

Accelerating People-Centered Smart Cities

Through Digital Transformation

*Mythili Menon
Project Officer, ITU*

June 2023



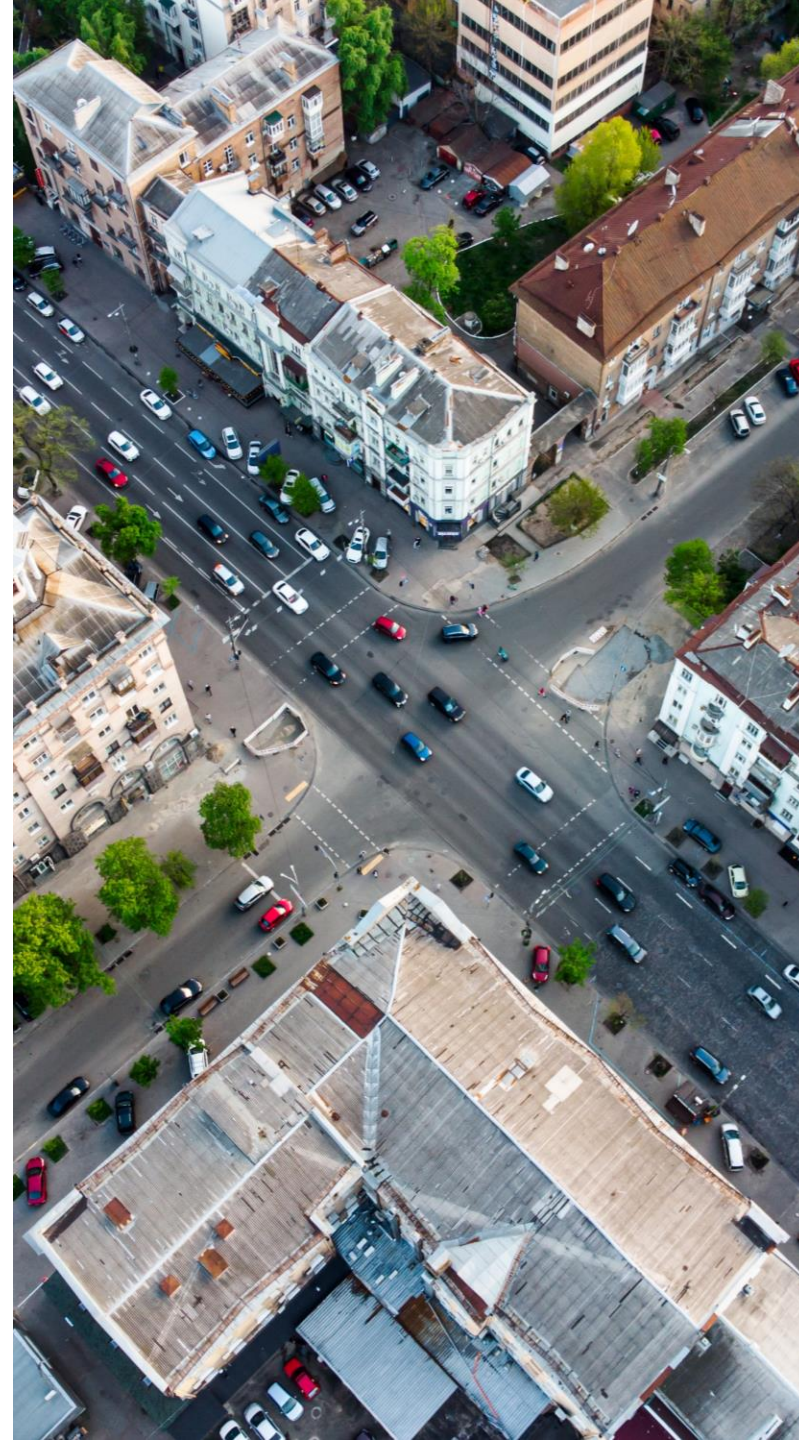
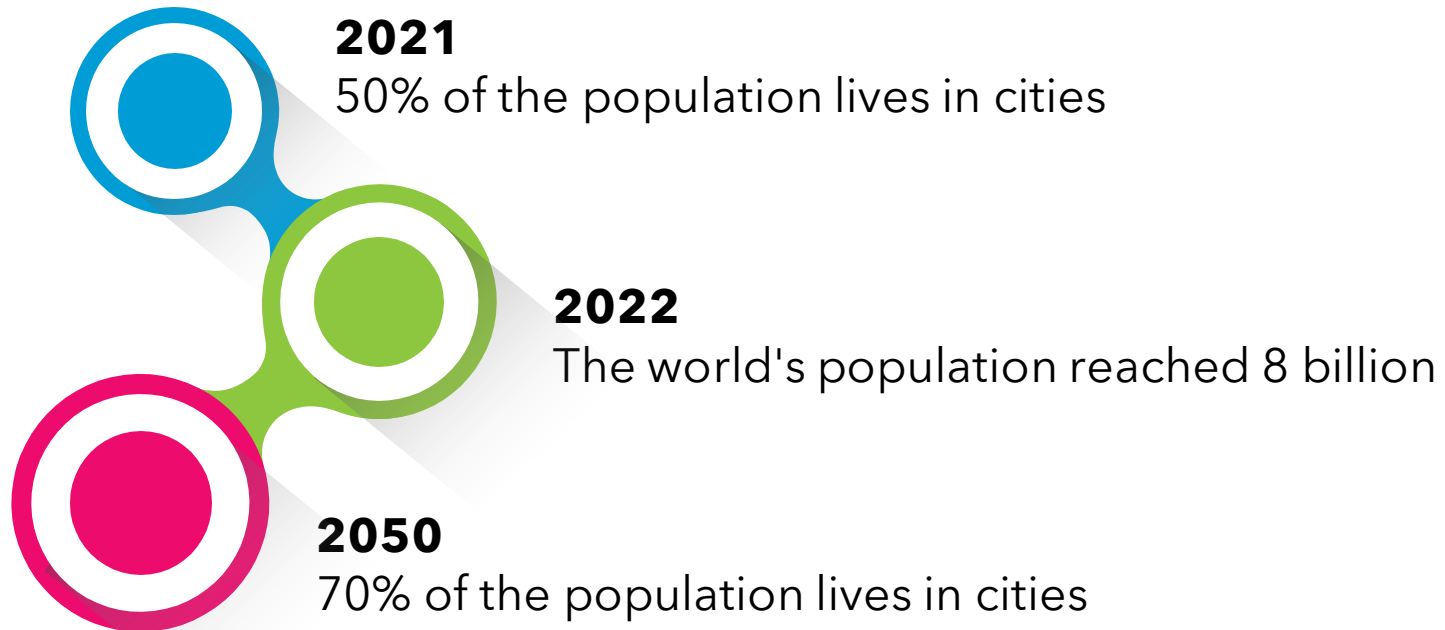
**Smart
sustainable
cities**

What percentage of the population do you think will live in cities by 2050?

