

Security Level:



Innovation Drives Future City SMART

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BUILDING A BETTER CONNECTED WORLD

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Content

- What:
Define; Vision; Roadmap
- Huawei Solutions for SMART city
 - The Puzzle
 - Technical background
 - Applications
- Huawei worldwide expertize in delivering SMART city

What is a SMART City

➤ Cities evolves permanently

•increased resource consumption

•continued urbanization process

•increased population density

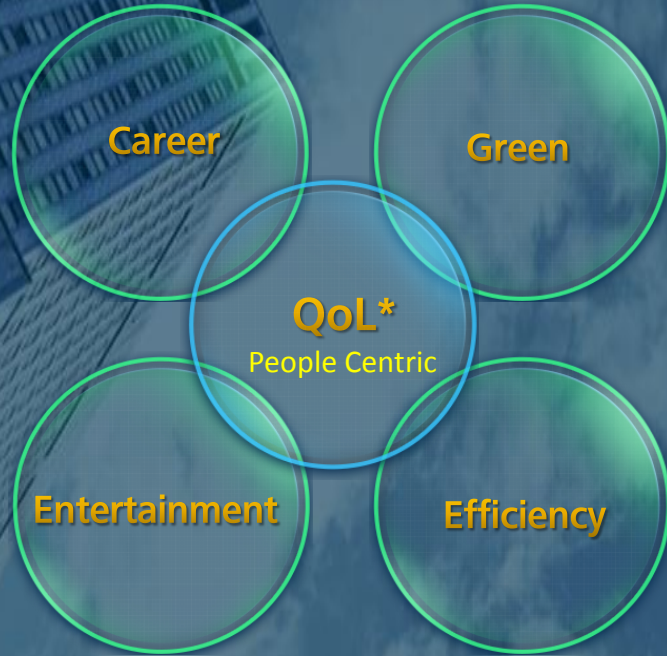
➤ A city modernization process needs to be rooted in the question of what kind of place cities want to become – define the quality of life

➤ Technology introduction and innovation enables cities modernization towards

....

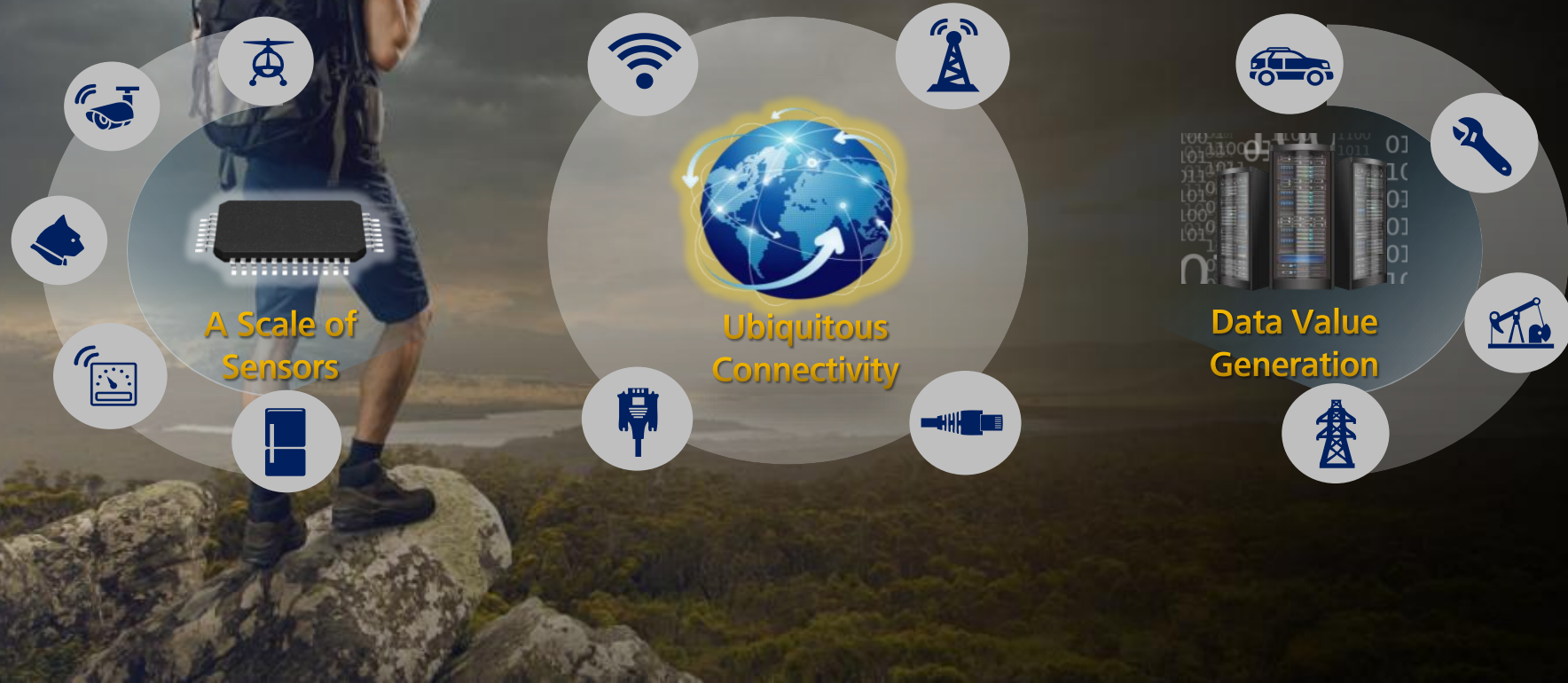
A smart city is a city that pushes the quality of resource management and service provision to the limit possible at a time and adapts agilely to the future

