

China Telecom's digital strategies against COVID-19

Yuan Zhang
China Telecom
18 May 2020

1

Our role in pandemic
combating

2

Observations and facts

3

Measures

COVID-19: An unexpected test for humankind



- It's an examination for our healthcare system, society, humanity, and telecommunication systems.
- The decisions we make in this period of time will contribute to the reshaping of the world for years to come.



- Telecommunication infrastructure, 1million+ 4G base stations, 75k 5G base stations and 170 million broadband subscribers
- Link to customers

- Transform technology into capabilities for continuous study, work, lives and epidemic prevention during the pandemic, to tens of thousands of households
- Shoulder the social responsibility, provide infrastructures and services for healthcare and for quality of life

1

Our role in pandemic
combating

2

Observations and facts

3

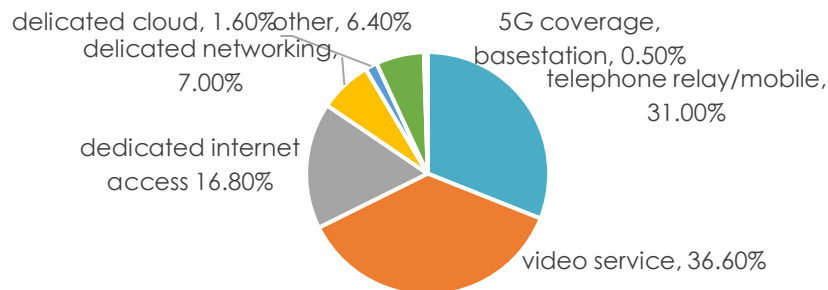
Measures

Increasing demand for remote applications



- Top to business service: remote video applications
- Top emergency applications: healthcare and education, i.e., hospital information system, online schooling
- Cloud conferencing: Within one month after launching, 700k+ new users, average cloud conferences held per day: 90, 22.5 times growth
- 5G+ applications: cloud overseer, 5G+ telemedicine, etc
- Top to customer service (mobile app): online education, telecommuting

