

ZTE Leading 5G Innovations

Building the 5G world

Stories of success and ... failures

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Nov, 2019



5G is about MONEY

\$12.3
trillion

Enabling a broad set of
industries

22m
jobs

Supporting a thriving value
chain

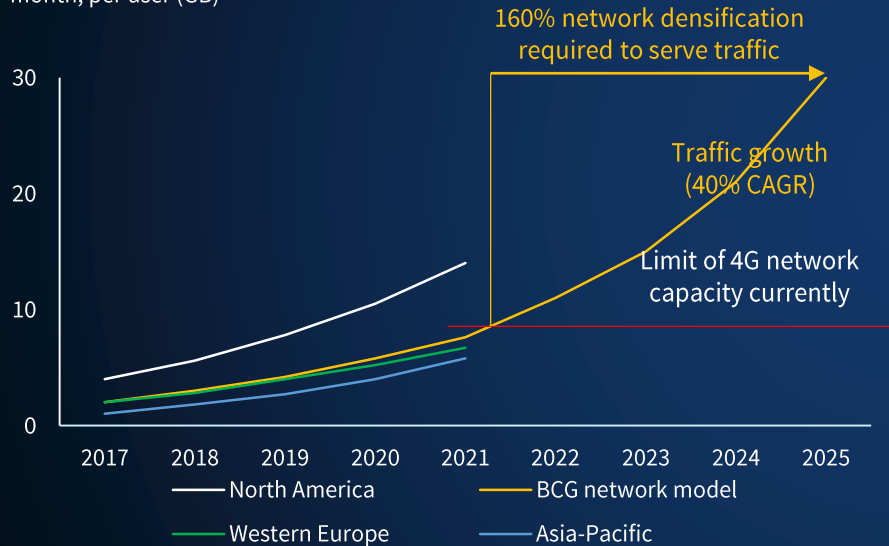
\$3.0 t
GDP

Driving global GDP growth

5G is the cheapest way to serve continuous traffic growth

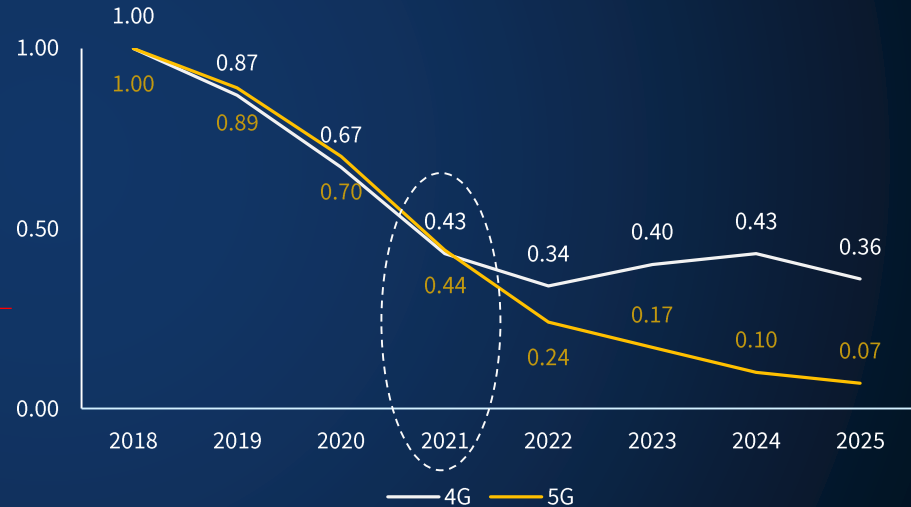
Exponential Mobile Data Traffic Growth

Network traffic consumer per month, per user (GB)



