

LG CNS Smart City Why, How, & What



Smart City Business Unit

1

LG CNS
Why & WWho



1.1. Who we are

LG CNS is the global IT service company that enables digital innovation for customers through emerging IT technologies.



Founded
1987

Headquarters
Seoul, Korea

Global Locations
14 Overseas subsidiaries

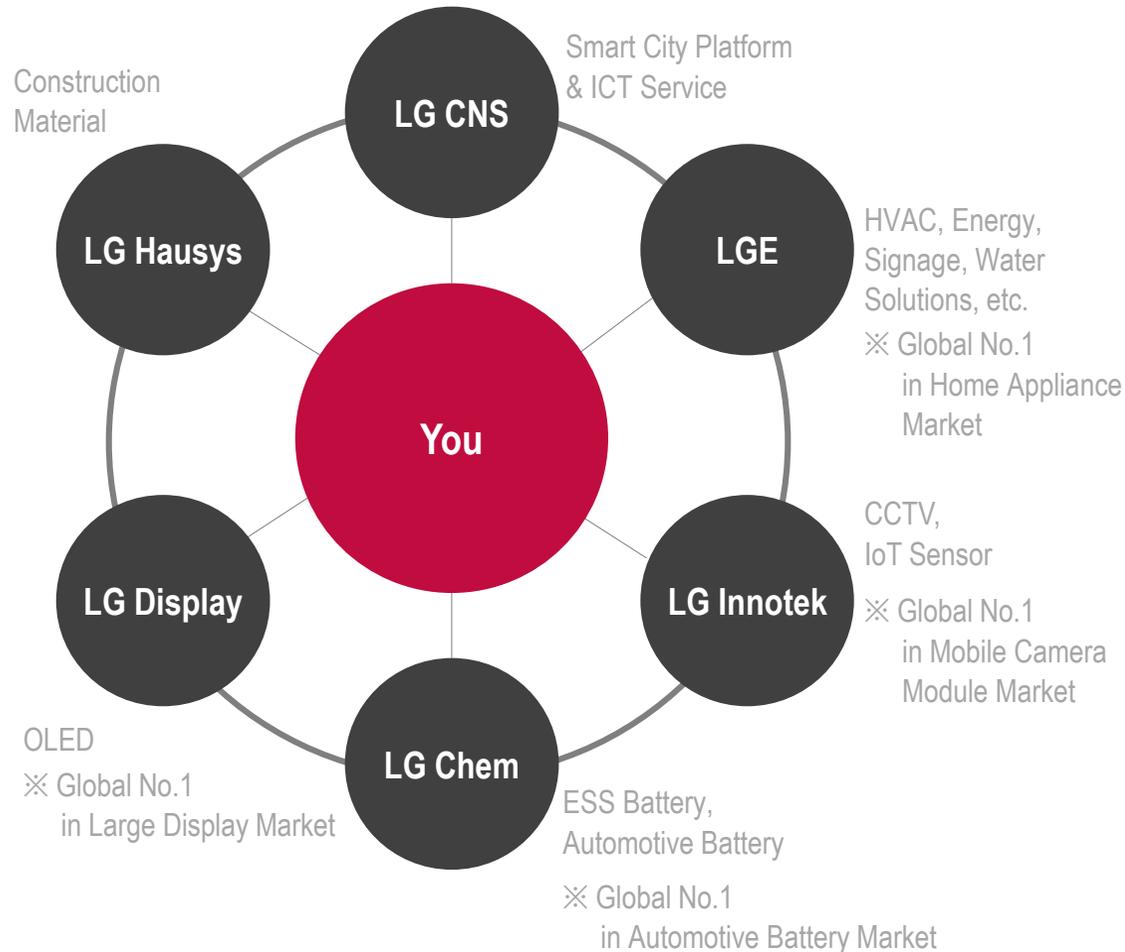
Annual Sales (2018)
USD 3 Billion

Employees
6,000+

Global Ranking
Top 8 IT service vendors
in Asia/Pacific (2010) by Forrester Research

1.2. Why LG ?

LG CNS and other world-class LG affiliates offer the global best “One LG solutions” to realize your Smart City successfully.