Quality of Life is the Next Connectivity Era



QoS → QoE → QoL

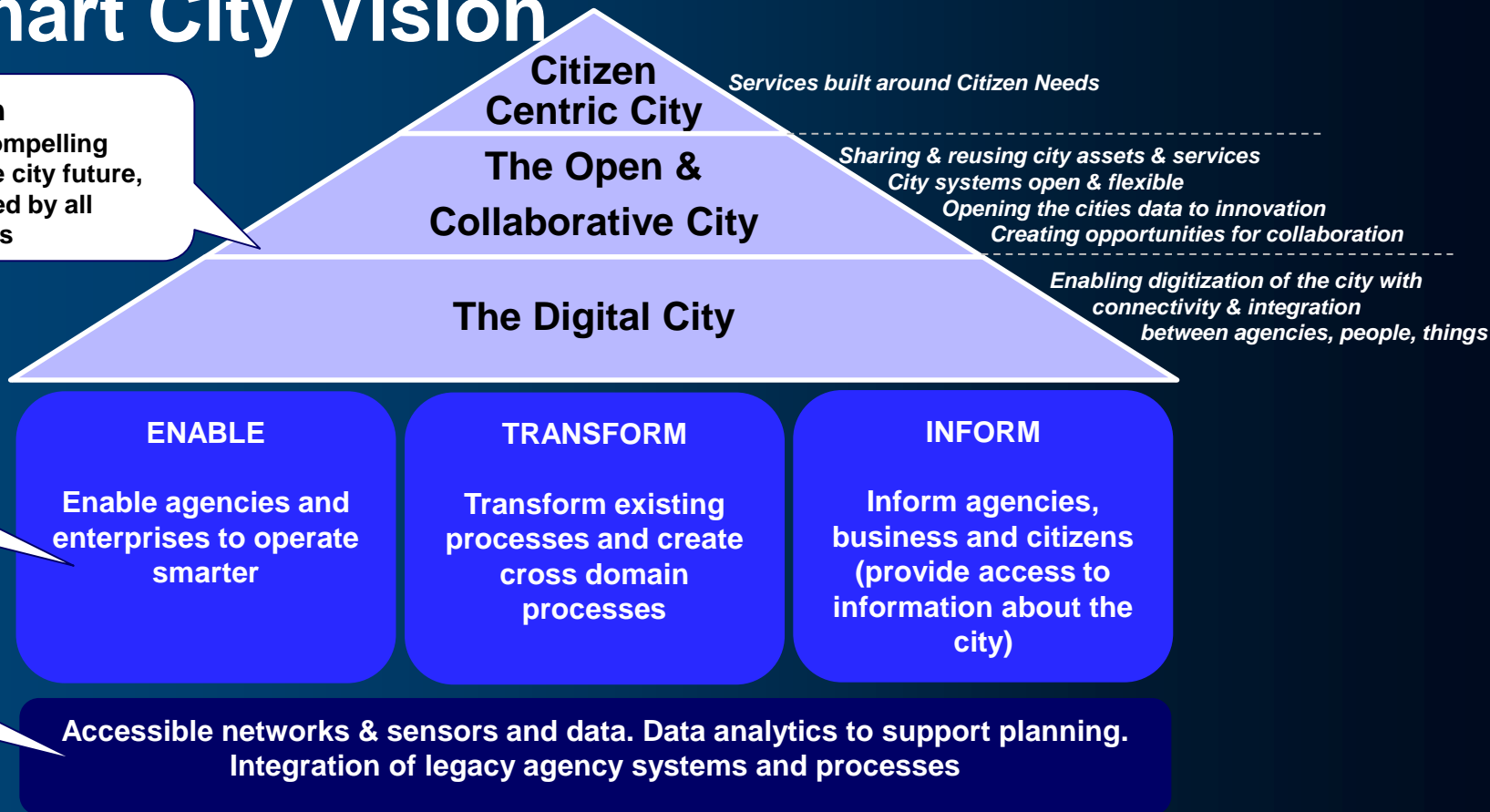
Key Focus Areas in Building a Smart City



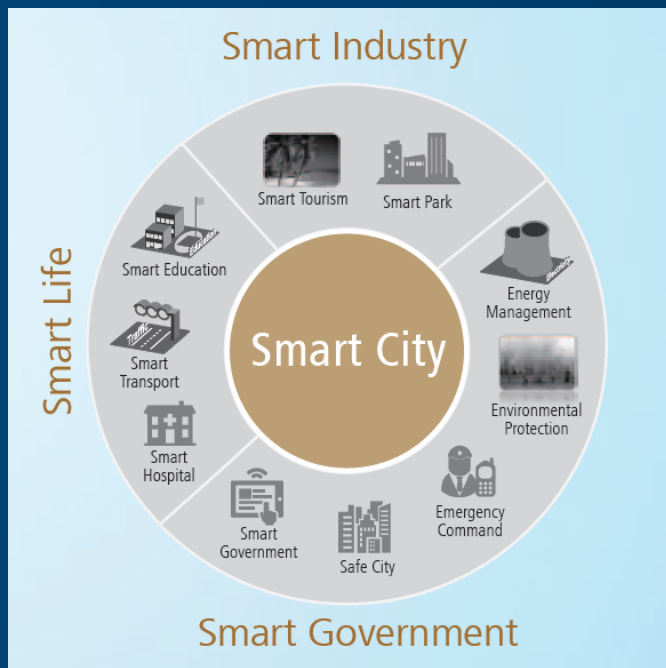
Smart City Vision

City Vision

A clear & compelling vision of the city future, jointly agreed by all stakeholders



