

Korea Telecom and its role in Smart City development

- For SSC Workshop ITU-TRAI -



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- 2 Smart City Development in Korea

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01 Company Overview



Korea Telecom

Established	December 10, 1981
Revenue	USD 17.4 B (2014)
Stock Listing	Korea, New York, London
No. of employees	23,800 (2014)

KT Group

- Consolidated Revenue : USD 21.4B (2014)
- Consolidated Assets : USD 30.7B (2014)
- Number of Subsidiaries : 56

[\[The Full List of Subsidiaries\]](#)

ICT Subsidiaries

kt ds (IT/SI) kt telecop (Security)
kt ens (NI, IDC) NEXR (Big Data)
CENTIOS (Smart Space) ...

02 Global Awards and Recognitions



- 1 MWC Outstanding Overall Mobile Technology (Feb. 2014)
- 2 DJSI Industry Super Sector Leader (2010 ~ 2014)
- 3 Global Mobile Awards 2012 (Feb. 2012)
- 4 WBA WiFi Industry Awards (Nov. 2012, 2013)
- 5 GSMA joyn Innovation Challenge 2012 (Feb. 2013)



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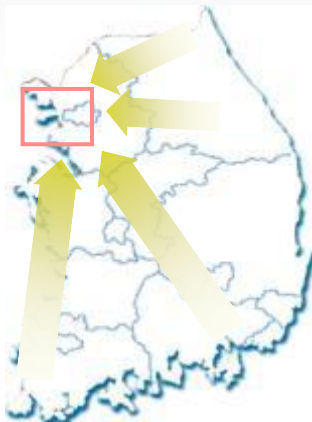
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01 Background: Urbanization in Korea

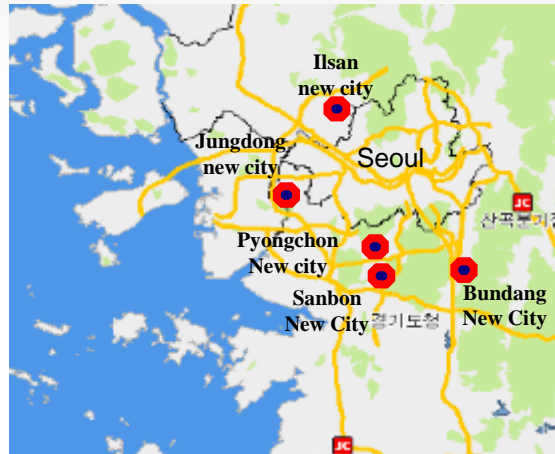
The concentration of population in the Seoul Metropolitan area brought the need for developing phase 1 and phase 2 new towns.

Concentration



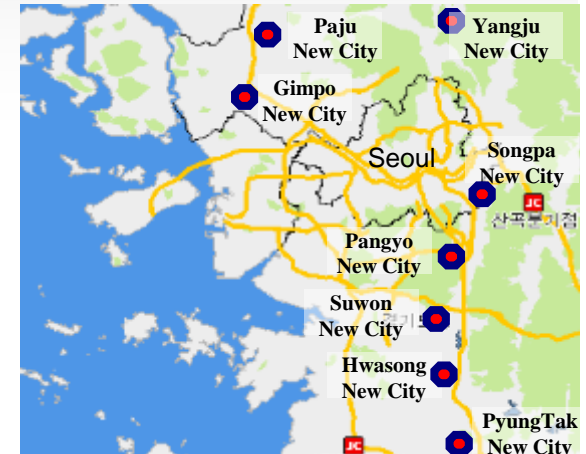
Concentration of population and industries in Seoul (more than 20% of the total)

Phase 1 New Towns



Development of 5 new cities around Seoul vicinity

Phase 2 New Towns



Development of self-sustaining new towns

02 Background: Increased Needs for Life Quality

The problems generated by rapid urbanization threaten the quality of life.

