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# Smart Sustainable Cities: From Vision to Reality

Cristina Bueti

Adviser and ITU Focal Point on Environment and  
Climate Change



## Members:

- **193 Member States** (Governments and regulatory bodies)
- **Over 700 Private Sector** (Sector Members and Associates)
- **Over 90 Academia**
- UN specialized agency for ICTs
- standards developing organization
- unique public/private partnership

# Some population facts

Every second, the **urban population** grows by 2 people.



There will be more than **40 megacities** worldwide by 2050, each with a population of at least 10 million.



In the world, over 750 million live in urban areas without adequate shelter and **basic services**.



By 2050, it is expected that **70% of the world population** will live in urban areas.

1/3 of people in developing countries living in cities, live in **slum/squatter settlements**.



Almost 180,000 **people** are added to the urban population each day.





# Some city facts



Cities account for about two-thirds of **global energy demand**.



Buildings produce a fifth of the world's **CO2 emissions**.



Cities produce up to 70% of **global greenhouse gas emissions**.



Buildings account for roughly 40% of the world's **energy use**.



An estimated 80% of **global GDP** is generated in cities.

# City is an holistic system

- economically compete
- sustainably growth



*“Cities are the greatest creations of humanity”* – Daniel Libeskind



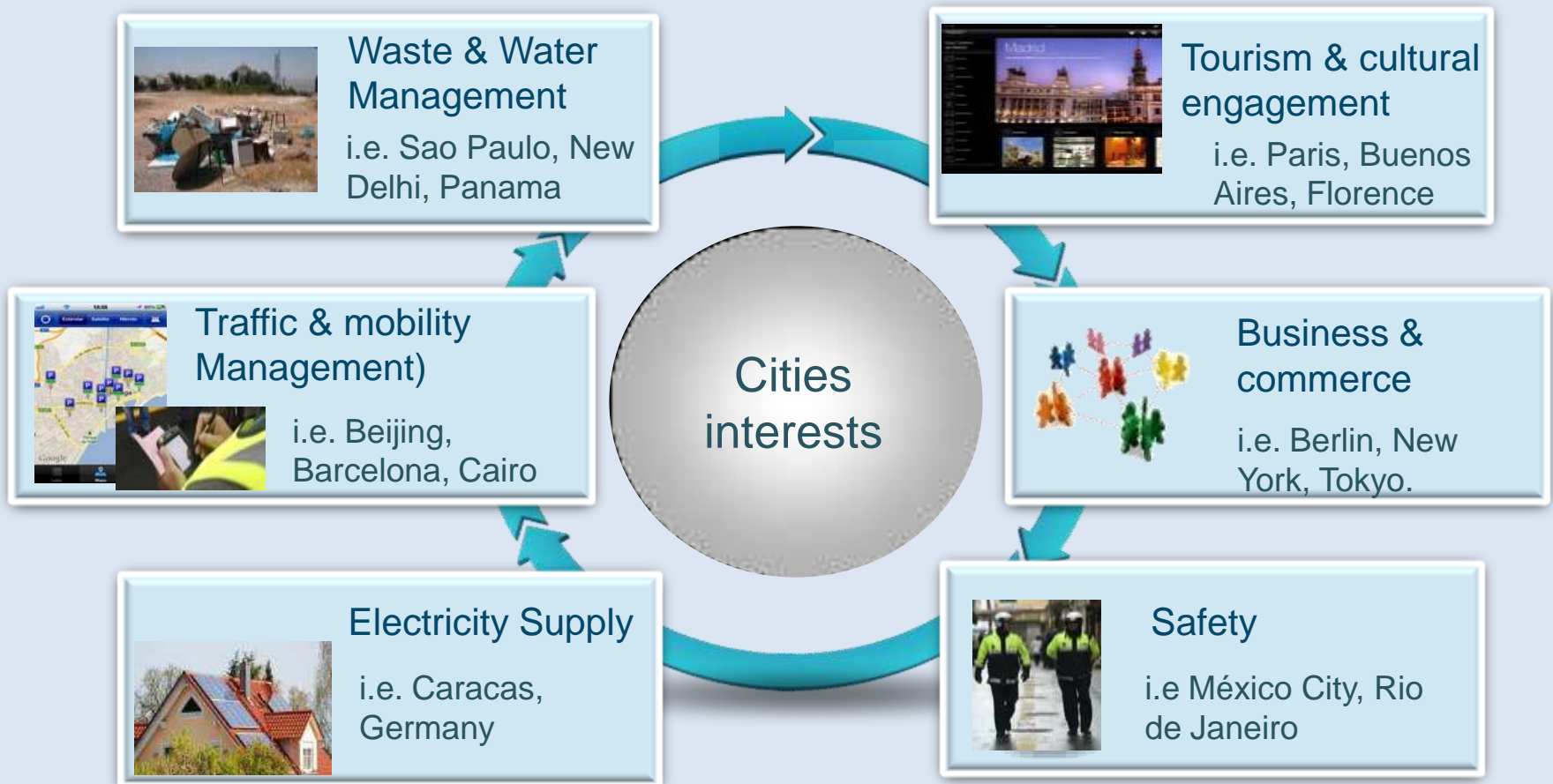
# From design to implementation



- Find funds to scale-up innovation;
- Generating **public support**;
- **Assessing** progress.
- Every city has **different needs**;
- Engaging all **stakeholders**;

# Cities challenges vs citizens interests

*Cities face quite similar challenges, most of them related to sustainability*



Sources: (1) McKinsey Global Institute - Big Data Report, May 2011. (2) 2012E, Strategy Analytics , Global Social Network Market Forecast, Oct 2011. (3) United Nations, April 2010, (4) Youtube 2011

*Transforming  
tomorrow...*



*... smart thinking is here already*



# Everything will be connected

## Drivers

- Entertainment, security, health
- Productivity, new revenues
- Sustainability, regulation