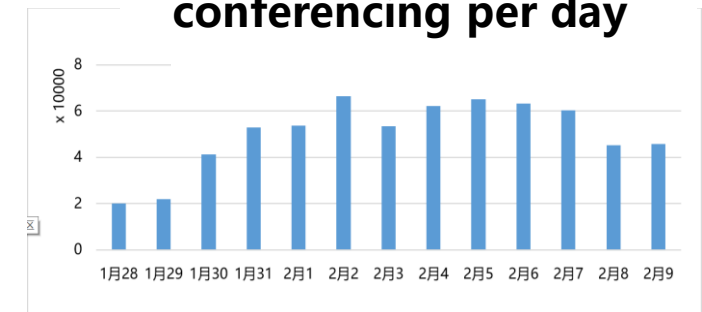
emergency service distribution



new projects using cloud resources

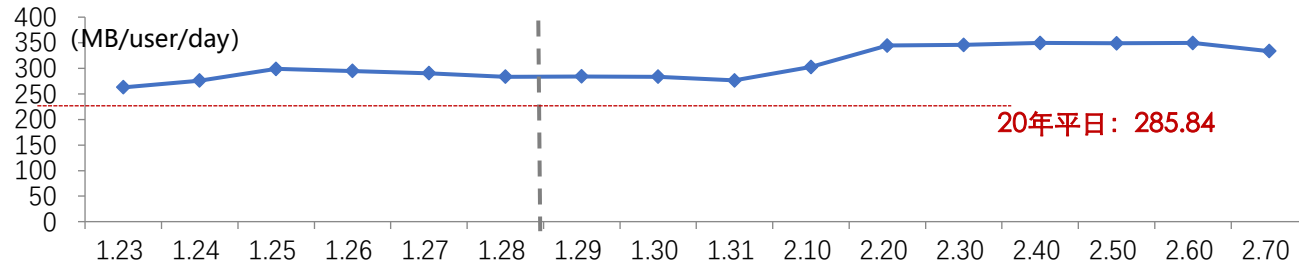
healthcare	education
16	13

new subscriber to cloud conferencing per day

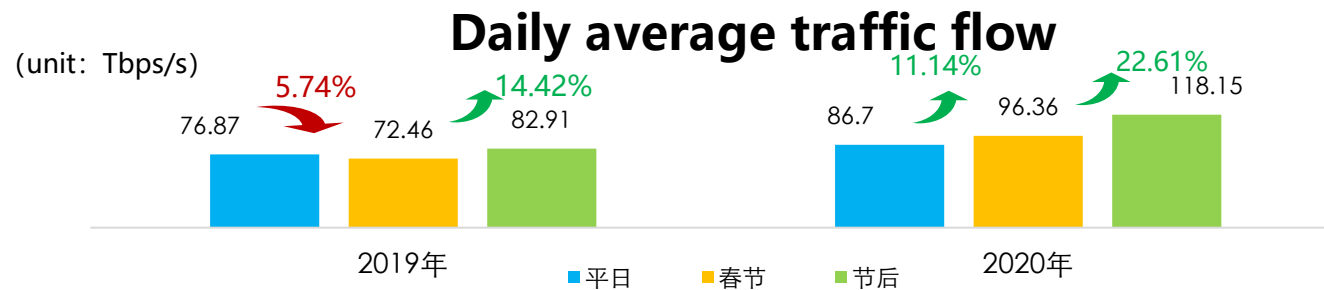


Network flow: increasing data from applications

- 4G: Daily average network traffic increased by 17.87%
- Video and image processing are the major driven forces



- Broadband: Daily average network traffic increased by 22.61%
- Backbone network traffic: network traffic of individual user increased 18.11pp



Network flow increased



QoS didn't drop



Why



- QoS of wireless network access: 97.10%, 0.60pp

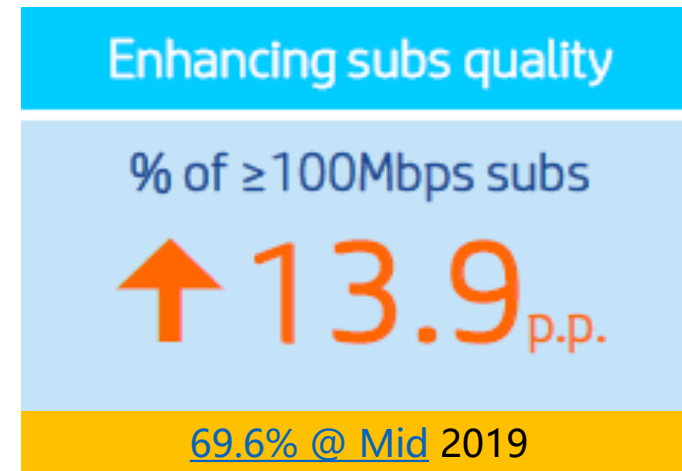
■ Have the coronavirus broken the internet? No.

■ Why? Because the peak level of data consumption did not come close to the limit of the broadband networks.

China has advantages in Optical Access Networks and FTTH Deployment. The persistent effort to build network has been paid off.

unit: million	Aug 2019
Total Broadband subscribers	443.28
FTTH subscribers	404.38
BB subscribers ≥ 100 Mbps	351.88

China Broadband subscriber
Source: MIIT of China



- China Telecom is continuously enhancing its broadband access bandwidth. 100Mbps is the baseline bandwidth now.
- 100(+)Mbps to the home accounts for 79.4%
- 509K BB subs is using the Giga-to-the-home service
- Measures taken: regional construction of base station and optical networks, increase the capacity

- Roaming users and data volume are dropping
- Volume of SMS is decreasing, except for public service SMSs
- Increasing need for safety, VPN, remote access
- Need for service online
- Growing need for Content Delivery Network
- Virtual cloud servers and use ratio increased
- Development of cloud computer
- Blowout of remote applications with novel requirements, i.e., beautify and clothing changing function in video conferencing
- Integration of capabilities to serve requirements
- Compression technology could reduce the bandwidth consumption
- 70+ new applications were developed for different regions and industries

