Smart Cities in Africa
Enabling TRUST

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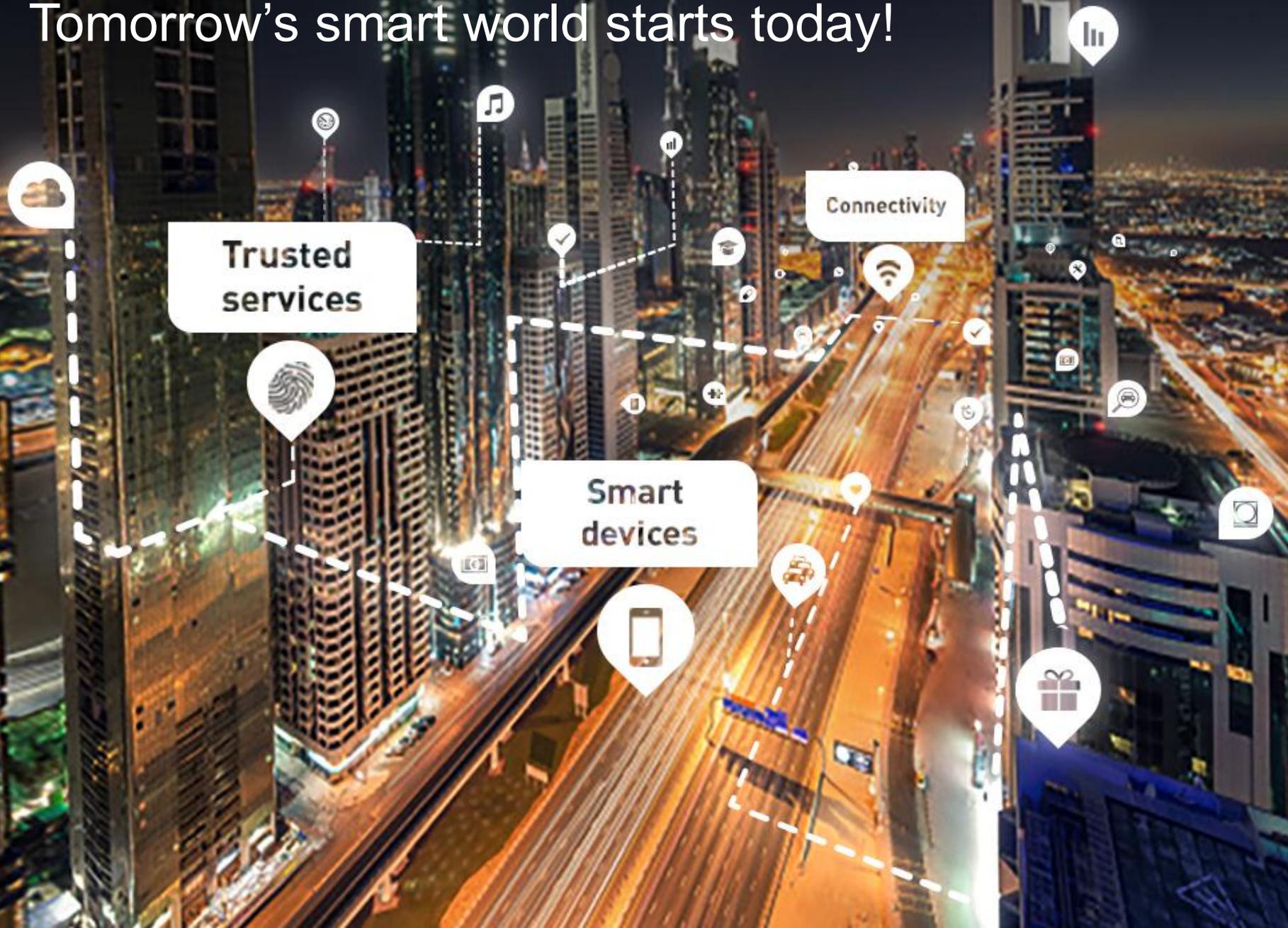
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Vice President Telecommunication Solutions Middle East & Africa - Gemalto

Tomorrow's smart world starts today!