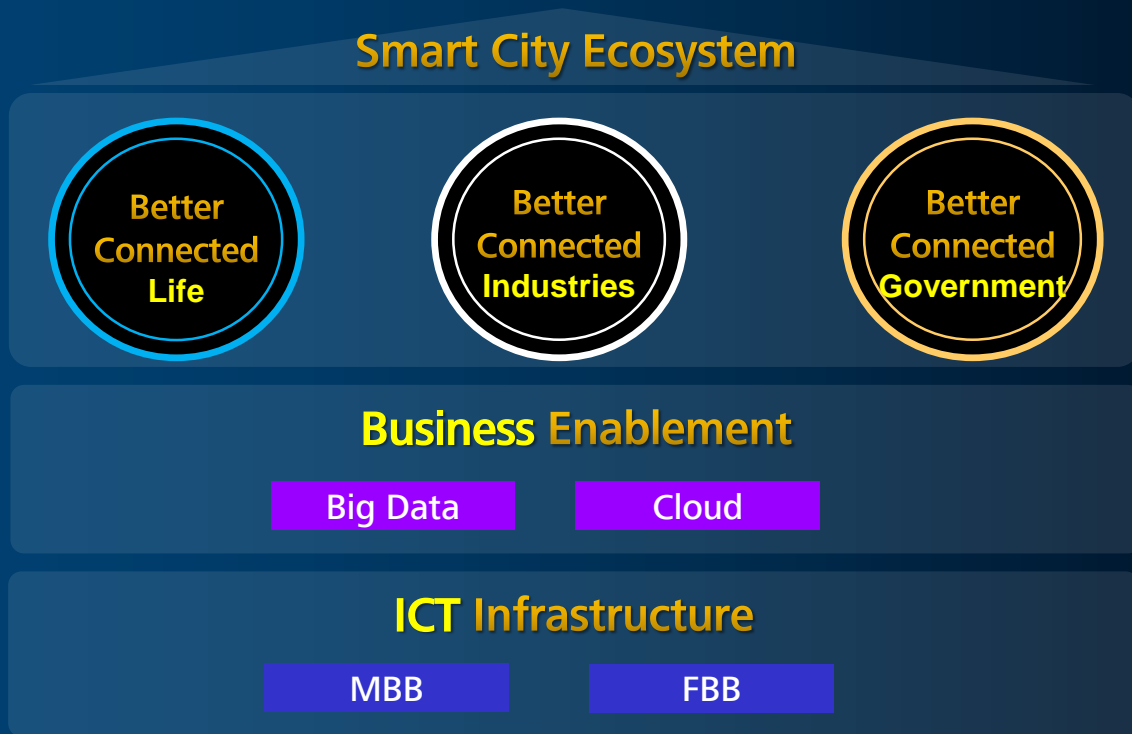
Huawei Smart city solutions



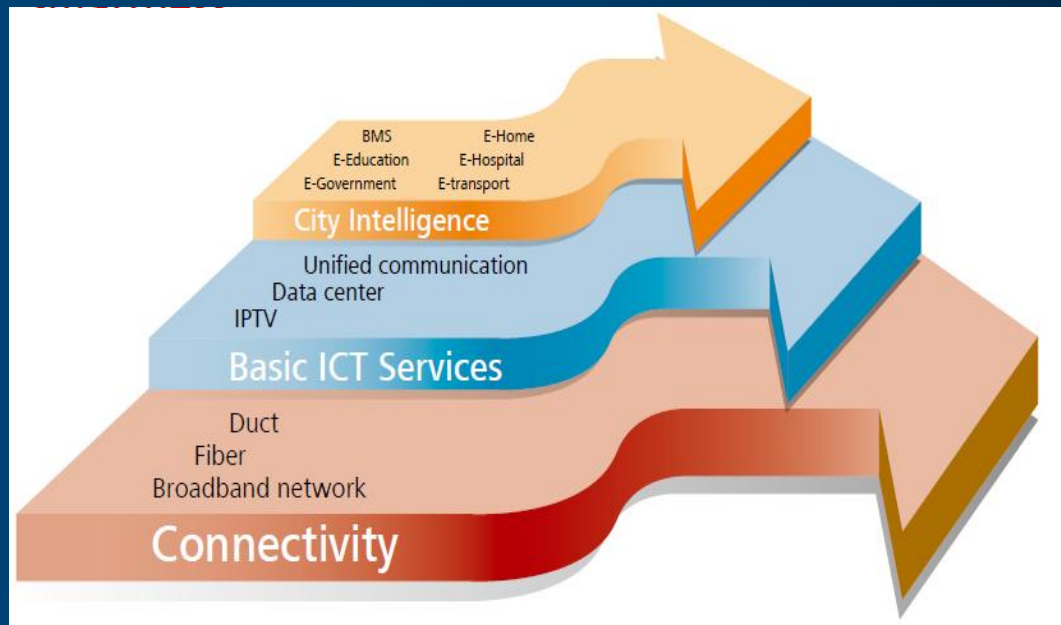
- **Smart Government:** open and transparent government by using a unified database management platform, a cloud-based data center to share and integrate data, and collaborates with different sectors to optimize resource utilization and improve governmental efficiency
- **Smart Industry :** promotes a city's continuous economic growth as well as intelligent and digital innovations to attract strategic investment and sophisticated enterprises to its high-tech parks. Provides professional IT services and cloud-based data centers to help enterprises develop businesses and urban economy, technical support to the whole tourism industry chain
- **Smart Life:** facilitates intelligent inclusion among smart applications and interactive platforms for real-time traffic information, health care and education.

Overall improves city's service level and citizen satisfaction, increasing quality of life.

