# Draft Final report

## Data Sub-Segment Market Review

This report is a draft for the Communications Authority and ICT Authority and is still subject to consultation and review based on stakeholder engagement


Prepared by:

Sha'ista Goga, Ryan Hawthorne, Rahma Leuner, Stacey Muzanya, Gokce Idiman, Matthew Russell, Kara Ranwell and Malaika Mamabolo (Acacia Economics)
Emanuel Tarus, Paul Kioko (Tilil)
Kerron Edmunson (Consultant)



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Contact person: Sha'ista Goga

Tel: +27 79 963 5684

Email: shaista@acaciaeconomics.com

Physical address: Workshop17, The Bank, 24 Cradock Avenue, Rosebank, 2196, South Africa

Contact person: Emmanuel Tarus

Tel: +254 714 555 111

Email: echeburet@tililtech.com

Physical address: 4th Floor, Rhapta Heights, Raphta Road, Westlands, Nairobi, Kenya

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# List of acronyms

| | |
|---|---|
| GB | Gigabyte |
| GSM | Global System for Mobile communications |
| HHI | Herfindahl Hirshman Index |
| IOT | Internet of Things |
| ICT | Information and Communications Technology |
| IP | Internet Protocol |
| KICA | Kenya Information and Communications Act |
| LTE | Long-Term Evolution |
| MB | Megabyte |

| | |
|---|---|
| Mbps | Megabits per second |
| MNO | Mobile Network Operators |
| MOCN | Multi-Operator Core Network |
| MORAN | Multi-Operator Radio Access Network |
| MTR | Mobile Termination Rate |
| MVNO | Mobile Virtual Network Operators |
| QoS | Quality of Service |
| RAN | Radio Access Network |
| RAMP | Research ICT Africa Mobile Pricing Index |
| SMS | Short Message Service |
| USSD | Unstructured Supplementary Service Data |
| VOIP | Voice over internet protocol |

# 1 Introduction

1. Acacia Economics and Tilil Technologies has been contracted to provide consultancy services by conducting a review of all services offered in the data sub-segment across Kenya.
2. The Terms of Reference (ToR) for the project state that the specific objective is to assess the data sub-segment in telecommunications services:
   2.1. To have a clear picture of the cost and market drivers.
   2.2. To identify any interventions to make the offer of data services more robust, more diverse and increasingly affordable.
   2.3. The study encompasses fixed and mobile, infrastructure and services, that allow customers to obtain capacity in terms of internet bandwidth to facilitate communication, transfer of media or access content via the internet.

# 2 The regulatory framework

## 2.1 Role of the Communications authority

3. Section 23(1) of the KICA provides that "The Authority shall, so far as is reasonably practicable, ensure there are provided throughout Kenya, such telecommunications services…. as are reasonably necessary to satisfy the public thereof."
4. The same section goes on to state at subsection (2) that "Without prejudice to the generality of subsection (1), the Authority shall –

   *(a) protect the interests of all users of telecommunications services in Kenya with respect to the prices charged for and the quality and variety of such services;*

   *(b) maintain and promote effective competition between persons engaged in commercial activities connected with telecommunications services in Kenya in order to ensure efficiency and economy in the provision of such services and to promote research and development in relation thereto;*

   *(c) encourage private investment in the telecommunications sector;…"*
5. The Authority also has is responsible for licensing. Section 35 provides that *"…no person shall establish, or use any radiocommunication station or apparatus except in accordance with the terms of a licence granted under section 36…*". Section 36 authorises the Authority to grant a licence to establish or use any radiocommunication station or apparatus or to install or use any apparatus for radiocommunication, subject to specific terms and conditions.
6. As such, the Authority's mandate includes consumer protection, promotion of competition, stimulation of investment and licensing.
7. This can be affected through use of various powers. The Authority's powers include interventions that may be useful in promoting access and removing barriers to data services. This includes powers related to wholesale access such as reference offers, transparency, non-discrimination and accounting separation; pricing interventions; dispute resolution mechanisms; monitoring and compliance remedies including the submission of information

from licensees in response to a request from the Authority; and remedies related to advertising and consumer protection. Regulations published that shape the market include Fair Competition Regulations, 2010, the Tariff Regulations, 2010, and the Interconnection and Provision of Fixed Links, Access and Facilities Regulations, 2010.

8. The Report also considers powers that may be necessary or that could be used to inject stimuli into the internet or data sub-segment in order to ensure that there is effective competition, accessibility, affordability and growth. These powers are typically related to competition regulation, consumer protection, universal service, and licensing. Conditions that promote the public interest in these outcomes can be included in licences or in regulations. In addition, the Authority is responsible for ongoing monitoring of compliance by licensees with the regulatory framework, monitoring of the market as a whole, and identifying inappropriate behaviour or new trends.

9. A short summary of the relevant regulations and the Authority's powers is included as **Annexure A**.

### 2.1.1 The Authority's role in the regulation and promotion of competition

10. The Authority has launched this project with a view to improving consumer access to data at affordable prices, among other things. This requires a thorough assessment of the "data market", including an assessment of competition within this market.

11. The Authority's powers in relation to competition under KICA include:

11.1. the promotion of competition (section 23(2)(b));

11.2. ex-ante and ex-post jurisdiction (sections 84Q, 84R, 84S and 84T);

11.3. determining which licensees are "dominant in a relevant market" (section 84W);

11.4. determining remedies (section 84T).

12. The Authority has also passed regulations in relation to competition which empower it:

12.1. to define a market – regulation 6, Fair Competition Regulations, 2010 read with regulation 3A of the Tariff Regulations, 2010;

12.2. to assess the level of competition in the market – regulations 3(2), 5, 8, and 8A(2) of the Fair Competition Regulations, 2010 read with the Schedule to the Tariff Regulations, 2010;

12.3. to determine dominance – regulation 8 of the Fair Competition Regulations, 2010 read with regulation 3A(2) of the Tariff Regulations, 2010; and

12.4. to determine and impose remedies – regulations 9, 10 and 11 of the Fair Competition Regulations, 2010; regulations 6 and 10 read with the Schedule to the Tariff Regulations 2010; and regulation 18 of the Interconnection and provision of Fixed Links, Access and Facilities Regulations, 2010.

