

DELMEC

Telecoms Technology Evolution and its Impacts on Macrocell Assets in SSA

WHITE PAPER

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Introduction

It has been reported that Africa had over 13 million new mobile-only subscribers in 2003, increasing to 477 million in 2019. This is a feat considering that the Telecommunication Development Bureau listed a similar figure for both fixed line and mobile subscribers in 1995. The Sub-Saharan Africa (SSA) market is among the fastest-growing markets with a compound annual growth rate of 4.6%, with the Global System for Mobile Communications (GSMA) forecasting an additional 167 million subscribers by 2025. The growth is mainly due to the current demographic in Africa, with New Security Beat pointing out that over 50% of the population in the SSA region are younger than 25.5 years of age. The younger demographic influences this growth rate and will see a major dependency on connections.

Advances in technology affect every industry, and this is particularly true of the telecommunications field. The pace of evolution leads to difficulties when planning long-term outlooks for an investment. In an article by the GSMA in 2019, the writers emphasise that the lack of rural connectivity in the SSA region is still a major factor. The article states that over 750 million people globally are still not covered by a 3G connection or higher – this is otherwise known as the “coverage gap”. Out of that number, SSA is home to 41% of individuals globally without a 3G or even 4G connection. These statistics reduce the impact of technology evolution in this area, proving that SSA may still need to close the coverage gap for the existing, or even previous technologies before the latest tech is even considered. Figure 1 demonstrates the extent to the gap that exists. The white paper will explore the potential of a straight leap into 5G.

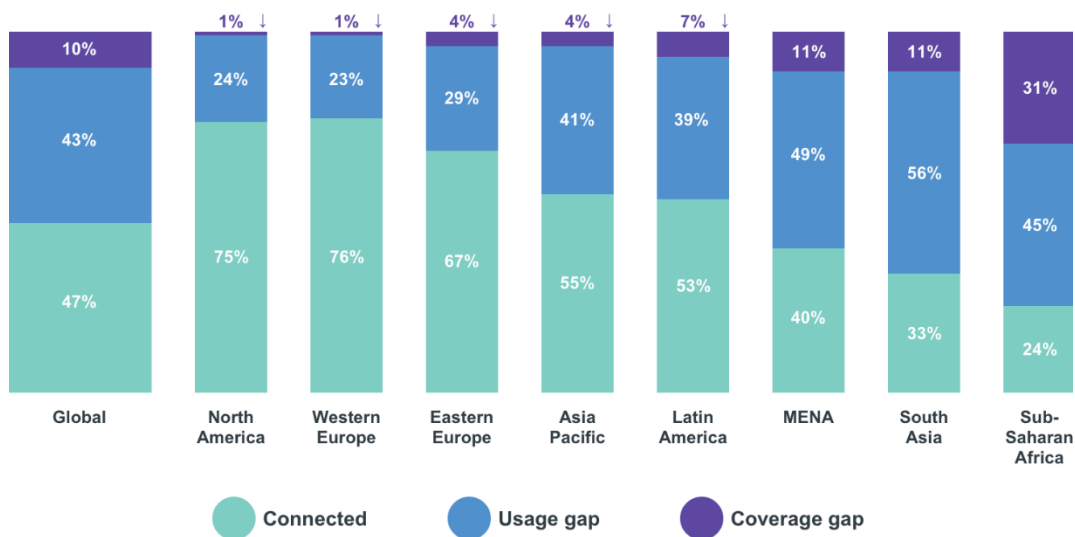
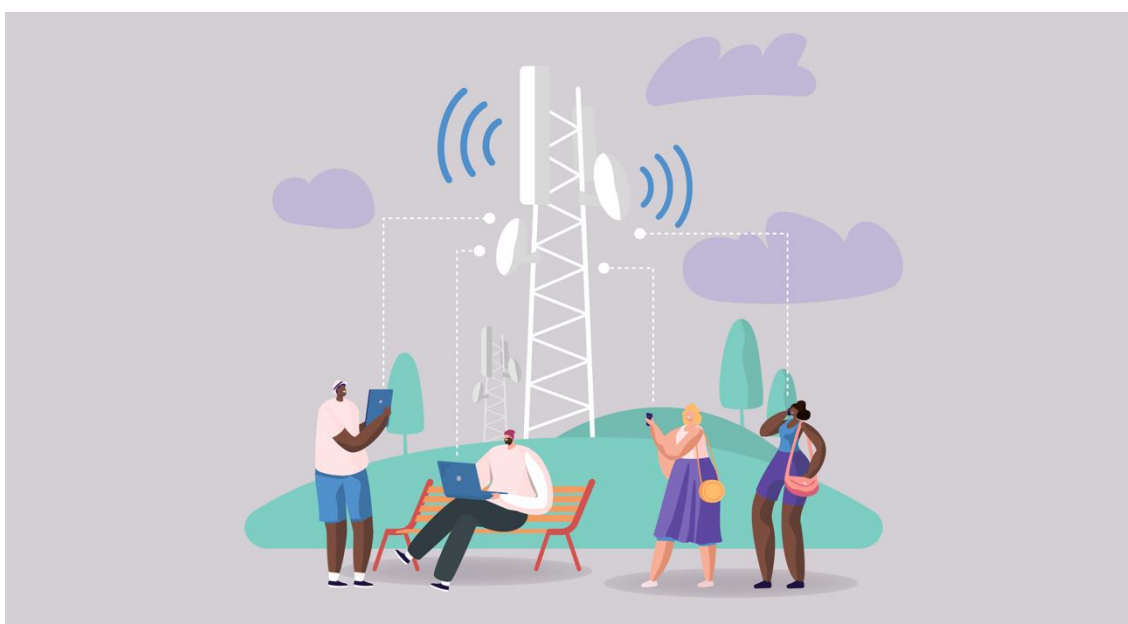