Modeling a Smart City



Smart city roadmap layers

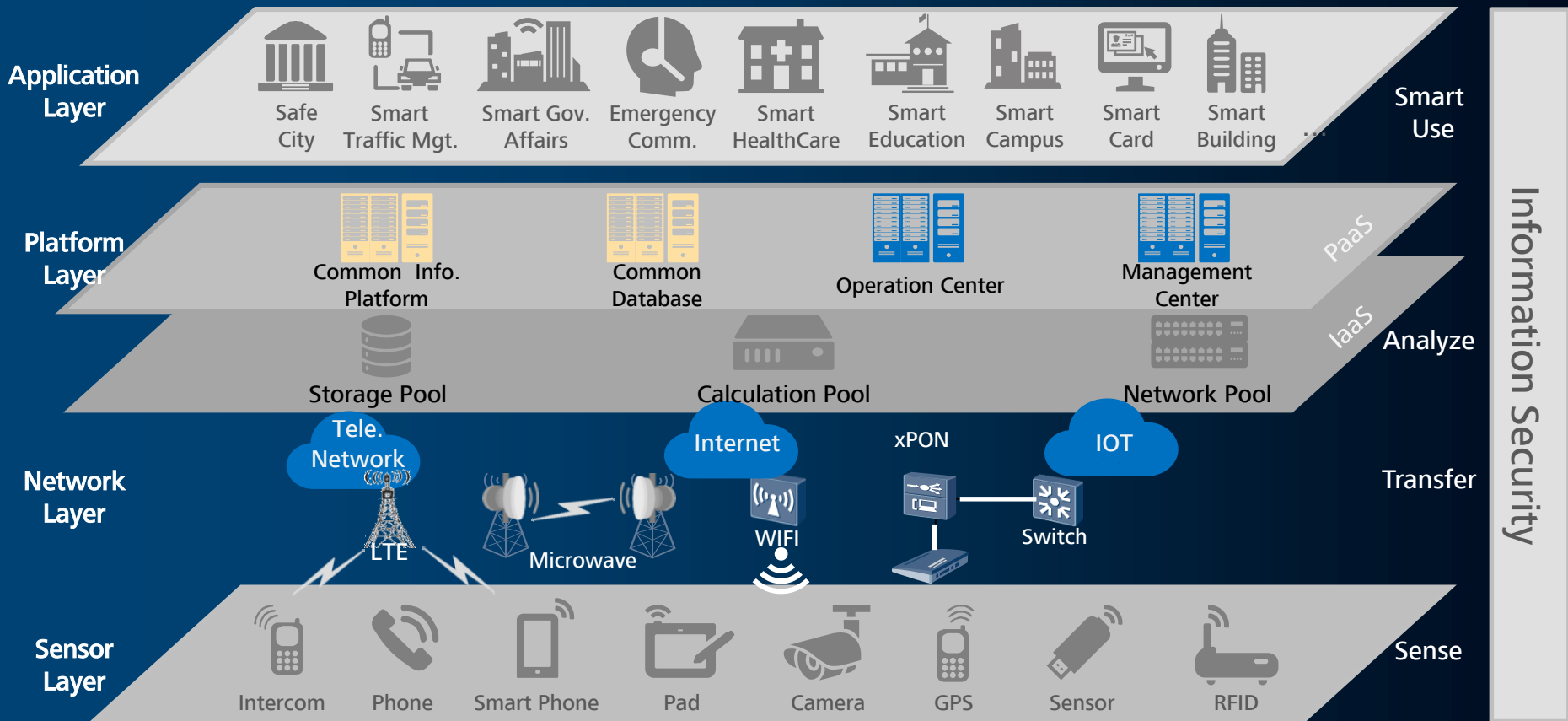


Deploy City intelligent applications

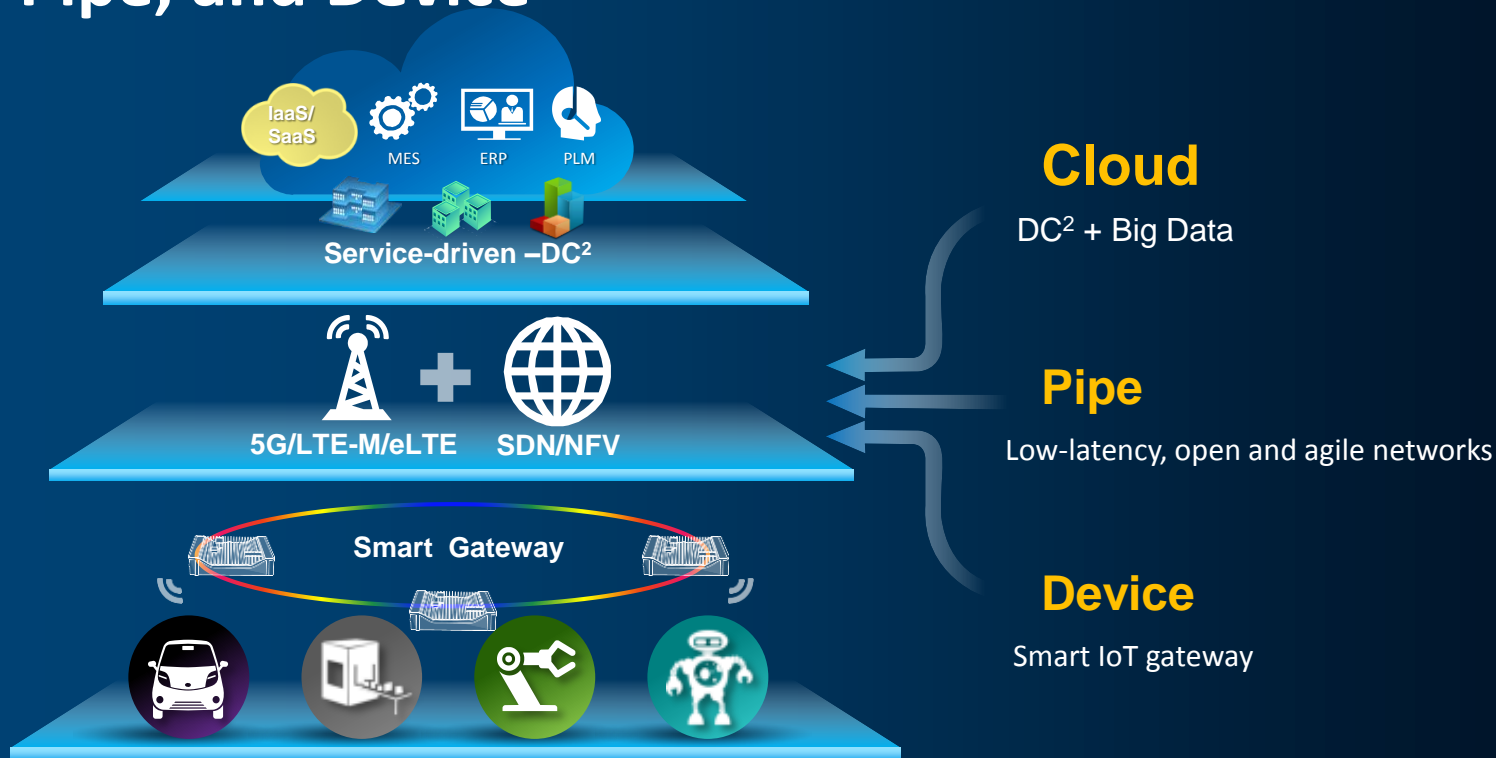
Deploy basic ICT services to change the way of city management and enhance life