One LG's innate value provided

- Custom solution provided
- Easy and simple execution and implementation
- Comprehensive service provided



LG CNS
How



2.1. Global Projects

LG CNS provides world-class IT services to overseas customers based on the understanding of various industries and the expertise on the IT field.



Transportation

- Bogota AFC & FMS
- Athena AFC
- Kuala Lumpur AFC & FMS

...



Energy

- Guam Microgrid
- Hiroshima Solar Power Plant
- Aomori Solar Power Plant

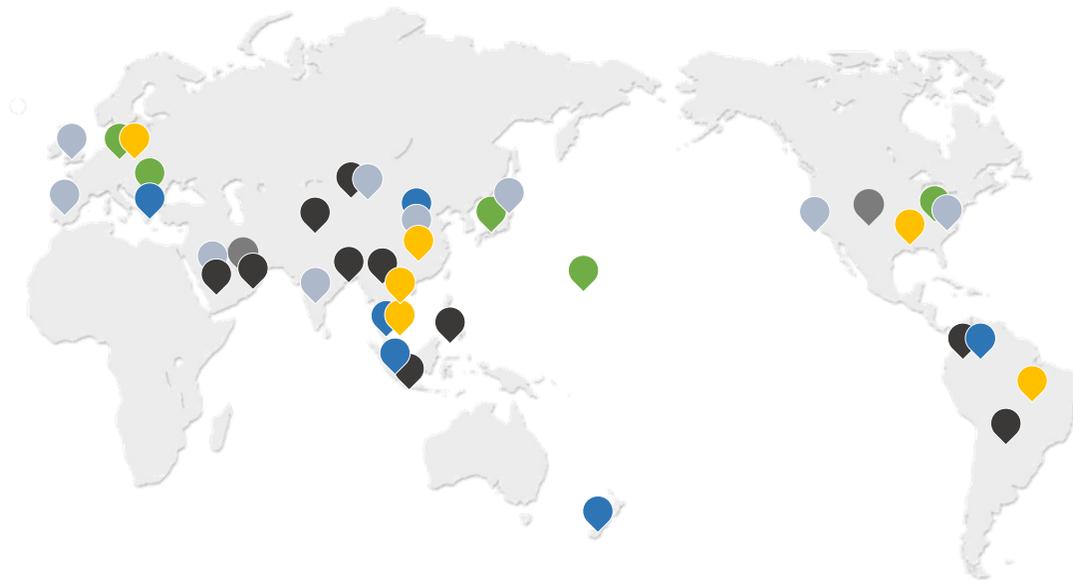
...



Smart Building & Signage

- LG Japan Building
- Manchester City FC Stadium
- Las Vegas LED Screen

...



Smart Factory & Logistics

- LGC China Factory
- LGC Poland Factory
- Malaysia PosLaju IPC

...



e-Government

- Colombia ICT Education Sys.
- Laos Tax System
- Indonesia Police System

...



Healthcare

- Bahrain National Health Insurance System
- NHC Homehealth

...

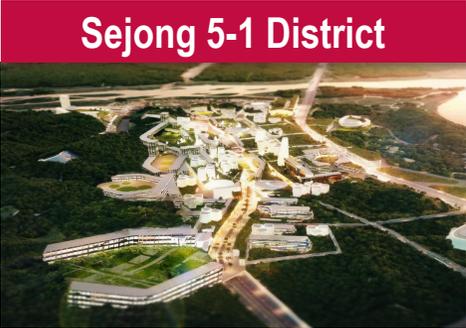
* AFC : Automated Fare Collection / FMS : Fleet Management System / IPC : Integrated Parcel Center

2.2. Smart City Flagship Projects in Korea

Korean government established customized models for each stage of city growth. LG CNS have been involved in four different projects of national pilot projects and smart city challenges. In these projects, we will create city with our various technologies.

