



Smart City Solution & Case Study

LG Uplus

LG Group & LGU+



LG way

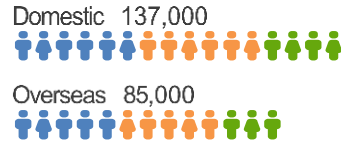
Customer Value Creation, People Oriented Management and Standard Ethical management to be No.1 LG as a premier company.



Founded
1947



Revenues (2017)
USD 141 billion

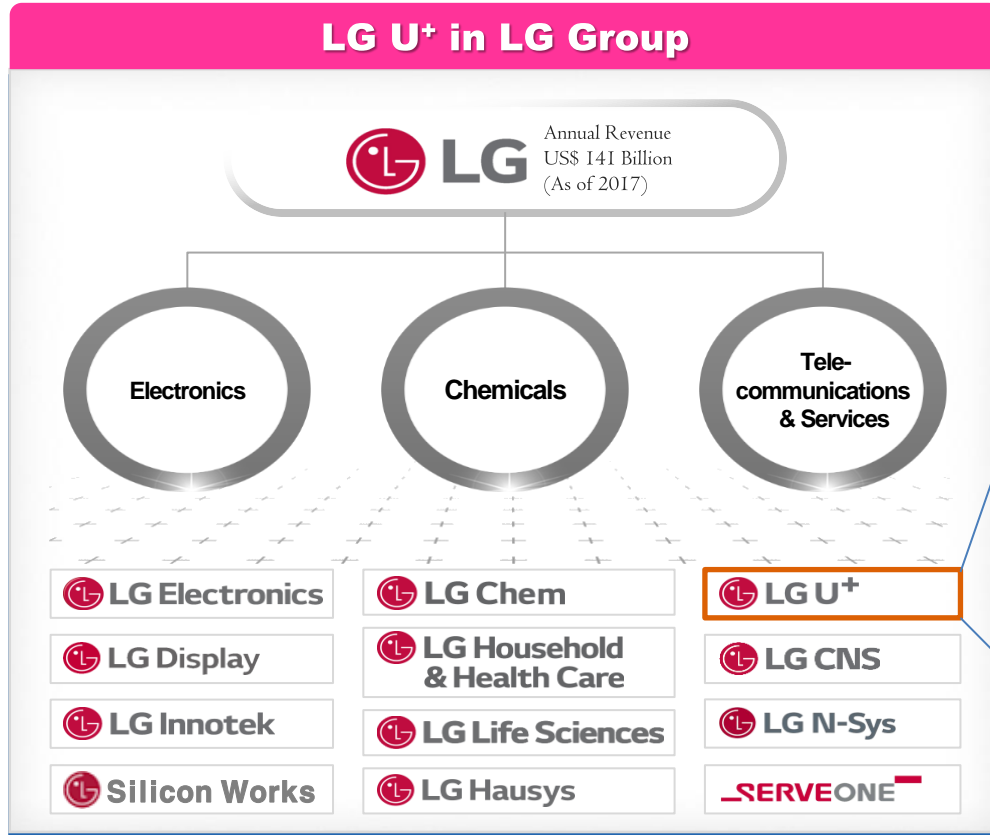


Employee (2016)
222,000+

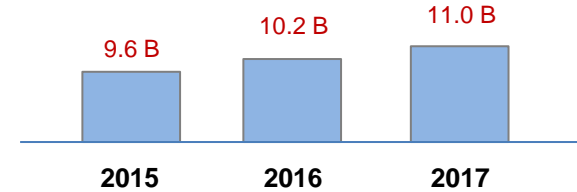


Global Subsidiaries
280+

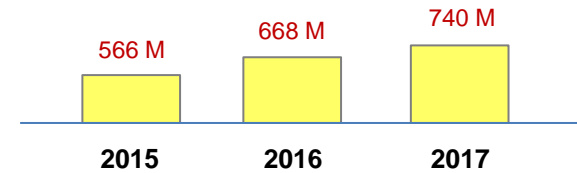
- Founded in 1947, LG Group now has 3 main business domains



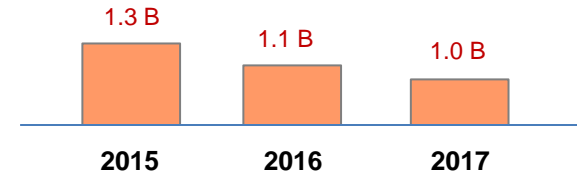
Revenue (USD)