13. The Authority has sole jurisdiction over ex-ante matters such as the deliverables within this project.

### 2.1.2 Other relevant authorities

14. Another regulator that is relevant to the Inquiry is the Competition Authority of Kenya (CAK). The CAK must "*liaise with regulatory bodies and other public bodies in all matters relating to competition and consumer welfare*" under section 9(1)(m) of the Competition Act. Several of the provisions of section 9 endow the CAK with very wide powers, some of which overlap with the powers of the Authority. CAK's role in relation to in consumer protection is also described under Part VI (Section 55 to 70) of the Act. The core function of the Consumer Department of the CAK is to investigate complaints relating to false or misleading representations, unconscionable conduct as well as supply of unsafe, defective and unsuitable good. Section 55 of the Competition Act contains a detailed set of rules for representations in respect of goods and services.
15. Authorisations other than licences are required by mobile network operators and other telecommunications service providers, including permits to access land or wayleaves to enable construction and building on land, and these may fall outside the Authority's jurisdiction.[68]

## 2.2 KICA Regulations

16. To frame our analysis we have also considered the following regulations
    16.1. Licensing and Quality of Service Regulations, 2010;
    16.2. Dispute resolution Regulations, 2010;
    16.3. Tariff Regulations, 2010;
    16.4. Fair Competition and Equality of Treatment Regulations, 2010;
    16.5. Interconnection and provision of Fixed Links, Access and Facilities Regulations, 2010;
    16.6. Consumer Protection Regulations, 2010; and
    16.7. Universal access and service Regulations, 2010.
17. We note that there are draft Infrastructure-Sharing Regulations were published in 2025.
18. A full list of legislation considered is included in Annexure A.

## 2.3 Project outline

19. This project synthesised and analysed information from a range of sources.
    19.1. Information provided by the Authority including annual financials and data submitted for the purpose of quarterly reporting.
    19.2. Information gathered from key stakeholders including retail mobile data operators, retail and wholesale fibre operators, tower, subsea cable and satellite operators.
    19.3. One-on-one interviews with key stakeholders.
    19.4. Information from public sources including the International Telecommunications Union (ITU), ResearchICT Africa, the World Bank, the IMF.
20. Where stakeholders did not submit the data requested, we have worked with a range of alternative data sources to achieve an understanding of the market including assumptions based on our experience in similar markets and projects.

21. This document is structured as follows.

21.1. First, we provide an analysis of **market trends**.

21.2. Second, we provide an overview of the data value chain, market shares and concentration.

21.3. Third, we provide a discussion of **cost drivers**.

21.4. Fourth, we engage in an analysis of market barriers and competition impediments.

21.5. Fifth, we discuss pricing **transparency and consumer** issues.

21.6. Sixth, we provide **recommendations**.

21.7. We then conclude.

# 3 Market trends in Kenya

22. To provide some background to the study we have engaged in an analysis of market trends. This section relates to TOR 4: Identify market trends and emerging issues in the data sub-segment in Kenya.

## 3.1 Uptake of data services in Kenya

23. In Kenya, as in many other countries in Africa, there has been significant **growth in mobile and fixed data subscriptions** over the last few years. This includes increases in the following:

    23.1. Total mobile subscriptions;

    23.2. Mobile data subscriptions;

    23.3. Mobile broadband subscriptions; and

    23.4. Fixed data subscriptions.

    23.5. Fixed Broadband Subscriptions

24. Broadband consumption in Kenya has also increased significantly in the last few years. This is also aligned with patterns internationally. Figure 1 illustrates these changes.

**Figure 1: Mobile and mobile data subscriptions over the past 5 years**

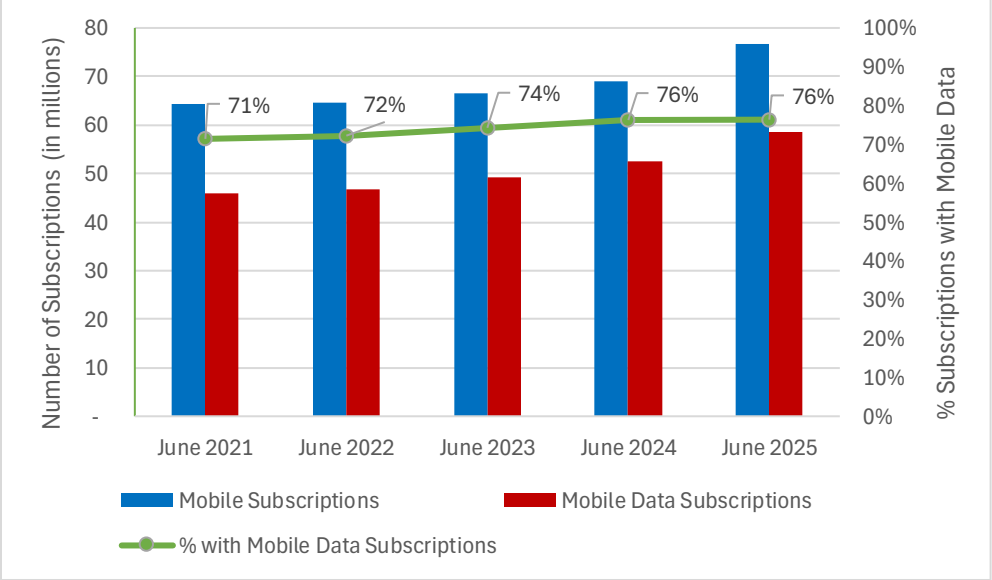



**Figure 1: Mobile and mobile data subscriptions over the past 5 years**

Source: CA Annual Report FY 2024/25

25. A very high proportion of mobile subscribers utilise mobile as shown in the figure below.

**Figure 2: Mobile broadband and fixed internet subscriptions**

26. However, use of fixed internet services is increasing both in terms of subscribers and as a percentage of total broadband subscriptions. Fixed data/internet subscriptions have risen from 2.5% of all subscriptions in Q2 2022/23 to 3.7% in Q2 2024/25.