High Population Density



High Crime Rate



Environmental pollution



*Factors Impacting
Life Quality*

**Waste
Management**



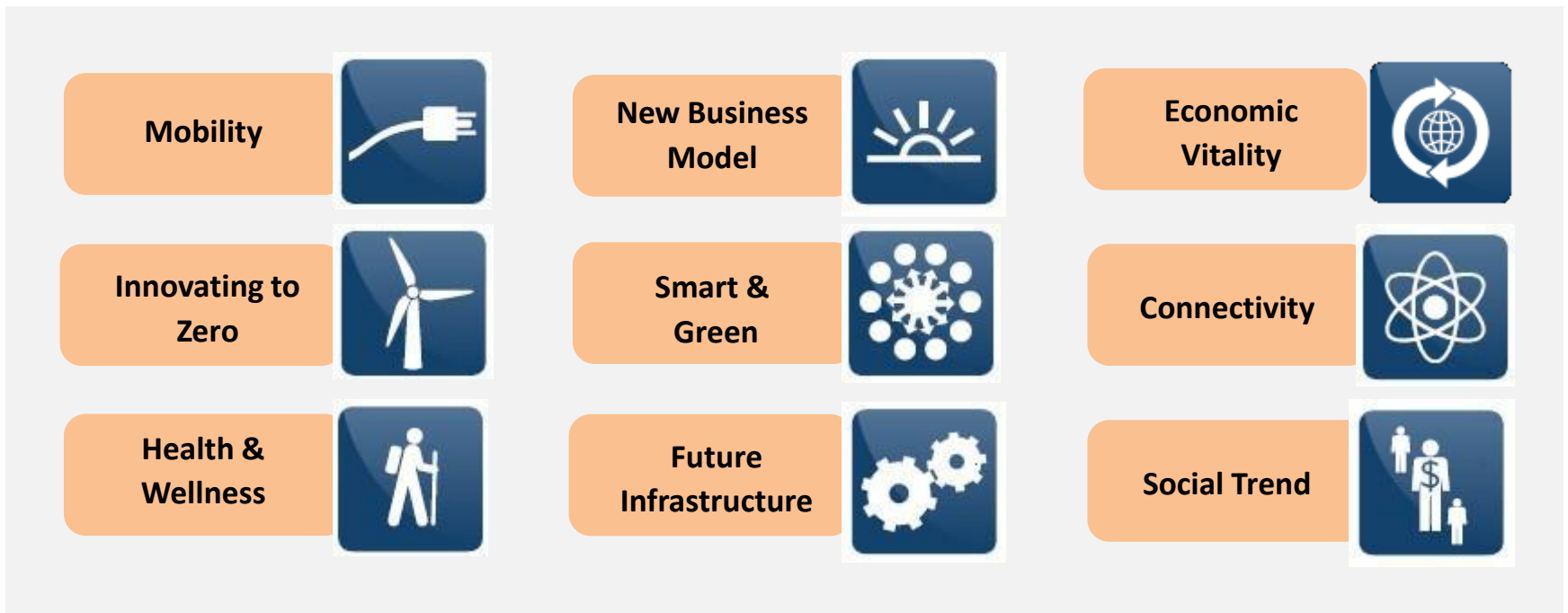
**Traffic
congestion**



03 Background: Social & Technical Trends

Global trends affecting society and personnel lives can be observed beyond physical boundaries by virtue of ICT.

Emerging Trends



ICT as a Facilitator

04 Smart City development in Korea

KT proposed Smart City concept to the Korean government as a new model of city development

R&D for Smart City Model Development



- Develop Technology, Operation Model of Smart City
- Test-bed for IT and Construction Convergence

Government organizations facilitate Smart City Development



- MOCT and MIC sign a MOU on Smart City implementation
- Define roles of related government agencies

Applying Smart City concept for Dongtan City



- LH(Land and Housing Corp.) leads city development
- Successful initial implementation leads to development of other smart cities

* Ministry of Construction & Transportation
** Ministry of Information and Communication

05 Major Stakeholders in Smart City Development

Major Stakeholders

Central Government

- Supports the industry through establishing Smart City law
- Standardization of relevant technologies



City Municipalities

- Smart City assets are transferred to Municipality
- Operation and maintenance
- Prepare Local regulations



Public Land Developers

- Plan and develop selected land based on Smart City Concept
- Fund Smart City Projects



Private Companies

- Lead Plan/Design/Implementation of Smart City projects



06 Regulations regarding Smart City

U-City Law

Background

- Smart Cities are consisted of various services; whereas multiple government organizations are related
- The Korea Government with the support of major Smart City developers have developed the U-City Law which regulates and give guideline to U-City implementation

Types

U-City Law

U-City Decree

U-City Guideline

Major Contents

- Smart City Comprehensive Planning
- Permits and license
- Technology development
- Management & Operation
- Privacy
- Smart City Steering Committee

Contents

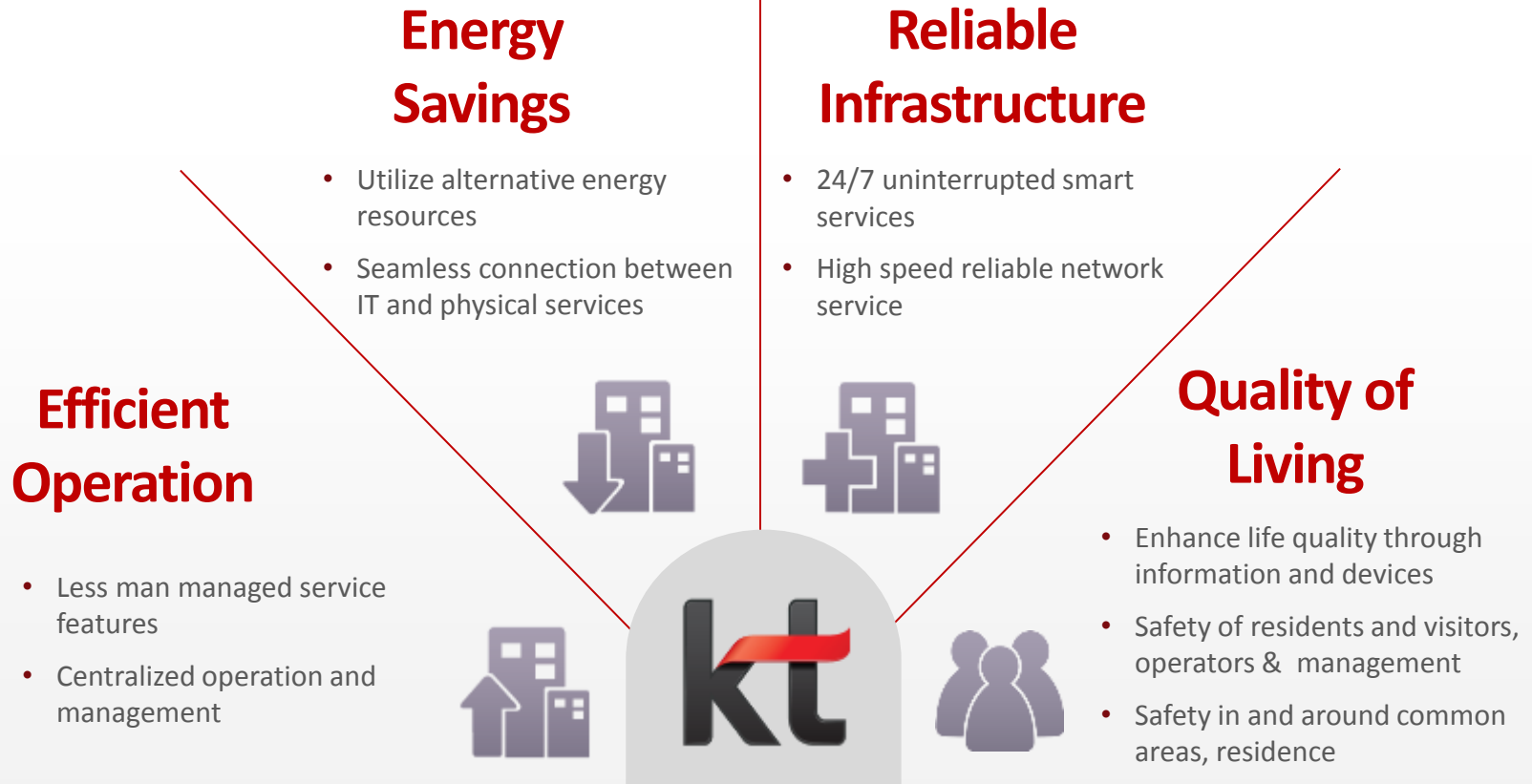
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01 Values for KT Smart City

