



APT SATRC

WEB DIALOGUE

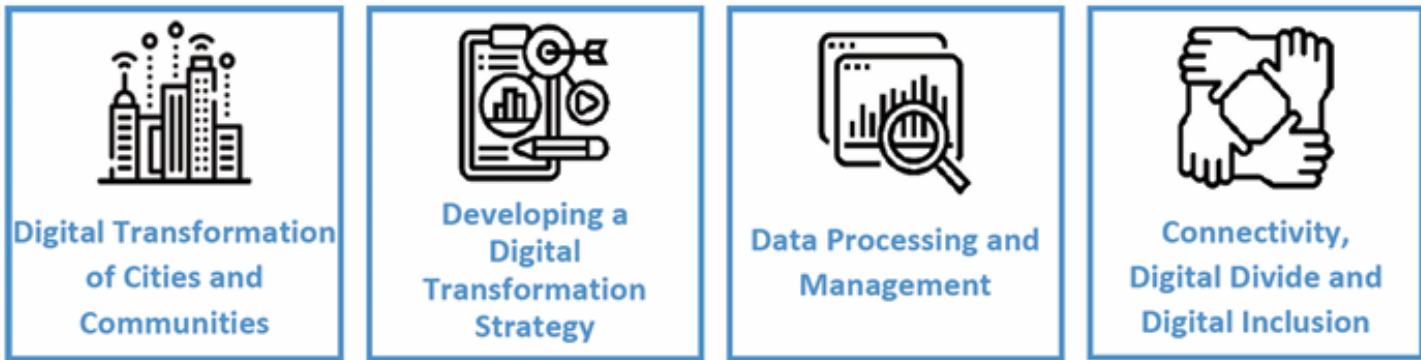
Smart Cities and Societies
for Sustainable Socio-
Economic Development

30 OCTOBER 2024

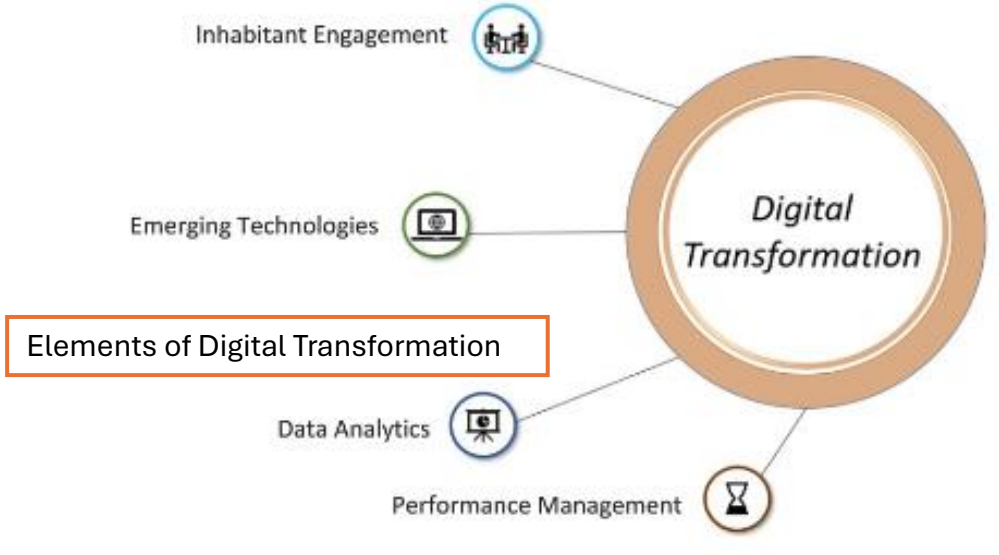
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Bangladesh Telecommunication
Regulatory Commission (BTRC)