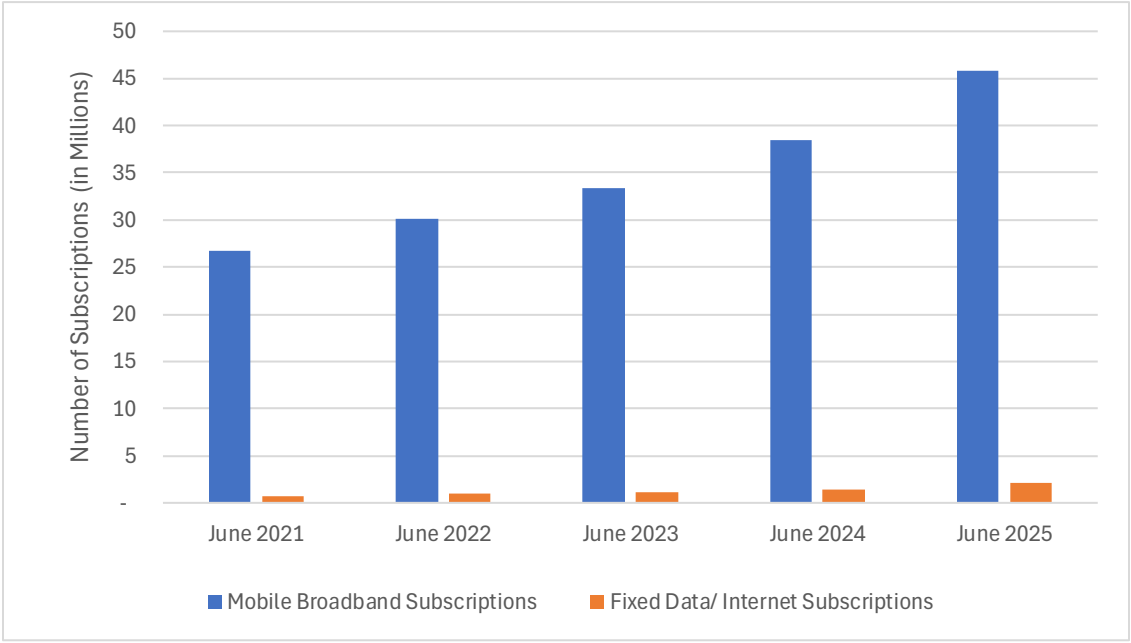



**Figure 2: Mobile broadband and fixed internet subscriptions**

Source: CA quarterly reports 2020/21-2024/25, Mobile broadband subscriptions as internet services via 3G or higher. For fixed broadband subscriptions it is defined as speeds of 2Mbps or higher.

27. Data volumes in Kenya have increased significantly as shown below.

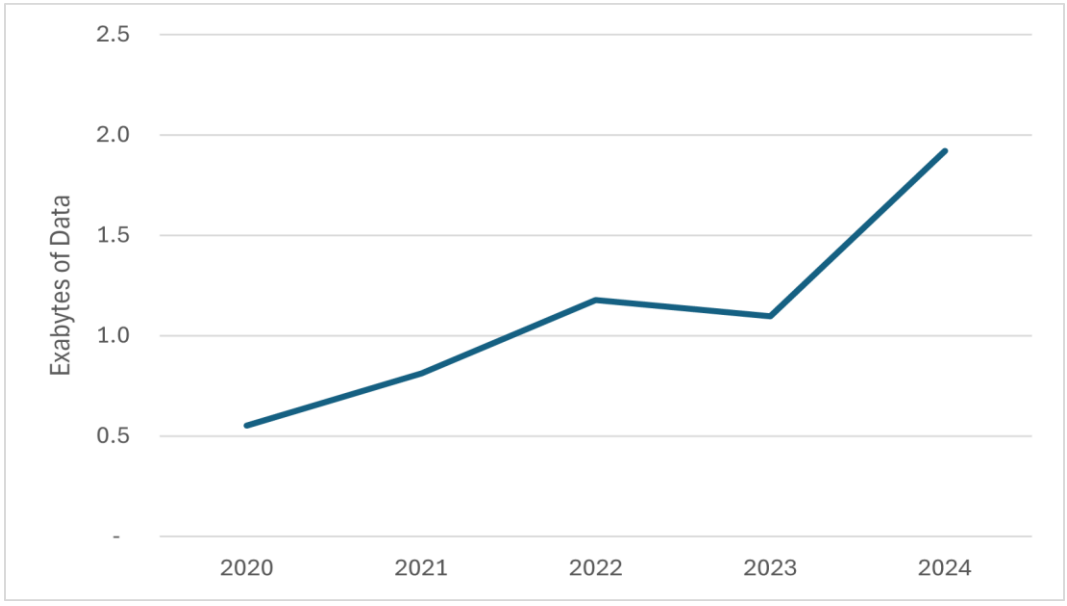



**Figure 3: Mobile broadband internet traffic over the past 5 years**

Source: ITU data (2025)

28. In addition, there is increased regional integration. This can be seen by the increase in roaming traffic driven by inbound roaming data traffic as shown in Figure 4: Inbound and outbound roaming traffic in the fourth quarter of 2020/21 to 2024/25