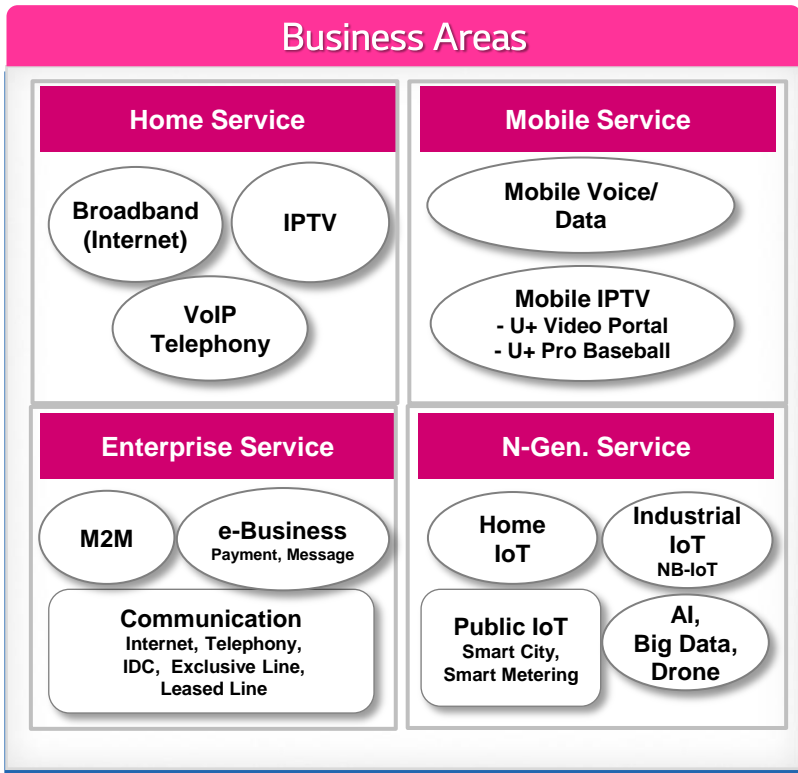
Operating Income (USD)



Capex (USD)

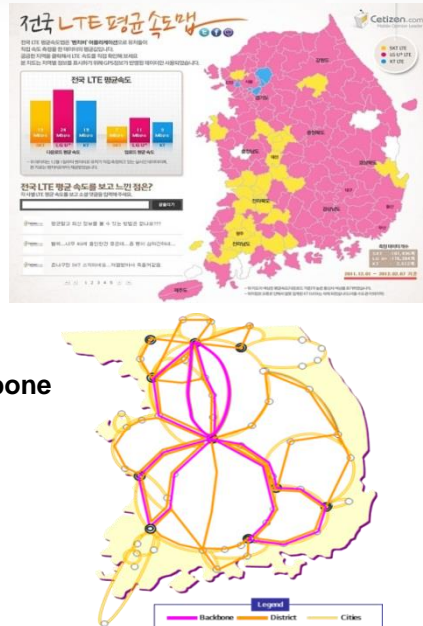


- Engaged in Mobile, Home, Enterprise Service and Next Generation Core Business Area with reliable mobile & broadband network infrastructure



Mobile & Broadband Network

- Nation-wide LTE Network with highest throughput**
 - RRH ~ 200,000
 - DU ~ 18,000
- Reliable Nation-wide backbone**
 - FOC > 330,000 km
 - Cox. > 30,000 km



The infographic includes a bar chart titled '전국 LTE 평균 속도' (National LTE Average Speed) comparing speeds across different regions. To its right is a map of South Korea color-coded by LTE average speed. Below these is a network backbone map showing a dense web of connections across the country, with a legend indicating Backbone (purple), District (orange), and Circles (yellow).