### Connected consumer electronics



### Intelligent transport, industry and society, smart utilities

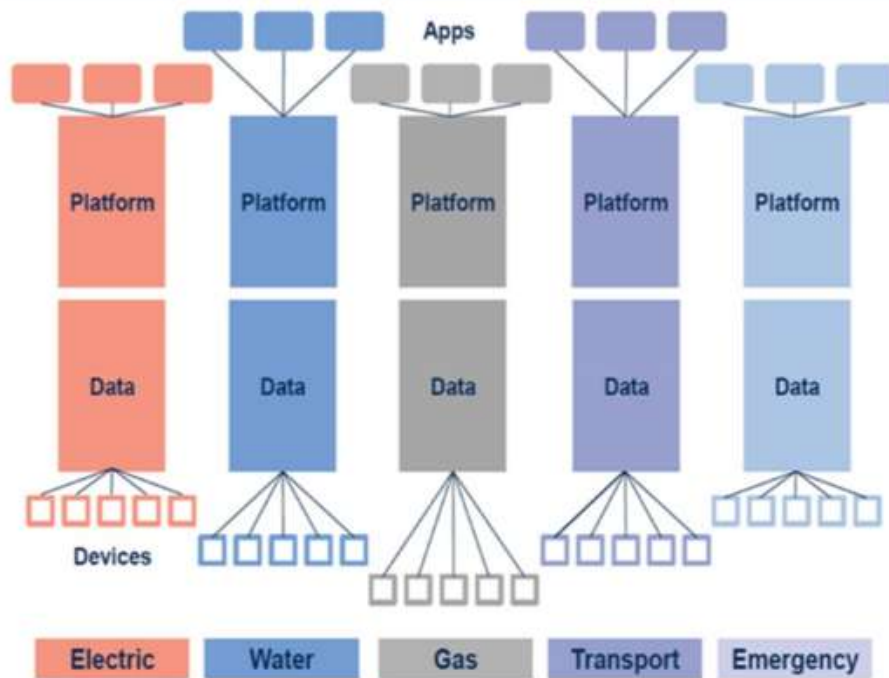


- Broadband ubiquity
- Declining cost of connectivity

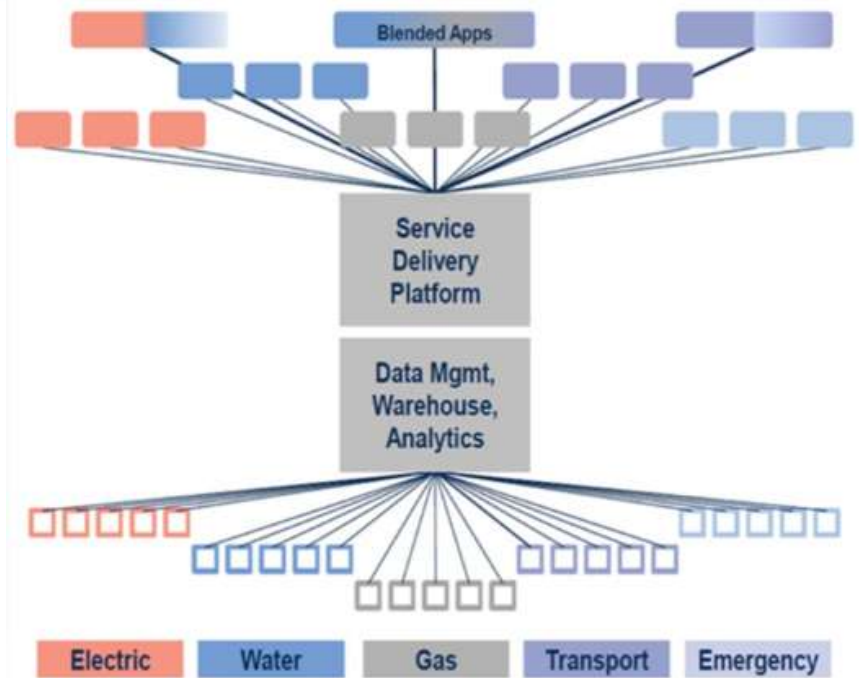
## Enablers

# Approaches

## Current applications live in "silos"



## Next-gen apps will share infrastructure and data



# What is ITU doing to shape Smart Sustainable Cities?



**ITU-T Study Groups**

**Focus Group on  
Smart Sustainable  