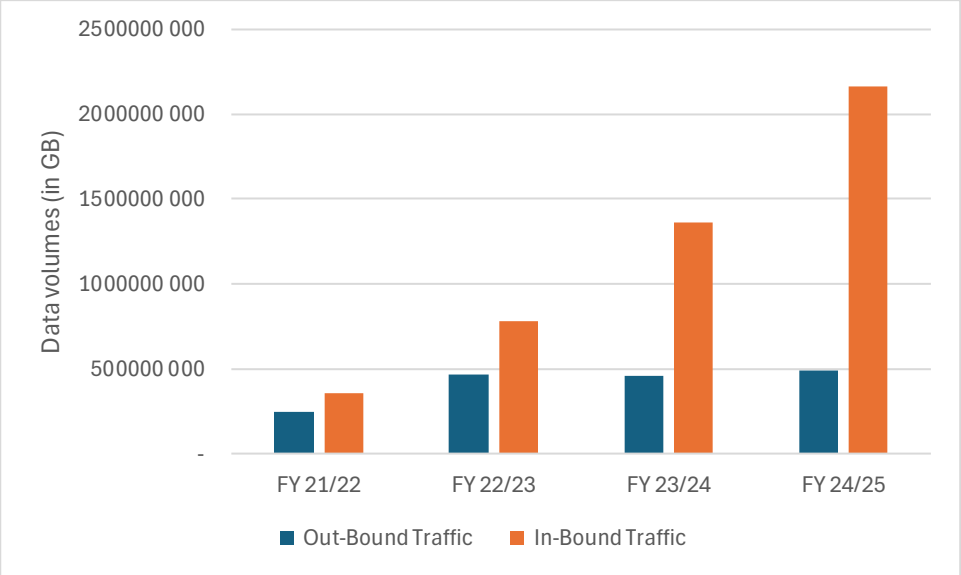



**Figure 4: Inbound and outbound roaming traffic in the fourth quarter of 2020/21 to 2024/25**

Source: CA quarterly reports 2020/21-2024/25

29. Another trend in Kenya has been a shift in the technologies invested in and utilised. In particular, there has been rollout of 5G services including fixed wireless access.

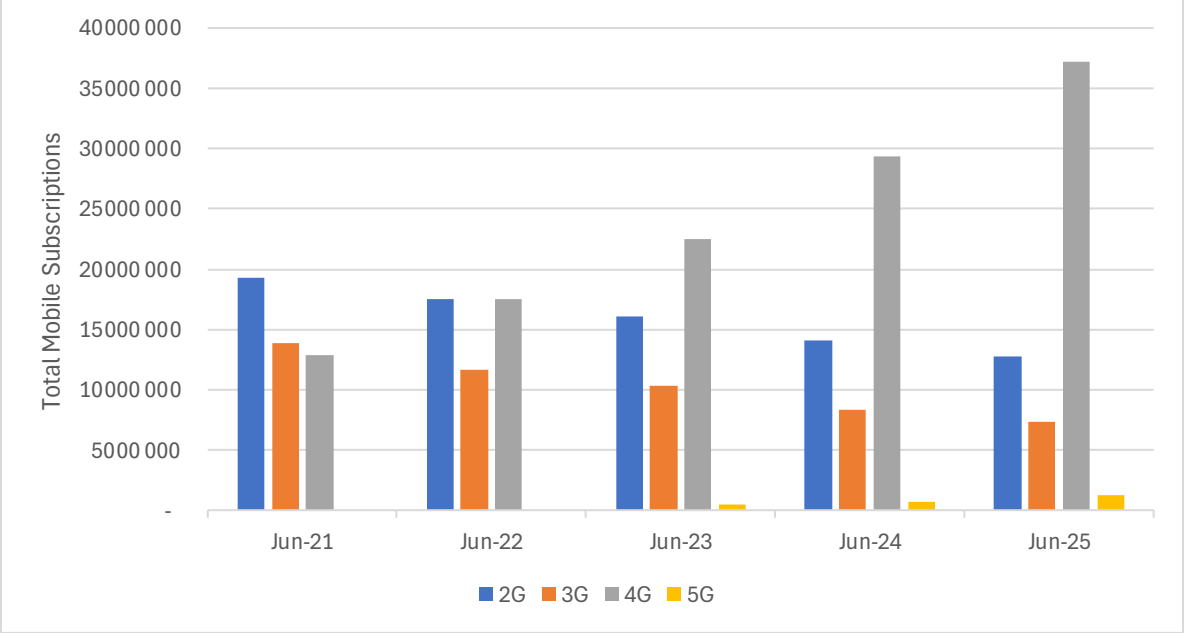



**Figure 5: Mobile data subscription by technology over 5 years**

Source: CA fourth quarter reports 2020/21-2024/25

30. Projections from the GSMA are that 5G connections in Kenya will rise from 2.8 million in 2025 with 4% adoption and 21% population coverage to 19.8 million connections in 2030 with 21% adoption and 99% population coverage.[1] This reflects international trends, where rising data volumes are projected to continue increasing across jurisdictions. This is largely due to the following:

30.1. Large increases in video traffic. Pricewaterhouse-Coopers estimates that by 2027 the amount of data consumed by video *globally* will increase to 79% of all data while online gaming will also increase significantly.[2]

30.2. The introduction of generative artificial intelligence (AI). Globally, the uptake of AI and use both by consumers and in businesses has risen exponentially.

30.3. Internet of things (IoT) devices are expected to increase significantly, particularly across medical and automotive industries. In Kenya, for example, 1.5 million smart devices have been connected to Safaricom alone.[3]

### 3.1.1 Trends in the price of data

31. Indices such as the ResearchICT Africa RAMP index which collates data on broadband products suggest the price of data in Kenya has been declining over time if measured by the cheapest prepaid broadband product, namely 1GB of data.