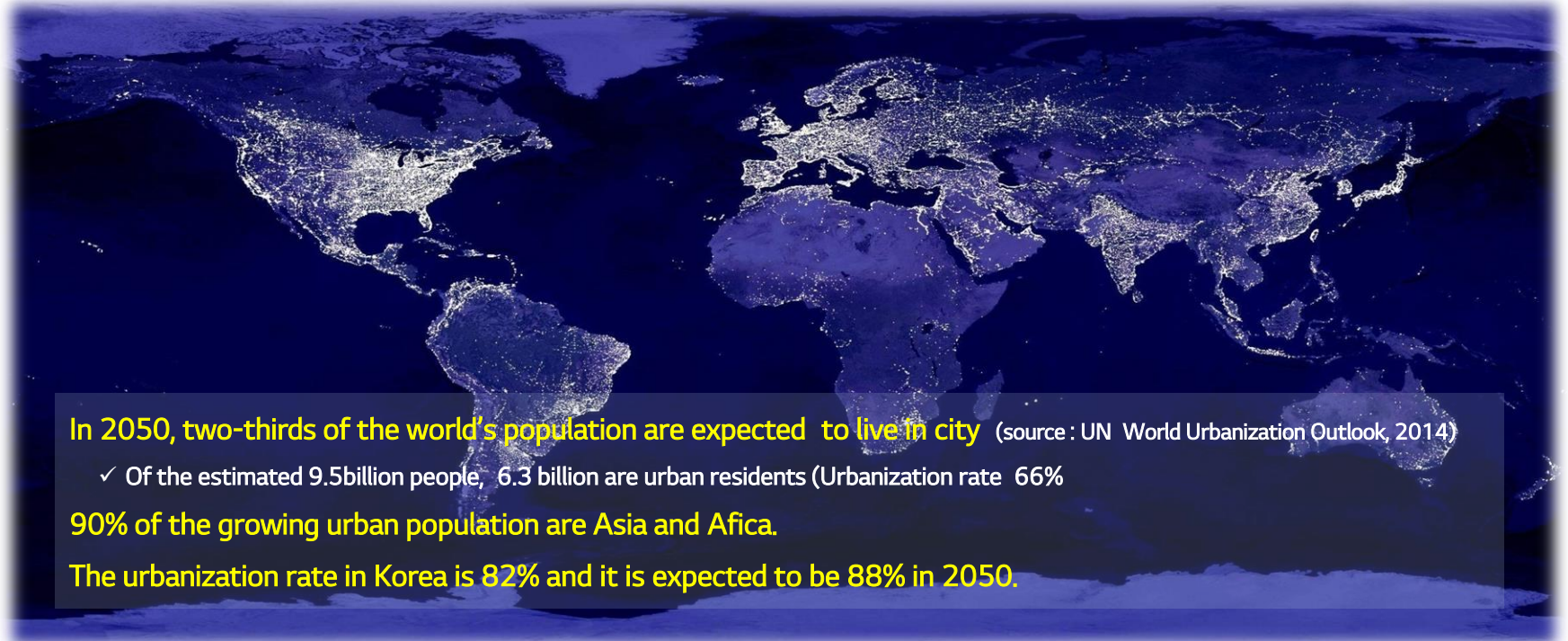
Smart City Solution



1. Urbanization is a global trend



In 21st century, urbanization is underway around world according to the each needs



In 2050, two-thirds of the world's population are expected to live in city (source : UN World Urbanization Outlook, 2014)

✓ Of the estimated 9.5 billion people, 6.3 billion are urban residents (Urbanization rate 66%)

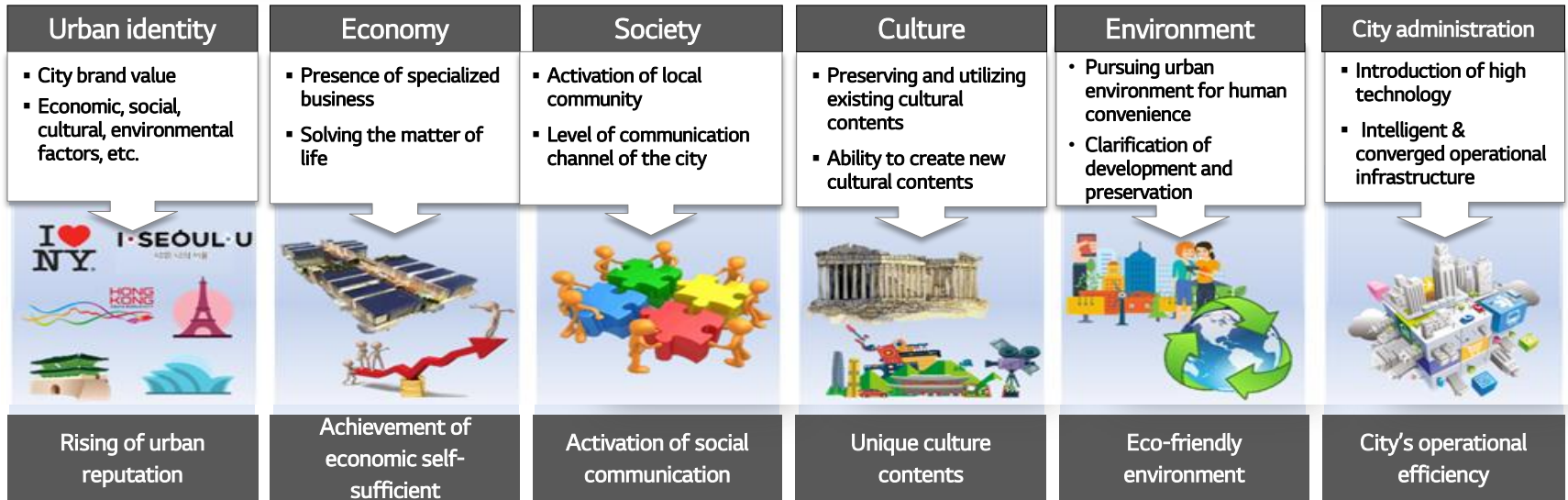
90% of the growing urban population are Asia and Africa.