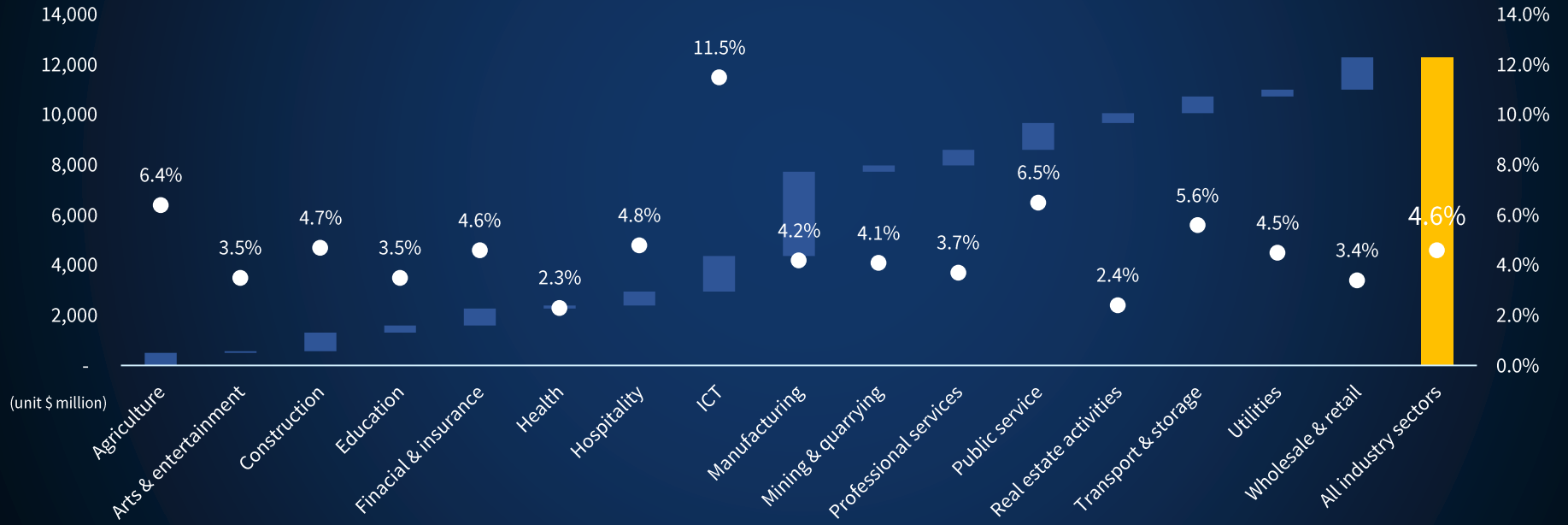
5G is the Cheapest Way to Serve Rising Data Demand

Estimated network cost per GB of traffic (indexed)



5G is the catalyst to accelerate the 4th Industrial Revolution

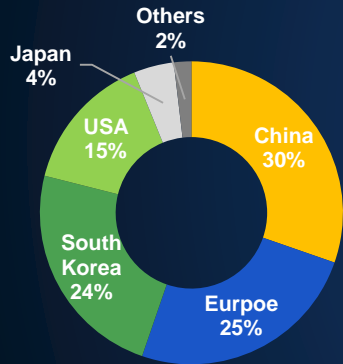
5G will enable \$12.3 trillion of global economic activity in 2035 and will impact almost all the industries



China's Large-scale 5G Roll-out and Top3 of 5G SEP

5G Standards Essential Patent

30% Contribution from China (of which 40% by ZTE)



Source: ETSI, CAICT

Year	China Mobile (中国移动)	China Telecom (中国电信)	China Unicom (中国联通)
2019.5	Launch 5G NSA network in 17 cities	launch 5G SA&NSA network in 7 cities	launch 5G NSA network in 29 provinces
2019.10	\$2.5bn 5G CAPEX	\$1.3bn 5G CAPEX	\$0.9~1.2bn 5G CAPEX
2019.12	~50,000 sites in 40 key cities	20,000 5G sites	15,000 5G sites
	160MHz in 2515-2675 & 100MHz in 4.8-4.9	100MHz in 3.4-3.5	100MHz in 3.5-3.6

ZTE is a main player (30%~40% market share) of China's 5G Roll-out

China's 5G subscribers (Booked) has reached almost 10 M



5,320,000

- Phase1(2019) : 4G+5G dual connectivity(5G NSA&SA), ~50,000 sites in 40 key cities
- Phase2(2020~): **5G SA**, 200,000~300,000 sites across the country
- 160MHz in 2515-2675



1,760,000

- Phase1(2019) : 5G SA&NSA, 20,000 sites
- Phase2(2020~): **5G SA**, Network sharing with China Unicom
- 100MHz in 3400-3500