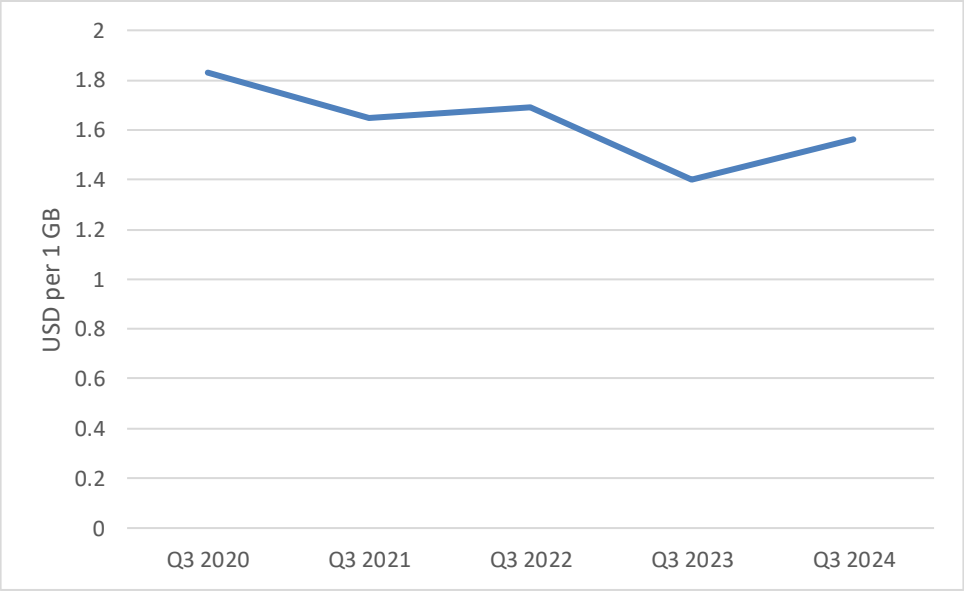



**Figure 6: Cheapest prepaid broadband product for 1GB Monthly Data Basket**

Source: Research ICT Africa RAMP database

[1] GSMA (2023), 5G in Africa 2023, available at 5G in Africa 2023: market status, trends and outlook

[2] PricewaterhouseCoopers (2023), Perspectives from the Global Telecom Outlook 2023–2027: The future on the line, The global telecom industry seeks growth in the face of rising demands available at Perspectives from the Global Telecom Outlook 2023–2027

[3] Safaricom Annual Report FY2024.

### 3.1.2 Access to internet and data usage

32. While there are high levels of network and service coverage in Kenya, access to the internet and data usage is highly skewed to urban areas. As shown below, this is relevant in terms of internet connections and technology to access the internet.

**Table 1: Proportion of households with smart technology by type**

| | **Kenya** | **Rural** | **Urban** |
|---|---|---|---|
| Total Internet connection | 36.3 | 25.1 | 54.1 |
| Fixed internet connection | 7.0 | 0.6 | 17.3 |
| Mobile Internet connection | 34.9 | 24.9 | 50.6 |
| Computer | 8.8 | 3.0 | 17.9 |
| Smart Lighting | 1.7 | 1.3 | 2.4 |
| Smart security | 2.0 | 0.6 | 4.2 |
| Smart door locks and garages | 0.4 | 0.2 | 0.8 |
| Smart plugs | 0.2 | 0.1 | 0.4 |
| CCTV | 3.8 | 0.8 | 8.5 |

Source: Kenya Housing Survey 2023/24

# 4 International benchmarks

33. This chapter benchmarks Kenya's data services pricing models against representative selection of other countries as required under TOR2: Benchmark Kenya's data services pricing models against a representative selection of other countries. It considers a range of indicators including coverage, price, digital readiness, speed and access.

34. We note that international benchmarks need to be used with caution as there are a range of factors that can influence indicators across countries such as population size, geography spread, income etc. Benchmarks should be considered in tandem with other information.

## 4.1 Coverage

35. Kenya has very **high population coverage of 4G** technologies relative to a range of other African countries as the next two Figures indicate.

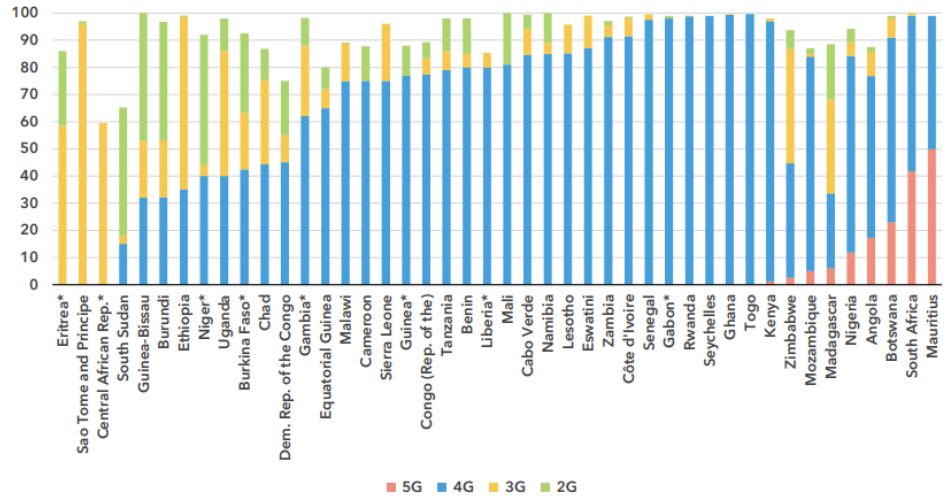



**Figure 7: Percentage of population covered by type of mobile network (2023)**

Source: ITU (2024)

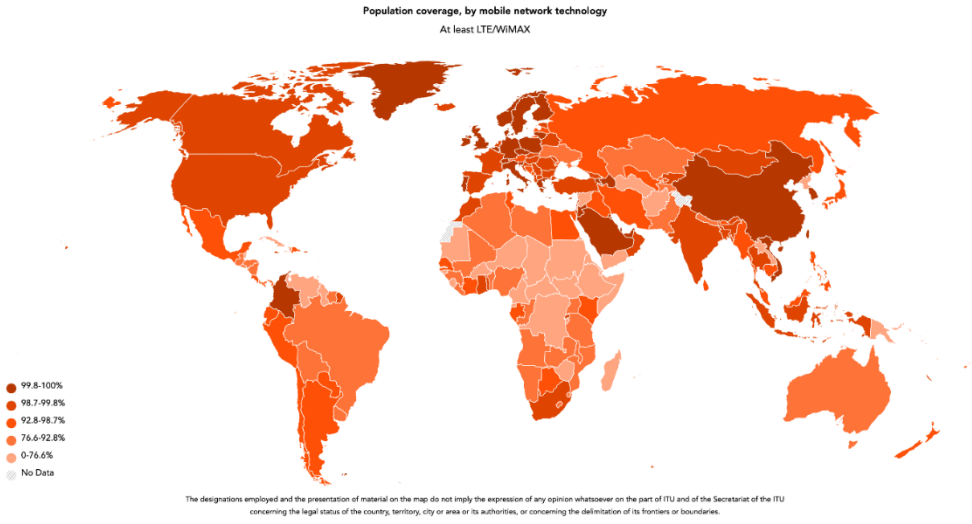



**Figure 8: Population percentage coverage by at least LTE/WiMax**

Source: ITU (2024)

