

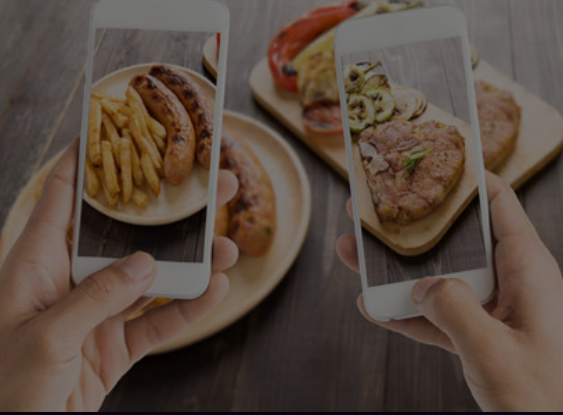
**HTE Infokom 2018**  
9<sup>th</sup> November

# 5G Mission of Huawei and the Industry

**Zsolt Voros**  
Wireless Solution Director  
Huawei Hungary



User Generated Content



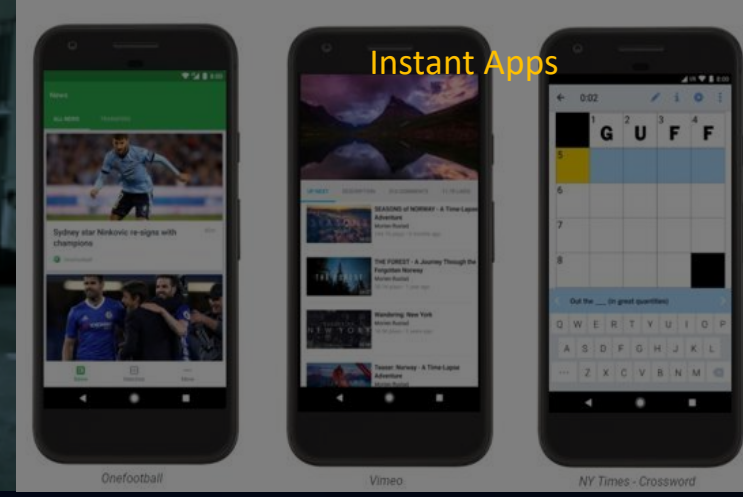
360 virtual touring



Immersive virtual reality



Instant Apps



## TRAFFIC EXPLOSION

**50B**<sub>GB</sub>

Monthly Mobile Traffic by 2021

**75%**

Video Traffic in Mobile Data by 2021

## FIBER LIKE WIRELESS CONNECTION

**1.6**<sub>GB</sub>

DoU 2016

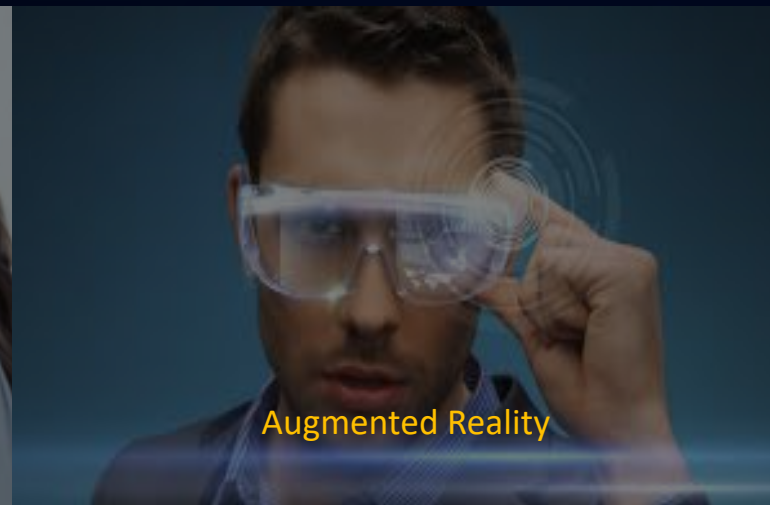
**6.8**<sub>GB</sub>

DoU 2021

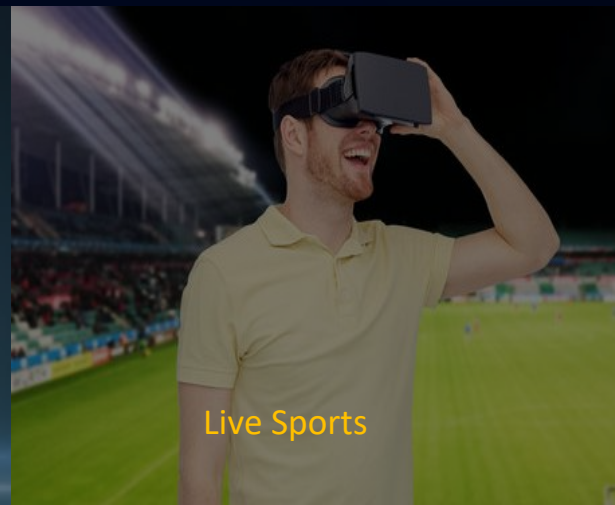
Interactive Medicine



Augmented Reality



Live Sports



Connected Cloud



# Alibaba's Smart Warehouse Staffed by Robots



Just a few staff to handle **million packages per day**

5G Enabled Output in Manufacturing by 2035:

**\$3.4 Trillion**

# Smart Public Buses Start Running in Shenzhen



Driverless + Electric + Mobile Pay



12 Dec 2017: Alphaba buses on the road in Shenzhen's Futian Free Trade Zone.

# AI Everywhere, Surveillance with HD Cameras

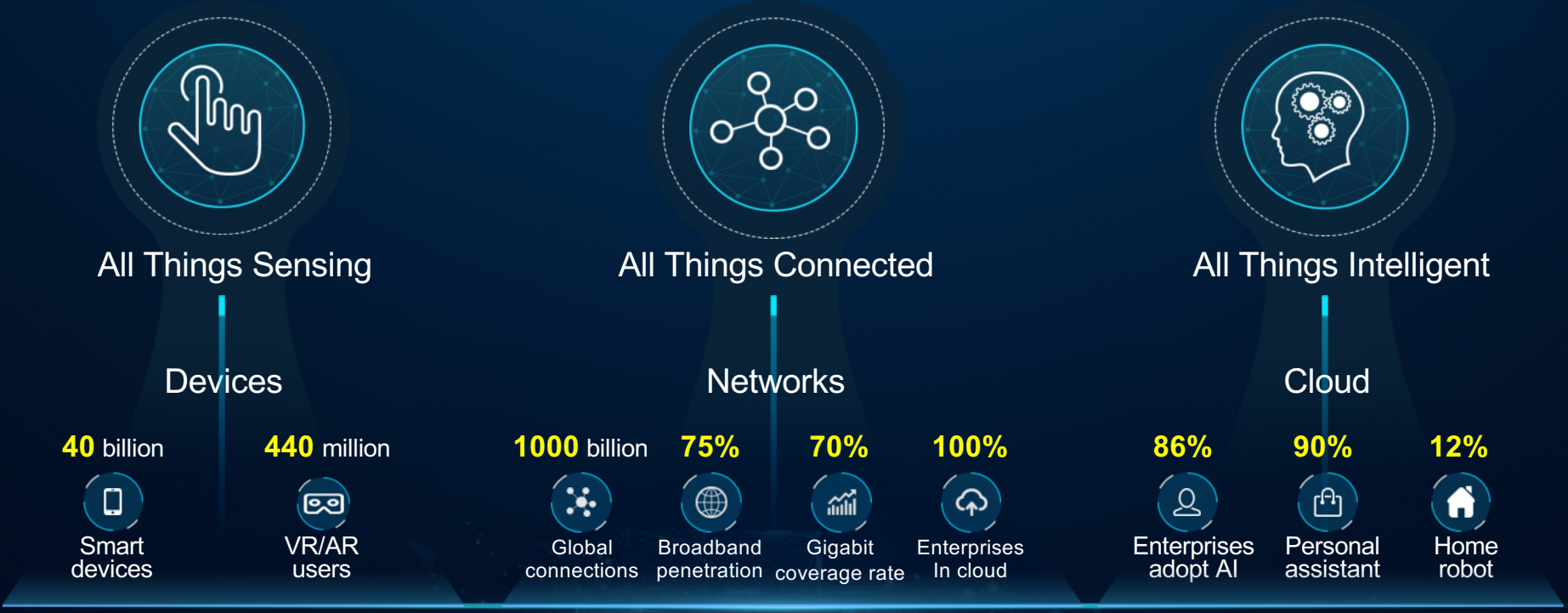


Facial recognition from a 2Bn-user database



Making the world a safe place

# 5G will be the Foundation of a Fully Connected World




By 2025, Source: Huawei GIV


# 5G

# 5G for All: Unlimited Business Possibilities

## Digital Sky

 Flight WiFi


 Drone Logistics

 5G Drone Surveillance

 Drone Aid

## Digital Crowded Area

 VR Live Stadium

 360 Concert

 AR Live Museum

 Crowd Management

## Digital Transportation


 Tele-Operated Driving

 Autonomous Bus

 Autonomous Car

 Fleet Management

## Digital Community

 Home Broadband

 Public WiFi

 4K IPTV

 VR Entertainment

## Digital Manufacturing

 Digital Oil Field

 Smart Grid

 Robotics

 Remote Control



Connected Car



