



THE DRIVE YOU DEMAND

2020 KEY CONVICTIONS

5G – on the cusp of a new cycle

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Marketing Communication



UNION BANCAIRE PRIVÉE

5G – ON THE CUSP OF A NEW CYCLE

2020 Key Convictions – Equity Thematic

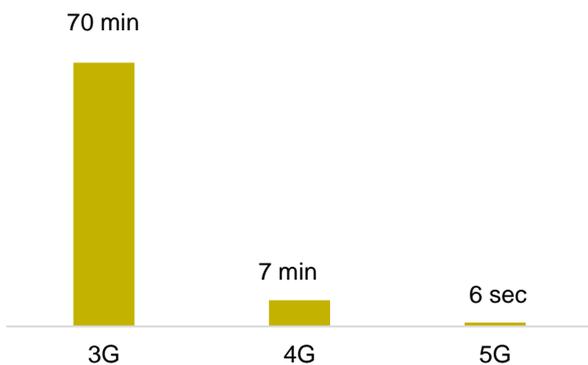
After several years of investments, regulatory implementation and competitive bidding, 5G deployment is finally accelerating. In 2020, we see significant advancements in several geographies, notably in Asia and in the US. What will change with 5G? Thanks to better data transmission, internet at home will be possible through Fixed Wireless Access (FWA) and we expect an explosion of new connected devices.

Key messages

- ◆ 5G deployment accelerates globally in 2020
- ◆ In the next few years, the number of connected devices will explode thanks to a much faster speed of data download
- ◆ We expect a significant increase of data traffic as well as new services

5G is a more transformative technology compared to both 3G and 4G. The number of cellular and Internet of Things connections are expected to reach 3.5bn by 2023 versus 1bn in 2018. 5G will have a 2'500x faster download speed versus LTE. The estimated average amount of time taken to download a HD movie on a 5G network is below 10 seconds. These great technological capacities are expected to generate a 10x growth of smartphone traffic over 2017 to 2023 and this could potentially trigger the emergence of a full set of new services. So far previous wireless cellular technologies were mostly centered on the mobile industry, but this generation will be fundamentally different, allowing connectivity to all type of devices.

Time required for download of a 8GB video using various technologies



Source: Huawei, Goldman Sachs, UBP Advisory

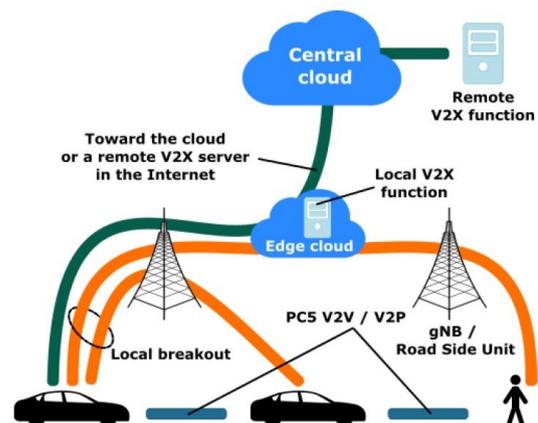
2020 will see 5G adoption rise significantly, and 5G becoming mass market. In Asia, in the US and in Europe, we see a wide range of offering for fast wireless internet access. The 5G opportunity will be divided into several services: internet of things, autonomous car & traffic control, virtual reality, gaming, real time grid control, healthcare monitoring, shopping and immersive communications.

The first service that will be available will be the Fixed Wireless Access (FWA). Indeed 5G technology makes the use of the cellular network for 1Gbps+ home broadband

access a very compelling opportunity for telecom operators, notably in the US, at a lower cost than current offerings. In Europe and Asia, where population density is higher, the FWA should have a less material impact. Goldman Sachs estimates the 5G FWA as a \$75bn market opportunity in 2026.

In the US the 5G deployment is accelerating. In October 2019, Sprint announced that they had expanded to new locations within their existing nine markets, and now cover ~16M people. In December 2019, AT&T deployed low-band 5G in parts of 10 cities and T-Mobile launched nationwide 5G services, which currently reaches more than 200 million people according to the company. Verizon has a service in 31 cities. Europe is lagging in term of deployment, but it is finally starting. In Asia, South Korea has already equipped most of their network. China is also expanding very rapidly. We see 2020 as the take off year for 5G.

Equipment makers (Cisco, Nokia, Ericsson, Huawei, ZTE) may experience a more sustainable investment cycle. Smartphone manufacturers like Apple or Samsung Electronics will benefit from this new generation devices, as we expect the launch of a 5G iPhone this year. Semiconductors manufacturers as NXP, ON semiconductors should also be the key beneficiaries of this upgrade.



Source: The 5G Infrastructure Public Private Partnership

The 5G case for telecom operators might be a bit more complex. Short term the investment needed to deploy 5G might potentially hurt margins. Countries where there is low competition (3 stable players) will have more benefits, thanks to potentially new revenues from innovative products. However, those opportunities won't take place in 2020 in our view. The bull case will take place when cellular vehicle-to-vehicle communication will be implemented.

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