Smart sustainable cities: From Vision to Reality

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We live in a **world of cities**, and our planet is increasingly urban. **By 2050, more than 70%** of the world's population will live in cities. **Cities are the new engines of growth** in the global economy, **responsible for 80% of global GDP.**

Regardless the size, cities are becoming nodes of:

INNOVATION

E.g. **Smart Array**: Intelligent Street Poles as a Platform for Urban Sensing – City of Chicago

PRODUCTION

E.g. **The city of Glasgow**, in 1990 the city was associated with street violence and urban decay and it has now transformed into "Scotland's economic engine room.

CREATIVITY

E.g. **The city of Istanbul** was designated as a "Design City" by the UNESCO Creative Cities Network.

Cities are the main actors for coping with *sustainability challenges* such as:

Growing population

Traffic congestion

Scarce resources

What is ITU doing to help cities to address these challenges and become smarter and more sustainable?

ITU-T Activities on IoT & Smart Sustainable Cities

Development and implementation of standards → **ITU-T Study Group 20**

Research & pre-standardization work → **Focus Group on Data Processing Management (FG-DPM)**

Projects, Open platform for knowledge sharing and raising awareness →

U4SSC

KPIs for SSC

Worldwide & regional events

ITU-T SG20: IoT and Smart Cities & Communities

Lead Study Group on:

Internet of things (IoT) and its applications

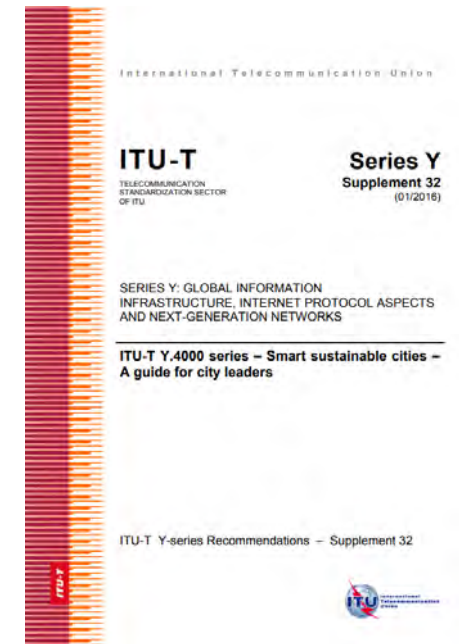Smart cities and communities, including its e-services and smart services

Internet of things identification

Regional Groups

- SG20RG-LATAM
- SG20RG-ARB
- SG20RG-AFR
- SG20RG-EECAT

Examples of ongoing standards work:

- Draft Recommendation ITU-T Y.ACC-PTS on **"Accessibility requirements for Smart public transportation services"**

- Draft Recommendation ITU-T Y.Stra-SSC **"Standards mapping assessment for smart sustainable city (SSC) strategy"**

- ...and more...

International Telecommunication Union

ITU-T
TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Series Y
Supplement 32
(01/2016)

SERIES Y: GLOBAL INFORMATION INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS AND NEXT-GENERATION NETWORKS

ITU-T Y.4000 series – Smart sustainable cities – A guide for city leaders

ITU-T Y-series Recommendations – Supplement 32

Next Meeting:
Geneva, Switzerland, 9-18 April 2019

gthening Regional & International Collaboration and Cooperation

JCA-IoT and SC&C

- Collaboration and coordination with other SDOs on topics on IoT and SC&C
- IoT and SC&C online standards roadmap

SDOs collaboration

and many more…

United Nations collaboration
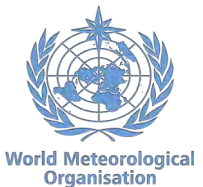
United 4 Smart Sustainable Cities (U4SSC)

U4SSC is a United Nations Initiative
coordinated by ITU, UNECE and UN-Habitat
&
supported by other 13 UN agencies

to achieve **Sustainable Development Goal 11:**
"Make cities and human settlements inclusive, safe, resilient and sustainable.

![U4SSC logo] **ongoing work**

U4SSC is developing:

- Guidelines on tools and mechanisms to **finance SSC projects**

- Guidelines on strategies for **circular cities**

- **City science** application framework

- **Blockchain** 4 cities

- Guiding principles for artificial intelligence in cities

- The Impact of Frontier Technologies on Cities:

  - The impact of **Artificial Intelligence** and cognitive computing in Cities

  - The impact of **data processing and computation** in cities

  - The impact of **sensing technologies** and IoT in cities

Join the U4SSC now

U4SSC publications

Available for free on the U4SSC website:
http://itu.int/go/U4SSC

Connecting cities and communities with the Sustainable Development Goals

17
case studies

w cities
nd ICT s be

SDGs

Mapping with
the SDGs

Mapping with
other international
commitments

Overview of the 2030 Agenda for Sustainable Development

Plan of action for **people**, **planet**, **prosperity**, **peace** and **partnership**