Sustainability will realize four areas of benefits that should be resolved through an experienced service provider



02 Efficient Operation through Integrated Operation

KT's Integrated Operation Platform can integrate smart services, monitor and control all the services through the City Operation Center



KT Integrated Service Management Platform

ITS

Energy

Surveillance

Utility

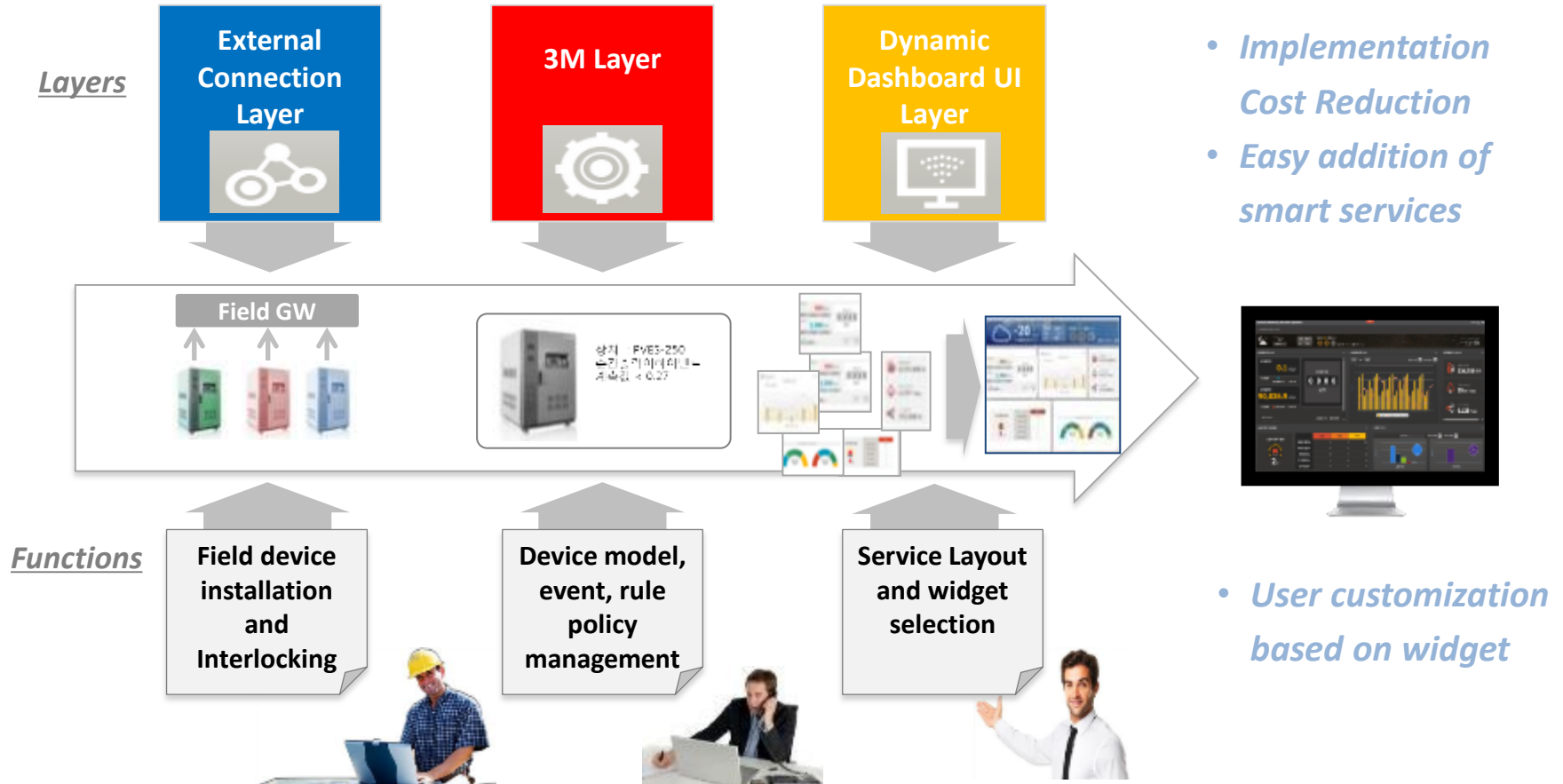
Parking

Waste Mgmt.

