



5G

Bulletin

In this issue of Telelink 5G bulletin we will wrap up news coming from the Mobile World Congress and the anticipated dominance of 5G phones, take a look at one hidden but fierce battle and get a dose of Donald Trump's tweets.

World Mobile Congress 5G Wrap Up

This year's MWC in Barcelona was about the 5G launch and as consumers did not care about the network itself, the blink, blink was focused on the mobile devices.

Phones, Phones, Phones

As expected, major players, sans couple of them, came in Barcelona with a 5G phone announcements. The devices will not be available immediately, but it's all about making the big news.

Apple

Nobody expected any news and there were none - Apple are known to adopt hype technologies, after they become no-hype technologies. So far, they were right not to rush it and most probably this will be the case also with the 5G iPhone. No hurry, the networks are not yet in place.

Samsung



The Koreans were not going to wait for MWC and announced their first 5G phone – Galaxy S10 5G one week earlier. It is expected in Q2 and will be followed with more 5G offerings by the end of the year.

Huawei



The new favorite US target has couple of “firsts” and “mosts” with the Mate X. It is the first 5G phone that brings some excitement due to the cleverly designed foldable screen. It is the first 5G phone out of the first 5G phones to omit 5G from its name. It is the most expensive mobile phone, that is not made out from noble metals or with gems – 2300 Euro.

Motorola (Lenovo)



Motorola have an add-on 5G magnetic back to be attached to their Moto Z3. If you are one of these people who cannot make their mind, this will be your solution – you are on 5G, the next moment you are off 5G.

Google

Just as with Apple, Google will eventually wait until the technology is a bit more mature and there are networks to run the phone on until they incorporate 5G into their Pixel devices.

LG



LG V50 ThinQ 5G was announced at the MWC and will be available in Q2. As an accessory to it you can attach a second display and can sort of pretend you have a foldable phone.

Equipment Vendors Bragging About Contracts

It's a tradition for the big-name vendors to show off the networks they will be building, and this year was no different.

Nokia

Nokia is taking advantage from Huawei's weaker hold after US painted a target on the Chinese company. New contracts announced on MWC are:

- Optus, Australia,
- Rain, South Africa,
- STC, Saudi Arabia.

Ericsson

As with Nokia they are trying to make the maximum from the current market dynamics. New contracts are:

- Etisalat, UAE
- Ooredoo, Qatar
- STC, Saudi Arabia
- US Cellular, USA

Huawei

Huawei are defiant and it looks that even if they took a hit from US actions, they are still contending for world number 1 telco vendor. New contracts:

- Rain, South Africa
- STC, Saudi Arabia
- Sunrise, Switzerland
- VIVA, Bahrain

Samsung

Taking the vacant spot of the third vendor in the USA after the Chinese companies were banned, Samsung announced a new contract with Sprint. As Sprint and T-Mobile are merging, the contract might prove to be a significant asset for the Koreans.

Battles of the 5G Modems

Chipsets and modems are not an interesting topic for the general public, but with Qualcomm blocking iPhone sales around the world, semiconductor vendors are generating more and more news.

The fierce hidden battle of the modems continues with renewed intensity as the respective multi-billion market is expected to grow rapidly.

The biggest name in the mobile devices modems is Qualcomm. They became one of the most critical links in the chain when it comes to mobile communications and very often the introduction of the next generation of mobile services depends namely on the availability of their next generation modem or chipset.

Qualcomm enjoyed quite a high level of comfort for many years as they managed to foresee the importance of their technologies and invested heavily in R&D, which gave them patents on many mobile technologies used today. This is the reason they are able to block iPhone sales in some countries after Apple did not strike a deal with them for modems delivery.

Their comfort was also guaranteed by the inability of other players to read and foresee the mobile market evolution, but this was meant to change when major players like Apple, Huawei and Samsung brought mobile processors and chipsets development in-house.

In the modem field Qualcomm are facing stronger competition from Intel, who abandoned the mobile processors efforts after many failures and focused on modems, MediaTek, Samsung and by Huawei's HiSilicon who are developing their own 5G modems.

Just before MWC, Qualcomm disclosed Snapdragon X55 - a 5G sub-6Ghz and mmWave modem to match Intel's and MediaTek's announcements from 2018 of XMM 8160 5G modem and Helio M70 5G modem respectively. Qualcomm are claiming up to 7 Gbps for download vs Intel's 6 Gbps and MediaTek's 5 Gbps, but these numbers are only theoretical.

The modems will be available in the second half of 2019 with Huawei and Samsung still to announce equivalent chips.