- 40%
- 50%
- 70%
- 80%



Growth in Cities Worldwide



Challenges Facing Cities Today



GHG Emissions



Air Pollution



Infrastructure Gaps



Overpopulation



Low Connectivity



Traffic Congestion



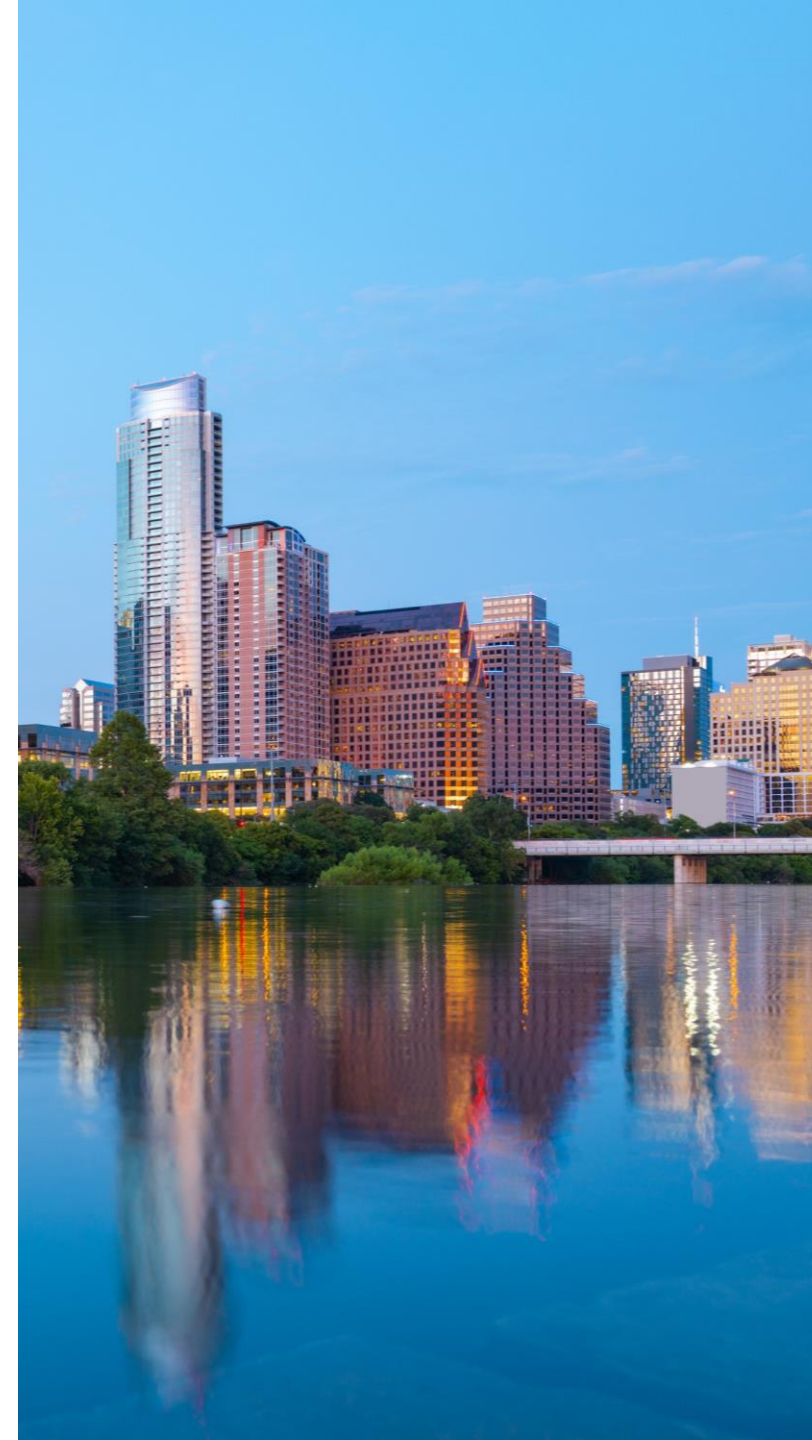
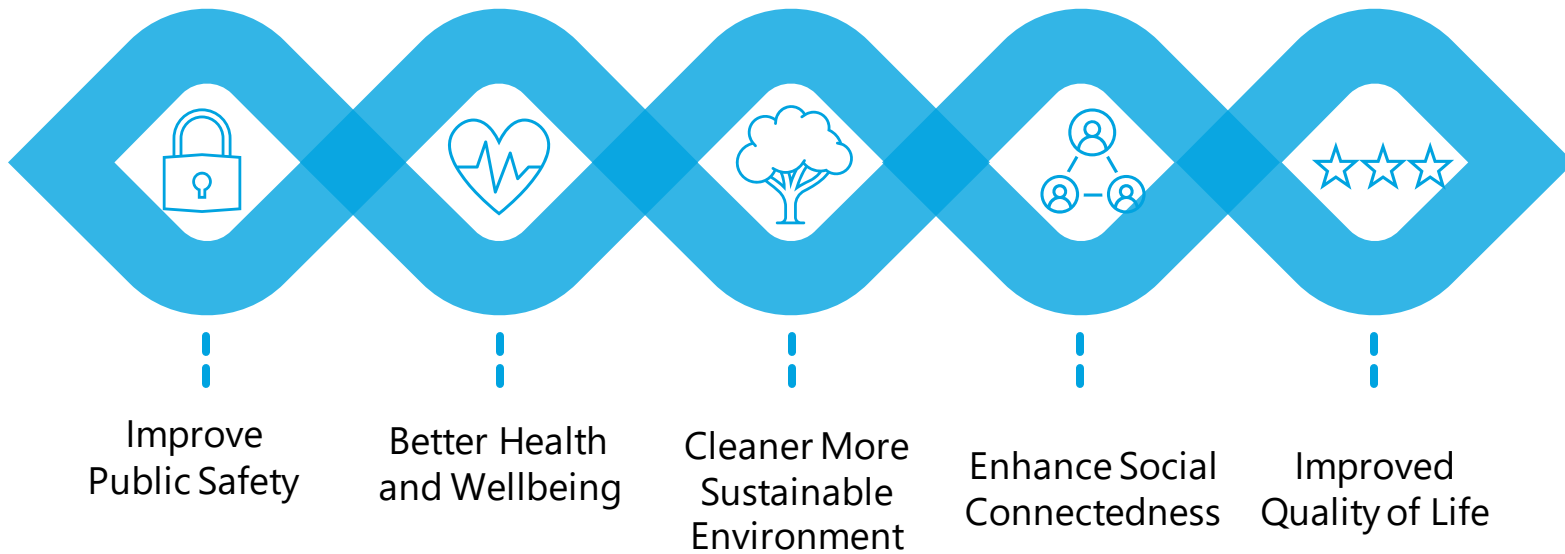
A Shift Towards People-Oriented Cities