Competitive Sourcing

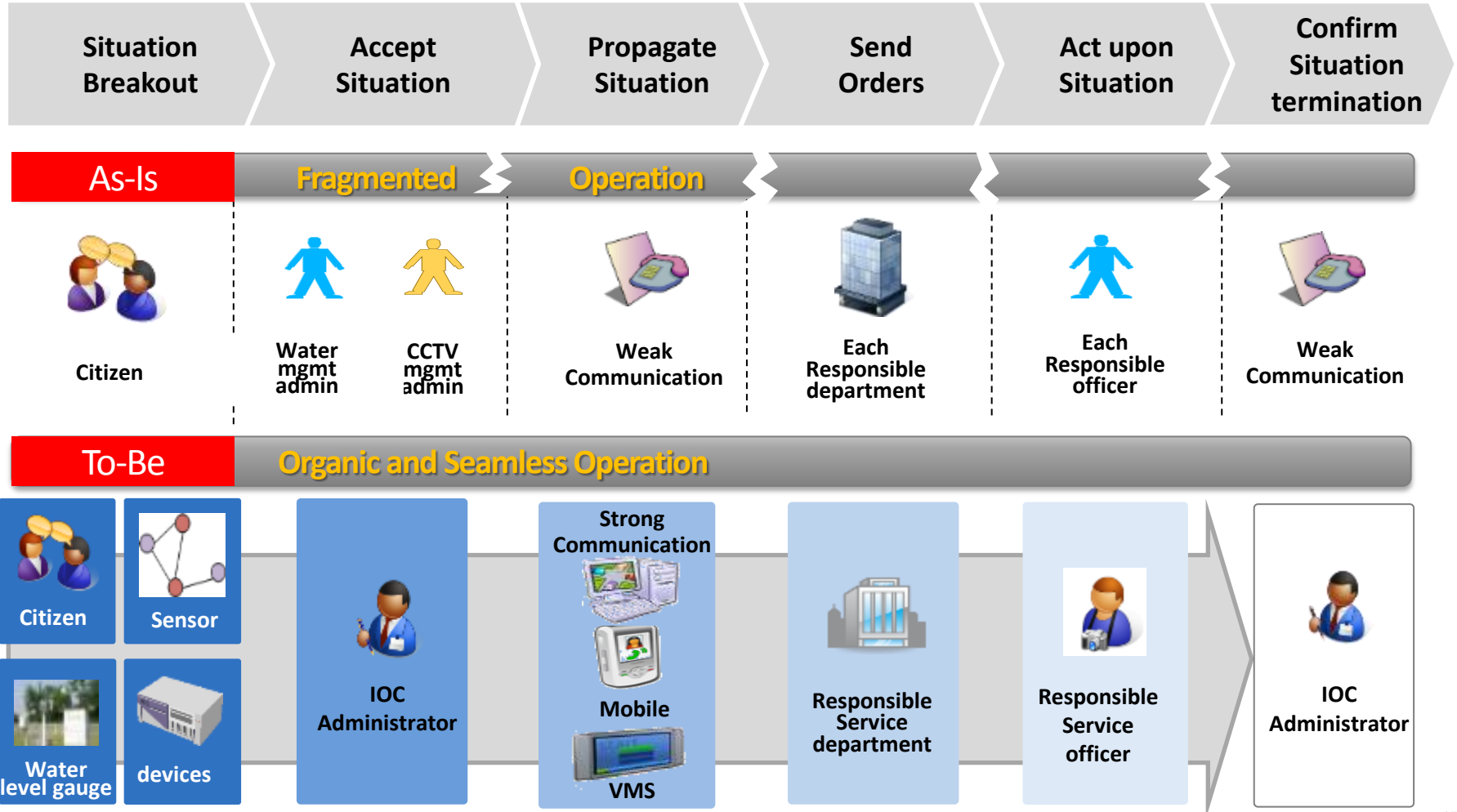
03 “3MP”: KT’s city platform

The 3MP is an IoT based city platform that offers productivity, cost efficiency, and timely entry into new markets.



04 Integrated monitoring benefits

3MP's integrated monitoring and control of operation flow enables quick resolution of city issues



05 Energy Savings

KT has participated and played an important role in government-led initiatives for energy

Government led Initiatives

Smart Grid Pilot ('09~)

Micro Energy Grid ('13~)

Participation Area

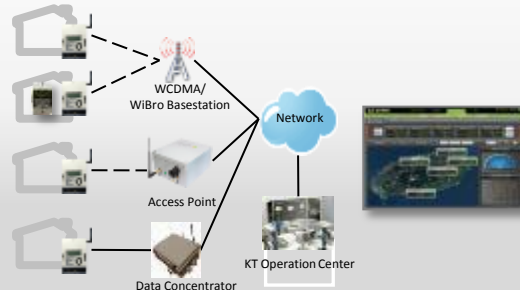
Smart Market Place Implementation

TOC Platform Implementation

Major roles of 

- Implementation of Integrated Operation system
- Implementation of Smart Grid Management Infra (AMI, EMS, ESS)
- BEMS Implementation & commercialization
- Implementation of charging infra. for electric vehicles

- System Integration and Interconnection
- System implementation for Analysis of Energy data
- Implementation of DR service platform



