Development of IoT & Smart Cities: Industry Perspective

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Agenda

1. Lessons Learned across Smart City deployments
2. Smart City ICT market trends & challenges
3. Huawei Value & Experience Sharing

Smart City - Working Hypothesis

"Smart City refers to a program of initiatives undertaken by a city owner, operator or governing entity in order to improve the quality of experience for residents, businesses and visitors."

New York

Cope with rapid population growth

Amsterdam

Reduce carbon emissions by 40% by 2025

Singapore

eGovernment develops sustainable energy supply

Dubai

The "happiest" City

Shenzhen

Information Economy
Better Livelihood
Efficient Governance

Weifang Smart City & IoT Development Roadmap

Smart Weifang 1.0

Improving work efficiency with the electronic office and web page apps supported by PC internet technologies

Government Modernization

Smart Weifang 2.0

Implementing mobile payment and mobile office mainly through smart and vertical apps on smart phones

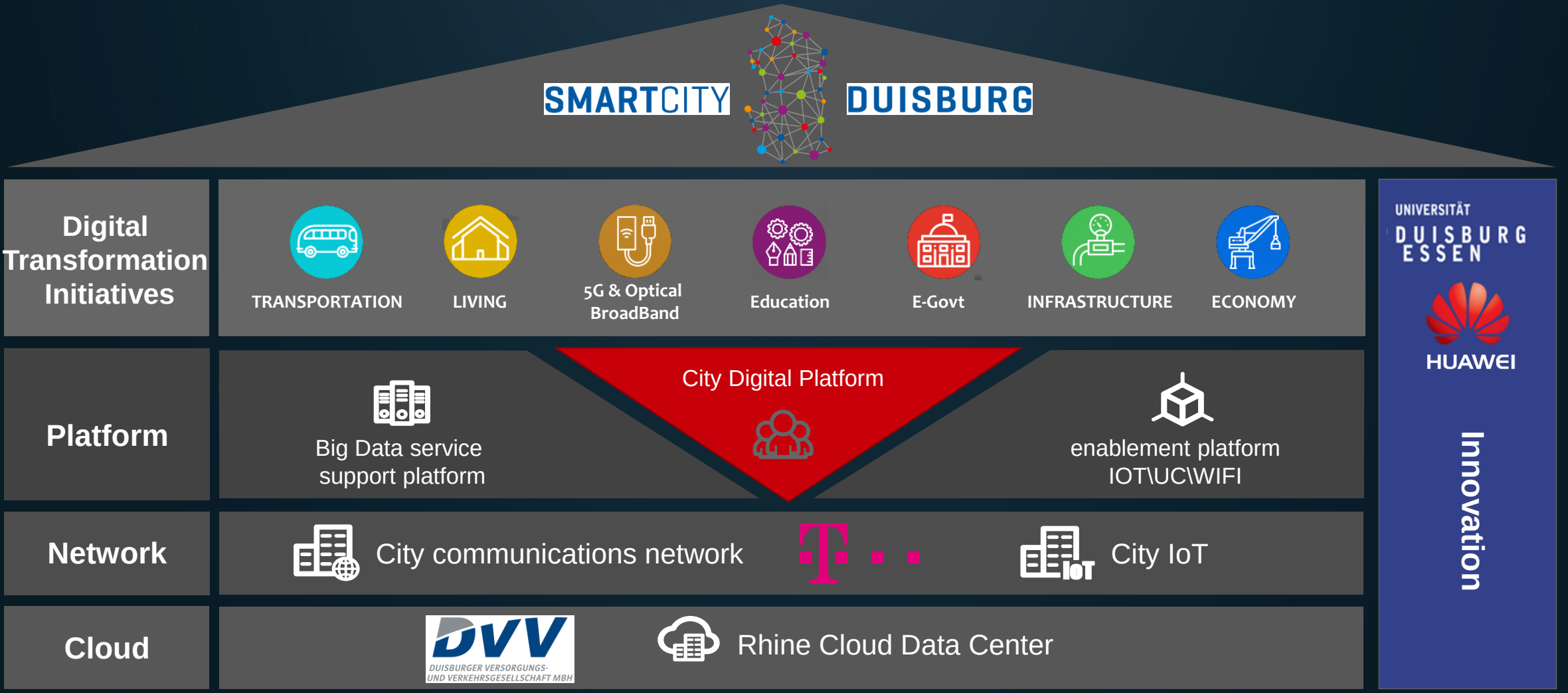
Collaborative City through Smart Apps

Smart Weifang 3.0

Connecting devices installed throughout the city to an IoT platform, and improving municipal governance efficiency by sharing information