A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects

Recommendation ITU-T Y.4900



Benefits of Digital Technologies for Cities



Emerging Technologies for Cities

Internet of Things

Sensors, actuators and smart devices for better traffic management



Digital Twin

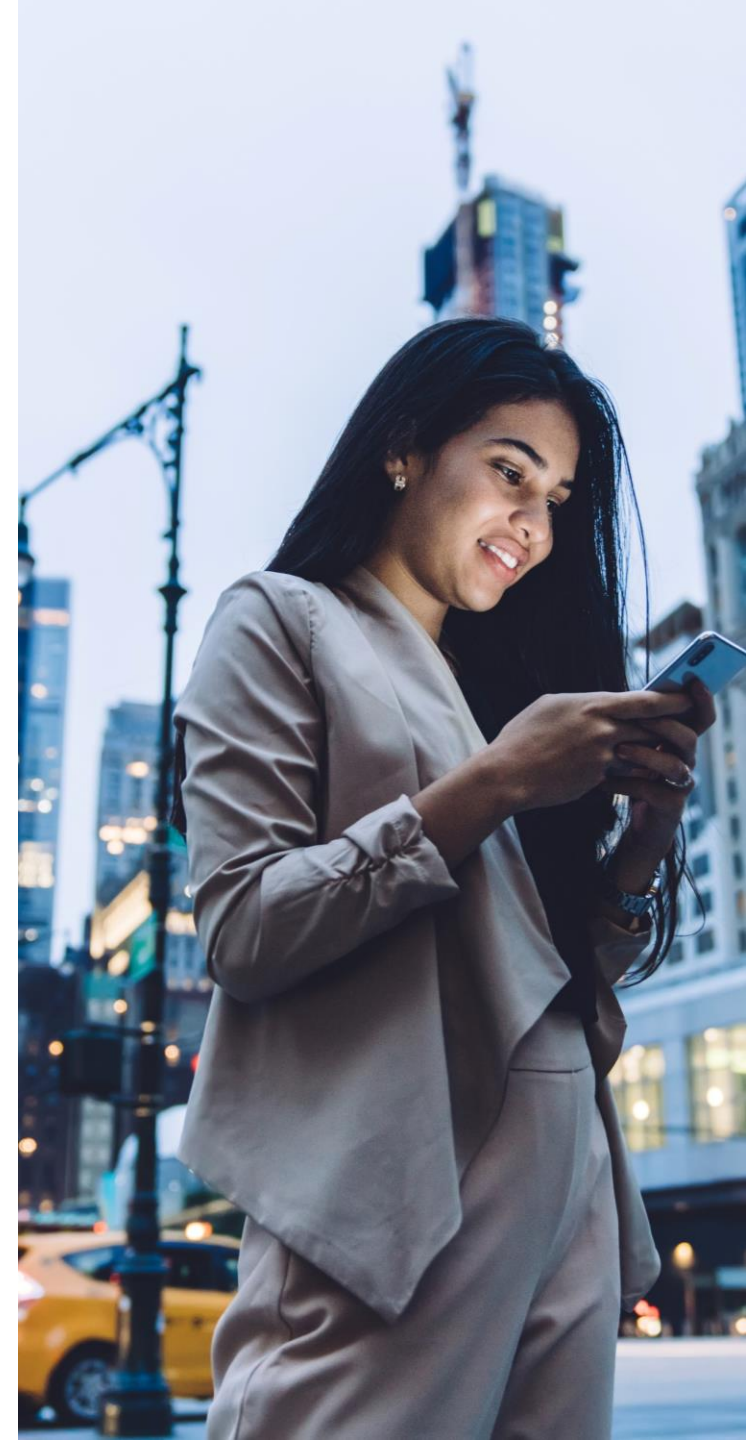
Disaster risk planning to increase local resilience

Metaverse

Virtual government hall to improve the efficiency of the services

Artificial Intelligence

Enhance the safety of power grids and improve performance management





Digital Twin and Cities

A digital twin is the virtual representation of a physical object or system across its life cycle. It uses real-time data and other sources to enable learning, reasoning, and dynamically recalibrating for improved decision making.