## 4.2 Price

36. In addition, the **price of mobile data in Kenya is relatively lower** by international and African standards. However, fixed internet prices appear to be higher. **Error! Reference source not found.**

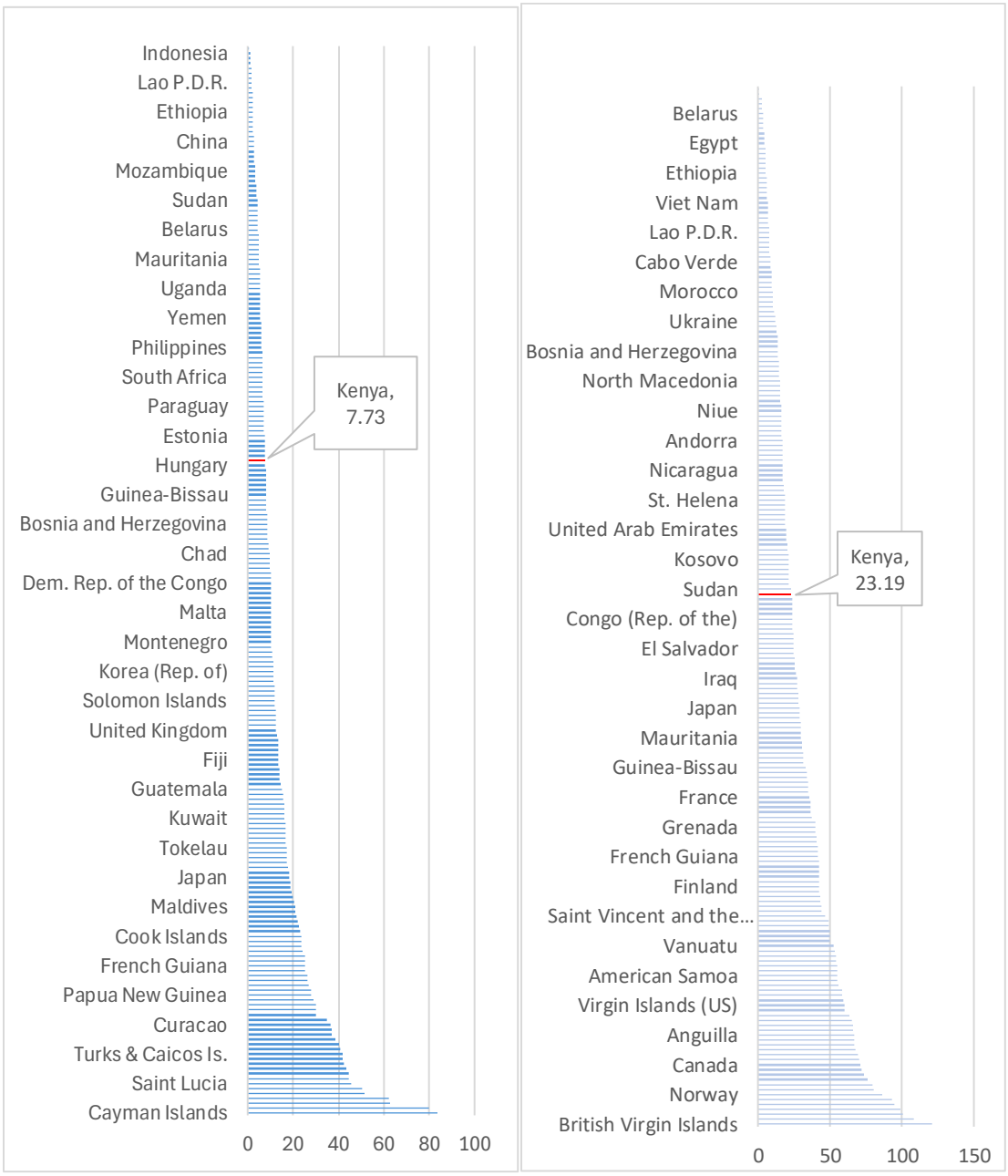



**Figure 9: Data Only mobile broadband 5GB (left) and Fixed broadband internet 5GB (right) basket prices in USD (2025)**

Source: ITU Data Hub (2026)