Cities**

**Raising awareness and  
building partnerships**

**Research and  
development**



# Global standards are key!

Drive competitiveness, for individual businesses and world economy;

Lower prices;

Reduce technical barriers;

Foster interoperability;

City leaders, Manufacturers, network operators and consumers;

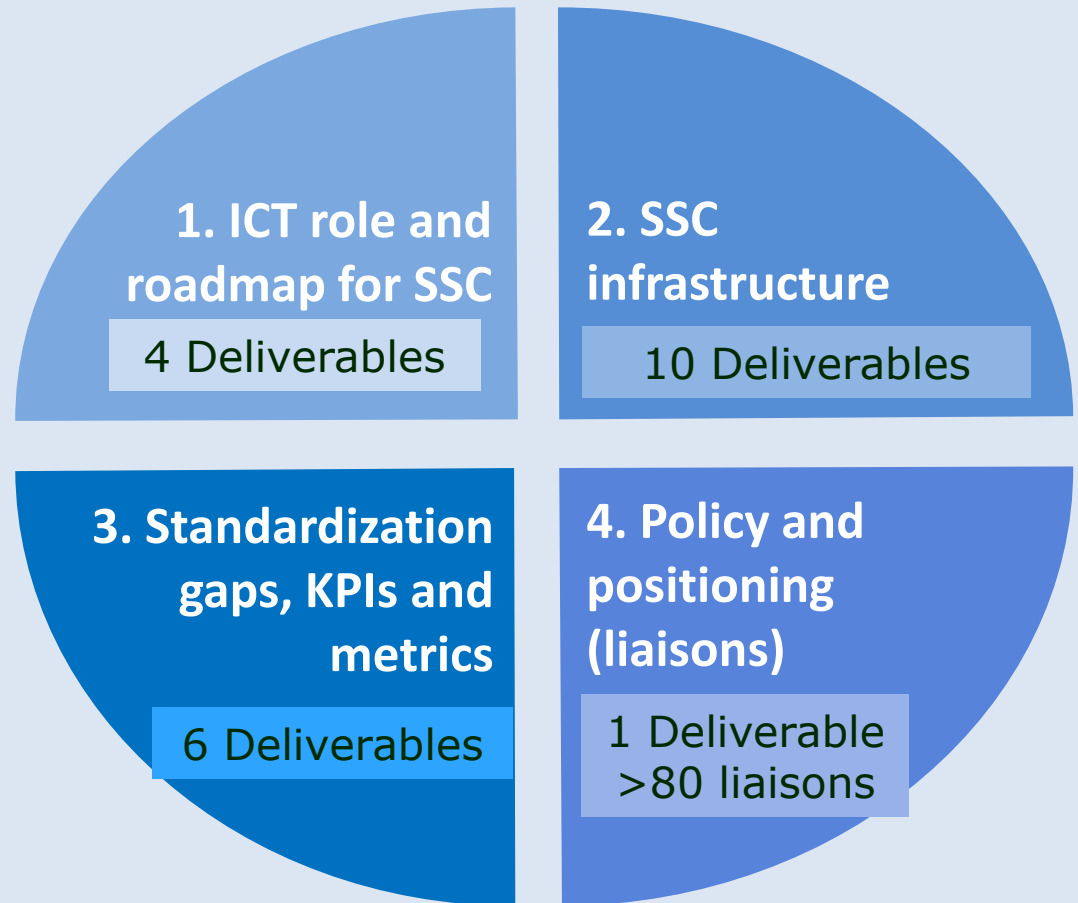
Reduce negative impacts on the environment



