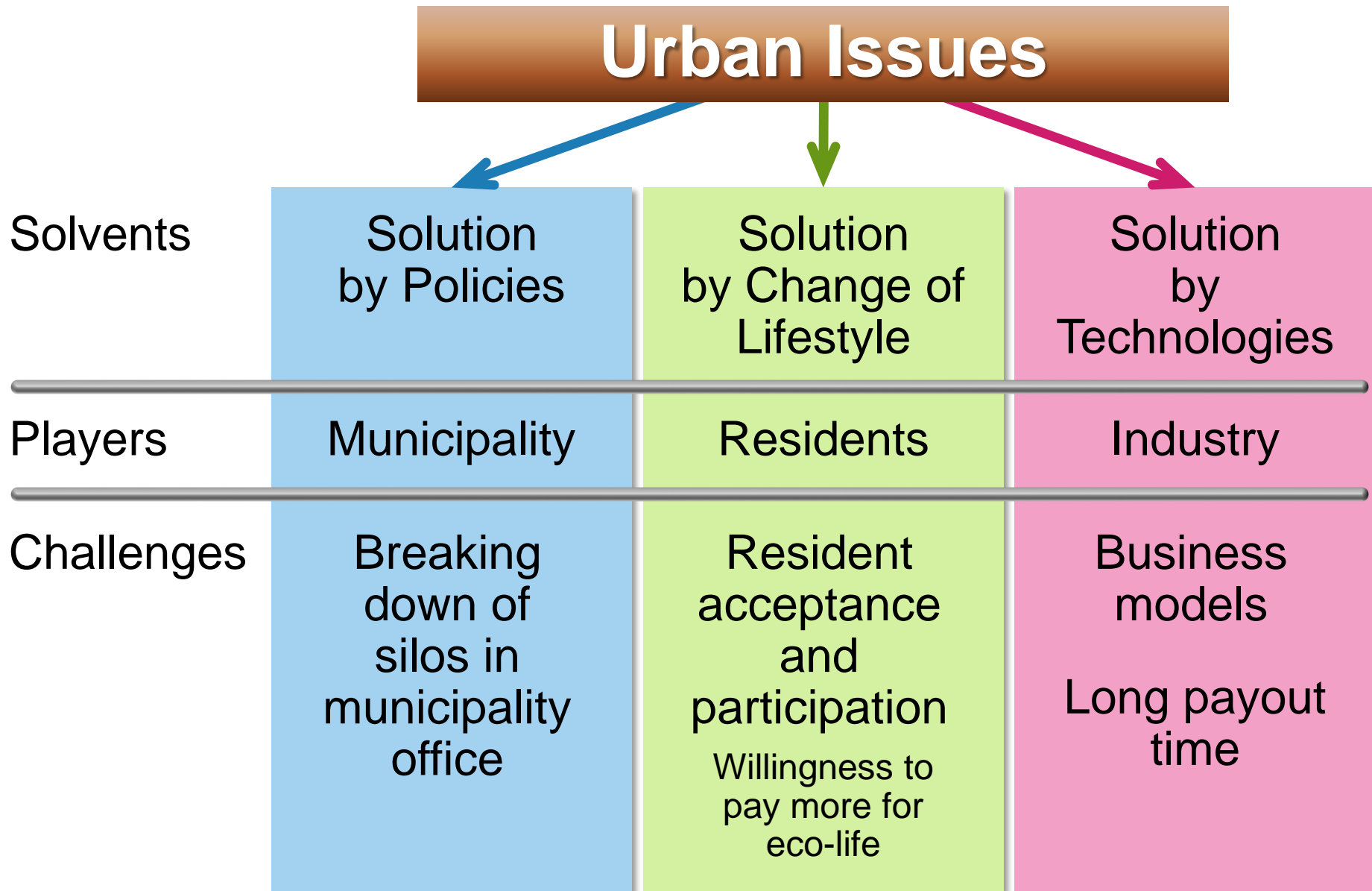
Quest for New Ways of Being for Cities

- ✓ Smart Cities
- ✓ Eco-Cities
- ✓ Green Cities

Who survives?