**Abu Dhabi Digital
Twin Project**



Virtual Singapore



Building the cities of the future



Digital Inclusion



Digital Connectivity



Digital Human Rights



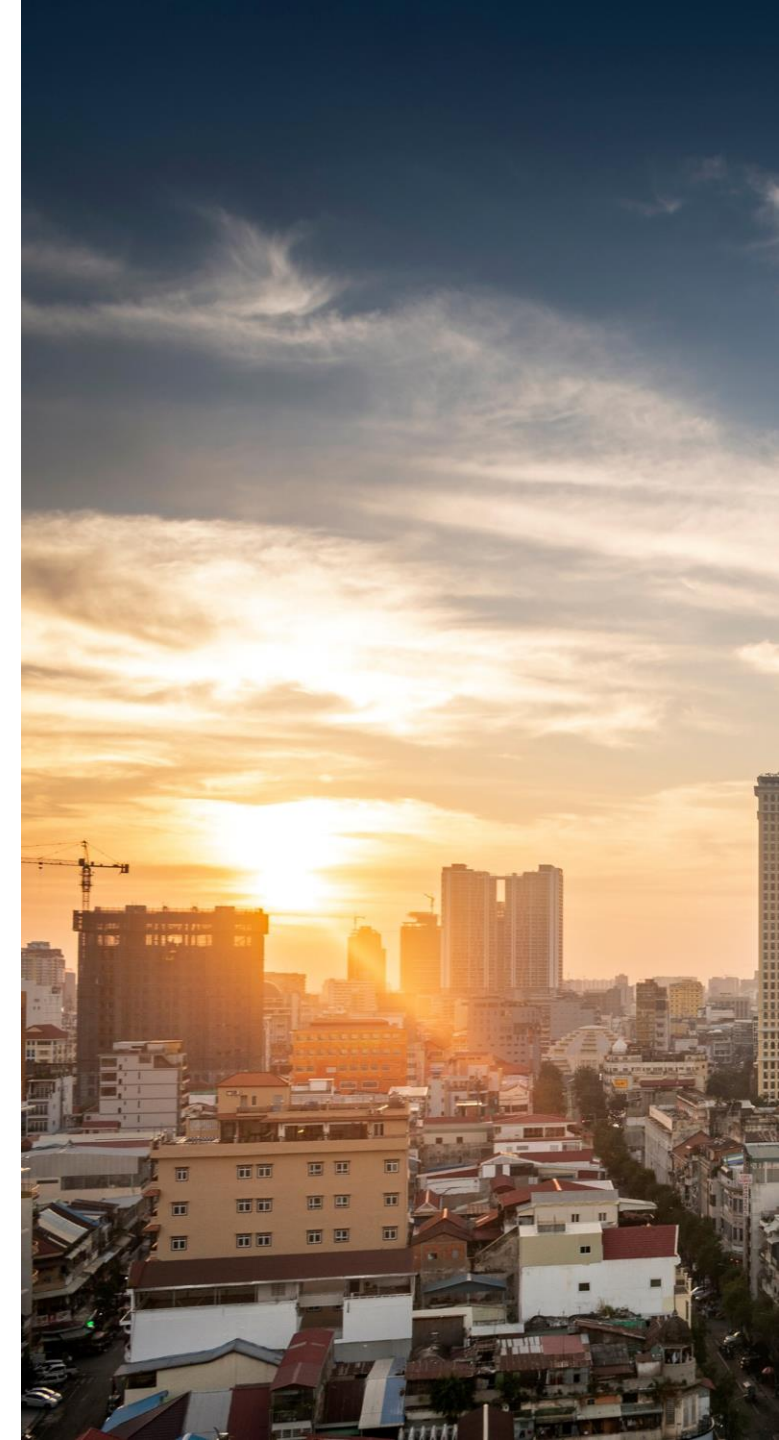
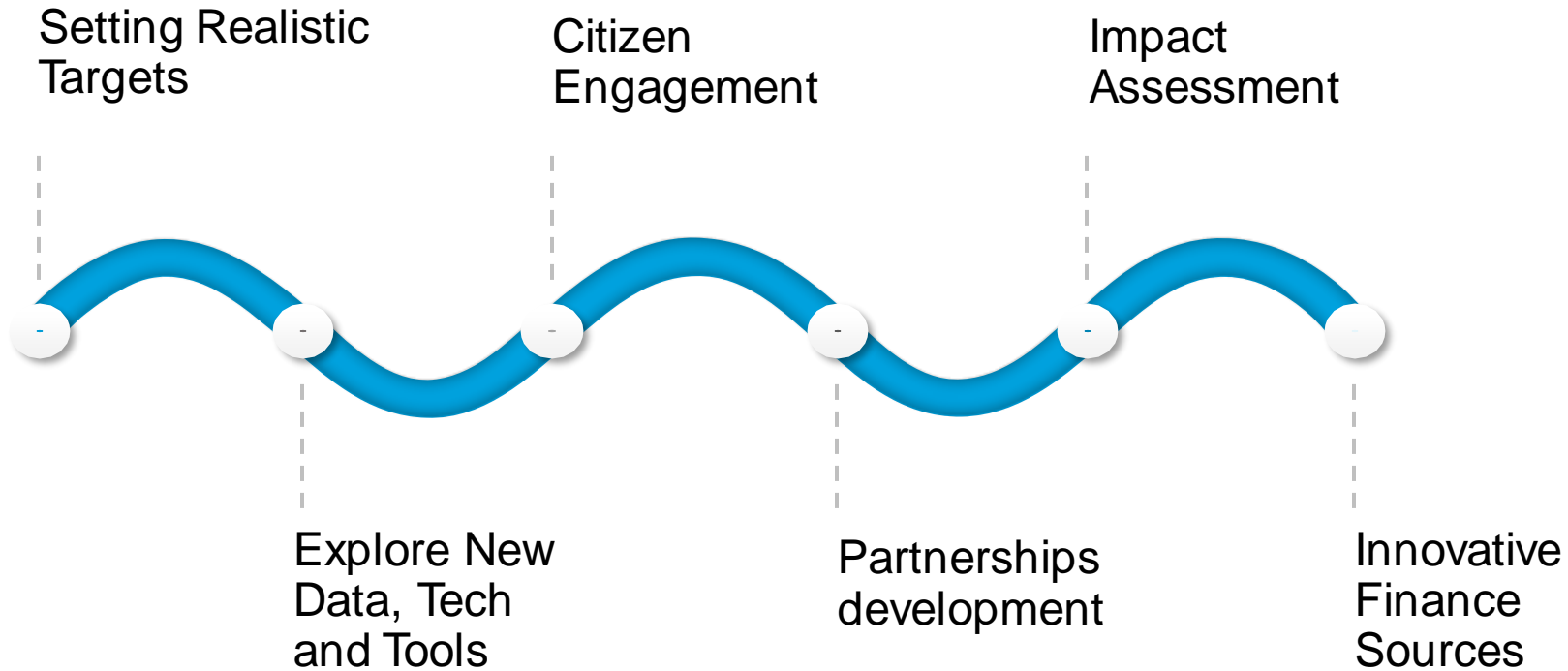
Digital Skills & Digital Capacity



Digital Trust and Security



Digital Transformation is a Multi Year Journey



How ITU Supports Digital Transformation

ITU-T Study Group 20

Internet of Things and its Applications

Smart Cities and Communities

IoT Identification

Digital health related to IoT and SSC



Africa Region



Americas Region



Arab Region



EECAT Region



Asia and Pacific Region



ITU Standards



Requirements and use cases

Recommendation ITU-T Y.4208: "IoT requirements for support of edge computing"

Recommendation ITU-T Y.4211: "Accessibility requirements for smart public transportation services"

Recommendation ITU-T Y.4214: "Requirements of IoT-based civil engineering infrastructure health monitoring system"



Infrastructure and architecture

Recommendation ITU-T Y.4470: "Reference architecture of artificial intelligence service exposure for smart sustainable cities"

Recommendation ITU-T Y.4480: "Low power protocol for wide area wireless networks"

Recommendation ITU-T Y.4500.1: "oneM2M-Functional Architecture"



Interoperability

Recommendation ITU-T Y.4200: "Requirements for interoperability of smart city platforms"

Recommendation ITU-T Y.4201: "High-level requirements and reference framework of smart city platform"

Recommendation ITU-T Y.4805: "Identifier service requirements for the interoperability of Smart City applications"



Data management

Recommendation ITU-T Y.4472: "Open data application programming interface (APIs) for IoT data in smart cities and communities"

Recommendation ITU-T Y.4461: "Framework of open data in smart cities"

Recommendation ITU-T Y.4464: "Framework of blockchain of things as decentralized service platform"

Recommendation ITU-T Y.4475: "Lightweight intelligent software framework for IoT devices"



Assessment

Recommendation ITU-T Y.4904: "Smart sustainable cities maturity model"

Recommendation ITU-T Y.4905: "Smart sustainable city impact assessment"

Recommendation ITU-T Y.4906: "Assessment framework for digital transformation of sectors in smart cities"

