chapter 9 Country by country

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Wireless communications have enabled 100s of millions of Africans to connect to the internet so that they can reap the benefits of today's digital economy. However, more needs to be done. Africa is arguably the most diverse continent on the planet, with a plethora of different cultures, religions, tribes and customs. That means countries have different priorities, ways of working and deliver projects at different speeds.

With that in mind, we at BuddeComm, a leading research and analysis firm, have partnered with Kadium to supply their readers with an in-depth look at the 54 nations that make up the world's second largest continent by land mass.

Numerous countries in Africa form key anchors for international submarine cables, which run across the Pacific Ocean, the Mediterranean, and the Indian Ocean. Landing points provide the connectivity for a growing number of terrestrial cables which cross the continent. Liquid Intelligent Technologies manages a direct terrestrial fibre link connecting the East and West coasts of Africa, running from Muanda in the DRC via Zaire to Tanzania, where it connects to the SEAS, EASSy, and SEACOM submarine cables. There are also links to LIT's 'One Africa' network, which now runs to some 75,000km.

Other regional loop networks serve groups of countries, such as those in the Sahal. As this infrastructure expands, it is continually increasing the capacity available to ISPs, thus encouraging the downward trend in costs for end-users, and facilitating the development of digital economies. The infrastructure is crucial to providing backhaul for mobile networks, which account for most voice connections and data traffic.

Specifically in this new chapter entitled Country by Country, BuddeComm's team will take a close look at what's going on in six countries - Angola, Kenya, Libya, Morocco, Tanzania and Zambia. To begin here are their mobile subscriber figures into 2022:

Table 1 – Growth in the number of mobile subscribers in select countries (million) – 2020 – 2022

Year	Tanzania	Libya	Zambia	Morocco	Angola	Kenya
2020	49.42	5.43	19.10	49.42	14.64	61.41
2021 (e)	52.88	4.88	19.96	52.88	14.31	67.55
2022 (f)	55.79	4.99	21.08	55.79	14.43	71.94

Source: BuddeComm

Tanzania

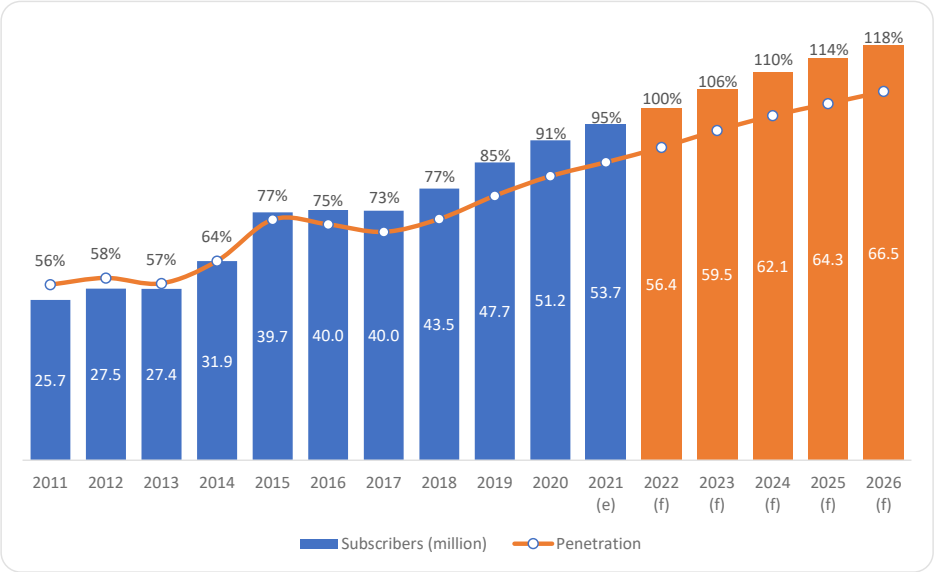
Tanzania's telecom sector has seen some considerable changes in recent years. Tigo Tanzania completed its merger with Zantel in late 2019, and the merged entity was sold by its parent company MIC in April 2021 as it sought to focus on its operations in Latin America.