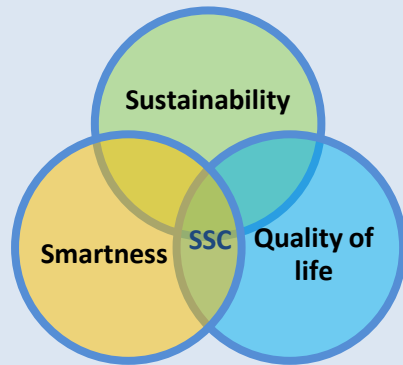
# ITU-T Focus Group on SSC

## Working Groups & Deliverables

- Established in February 2013, concluded in May 2015
- As an open platform for smart-city stakeholders
- Over 150 participants / collaborators from different stakeholders
- Liaison with other SDOs (ETSI, ISO, IEC etc) & IGOs (UNFCCC, UN-Habitat, etc)
- 21 technical specifications and reports



# Dimensions of a Smart Sustainable City



A graphic illustration of a smart sustainable city. It features a city skyline with blue buildings and a rainbow arching over them. Below the city is a stylized globe with a blue and white color scheme. The background is a light blue sky with white clouds.

**"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 and environmental aspects."

Focus Group on Smart Sustainable Cities



# You cannot manage what you cannot measure!



- Key performance indicators (KPIs) to assess how the impact of ICT on the sustainability of cities.
- Dubai, 1<sup>st</sup> city to pilot ITU's KPIs worldwide