Introduction to Smart Cities

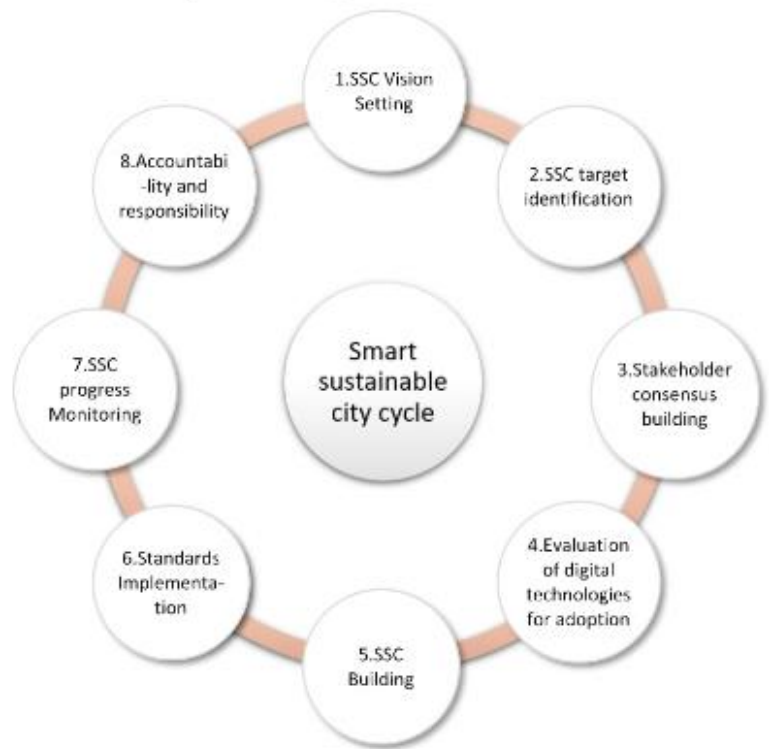
- ❖ A smart city represents a contemporary urban landscape where **technologies are harnessed to improve public services, improve the living standards of residents, and promote sustainability.**
- ❖ Hall et al. (2000): smart city is the urban center of the future, made safe, secure environmentally green, and efficient because all structures, (power, water, etc.) are designed, constructed, and maintained making use of **advanced, integrated materials, sensors, electronics, and networks which are interfaced with computerized systems comprised of databases, tracking, and decision-making algorithms.**
- ❖ Finger and Razaghi (2017) has defined smart cities as “the penetration of cities by ICTs”.
- ❖ Belissent et al. (2010): a ‘city’ that uses information and communication technologies to make the critical infrastructure components and services of a city more aware, interactive, and efficient.
- ❖ **ITU** has defined “A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, the 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.*



SSC Components



Elements of Digital Transformation



(Adapted from ICLEI, 2014)

Role of Telecom in SSC Development

Ensuring Widespread, High-Quality Connectivity

- ❖ Telecom regulations that promote infrastructure investments, like 5G, fiber-optic networks, and low-power wide-area networks (LPWANs), are essential to support dense connectivity demands in SSC.
- ❖ Regulatory frameworks help standardize quality and performance expectations for telecom providers, ensuring that the connectivity is both reliable and consistent across the city.

Enabling IoT and Device Interoperability

- ❖ Smart cities require interoperability across diverse devices, systems, and applications. Telecom regulations help standardize protocols and frequencies to ensure that these IoT devices can connect seamlessly.

Building Public Trust and Social Acceptance

- ❖ Transparent regulations increase public trust by clearly defining how personal data will be used, how services will be delivered, and how citizen welfare will be prioritized.

Role of Telecom ...2

Environmental and Sustainability Goals

- ❖ Regulatory frameworks can mandate environmental standards for smart city infrastructure, promoting sustainable urban development.
- ❖ Policies around renewable energy, waste reduction, and green infrastructure help align smart city projects with broader environmental objectives, ensuring they contribute positively to long-term sustainability.

Supporting Data Security and Privacy Standards

- ❖ Connectivity in smart cities involves constant data transfer, often containing sensitive or personal information. Telecom regulations establish protocols for secure data transmission and handling.
- ❖ By enforcing data encryption, cybersecurity standards, and user consent practices, telecom regulation safeguards citizen data and builds public trust in smart city systems.

Role of Telecom ...3

Facilitating Investment and Innovation

- ❖ Regulatory frameworks that promote competition, innovation incentives, and open market access encourage telecom providers to develop new solutions and invest in cutting-edge technologies (including PPP Initiatives).
- ❖ Flexible regulations allow telecom companies to experiment and deploy emerging technologies, like 5G and network slicing, which provide the high bandwidth and low latency crucial for smart city services.