Building the Interactive City

Duisburg Smart City Program – Key focus on City Digital Platform Services with 5G IoT Infra



Yanbu Saudi - Smart City attracted investment & improves quality of life via City Brain

VISION رؤية 2030 المملكة العربية السعودية KINGDOM OF SAUDI ARABIA

National Transformation Program

2.3.1 Improve the Quality of Services Provided in Saudi Cities
2.3.2 Improve the Urban Landscape in Saudi Cities

Apply Smart Cities' Concepts: The aim of this initiative is to transform Saudi cities to smart cities, which will result in enhancing management efficiency and improving quality of life.

Huawei: Builds Smart City 'Nervous System'

- Central Nervous System – 'Brain': City Operations Center, Big Data & AI
- Peripheral Nervous System: Internet of Things & Communications Network

Business investment **16%** ↑

Road maintenance cost **20%** ↓

Municipal lighting costs **30%** ↓

Memorandum for the Framework to establish strategic partnership in smart city program

وزارة الطاقة والصناعة والثروة المعدنية المملكة العربية السعودية

وزارة الاتصالات وتقنية المعلومات MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY

HUAWEI

- Top Level Design
- Foresting Ecosystem
- Localization Capabilities

AI Smart City TEDA – Special Economic Zone – Tianjin, China

Tianjin will serve as a research, manufacturing and testing base for JD's smart logistics technology, which consists of the use of robots, Unmanned Aerial Vehicles and autonomous delivery vehicles.

Happiness index

Improvement Public enterprise Happiness

Smart Applications for Industrial City

Construction More human Centric City

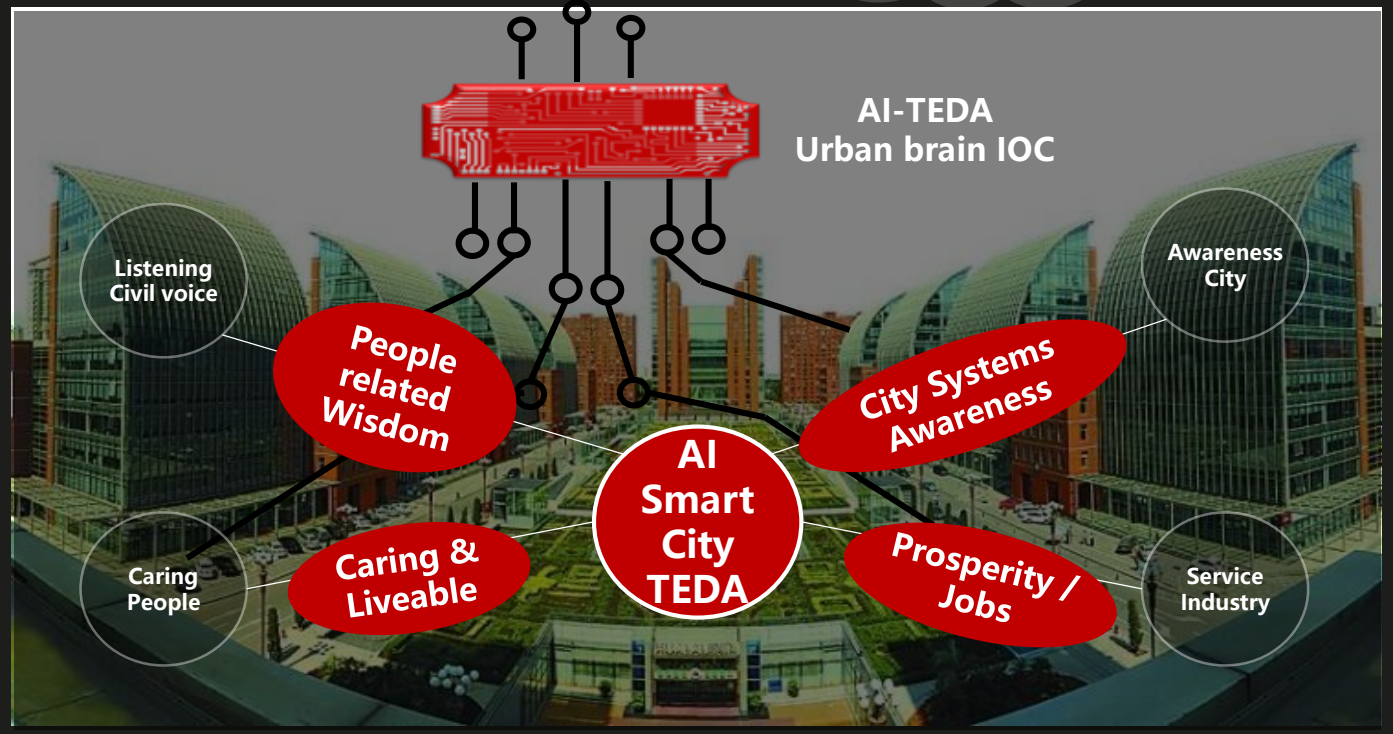
Artificial Intelligence & Data Analytics

