Before using Of ICT Infrastructure.

- Network system was unmanaged and improper.
- Digital Literacy was low
- Computer were low specification(Processor, RAM, Hard Disk and peripherals etc.)
- Maximum Use of Paper for official Work.
- Staff carried pen drive from one to another for data transfer.

After using Of ICT Infrastructure

- Internet Connection through optical fiber and

Network infrastructure is well managed.

- Software-based Services.
- Service is Reliable and easy.
- Less Paper used for official Work.
- Hardware and software sharing through the Network.
- Information is for more peoples at the same time.
- Branded laptops and computers are used.

Ongoing Application software at Dhulikhel Municipality.

- Using Different types of Software's for E-governance.
  - Revenue Management information System(RMIS)
  - Integrated Property Tax (IPT)
  - Application Recording and Tracking System
  - Personal Management Information System(PMIS)
  - Store Management System.
  - - Vital Event Registration and social Security (VERSP) –MIS

Ongoing ICT Tools for implementing E-Governance at Dhulikhel Municipality.

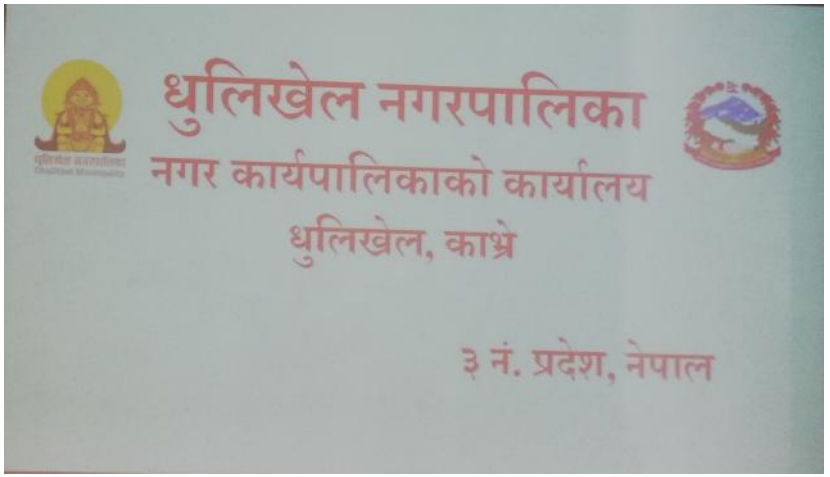
Official Web site- For Official and updated Notices, News, Decisions, Reports, Contact Details, and services.

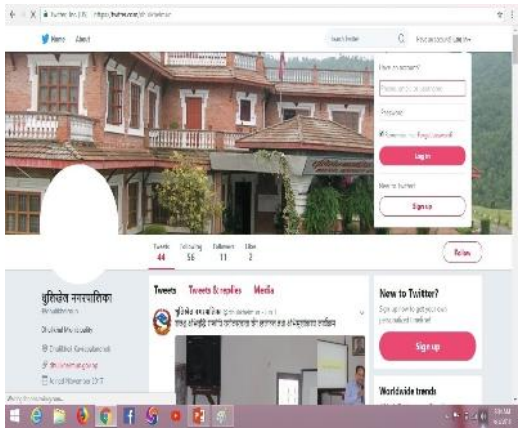
TO BE CONTD.....

Ongoing ICT Tools for implementing E-Government at Dhulikhel Municipality.

- **Social Networking (Official Facebook page & Twitter) –** For Information Providing to the General public.

- **Multimedia Display-** For more information about the services of Municipality



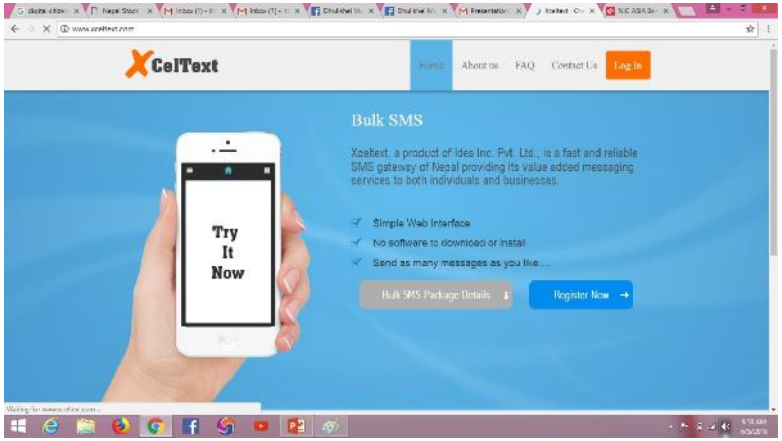


TO BE CONTD.....

Ongoing ICT Tools for implementing E-Governance at Dhulikhel Municipality.

- Bio-metric attendance
- Group web SMS

-For Increasing Productivity among Employees / Develop a Strong organization Culture.



- This system help to reach a person where they are.
- Text messaging is immediate.
- Text messaging doesn't require an Internet connection.

TO BE CONTD.....

Ongoing ICT Tools for implementing E-Governance at Dhulikhel Municipality.

- CCTV

- Effective Tool for Supervision and Security.
- Effective tools for enhancing Governance by controlling Petty Corruption.
-

TO BE CONTD……..

ICT Tool (s) and softwares to be implemented very soon:

- Tower Server system for Data management Security, reliability and Centralization.
- Building Permit System.
- Project Management System.
- Software to collect user charges for solid waste management etc.
- Implementation of Smart City

E- Procurement System

- Designed and controlled by public procurement monitoring office (Central Government Software).
- Municipalities use the system as a client.
- So far E-submission system is being implemented.
- Technically sound E-bidding (including evaluation, reporting, award etc.) is under consideration.

Way forward for Smart Sustainable City: what we have been doing:

1. Within Office System

- Integrating all specific MIS with the office server
- Linking local tax system to the central Government Tax system
- Working to have to have ICT based internal control mechanism
- Developing application based early warning system and disaster management system
- Developing database of the citizens and link with vital registration system
- Establishing surveillance system for heritage protection
- Working to have to have public grievance platform and management mechanism

Way forward for Smart Sustainable City: what we have been doing:

2. Through the private sector, with the help of Municipality:

- Smart City solution through Telecommunication providers and ISPs
- Smart City solution through private banks
- Smart City solution through payment gateways such as digital wallet
- Smart City solution through supermarkets
- Smart City solution through online shopping portals

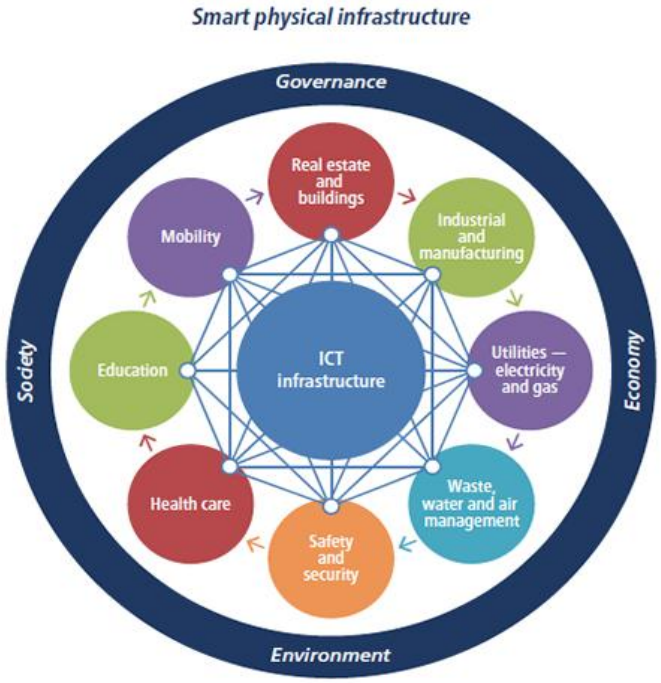
Way forward for Smart Sustainable City: what we have been doing:

3. Municipality encouraging the private and service sector to go for ICT

- Encouraging public transport to go for smart technology
- Encouraging Hotel Association of Dhulikhel to go for smart booking system
- Encouraging Water Supply Board to go for smart distribution, billing and payment
- Encouraging private and public schools to go for ICT based school management system
- Encouraging all health facilities to go for ICT based system, information sharing
- Encouraging Cooperatives to go for ICT based services and records

Way forward for Smart Sustainable City: what we have been doing:

4. Partnership with Kathmandu University, Depart of Engineering



- Kathmandu University, Department of Engineering and Dhulikhel - Municipality mutually agreed that University will help to develop Municipality App
- The Department will also help to enrich Municipality Webpage
- The University will also help the Planning and Urban Development Units of the Municipality

Challenges of implementing Smart Sustainable City:

- Population size is not big to go for huge database and services
- Large number of people are still out of smart communication devices.
- ICT based infrastructures are weak (both form Government and private side)
- Only city center is covered with 4G Service
- The internet and 4G service charge is high in-comparison to the income of people
- Investment of Municipality on ICT sector is still not a priority

Expectation with WeGO and Member Cities:

- Bridge the digital divide
- Learn from your experiences
- Using cloud resources
- Twinning on ICT sector
- Capacity development of the office and officials

Ways To Get Connected With Us.