1

Our role in pandemic
combating

2

Observations and facts

3

Measures

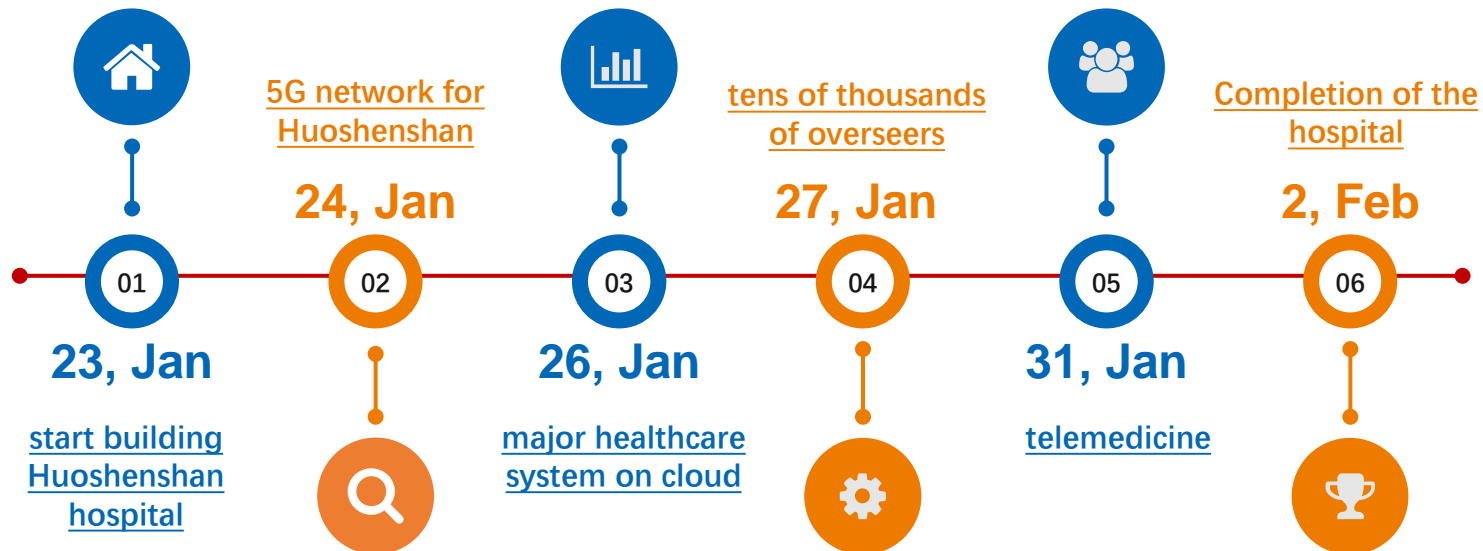
Hospital on cloud

all-on-cloud medical system

information construction in 7 days

5G+2 gigabit network

multiple safety protection



China Xinhua News: China builds new hospital in 10 days to combat coronavirus...

A new hospital has been constructed in Wuhan in 10 days to combat a novel coronavirus outbreak. Huoshenshan Hospital is the first #SARS treatment-model facility in Wuhan and will receive patients on Monday. #coronavirus #pneumonia

What's on cloud?

- Hospital information system (HIS), laboratory information system (LIS), and picture archiving and communication systems (PACS)
- Database
- Auxiliary information systems (operation, resource, knowledge, financial management, customer service, including the queuing system)

Key points:

- Deploy the same type of services in different underlying servers
- Dedicated cloud servers
- Host and backup database, timely data backup

Metrics:

- Availability, reliability, security

Benefits:

- Reduce local maintenance
- Accelerate the deployment of application
- A reusable solution for duplication (Huoshenshan - Leishenshan hospital)

How does it shape our future?

- Sharing among hospitals: systems and data
- Potential standardization area: uniformed interface and data format

100 million “cloud overseers” at the same time



Track querying



- The track querying app is developed for individual subscribers to query regional risk, epidemic situation forecast, return to city query, itinerary and contact.
- Interfaces are provided to the other shareholders
- **20 billion signaling data** (OIDD, VOLTE, 4G) and billing data were processed every day, covering all 2/3/4G users.
- Until the end of last month, there are **70 million** query records.

Track querying is an application for public based on HTML5 with five major functions.