Build Innovation & Intelligent platforms

AI Smart City Teda Resident

AI-TEDA Smart City
You know more than you!

Strive to build the whole country.
Smart city Showroom



Smart City is the brand of a new round of urban competition and the most competitive investment environment in the future.

Prosperity and wisdom

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Key Technology Enablers for Urban Digital Transformation

Smart Devices

- VR/AR use cases
- Robotics/Drones, etc.
- Driverless Cars
- Citywide Sensors
- Wearables
- Smart beacons

5G

- Enhanced Mobile Broadband
- Massive IoT
- Mission Critical Network
- Outdoor vs. indoor deployments

AI

- Campus Energy & environment monitoring.
- Building information management.
- Facial Analytics for crowd management.

Blockchain

- Digital Citizenship
- Decentralized Security
- Reliable / Scalable

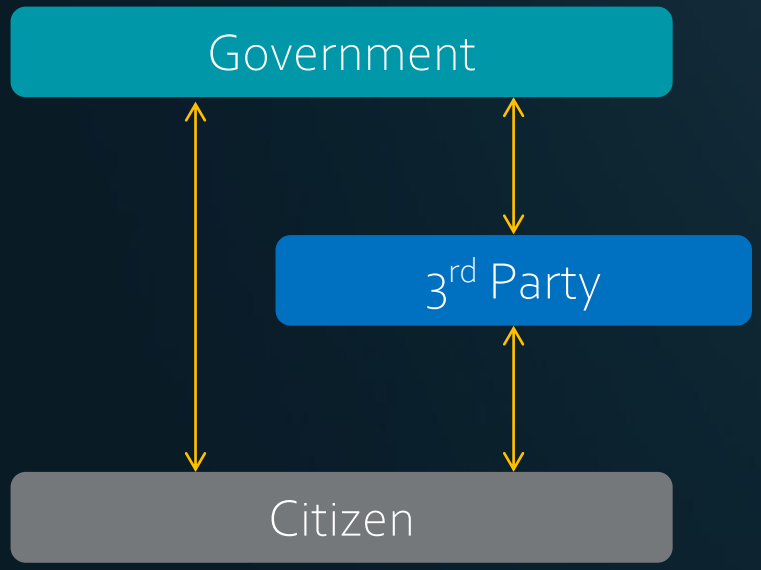
Cloud

- Continuous data stream management
- Open data vs Private data
- Data Monetization to drive growth:
  - As a Service.
  - Revenue sharing
  - Concession based investment models