The making of a smart city calls for concerted efforts from public and private sectors

Harness Connectivity and Mobility
providing pervasive access to information, media and online services through smart devices and machines

Boost Economic Developments
fostering innovation in consumer shopping experience as well as industrial processes

Improve Life Expectancy
enabling remote healthcare and safety assistance at home and around the city

Enhance Public Services
providing citizens with state-of-the-art e-government services for more administrative convenience

Streamline Immigration
providing secure, electronic immigration and border management services to enhance travelers' and visitors' experience

Promote Sustainability
optimizing resources usage with smarter energy management and digitization of paper documents

Improve Commuting Experience
Integrating smart technologies into transport & traffic systems

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Smart Cities use a set of secure and certified delivery capabilities to build a *Trust Infrastructure*

Identity Issuers Platforms that issue and manage digital credentials

Service Platforms that operate and provide services like commerce, ID checks or data streaming

Connectivity Infrastructure to enable fast data exchange

User Interface on smart devices and objects carrying embedded client-side software and digital credentials

Trust Management platforms that verify, provision and manage digital credentials, sensitive applications and data lifecycles

Global Technical Standards and implementation frameworks that ensure interoperability of critical networks

Building a state-of-the-art trust infrastructure

✖ Use of state-of-the art digital encryption and tamper-proof secure elements to store and manage sensitive data

✖ Establish the role of a Trust Manager platform that can act as trusted third party to supervise transfer of sensitive information between service providers

✖ Ensure that the systems being implemented are industrially robust, reliable and scalable with more users adoption, city growth and future innovations

✖ Create an open eco-system by leveraging recognized standards and certifications, so that innovation can thrive, with application developers and service providers able to cost-effectively develop and onboard new services

Create a smarter world
with smart cities in Africa where:

- connectivity brings people and ideas closer together

- people can depend on and trust the technology surrounding them

- citizens can fulfill their human potentials

- quality of everyday life brings more convenience and enjoyments

- economic prosperity and political stability underpin society progress

- we leave a cleaner planet for future generations

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Harness connectivity and mobility

African's Digital Natives

Sub-Saharan Africa, the fastest growing region globally of unique mobile subscriber base
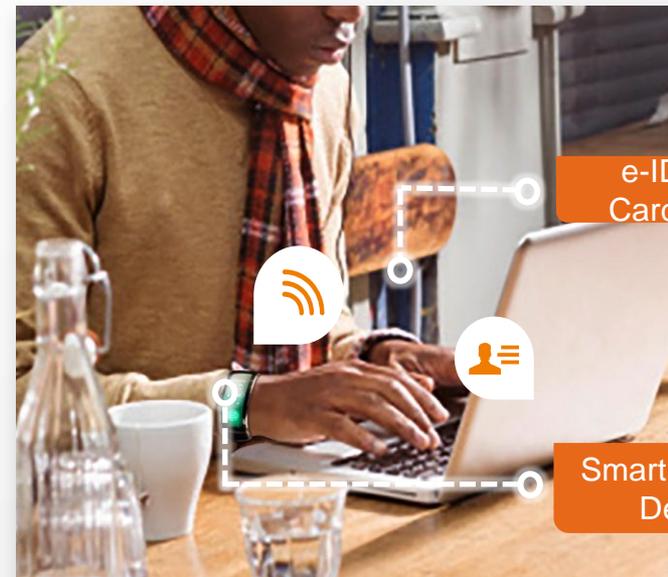**+18 % per year over the last 5 years**

253 million mobile subscribers and **502 million connections** (mid 2013)

With fixed line penetration rates of less than 5%, mobile has emerged as the main medium for accessing the internet across Sub-Saharan Africa.

