

IoT | 5G | VoD

Preparing for the Dawn of 5G – Technical, Commercial and Business Evolution Will Be the Dominant Themes in 2018 for MNOs



Although formal agreement of 5G standards is a work in progress, its already having a significant impact on the mobile industry. That's partly because the industry is preparing to deliver the ambitious targets that have been identified – for example, providing up to 1000x higher wireless area capacity when compared to performance levels achieved in 2010, and saving 90% energy for each service*.

But it's also partly because stakeholders are beginning to explore the possibilities that these new performance levels will unlock. 5G services are expected to provide specific benefits and enable new applications for a wide range of connected applications across many different verticals. It will deliver the connectivity and meet performance requirements for a new class of services that leverage connected devices and machine to machine communications, spanning the Internet of Things (IoT), as well as a vast array of new industrial and automation processes that will be driven by enhanced connectivity.

*) according to 5G-ppp.org

Of course, new IoT capabilities are still under discussion. Indeed, support for IoT in general is slated for inclusion in 3GPP Release 16, due in 2020, and there will be some support for Ultra Reliable Low Latency Communications (URLCC) in the first iteration of 5G standards, Release 15 (R15) in 2018. Despite this and although there will be upside for individual consumers through the delivery of enhanced performance for applications, such as streaming and video on demand (VOD), as well as extended coverage, the primary audience for 5G is likely to be stakeholders in industry sectors, with a clear focus on IoT services and applications. These will capitalise on capabilities such as the ultra-low latency features of R15. There will also be a new cohort of niche service providers to take advantage of emerging network slicing techniques that allow network resources to be secured and performance tuned to meet unique requirements.

These two factors combine to suggest that a number of developments are likely in 2018, which will help to drive and develop the market for 5G services and, in turn, propel investment in the networks to support them.

#1 | 5G will unlock new and more demanding use cases

While today's IoT and connected industrial applications are dominated by low power and low data requirements, evolution to 5G will unlock more demanding use cases, which have more challenging needs in terms of latency and data transfer. Such requirements will go beyond the capabilities of today's real-time applications and will require the transfer of ever-larger data volumes at faster speeds than have been achieved to date.

5G is not only a set of standards for enhanced radio access, it is also built on pillars of virtualisation and a new technology known as network slicing, in which network resources can be requested for a specific use case and with defined performance characteristics. This will require the ability to deliver variable Quality of Service (QoS) and to be supported by Service Level Agreements to ensure that the requested performance levels are delivered.

As a result, even while 5G takes shape, we can expect to early adopters to leverage virtualisation and network slicing in order to meet the needs of use cases, such as emerging smart grids, autonomous vehicles and enhanced content delivery, and to enable the flexibility and performance these will require.

#2 | Growing adoption of existing IoT devices

At the same time, as new IoT applications are enabled by steps towards full 5G, we expect to see growing adoption of existing IoT applications. We predict that there will be significant scale realised in the footprint of consumer and business IoT applications that use newer forms of licensed radio access, such as NB-IoT, which are part of the ongoing iteration of LTE technology towards 5G, as well as increasing adoption of eMTC to enable support for an increasingly diverse range of IoT applications.

Such applications are characterised, first, by low-power requirements, as devices are expected to remain in-situ for many years, and second, by long-range transmission capabilities, as they may be far from radio access transmitters. They will begin to proliferate and a key performance requirement for 5G is the ability to support many millions of such devices, whether in the home, in the field or in specific business locations. As such, IoT will take off and become mainstream – ultimately, 5G will be required to support the expected volume of devices, but the strides that have already been taken along the path to the next generation will support expected growth in the meantime.

#3 | Growing device diversity

We also expect to see growth in the variety of devices that are equipped with radio access technology. These will support licensed radio access, as well as unlicensed technologies that may also need to be accommodated by today's mobile networks, for tasks such as backhaul. As such, the mobile core will also evolve to allow greater flexibility through virtualisation and service management. Mobile network operators (MNOs) will extend their offers to cater for both services that they provide directly and to also support requirements for backhaul, roaming and connectivity needed by other providers who capitalise on unlicensed radio access.

#4 | MNO business model evolution

We have already suggested that a growing range of increasingly specialised vertical applications will emerge, with considerable variation in technical performance requirements. Associated with this trend will be a shift in business processes. Today's MNOs can be expected to make announcements

regarding their capabilities in different verticals and to create offers for different industrial sectors. They will jostle for leadership in verticals they can address directly, as well as forge partnerships with stakeholders from other industries.

2018 will see a flurry of announcements regarding new service offers for sectors such as healthcare, energy, automotive and more, both from MNOs and from existing industry leaders, all of which will be seeking to leverage core competencies and expertise that will leverage new capabilities unlocked by the evolution to 5G. In this context, we expect that those MNOs that make careful selections will gain ground while those that seek to address all use cases may struggle to achieve the differentiation they seek.

#5 | MNOs use their networks to achieve differentiation for quality

Finally, despite the industrial focus driving evolution to 5G, consumers remain a powerful force. MNOs are in the business of delivering mass market service capabilities. By far the greatest source of current traffic in the mobile industry is video – content is king – and MNOs must ensure that they have the best partnerships to meet consumer demands as well as the most optimised network to ensure that they can deliver the best content experience.

We predict that many MNOs will seek to present their network as a differentiator and as a means to enable the best content experience. While any short-term advantage will likely be of short duration (as all will invest to ensure they remain competitive), 2018 can be expected to see increased prominence given to network performance to meet consumer video demand, which will be served by the investments in network optimisation required to support the ultimate migration to the 5G virtualised network that is envisaged.

2018 will see device proliferation, increasing specialisation and continued performance enhancements to meet the needs of new applications and services, as well as to ensure better delivery of today's most popular services. However, it is not only technical evolution that we will encounter. Business evolution is critical and, in parallel with technical changes, MNOs must evolve to position for the dawn of 5G.

Jonas Petersson has over 20 years of experience in the telecommunications industry. He has extensive knowledge of 3GPP/IETF/ITU standards, as well as practical experience of the design, implementation, test and verification of telecom and datacoms solutions. Jonas is an expert in 4G, 5G, VoLTE, VoWiFi, IoT, and IMS. As the Senior Technology Advisor and a Member of the CTO Office at Polystar, Jonas is responsible for the company's 5G product strategy. Jonas holds a Master's degree in Physics.



Jonas Petersson
Polystar

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