Collect, Monitor, Manage Citywide Data & Improve the Citizen Experience

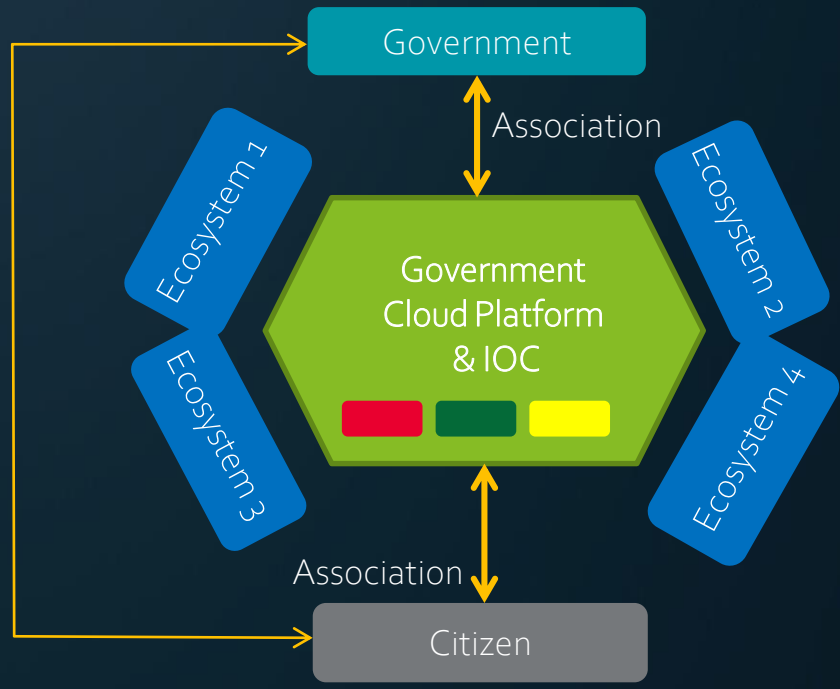
Curating a City Ecosystem for a Sharing Economy

Traditional City Services Model



Enabling Policies

Future City Services Model - Ecosystem Curation



Value Flow

Application Platforms

Industry Solutions

Services Orchestration

- I have…you need: Idling capacity exists across various asset classes including, time, space, capital, products, skills, utilities…
- E.g. healthcare, Cohealo found the average idling time of assets was 58% and 1/3 of surgeries were cancelled due to unavailable assets. The platform increased utilization by over 20% in 18months

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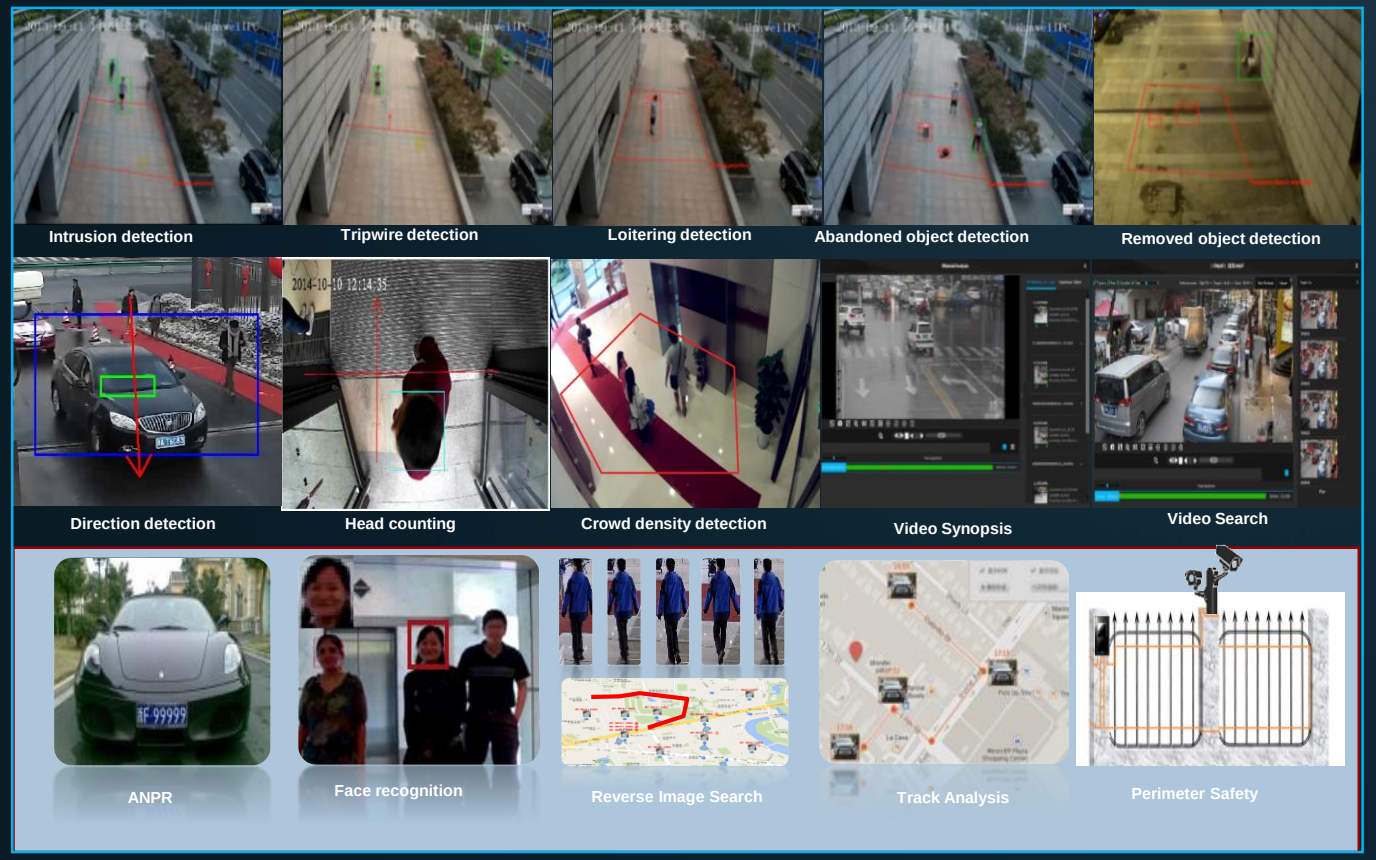
5G & AI Enables Powerful Services – Digital Twining of People, Processes & Assets in Cities