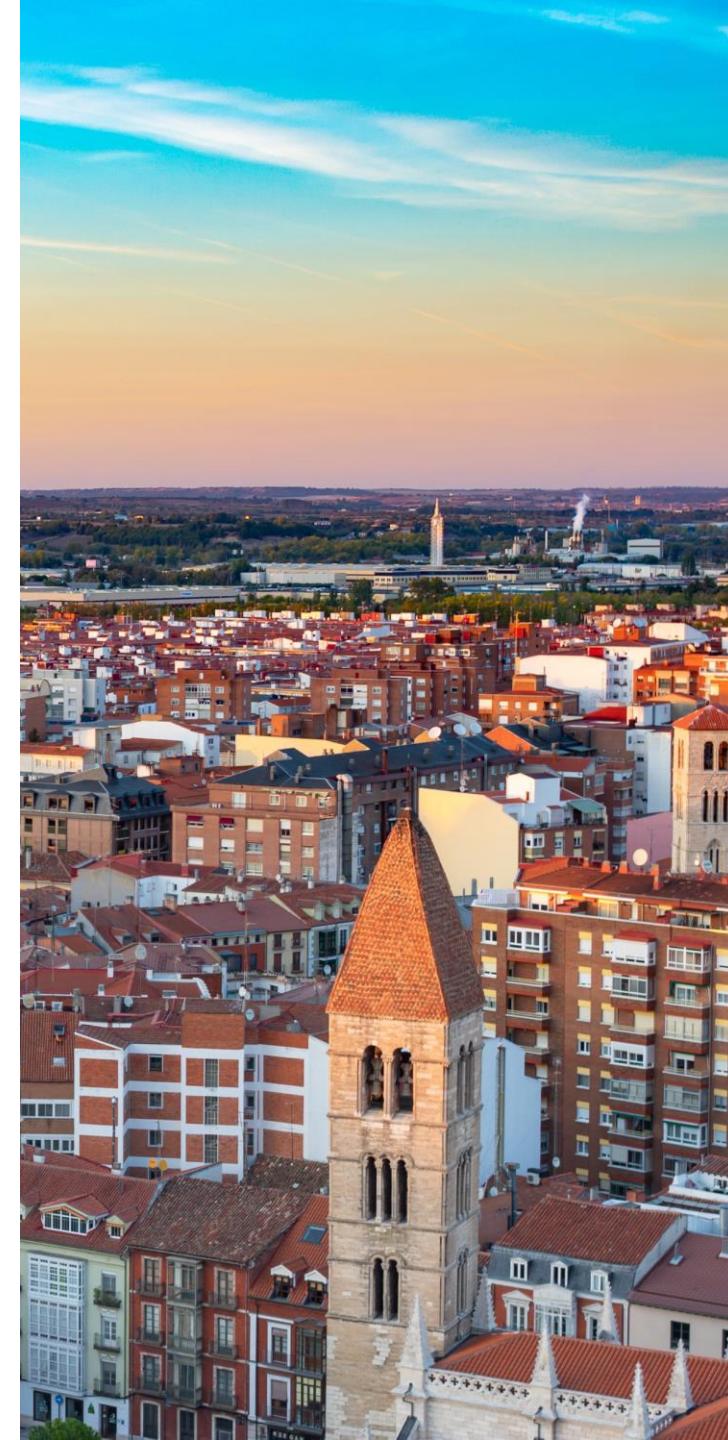


Identification and security

Recommendation ITU-T Y.4807: "Agility by design for Telecommunications/ICT Systems Security used in the Internet of Things"

Recommendation ITU-T Y.4808: "Digital entity architecture framework to combat counterfeiting in IoT"

Recommendation ITU-T Y.4809: "Unified IoT Identifiers for intelligent transport systems"



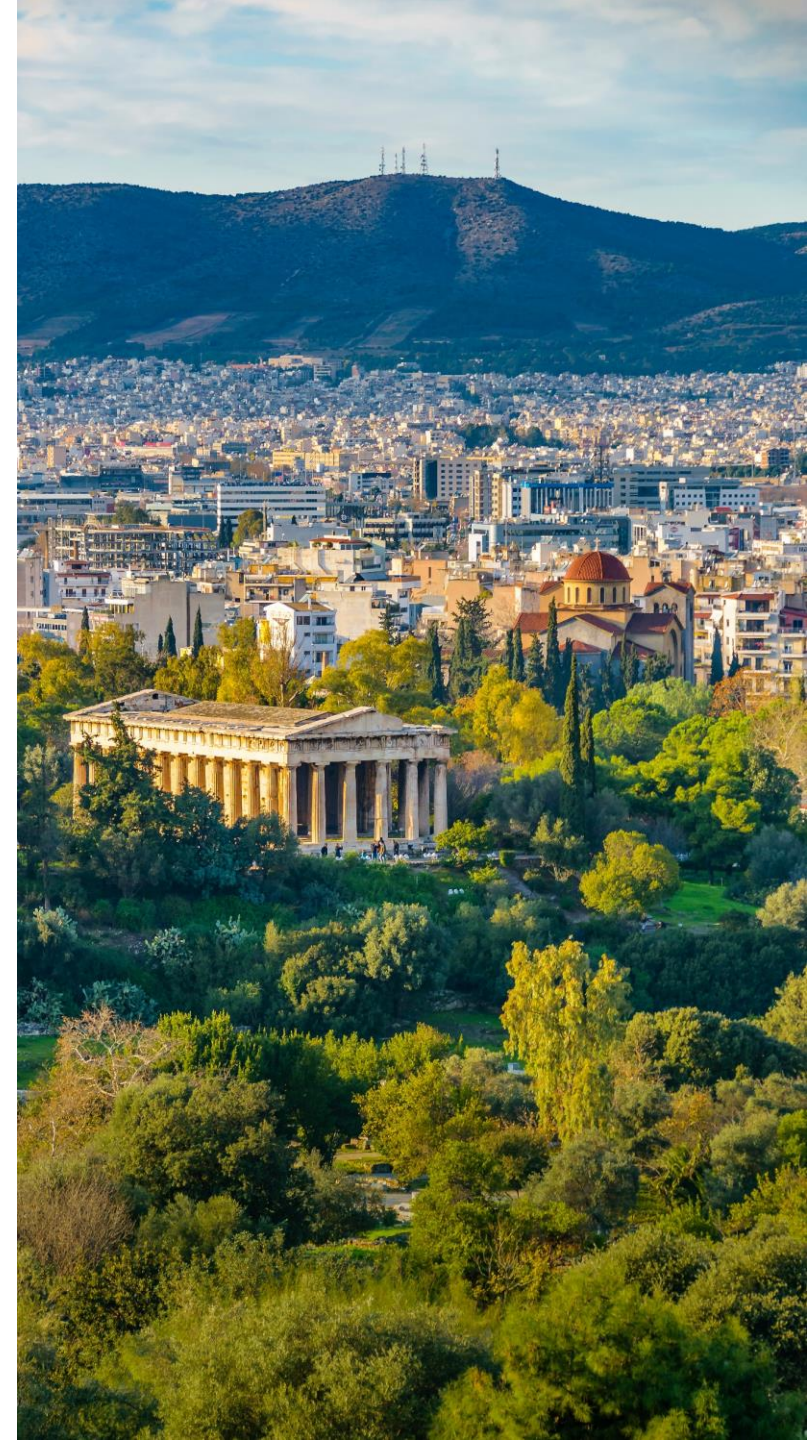
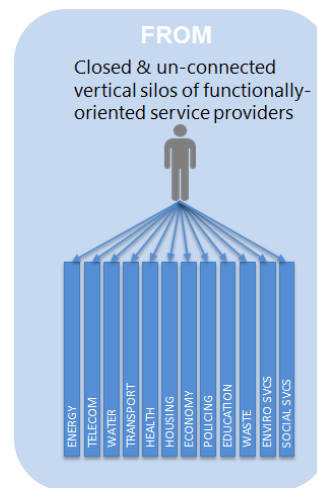
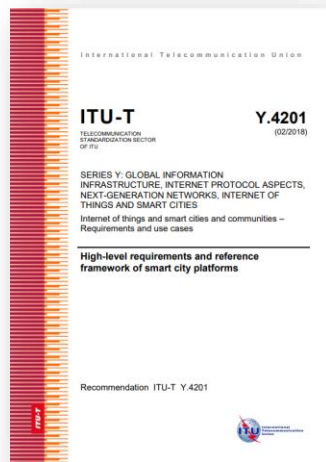
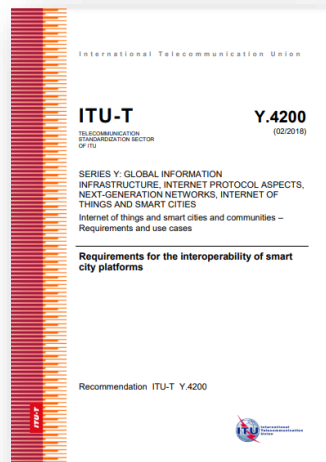
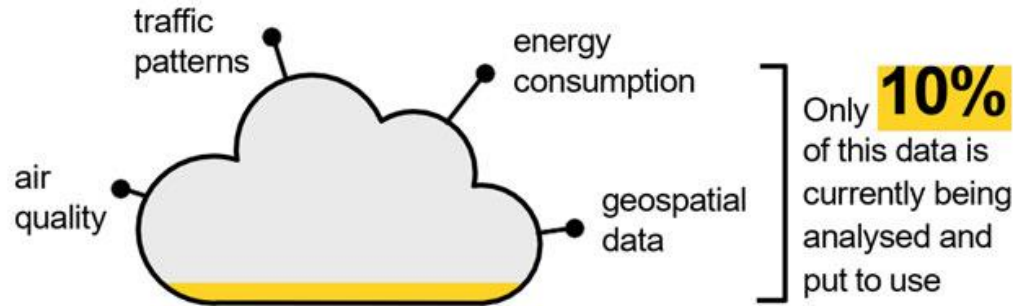
How many connected devices and sensors do you think are collecting data in cities?

