

ForumEurope

Releasing the potential of Fixed Wireless Access in Europe

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Session 1: What role for FWA in delivering the gigabit society in Europe?

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Global demand for broadband connectivity from both households and enterprises has been strong for several years now. Globally, the fixed broadband market is growing and according to the ITU (2021), fixed broadband subscriptions have increased by five percent annually over the past five years.

The European strategy for the Digital Decade, outlined in the 2030 Digital Compass, sets a very ambitious objective with regards to fixed connectivity: All European households should be offered 1Gbps access by 2030.

That's a clear call for FTTx Deployment acceleration, but also a call for extending and widening FWA reach to subscribers across Europe - if we want this 'Gigabit for all' vision to have it's fair share of chances for success-

Over the last couple of years, I think the public speaking sphere, overwhelmingly discussed the pros and cons of wired vs wireless deployments for Next Generation Networks.

The fact that there is a certain threshold that allows/prohibits FTTx deployment is well communicated and understood. That is a 'subscriber density' related threshold and it does change from country to country but not in a way that would drastically change the norm: densely populated areas go Fiber.

FWA can pick-up, where FTTx is prohibitively expensive, either via 4G, 5G modems going stationary, or via millimeter wave radio/unlicensed-band-using hardware.

These two sentences am afraid distill all that's been discussed up until today, and that's not good enough for servicing our Gigabit societies vision.

So what's next?

I believe what's next is the complex discussion of a) 'hybrid FWA networks' and b) 'smart cities-FWA' integration.

From the technical perspective, most -if not all- FWA challenges narrow down to one problem: 'Line of sight vs non-line of sight' – a problem also known as 'spectrum cost'.

Radio links having (visual) line of sight between the transmitter and the receiver typically provide high speeds and 'low costs'*.

'Low costs' come with an asterisk and practically means:

1. Capability to operate in unlicensed wave bands (60GHz typically)
2. Capability to SHIFT COSTS (costs never magically disappear) from the core radio network deployment phase towards the subscriber activation phase.

This later characteristic replaces the 'impossible' FTTx-in-sparce-populated-areas business plan, with a very convenient and realistic 'pay as you grow' business plan, since adding cost at customer activation phase means that the investor secures a revenue stream first (the customer to be activated), before investing further.

Investing further in this case relates to subsidizing the new subscriber's CPE costs (which is typically expensive), as well as dealing with installation and installation adaptation complexities (like trees growing, buildings rising, heavy wind and weather-over-all induced challenges).

On the other hand, Non-line of sight bands, typically licensed 4G and 5G bands, offer low overall cost on hardware through benefiting from 'mobile world' economies of scale, which allows silicon and other critical component costs to be 'in the few dollars/pc' range while integrating incredible technologies.

The non-line of sight world is dominated by mobile operators for profound reasons (they already have licensed spectrum), while the line-of-sight world is dominated by 'challengers'.

Unless we start evaluating 'hybrid networks', our quest to the FWA world would already have end by what we have already mentioned!

By 'hybrid FWA networks' I mean deployment scenarios using line of sight technologies to interconnect base stations, while relying on 4G/5G for connecting subscribers to the network (the mobile operator's case) OR WiFi (the 'challenger's case) to do so.

Such scenarios will help operators to cut costs in the back-haul and 'challengers' in the access. Both are wins for speeding up deployment and lowering costs for end users so a primary concern for me and every NRA.

What's more to do in this area is to check spectrum auction opportunities in frequency bands sitting in the Line-of-sight/non-line-of-sight limit. Where minor obstacles sitting between the receiver and the transmitter can be 'forgiven', and not causing a link to fail, even temporarily.

That's on top of my study 'to-do-list' for FWA

Also, as mentioned earlier, 'Smart cities-FWA integration' is also a personal interest and concern.

Through a very simple, Low-tech -but very practical example- 'Smart cities-FWA integration' is about addressing problems as the following one:

FWA can do MOST of the things a FWA network needs 'wirelessly', but not ALL!

Powering FWA base stations (and in general 'radio network' side equipment) cannot be done wirelessly.

Simplifying the regulatory/access framework around street lighting poles and allowing access to this humble but critical infrastructure can deliver a decisive win in promoting FWA deployments, both for 'mobile operators' and 'mm-wave challengers' in equal parts.

Getting 1Gbps to everyone across Europe within the next 7 years is a hard goal to go after, but a very inspiring one -definitely a goal worth fighting for- and if we want to give this goal a fair chance of success, FWA absolutely HAS TO be part of the solution. The event today is a great opportunity to share views and communicate the importance of adding FWA to the Digital Compass 2030 mix of tools. Thank you very much for the opportunity to share my views on the matter.