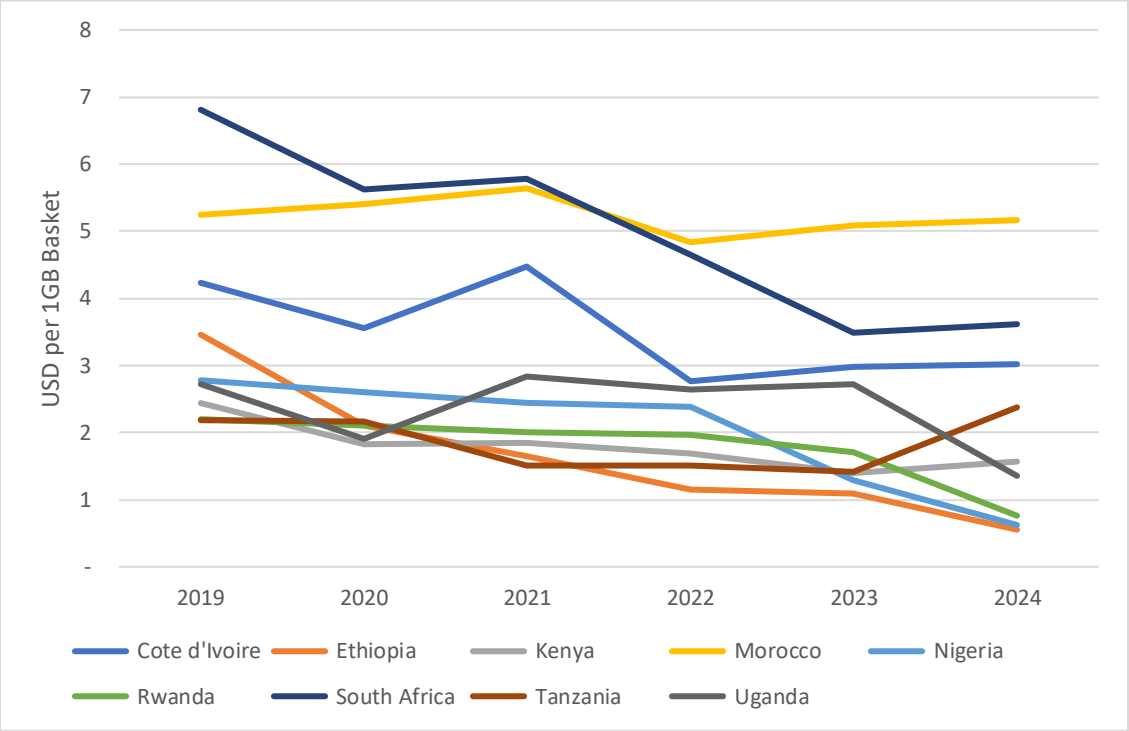



**Figure 10: Comparison of entry-level prices of 1GB mobile data bundles across selected African countries over time (Q2 2014-Q2 2024)**

Source: Research ICT Africa Mobile Price Index (Based on annual Q3 data) (countries selected based on data quality and availability over the time period and size of the economy relative to Kenya)

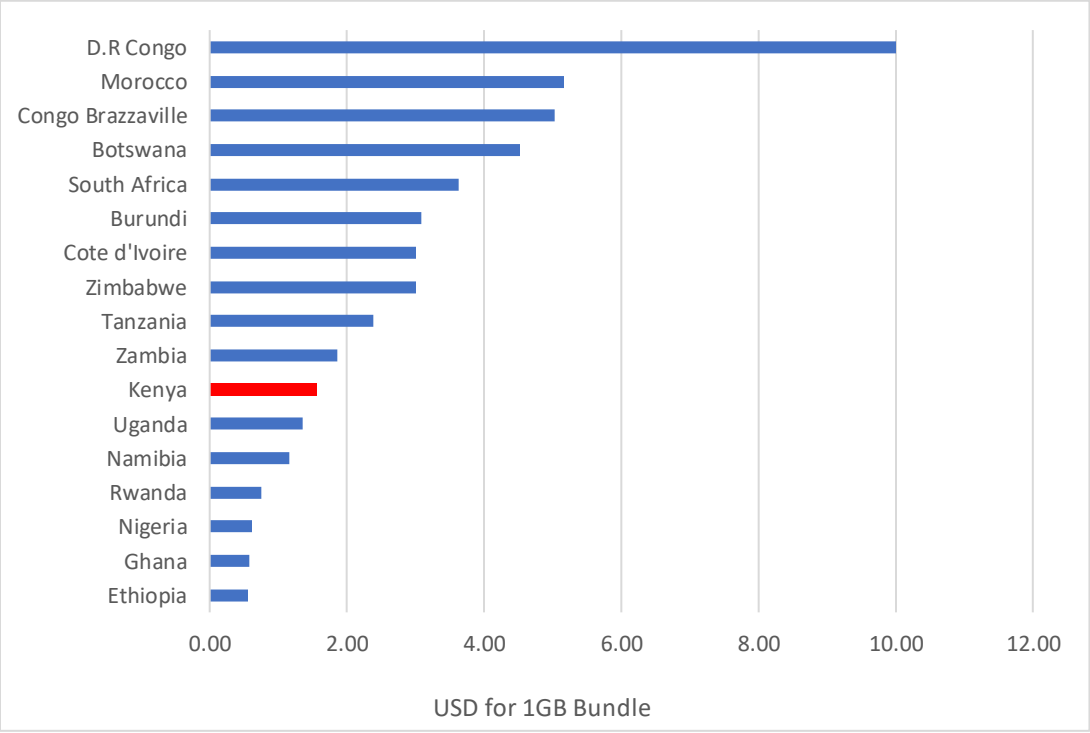



**Figure 11: Comparison of entry-level prices for 1GB mobile data across selected African countries (2024)**

Source: Research ICT Africa Mobile Price Index (Q3 2024)

37. It is important to bear in mind that the ResearchICT Africa dataset which is used for the price comparisons referenced here only compares the prices of the cheapest data bundles rather than the most popular bundles. The cheapest bundles may be offered by small and/or new operators trying to entice customers to their networks through price competitiveness, particularly where they cannot offer comparable quality (e.g. coverage, or network speeds). To appreciate price differences across different countries, it is worth also considering the differences in prices from other sources.

38. It is instructive to consider MNO pricing where the same MNO operates in other jurisdictions besides Kenya. The figure below shows that Safaricom Kenya's data prices are cheaper than Vodacom South Africa's prices, but more expensive than Safaricom Ethiopia[4] which is in line with the ITU and Research ICT Africa data presented above. Vodacom South Africa is a shareholder in Safaricom in Kenya and in Safaricom Ethiopia. Airtel's data prices in Kenya appear to be higher than their prices in Nigeria and Zambia.

