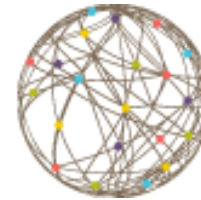


Change or Be Changed



Hong-Eng Koh  @he_koh
Global Chief Public Safety Scientist





THE GLOBAL INITIATIVE
AGAINST TRANSNATIONAL
ORGANIZED CRIME

NATIONAL RESEARCH FOUNDATION
PRIME MINISTER'S OFFICE
SINGAPORE

Huawei at a Glance

188,000 Employees	80,000 R&D employees	170+ Countries	15 R&D centers	No. 68 Interbrand's Top 100 Best Global Brands	No. 72 Fortune Global 500
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Carrier

- Global **NO.1**
- Tech. pioneer on 5G, IoT

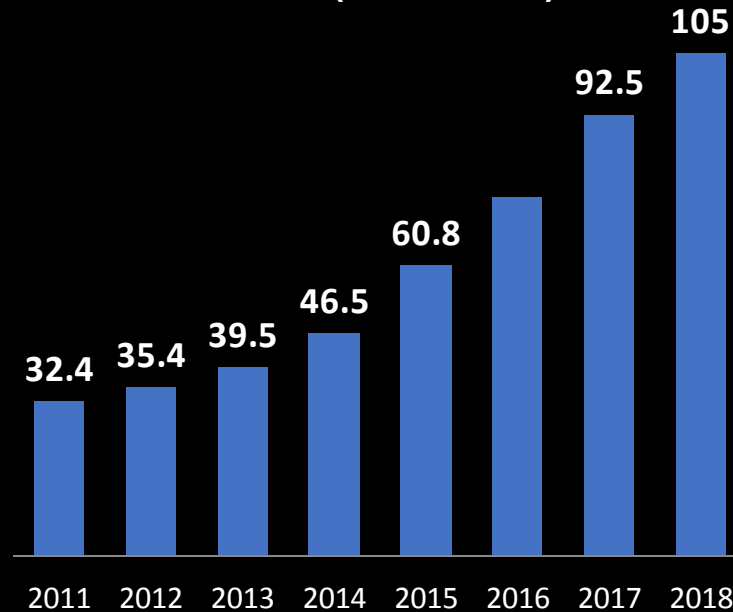
Consumer

- Global **NO.2**
- Brand awareness, 76% to 81%
- Shipment: 208 million in 2018

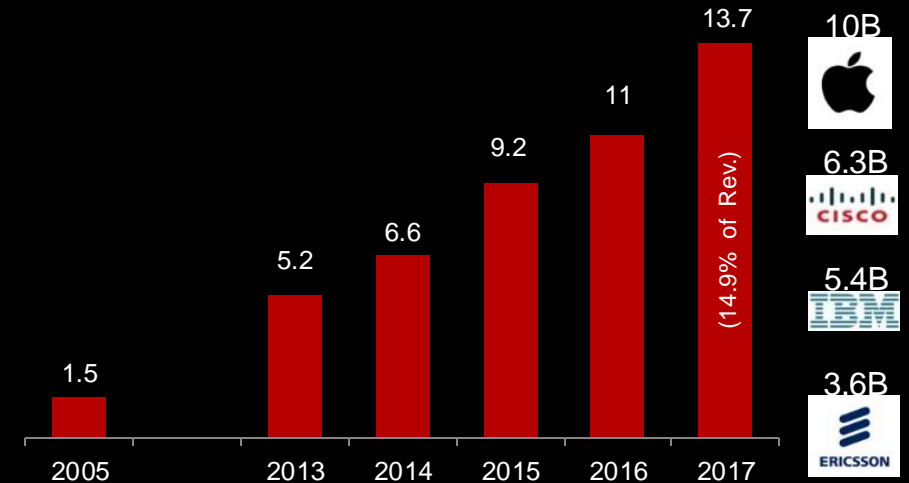
Enterprise

- Serving 197 of Fortune Global 500

Huawei Revenues (Billion USD)



R&D Investment (Billion USD)



60B+ USD R&D Investment in last 10-years, World TOP 8



Huawei in the Philippines



2001

Established

450+

Staff

10,000+

Local Jobs Created



10

Offices

5

Regions:

Manila (Makati and BCG), Cebu, Davao, Tarlac, Batangas



70m

Filipinos Being Served

100+

Customers

Lead the ICT industry in the Philippines



Digital Transformation

New Business Model

Sharing Economy

Crowd Sourcing

Collaboration

Ecosystem

Platform

Digital Transformation



5G



Cloud



AR

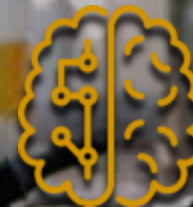


VR

Platform

Blockchain

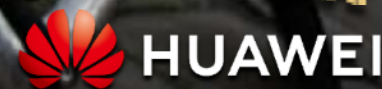
AI



UAV



Robot



Digital Disruption



Fake News

Rumor Mongering

Distrust of Authority

Xenophobia

Doxxing

Cyber Bullying

Vigilante

Cyber Enabled Crime

Crime-Sourcing

Online Radicalization



Digital Disruption

Fake News Rumor Mongering
Change or Be Changed

Are You Game For

CHANGE?

INNOVATION INCLUSION INSPIRATION



ICT Today Is Like Electricity 100 Years Ago

1875

Electric lighting is used for the first time.

Paris Nord Train Station

1879

Electricity is sold for the first time.