itinerary query



contact query



epidemic
forecast query

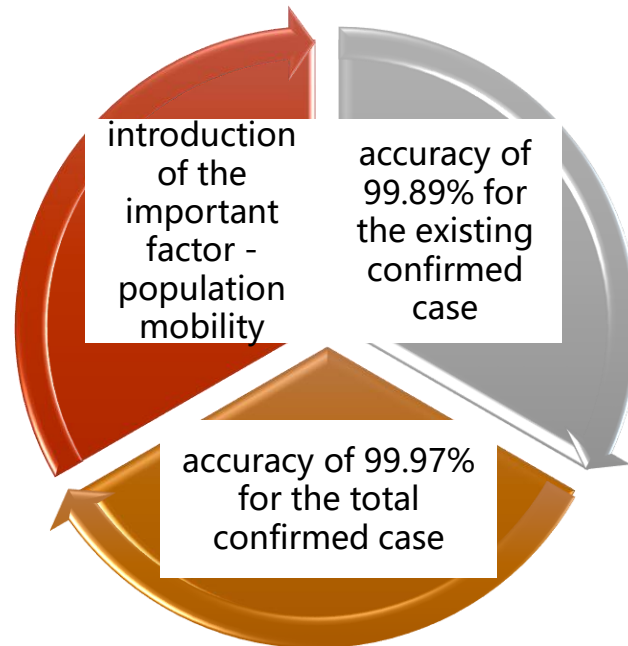


return to city
query

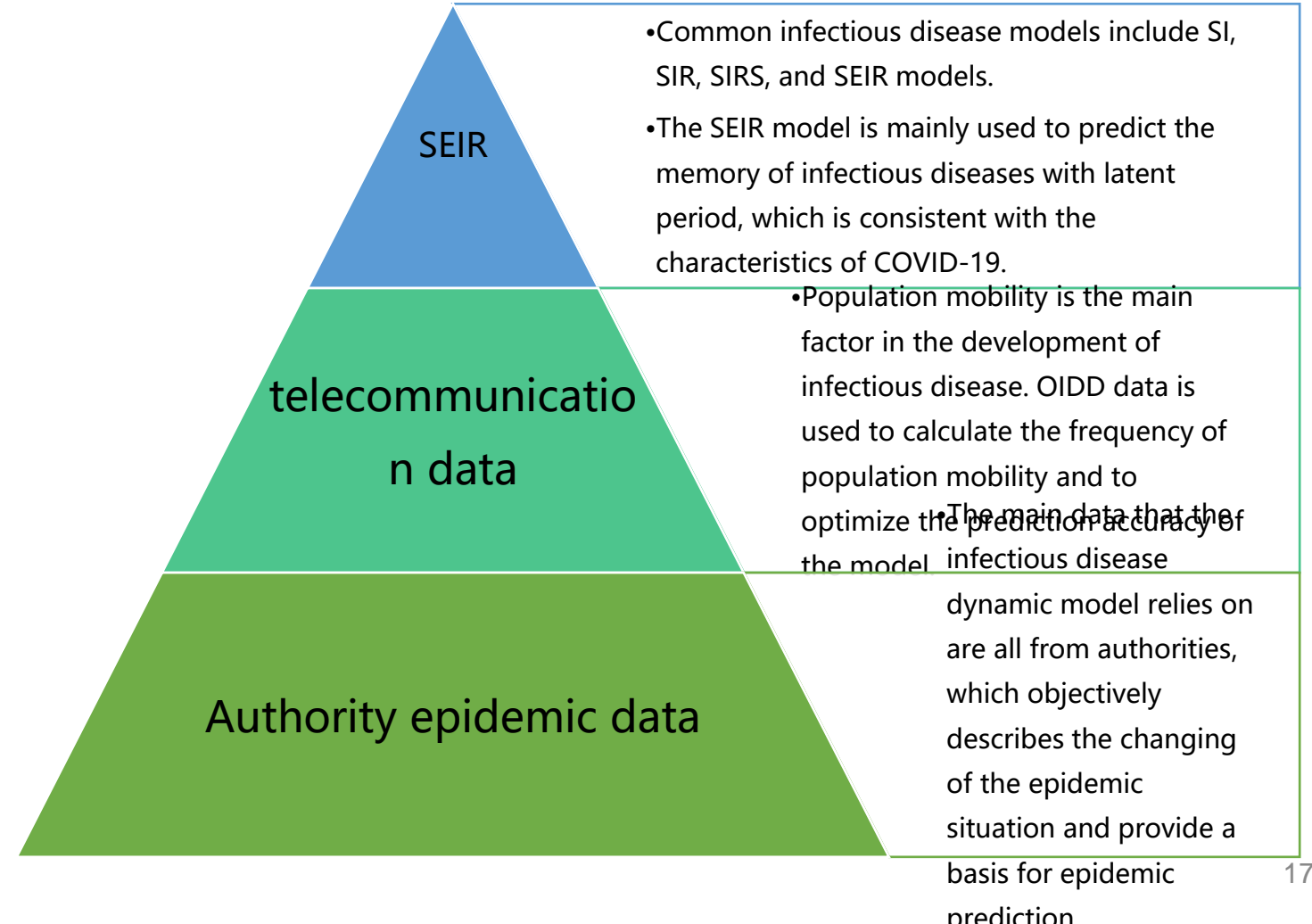


regional risk
query

major effect



core technology



precise temperature tracing



abnormal temperature alert



infrared and visible light





Emerging applications



Smart broadcasting, COVID-19 prevention&control platform, self-quarantine app, big data app, information app, unmanned business office, unmanned aerial vehicle solution, etc





Yuan Zhang
zhangy666@chinatelecom.cn

Thank you!