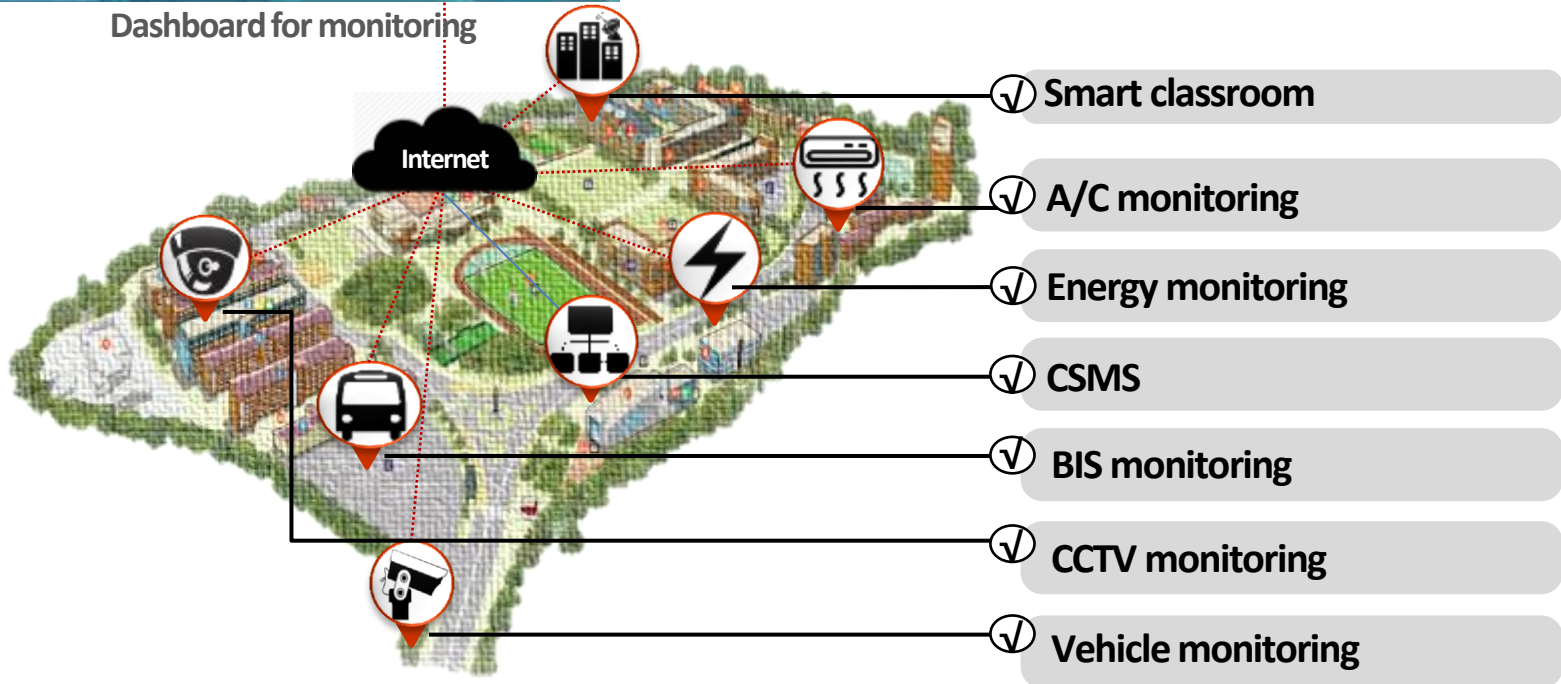
06 Energy Savings case – for Campus

Handong University in Korea



Dashboard for monitoring

- **Overview:** Implementation of energy monitoring and saving solutions at campus level
- **Site :** Handong University in Korea, 2013
- **Implementation Description:**
M2M Integrated Monitoring solution,
Vehicle monitoring, EMS, CCTV, BIS, CSMS



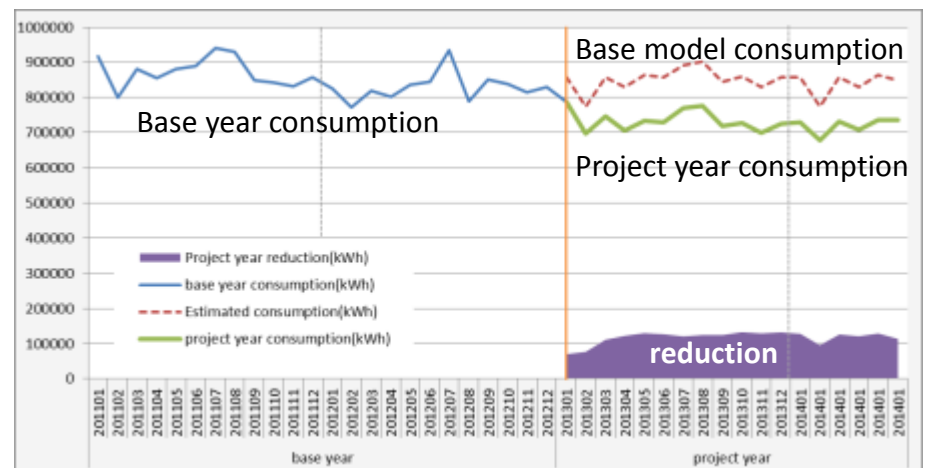
07 Energy Savings case – for Building

BC Card Future Center Building



- **Site** : BC card Future center, Seoul, 2012
- **Implementation Description**: Energy management platform, Legacy BAS/FMS interface, Environment-based control (CO2, external air temp), Analytic advanced BEMS
- **Energy Analysis Overview**
 - Period: January 1, 2013 ~ June 30, 2014 (18 months)
 - Base year : 2011.1~2012.12 (2year)

Improvement : 14.2% (1 year average) reduction against base year



08 Reliable Infrastructure – Facility management

Smart City is implemented to efficiently manage and operate city infrastructure for decrease of maintenance cost and increase usability



- **Site : Dongtan Smart City, Paju Smart City etc.**
- Sensor based urban facility management
- CCTV monitoring
- 3D monitoring of underground water/gas pipelines
- Road monitoring
- Network Management

Values

- Increased usability of infrastructure
- Decrease of maintenance cost
- Increase of user satisfaction

09 Quality of Living – Increased access to information

Data collected through sensors and wireless devices will be used as a information for public access



e-government portal

- Government information open to public with easy access
- Tax payment, Application for public document etc.