**Join ITU's SSC Initiative!**

# What do stakeholders expect in smart sustainable cities?



# Technology: turning traditional infrastructure into smart infrastructure



## The role of ICT for:

Better data = better decisions

Smart Ubiquitous infrastructure

Economic competitiveness

Green and sustainability

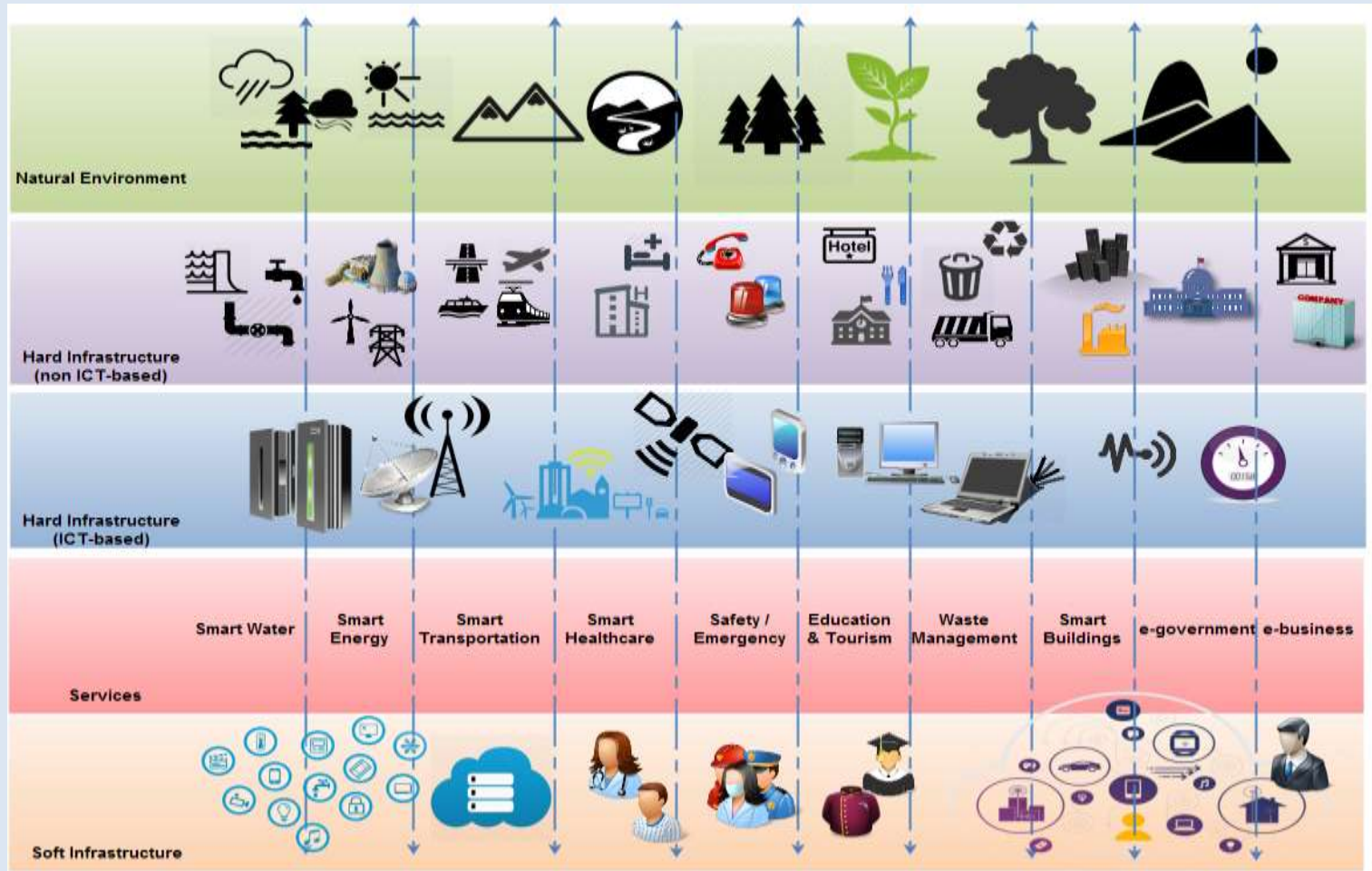
Low carbon businesses

Social inclusiveness

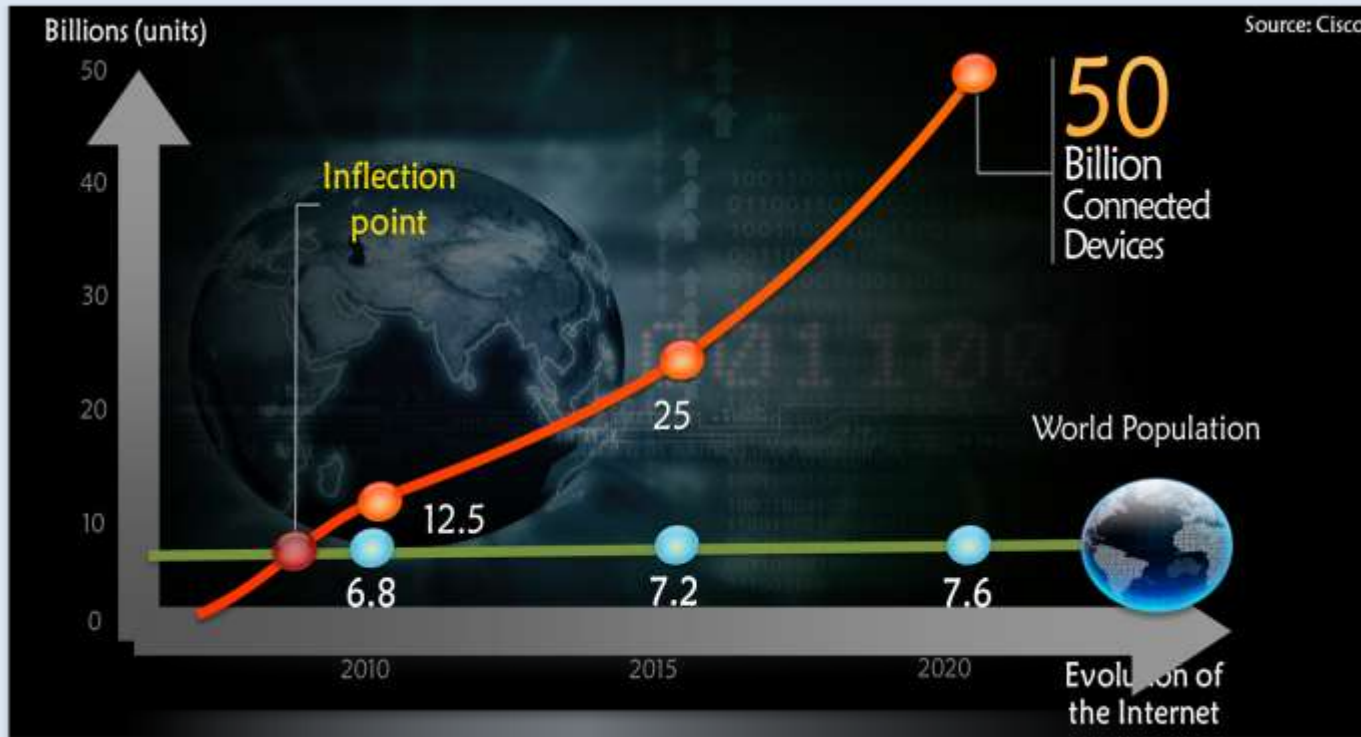
Citizens' engagement



# Setting a SSC Infrastructure



# IoT will shape smart sustainable cities



- IoT is “A global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies” (ITU-T Rec. Y. 2060 – international standard).

# Smart food for smart citizens

Shanghai: Nutrizione Equilibrata e Rete Logistica Agricola

上海膳食营养平衡和农业物联网

Balanced Nutrition and the Agricultural Internet of Things in Shanghai

Presentazione - XINHAJIA NEWS AGENCY

La salute è originata dal cibo sicuro, dalla dieta equilibrata e da un'alimentazione equilibrata. La presente esposizione, tramite un'esperienza interattiva di nutrizione equilibrata e la presentazione del ricorso dei dipartimenti governativi e del mondo imprenditoriale di Shanghai alla tecnologia logistica per attuare il design digitale, l'automazione della produzione, il controllo intelligente, il funzionamento preciso, la distribuzione efficiente, la tracciabilità del consumo, servizi informativi e la gestione meticolosa delle produzioni, lavorazione, distribuzione, e consumo dei prodotti agricoli, è tutta l'impegno del paese in favore della sicurezza alimentare, della sana alimentazione e della nutrizione equilibrata.

展览介绍

健康源于食品安全、均衡膳食和营养平衡。该展览将通过营养平衡互动体验，结合中国上海地区农业物联网部门和企业，运用物联网技术对农产品生产、加工、销售、配送、消费等环节，实现精准控制、智能化管理、高效物流、可溯化消费、信息化服务、精细化管理的展示案例，体现中国人在保障国家农产品安全、提升国民膳食安全、

