

The evolution of mobile networks in Africa

By [Giovanni Chiarelli](#)

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As we move closer to the era of 5G technology, the mobile network industry is gearing up for what this will bring to the technology landscape.



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This new generation technology is expected to unlock the full capabilities of next-generation services such as virtual and augmented reality, ultra-high definition video streaming, artificial intelligence, robotics, automated cars, and the internet of things.

Even though various international standards bodies are finalising the standards for 5G, we continued to work on future proofing and preparing the network by conducting the first 5G trial in Africa with Ericsson at the beginning of 2018 - where we registered speeds of over 20 Gigabytes per second. In May, MTN successfully demonstrated a fixed wireless access (FWA) use case in Africa's first live outdoor 5G trial with an end-to-end Huawei 5G solution in a real-life environment.

“ Though the commercial rollout of this new technology is about two years or more away, there are important lessons that the industry has learnt that will inform future technological developments for the successful deployment of 5G in the not so distant future. ”

Firstly, the road to 5G has many steps that operators need to put in place in order to ensure their networks are 5G ready.

As 5G technology continues to evolve, so does our familiarity with it.



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One of the biggest misconceptions about 5G is that people think you can simply flick a switch and turn your 3G and 4G networks into a 5G network.

“ 5G is an evolution network that requires multiple changes in network architecture, from the core, radio, transmission network to the antennas, terminals and data centres. This is one of the key lessons that we have learnt during the 5G pilots. ”

The pilots have provided infrastructure vendors like Ericsson and Huawei to advance from planning and research to collaborative tests with the mobile network operators to ensure that their technology works in a real-life setting.

It also provided us with the opportunity to determine what the necessary changes are that we need to make, and what the maximum that we can accomplish is in order to start building our plants to conduct trials. It was exciting to achieve speeds of multiple gigabytes per second.

A glimpse of what the future holds

The 5G trials have demonstrated the capability of this new technology while giving customers a glimpse of what the future holds showcasing the next generation of applications for consumer and enterprise customers.

Some local observers have dismissed the 5G hype, pointing out that the ecosystem is not ready to support the uptake of this technology.

Since the first trial was conducted, the industry has seen a huge surge in the development of the 5G ecosystem.



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The ecosystem that we were predicting to be in place by 2020 has already seen an acceleration in the past few months since the first trial we successfully conducted. This has generated an appetite for this technology, and we expect to see noticeable progress after the Huawei trial.

Industry expectations

Industry expectations are that the standards for 5G will be finalised before the end of the year, and the first 5G premise routers will be available in the market in the first half of 2019, with the potential for devices to be introduced by the second half of 2019.

5G will require large amounts of additional spectrum made available during the rollout phase. This would ideally be within the bands above 1GHz during the initial phase of rollout, and then a layer below the 1GHz during the second and later phases of deployment to cater for coverage requirements.

“ The future commercial rollout of 5G technology will not render 2 and 3G technologies obsolete, as the realities of the market in Africa have shown that millions of customers are still using 2 and 3G handsets. ”

We are seeing substantial growth of 4G penetration in the major cities where we operate such as Johannesburg, Lagos, Accra, and Tehran. We are already making plans for massive MIMO technology to increase speeds of 4G.

What is really pushing the adoption of these technologies

One of the lessons learned is while we have seen an incremental uptake of new technologies when they first are introduced, it is the introduction of new applications that support the technology that push the adoption of these technologies.

We didn't expect to be profitable on the second day of 3G rollout, we had to put the investment in place and create an enabling network that allows the applications to develop and prosper. We expect to see a similar development in the 5G life cycle. MTN will continue to work with its partners to make the 5G devices more affordable.



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Our Dual Data strategy is underpinned by the fact that new generation technologies such as 5G are not for everyone. We will strategically grow our 4G footprint and, where feasible, 5G coverage in strategic locations. In addition, we will extend and improve 3G coverage in other areas.

Availability of spectrum remains an obstacle

The availability of spectrum remains an obstacle to the commercial deployment of 5G. The South African government has outlined its plans to shake up the previous policy framework for spectrum allocation in favour of a wholesale open access network (WOAN) model, which will act as a public-private sector owned and managed consortium.

Various players in the industry, we included, have opposed the proposed WOAN in its current format, saying it will lead to a slowdown in capital investment in mobile networks, in turn degrading the service and quality of the networks.

We continue to engage with the regulator on this matter and hope that the hybrid model we have proposed offers a middle ground and is in the best interests of the sustainability and growth of the sector.

ABOUT THE AUTHOR

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