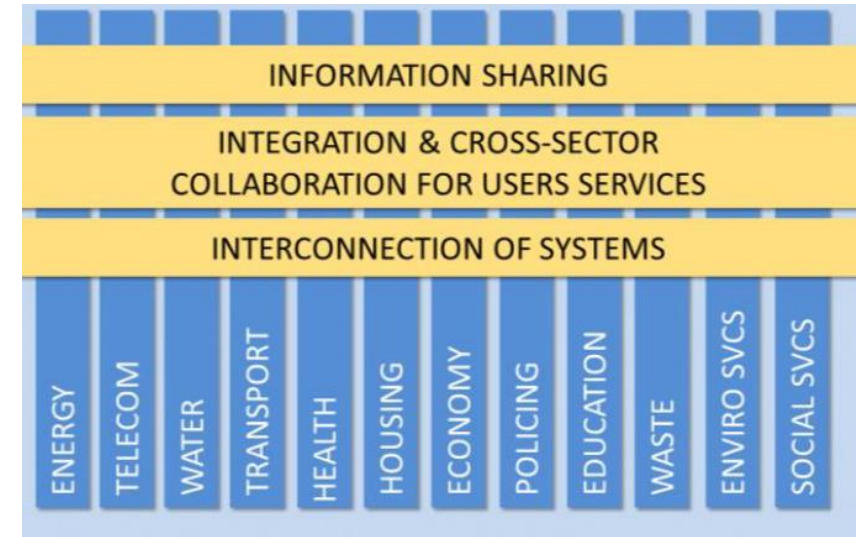
Global and Regional Standardization

- ❖ Consistent regulations across regions and globally promote interoperability, allowing smart city services to scale and benefit from shared standards.
- ❖ Standardization efforts by organizations like the **ITU** or **ISO** encourage cities worldwide to adopt similar technical standards, which enhances collaboration, reduces costs, and simplifies technology deployment.

Open Access to Data...Qatar

To encourage open access and data sharing, the data management policy in Qatar is guided by three main principles (***Ministry of Information and Communications Technology, 2015***):

- ❖ Data should be managed as a strategic resource that supports policy and decision-making, accountability and the efficient delivery of government programs and services;
- ❖ Data collected or generated by each agency should not be viewed as belonging to one agency alone but is available for sharing with other agencies, within the limits of privacy, copyright, legal and security considerations;
- ❖ Data should not be duplicated; it should be captured once and used for multiple generic purposes.



Law on protecting personal data (2016) :

- Individuals have the right to protect their personal data that is electronically processed.
- The prior consent of individual users before sharing their data with a third party is now an obligation on all private businesses handling users' personal information

Communication Protocol ...São Paulo, Brazil

- The Ordinance of **São Paulo's Transportation Office** established the communication protocol that must be adopted by any intelligent transportation system (ITS), closed circuit television (CCTV) system, or traffic management system.
- An open protocol introduces **competition** and thus allows the regulator to replace public equipment with any provider without changing the given network. **On the other hand**, the regulation could improve public capacity to control urban mobility with centralized and aggregated data from different sources.

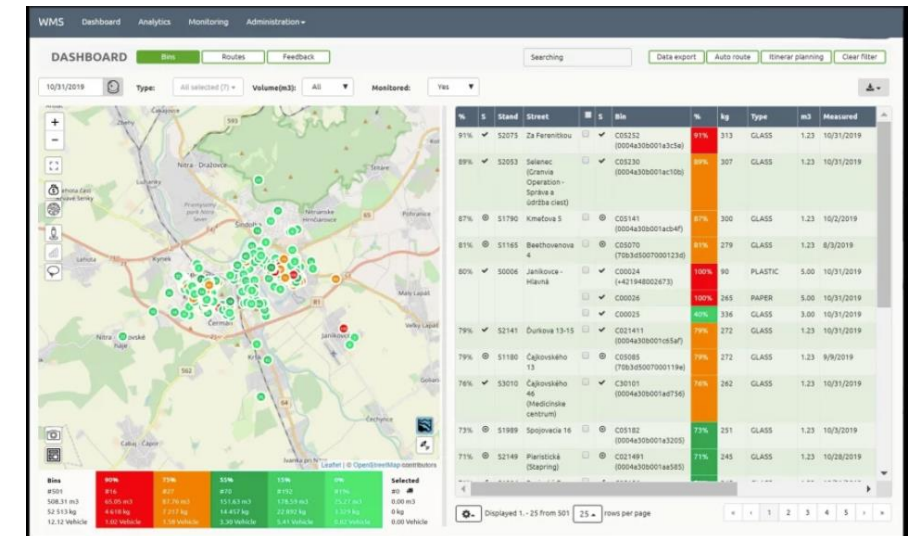


Brazilian Data Protection Law, enacted in August 2018, turned mandatory the standardization of data and communication in activities under public interest.