The urbanization rate in Korea is 82% and it is expected to be 88% in 2050.

2. Urbanization and elements of Urban Competitiveness



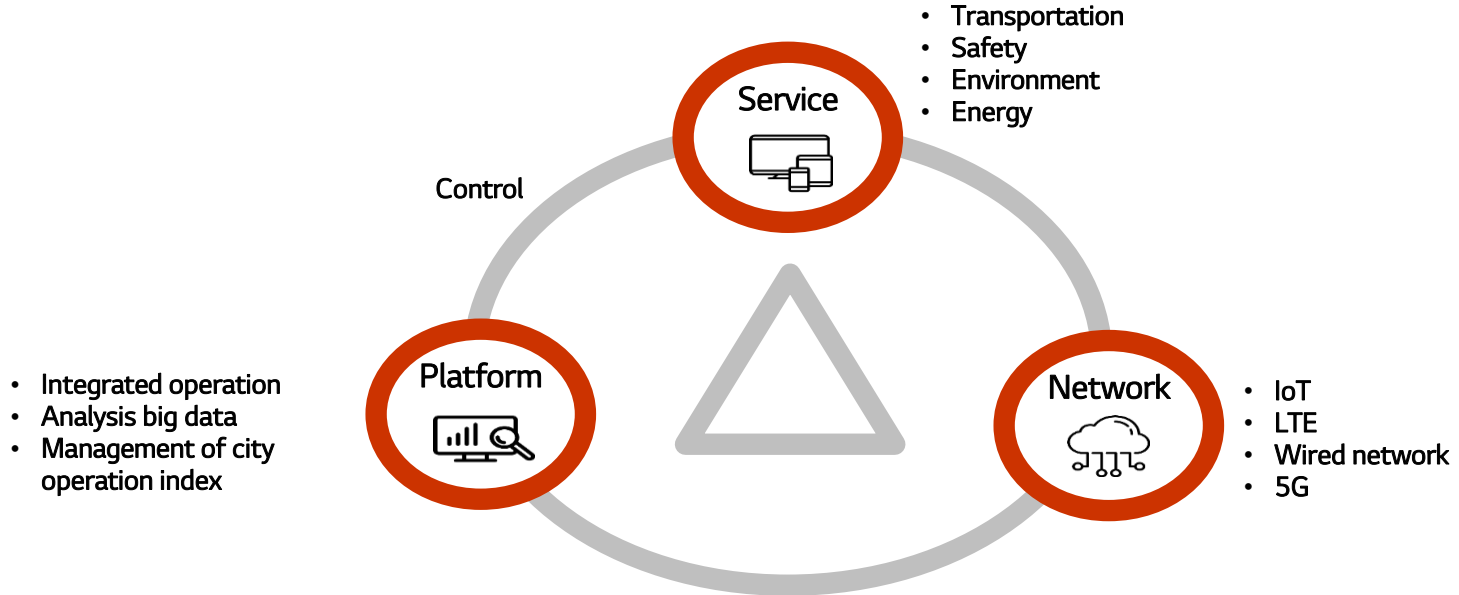
Urban Competitiveness Factors are urban reputation, economic self-sufficient, social communication, unique culture contents, environment friendly and operational efficiency in sustainable urban development and regeneration



The role of Smart City is a good way to strengthen the city's competitiveness.