Piloting power plant in San Francisco

Early 20th Century

Industrial enterprises are **electrified**.

The 2nd Industrial Revolution

5G + AI: Driving Industry Upgrades and Enabling an Intelligent World

CCTV Spring Festival Gala | Audi: autonomous driving | Shell: AI patrol robots

Remote type-B ultrasonic testing in Luohu Hospital

5G-enabled "Smart Police Station" in Shenzhen

5G



Connected Cars



Cloud VR/AR



Intelligent Manufacturing



Telemedicine



Smart City

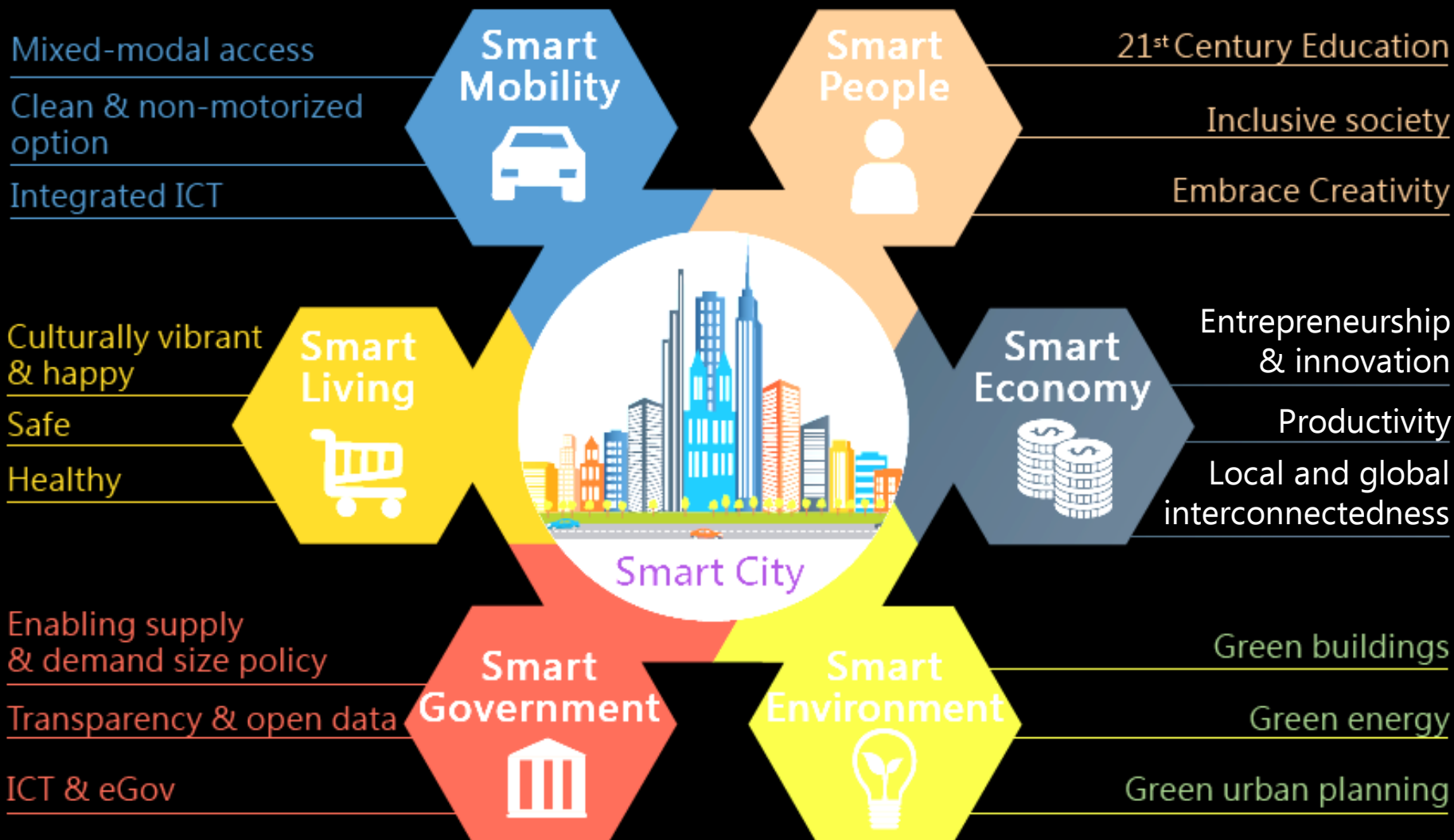


Connected Drones



AI

Smart City



Smart City