- Transport Authority
- City Government
- Telecom
- Police
- Traffic

Smart Recycling of Municipal Waste...Spain

- SmartWaste project for collecting and analyzing data from all types of sensors located throughout the recycling process, which allows relevant data to be obtained, in order to make predictive models of behavior that help in **decision-making**.
- To monitor the recycling process using real-time information, which enhances **transparency for the citizens**, facilitates the implementation of promotional campaigns, optimizes municipal resources dedicated to the collection of urban waste, and increases the efficiency in re-using the material.

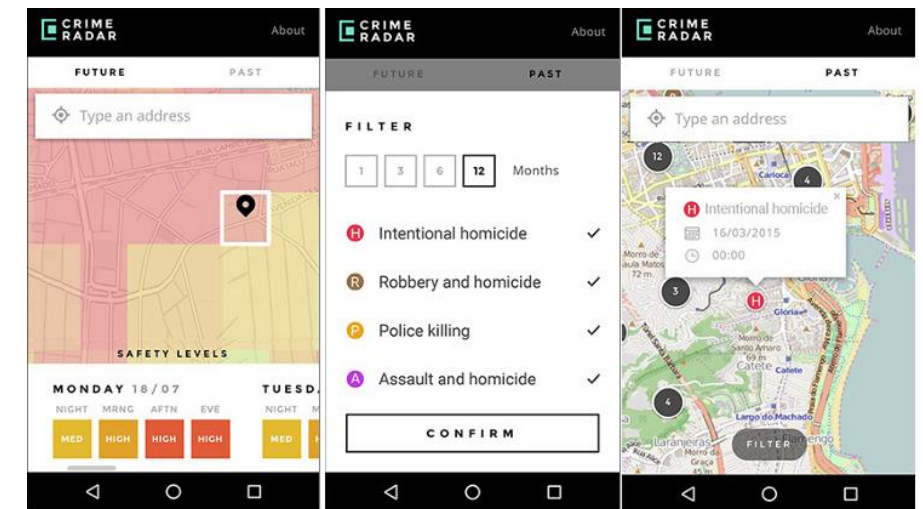
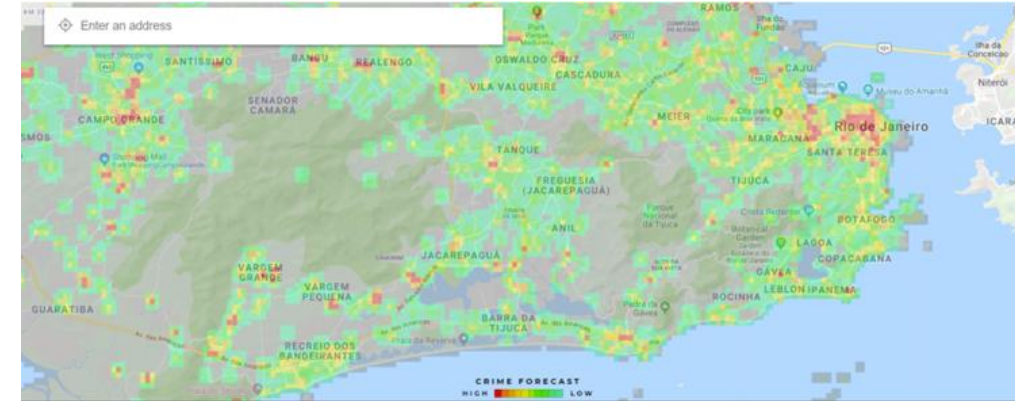


