

Internet of Things technology and applications for Smart cities

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1. Introduction and Digital Economy
2. Key emerging technologies and IoT (Internet of Things) for building Smart cities
3. Policy and Regulatory frameworks for Smart cities
4. Study on international activities and best practices
5. Common challenges and key strategies on IoT for Smart cities
6. Way to forward-summary of Recommendations

Summary

Now more than ever, the world is looking into cities to help achieve a sustainable future. In light of projections stating that two-thirds of humanity will be living in cities by 2050 and the anticipated challenges this brings about, cities will definitely have to lead the way in addressing present needs without compromising the future. Building Smart City has become an important trend globally. In the past, telecom operators were already crucial partners in terms of city infrastructure. ICT sector is including IoT technology and applications often recognized as one of the enablers of Smart cities (SC) and its strategic use help cities become inclusive, safe, and resilient.

The potential of Smart cities is nearly limitless. The capabilities of SCs will be enacted not only by traditional ICTs, but also by advanced emerging trends 4-th industrial revolution, 3-rd wave of digital transformation including key technology such as Internet of Things (IoT), AI, Radio-Frequency Identification (RFID), Machine-to-Machine (M2M) communications, Bluetooth®, Cloud Computing and Big Data. The IoT is fundamentally changing the business and drives convergence between ICT and industries. Quite simply, SCs use IoT devices such as connected sensors, lights, and meters to collect and analyze data. The cities then use this data to improve infrastructure, public utilities and services, and more. With IoT becoming basic communication facilities in every city, the role of telecom operators cannot be overemphasized in Smart City development.

This paper has several aims: a) the presentation of a critical analysis of the terms “smart sustainable cities” and “Internet of things IoT” b) paper also attempts to define key emerging technology with IoT technology development trends, and challenges of national developments from various aspects ranging from standards and KPIs for measuring Smart Cities to design and implementing architectures, and IoT services & applications for Smart Cities. c) Analysis of policy and regulatory frameworks for planning and building SC d) Study on activities and best practices related to the ITU and international organizations, partnership projects for working to develop the tremendous potential ICTs have to help build smarter, more sustainable cities with other. U4SSC develops international standards and guidelines to enable the coordinated development of IoT technologies and their application in SCs. Recently, many cities including Dubai, Singapore, Moscow, Taipei, Valencia, Montevideo, Maldonado, Pully and Rimini have asked ITU for assistance in the implementation of the U4SSC KPIs.

The creation of SCs require a trusted infrastructure capable of supporting an enormous volume of ICT-based applications and services by using IoT, which in turn requires coordinated adherence to common standards that ensure openness and interoperability. It is essential that next-generation urban systems including IoT are conceived with cybersecurity and data protection.

Finally, paper proposed the way to forward-set of recommendations on improvement of Government and public service delivery mechanisms including Smart city initiatives, ICT development trend impacts (IoT), common challenges on key strategies (i.e.integrated management, safety net-cyber security, the open and inclusive architecture) for building Smart cities.

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