Flagship Projects for each stage of city growth

 CNS Participation

National Pilot Projects	 <p>Sejong 5-1 District</p> <ul style="list-style-type: none"> • [Core Value] City as a Sustainable Platform • [Major Contents] Mobility + Healthcare with 7 initiatives 		 <p>Busan Eco-Delta City</p> <ul style="list-style-type: none"> • [Core Value] Fostering 4th Industrial Revolution Technology & Improving Quality of Life • [Major Contents] Water Management + Robot with 3 platforms and 10 initiatives 				
	Smart City Challenge Projects	<p>Gwangju</p> <p>Blockchain based Data-Reward Platform</p>	<p>Daejeon</p> <p>Shared Parking & Linked Services</p>	<p>Incheon</p> <p>Demand Response Transportation Service</p>	<p>Bucheon</p> <p>Solving Parking Problem via e-Mobility Service</p>	<p>Suwon</p> <p>5G-based Mobile Digital Twin</p>	<p>Changwon</p> <p>Smart City Services for Industrial District</p>
Urban Revitalization Projects		<p>Goyang</p> <p>Security Service via Drones</p>	<p>Jochiwon</p> <p>Startup Support with Data Center</p>	<p>Pohang</p> <p>Experiencible VR Service</p>	<p>Namyangju</p> <p>Tourism Invigoration via AR/VR Services</p>	<p>Bupyeong</p> <p>Community Platform</p>	<p>Saha</p> <p>Smart Farm</p>

2.3. Projects in progress : Sejong

LH is planning and implementing various services in 7 sectors such as mobility, healthcare, etc. at Sejong 5-1 District as a National Smart City Pilot Project until 2021.

LH has a plan to establish SPC which be in charge of managing city construction & operation by 2020.



Business Overview

- Area : 2.74 km²
- Period : 2017.7 ~ 2021.12
- Budget: \$1.5B development \$750mio + innovative services \$750mio
- Population projection : 29,000 people (11,400 households)
- Developer : Korea Land & Housing Corporation(LH) et al.

Development Concept

- Sharing-based Mobility City
 - . Interregional : BRT Bus, private car Personal Mobility
 - . Regional : autonomous shuttle, car sharing, PM, etc.
- Provide 80 Smart Services in 7 Sectors
 - . Mobility, Healthcare, Energy/Environment, Education, etc.

CNS,

- ✓ Designed basic concept of Smart City
- ✓ Will establish the action plan for applying innovative technologies related to energy and environment



2.3. Projects in progress : Sejong

Sejong Smart City is designed with following 7 initiative services to change and improve quality of citizens' life based on AI.

* CNS Participation

7 Initiatives		Service Details
①	 Mobility	Shared Mobility(Car Sharing, Car Hailing, etc.), Autonomous Driving BRT Bus/Shuttle , Smart Street, Total Mobility Service, etc.
②	 Healthcare	Smart Emergency Call, Emergency Kit Delivery via Drones , AI Smart Medical Examination, Smart Home Connected Medical Service, Hospital Easy-Reservation Service, etc.
③	 Education	Creative School Design, 3D Printer, Maker Space(e.g. Robot's Arm), International Standards-level Education System, EduTech, etc.
④	 Energy/Environment	City EMS , Small-scale Power Trade, Solar Energy City, Fuel Cell Pilot, Mobility Charging Infrastructure, Zero Energy Building , etc.
⑤	 Governance	Citizen Communication Channel, Living Lab Platform, Social Contribution Platform Operation, Blockchain based Local Currency and M-Voting, Digital Twin, etc.
⑥	 Culture/Shopping	Customized Planning and Demand Customized Service, Autonomous Shopping Cart , Unmanned Delivery System , Smart Goods Storage Service, etc.
⑦	 Job	Startup Incubation Center, Promotion of Win-Win Relationship-Collaboration-Convergence between Large and Small Enterprises, Startup Support, Cross-country Verification, etc.

Data-driven City Management Center

Integrated City Operation & Management Platform

Big Data Collection/Storage/Management

AI Analytics

Startup Incubation

Monitoring & Operation

2.4. Projects in progress : Busan

K-water is promoting National Smart City Pilot Project in Busan Eco-Delta City. Three major platforms and 10 innovative services such as robotics, smart water, etc. will be implemented by 2021.