The government has aimed to increase broadband penetration by adopting a range of measures, including the reduction in VAT charged on the sale of smartphones and other devices, and reductions in the cost of data. Public opposition to a controversial tax on m-money transactions forced the government in late 2021 to reduce these charges by 30%.

The MNOs are developing revenue growth from mobile data, m-money, and m-banking services, and to this end they have invested in network upgrades to support increased data traffic, and promote customer satisfaction through improved quality of service.

The landing of the international submarine cables some years ago revolutionised the market, which up to that point had entirely depended on expensive satellite connections. LIT's recently completed terrestrial cable network has a key terminus at Dar es Salaam linking to three submarine cables. In parallel, the government is completing a national fibre backbone network, having signed an agreement by which the incumbent telco TTC can make use of the infrastructure of the national electric supply company Tanesco, and so extend broadband availability to 94% of the country. ■

***Chart 1** – Growth in the number of mobile subscribers and penetration – 2011 – 2026*



Source: BuddeComm based on regulator data

Libya

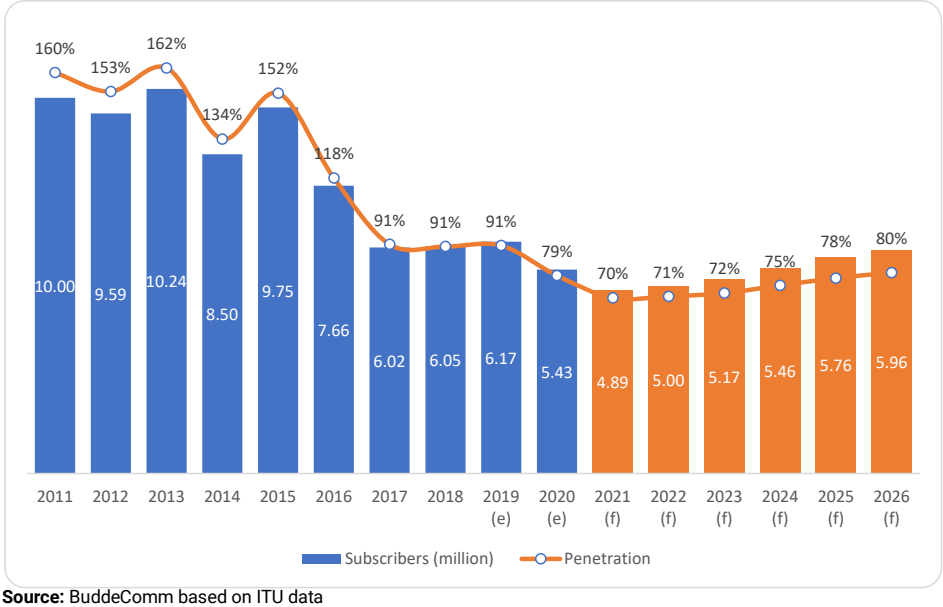
During the last few years Libya has struggled to rebuild its economy and infrastructure, much of which was destroyed or stolen during periods of civil war or fighting between opposing factions. Reconstruction efforts were stymied, with two opposing administrations lacking consensus or the ability to rebuild on a national scale. However, some change is anticipated following the formation of a UN-brokered Government of National Unity in March 2021, though this was an interim measure pending the anticipated presidential and legislative elections set for late December 2021.

There has nevertheless been some recent progress made in rebuilding telecom networks. The MNOs in particular have cooperated to extend the reach of LTE services in the south of the country.

The government-owned telco LPTIC has been instrumental in this rebuilding, having developed a working relationship with US companies for the first time in many years. Its subsidiary Hatif Libya in mid-2021 contracted the US-firm Infinera to provide an optical transport network to unserved areas of the country, and to improve service quality to existing customers.