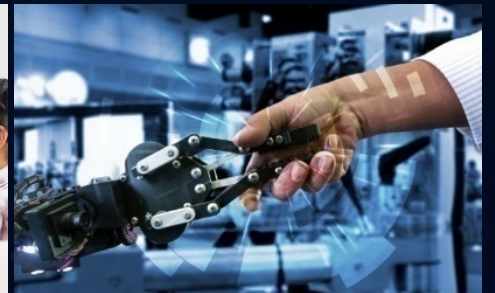
Service Drone



Cloud VR



Fixed Wireless Access



Internet of Things

# Exploring 5G New Business Opportunities

## Operator Collaborations



## Industry Collaborations Europe



### Asia



5

Research directions

283+

Industry partners

49+

On-going projects



Digital Sky



VR/AR



V2X



Digital Factory



Telemedicine

Personal app / Home app / Vertical Industry



Personal App



mLAB

Home App



hLAB

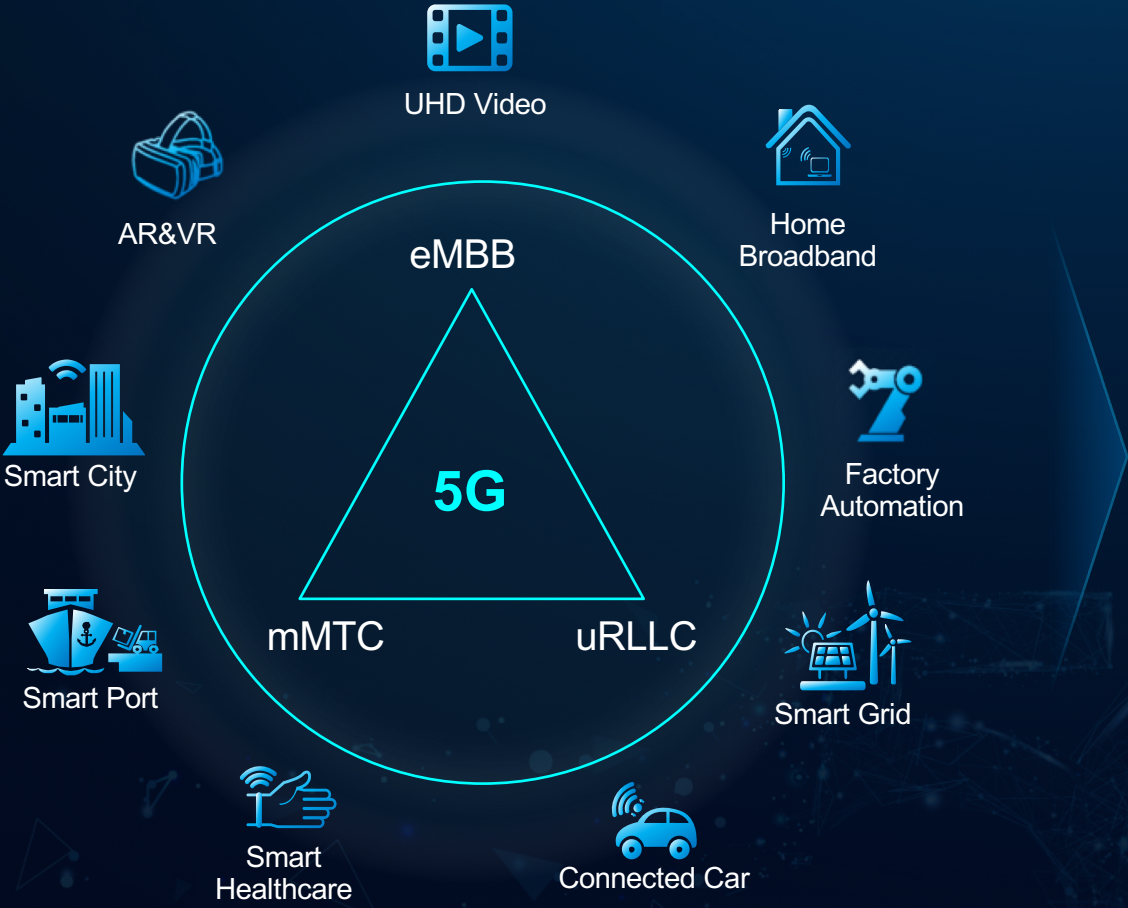
Vertical Industry



vLAB



# Global Early Use Cases for 5G - FWA and eMBB



## 2H

**Korea LGU+:**  
Panoramic IPTV

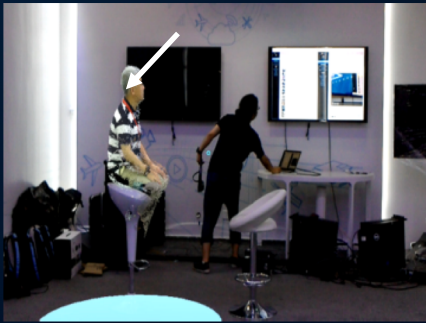


**US Verizon:**  
Rural House FWA@ mmWave



## 2C

**Japanese NTT DOCOMO:**  
Holographic Communication



**China Mobile:**  
Multiple Screen HD Video



# VR Live Becomes Highlight in 2018



Ave Viewers



4K/VR Live Matches



VR LIVE Time



2016 Olympics 2B Live Users

2018 Winter Olympics 18 Live Matches out of 102

2018 Winter Olympic Live Time 50 Hours

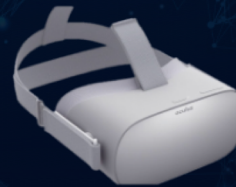
2018 Winter Olympic Live Broadcast by BBC, Eurosport



Gear VR



PS VR



Oculus Go



Daydream

# VR Needs 5G

## Concert/Stadium LIVE



- Live VR Requires Uploading Ultra-High Definition (4K) Video Upload: ~35Mbps

## Nomadic Scenarios



- VR on Go (Trains, Boats, Buses..) requires Ubiquitous Wireless Experience

## Indoor WI-FI Interference



- Indoor VR Performance with WiFi degrades experience due to interference

VR Entry experience:

**100Mbps**

VR Extreme experience:

**900Mbps**

E2E Latency

**< 20ms**

**Only 5G Can Meet These Requirement**

# Digital Sky

## Connections

to all drones

## Regulations

to regular drone behaviors

## Business Innovations

via the connections & Data



Launched in 2017 MBBF

- Deliver low airspace coverage
- Incubate drone application innovation
- Enable digital sky industry



# THANK YOU!

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