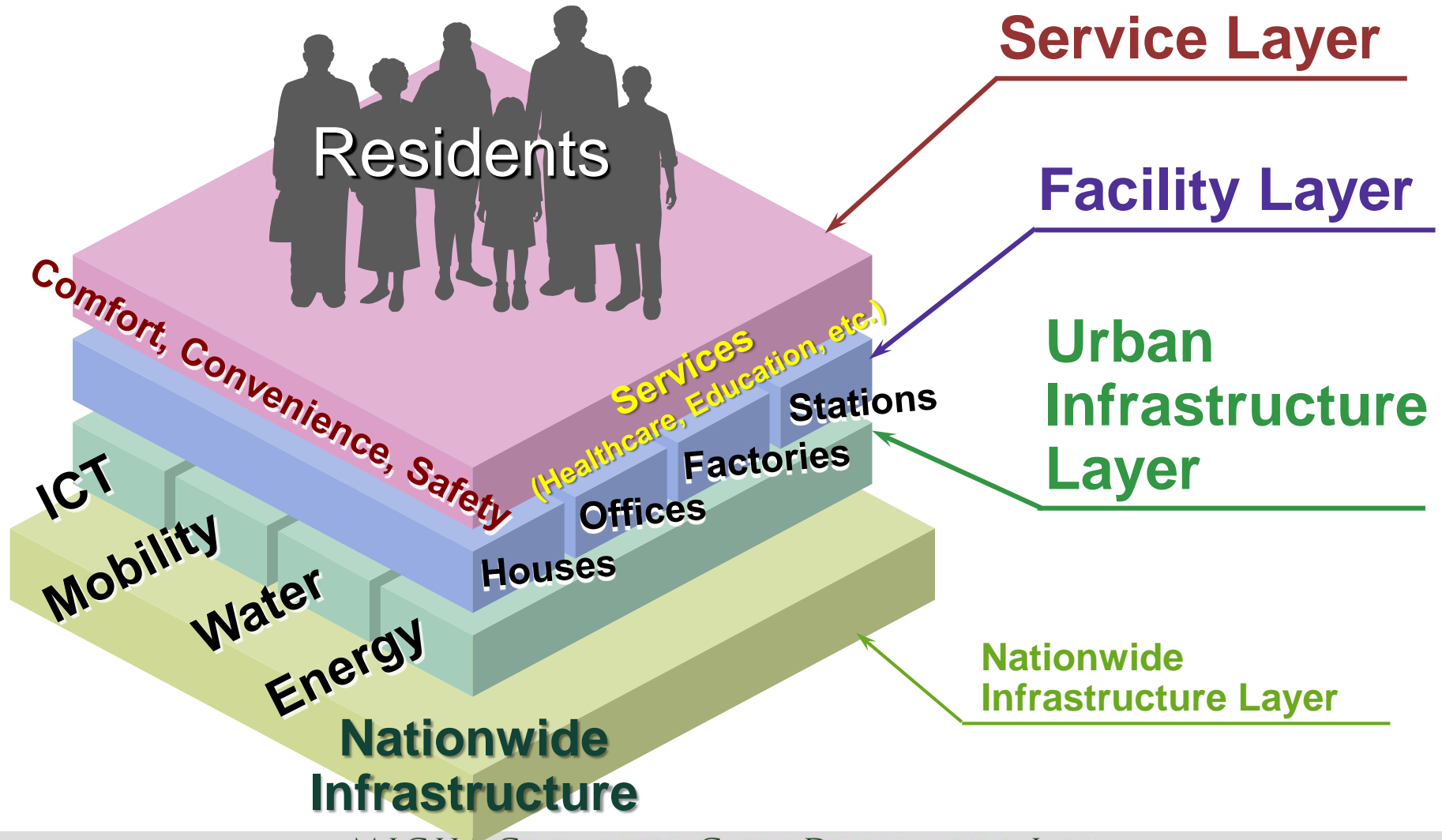


Three Ways to Solve Urban Issues



Stratified Approach to the Urban Issues

It is important to identify the urban issues at the specific layer of the stratified model.



Opportunities of the Cities

● “Integration” is the key to effective management of cities.