Business Overview

- Area : 2.19 km²
- Period : 2017.7 ~ 2021.12
- Budget : \$2.2B development \$1.2B + innovative services \$1B
- Population projection : 8,500 people (3,380 households)
- Developer : K-Water et al.

Development Concept

- A Waterfront Eco City
- Global Waterfront Cultural City
- Future Logistics & Service City
- Three major platforms(Digital, Augmented, Robotic City) and 10 initiatives(Robot-based Life Innovation, Smart Water, etc.)

CNS,

- ✓ Signed the MOU to build a Smart Town with a private developer (Bosung Corp.-LG CNS- LG Electronics, 2019.05)
- ✓ Supports to establish SPC for city construction & operation

2.4. Projects in progress : Busan

Busan EDC is designed with following 10 initiative services to add new value to citizens' life and to develop innovative business-friendly city.

* CNS Participation

10 Initiatives		Service Details
①	 Robot	Home AI Secretary Robot, Robot Delivery, Rehabilitation Robot, Robot Testbed, etc.
②	 Learn-Work-Play	LWP Center(Library, Smart Work Center, Maker Space) Infrastructure construction and program management
③	 City Administration	VR City Administration, City Maintenance Management via Robot , Administration of Citizen Self-Government, etc.
④	 Water	City Rain Radar, Smart Purification Plant, SWM(Smart Water Management), Sewage Recycling, etc.
⑤	 Energy	Fuel Cell, Thermal Energy Supply Using Sea Water and Regenerative Heat, Zero-Energy Home Model Complex , etc.
⑥	 Education/Living	EduTech, City App, Smart Home , Smart Shopping Center, etc.
⑦	 Healthcare	Real-Time Health Monitoring System, Healthcare Clusters(e.g. University Hospital, Research Facility), etc.
⑧	 Transportation	Smart Street-Vehicle-Parking-Personal Mobility Connection, Autonomous Shuttle Pilot and Expansion , etc.
⑨	 Safety	Optimized Emergency Response System, Evacuation Guidance System in Building, Smart CCTV, etc.
⑩	 Park	Smart Technology Experience Park for Urban Problem Solving(PM 10 Dust Reduction, Water Recycling), Renewable Energy, etc.

Data-driven City Management Center

Integrated City Operation & Management Platform

Big Data Collection/Storage/Management

AI Analytics

Startup Incubation

Monitoring & Operation

3

LG CNS

What: Business & Solution for Smart City



Cityhub

3.1. Business for Smart City

Using our Smart City Platform – CityHub, LG CNS brings ICT based solutions to various challenges occurring in urban and suburban areas including traffic congestion, environmental issues, housing problem, building energy inefficiency and more.

Service Coverage

Smart City Platform 		
Smart Home & Building Solutions	Smart Community Solutions	Smart Public Solutions
<ul style="list-style-type: none"> • Smart Home IoT Solution • Smart Home & Building Management Solution 	<ul style="list-style-type: none"> • Smart integrated complex Management Solution • Robot Solution • Smart CCTV & Security Solution 	<ul style="list-style-type: none"> • Smart Public Transportation Payment Solution • Intelligent Transportation System • Urban Distributed Energy Solution • Digital Signage Solution
⋮	⋮	⋮

Service Proposition



- ✓ Smart City Master Planning
- ✓ Platform and Public-Private Partnership based Business Model Development