- 63 Billion
- 73 Billion
- 83 Billion
- 93 Billion



Importance of Data in a Digital Transformation Journey

By **2021**:
83 billion
connected devices and sensors will be creating large, diverse datasets on a wide range of topics:

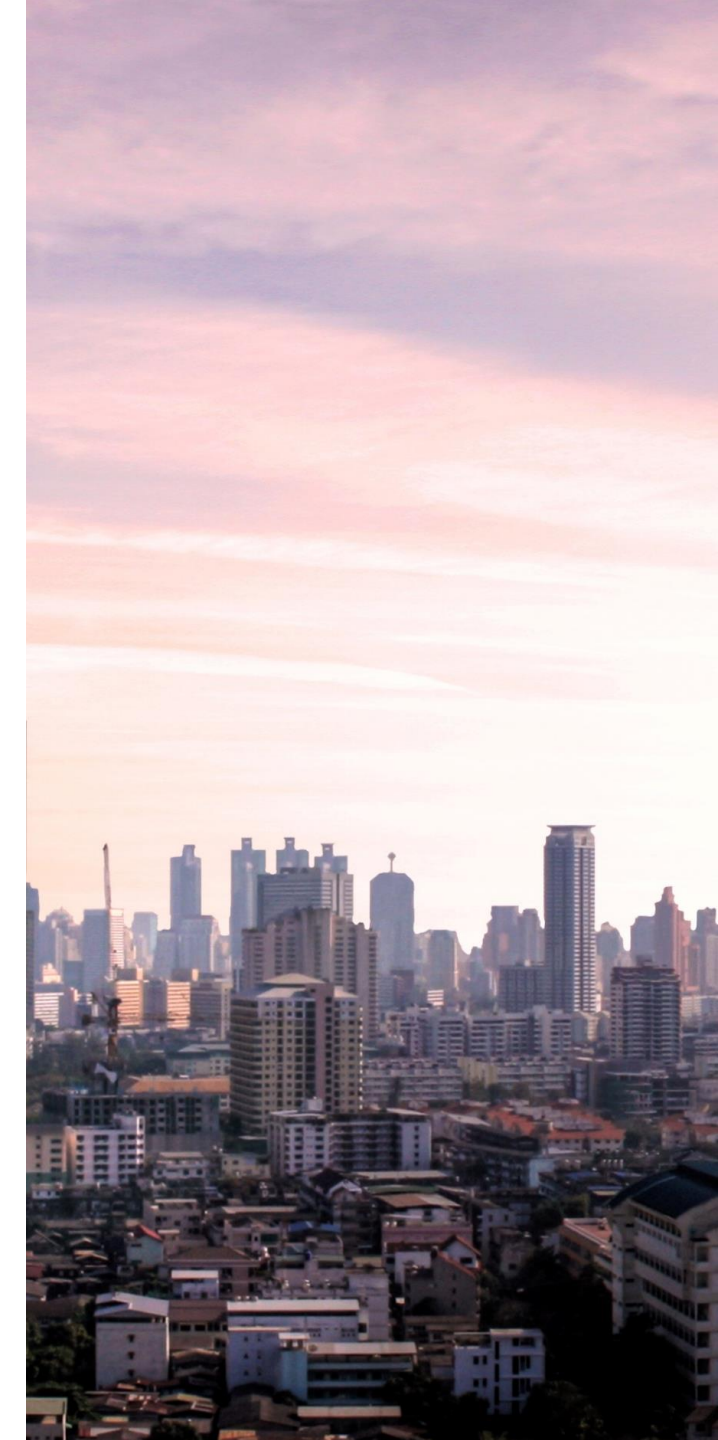


United for Smart Sustainable Cities

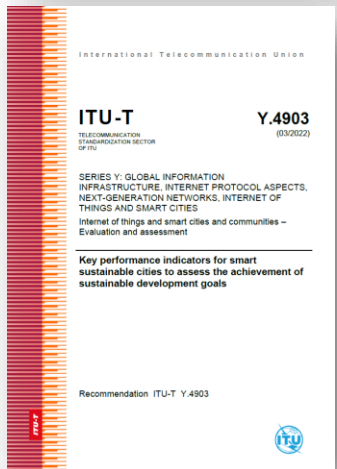
U4SSC is a UN global platform to advocate for public policy and encourage the use of digital technologies to accelerate digital transformation in cities.