Transit-Oriented Development

Integrated City Management

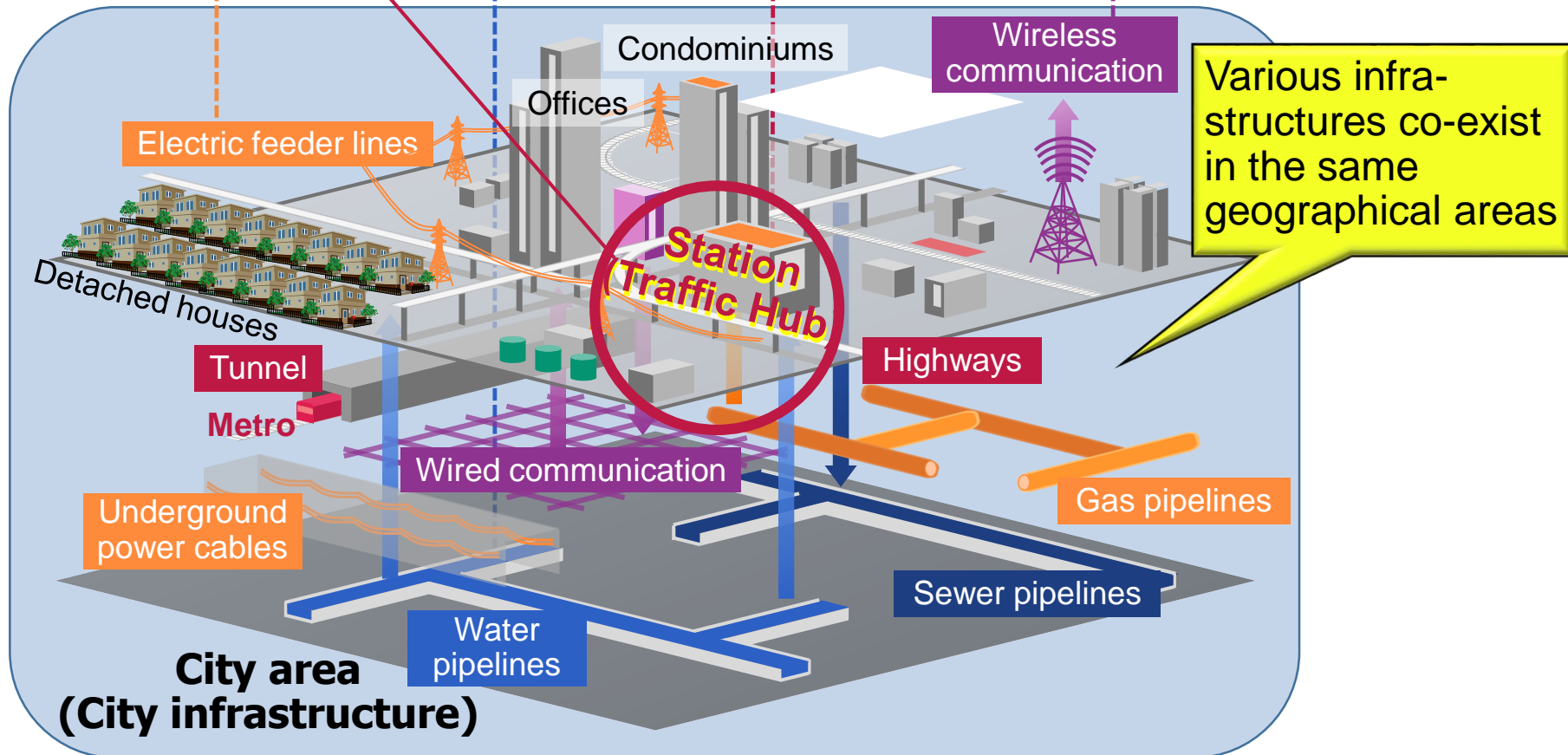
City Management Infrastructure

Energy Management

Water/Sewer Management

Mobility Management

Communication Management