Foundation to connect: anytime, anyplace any terminal

Smart City ICT solution architecture



Convergent ICT Architecture Across the Cloud, Pipe, and Device



Challenges

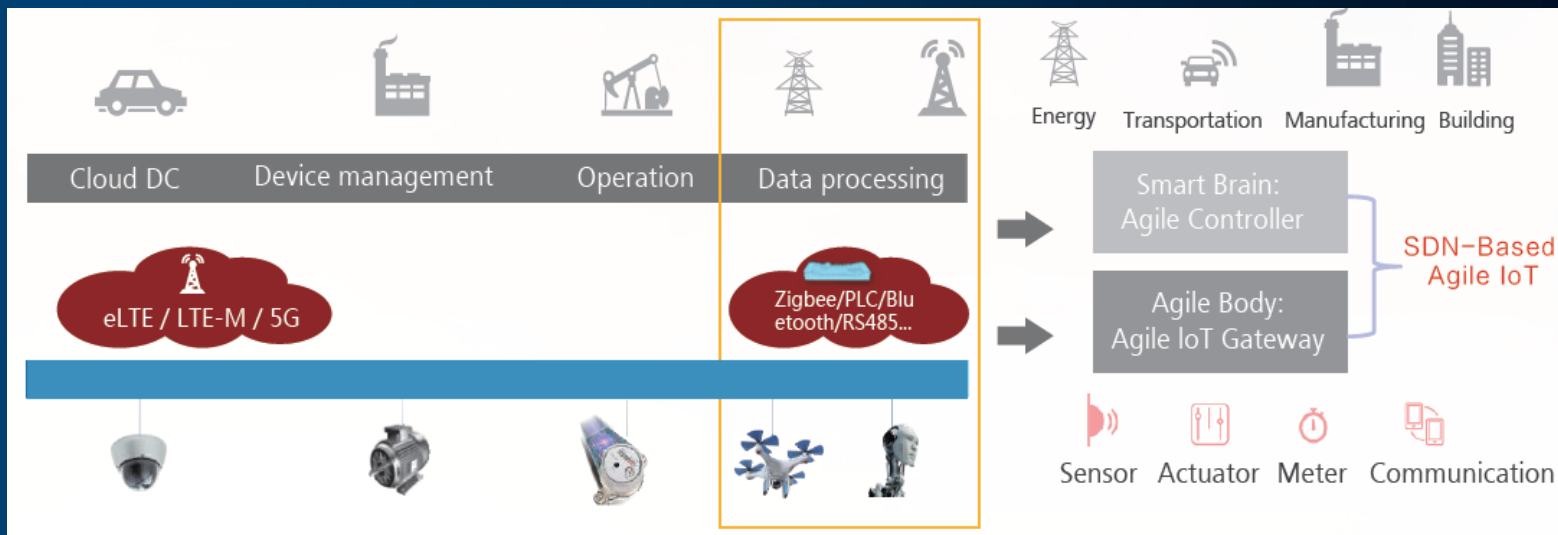
- Mobility: Experience, Security, and Management
- Cloud Computing: Real-Time, Reliability, and Virtualization
- Real-Time: How to Guarantee Real-Time Service Experiences?
- Scalability: How to Handle Increased Traffic and Nodes?
- Security Threats: Borderless Security
- IoT: Sensor Standardization, Various Access Modes

Centralized Management - Smooth Evolution to Agile Networks

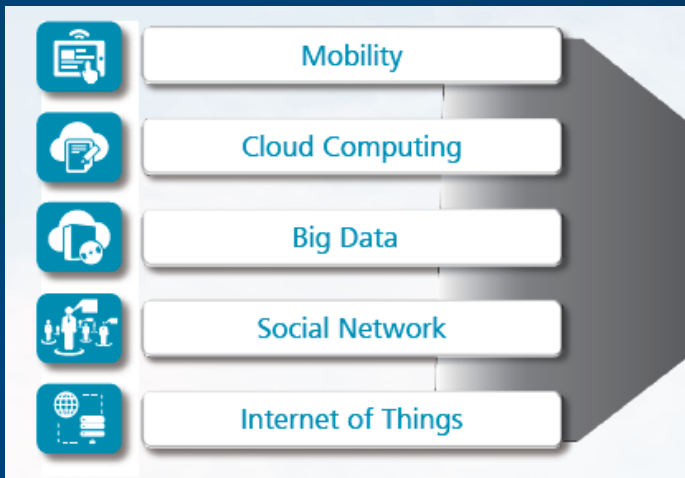
Agile networks to transform challenges in opportunities

- ✓ Forwarding and control plane *separation*
- ✓ **Centralized** management and control
- ✓ **One-click**, automatic network deployment
- ✓ In-service upgrade, "**0**" service interruption