In itself, this shows a positive response to calls from LPTIC for governments and the private sector to invest in the country's telecom infrastructure. Financial, technical, and regulatory assistance has been solicited from a range of countries, including the US, the UK, Italy, Algeria, and Egypt. Other services and cooperation have been offered in relation to developing digital infrastructure and transformation, and to creating a workable legal framework for the ICT and telecom sectors. ■

***Chart 2** – Growth in the number of mobile subscribers and penetration – 2011 – 2026*



Source: BuddeComm based on ITU data

Zambia

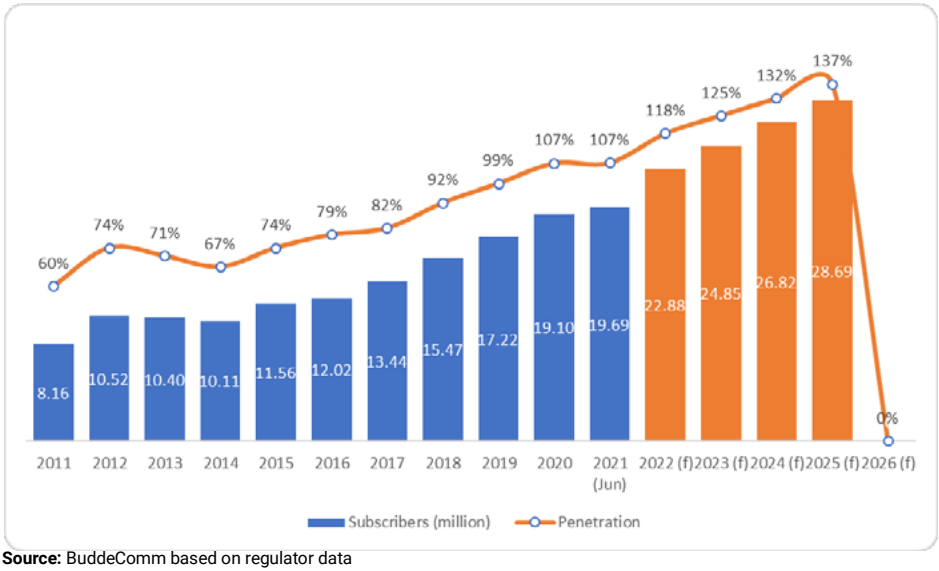
Following elections held in August 2021, the new government immediately established a Ministry of Technology and Science to promote the use of ICT in developing economic growth and social inclusion. This focus on ICT, and on telecoms in particular, has been central to government strategies for some years.

As part of the Smart Zambia initiative, investment has been made in data centres, a computer assembly plant, ICT training centres, and a Smart Education program. These efforts have been combined with the extension of broadband access and improved connectivity to international submarine cables. In turn, this has resulted in a considerable reduction in fixed-line and mobile access pricing for end-users.

Mobile network operators continue to invest in 3G and LTE-based services, while the government has also contracted to upgrade the state-owned mobile infrastructure for 5G services. Delays in holding spectrum auctions have held back the development of 5G thus far. However, in mid-2021 the regulator completed a consultation of auctioning low, medium, and high band spectrum for 5G use, aiming to provide sufficient spectrum to meet the anticipated increase in data traffic in coming years. ■

"Mobile network operators continue to invest in 3G and LTE-based services, while the government has also contracted to upgrade the state-owned mobile infrastructure for 5G services"

Chart 3 *– Growth in the number of active mobile subscribers and penetration – 2011 – 2026*



Source: BuddeComm based on regulator data

Morocco

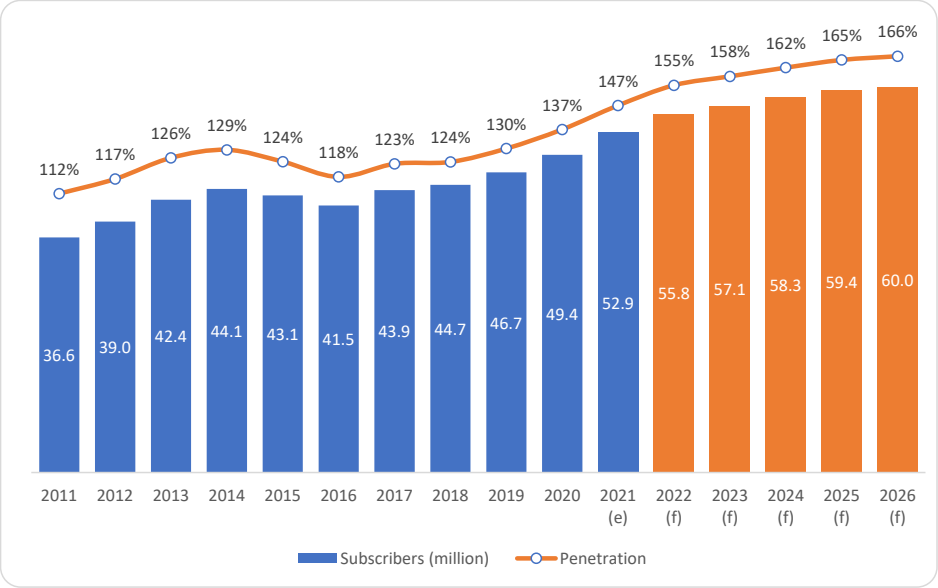
Morocco has one of the more advanced telecom sectors in Africa. It has been supported by the government's Maroc Digital 2020 strategy (which encourages the development of a digital economy) and the National Broadband Plan (which aims to provide the entire population with fixed or mobile broadband by the end of 2022).