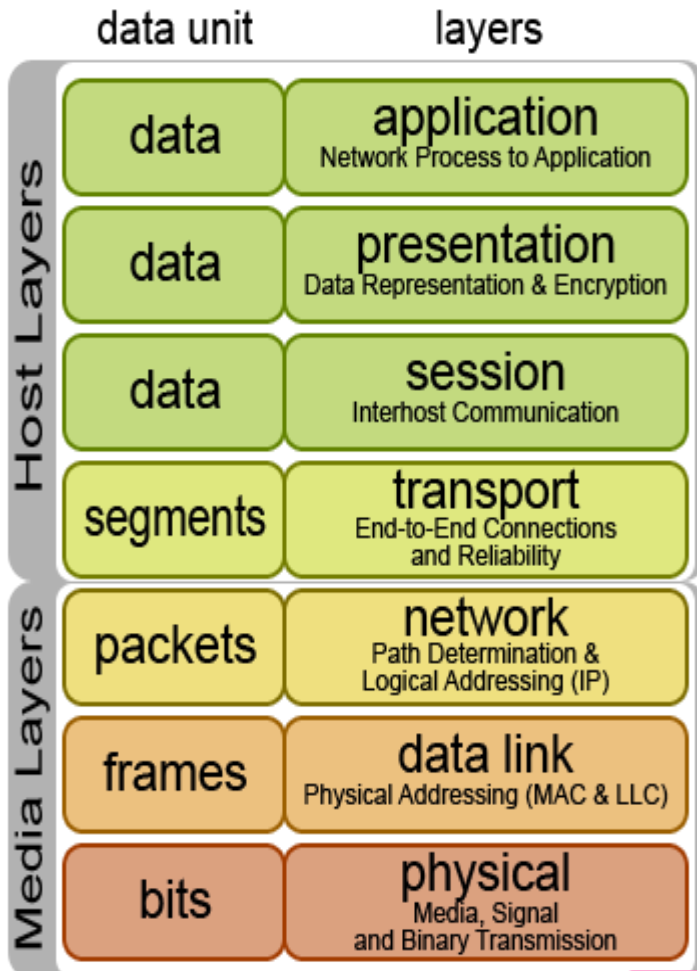


A Layer Model of Urban Infrastructure

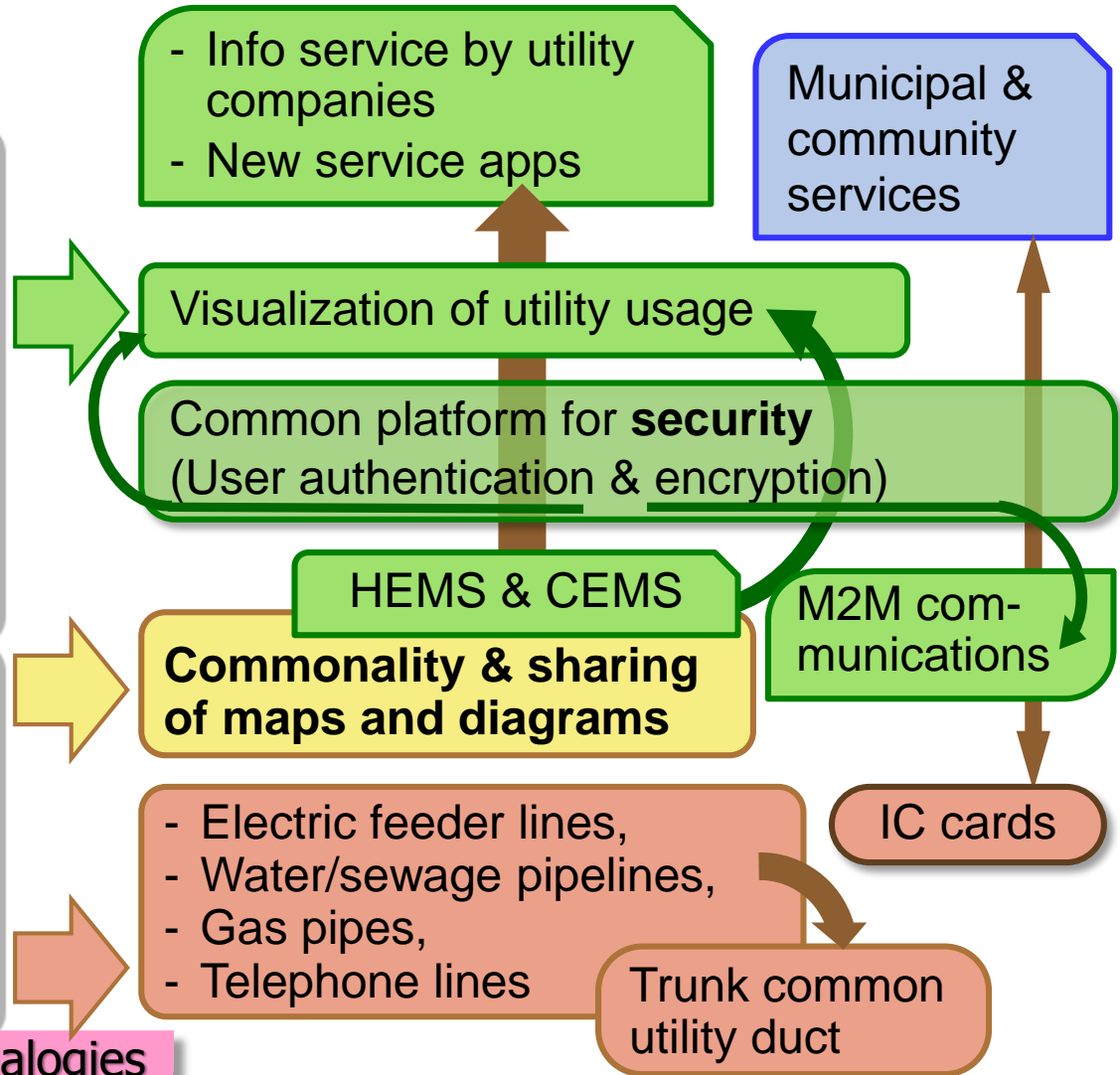
● OSI Model Analogy

OSI: Open System Interconnection

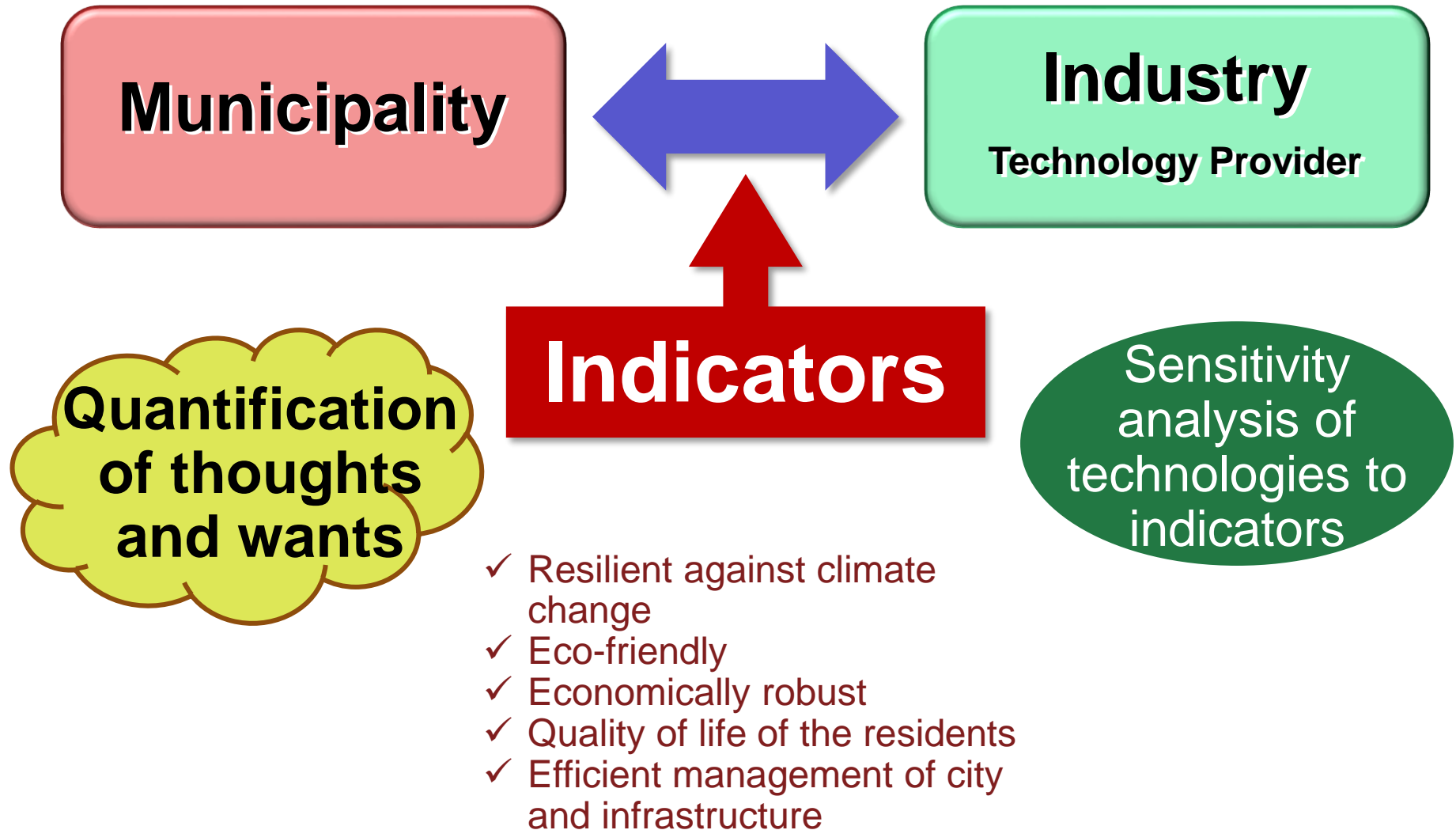