- Utility Authority
- City Government
- Telecom
- Environment
- Industry

Smart Crime Monitoring & Response: Reo De Janeiro, Brazil

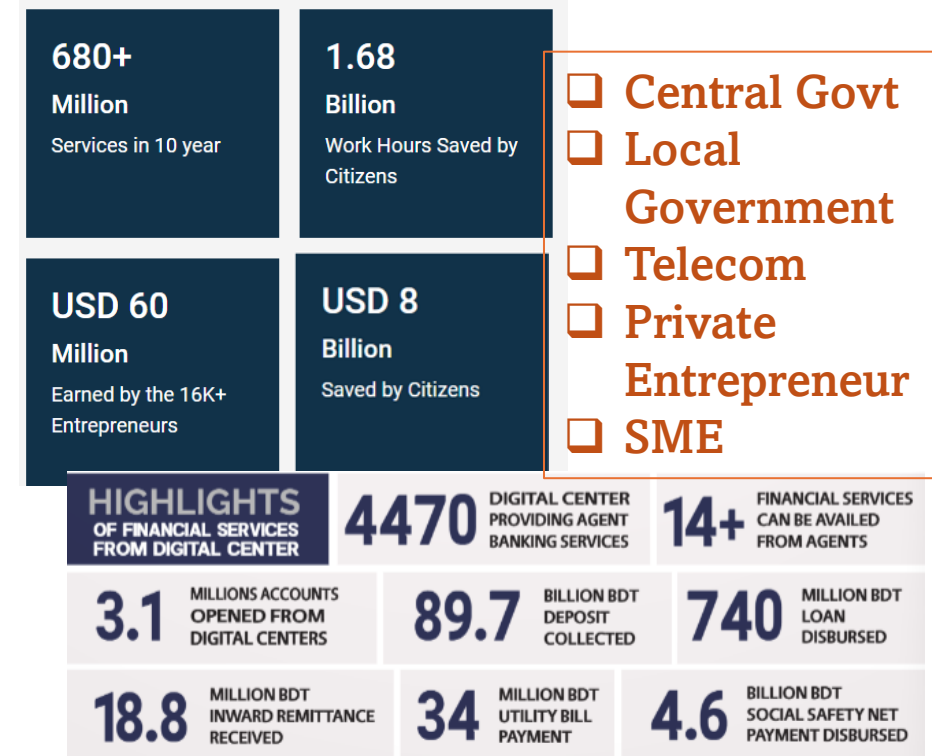
- CrimeRadar is an example of public private partnership whereby actual city crime data was provided to develop a solution which helps both city police as well as citizens and visitors of the city.
- Requires all police departments deploying the predictive tool comply with a minimum set of transparency and reporting standards.
- CrimeRadar was featured in several prominent publications.

City Government
 Telecom
 Police
 Academia
 IT Industry



Digital Centres, Bangladesh

- ❖ Digital Centres are one-stop shops that ensure that the underserved, such as women living in remote rural areas, people with disabilities and the elderly, regardless of their literacy and ICT knowledge, can access vital services.
- ❖ 16,800 Digital Centre Entrepreneurs (9394 Digital Centres countrywide), over 5,300 of whom are women, charge money for the provision of popular private services which cross subsidizes the free of cost provision of government services.
- ❖ These one-stop shops thus represent a novel **public-private partnership between public agencies, private sector companies and the Digital Centre Entrepreneurs** – effectively establishing a microenterprise in grassroots level government offices – that **allow the amalgamation of over 387 public and private services.**