The extension of mobile broadband services has gone far to improving internet access, which accounts for 93% of all internet connections in the country. If the government succeeds in achieving its universal broadband goal by 2022, it will be largely thanks to the widespread coverage of LTE networks.

Most fixed broadband connections in Morocco are via DSL, a segment of the market that has long been dominated by the incumbent Maroc Telecom but which, at the same time, has been restricted by the limited reach of the national copper-based network, which only covers about 20% of the population. The number of fibre broadband connections grew almost 80% in 2020, but the technology is at a relatively nascent stage in Morocco, accounting for less than one% of all connections. ■

"If the government succeeds in achieving its universal broadband goal by 2022, it will be largely thanks to the widespread coverage of LTE networks"

Chart 4 *– Growth in the number of mobile subscribers and penetration rate – 2011 – 2026*



Source: BuddeComm based on regulator data

Angola

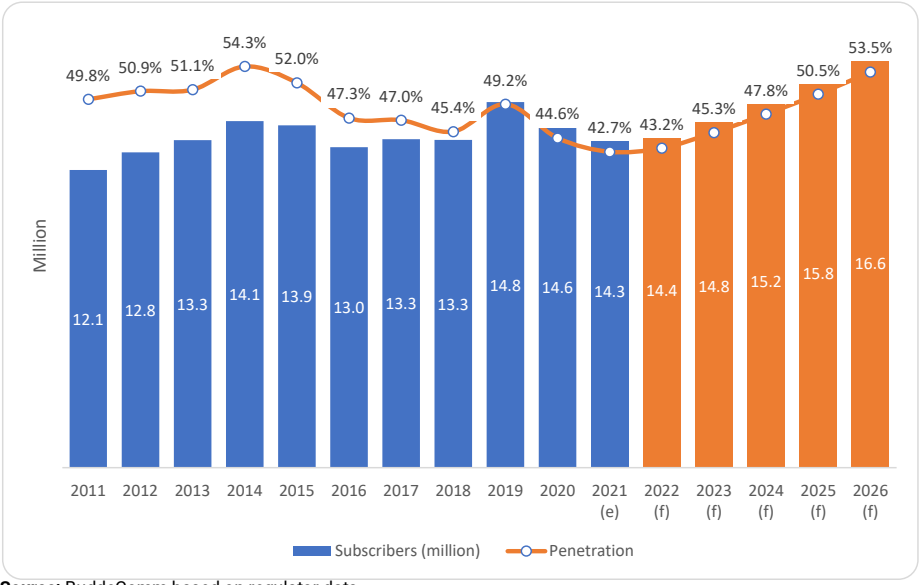
Angola's telecom sector in recent years has benefited from political stability, which has encouraged foreign investment. The government and regulator have also set in train mechanisms to open up the sector to new competitors, with Africell having secured a universal licence and in so doing becoming the country's fourth MNO.

The MNOs were slow to develop LTE services, instead relying on their GSM and 3G network capabilities. Angola Telecom did not launch LTE services until mid-2018. This tardiness was partly due to the relatively high cost of LTE-capable handsets, which continues to discourage users from upgrading from GSM and 3G. As a result, there has been slow progress in LTE network development, with only a small proportion of the country covered by network infrastructure.