Smart Phones

3G and 4G networks are gaining scale in Africa
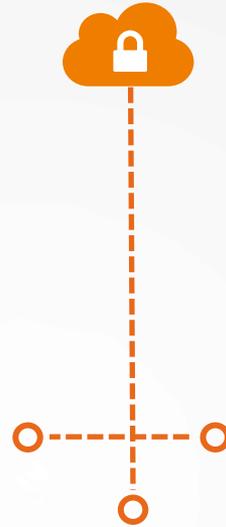Smartphone ownership is on the rise

e-ID Cards

Smart Wearable Devices

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Improve life expectancy with *Smart Healthcare*

Remote Health Assistance

Chronic Care Management

Remote First Aid Assistance

250 mHealth services currently in operation across the region, supporting patients who may not have access to local healthcare services

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Improve life expectancy with *Smart Healthcare*

101 mHealth services throughout South Africa of which 83 are live

- Strong focus on Maternal, Newborn and Child Health (MNCH)

- Most addressed medical need are HIV/AIDS with 42 live mHealth services and Tuberculosis (10 mHealth services)

- Out of 83, only 3 services address diabetes in the country, where roughly 4 million people are living with diabetes

- Out of 83, **only 18 services are led by mobile operators**

Examples of mHealth Service on the field

Hi4Life sends health information
iMobiMama sends reminders to increase earlier antenatal booking
MomConnect sends SMS reminders to the expectant mothers with HIV status
BabyInfo, MAMA, **small-MAMA** and **The Baby Club** sends vital health information to new and expectant mothers

Information on Sexual and Reproductive Health, Motherhood, Fatherhood & Baby Care

hi4LIFE

Trusted health information on your mobile phone

dial: *120*6336# sms: hi to 43751
visit: mama.mobi • papa.mobi • baby.mobi • hi4LIFE.mobi

"There is a tremendous yearning, not for technology per se, but for what technology can make possible."

' *mHealth could save a million African lives by 2017*'
PricewaterhouseCoopers report

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Boost economic development with *M-Commerce*

In-store Contactless Payment

Bills Payment

m-Banking

Contract Signing

Money Transfer & Remittance Payment

Online Purchase

Loyalty Program & Coupons

ATM Cash-out

Mobile enables financial inclusion: over 100 active mobile money initiatives and 56.9 million registered mobile money users in the region

M-PESA Success Story: 24.8 million subscribers use mobile money transfer services, like M-PESA, in Kenya, which represents 56% of the population

Promote sustainability through *Smart Energy*

40 /=
Per day + 2500 /= deposit

d.light d10g solar home system

- 3 lights with multiple brightness settings
- Phone charging USB with 5 standard connections
- 4W high quality solar panel
- 1 year warranty
- Payment term: one year

50 /=
Per day + 2999 /= deposit

d.light d20g solar home system

- 3 lights – 2 wall hanging plus 1 portable lamp
- Phone charging USB with 5 standard connections
- Solar chargeable radio
- 5W high quality solar panel
- 2 year warranty
- Payment term: one year

M-KOPA was established in 2011 following successful consumer trials in Kenya during 2010.

M-KOPA has developed a proprietary, patented technology platform that combines embedded GSM + mobile payments to revolutionize asset financing in emerging markets.