OSI Model



Analogies

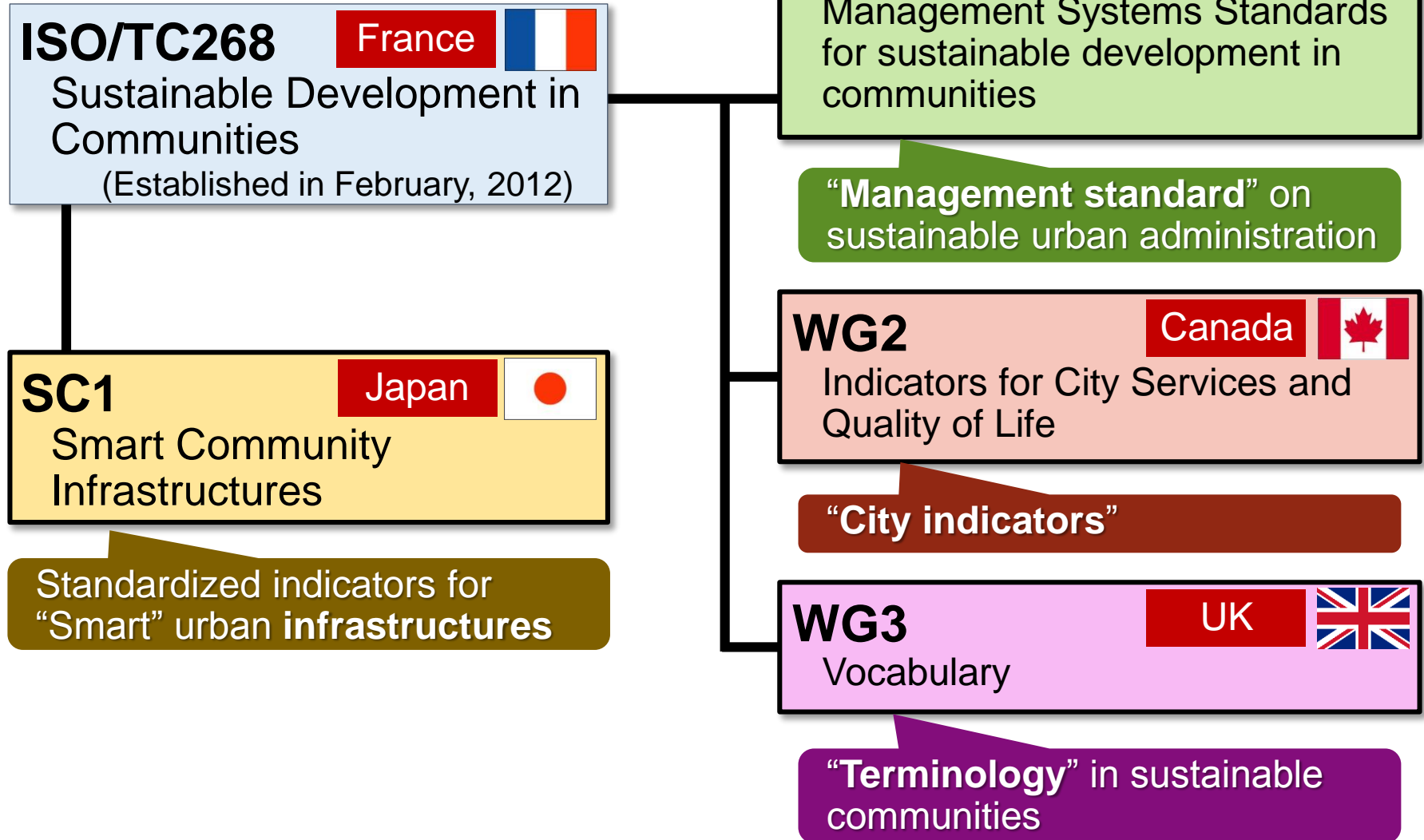


Indicator as a Tool of Communication



ISO TC268

Structure of ISO Activities



ISO 37120



ISO 37120 Sustainable Development in Communities: Indicators for City Services and Quality of Life

**OUR NEW ISO STANDARD/ISO
37120 – “FIRST THROUGH THE
GATE” THE FIRST ISO STANDARD
TO BE PASSED ON CITIES**



New ISO Standard:
APPROVED
City Indicators ISO37120

What is ISO 37120?