Find Us On:

- **URL:**https://www.dhulikhelmun.gov.np
- **E-mail:**info@dhulikhelmun.gov.np
- **Official Facebook page:**https://www.facebook.com/dhulikhel.municipality
- **Official twitter Account:**https://twitter.com/dhulikhelmun

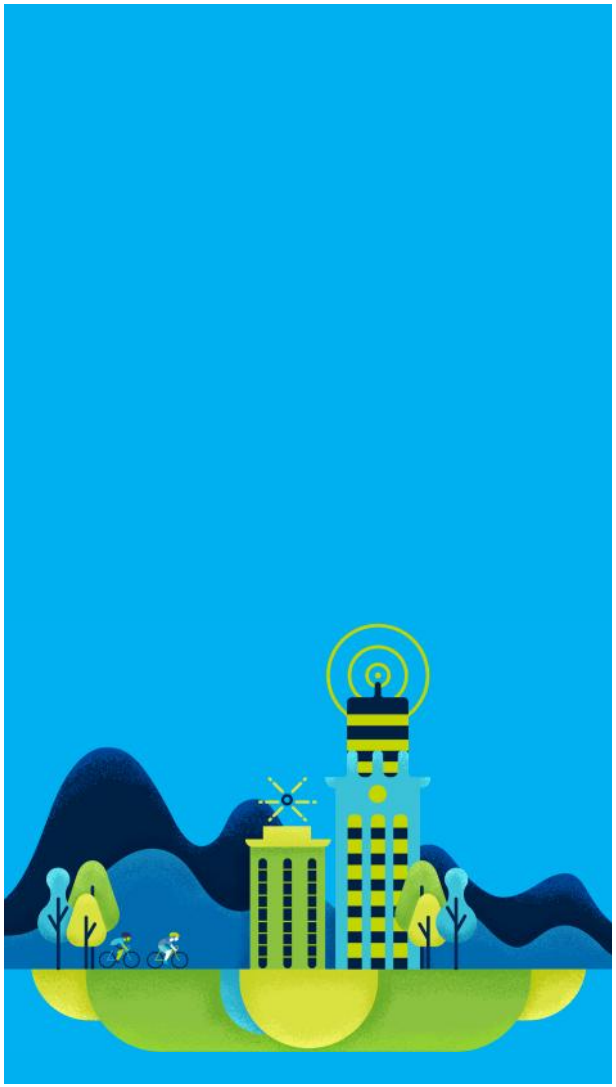
Contact Us:
Ph:O11-490324
Fax:+977-011-490330

Welcome to Dhulikhel

&

Witness the magnificent view of the Sunrise in the ancient town of Nepal

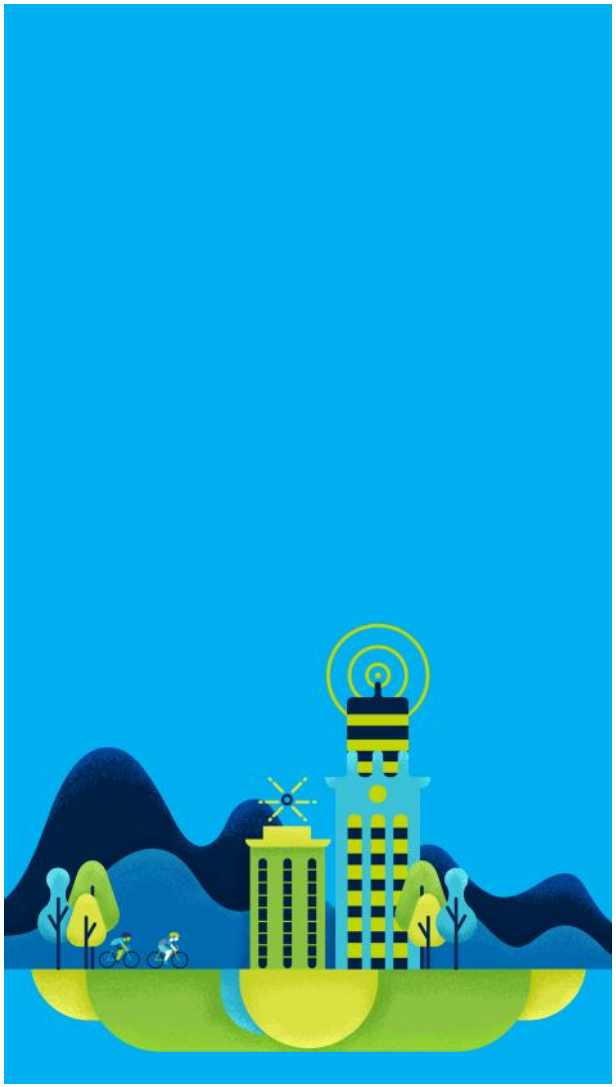
Thank You !!!



High-level Roundtable Discussion on Smart Sustainable Cities

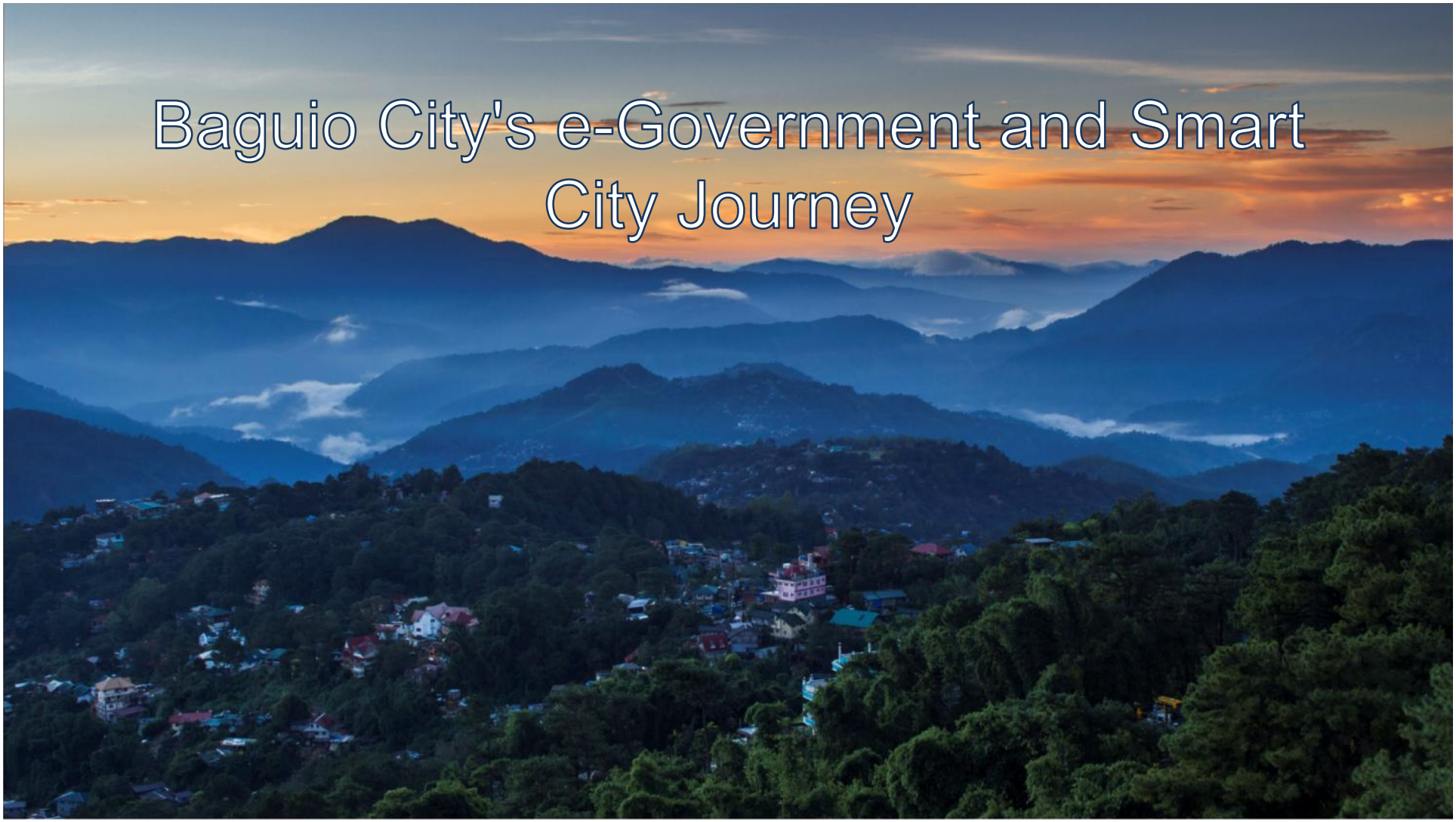
4th Asia-Pacific Regional Forum
on Smart Sustainable Cities and e-Government