Introduction

Our health depends on safe food, better dining, and balanced nutrition. The exhibition provides a chance to experience a balanced nutrition with examples of how authorities and companies in Shanghai are using the Internet of Things to digital design, automate production, and get smart control, precise operation, more efficient transport, traceable consumption, information-based services, and better food safety management. It shows us Chinese are concerned about food safety and are improving scientific dining and balanced nutrition.



MILANO 2015





# Building Trust

Privacy

Resilience

Data  
Protection

Security

# Way to a Smart Sustainable City



# Transitioning to a smart sustainable city



Source: Guide for City Leaders, ITU Focus Group on Smart Sustainable Cities



# Thinking smart, acting sustainable, living fulfilled

*“ICTs have transformed the way people live and the manner in which countries develop. They have the potential to enable us to solve many of the critical problems confronting us. If this potential is to be realised, then we must find ways of turning these technologies into a resource for all people despite the challenges they face within their communities.”*

**Nelson Mandela**  
@ITU Telecom World 2009



## ICT can help... let's move further!

# Connecting Minds, Creating the Future

Get-together of  
leading specialists



ITU provides a  
global platform



IoT enabled

**Thank you!**

**Hope to see you all in a smarter and  
more sustainable tomorrow**

**ITU-T, Environment and Climate Change**  
<http://www.itu.int/go/ITU-T/climate>

[cristina.bueti@itu.int](mailto:cristina.bueti@itu.int)