20 times more scalable network

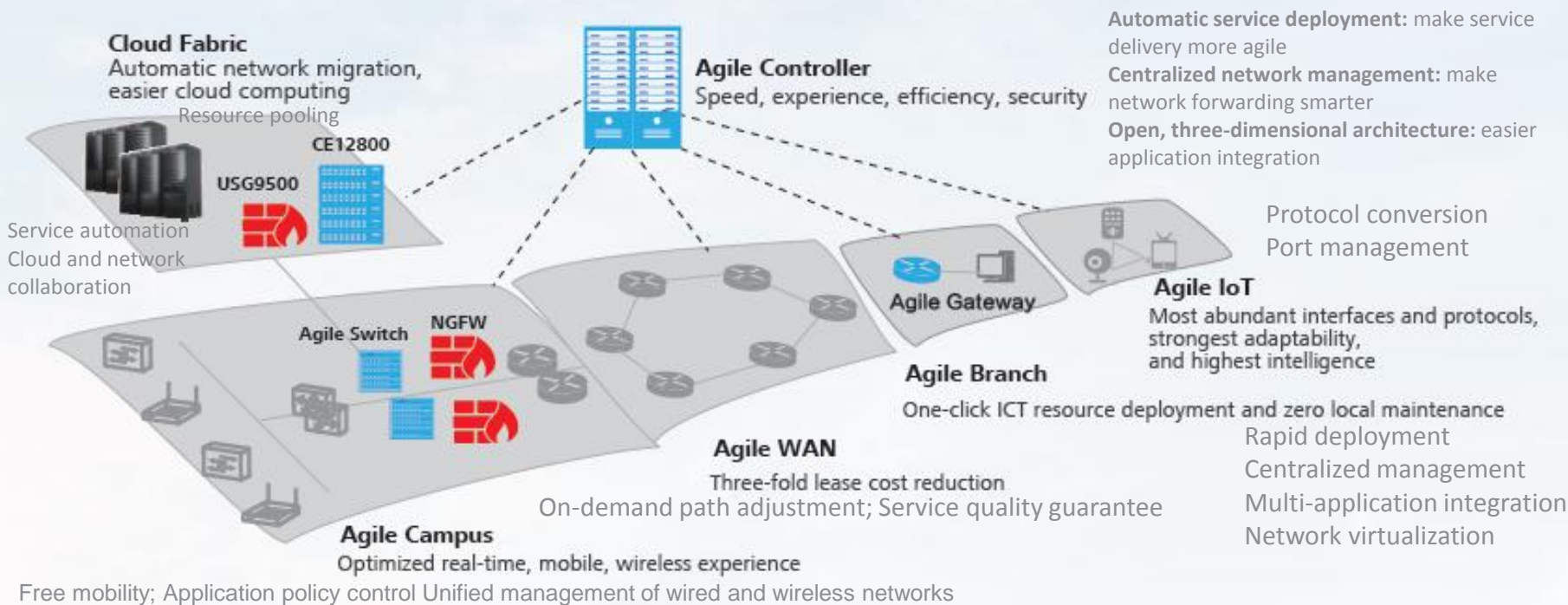


Agile shifts towards faster evolution



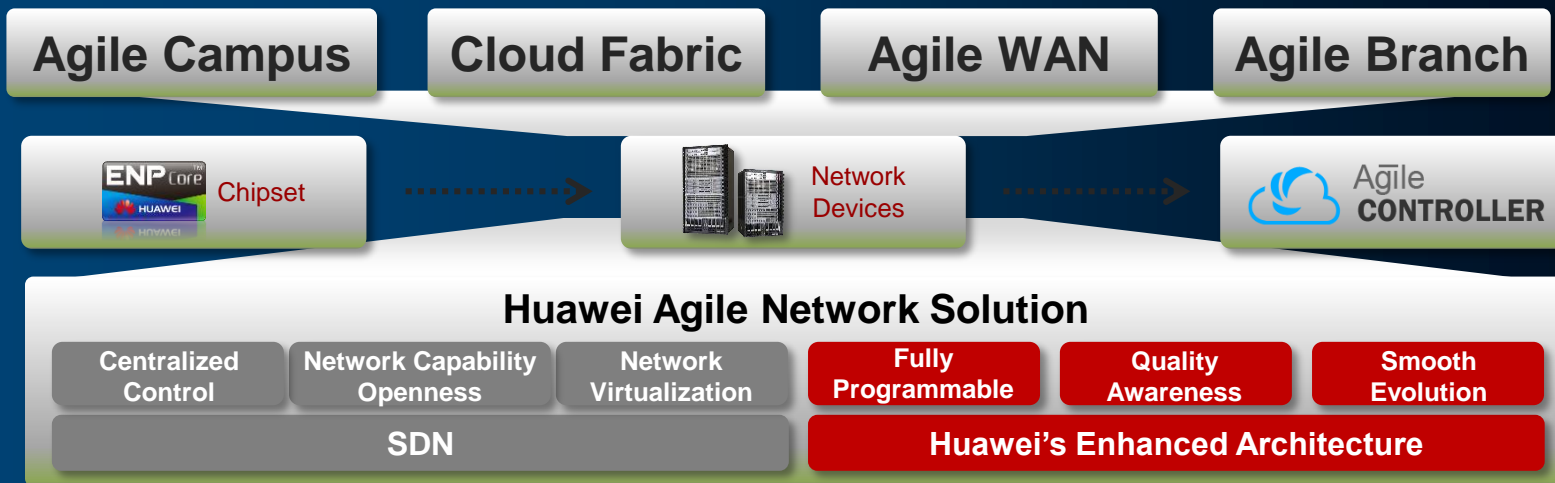
- 1.Shift the focus from technology, device and connectivity to service and user experience.
- 2.Shift from single-point management to complete network management.
- 3.Shift from best effort to real-time quality detection on the network.
- 4.Shift from static configuration to dynamic auto deployment.
- 5.Shift from hardware-defined to software-defined.

Agile solution deployment



What's more: traditional network to be seamlessly migrated to agile network

AGILE



The Agile Network implements SDN and solves previously unresolved problems in SDN.