Better Governance



Better Livelihood



Better Industry



1.0
PC

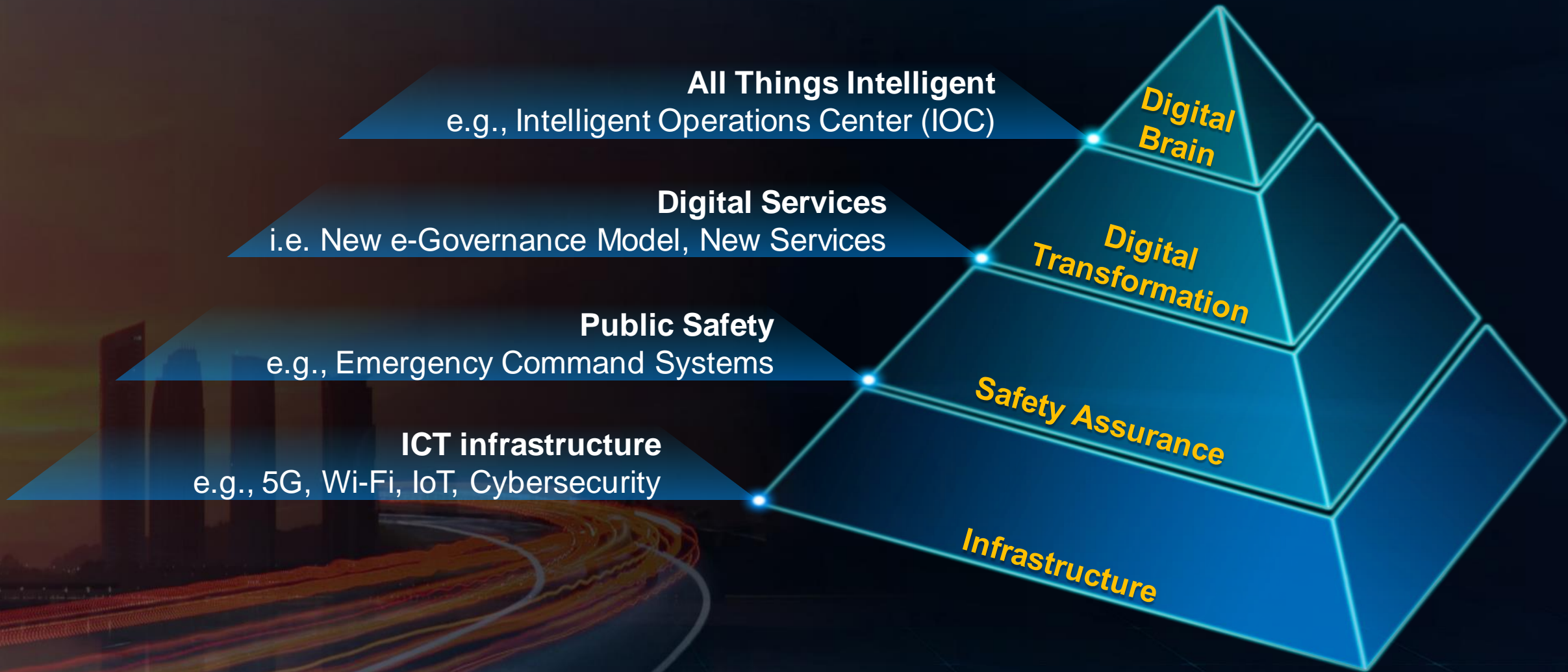


2.0
Mobile

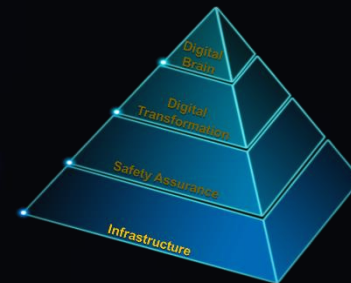


3.0
IoT

Maslow Model for Smart City



Infrastructure



5G

Wi-Fi 6

City-wide seamless broadband coverage

Wireless hotspots in public places

Many times

faster than 4G

1 billion

connections per square kilometer

Multiplied

resource and O&M efficiency

3.8 Gbps

Throughput per AP

10 ms

Latency

↑ 40%

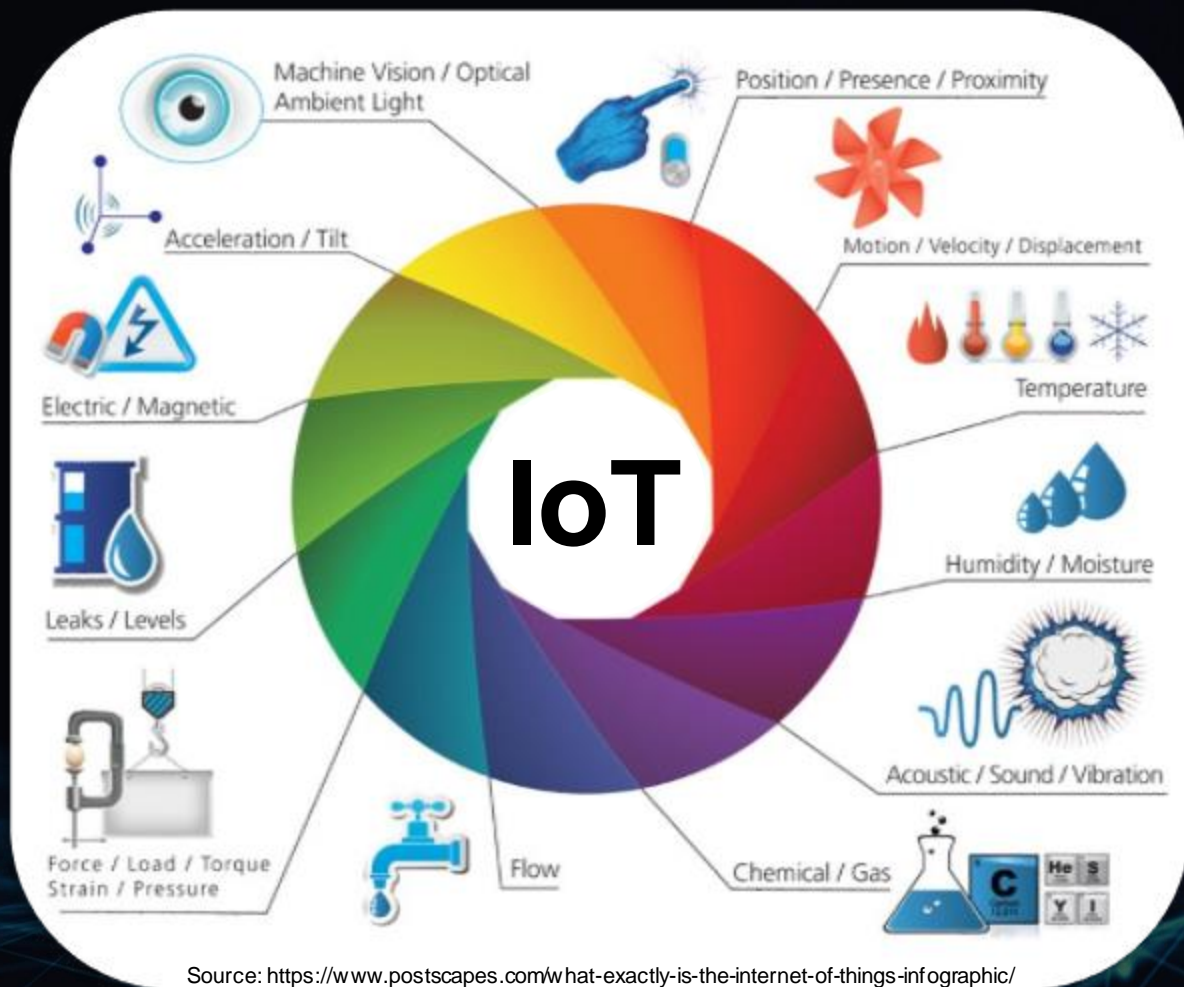
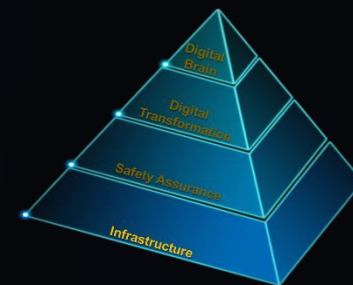
Coverage

