

《China Breakthroughs: Making a big play of 5G networks》

By Tom McGregor, CCTV.com Panview commentator and editor

In the world of IoT (Internet of Things) and Communications Technologies, the big talk is about the emergence of 5G - fifth generation cellular networks, since it will pave the way for more powerful smartphones that can deliver never-seen-before applications.

5G will be 100 times faster than 4G, but at lower power consumption.

Let's explore the possibilities, you can watch live-streaming TV at real-time and without pesky technical glitches. You can store mega amounts of photos, documents and videos on cloud. Your smartphone will move at lightning speed.

Accordingly, China's Big Three Telecoms - China Mobile (CM), China Telecom (CT) and China Unicom (CU) are expected to invest a total - US\$180bn. (RMB1.14 trillion) in the next seven years, which would eclipse Japan's spending at US\$46bn. for the same period.



Platforms of transformation

China's Big 3 Telecoms are spending big, because the technologies require greater frequency reuse and more base stations, according to Xiang Ligang, CEO of the domestic telecom industry portal cctime.com.

Massive investments mean faster speeds, while the platforms would be more effective. For 5G networks to work, companies must make major upgrades on software and hardware technologies.

Forbes reports that the 5G transformation would get delivered in virtualized (not physical) technologies, open-sourcing and multi-vendor, as companies must collaborate to succeed.

The integration will go beyond borders. On the Chinese 5G equipment manufacturing side, Huawei and ZTE have made tremendous headway on global collaboration.

There's also an initiative from the Linux Foundation to work on the inter-operability and integration of virtual components, called virtual network functions (VNFs) that convert into a platform, known as network function virtualization (NFV).

Solutions-based functions

The NFV could enable China's Big 3 Telecoms to transfer from physical devices and appliances to the direction of virtual functions with software-based solutions, since hardware cannot scale up to meet future demands.

5G must continuously adapt in light of new technologies introduced on a daily basis. China's telecoms must bring about a diversity of experience, engagement and progress to handle the different stages of the virtual world transition.

Companies have no choice but to collaborate across different companies and industries to confront challenges, such as constructing new networks.

Meanwhile, China's hardware and software companies have engaged in developing 5G networks for commercial purposes, which is expected to begin in China by 2020, and will favor homegrown technologies.

Technology experts believe companies from China, South Korea, USA, Japan and Western European countries will be the groundbreakers for the upcoming 5G tech. sector. Sweden-based Ericsson and Huawei are already collaborating.

Moving ahead

With the development of 5G networking, we can anticipate China's telecoms to overcome challenges that include language and cultural barriers.

China Mobile is recognized as the world's leading carrier of 4G networks, with over 863.2 million users in the nation as of June 21, according to data released by the Big 3 Telecoms. China Mobile has pledged to make large-scale investments in 5G to forge ahead.

The goal is to make 5G operational for commercial use by 2020 and for China to lead the field by 2030. China's

Ministry of Industry and Information Technology (MIIT) is the government agency that will introduce regulations and support for 5G in China.

The MIIT will also grant 5G licenses to companies operating in the country.

China Telecom hopes to play a crucial role, the company's spokesperson explained to the Global Times:

"China Telecom has established a united open laboratory for 5G testing and has already started field tests in Beijing, Shanghai and Guangzhou."

NB-IoT innovations

On May 17, China Telecom announced the company had built the world's first and largest Narrow Band IoT (NB-IoT) network, which will set the stage for 5G to go commercial.

The NB-IoT, according to the Global Times, will pave the way for massive IoT capacities and to conduct field tests.

China Mobile plans to move forward on 5G field tests and building networks in China's major cities will be starting this year.

Fu Liang, Beijing-based IT expert, said, "In terms of 5G, China has participated from the very beginning when the market demand surfaced and then to the technologies concept and application."

Beijing had launched IMT-2020 5G promotion group in 2013 to encourage cooperation among China's Big 3 Telecoms along with smartphones manufacturers and research institutes.

The research division of the MIIT released a White Paper on June 13 to identify the three industry groups that are expected to become the biggest beneficiaries of the 5G economy.

The China Academy of Information and Communications Technology forecasts the big winners to be equipment makers, internet-related companies offering 5G services and the Big 3 Telecoms.

China's high hopes

IT analysts Edison Lee and Timothy Chau had written a report to tout China's leadership in the 5G field:

"China is now highly-determined to support global compatibility in 5G. Since high frequencies will likely be officially adopted ... as part of the 5G spectrum ... China will continue to closely study high frequencies for possible future adaption. This will support China's ambition to become a leader in the 5G global supply chain."

Well, if all goes according to plan that's likely to come true. But as in life, there are often surprises, so other countries may emerge as leading players in the 5G game as well.