What is ISO 37120?

- Establishes a set of standardized indicators that provide a uniform approach to what is measured, and how that measurement is to be undertaken
- No rankings
- 100 Indicators – standardized definitions and methodology
- Common language for reporting



17 Themes in City Services and QoL

17 Themes

City Services and Quality of Life

Economy

Education

Energy

Environment

Finance

Fire and Emergency Response

Governance

Health

Recreation

Safety

Shelter

Solid Waste

Telecommunication and Innovation

Transportation

Urban Planning

Wastewater

Water and Sanitation



46 Core Indicators

46 CORE ISO 37120 CITY INDICATORS

Economy

- City's unemployment rate
- Assessed value of commercial and industrial properties as a percentage of total assessed value of all properties
- Percentage of city population living in poverty

Education

- Percentage of female school-aged population enrolled in school
- Percentage of students completing primary education
- Percentage of students completing secondary education
- Primary education student/teacher ratio

Energy

- Total residential electrical use per capita (kWh/year)
- Percentage of city population with authorized electrical service
- Energy consumption of public buildings per year (kWh/m²)
- Percentage of total energy derived from renewable sources, as a share of the city's total energy consumption

Environment

- Fine particulate matter (PM2.5) concentration
- Particulate matter (PM10) concentration
- Greenhouse gas emissions measured in tonnes per capita

Finance

- Debt service ratio (debt service expenditure as a percent of a municipality's own-source revenue)

Fire and emergency response

- Number of firefighters per 100 000 population
- Number of fire related deaths per 100 000 population
- Number of natural disaster-related deaths per 100 000 population

Governance

- Voter participation in last municipal election (as a percentage of eligible voters)
- Women as a percentage of total elected to city-level office

Health

- Average life expectancy
- Number of in-patient hospital beds per 100 000 population
- Number of physicians per 100 000 population
- Under age five mortality per 1 000 live births

Safety

- Number of police officers per 100 000 population
- Number of homicides per 100 000 population

Shelter

- Percentage of city population living in slums

Solid waste

- Percentage of city population with regular solid waste collection (residential)
- Total collected municipal solid waste per capita
- Percentage of city's solid waste that is recycled

Telecommunication and innovation

- Number of internet connections per 100 000 population
- Number of cell phone connections per 100 000 population

Transportation

- Km of high capacity public transport system per 100 000 population
- Km of light passenger transport system per 100 000 population
- Annual number of public transport trips per capita
- Number of personal automobiles per capita

Urban Planning

- Green area (hectares) per 100 000 population

Wastewater

- Percentage of city population served by wastewater collection
- Percentage of the city's wastewater that has received no treatment
- Percentage of the city's wastewater receiving primary treatment
- Percentage of the city's wastewater receiving secondary treatment
- Percentage of the city's wastewater receiving tertiary treatment