Thanh Hoa, Vietnam

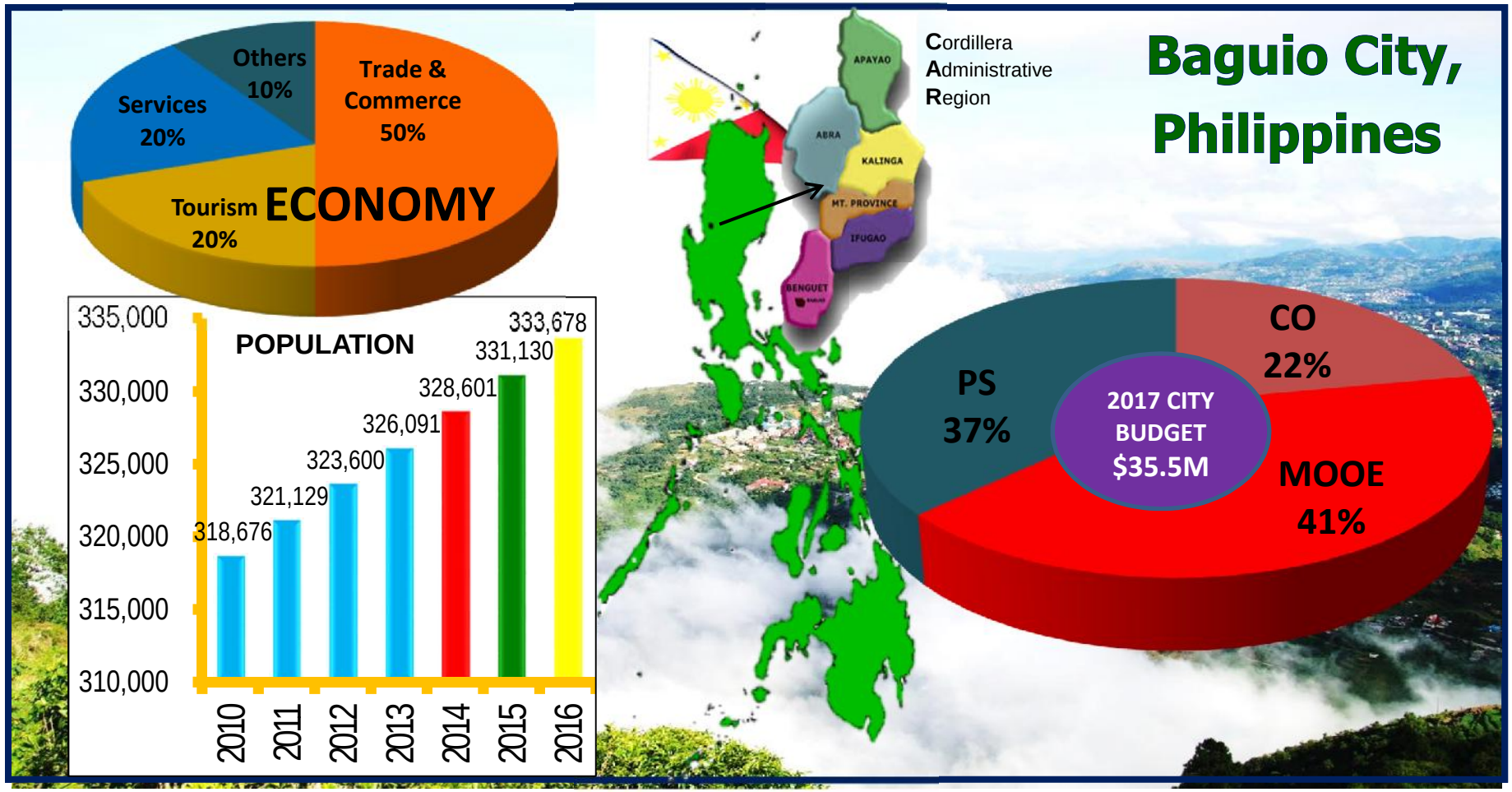


Baguio City's e-Government and Smart City Journey

Hon. Joel Alangsab
City Councilor
Baguio City, Philippines

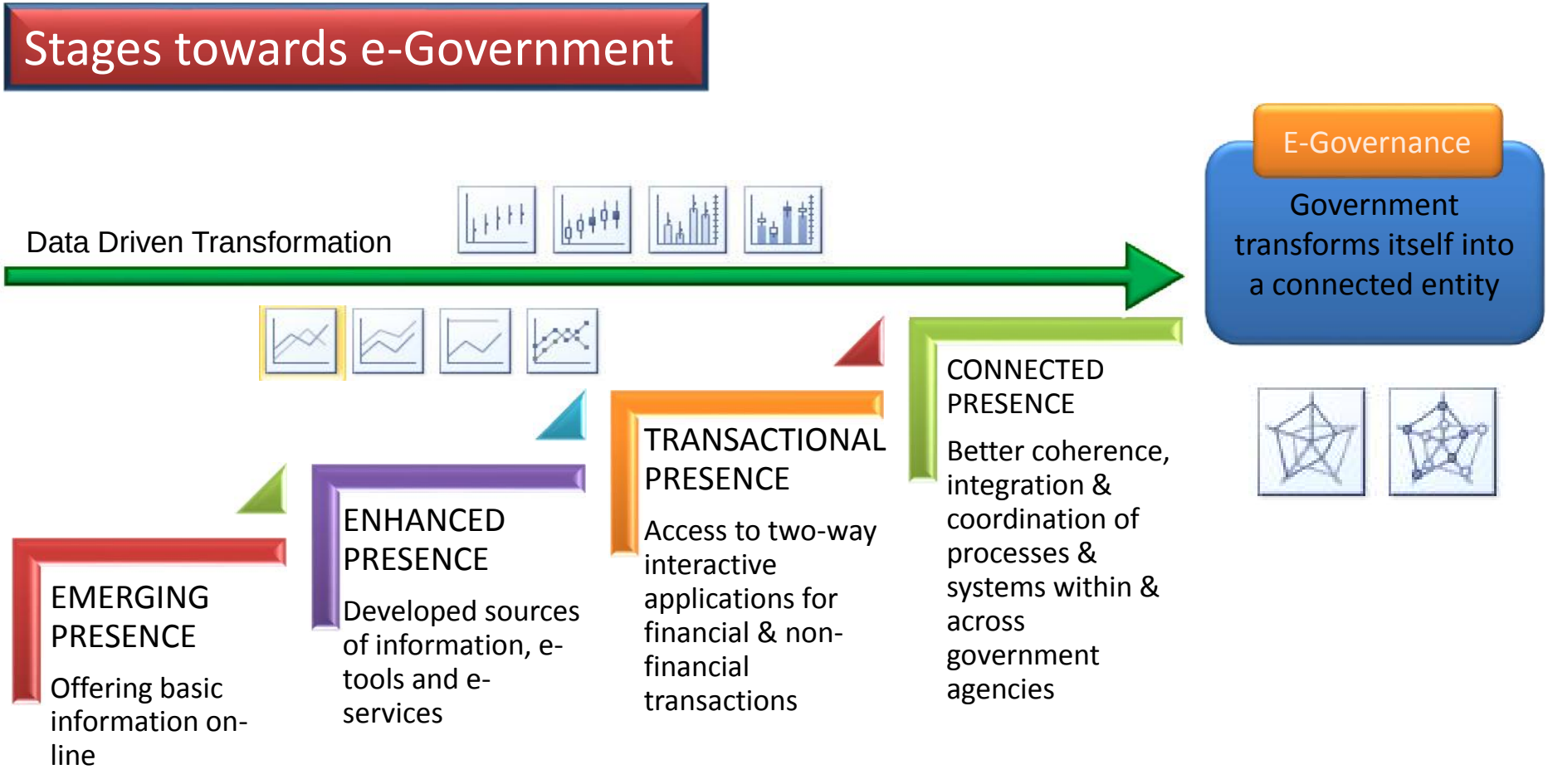

Baguio City's e-Government and Smart
City Journey

Quick Facts


Others 10%
Trade & Commerce 50%
Services 20%
Tourism 20%
ECONOMY
POPULATION
335,000
330,000
325,000
320,000
315,000
310,000
318,676
321,129
323,600
326,091
328,601
331,130
333,678
2010
2011
2012
2013
2014
2015
2016
Cordillera Administrative Region
APAYAO
ABRA
KALINGA
MT. PROVINCE
IFUGAO
BENGUET
Baguio City, Philippines
PS 37%
CO 22%
MOOE 41%
2017 CITY BUDGET $35.5M

Source: Leticia O. Clemente –

Stages towards e-Government

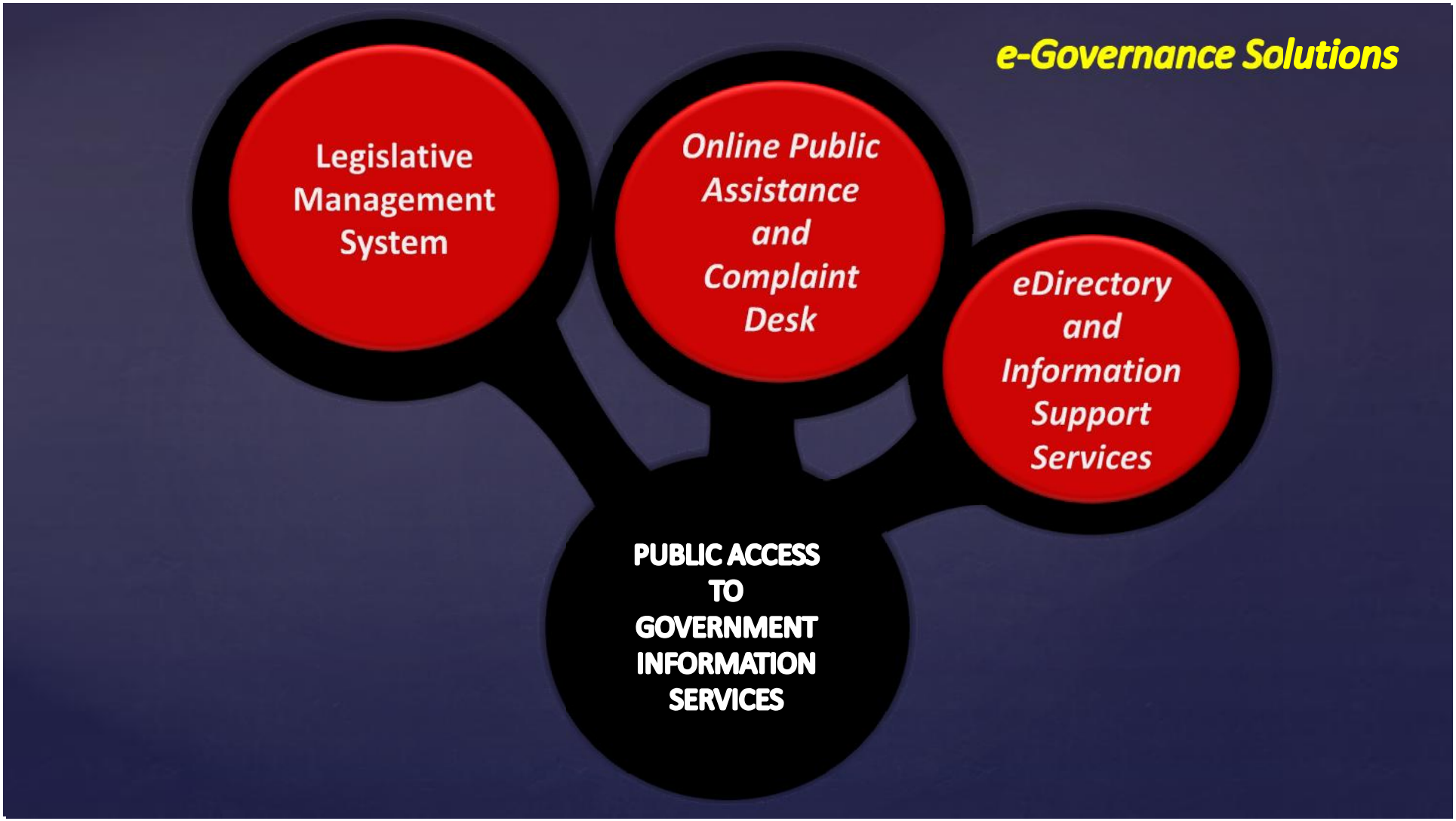


Challenges:

1. *Lack of ICT experts within the Local Government Unit.*
2. *Rapid pace of Technology Development requiring financing to sustain technological sustainability & development consistency*
3. *Harmonization of e-Governance with the City Business Goal and overall Urban Development directions*
4. *Horizontal & Vertical ICT Integration referring to harmonization of systems and basic services with the Private Sector and the National Government.*

BAGUIO'S STRATEGIC ROADMAP & CHALLENGES

Baguio City Information Systems Strategic Plan 2013 - 2020


e-Governance Solutions
Legislative Management System
Online Public Assistance and Complaint Desk
eDirectory and Information Support Services
PUBLIC ACCESS TO GOVERNMENT INFORMATION SERVICES

Legislative Management System

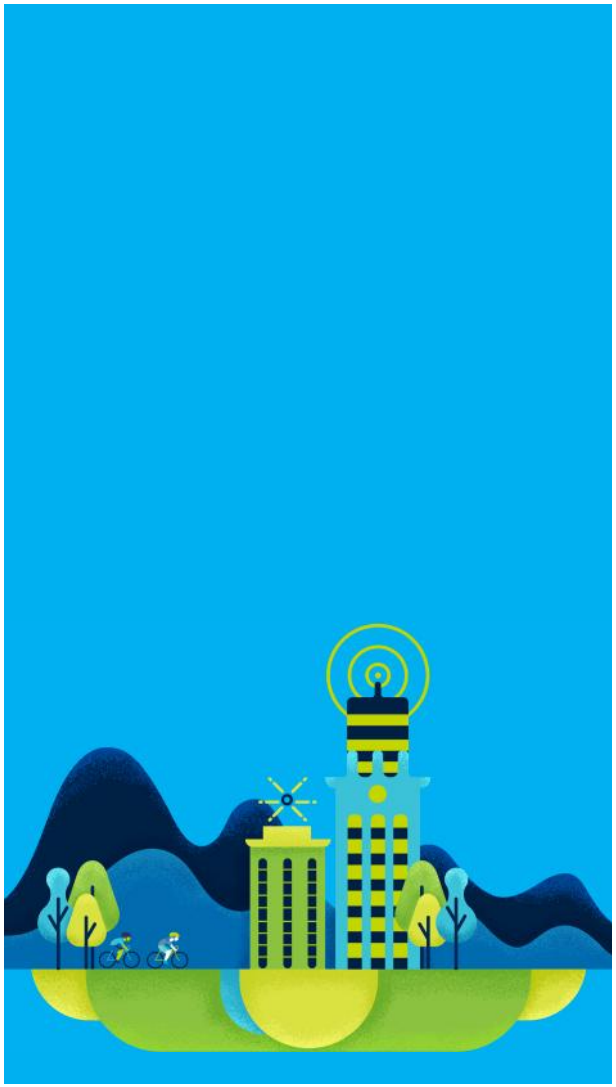
Focused Pillars for Baguio Smart City

Background Picture
By Edpan newyork - Own work, CC BY-SA 3.0,
https://commons.wikimedia.org/w/index.php?curid=25927201

Way Forward….

1. Strengthen Public-Private Partnership thru the ICT Council
2. LGU to implement the ISSP as planned
3. Enhance local in-house ICT capacity
4. Create the City ICT Department
5. Explore partnerships with WeGO members

Thank you.



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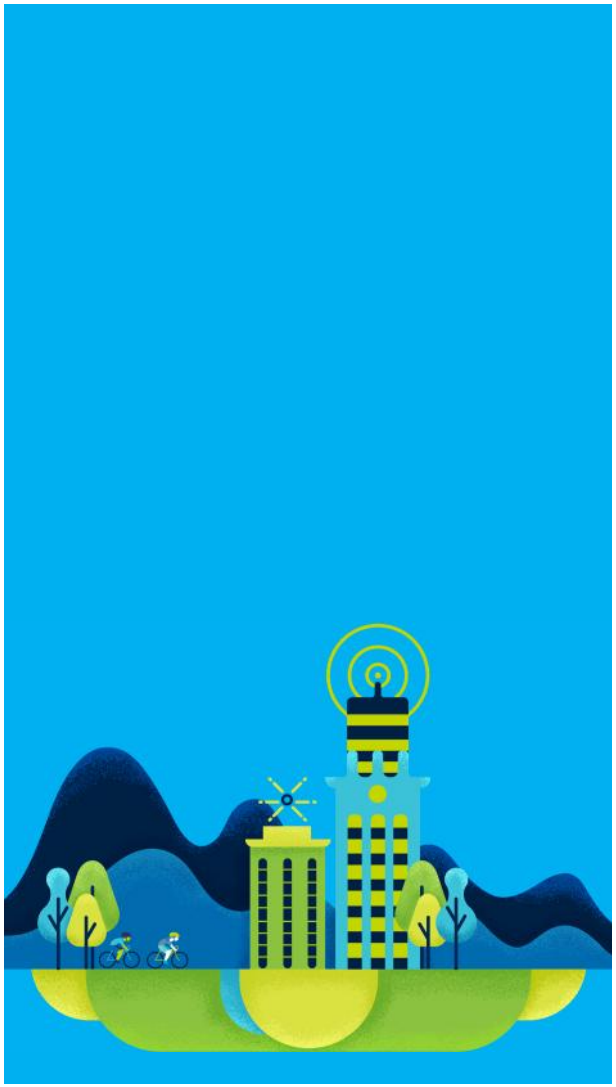


Strategic Smart City Plan in Da Nang City

Mr. Tran Ngoc Thach

Vice Director, Department of Information and Communications

Da Nang, Vietnam

STRATEGIC SMART CITY PLAN IN DA NANG CITY

CONTENTS

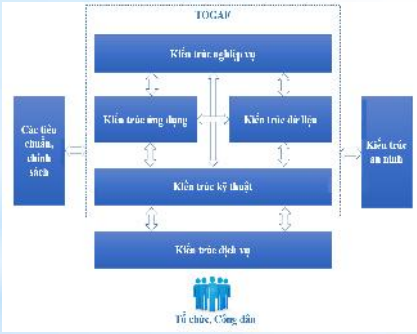
I
- Achievements from deployment of e-Government and pilot smart city projects

II
- Architecture framework of smart city in DaNang city

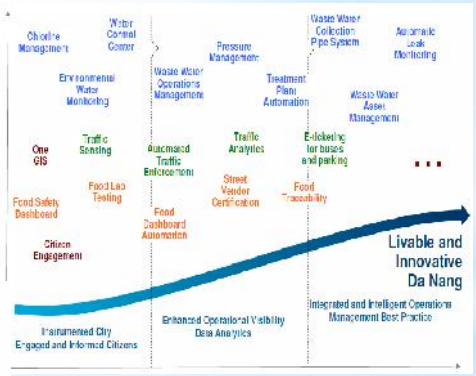
III
- Action plan

SUMMARY OF THE JOURNEY IN DEVELOPMENT OF E-GOVERNMENT AND SMART CITY IN DA NANG

- In 2003, issue of the resolution for promoting the application and development of IT in Da Nang city.
- In 2010, issue of ICT architecture framework of Da Nang
- From July 2014, Da Nang e-Government System put into operation
- In 2015, issue of Da Nang e-Government architecture framework for the period 2016-2020
- In 2014, roadmap of building smart city in Da Nang (advised by IBM Corporation)
- From 2014, deployment of pilot smart applications
- In 2018, issue of Da Nang smart city architecture framework



e-Government architecture framework



Pilot smart applications

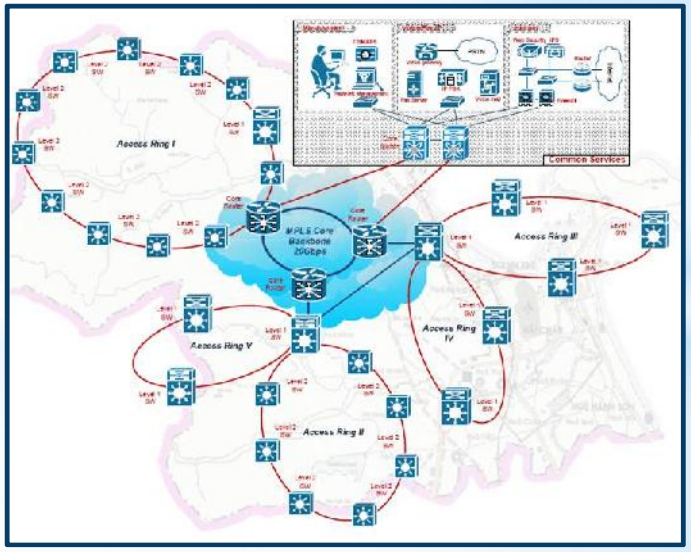
DA NANG ICT INFRASTRUCTURE

Da Nang Data Center

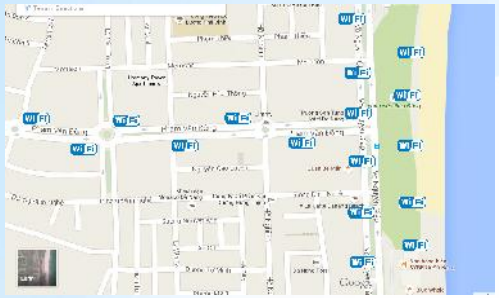
- **100TB** storage
- **TIER III**
- **ISO/IEC 27001:2013** information security management

MAN Network

- **5** Rings
- **320km** underground cables
- **105** administrative agencies connected
- Intranet connection up to **20Gbps**
- Internet connection up to **4,5Gbps**