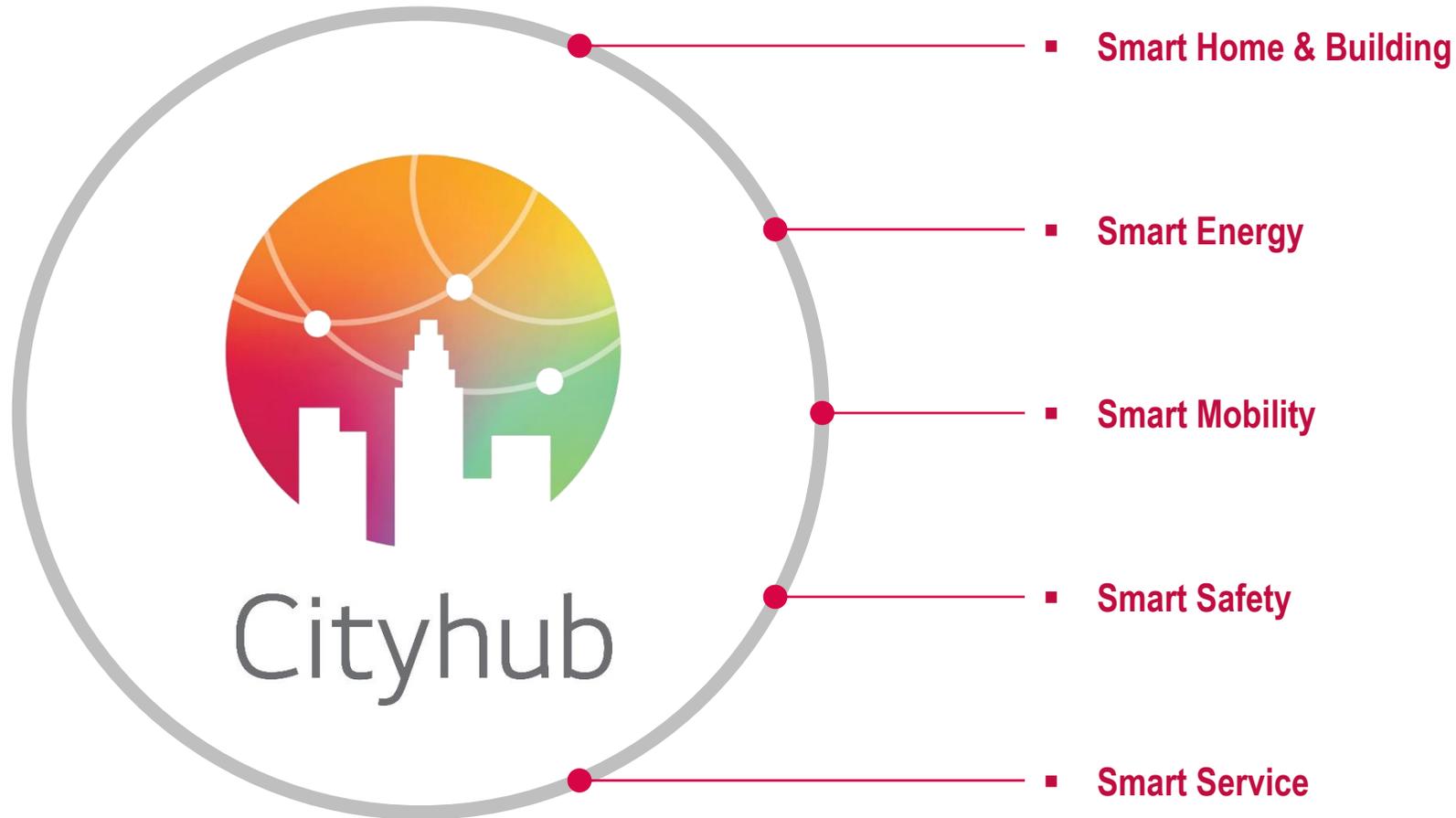
- ✓ Data driven City Platform Design and Implementation
- ✓ Platform based Smart City Service Design and EPC



- ✓ Smart City Services Monitoring and Operation
- ✓ Promoting Smart City Ecosystem through Living Lab

3.2. Smart City Solutions : Key Areas

By focusing on five key smart city areas,
LG CNS provides a variety solution that enable people to enjoy a better life.



The image features a light gray background with a complex network of white dots and thin lines, resembling a molecular or data network. A large, faint dashed circle is centered on the page. Within this dashed circle is a solid dark gray circle. Inside the dark gray circle, the Korean text '감사합니다' is written in white, bold, sans-serif font. Below it, the English text 'Thank you' is written in a smaller, white, sans-serif font.

감사합니다

Thank you