Approved by the UN General Assembly on 25 September 2015

17 Goals

High-level Political Forum on Sustainable Development is the platform for its follow-up

Overview of the Case Studies

SDG 1: No poverty – Green bonds for cities

SDG 2: Zero hunger – Aquaponics as innovative urban agriculture: the case of GrowUp Box

SDG 3: Good health and well-being – Managing HIV in children: the case of Kenya

SDG 4: Quality education – Mohammed Bin Rashid Smart Learning Program

SDG 5: Gender equality – Digital Literacy Campaign

SDG 6: Clean water and sanitatiion – Smart water managemet: SmartH2O project

SDG 7: Affordable and clean energy - Smart grid solutions: the case of PowerMatching City

SDG 8: Decent work and economic growth – E-banking services:the case of Pakistan

SDG 9: Industry innovation and infrastructure – Smart mobility: the case of Ahmedabad

SDG 10: Reduced inequalities – Pan-African e-Network Programme

SDG 11: Sustainable cities and communities – Smart Dubai Platform and Dubai Data Initiative

SDG 12: Responsible consumption and production – Smart tourism

SDG 13: Climate action – Creating climate smart cities: the case of Scotland

SDG 14: Life below water – Protecting life below water: the Global Fishing Watch platform

SDG 15: Life on land – Monitoring of animals using ICTs

SDG 16: Peace, justice and strong institutions – Improving participation and accountability: MyGov Portal

SDG 17: Partnership for the goals – United for Smart Sustainable Cities

Mapping case studies-SDGs

Product/ Case study title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Green bonds for cities	√								√				√				
Aquaponics as innovative urban agriculture: The case of the GrowUp Box		√	√			√			√			√					
Managing HIV in children: The case of Kenya			√						√	√						√	√
Mohammed Bin Rashid Smart Learning Program				√					√								√
Digital Literacy Campaign	√				√				√	√	√						√
Smart water management: SmartH2O project						√					√						√
Smart grid solutions: The case of PowerMatching City							√		√		√						√
E-banking services: The case of Pakistan								√	√	√						√	√
Smart mobility: The case of Ahmedabad							√		√		√	√					√
Pan-African e-Network Programme			√						√	√	√						√
Smart Dubai Platform and Dubai Data initiative					√				√	√	√					√	√
Smart tourism								√	√		√	√	√	√	√	√	√
Creating climate smart cities: The case of Scotland			√						√		√		√		√		√
Protecting life below water: The Global Fishing Watch platform									√			√		√		√	√
Monitoring of animals using ICTs									√		√				√	√	√
Improving participation and accountability: MyGov Portal									√		√					√	√
United for Smart Sustainable Cities	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Mapping of case studies to other international commitments

Product/ Case study title	Connect 2020 Agenda	New Urban Agenda	Paris Agreement	WTSA
Green bonds for cities		√	√	
Aquaponics as innovative urban agriculture: The case of the GrowUp Box			√	
Managing HIV in children: The case of Kenya	√	√		√
Mohammed Bin Rashid Smart Learning Program	√	√		√
Digital Literacy Campaign	√	√		√
Smart water management: SmartH2O project	√		√	
Smart grid solutions: The case of PowerMatching City	√			√
E-banking services: The case of Pakistan	√	√		√
Smart mobility: The case of Ahmedabad	√	√		√
Pan-African e-Network Programme	√			√
Smart Dubai Platform and Dubai Data initiative	√			√
Smart tourism	√	√	√	√
Creating climate smart cities: The case of Scotland	√	√	√	√
Protecting life below water: The Global Fishing Watch platform	√			√
Monitoring of animals using ICTs	√			
Improving participation and accountability in India: MyGov Portal	√			√
United for Smart Sustainable Cities	√	√	√	√

Key messages

- International commitments provide a strategic approach which countries and cities have to translate in their work.

- Regional, national and local governments have already started to implement SDGs.

- SDGs are achievable and all stakeholders should engage.

- Knowledge and good practice transfer is a good means to scale up action.

Enhancing innovation and participation in smart sustainable cities

United 4 Smart Sustainable Cities

Enhancing innovation and participation in smart sustainable cities

Smart Governance

| Dubai Government Electronic shared services | Singapore: A Smart City on the horizon | Fit-for-purpose land register |

Smart People

| The Seoul Open Data Plaza | Skill development and entrepreneurship - India |

Smart Economy

| Dubai: The first city on the blockchain | Airport PPP experience in India | Maribor, Slovenia PPP | London Green Fund |

Overview of Conclusions for Innovation and Participation

1. Enhancements in innovation and participation have far-reaching positive impacts on society, economy and the environment.