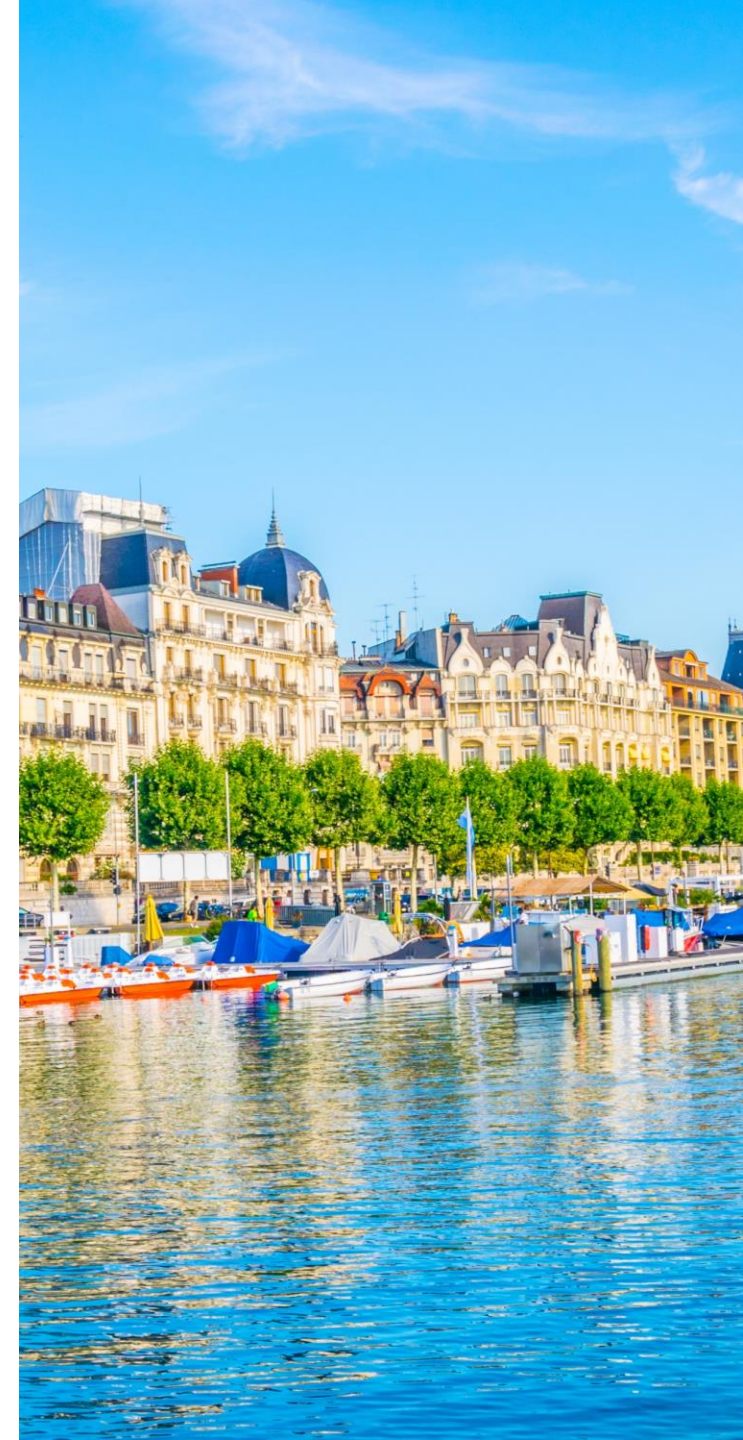
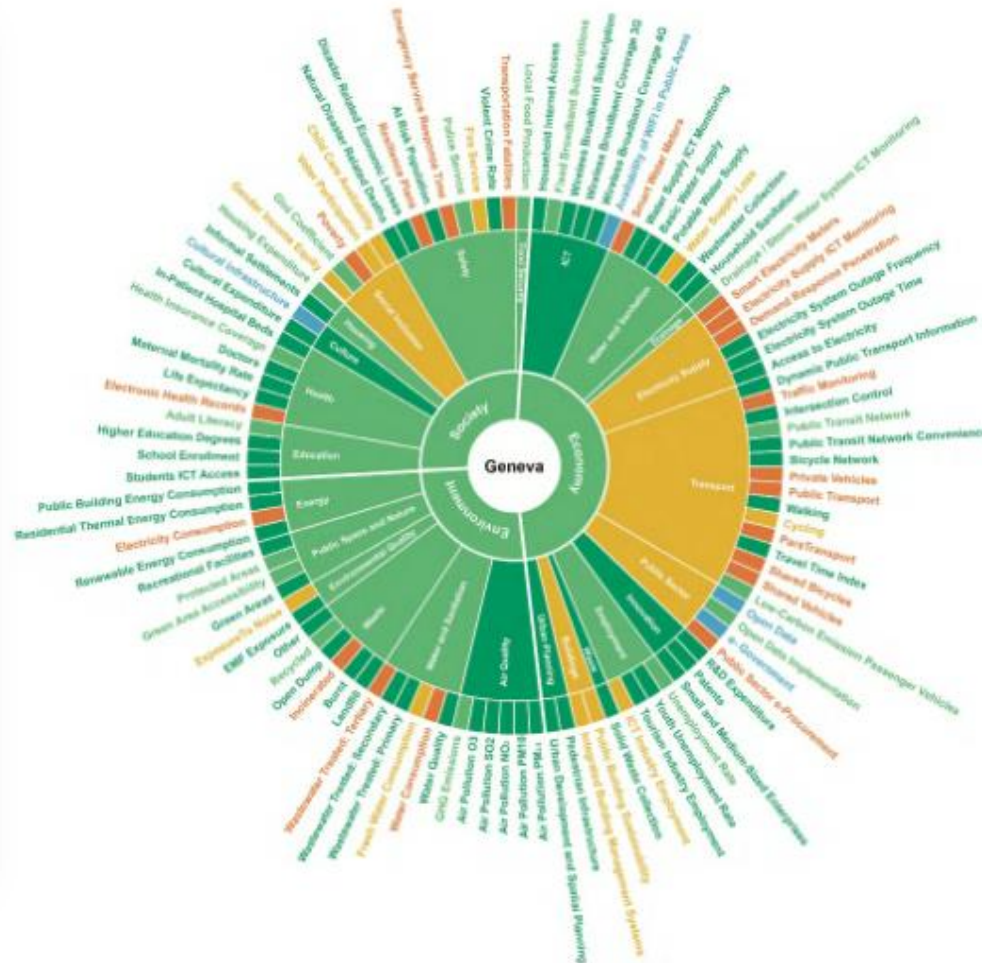
 City Platforms	 Building Urban Economic Resilience at City Level	 Artificial Intelligence in Cities	 Procurement for Smart Sustainable Cities	 Enabling People-Centred Cities through Digital Transformation
--	--	---	--	---