ICT INFRASTRUCTURE



Public Wifi System

430 access points

Cover all city center areas, administrative agencies, tourism points, shopping mall

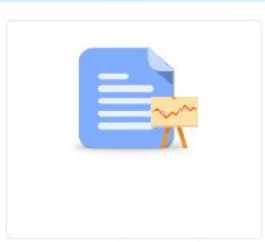
Call Center

100 reception desks

IT Training Center

500 e-learning lectures

E-GOVERNMENT APPLICATIONS

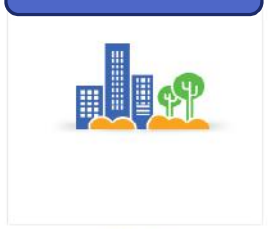


One stop shop

Document Management

Email

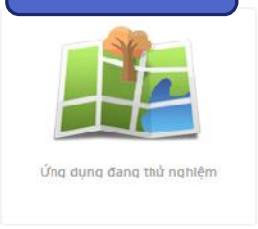
HRM



Feedback Application

People and Household Management

Elearning



Public Tree Managment

Citizen database

Enterprise risk management

Food safety management

ICT HUMAN RESOURCES

- **500** IT engineers working in local administrative agencies
- **700** IT companies
- **24.500** people working in ICT industry
- **38** universities, colleges and training centers
- Attracted human resources from other provinces in the Central of VietNam

Human resource hub of Central Vietnam

Da Nang Uni

Duy Tan Uni

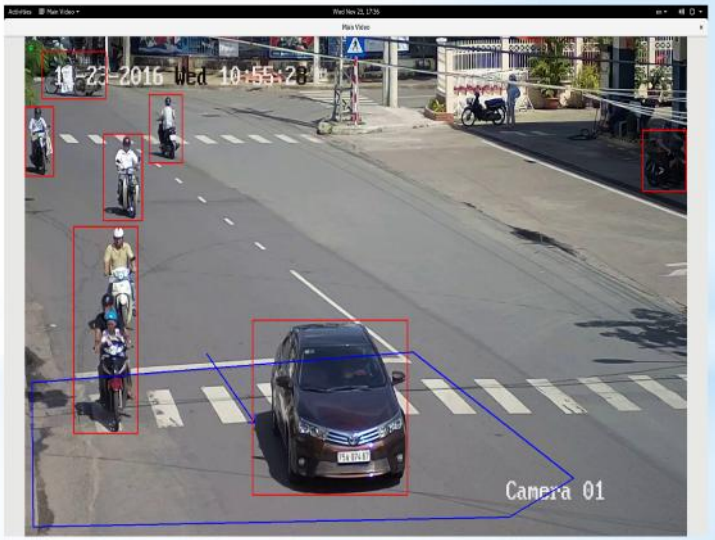
Hue Uni

PILOT SMART APPLICATIONS

TRAFFIC MONITORING AND CONTROL

Center of traffic monitoring and control

- **72** monitoring cameras
- **6** speed measurement devices
- Sanction traffic violations through traffic monitoring cameras **from November 01, 2016**

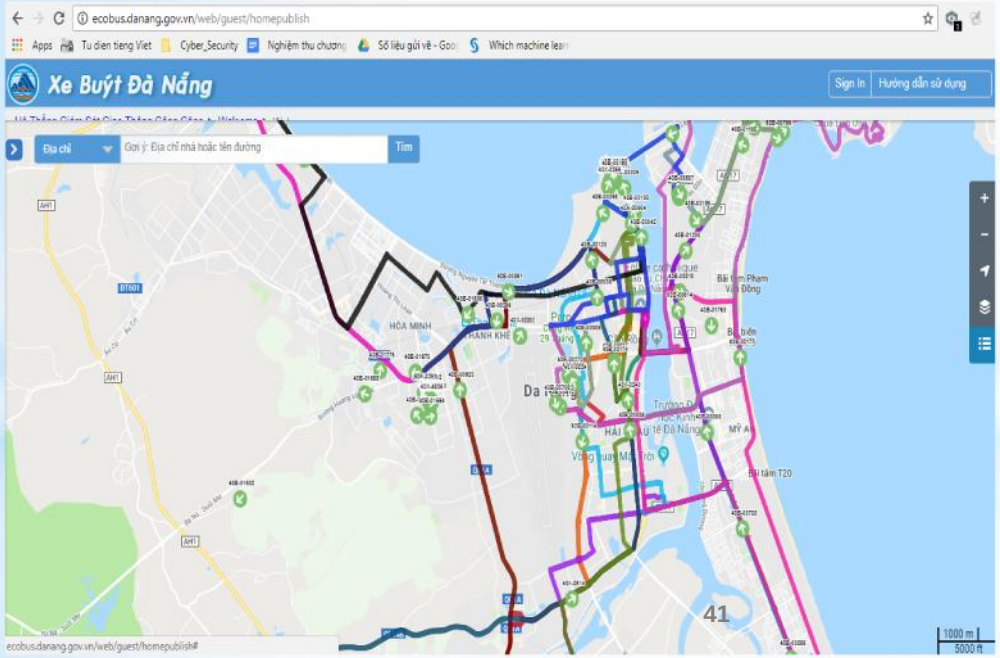


PILOT SMART APPLICATIONS

TRAFFIC MONITORING AND CONTROL

Bus management system with cruise control equipment

- Bus information collection (location, velocity, arrival time,..)
- Finding bus journey through website, mobile app, SMS,...



Danabus mobile app (Android and iOS)

PILOT SMART APPLICATIONS

SECURITY MONITORING

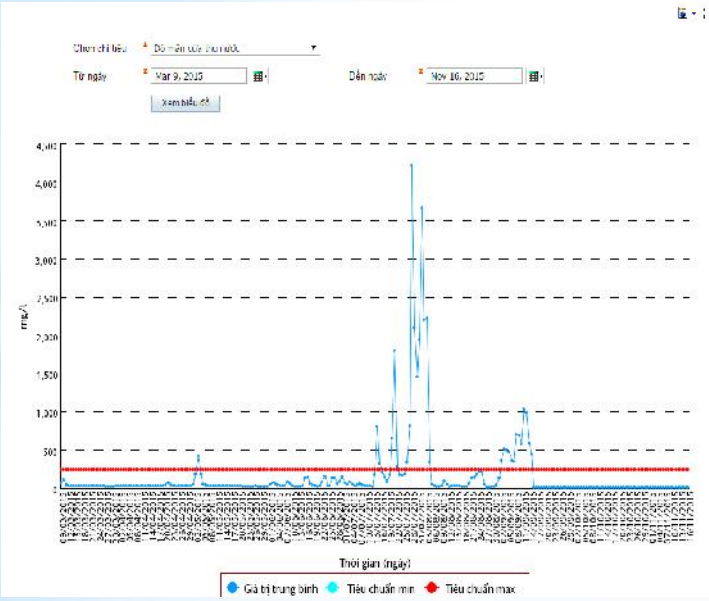
System of security monitoring cameras

- **1.800** cameras invested by local governments
- **23.000** cameras invested by private organizations and citizens

PILOT SMART APPLICATIONS
WATER MONITORING

SCADA System of clean water supply monitoring at Red Bridge WaterPlant

- Quality of water (turbidity, salinity, conductivity, pH and chlorine levels,...)
- Flow water (water level, speed, pressure) .



System of wastewater quality monitoring at 3 industrial zones

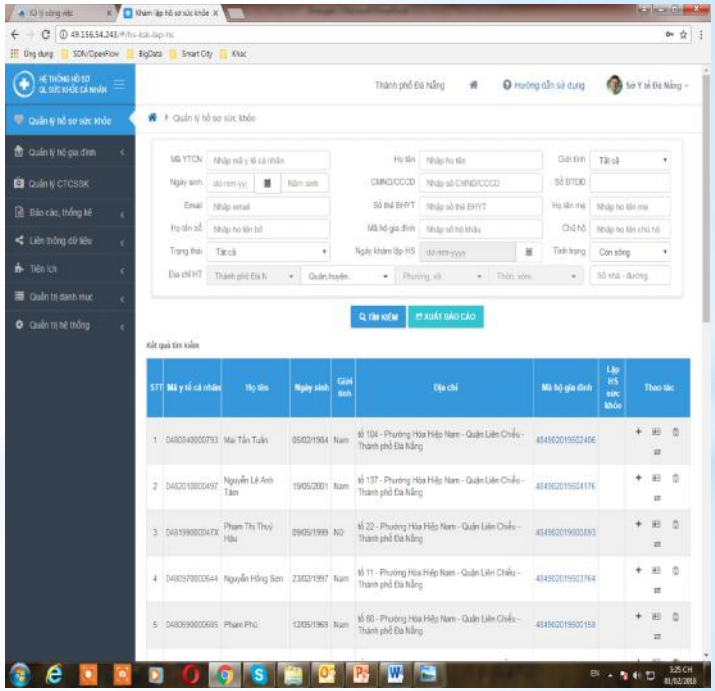
System of water quality monitoring at 9 lakes