M-KOPA are actively providing affordable solar power to over 50,000 Kenyan households and adding 1,000 more every week.
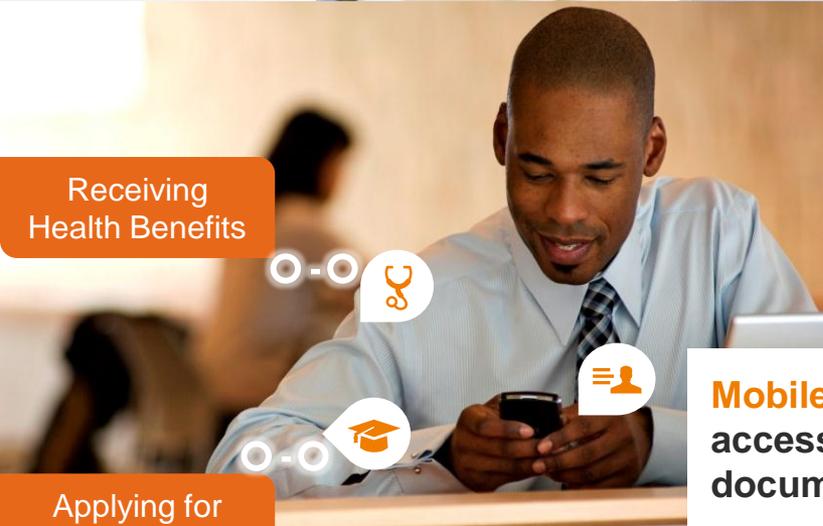
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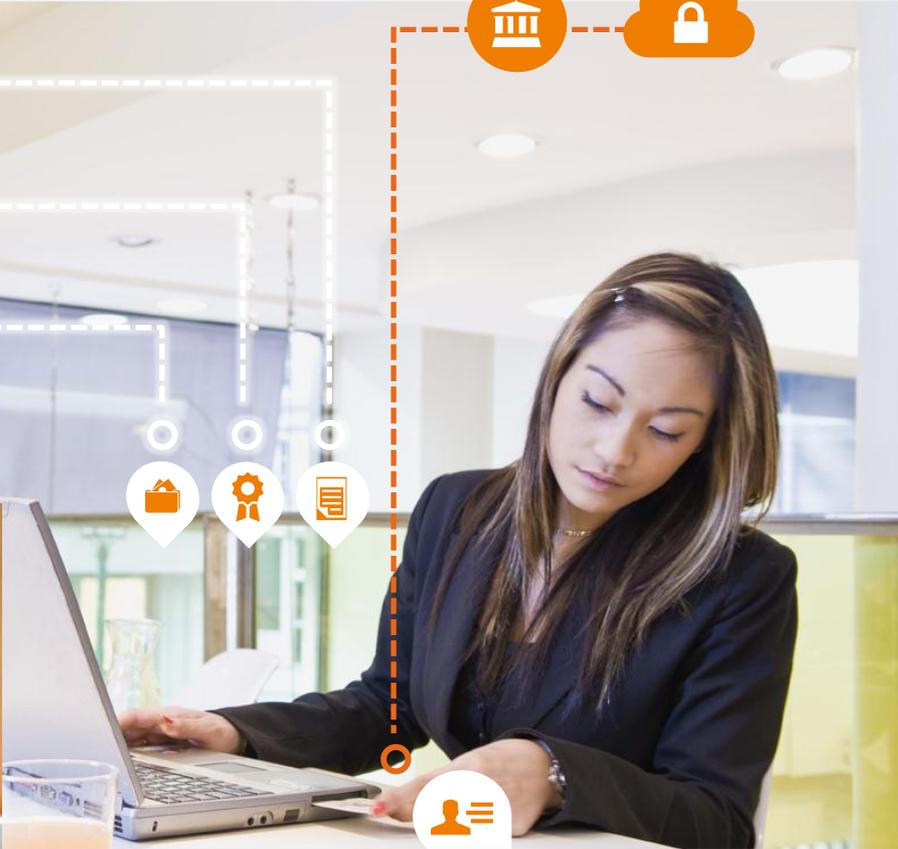# Enhance public services with e-*Government*

Filling in Admin e-Forms

Requesting Permits & Official Certificates

Recharging e-Purse

Receiving Health Benefits

Applying for Student Grants

Mobile ID & eID cards as secure authentication methods to access eGov services and sign legally binding digital documents

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Streamline immigration process with
Smart Border Control