Benefits from Agile Network

Wired and Wireless Convergence

Integrating AC



**From 15 days
to 30 minutes**

Improved network
construction speed
— Agile Construction

Free Mobility

Ubiquitous Policies & Enhanced experiences

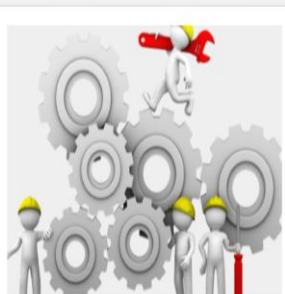


**From 30 days to
30 minutes**

Shortened service
provisioning time
— Agile Deployment

Quality Awareness

Real-Time Fault Location

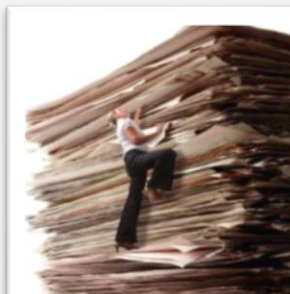


100%

Reduced potential faults
— Agile Maintenance

United Security

From Single-Point Security to United Security



30-66%

Security hardening
— Agile Service

SDN & Smooth Evolution

Evolution to the Future Network



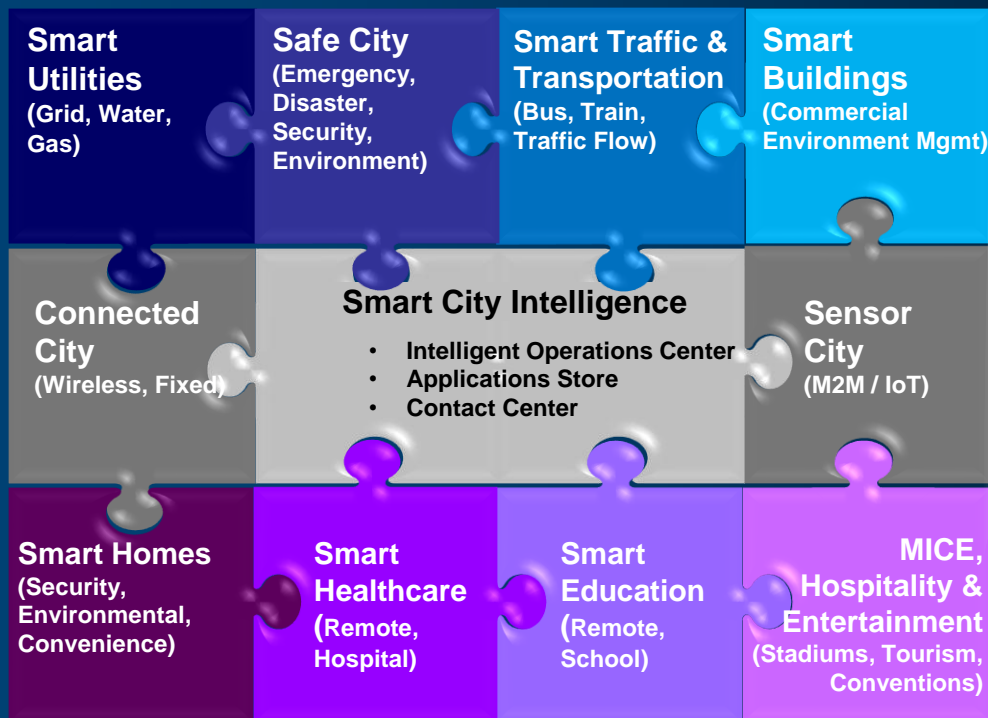
100%

Investment protection
— Agile Evolution

Elements that makes a city SMART

Urban Development, Security & Sustainability

ICT Infrastructure



Social Development Communities, Villages, Citizens

Internet Of Things



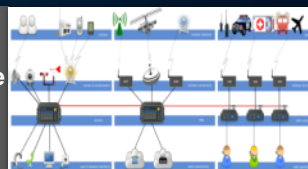
Information Flows



Intelligent Computing



Collaborative Response



Huawei SMART Government Solution



Online
& mobile
government



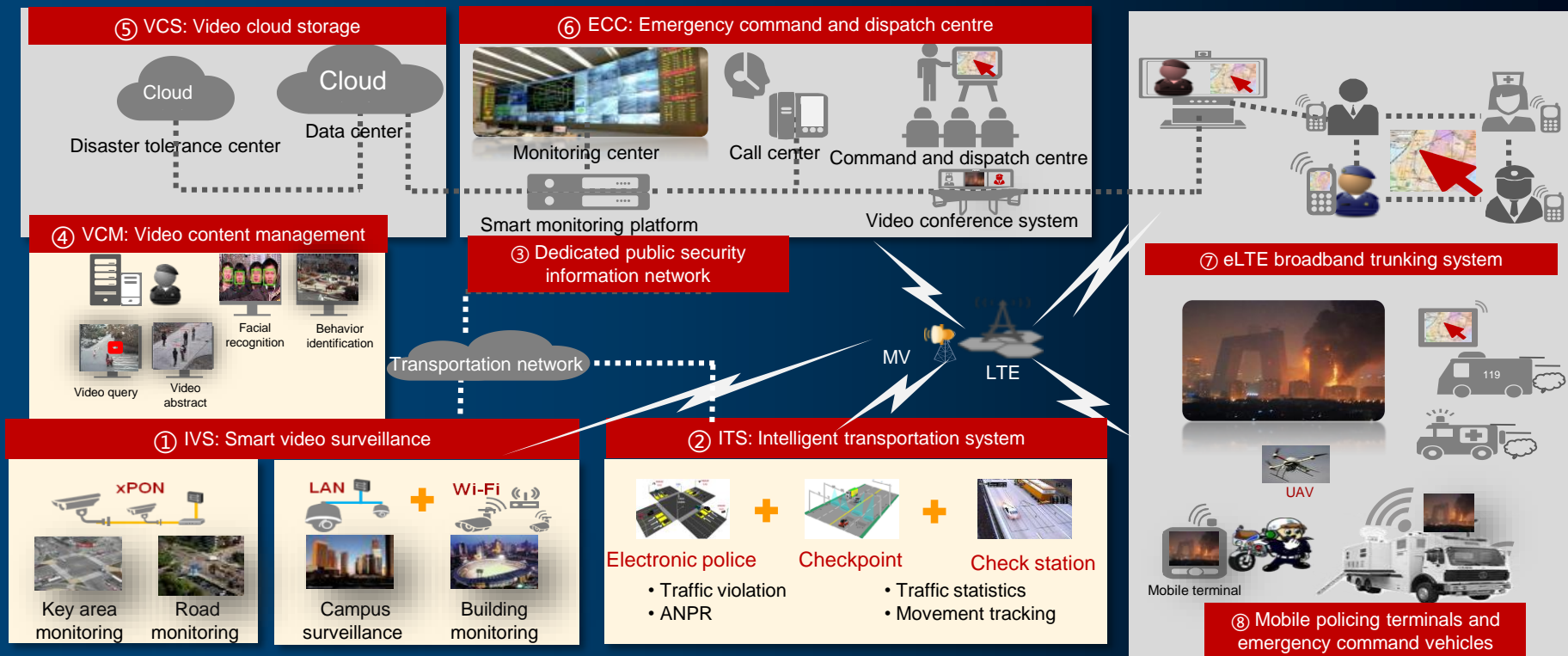
Efficient
collaborative
government



Government
OA & ERP

Smart
Government

Huawei's Safe City Solutions



Huawei eLTE complete solution



Data Acquisition
& Control



Utility, Oil & Gas, Smart Grid



Emergency
Dispatching



Video
Dispatching



Traffic, Airport
Transportation



Command & Control Center
Emergency Communication Vehicle

The Digital DNA of a Smart City



(enterprise LTE) eLTE solution delivers flexible networking via interoperability to ensure smooth communications during critical situations, helping enterprises address big data-based opportunities.