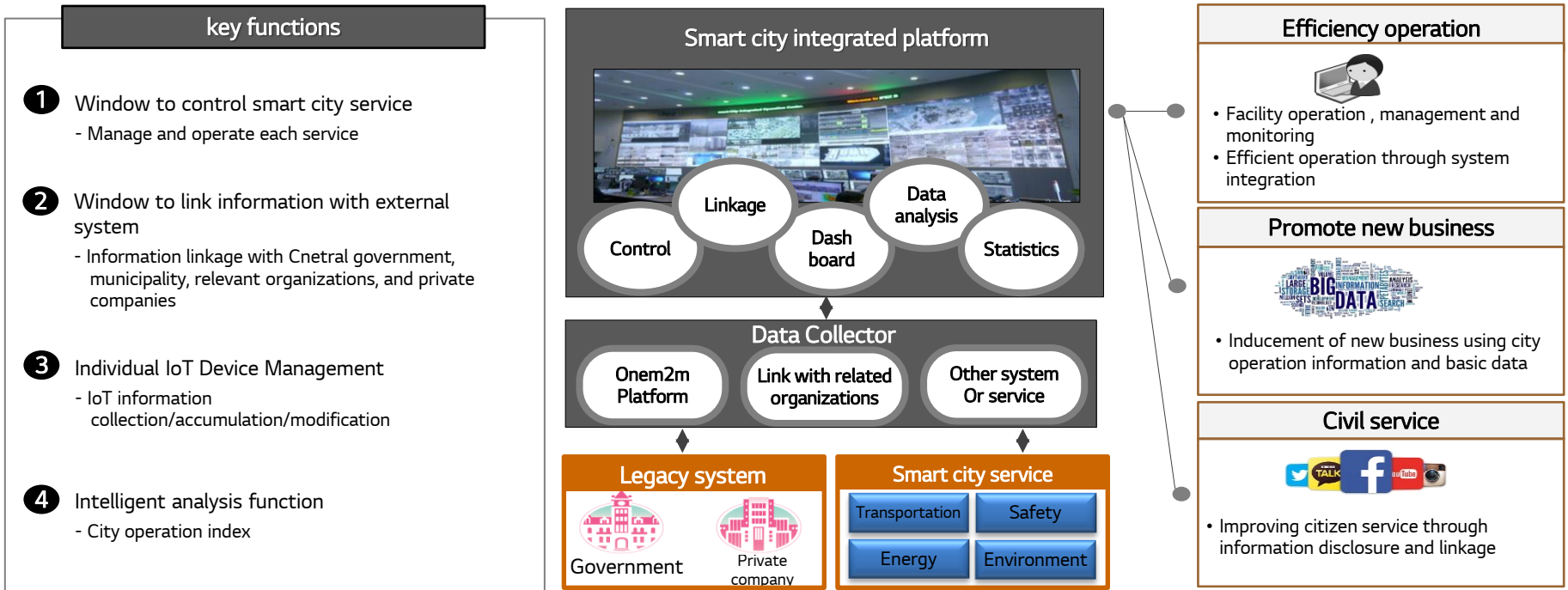
3. Smart City Components

“ Smart City is interconnected through “Service”, “platform” and “Communication network ” and is evolving into a system that provides new added value by utilizing the data accumulated through interconnection . ”

