The road to 5G in Africa: navigating investment and value creation

INSIGHT SPOTLIGHT

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The journey to 5G has started in Africa and is gathering pace across the region. There are now commercial 5G networks in 13 countries, while operators and other ecosystem players in many more countries expect commercial 5G to be available by 2025. Africa's approach to 5G needs to account for the current connectivity landscape and unique market features that could affect 5G rollout and adoption. 5G network ecosystem players in the region must find ways to deliver cost-effective and efficient 5G networks with an implementation strategy that balances investment and value creation.

Analysis

Assessing Africa's readiness for 5G

Any assessment of Africa's readiness for 5G needs to consider various market indicators that could impact rollout and adoption. For example, 4G was already the dominant technology in most other markets by the time 5G arrived. However, in Africa, legacy networks (2G and 3G) remain dominant, with 4G accounting for less than 25% of total connections in 2022.

Spectrum availability is another important factor. As of December 2022, only seven countries (Angola, Kenya, Mauritius, Nigeria, South Africa, Tanzania and Zambia) had completed 5G spectrum assignments. Slow progress with assignments can delay network rollout, and is particularly the case in North Africa, where countries risk falling behind regional and global peers on 5G development due to the slow pace of 5G spectrum assignment.

The case for 5G in Africa

Despite the challenging scenario in Africa, 5G is set to be a key part of the connectivity landscape, enabling the following benefits:

- **Enhanced connectivity in homes and enterprises –** 5G FWA will be a leading use case for 5G in Africa; a third of 5G launches include a 5G FWA offering.
- **Digital transformation of enterprises –** 5G can bring significant improvements to existing and new business operations.
- **Access to new services –** Around 60% of Africa's population is under the age of 25. For these digital natives, 5G will be key to accessing new digital services, such as metaverse applications.
- **Tech innovation –** Africa's tech ecosystem will utilise the key attributes of 5G, such as low latency and high device density, to develop new locally relevant solutions.

Preparing for 5G in Africa

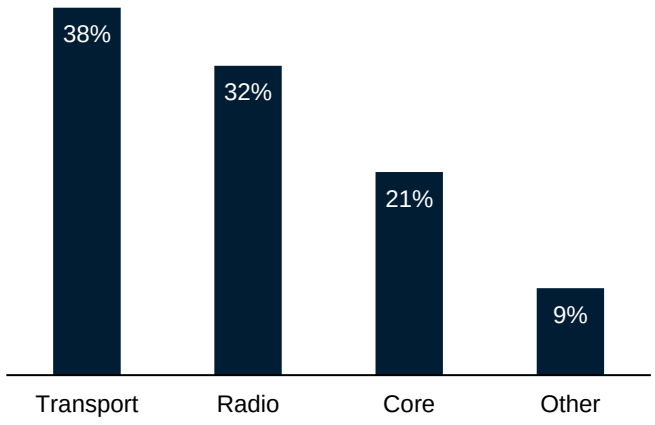
The rollout of 5G in Africa will likely take a phased approach, with an initial focus on urban centres, industrial locations and other areas of high demand. This allows operators to roll out 5G at a sustainable pace and progressively develop the business case for more widespread rollout. It also allows operators to maintain their focus on increasing 4G adoption over the near term, especially as there are significant returns still to be gained from 4G investments. Operators in Africa have invested nearly $45 billion in capex – mostly on 4G networks – over the last five years.

In the coming years, operators will progressively increase investments in 5G as they prepare for rollout. According to a GSMA Intelligence survey, 87% of operators have started upgrading and preparing their networks for 5G. As 5G momentum builds across the region, success factors will include a pro-investment, pro-innovation environment to support cost-effective network rollout, and the development of innovative use cases to stimulate demand.

Source: GSMA Intelligence

Main focus areas for 5G preparation

If you have started preparing/upgrading your network for 5G, which part(s) of the network have so far received attention?
Percentage of respondents



Implications

Mobile operators

- **Take a multi-year view** – The network transformation required to reap the full benefits of 5G will mean a multi-year journey for operators, but the groundwork needs to be done now. This highlights the need to take a medium- to long-term view when building partnerships with suppliers. For example, MTN Uganda is working with Huawei to integrate core network elements into a single cloud network over the next five years.
- **Make network automation a priority** – The transition to new architectures (such as cloud-based networks) that often comes with 5G investments presents an opportunity for operators to increase their level of network and service automation and drive opex savings. The need to replace manual network operations will only grow in importance with the added complexity introduced by 5G networks.
- **Seize the FWA opportunity** – The immediate opportunity for 5G is to use FWA to bridge the gap for enhanced broadband connectivity for homes and enterprises, both large and small. Increased demand for enhanced connectivity or an identified enterprise need in a market are credible triggers for 5G rollout.

Network equipment vendors

- **Integrate 5G within single RAN solutions** – The slow pace of migration from legacy networks in Africa restricts opportunities to shut down 2G and 3G networks in the near term. Network vendors can provide multi-generational RAN solutions, allowing operators to run 2G, 3G, 4G and 5G on the same radio, helping them balance legacy and future network requirements. This can generate opex savings for operators and reduce energy usage.
- **Build sustainability into the technology roadmap** – The network accounts for around 90% of electricity use for an average operator (the rest being fleets, property and travel). To help operators lower energy use, network equipment vendors should use 5G equipment upgrades to deliver greener products for the RAN (e.g. AI-driven sleep state), core and data centres (e.g. liquid cooling).
- **Promote E-band benefits** – According to a GSMA Intelligence survey, wireless backhaul accounts for nearly 60% of the backhaul mix in Africa. While investments in fibre will increase, wireless backhaul will continue to account for a significant share of backhaul infrastructure by 2030. E-band (71–86 GHz) solutions for mobile backhaul will be particularly important, due to the large channel sizes available in the band, making it a cost-effective way to meet the backhaul capacity requirements of cell sites in traffic hotspots.

Regulators

- **Provide timely access to the right amount of spectrum** – Initially, regulators should aim to make available 100 MHz of contiguous spectrum per operator in prime 5G mid-bands (e.g. 3.5 GHz). Lower bands (sub-1 GHz) are also required to provide wide-area capacity and ensure that 5G reaches everyone. Beyond spectrum availability, the cost of spectrum also has a major impact. Governments and regulators should assign 5G spectrum to support their digital connectivity goals rather than as a means of maximising state revenues.
- **Consider 5G backhaul needs** – Policymakers should make additional bands available and support wider bandwidths in existing bands. Measures should also be taken to ensure licences are affordable and designed effectively. In the near term, the E-band will be most important, especially to support initial 5G growth, but the W-band (92–114 GHz) and D-band (130–175 GHz) will be vital to scale capacity in subsequent years.
- **Enable quick and cost-effective network rollout** – Policymakers are encouraged to simplify planning procedures and regulations for site acquisition, co-location and upgrades to base stations. It is also important to provide operators access and rights of way to public facilities for antenna siting and fibre deployment, according to reasonable terms and conditions.

Related reading

5G in Africa: realising the potential

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