PILOT SMART APPLICATIONS

HEALTHCARE

Hospital management software

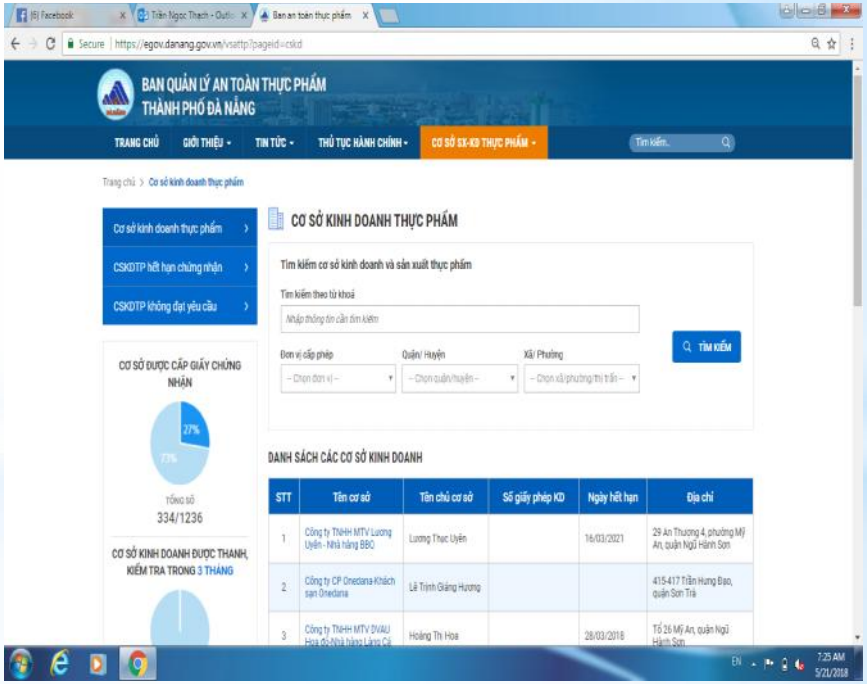
Electronic medial records



PILOT SMART APPLICATIONS

CONTROL OF FOOD SAFETY AND HYGIENE

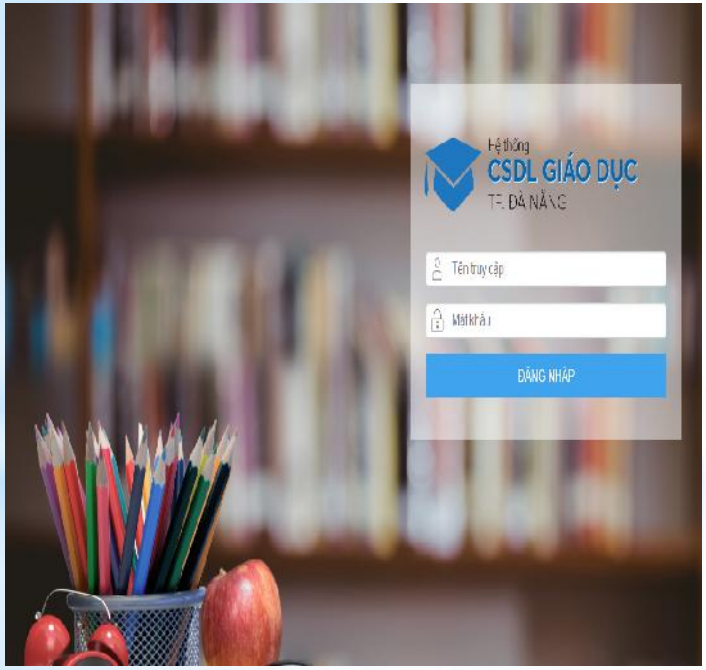
- Elaborate a database of certified restaurants and factories
- Searching information about certified factories, restaurants (via SMS, Zalo, 1022 call center)



PILOT SMART APPLICATIONS

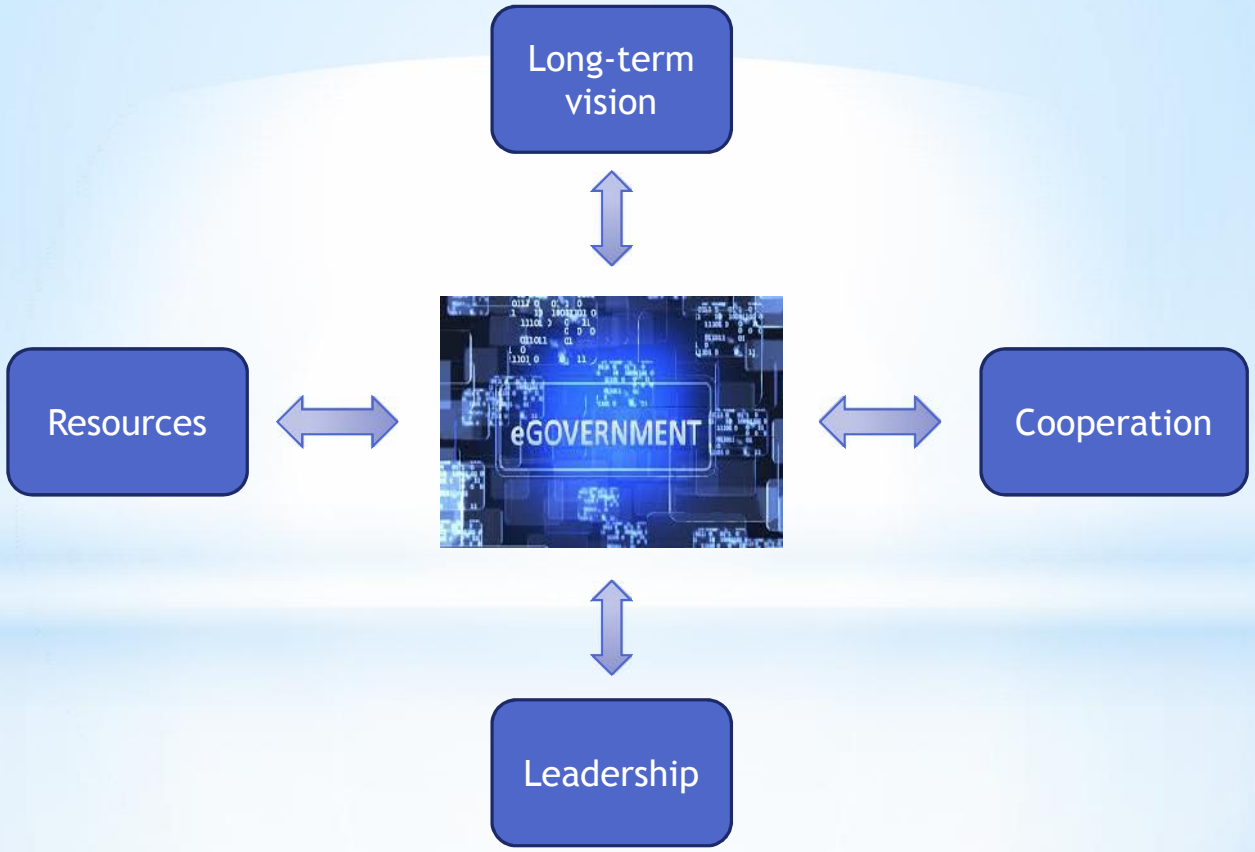
EDUCATION

Educational database portal



Enrollment software

EXPERIENCES FROM EGOVERNMENT DEPLOYMENT



OPPORTUNITIES AND CHALLENGES IN BUILDING SMART CITY

OPPORTUNITIES

- Commitment of local governments through mechanisms and policies
- Talented human resources
- Case-study and references of smart city in some developed cities (Barcelona, Singapore, Rio de Janeiro...)
- Moderate-scale city
- Good ICT basis

OPPORTUNITIES AND CHALLENGES IN BUILDING SMART CITY

CHALLENGES

- Many smart city solutions, many consultants, providers but not yet standards
- Many guidelines, policies about smart city
- Country with average incomes
- Present law and policies involving privacy, confidentiality
- Cyber security

STRATEGIC SMART CITY PLAN

❖ **Vision:** In 2030, Da Nang is the smart, livable and sustainable city with citizen – centric strategy, delivering high quality of life and sustainable environment for citizens while ensuring economy growth and competitiveness.

❖ **Overall goal:** Application of ICT and other means in all socio-economic fields in order to enhance city governance and address urban challenges, improve quality of life and ensure efficient use of resources and economy competitiveness.

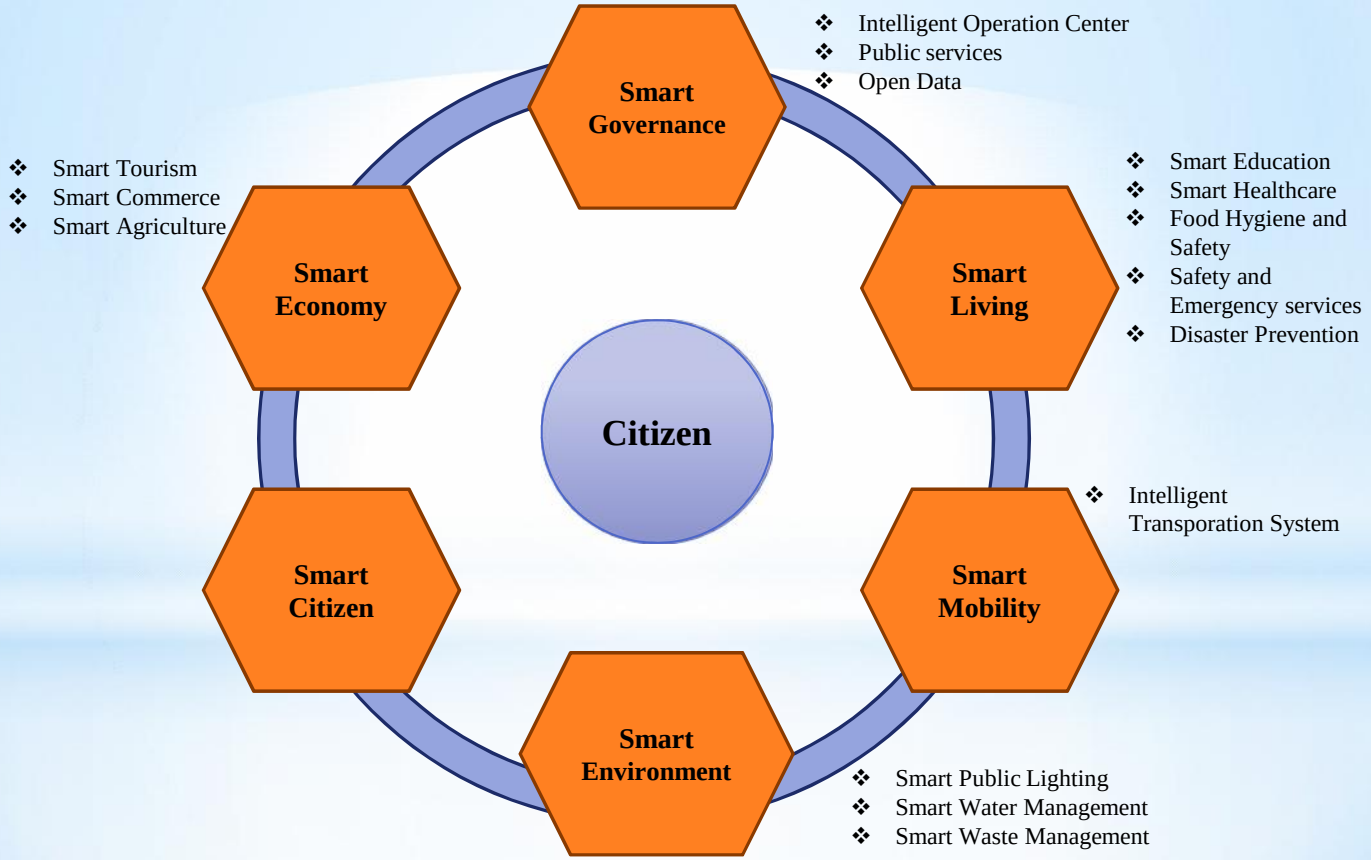
❖ **Detail goal:**

- 2019 – 2020: Ensure smart ICT-infrastructure and key databases
- 2021 – 2025: Develop smart applications in 16 key domains
- Towards 2030: Develop the innovative ecosystem