Transit Information system

- Real-time Bus/train Arrival Time
- Route information
- Transfer information
- Vicinity Area Map
- Information collected through Wi-Fi, GPS & Sensors

Public API Sharing

- Public Data API opened to be used for extensive development by the general
- Brings various options and better service for users

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Dongtan Smart City



01 Dongtan, the first Smart City in-operation

Dongtan City Map



General Information

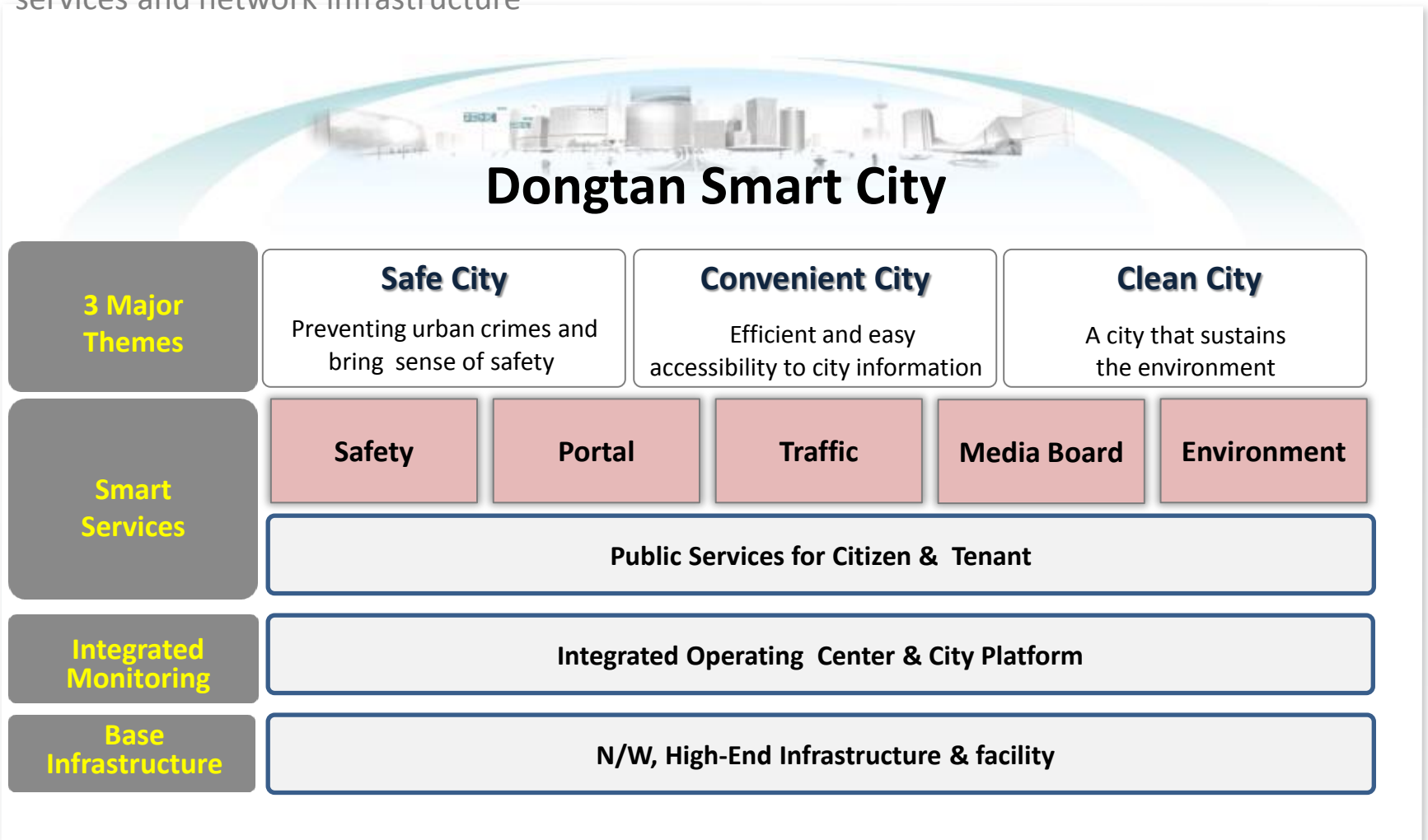
- 40km South from Seoul
- 9.04km² (2,169 acre)
- 120,692 population
- 39,827 households
- Project Period : May 2006 ~ Sept. 2008
- Budget : 50.8 M USD

Major Features

- Residential that disperses population from Seoul
- Implementation of Green City concept with greenway connection throughout the city
- Strong connection with semiconductor/logistics industry for job security
- Road design that brings easy connection to city amenities