Industry bits

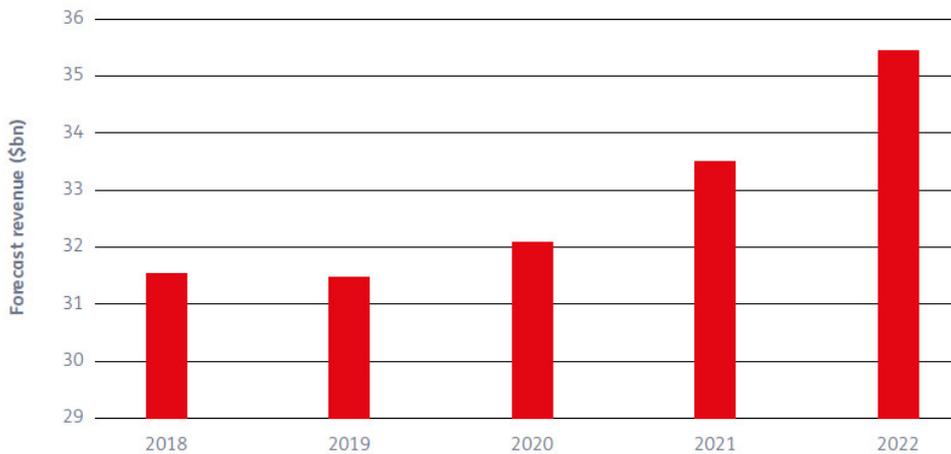
Ericsson is buying Kathrein's antenna business

With Massive MIMO technology being an important part of 5G, the antenna business of Kathrein turned into a delicacy for Ericsson. The financial parameters of the deal were not disclosed. Kathrein antenna and filters business, operated with around 4000 staffmen, cashed in 270M Euro last year without counting the sales to Ericsson.

RAN and AR app revenues forecasted to increase rapidly

The analyst company Ovum are forecasting rapid increase in RAN sales on the back of forthcoming 5G implementations.

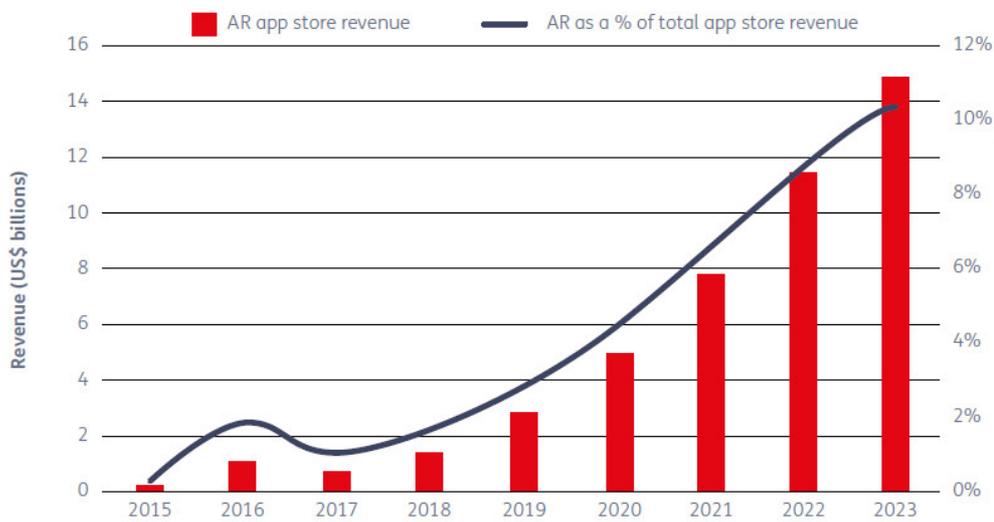
Figure 4: RAN revenue forecast, 2018–22



Source: Ovum

The enhanced network capabilities are expecting to lay the ground also for the rapid increase of AR apps popularity and despite the respective revenue fall in 2017 a steady \$2B growth per year is forecasted after 2019.

AR app store revenue, 2015-23



Trump makes 5G and 6G news

Donald Trump's tweets are constantly making headlines and it was inevitable to get some in the Telco field.

Now he wants **6G** technology as soon as possible in the US. He is a true visionary as proven by the next piece of news from Finland. Maybe that's why AT&T decided to call their 4G service a 5G, so that they can focus on 6G.