2019: scaled 5G rollout worldwide

Late 2018: world's first Wi-Fi 6 project deployed in Shanghai

Enabling Ubiquitous Connectivity

Infrastructure



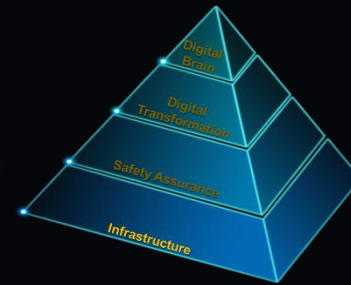
Internet of Life-Saving Things (IoLST)

<p>Personal</p> <ul style="list-style-type: none"> Health Monitor AED 	<p>Responders</p> <ul style="list-style-type: none"> Breathing Apparatus Body Worn Camera
<p>Vehicles</p> <ul style="list-style-type: none"> Telematics Drone 	<p>Buildings</p> <ul style="list-style-type: none"> Smoke/Fire Detector CCTV

30 billion connected devices by 2020

All Things Sensing

Infrastructure



John Suffolk

Global Cyber Security and Privacy Officer

- Former UK government CIO
- **Veto right** in cyber security

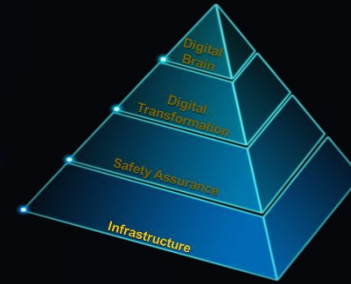
"At Huawei we are proud that we are the **most open, transparent, and scrutinized** company in the world. Huawei's approach to security by design development and deployment sets **a high standards bar that few can match.**"

We use what we have learnt to optimize all Huawei processes, standards, and policies; and then apply them to all products and services to create a "virtuous" circle.



Trusted by 1,500+ Carriers in 170+ Countries for 30+ Years

Infrastructure



"we cannot block something that has **no scientific evidence** or engineering or IT process evidence... we cannot block Huawei from any network in the Philippines"

DICT Assistant Secretary for Cybersecurity Allan Cabanlong

March 13, 2019

GMA NEWS ONLINE

PHL can't block Huawei without scientific evidence – DICT official

Published March 13, 2019 12:05pm
By TED CORDERO, GMA News

Despite cybersecurity issues hounding Huawei, the Philippines will have to secure concrete evidence of possible threats before blocking the Chinese information and communications technology giant in the country.

"So our stand in the Philippines, we cannot block something that has no scientific evidence or engineering or IT process evidence... we cannot block Huawei from any network in the Philippines," Department of Information and Communications Technology Assistant Secretary for Cybersecurity Allan Cabanlong said in an interview Wednesday.

May 21, 2019

South China Morning Post

In the Philippines, police inquiry finds no evidence of Huawei spying for Beijing

- The Philippine National Police's conclusion comes as the US blacklists the telecommunications firm on national security grounds
- Manila has largely welcomed Huawei since Duterte took office in 2016 while pledging to cultivate closer relations with Beijing

Topic | **Huawei**

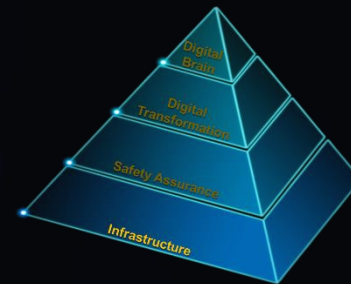
John Power
Published: 9:10pm, 21 May, 2019

"As of now we **do not see evidence** that will prove Huawei is engaged in spying activities; based on inquiry carried out in coordination with overseas law enforcement agencies"

PNP Spokesperson Bernard Banac

Thank you, Philippines!