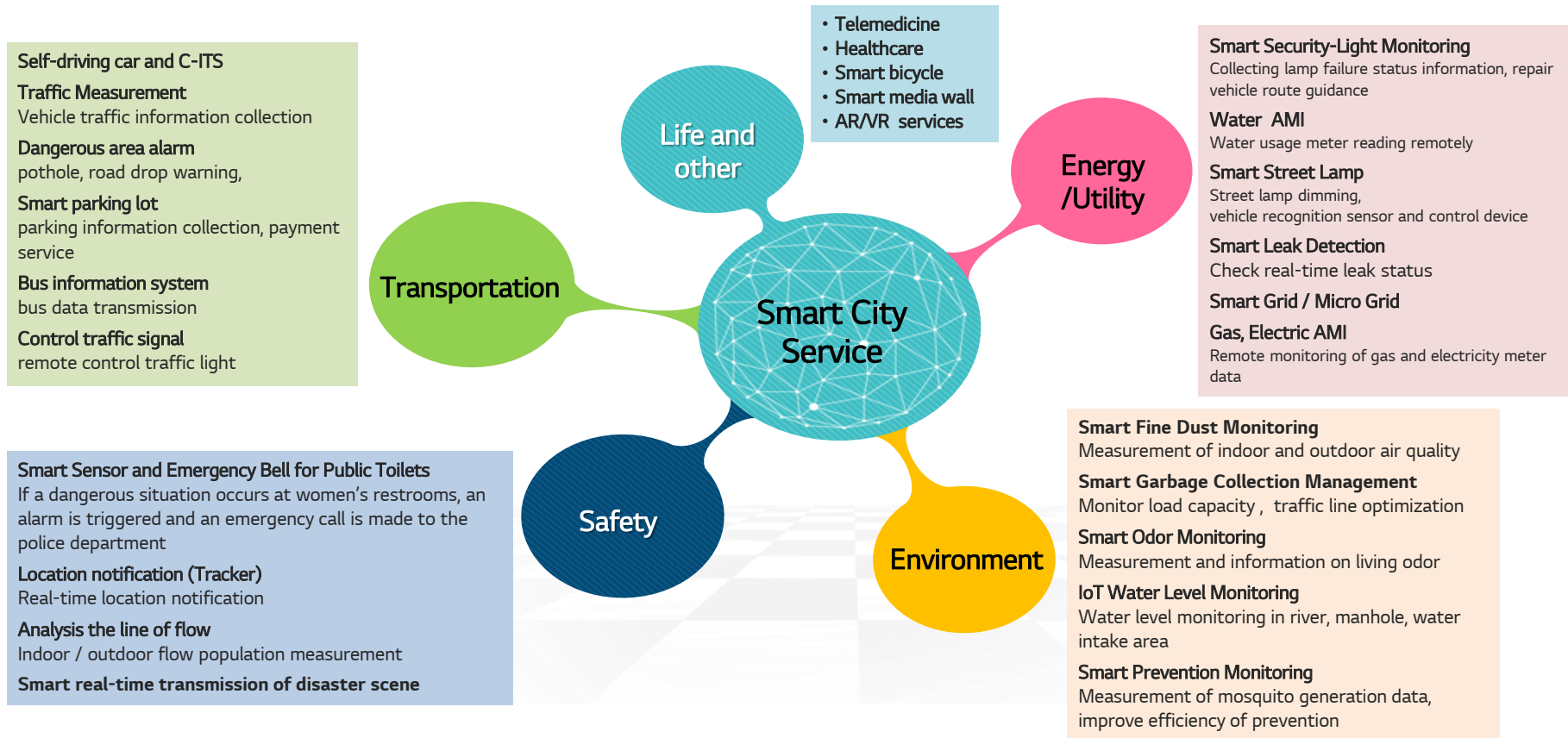


3. Smart City components - Platform

“ The platform is a Smart City’s control tower that monitors and controls individual services, analyzes data collected through service operations, provides dashboards, and links information with external related organizations. ”