2. The diffusion and uptake of ICT-based digital technologies enable tremendous opportunities for changing the way that cities are governed.

3. Public services should be digitally provided in a convenient, easy-to-use manner.

4. Public services should be provided effectively and efficiently by digitizing, streamlining, simplifying and redesigning public sector processes.

5. Public services should target high levels of digital adoption (uptake) by realizing the potential of digital public services while boosting the return on investments for digital transformation.

6. SSC should consider providing shared services / solutions in order to create operational efficiencies through savings in public funds.

7. SSC should provide open data to enable easy and convenient access to city information; and to also encourage innovation and value creation by various constituents of the city, including public and private sectors, as well as academia and NGOs.

8. SSC should formulate and implement policies and initiatives to achieve high levels of inclusive and sustainable economic growth.

Overview of Conclusions for Innovation and Participation (cont.)

9. Policies and regulations supporting innovation and entrepreneurship will be conducive to economic growth.

10. SSC should devise creative and alternative smart financing mechanisms.

11. SSC have an enormous opportunity to engage their citizens during the formulation, design and even implementation of urban projects.

12. SSC solutions ultimately address and meet the needs of people living in a city (as consumers of solutions).

13. SSC should aim to equip its people with the right skills and capabilities to ensure their wellbeing and economic prosperity as city residents.

14. Skills of people in cities are key enablers for smart sustainable cities.

15. SSC should aim sustainable and inclusive city solutions, services, policies and governance while ensuring high levels of stakeholder participation and engagement.

16. Enhancing people's skill sand ensuring their engagement and participation will contribute to innovation and also expedite societal adjustment to innovation in SSC.

Implementing SDG11 by connecting sustainability policies and urban-planning practices through ICTs

Provides a study of the advantages of using ICTs to support the implementation of the Sustainable Development Goals, in particular SDG 11, by facilitating the missing linkages that exist between sustainability policies and urban-planning practices through digitally-enabled urban actions.

Fostering the incorporation of transformative public policies into urban-planning actions

achievement of SDG11

Elaborating on urban-planning design values to support its technology-based execution in aspiring smart cities.

Key performance indicators for SSC

The U4SSC developed a set of KPIs for SSC:

- to establish the criteria to evaluate ICT´s contributions in making cities smarter and more sustainable, and

- to provide cities with the means for self-assessments in order to achieve the sustainable development goals (SDGs).
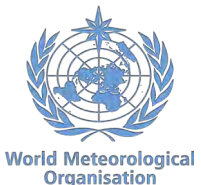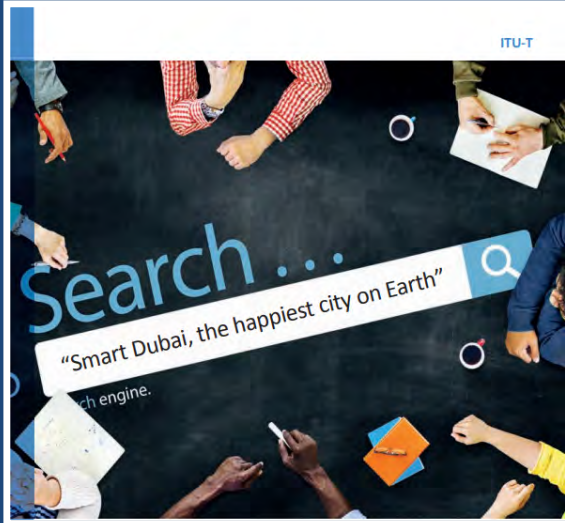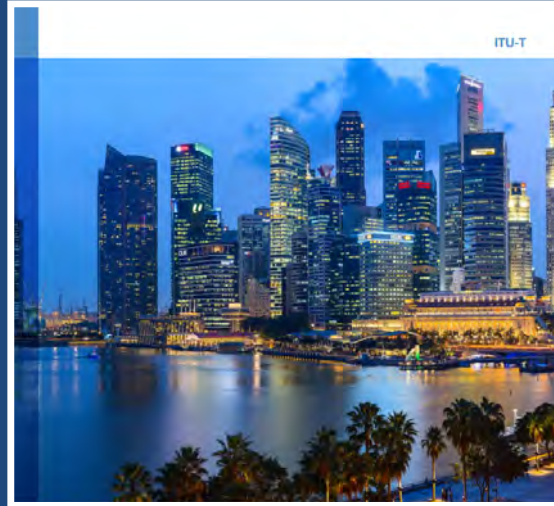
Case Studies on the Implementation of KPIs for SSC

The Case of Dubai

The Case of Singapore

The Case of Moscow

Visit: http://www.itu.int/go/ITU-T-SSC

Thank you!

More information can be found at:

https://www.itu.int/en/ITU-T/ssc/united/Pages/default.aspx

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