Infrastructure



Unified



Security

Cloud

User & Entity Behavior Analytics

Data Leak Prevention

Privacy Protection

Pipe



Network Isolation



Intrusion Detection



Secure Transmission

Device



Secured Access



Secure Boot



Unified Management



AI-based Cybersecurity

Safety Assurance



Evolving Threats

- Terrorism
- Volume Crime/ Drug
- Organized Crime
- Cyber-enabled Crime
- Public Disorder
- Epidemics
- Major Accidents
- Natural Catastrophes



Operational Challenges

- Silos
- Heterogeneous
- Cyber Security
- Lack of Data
- Privacy Protection
- Laws & Regulations
- Digital Evidence
- Countering Technologies

First Safe Then Smart

Safety Assurance



New: Service, Process, Organization



Collaborative Public Safety

Safety Assurance

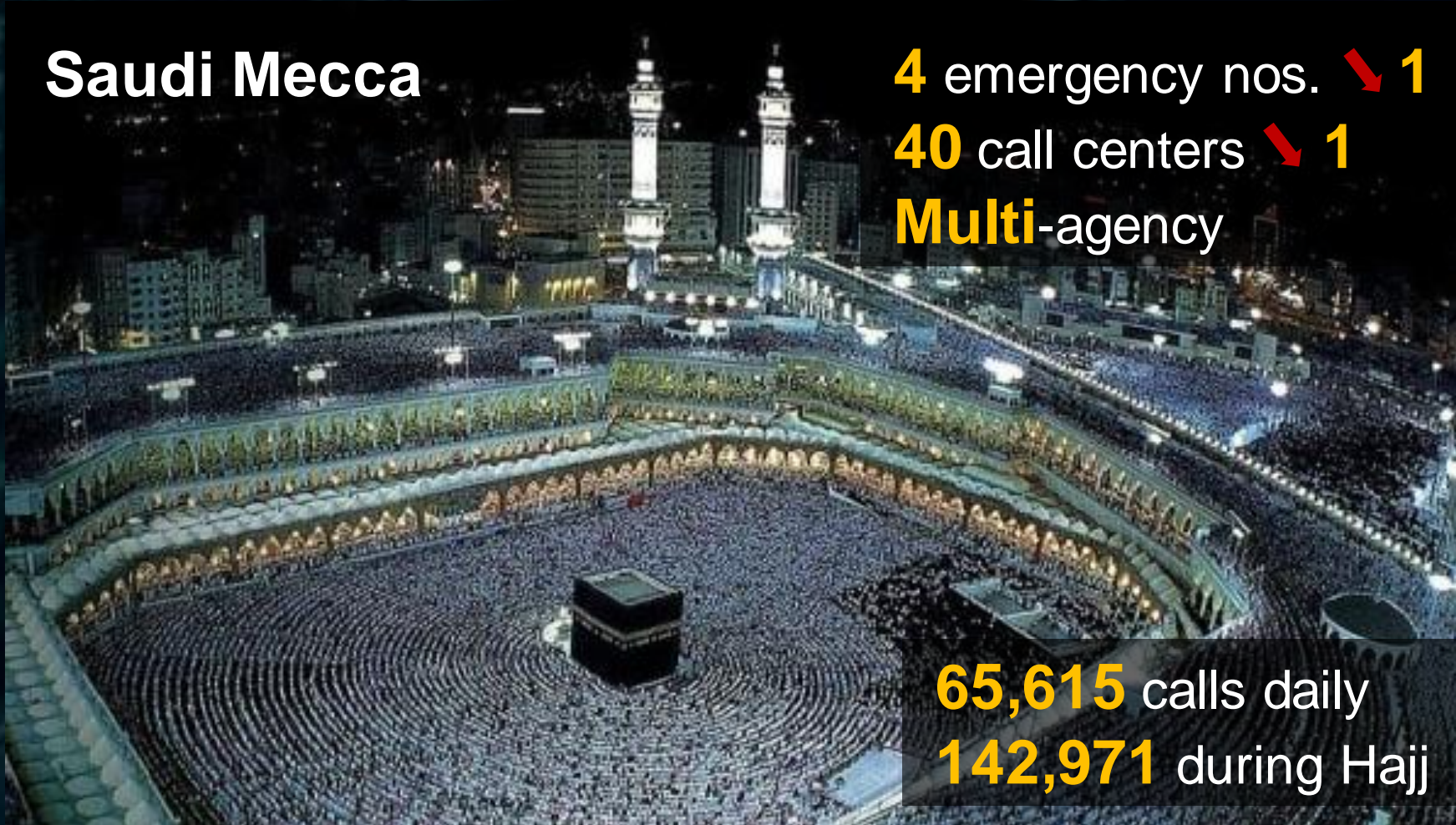


Huawei C-C4ISR

Safety Assurance



Saudi Mecca



4 emergency nos. ↘ 1
40 call centers ↘ 1
Multi-agency

65,615 calls daily
142,971 during Hajj

Collaborative Command & Control

Safety Assurance



China Wujiang

4 devices ↘ **1**
Mobile Cameras



Command & Control

Apps: Inspection, Enforcement, Investigation, etc.