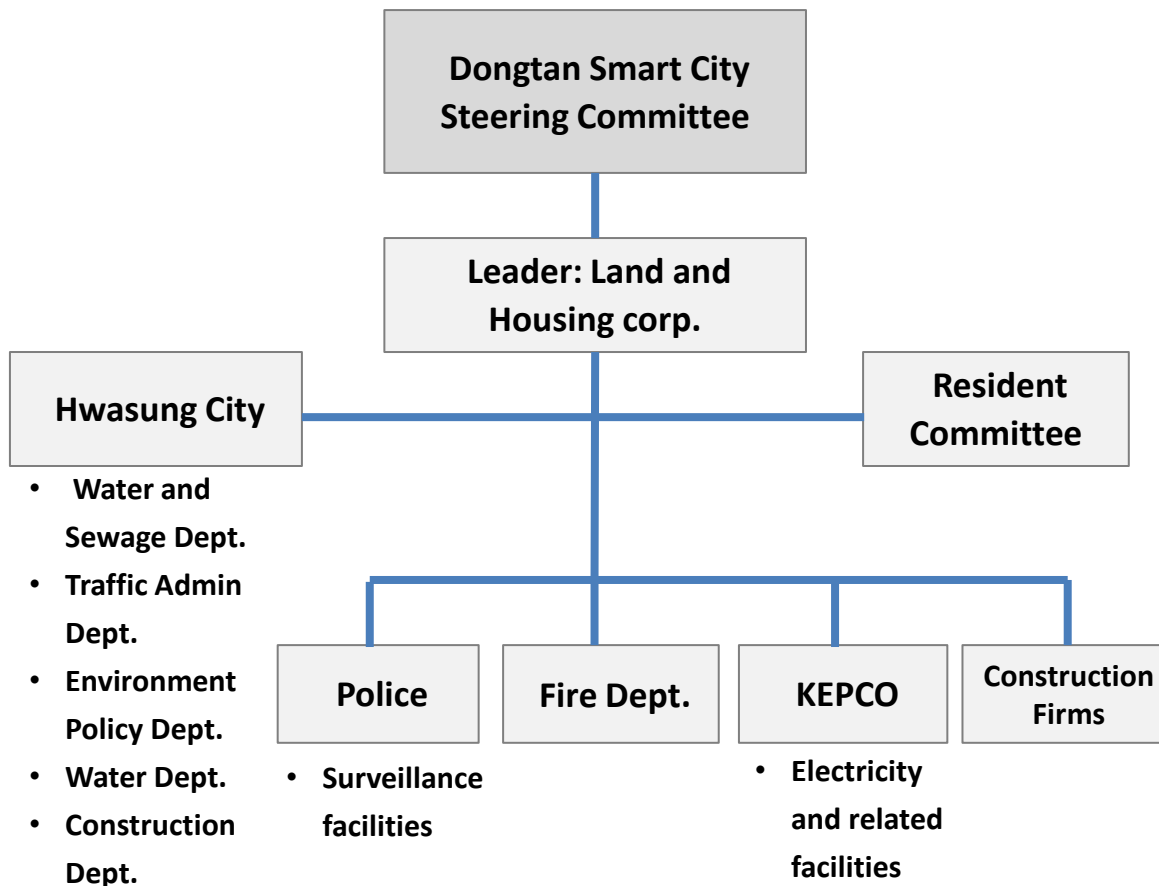
02 Smart Services of Dongtan

Dongtan aims for a safe and convenient city through the citywide implementation of smart services and network infrastructure



03 Dealing with issues during development

Related government organizations and resident committee has made a Steering Committee to mediate developing issues of Smart city



Key Findings

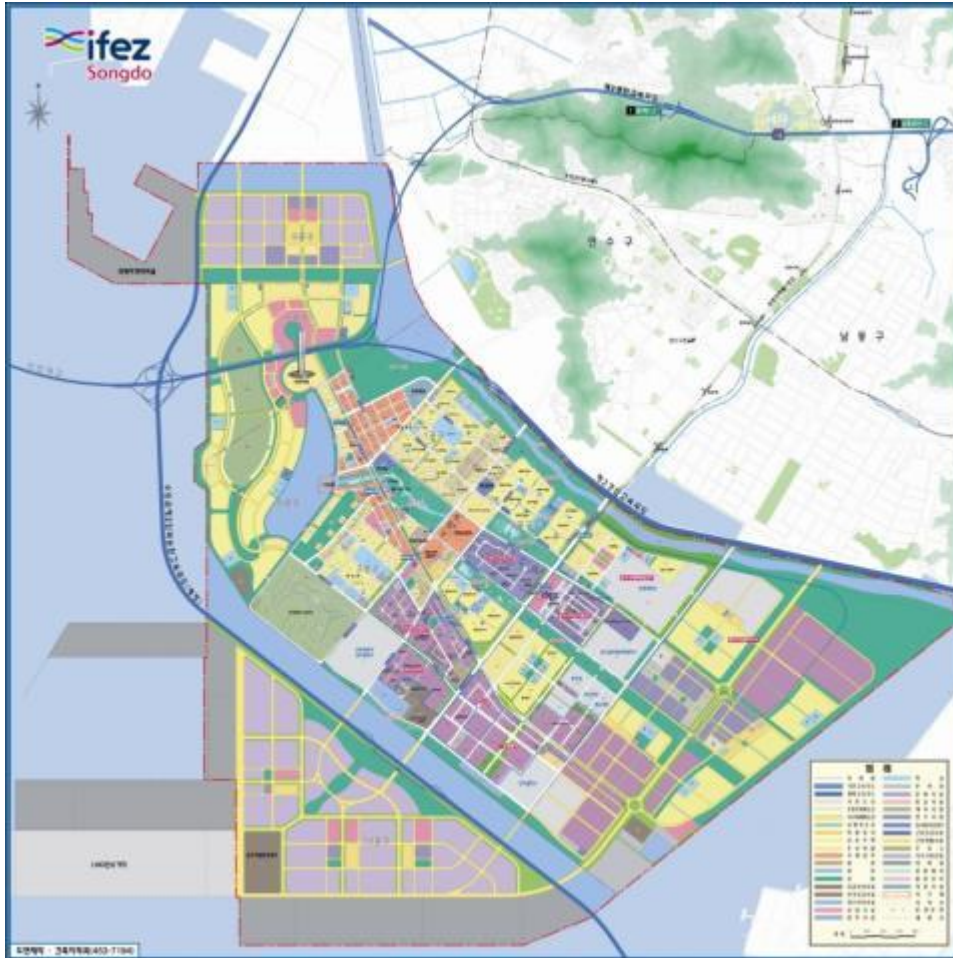
- Main public and private interests of the city participate in regular meetings
- Related Departments of Hwasung City and Resident Committee are core participants of the Steering committee