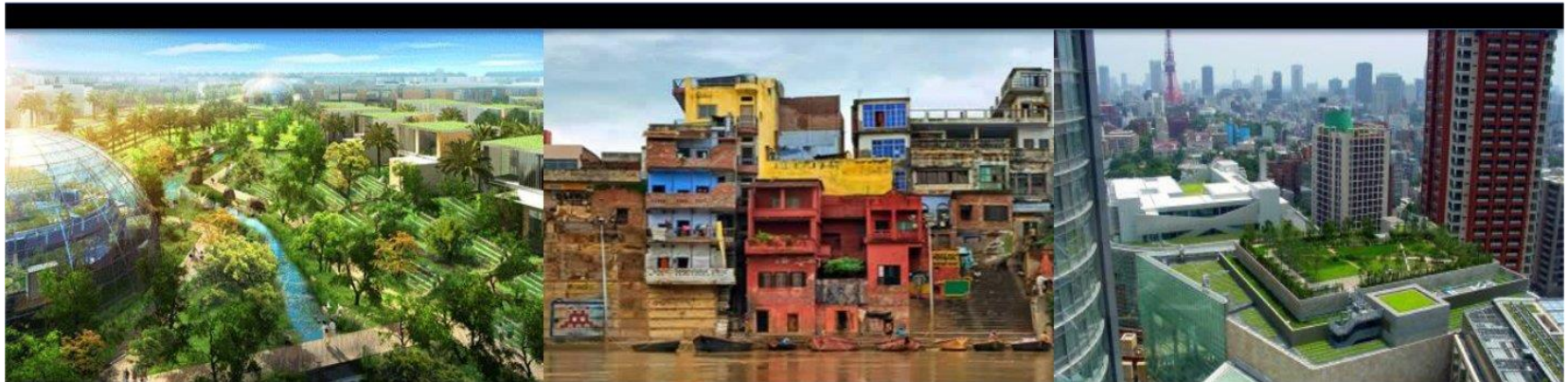
Water and Sanitation

- Percentage of city population with potable water supply service
- Percentage of city population with sustainable access to an improved water source
- Percentage of population with access to improved sanitation
- Total domestic water consumption per capita (litres/day)

Why is this Standard Important?

Why is this Standard Important?

- Steer and guide sustainability
- Facilitates learning
- Comparative Analysis for Policy development
- Open Data – third party verified data



Who are the Users?

Who are the Users?

- Applicable to any city, municipality or local government
- Tool for city managers, planners, politicians, researchers, business leaders, designers and other professionals



How Can the Standard be Used?

- Assessing city's performance for improving quality of life and sustainability
- Increasing transparency and accountability
- Leveraging funds for projects and infrastructure
- Benchmarking – locally and globally
- Benchmarking for projects, monitoring progress and success
- City apps



World Council on City Data™

What is WCCD?

THE WORLD COUNCIL ON CITY DATA

- The World Council on City Data coordinates all efforts on urban data to ensure a consistent and comprehensive open data platform for standardized urban metrics.
- The WCCD is a global hub for creative learning partnerships across cities, international organizations, corporate partners, and academia to further innovation, envision alternative futures, and build better and more livable cities.
- The WCCD, is developing the first five year program on:
 - City Data, Analytics, Visualization
 - Publications, City Awards and Recognitions
 - Workshops and Global Summits
 - Drafting New International Standards
 - Develop Strategies on Big Data for Cities

STANDARDIZED CITY INDICATORS - BENEFITS

Cities and standardized indicators:

- More effective governance and delivery of services
- A base for building accurate and robust indices on prosperity, sustainability, resilience
- Measure progress and set targets
- Local and International benchmarks and targets
- Informed decision making for planning, policy, and city management
- Learning across cities
- Framework for sustainability planning and resilience planning to for risk assessment
- Transparency and open data for investment attractiveness
- Data is moving fast – big data and the information explosion – ISO can help to give cities a reliable foundation of globally standardized data that will assist cities in building core knowledge for city decision-making, and enable comparative insight and global benchmarking

Conformity for ISO 37120

ISO 37120 – PILOTING THE FIRST INTERNATIONAL STANDARD ON CITY INDICATORS

Conformity for ISO 37120 means:

- Compile 46 core indicators required to show conformity with ISO 37120 out of a total 100 indicators in ISO 37120 (see list of indicators below)
- Indicators are collected according to standardized definitions and methodologies
- Indicators are verified by a certified verifier
- Be the first cities to join the ISO 37120 Registry and be recognized in the WCCD as ISO certified cities

WCCD Foundation Cities

World Council on City Data



WCCD Foundation Cities

Challenges in the Field of City Data

Challenges in this Field of City Data

- **Boundaries – No Conformity**
- **No Standardized definitions on what to measure**
- **No Standardized methodologies on how to measure**
- **City data often collected nationally – Not locally**
- **City data collected locally is uneven across cities in terms of what is being measured**
- **Weak or nonexistent baseline data in cities**
- **No mechanism for data and knowledge sharing across cities**

WCCD Expression of Interest Card

ISO 37120

World Council on City Data

Global City Indicators for City Services and Quality of Life

The World Council on City Data (WCCD) coordinates all efforts on city data to ensure a consistent and comprehensive platform for standardized urban metrics. The WCCD also hosts *ISO 37120: Sustainable Development of Communities – Indicators for City Services and Quality of Life*; the new international standard for cities which provides a comprehensive set of indicators and a methodology that will enable any sized city to benchmark its social, economic and environmental performance in relation to other cities.

How can I join the WCCD and become an ISO 37120 city?

Please visit our website www.dataforcities.org and fill out an Expression of Interest form

or

Fill out and return this form by post, fax, or email.

City Name: _____

Country: _____

Name: _____

Postion: _____

Email: _____

Phone: _____

Signature: _____

Date: _____

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Thank you very much for your interest and we look forward to working with you.

World Council on City Data

World Council on City Data

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