Collaborative Communication

Safety Assurance

Germany Duisburg



Silo Systems in **2** Data Centers
→ **Unified Cloud** Platform
Quick Provision of Services
O&M ↘

Collaborative Cloud Computing



Safety Assurance



China Suzhou



255 GIS Layers

Predictive Policing, great results in Anti-Narcotics
Crimes **↓ 7.7%** after 3 months

Collaborative Intelligence

Safety Assurance



Mexico Zacatecas

Multiple Sites, Multiple **Analytics**
1st year: **951** Stolen Vehicles Recovered
Vehicle Theft **↓ 40%**



Collaborative Surveillance

Safety Assurance



China Hefei



Collaborative Reconnaissance

Safety Assurance



IHS Markit®

The Benefits of Safe Cities

- Government Investment
- Safety Result
- Social Benefit
- Economic Benefit

https://cdn.ihs.com/www/Technology/Security/IHS_Markit-Benefits_of_Safe_Cities_WhitePaper.pdf



BROOKINGS

Benefits and Best Practices of Safe City Innovation

- Economic Growth
- Productivity
- National Competitiveness
- Job Creation
- Innovation
- Reduction in Police Complaints
- Reduction in Crime Incidence
- Increase in Housing Values

https://www.brookings.edu/wp-content/uploads/2017/10/safe-city-innovation_final.pdf

Benefits of Safety Assurance

Safety Assurance



Smart Government



Intelligent Transportation



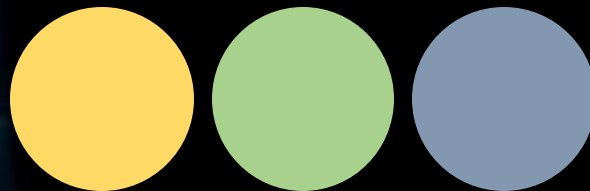
Smart Education



Smart Healthcare



Smart Lighting



Public Safety



First Safe Then Smart

Safety Assurance



Smart Government



Intelligent Transportation



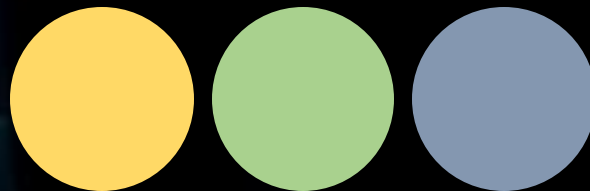
Smart Education



Smart Healthcare



Smart Lighting



Public Safety



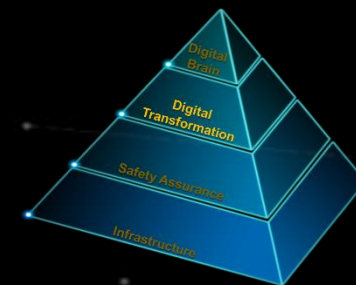
HUAWEI Platforms

First Safe Then Smart



HUAWEI

Digital Transformation



e-Gov Service App

One Identity for all functions:
1,732 e-government services
and 342 public services

1-Stop Enterprise Services

300 common services for
businesses and enterprise
can be transacted one-stop
in any district of the city

Digital Education

93.7% of elementary and
secondary schools enjoy
digital and multimedia
classrooms

Efficient Online Approval

300 common applications
can be approved online
without physical visit to
government offices

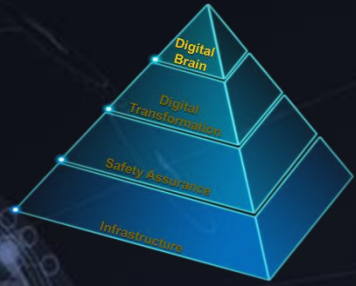
Digital Traffic

Digital Brain reduced traffic
accident fatality to **0.9** per
10,000 vehicles; best traffic
flow tier-1 city