Songdo Smart City



01 Songdo – Sustainable Smart City

Songdo Smart City is pursuing the establishment of four development directions to become an international business hub



General Information

- Total area : 53.4 km² (5,340 ha)
- Expected Population : 252,500 by 2020 (Current 55,000)
- Total Budget : 7.6B USD
- Locates World Bank, GCF (Green Climate Fund) HQ

Development Directions

1. **Composition of a Cluster** consisting of industrial, academic and R&D org.
2. Development as a **hub for multinational companies in Asia Pacific**
3. Setting a complex of high-tech, knowledge-based industries
4. Developing an **International business center** including Convention Center and Exhibition Centre, etc.

02 PPCC Model for Songdo Smart City

To overcome the issues of public based Smart City development, Incheon U-City Co. was created for a sustainable business model structure and stable city infra operation

Challenges facing Smart City development



Launch of Public-Private Cooperation Company

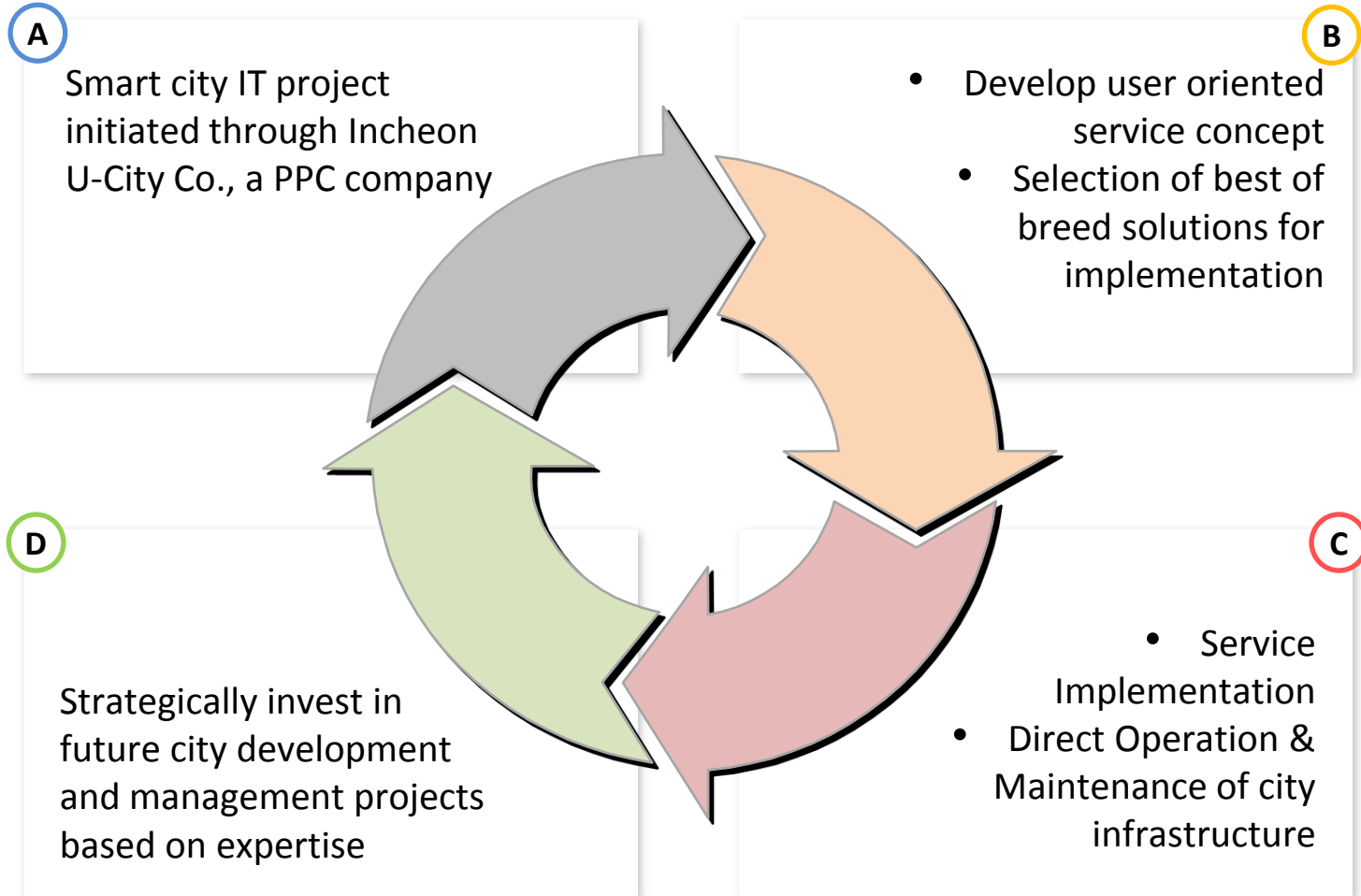


Incheon U-City Co. established as a public-private cooperation company

- Shareholding Structure: KT & Cisco (Centios), Incheon City, local SMBs of Incheon
- Main Business : Implementation & Management of Incheon smart city & buildings

03 Engagement model for PPCC

To overcome the issues of public based Smart City development, Incheon U-City Co. was created for a sustainable business model structure and stable city infra operation



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Thank you !

irene.seo@kt.com