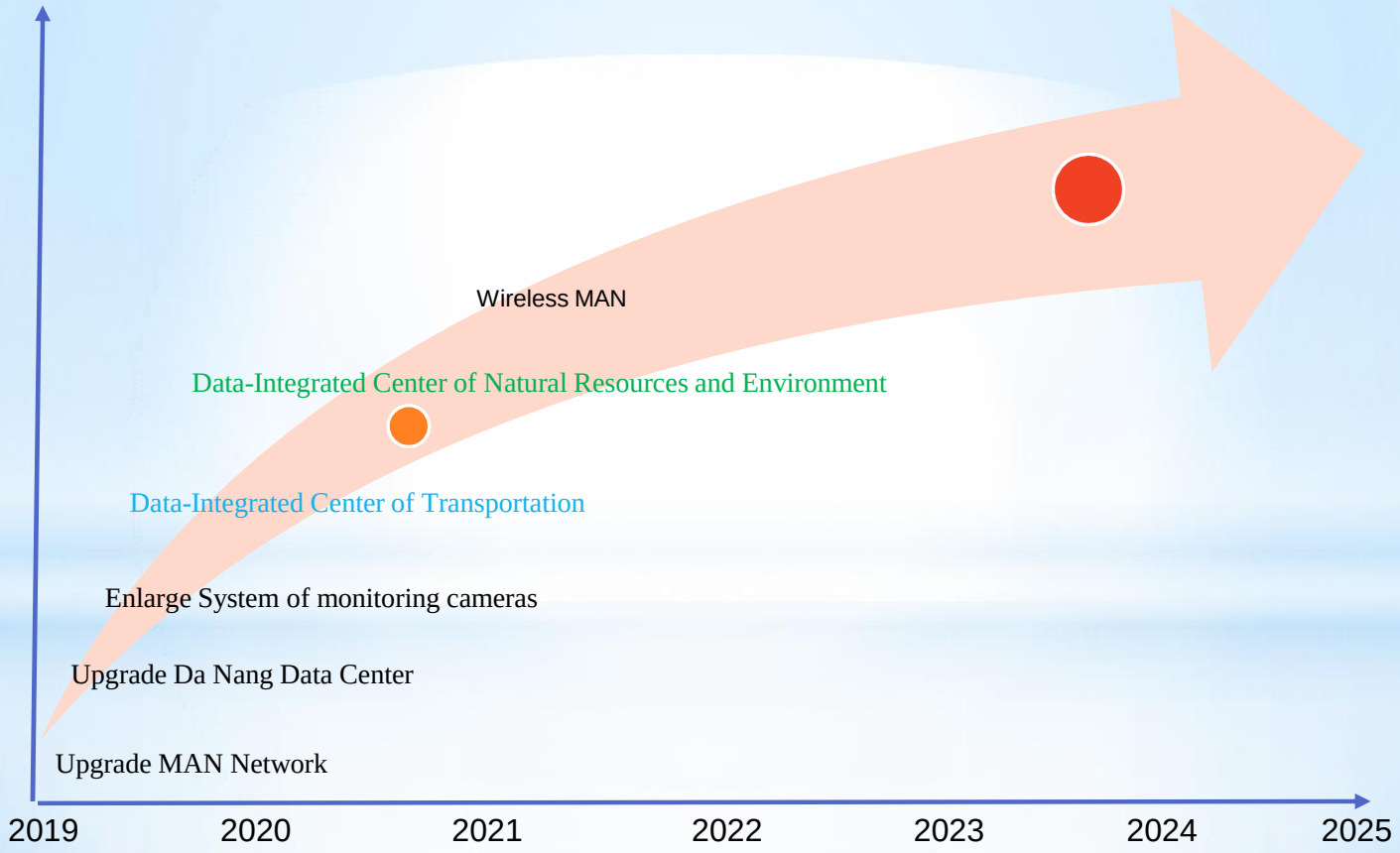
❖ **Priority:** Transport, Environment, Building and Construction, Food Safety, Public Security, Healthcare, Education, Tourism, Agriculture