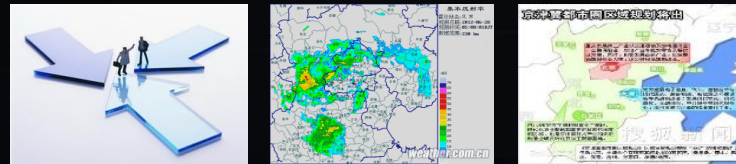


Examples in Shenzhen

Digital Brain



Comprehensive City Monitoring



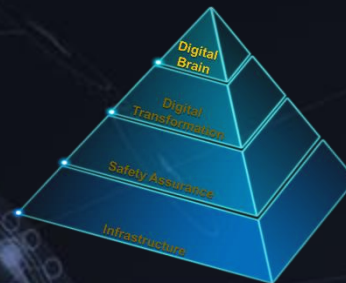
Data Analytics Decision Support



**Unified Operations, Alerting,
Command and Control, and
Collaborative Response**

Real-Time Monitoring & Visualized Urban Management

Digital Brain



+AI
App



+AI
Platform



+AI
Infrastructure



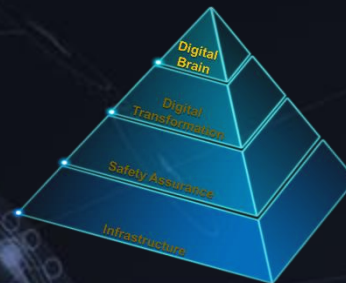
+AI
Device



Intent
Driven
Network
Software
Defined
Camera

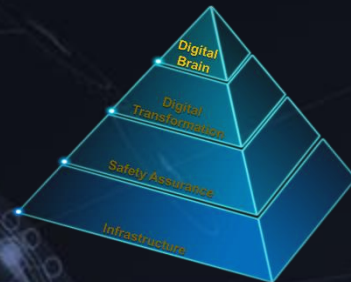
AI Everywhere

Digital Brain



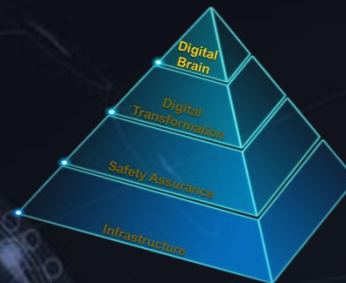
A Possible AI Public Safety Use Case

Digital Brain



A Possible AI Public Safety Use Case

Digital Brain



+AI
App



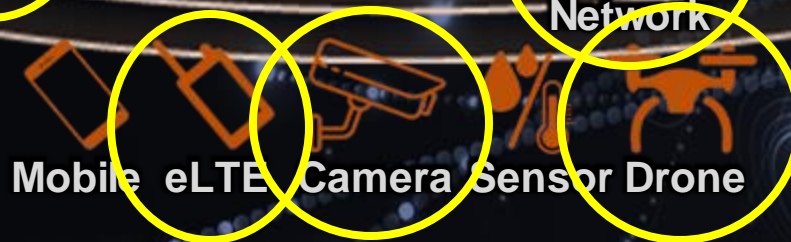
+AI
Platform



+AI
Infrastructure

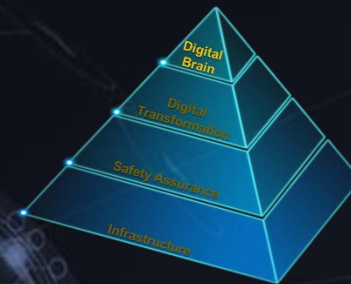
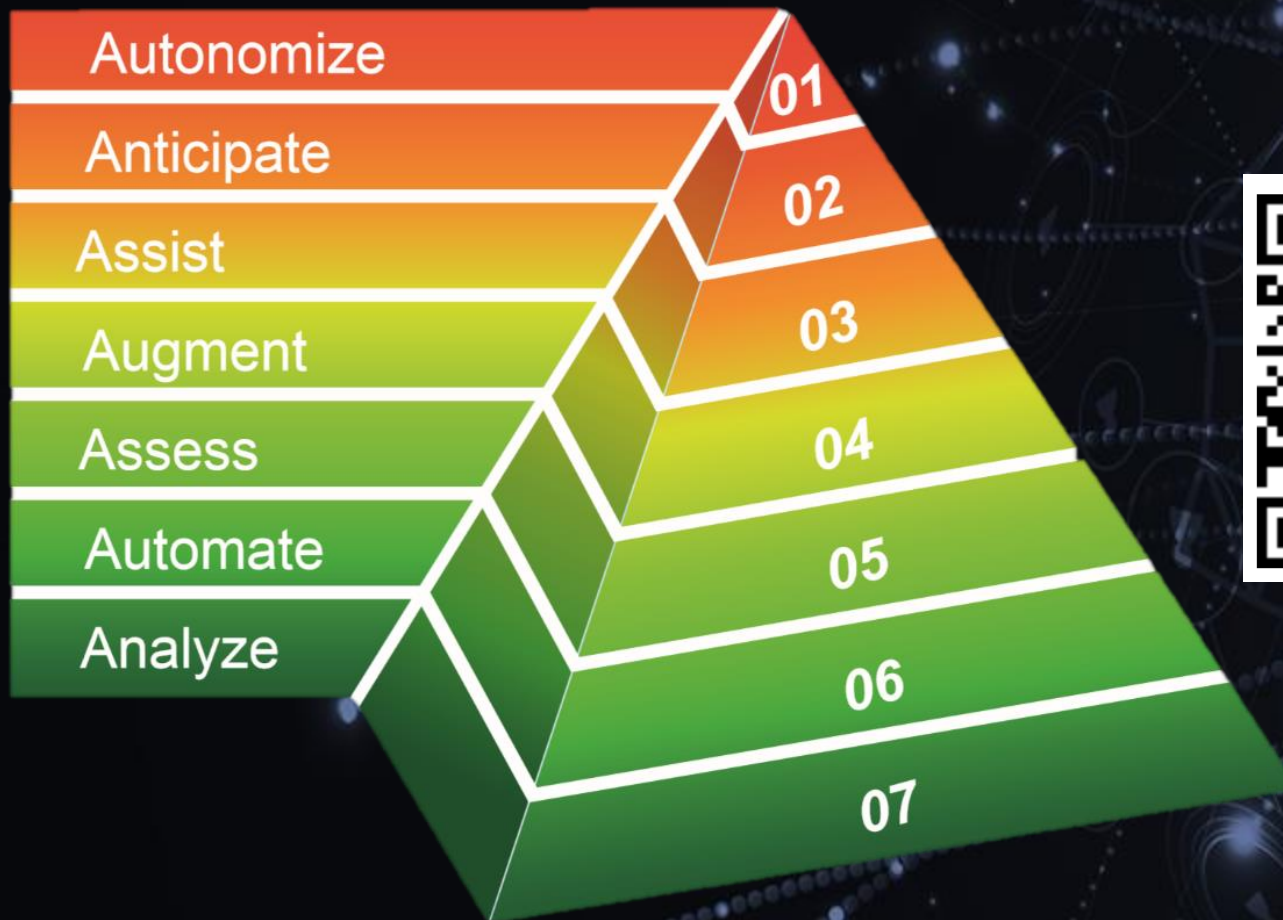