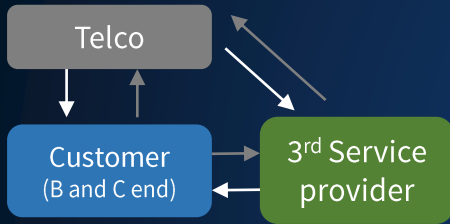
1,750,000

- Phase1(2019) : 5G NSA, 15,000 sites
- Phase2(2020~): **5G SA**, Network sharing with China Telecom
- 100MHz in 3500-3600

Business models adopted by Operators (1/2)

Connectivity Provider

Operator lead



Telco can offer differentiated connectivity based on

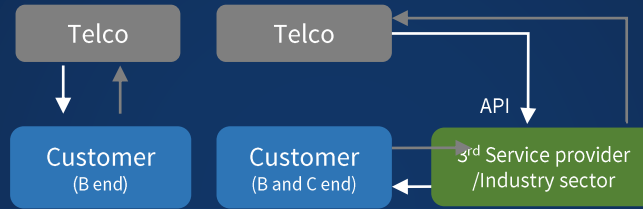
- Speed
- Latency
- Quality-of- service/reliability

Will evolve to Slice Provider



Slice Provider

Network slice as a Service

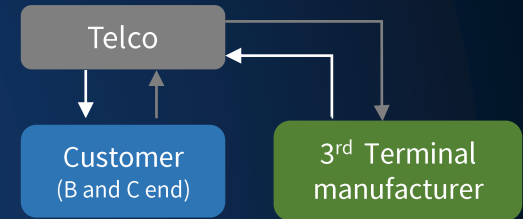


Telco's offerings and preconditions:

- 5G Network slicing based on location, time, and scenario
- Slicing design, deploy and SLA capability
- Intelligent O&M
- Ecosystem and partnership

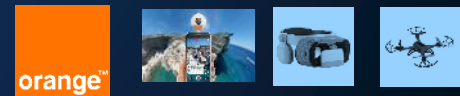


Differentiated Terminal Provider



Telco's offerings and preconditions:

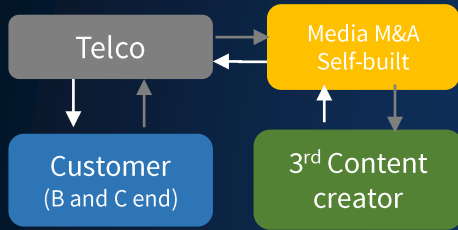
- 5G Network
- Partnership with manufacturers
- Terminal and device sales channel
- One-stop provisioning and operation



5G Business Model (2/2)

Content Provider

Operator lead



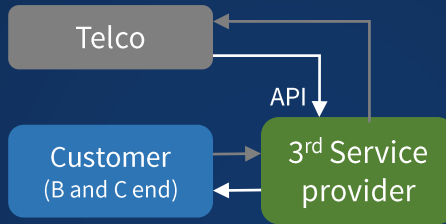
Telco's offerings and preconditions:

- 5G Network and service platform
- Content and IP partnership
- User experience analysis and operation system



Service Enabler

Mainly for vertical industries



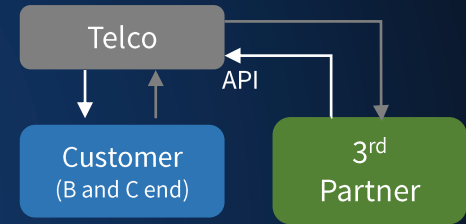
Telco's offerings and preconditions:

- 5G Network and cloud service (especially Edge cloud-MEC)
- ICT capability with platforms and open API
- Open Lab and ecosystem