- Intelligent Behavioral Analysis, **Auto pre-warning**
- **Massive Video analysis capability** based on Big Data
- Clue Search efficiency increased by **85%** ↑

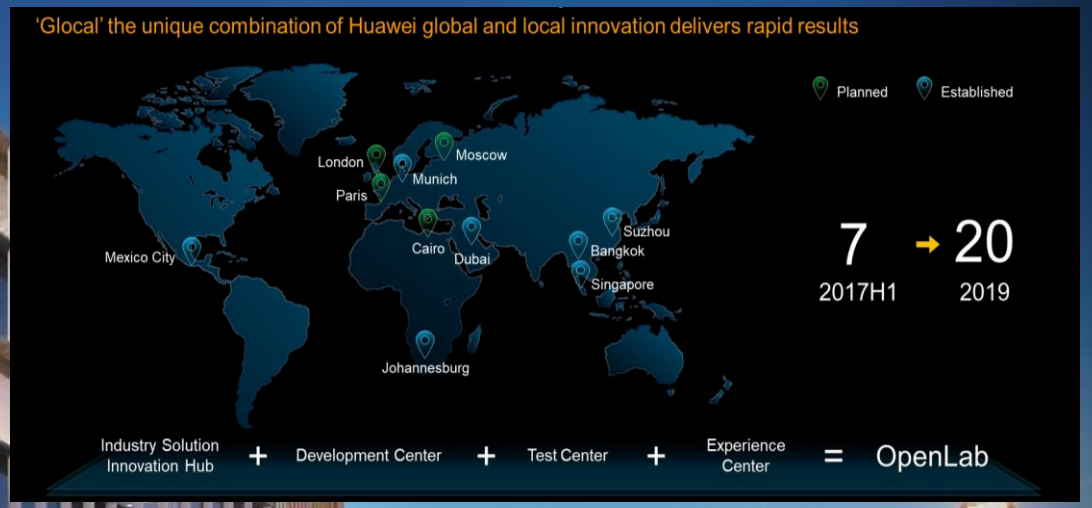
Intelligent Edge Appliance
(Including wireless transmission, intelligent analytics, and IPC)

Huawei assisted 7 Cities to Win International Smart City Awards in Recent Two Years

Smart City Expo World Congress
2016 and 2017
Yanbu, Shenzhen, Weifang, Dunhuang, Cameroon, First Affiliated Hospital of Zhengzhou University, and Kenya

Huawei Actively Contributes to Global Smart City Construction and Sets Footprint in 120+ Cities in 40+ Countries.

Huawei Worldwide OpenLabs Network, launched in Dubai in May, 2019



OpenLab

Thank You