+AI
Device



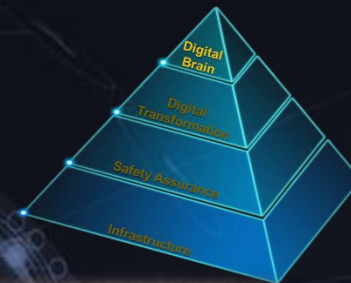
A Possible AI Public Safety Use Case

Digital Brain



AI Use Cases: The Seven A's Framework

Digital Brain



Over-Expectation



Internal Resistance



Public Confidence



Privacy



Algorithmic Biases



Law & Ethics



Implementation

AI Adoption Considerations

Implementation: Critical Success Factors

Top Leadership Support



Strong Project Teams



Sustained Investment



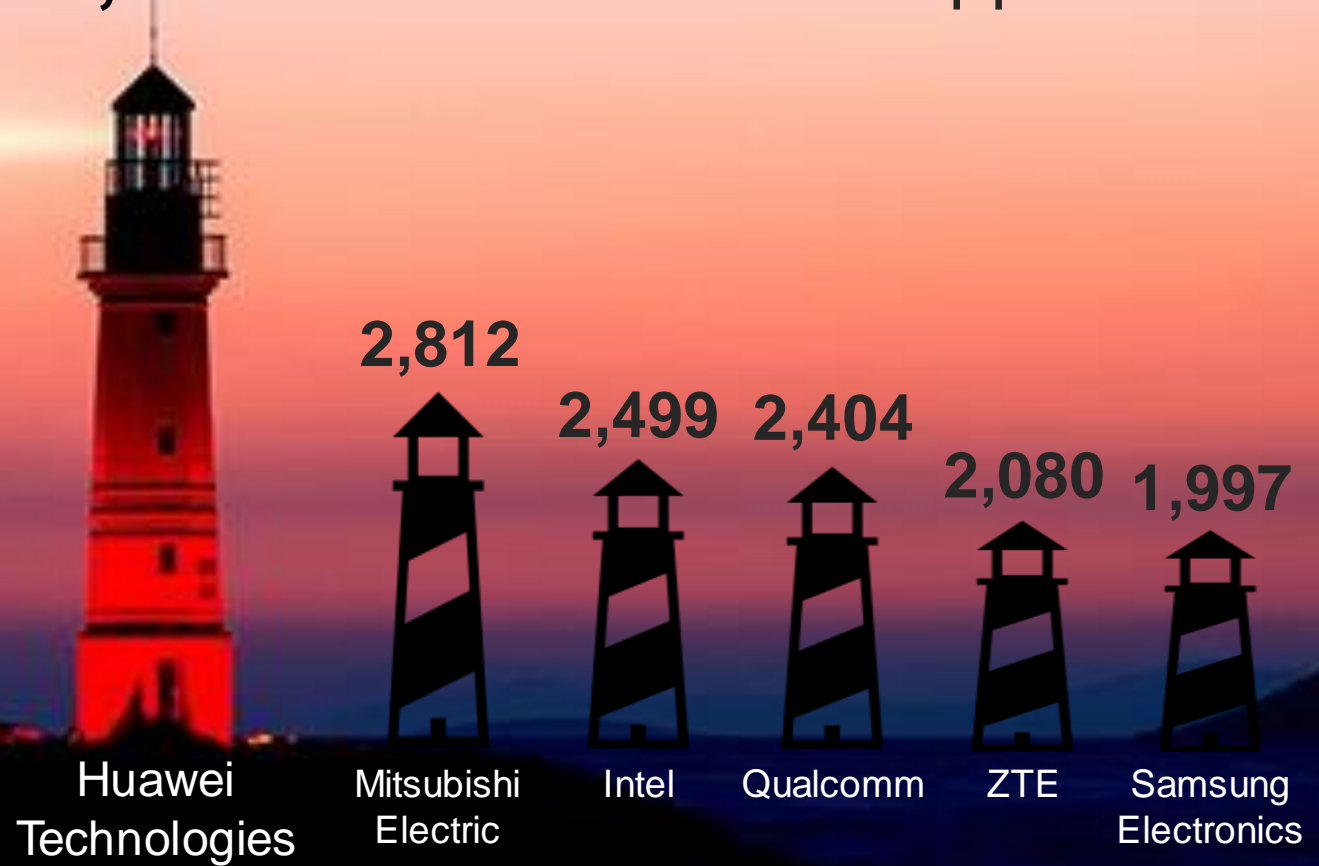
Industry Leading Partners



Huawei's DNA: Innovation

5,405

2018 PCT Applications



6,000+ People Supporting Government Business



Serving 700+ Cities in 100+ Countries



It has nothing to do with network security!



Trump says Huawei could be part of trade deal
bbc.co.uk

24 May 2019

Chris Kelly
Editor
Total Telecoms



Chris Kelly

@Editor_Telecoms

It has been extremely obvious from day 1 that President Trump's offensive against Huawei was nothing but a cynical bargaining strategy in America's trade war with China. IT HAS NOTHING TO DO WITH NETWORK SECURITY!



#5G #Huawei #TradeWars #China
#Telecoms

**Bring digital to every person,
home and organization for a fully
connected, intelligent world**



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HUAWEI

