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The Case for Broadband WiFi

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26. 1. 2015

Last year we were celebrating 15 years of WiFi technologies. In terms of technology, WiFi is still pretty young and will probably see a lot more innovation in the coming years although it has experienced significant growth since the inception of IEEE 802.11n in 2007. Until a few years ago, WiFi was still considered to be more of a niche technology. Due to 2.4 GHz unlicensed spectrum problems, one might even say it was an immature, best-effort access technology. It was nice to have in the office, but it was often slow or the coverage was only available in certain areas. WiFi was used in storage areas and warehouses where there was no wired alternative for network access. A few years later, it is hard to imagine having no WiFi access at work, at home and even while commuting or shopping. We really have become a connected society and WiFi is playing a major role in it. Just think about how many WiFi enabled devices you currently own. If you don't believe in WiFi yet, take a moment and look around you on your way to or from the office. If you still don't believe, go to a concert and compare the number of people with their hands raised to the number of people holding a smartphone or a tablet. You will be seeing a very similar sight no matter where on the globe you are currently located. Granted, maybe not if

you're currently in the middle of desert or near the North Pole, but you are probably wishing there was WiFi there. Case closed.

Due to the ever rising demand for data access and the rapid improvements to IEEE 802.11 standards family, WiFi technologies have been recognized by operators as a valid network access option. Sure, there's always the UMTS alternative, but the data plans are usually more expensive, and today's mobile networks are struggling to handle all the demand for data consumption which frustrates the users and the operators alike. As an additional obstacle, operators are very limited when it comes to setting up new base stations and this limitation is as much connected to cost as to restrictions due to civic works and obtaining permits. It also turns out that even if you add mobile cells, they will only be able to handle the rising data demand for a limited time. When it comes to user data throughput, a LTE base station can hardly compare to the 1,3 Gbps data rates delivered by IEEE 802.11ac. When it comes to deployment time and price, 802.11ac wins hands down.

This doesn't mean that WiFi is a replacement technology for mobile. Mobile technologies still have superior signal coverage properties and the usage of a licensed spectrum makes sure they don't have to deal with too much interference and non-deterministic spectrum properties. But where high data throughput is required, it can be provided by WiFi which makes these technologies complementary. In fact, knowing that users are always on the lookout for WiFi connectivity, WiFi and cellular networks should probably become a part of a same service, both technically and commercially. Most users don't really care about which technology is used anyway. Price sensitive users will always search for cheap options and heavy users will search for high bandwidths. By merging WiFi and cellular networks into a single access service, both customers will get what they want. Not only will that affect the average return per user but it might also decrease churn (customers switching their operator).

At this point, we have the business case, we have the technology to implement it. What about the social factors? According to the Future Agenda – The World in 2020, providing connectivity enables economies to grow. According to the UNESCAP studies, 29% of the world's workforce is

classified as mobile and it contributes to 31% of global GDP. Due to improved mobile access options, there is a 4% productivity improvement in high and medium economies and an 8% productivity improvement in low income economies. Together, that is almost a 2% contribution to the world's GDP. So how does that translate into the tangible world? If farmers in a low income economy suddenly have broadband access to the internet, they can communicate with their buyers and suppliers online without having to sacrifice their precious time for trips to the nearest city. A farmer may procure new equipment without having to make a long trip to the city, which is usually either done with a vehicle over poor transport infrastructure or even on foot. The supplier may not even have the equipment and the trip was made for nothing. If the farmer would be able to communicate with the supplier, it would save time, gas and also enable them to spend more time either doing what they do best or spend more time with the people they hold dear.

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