Service Creator

Operator lead

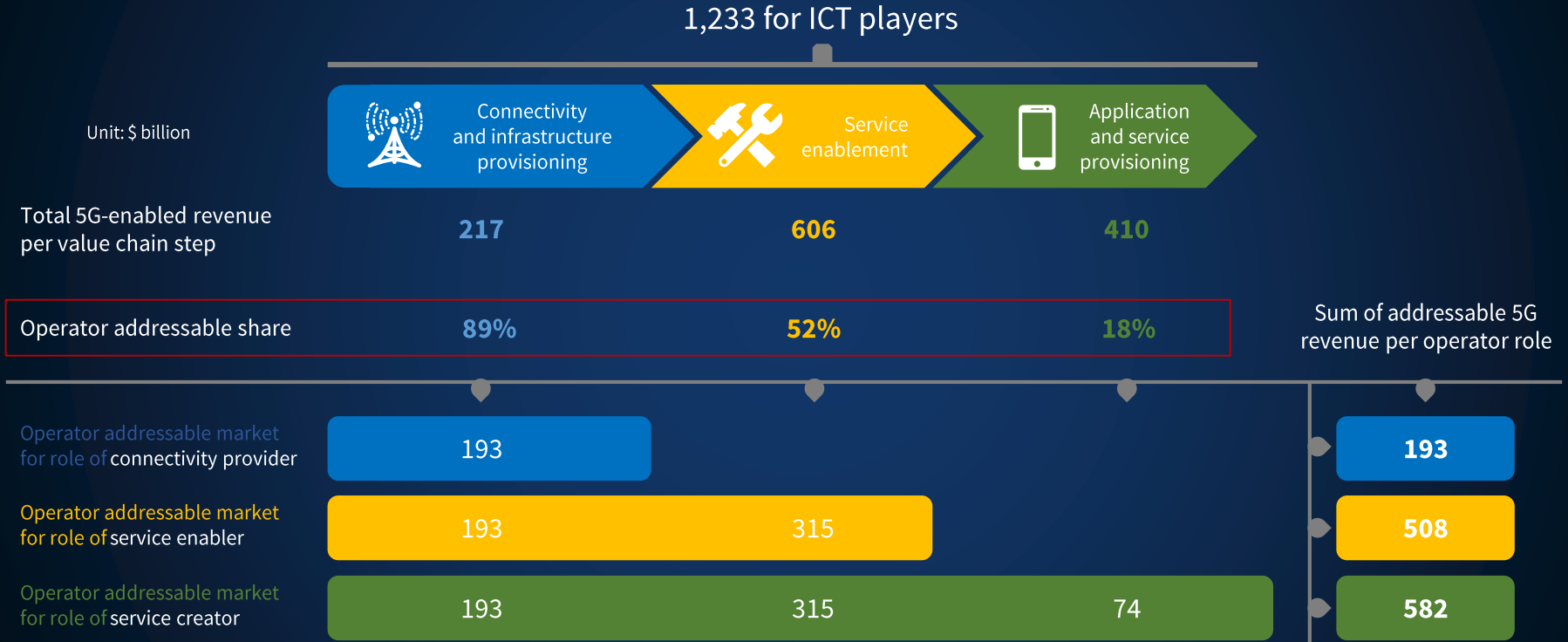


Telco's offerings and preconditions:

- 5G Network
- E2E Service integration and provisioning
- Business consulting and developing
- Ecosystem and partnership



Addressable 5G market from Connectivity Provider to Service Creator



Network Slicing Provider – Strategic role

5G Network Slice Store



5G End-to-End Network Slice

5G End-to-End Network Slice is a 5G network service supporting self-ordering, on-demand configuration, automatic deployment and instant provisioning. It helps to reduce network cost and fulfill personalized requirements of service assurance and isolation.

[Buy Now](#)
[Console](#)


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Filter By Category

 Area Smart Manufacturing
 Bandwidth 1Gbps


Standard Slice

[General](#)


High Priority Slice(Low-Latency & High Reliability)

[Industrial Control](#)