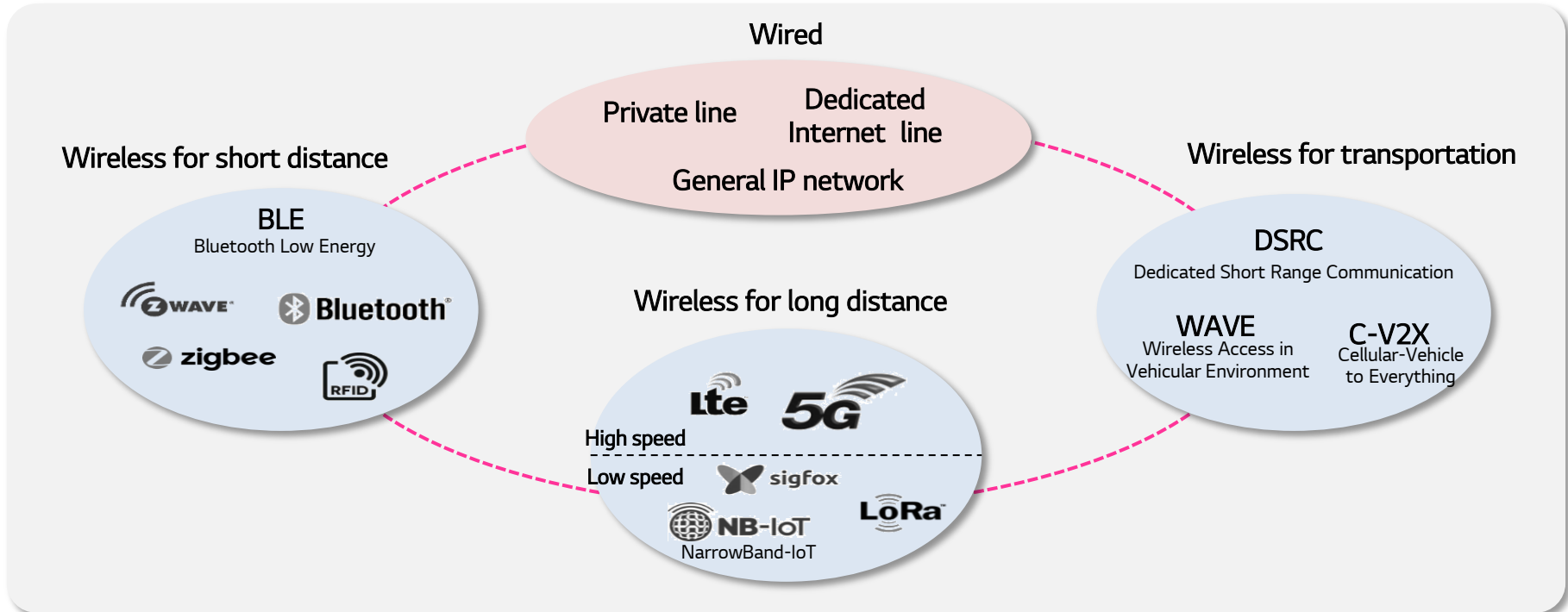
3. Smart City components - Services



3. Smart City components - Network



Communication network for smart city configuration includes wired network and wireless network with various uses and coverage.



4. Smart city solutions of LG



LG U+ can provide total solution covering everything in sensor, device, network, big data and platform area in collaboration with LG Group companies and partners.



LG Electronics

- Cellular /watch
- Home Appliances (TV, Refrigerator, washer, etc.)
- SmartThinQ

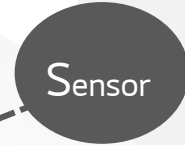
+ Other device manufacturer



LG Innotek

- Sensor lineup (Temperature, pulse, gas, etc.)
- Communication, camera module (BLE, 3G/4G, etc.)

+ Other sensor companies



LG U+

- IoT solution (Home, Public, Industry field)
- IoT platform
- Wired and wireless network



LG CNS

- Big data platform
- IT infrastructure
- IT Convergence Services



LG IoT

5. LG U+ Smart city services

Smart City solutions of LG U+ have proven product and construction experience in the field of transportation, environment & safety and energy & utility.

Transportation

Bus information system
bus data transmission

Smart unmanned vehicle parking control
Real-time illegal parking monitoring by sensors

Smart Road Monitoring
Collect and provide various dangerous information during driving to prevent traffic accidents

Priority Signal for Emergency Vehicles Fleet Management System
Real-time check vehicle location and status

Control traffic signal
remote control traffic light

Smart parking lot
Collection and provision of parking information, Provide billing information

Smart Traffic Measurement
Vehicle traffic collection, , control signal

Notice of Electric Car Charging Station

Environment · Safety

Smart Clean : food waste disposal service

Smart Clean House : Management of recycling garbage collection

Emergency safe bell of public restroom
Emergency alarm and call

Smart Prevention of Mosquitoes
Measurement of mosquito generation data, improve efficiency of prevention

IoT Water Level Monitoring
Water level monitoring in river, manhole, water intake area

Smart Dust Monitoring
Measurement of indoor and outdoor air quality

Smart Garbage Collection Management

Monitor load capacity , traffic line optimization

Smart Village Broadcasting System
Disaster alert and public broadcasting by smartphone anywhere

Smart real-time transmission of disaster scene
Video real-time transmission, sharing

Smart Odor Monitoring
Measurement and information on living odor

Smart Water Quality Monitoring
Measurement and analysis of various water quality such as groundwater, reservoir, sea water, etc.

Intelligent Fire Hydrant
Check the state of fire hydrant in real-time

Energy · Utility

Smart Street Lamp
Street lamp dimming, vehicle recognition sensor and control device

Smart Security-Light Monitoring
Real-time monitoring security terminal

Smart Leak Detection
Check real-time leak status

Remote water meter-reading system
Remote detecting water usage