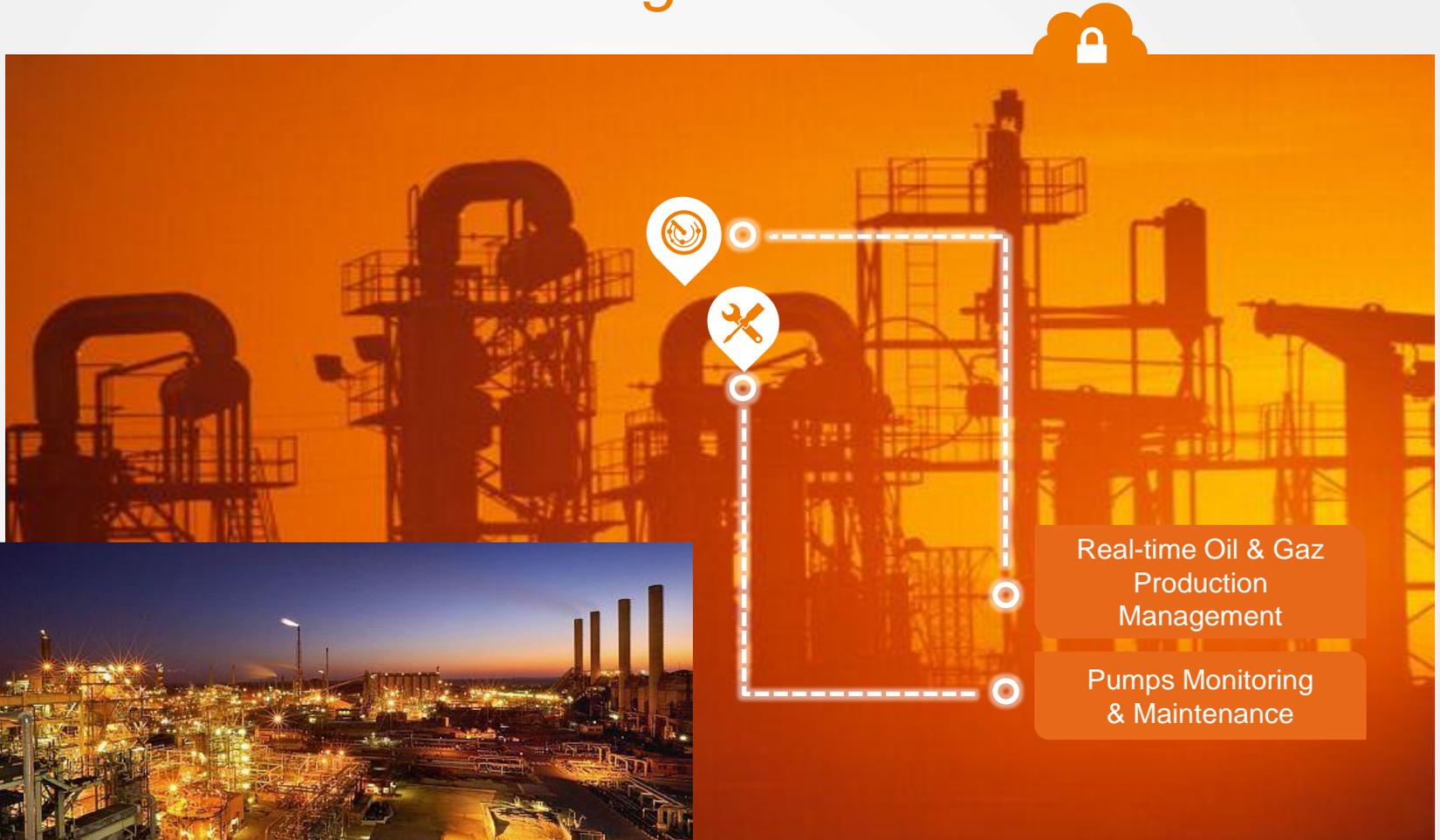Automated Border Control

e-Resident Permit

e-Visa

e-Passport

e-Boarding Pass

Ghana's state-of-the-art Visa & Border Control Management System

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Boost economic development with *Smart Industrial Management*

Real-time Oil & Gaz Production Management

Pumps Monitoring & Maintenance

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Best Practices - Smart City Ecosystem

Program Coordinator

Government Regulator

Telecom Regulator

- Economic Development
- Health Authority
- Transport Authority
- Education
- Utilities
- Police
- Tourism
- Customs
- Border Control

- MNO 1
- GSMA
- MNO 2
- MNO 3

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Key enablers for the success of a smart city's *delivery capabilities*

- ☑ Make fast, ubiquitous connectivity available to everyone

- ☑ Set up a robust and scalable *Trust Infrastructure*

- ☑ Align with global technology standards and obtain industry certifications

- ☑ Leverage the role of the government to create an electronic national registry of citizens

- ☑ Facilitate industry stakeholders to create joint service management efforts

- ☑ Review regulatory environment to avoid delaying innovative services

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Thank you for your attention

Any Questions?

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