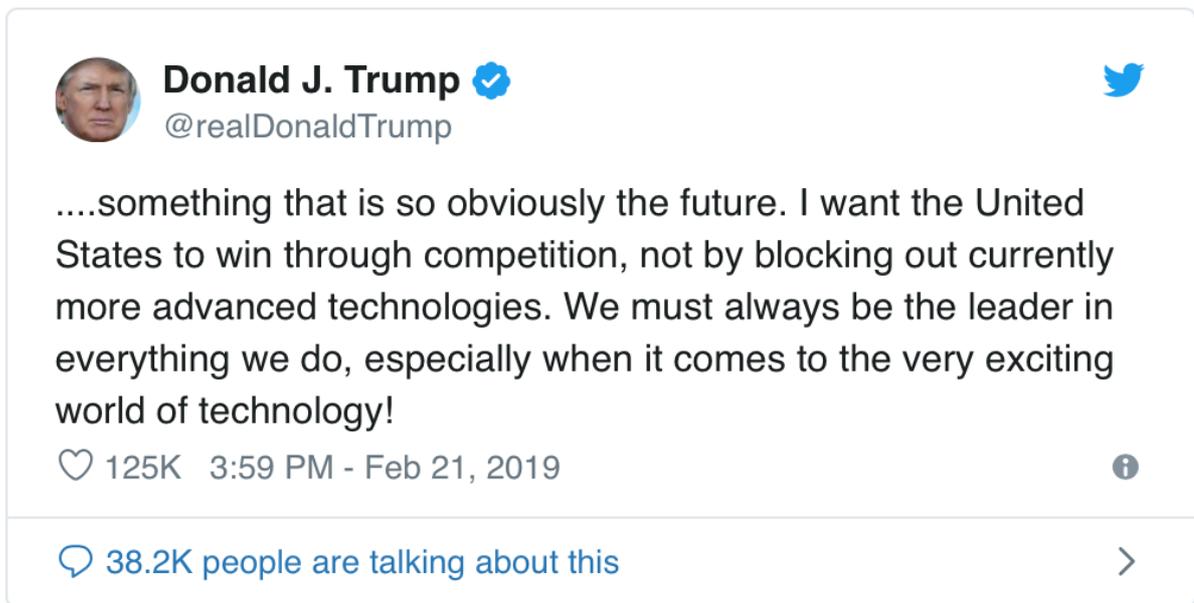


 **Donald J. Trump**  
@realDonaldTrump

I want 5G, and even 6G, technology in the United States as soon as possible. It is far more powerful, faster, and smarter than the current standard. American companies must step up their efforts, or get left behind. There is no reason that we should be lagging behind on.....

 143K  3:55 PM - Feb 21, 2019 

 59.1K people are talking about this 



 **Donald J. Trump**  
@realDonaldTrump

...something that is so obviously the future. I want the United States to win through competition, not by blocking out currently more advanced technologies. We must always be the leader in everything we do, especially when it comes to the very exciting world of technology!

 125K  3:59 PM - Feb 21, 2019 

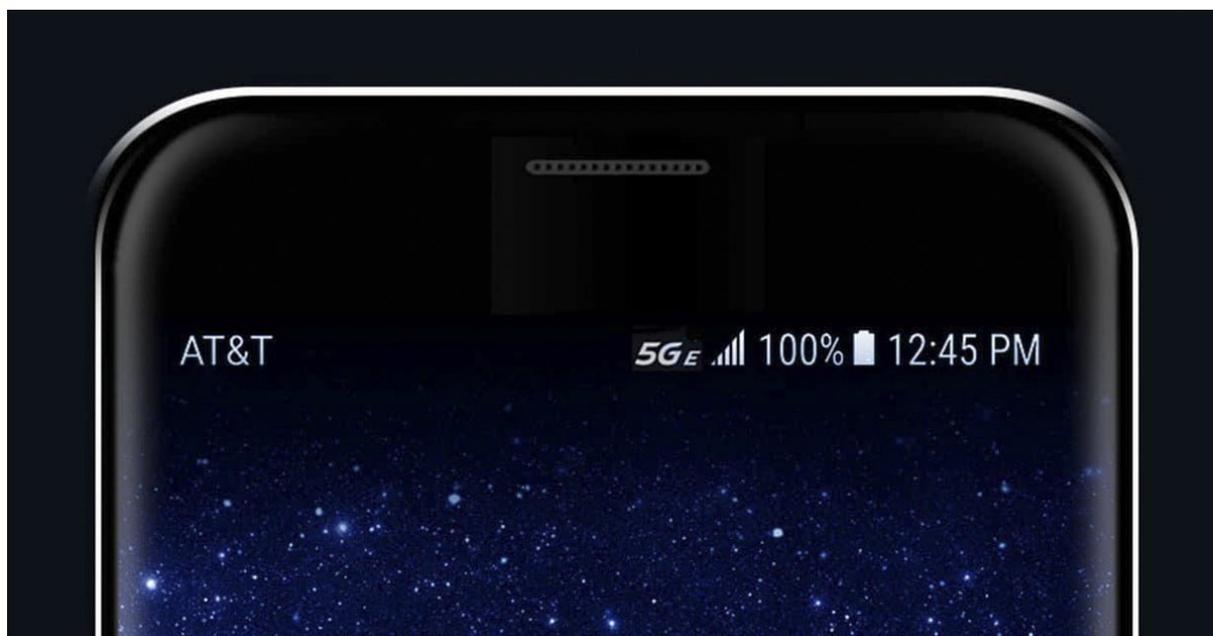
 38.2K people are talking about this 

Finland kicks off a 6G research project

Finland's Oulu University unknowingly proved wrong all the people who ridiculed Trump's 6G tweet. They announced at the MWC the start of a project called 6Genesis with initial 25M Euro state funding aimed at keeping Finland in the 6G elite. The actual 6G technology is expected to take form maybe around 2030.

AT&T decided to call its LTE-Advanced service 5G. The competition is suing them.

The PR battle in the US received a new push with AT&T's decision to boldly call their new LTE-Advanced service a 5G service. They decided to go one step further from the ordinary press buzz and changed iPhone's and Android's network indication from "LTE" to "5GE" in the covered areas.



5GE stands for 5G Evolution and is **definitely not a 5G**.

Sprint put on their Robin Hood costumes and decided to save the public from the vile deception by suing AT&T because "It harms consumers by holding out AT&T's services as more technologically advanced than Sprint's and enticing consumers to switch wireless service providers (or remain AT&T subscribers) under false pretenses".