1 eLTE supports multiple frequency bands & bandwidth rates



100 Mbps
downlink



50 Mbps
uplink

2

It can adapt to locations prone to corrosion, noise, as well as temperature extremes.



eLTE makes city smarter



eGovernment



Positioning



Public Safety
Video Surveillance



Public Health
Remote Surgery



Railway



Harbor & Port



Instant Video &
Broadband Trunking

Huawei Smart Transportation Solution



Perimeter guarding



One way & Reverse driving detection



Illegal parking



Illegal driving capturing



Traffic flow statistics



License Plate Recognition



Intelligent traffic guidance



Facial image capturing



Visualized 2D/3D GIS surveillance



e-TAXI



e-BUS



Public Traffic Information Platform



Smooth



Safe



Environmentally friendly

Huawei Smart Healthcare solution



Huawei Smart Education solution



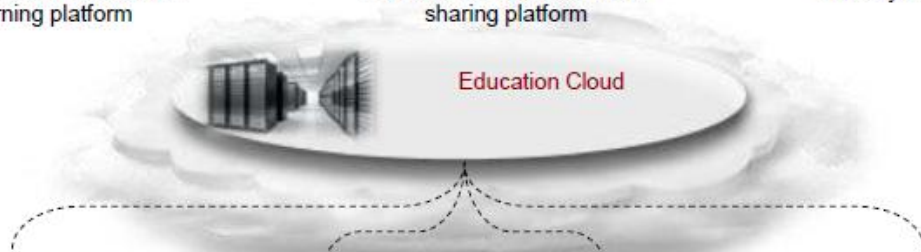
eClass : remote interactive learning platform



eCourse learning : resource sharing platform



eLibrary : digital library



Real-Time Live Course



Online tests



Interactive Teaching



Mobile Learning

Series of training classrooms



Huawei Smart City projects worldwide



Huawei Safe city cases



Huawei safe city solutions serves 400M people in 100+ cities, 30+ countries

Huawei Smart Education worldwide

Huawei's "Telecom Seeds for the Future" Program

- Set up **16** training centers globally in **14** countries, including France, Germany, UK, Russia, Spain, Indonesia, Singapore, and Thailand
- **Worked with 50** universities, providing scholarships, internships, and funds for **thousands of students**

Huawei Authorized Network Academy (HANA)

- Plan to develop **500** HANAs for the next 3 to 5 years

- ✓ Presence in 30+ countries and regions
- ✓ US\$1 billion sales revenue in the education industry
- ✓ Dozens of international exchange opportunities every year

UK

Launched the Huawei Undergraduate Work Experience Program; provided funding to the Prince's Charities Foundation

Spain

Launched the "Telecom Seeds for the Future" Program"

France

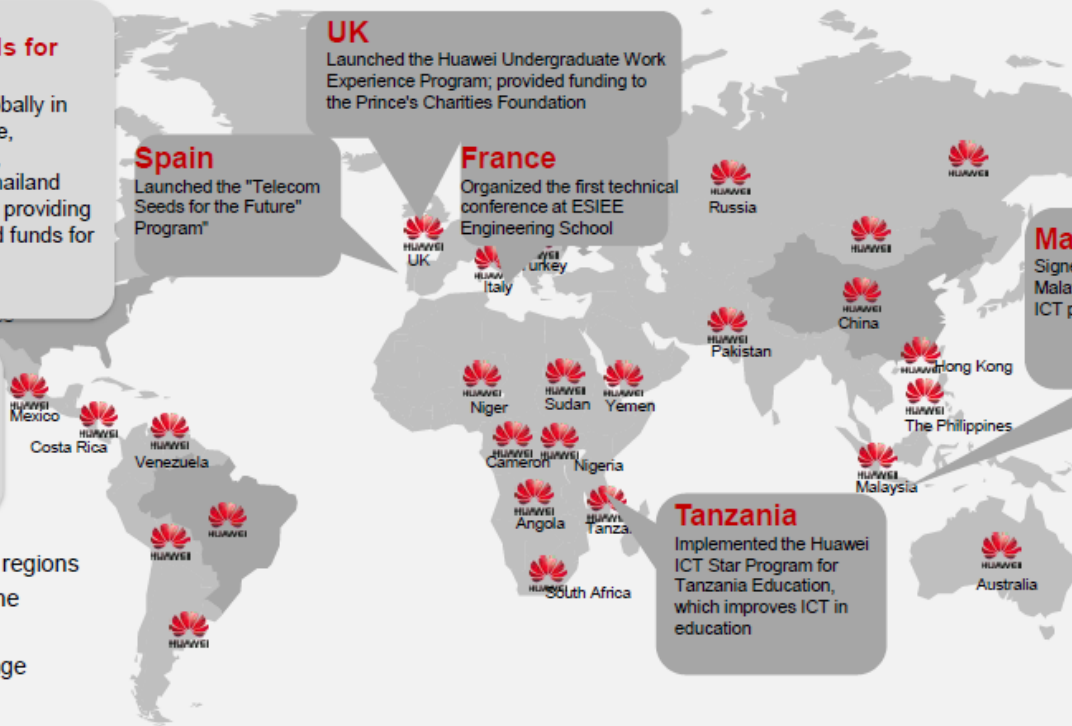
Organized the first technical conference at ESIEE Engineering School

Malaysia

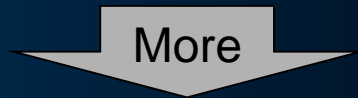
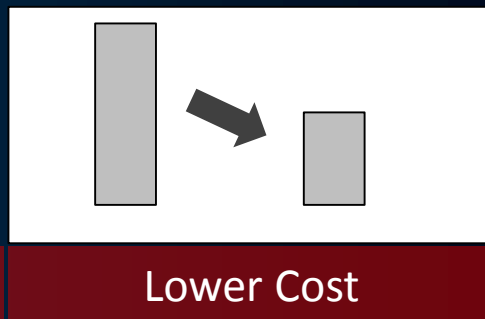
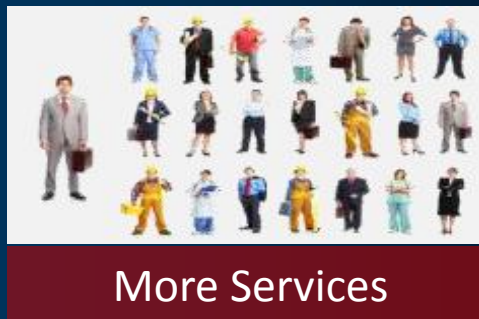
Signed contracts with **10** universities in Malaysia and set a target of training **10,000** ICT professionals for Malaysia.

Tanzania

Implemented the Huawei ICT Star Program for Tanzania Education, which improves ICT in education



Smart City – a New Way to develop your city



JOIN US IN
BUILDING A BETTER CONNECTED WORLD

THANK YOU

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