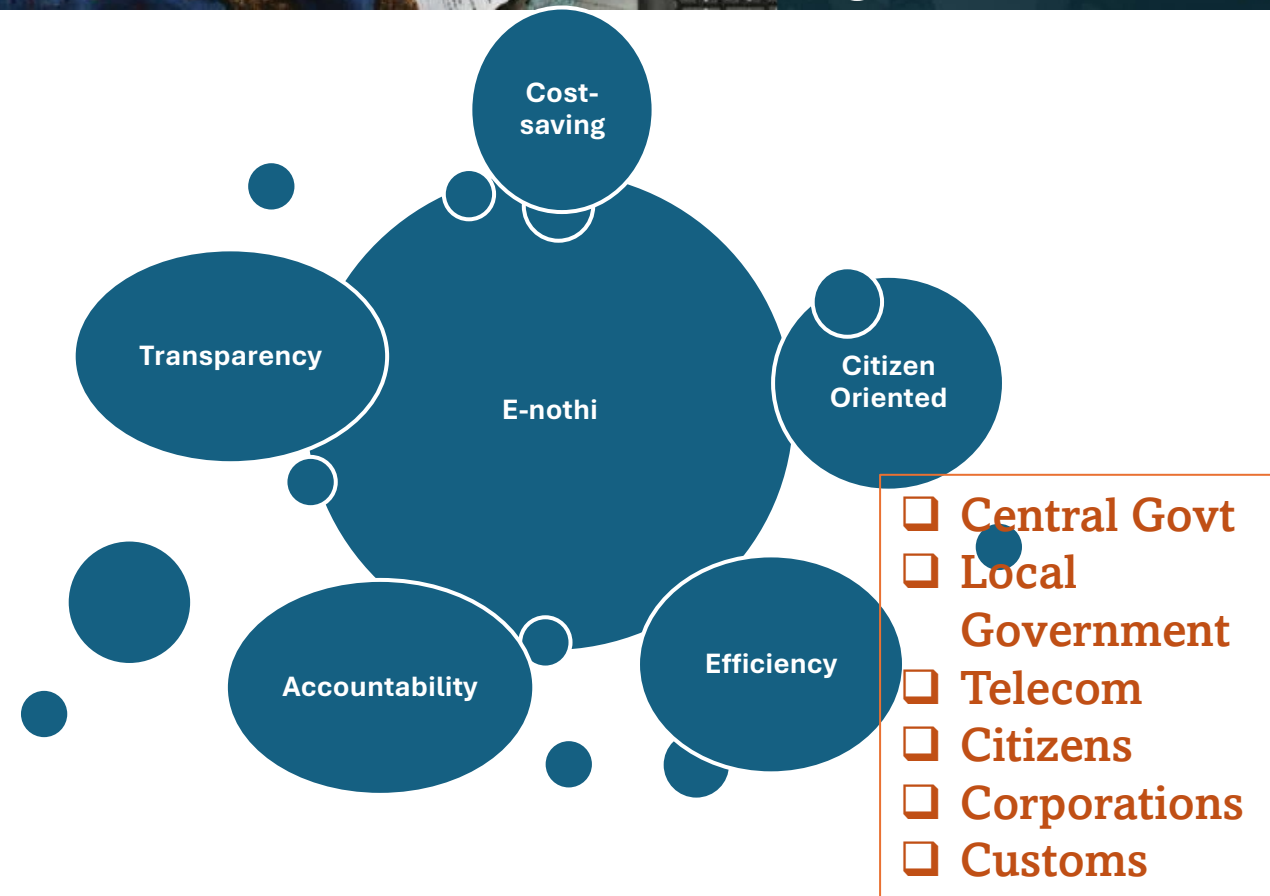


e-Nothi, Bangladesh

- ❖ Revolutionizing the traditional filing system, e-Nothi provides a solution to several problems that plagued the previous manual system.
- ❖ Connecting over 11,370 offices, the system has boosted the efficiency of tasks by creating transparency, accountability and coordination among the government offices and in the work process.
- ❖ Citizens can submit the electronic forms that they filled in (themselves or, with the help of Digital Centre Entrepreneurs) on the National Portal.



e-Nothi: The Ultimate Government Decision-making and Workflow System



U4SSC Initiative: Influencing Regulatory Reforms



- Over 200 cities worldwide are already implementing the U4SSC KPIs, including Dubai, Singapore, Manizales (Colombia), Moscow, Valencia, Kyebi (Ghana), Riyadh (Saudi Arabia), Mashhad (Iran) and Bizerte (Tunisia), with many more aspiring smart cities interested in the initiative.
- The KPIs for SSC consist of 91 indicators. Each U4SSC KPI has been chosen through a process of review and input by international experts and UN agencies to capture a city's performance in three dimensions: Economy, Environment & Society and Culture.
- Each of these dimensions provides a separate view of progress and, when reported together, they provide a holistic view of a Smart Sustainable City.
- This initiative is encouraging targeted regulatory reform, convergence and interoperability from both regulatory and technological perspectives.

Thank You