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Panel: Why do we need a Regulation Revolution?

6G: Regulating Innovation

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5G networks deployment progresses fast in many countries and more and more operators around the world provide 5G services. The number of subscribers increases rapidly and the total number of 5G subscriptions was estimated to near 600 million by the end of 2021, fueling expectations that 5G will become the fastest adopted mobile radio technology ever (to reach 3.5 billion 5G subscribers and 60% population by the end of 2026).

5G of course still has a long way to go before it reaches its full potential, but the discussion on 6G has already started. This comes as no surprise as extensive research and development regarding the technical aspects, the use cases and the business models is needed, as well as decisions about standardization and spectrum allocation

6G is a new wireless communication standard in the wider sense. 6G networks will be able to use higher frequencies than 5G networks and provide substantially higher capacity and much lower latency. This will extend the performance of 5G applications. It will also expand the scope of capabilities to support new and innovative applications. 6G I believe will also be the first radio technology that will extensively utilize AI techniques in its Core Network and RAN orchestration (in signal conditioning, power saving and more)

As with 5G evolution the trend for 6G will be towards increased bandwidth, increased coverage, and increased volumes of data. Lessons learned and to be learned from 5G will still be relevant in all key forms: industrial use cases, mmWave coverage and mobility, uplink performance etc.

5G experiences, especially in the use of millimeter-wave frequencies, will play, without a doubt, a key role in our wireless 6G future, so it is critical to make sure today that, when deploying 5G networks we will tend to utilize their potential and will accept the challenge to move beyond the traditional 'high mast' antenna RANs. We need to start thinking in 'hyper-dense' network terms, consider small-cells as the most important paradigm-shift of our decade in radio network planning and embrace it as such.

It is certain that 6G multi-gigabit links will have to utilize frequency bands above 26GHz. 110-170GHz are discussed as we speak! These frequencies don't travel distances so, for the kind of network density that would actually be needed, 'hyper-sense' probably falls 'short' of delivering the scale.

As in early 5G planning days, regulators across the world need to conduct in-depth analysis in order to understand the conditions future implementation of 6G networks will need to face and deal with, and timely identify possible challenges and topics related to this matter. The challenges that we will need to address include, but will not be limited to, work on standards, interoperability, new business models, spectrum availability, coverage, Quality of Service (QoS), sustainability, security and resilience, always keeping in mind that overregulation prevents innovation, especially in the cases of emerging technologies and ecosystems.

As BEREC identified in the case of 5G, that we should NOT RUSH early with regulations, this will probably need to be the case with 6G.

When 5G introduction was at a very early and experimental phase in EU, BEREC understood that it was too early to pinpoint and analyze the regulatory aspects of 5G, so preferred to ‘just’ identify the regulatory aspects that MAY need BEREC’s attention in the future. That approach gave birth to BEREC’s ‘5G radar’ which is practically a tool for identifying developments in the 5G ecosystem that MAY NEED regulatory attention. Currently, BEREC prepares a report on the 5G value chain, capitalizing on its ‘5G radar’ experience.

We recognize that regulators need to be fully aware of the relevant evolutions but in equal terms we recognize that we should avoid promoting regulation at early stages.

As regards 6G, we also expect to face challenges on spectrum allocation, for which our ‘decision calendar’ points to the World Radio Communication Conferences of 2023 and 2027.

Having said the above, decision makers and regulators I believe that should, in the coming years, give a serious thought in the implementation of regulatory sandboxes.

This tool has been used in other sectors but not in the electronic communications field yet. Regulatory sandboxes are practically about avoiding all regulatory restrictions at early stages, with the regulator been very actively involved in monitoring each and every process of a new technology entering a market, in a collaborative manner.

During the anticipation of 6G introduction for which innovation is key, BEREC could consider the use of sandboxes for the issues of spectrum allocation, licensing and the arrangements between market players with the support of the relevant stakeholders.

There is much to tell... But more importantly much to do!

So BEREC and each and every single regulator in the EU, as well as around the world, should roll it’s sleeves up and, while everyone’s attention is on the 5G roll-out, start planning our 6G future -sand boxed or not- to make sure continue promoting always faster/always better telecommunication services for all of us.