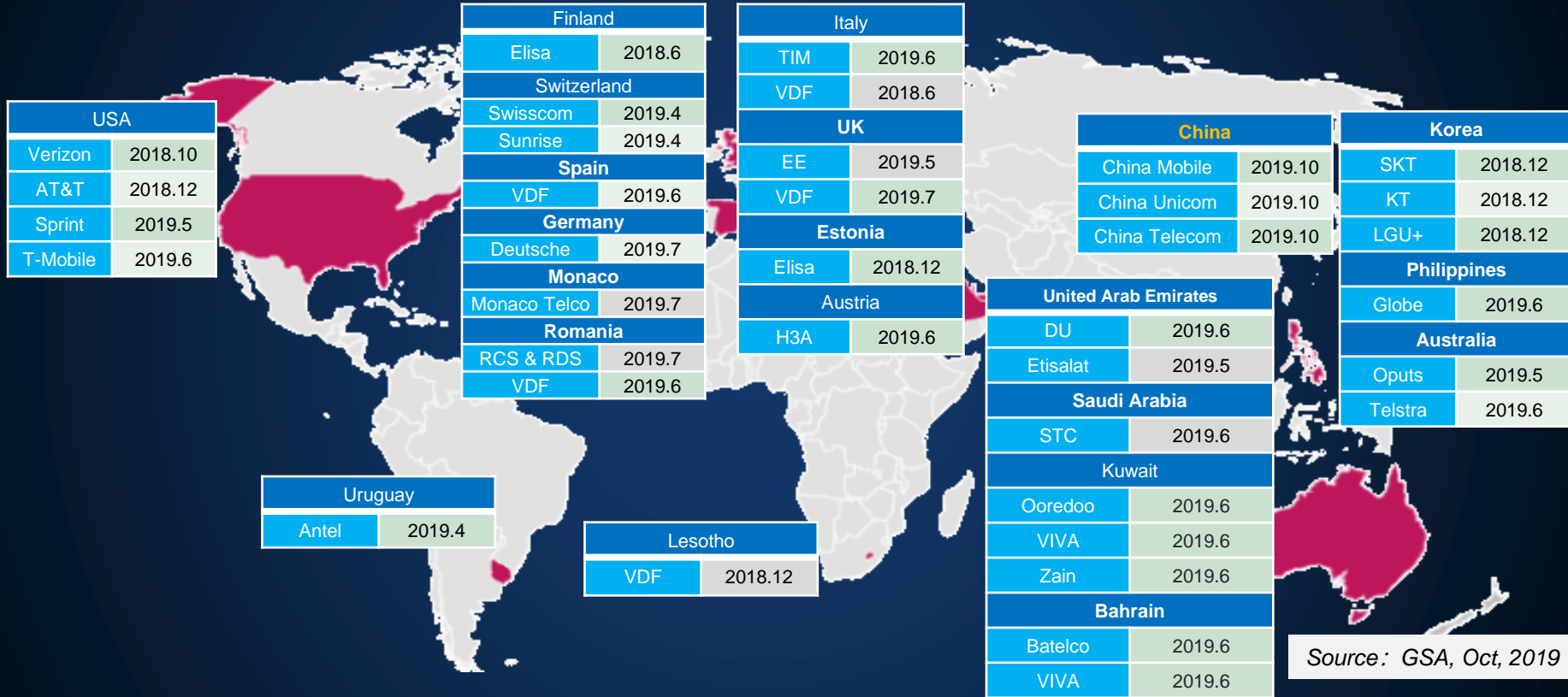

High Priority Slice(High Bandwidth)

[VR/AR](#)


High Priority Slice(Massive Connection)

[IoT](#)

5G success is Beyond Expectations



Source: GSA, Oct, 2019

... but some still managed to fail...

FAIL → From politics to Real Security

“It requires so much effort to build backdoors into networking equipment that work across different global communications networks and system configurations that it likely is easier and more effective to bribe a telco executive, says Huawei's chief cybersecurity officer.”

<https://www.zdnet.com/article/huawei-easier-to-bribe-telco-staff-then-build-backdoors/>

Oct 23 2019



FAIL → Short-sighted regulators

5G IN GERMANY: THE SPECTRUM AUCTION WITH A LOOK AT INDUSTRIAL 5G CHALLENGES



€6.5 Billion

The auction for 2 GHz and 3.6 GHz mobile spectrum for the development of 5G in Germany resulted in a total sum of over €6.5bn with four companies acquiring a total of 420 MHz.

- Delayed spectrum allocation in Europe
- Massive prices paid in UK, Germany, ... for spectrum licenses
 - Now considering to open auctions for limited area private networks...
- VS. Chinese **enablement** strategy: go build it and then we'll see how it goes...

FAIL → USA 5G rollout



Verizon 5G coverage in one area in Boston

OpenSignal:

“In the US, just 1% of speed tests we conducted from 5G NR enabled devices used an active 5G connection, compared with 20% in early 5G leader South Korea.

ZTE

THANKS