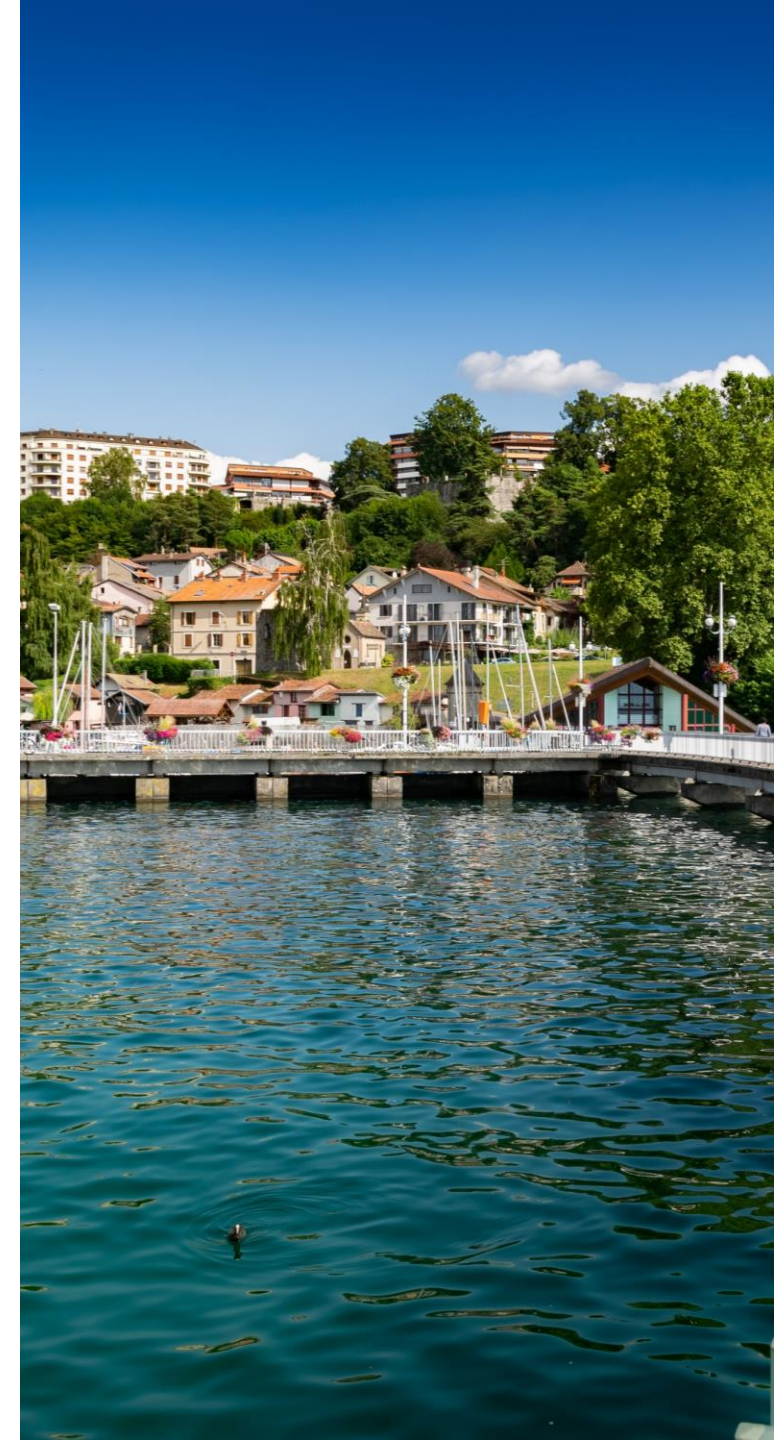
U4SSC Key Performance Indicators




U4SSC Key Performance Indicators

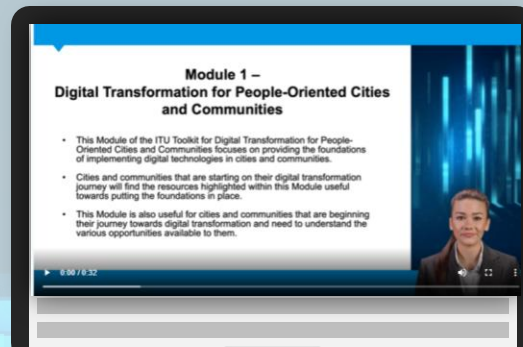


U4SSC Key Performance Indicators



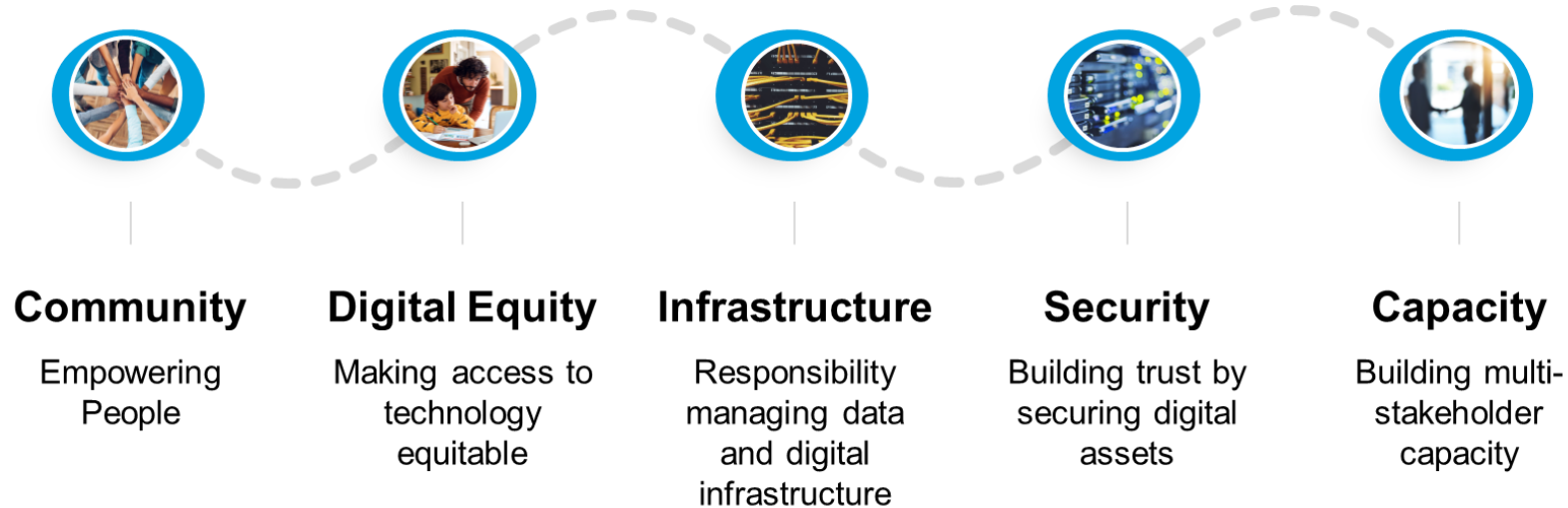
Toolkit on Digital Transformation for Cities and Communities

 Digital Transformation of Cities and Communities	 Developing a Digital Transformation Strategy	 Data Processing and Management	 Connectivity, Digital Divide and Digital Inclusion
 Accessibility and Digital Inclusion	 Reduce the Environmental Impact of Cities	 Smart Energy Management	 Smart Water Management
 Emergency Management	 4IR and Smart Manufacturing	 Smart Sustainable City Governance	



 United Nations Department of Economic and Social Affairs		 UNECE	
 WORLD METEOROLOGICAL ORGANIZATION	 International Water Resources Association	 UN environment programme	 copenhagen climate centre
		supported by 	
 UNITED NATIONS UNIVERSITY UNU-EGOV	 UNEP DTU PARTNERSHIP	 COPENHAGEN CENTRE ON ENERGY EFFICIENCY SEforALL EE HUB	
 UN HABITAT FOR A BETTER URBAN FUTURE	 U4E UN IN United for Efficiency	 UNDP Empowered lives. Resilient nations.	

Towards people-centred cities and communities





Thank you!



Email

u4ssc@itu.int



Website

U4SSC.itu.int

*Check out our new
Digital Transformation
Brochure!*