Despite the evident remaining usefulness of LTE and 3G in relation to current data demands, there has been some progress made with 5G. The Ministry of Telecommunications in early 2021 set up a 5G hub to assess 5G user cases, while Unitel and the new MNO Africell since mid-2021 have contracted vendors to provide 5G-ready transmission networks.

The government has also continued to develop telecom infrastructure to help diversify the country's economy and lessen its dependence on offshore crude oil production, which accounts for almost all exports and up to 80% of tax revenue. By extending and upgrading telecom networks the government expects businesses to become more efficient, and for e-commerce to become a more prominent feature of economic growth. In addition, networks will facilitate rural access to education and health care. However, there is much progress to be made if the country is to improve the business climate and attract investors. ■

Chart 5 *– Growth in the number of mobile subscribers and penetration – 2011 – 2026*



Source: BuddeComm based on regulator data

Kenya

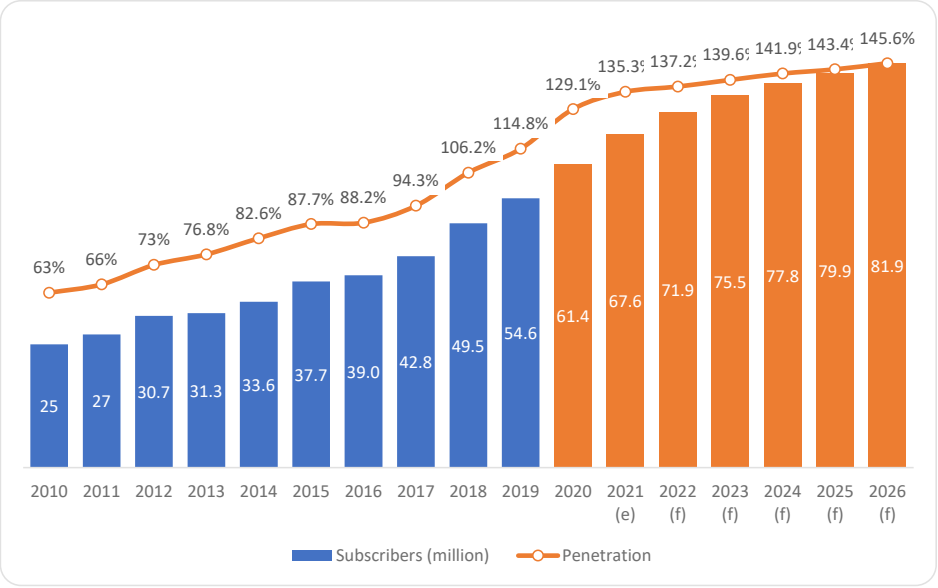
Kenya's telecom market continues to undergo considerable changes, fostered by increased competition, improved international connectivity, and rapid developments in the mobile market. The landing of submarine cables in recent years has dramatically reduced the cost of phone calls and internet access, allowing internet services to be affordable to a far greater proportion of the population. In parallel, the sector's regulator has reduced interconnection tariffs and implemented a range of regulations aimed at developing further competition.

The incumbent telco has struggled to make headway in this market, prompting a reorganisation in 2018 which included a sale and leaseback arrangement affecting its mobile tower portfolio. Competition authorities approved the acquisition of Telkom Kenya by Airtel Kenya, hoping that the merged operator would provide a greater challenge to the market dominance of Safaricom, but the merger was cancelled in August 2020.

Numerous competitors are rolling out national and metropolitan fibre backbone networks and wireless access networks to deliver services to population centres across the country. Several fibre infrastructure sharing agreements have been forged, and as a result the number of fibre broadband connections has increased sharply, including a 49% increase in 2020, year-on-year, though this slowed to a 10% increase in the first six months of 2021.

Much of the progress made in the broadband segment has been due to the government's revised national broadband strategy, updated with goals through to 2030. The strategy is largely dependent on mobile broadband platforms based on LTE and 5G. ■

***Chart 6** – Growth in the number of mobile subscribers and penetration – 2011 – 2026*



Source: BuddeComm based on regulator data