DA NANG SMART CITY ARCHITECTURE FRAMEWORK

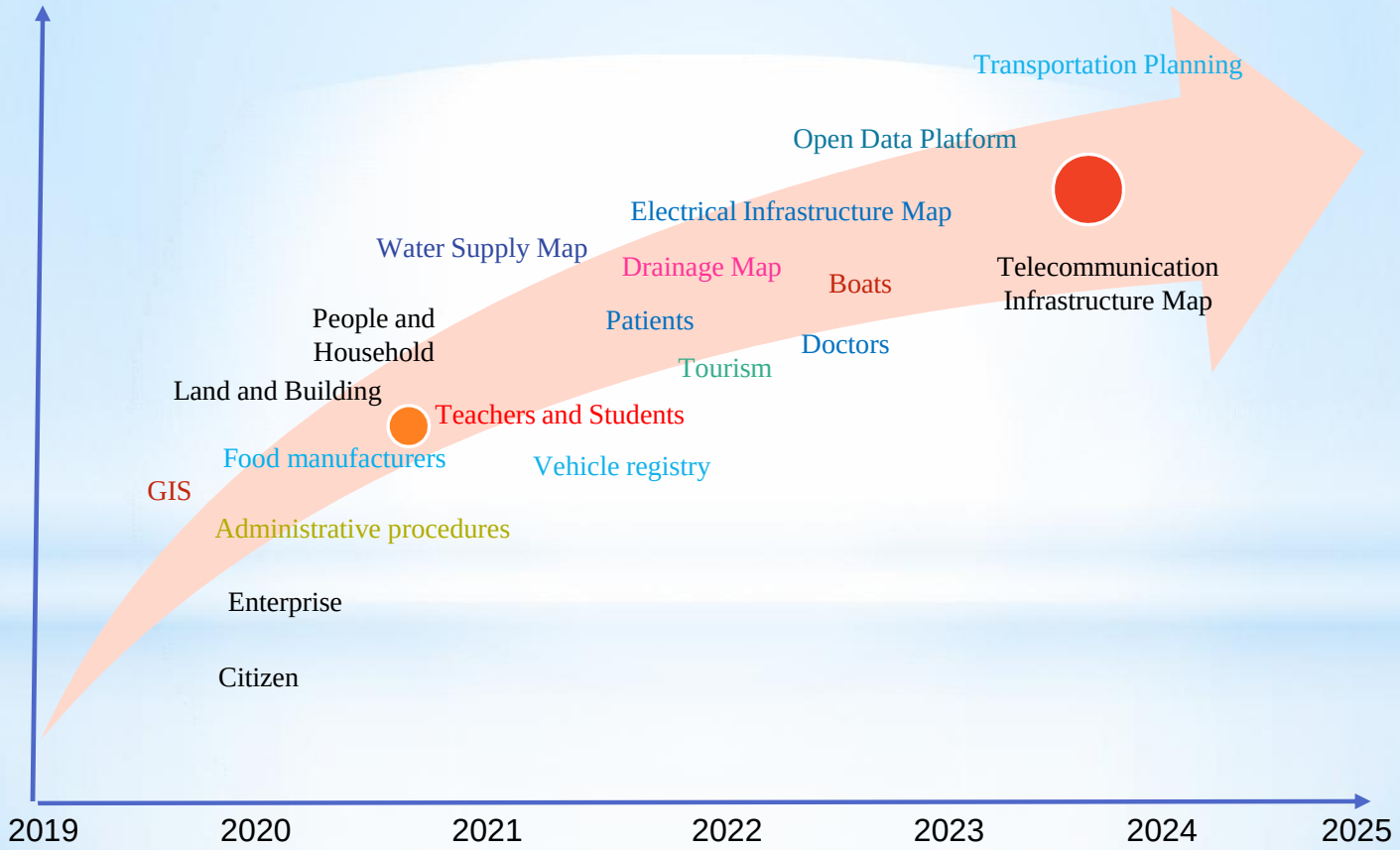
SMART CITY PILLARS



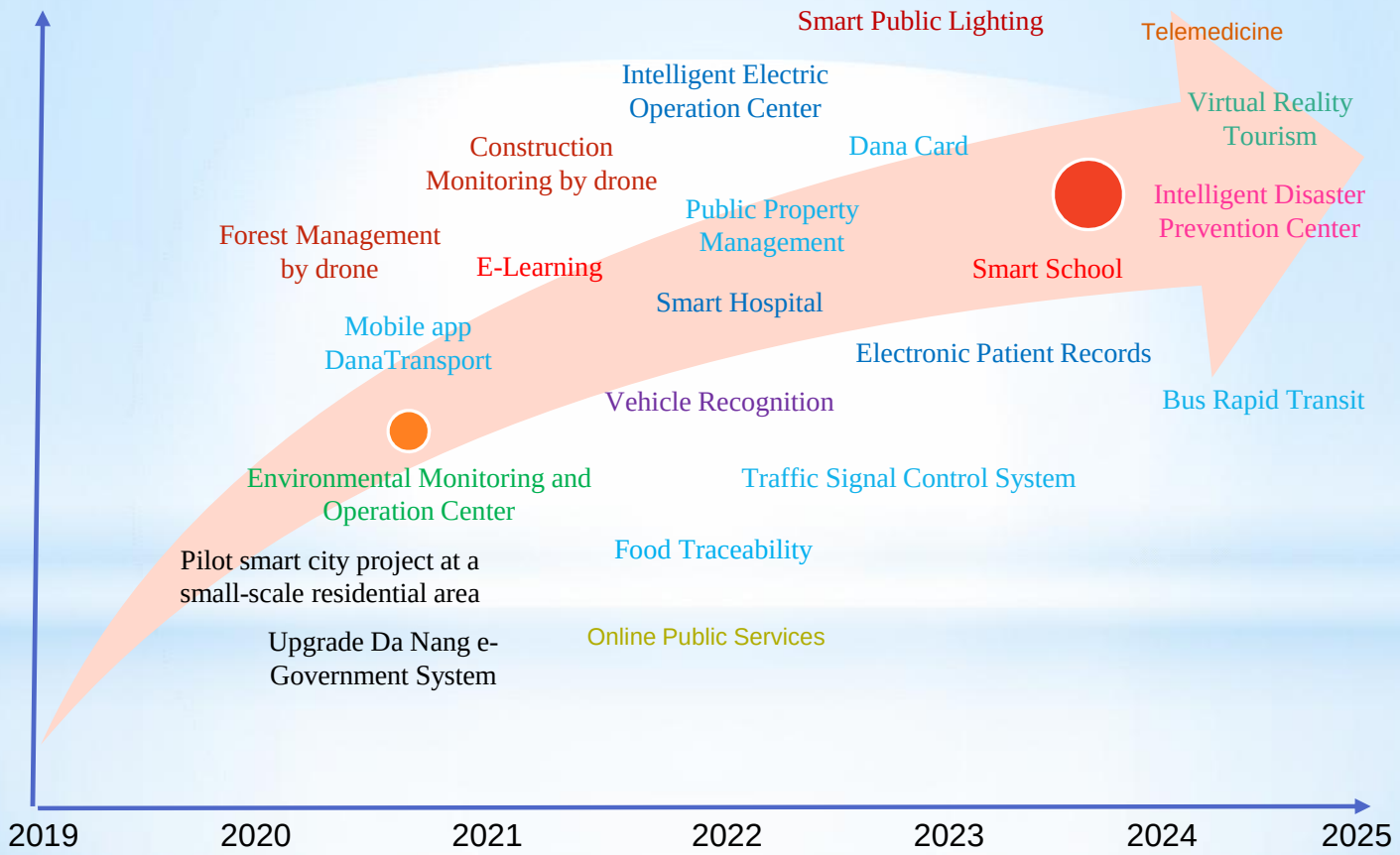
ACTION PLAN IN 2019-2025
ICT-INFRASTRUCTURE



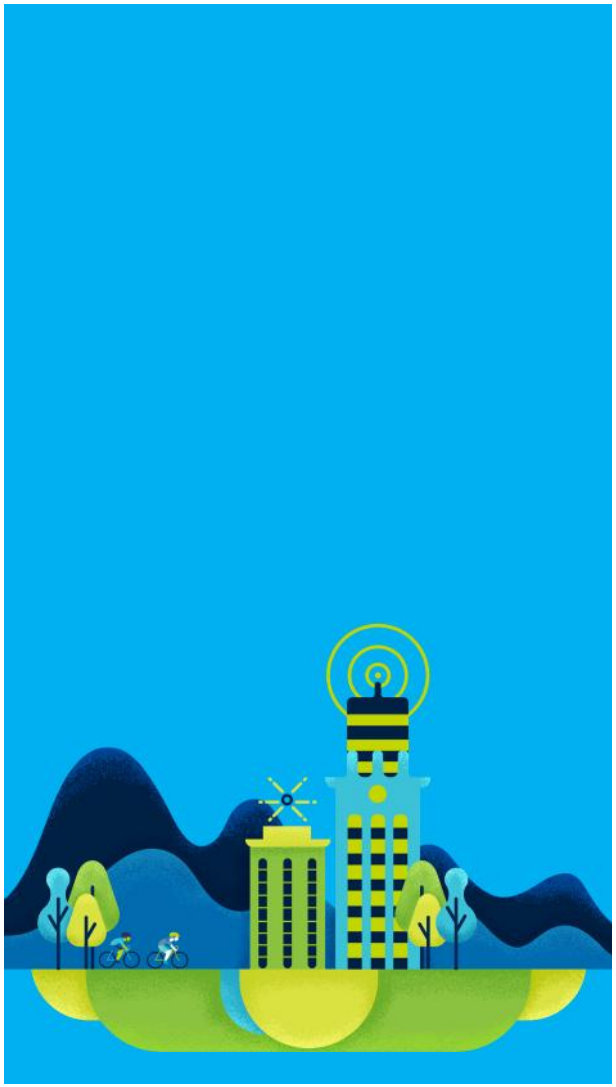
ACTION PLAN IN 2019-2025
KEY DATABASES



ACTION PLAN IN 2019-2025
SMART APPLICATIONS



ĐÀ NẴNG
THANK YOU!
Novotel



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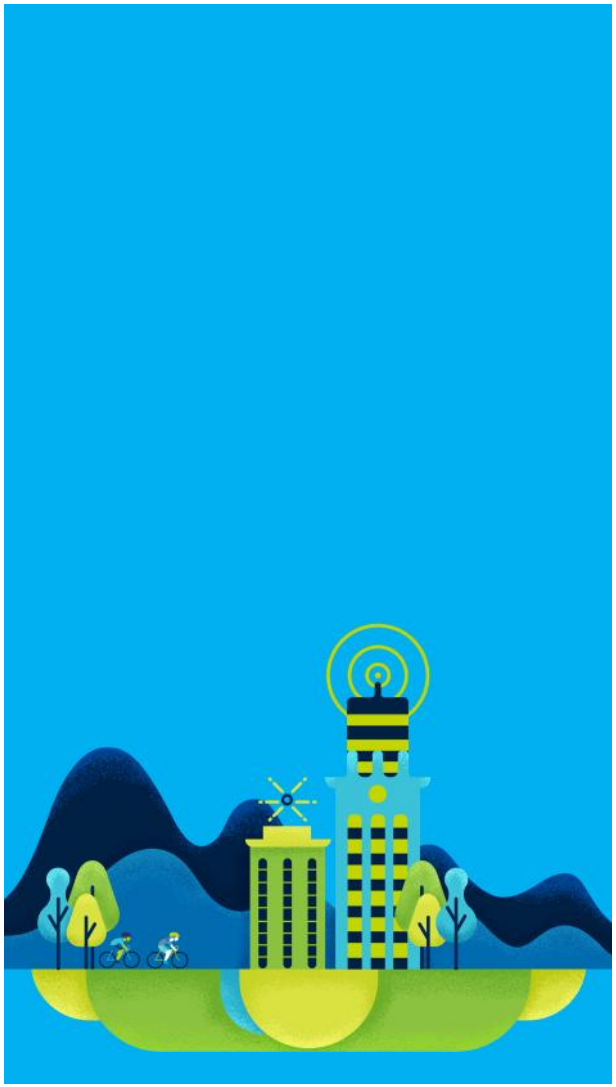
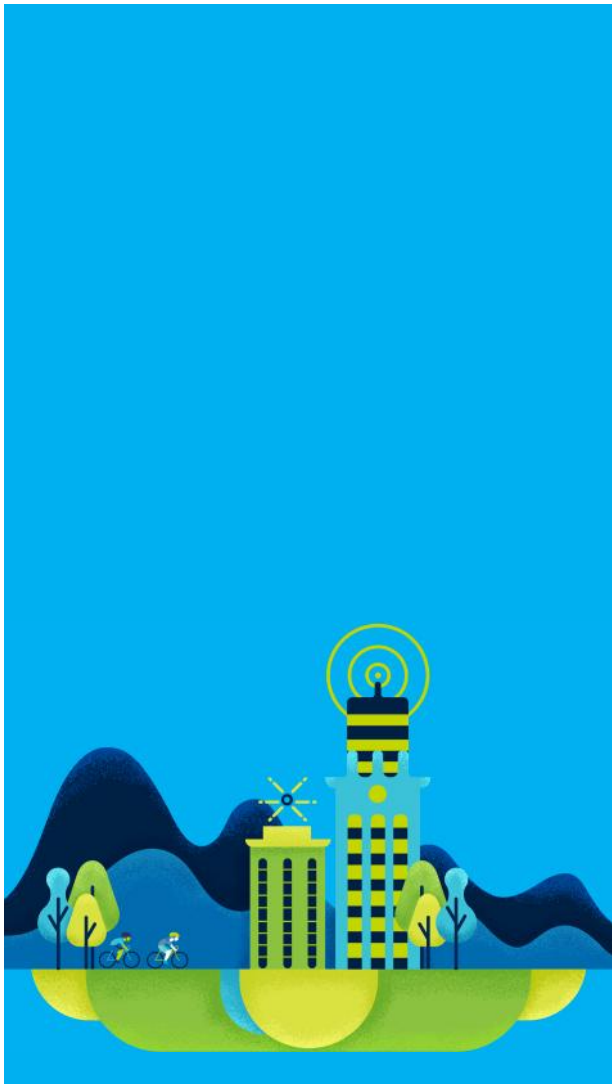


Panel Discussion and Q&A



High-level Roundtable Discussion on Smart Sustainable Cities

4th Asia-Pacific Regional Forum
on Smart Sustainable Cities and e-Government

Thanh Hoa, Vietnam