Figure 1: Global Mobile Broadband Coverage Gap (GSMA, 2019)

Challenge to Network Deployment in SSA

This issue is exacerbated by the commercial aspects of network deployment in these regions. A 2019 report from GSMA discusses the increased costs, lower revenues and overall logistical complexities in deploying to these remote regions. It states that the average revenues received can be at least 10 times lower than a typical urban setting. For the population in the coverage gap to first experience data coverage of 3G and above, and then receive newer technology options, it must find innovative ways to deploy to these regions. This has become a pressing concern as traditional work patterns evolve; a recent study suggests that 53% of South Africans prefer a job that allows remote/home working. This is problematic for two reasons: operators will be reluctant to deploy as the payback period is prolonged, while TowerCos are also hesitant due to the lack of demand for hosting on their sites.



A 2019 article by Heath Muchena also discusses the challenge of rural deployment to technology evolution and uptake in these regions. Mr Muchena asserts that due to the costs of deploying the network, 5G will not become widespread for another four to five years. The double impact of new technologies often centres on who will eventually foot the bill. If MNOs are planning on deploying 5G – or even 4G in some instances – they will look to push the charges onto the consumer. To put this issue into perspective, in a report published by the United Nations in 2019, more than 40% of the SSA population are living on \$1.90 a day, with the total number of extremely poor people significantly higher than that of two decades ago. The idea of pushing 5G charges onto the consumer in such circumstances – particularly with a lack of demand for the service – would seem illogical.

Network Regulation Required

It's anticipated that the demand for TowerCos to provide infrastructure to host 5G will be low to non-existent, with the target market demanding 3G at best. Muchena's article points out that there will be a need for denser mast networks to host 5G. This statement is strengthened by the fact that 5G networks will be 8-10 times as dense as previous technologies, resulting in a need for equipment to be placed higher. For TowerCos focusing on a macro cell perspective, higher equipment means more revenue and an overall need for larger structures.

In line with any new network advancement, regulation needs to be developed to maintain control. Currently only a few African governments have developed regulations to handle this technology, including establishing spectrum allocation rules. Although the lack of immediate need will further delay any implementation of these regulations, if SSA wants to compete globally, a framework of rules needs to be established. Muchena captures the need and technology drawbacks, but refrains from discussing the lack of infrastructure to host this technology, such as power and network reliability. Realistically however, MNOs and TowerCos will consider these factors when reviewing a 5G roll-out.



Government and Investor Cooperation

A 2018 report by CSIR and Ericsson reviews the impact and importance of 5G regulations in detail. While governments have a duty to develop these regulations, they must also promote investment in this area. Due to the various unknowns inherent in this technology, governments need to review it on a regular basis as the network enhances and technological understanding increases. To encourage increased investment in this area, governments need to consider reforms to the overall telecoms legislation, while also lowering the cost of infrastructure deployment. This element alone is an attractive benefit to TowerCos. The report states that governments need to work closely with key industry players to maximise the commercial case for rapid and widespread deployment. The parties involved in the development of these regulations will also be a major driver here. A 2018 article by Bauer and Bohlin highlights the importance of allowing innovation in the spectrum and not to over-regulate the sector. When the future of 5G requires innovation to promote investment, governments must allow industry leaders to give their input.

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The Future of 5G in SSA

In conclusion, there are two major viewpoints on the future of 5G technology and its overall requirement in SSA. On one hand, in order to build a 5G network, MNOs and TowerCos must invest in deployment to rural areas to aid the popularity of 5G. The benefits of this include a need for a denser network and more structures, as highlighted by Muchena. However, the commercial aspects are currently out of reach for a firm to invest. Alternatively, the MNO's and TowerCo's can focus on where the revenue is, prolonging the need for macrocell sites. This leaves the market exposed to a competitor taking the decision to deploy to these areas at a lower cost and increasing the popularity of 5G.

Further Reading

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