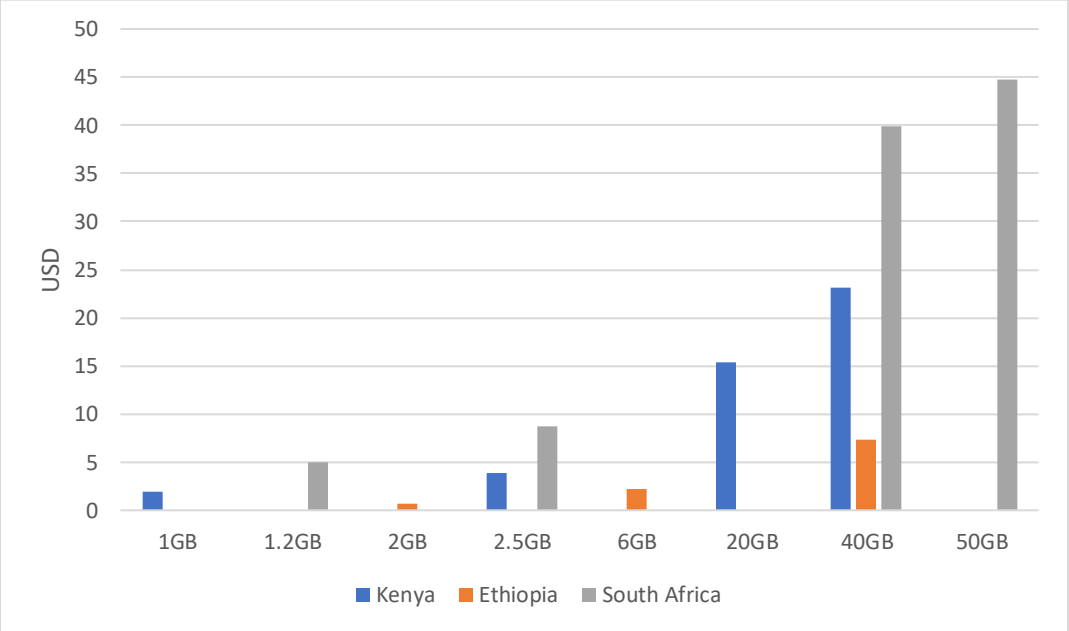



**Figure 12: Monthly mobile data prices in Safaricom Kenya, Safaricom Ethiopia and Vodacom South Africa (2025)**

Source: Operator Websites

[4] Note that Safaricom Ethiopia is still a small market participant (5.5%), having only entered the country in mid-2022, which may partly explain why its prices in Ethiopia are lower than in Kenya. Mwaniki, C. (2024, October 21). Safaricom Ethiopia's market share hits 5.5pc in 22 months. *BusinessDailyAfrica.* https://www.businessdailyafrica.com/bd/corporate/companies/safaricom-ethiopia-market-share-hits-5-5pc-in-22-months-4799324#google_vignette

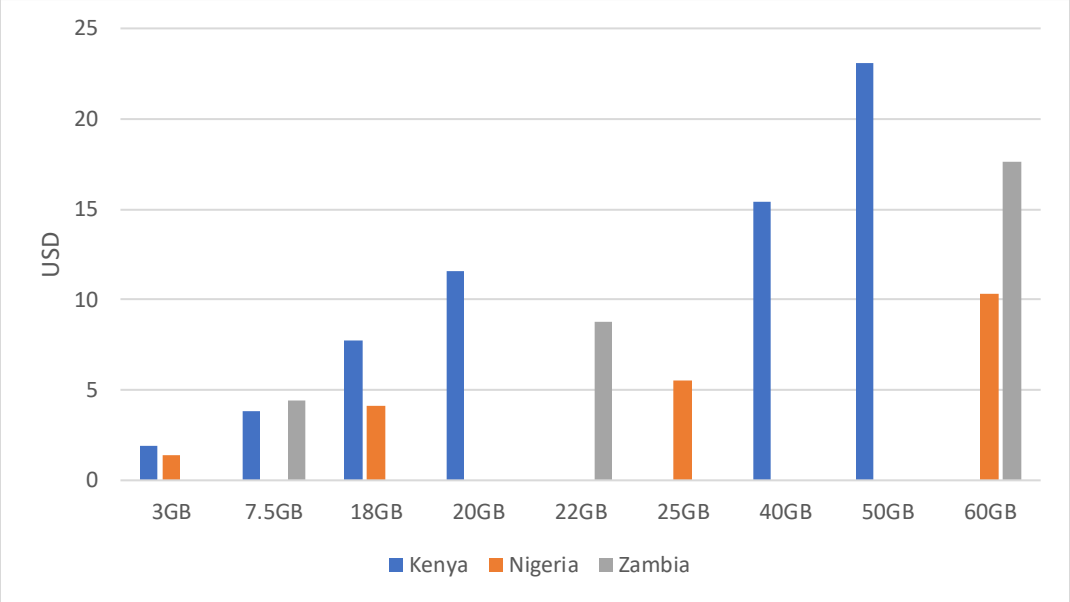



**Figure 13: Monthly mobile data prices for Airtel Kenya, Airtel Nigeria and Airtel Zambia in USD (2025)**

Source: Operator websites

## 4.3 Factors that impact on cost and prices

39. It should be noted that there are a range of factors that impact on the cost of data services, the network required, spectrum allocated, the population density and spread, and the topography of the country. For example, data prices are likely to be lower in countries in which the population is smaller and concentrated over a smaller geographic area, requiring less towers to be built in outlying areas. It also can vary depending on factors such as regulatory fees and costs, taxation etc. So for example, if we consider the table below a country like Rwanda has a high population density and a large proportion of urban inhabitants. Other countries such as Ethiopia, Somalia and even Uganda have a lower level of subscriptions per 100 people, which also may translate to a different pattern of rollout in more costly rural areas, and therefore differences in network costs. There also may be differences in competitive dynamics which impact on pricing.

**Table 2: Area, population and density comparison**

| Country Name | Surface area (sq. km) | Population, total | Population density (people per sq. km of land area) | Population in the largest city (% of urban population) | Mobile cellar subscriptions per 100 people |
|---|---|---|---|---|---|
| Ethiopia | 1,136,239 | 128,691,692 | 114 | 18.3% | 57.0 (2022) |
| Kenya | 591,969 | 55,339,003 | 95 | 32.6% | 120.6 |
| Rwanda | 26,338 | 13,954,471 | 565 | 50.0% | 91.5 |
| Somalia, Fed. Rep. | 637,660 | 18,358,615 | 29 | 30.0% | 54.0 |
| Uganda | 241,550 | 48,656,601 | 242 | 30.0% | 76.3 |

Source: World Bank Indicators (most recent data 2023)

40. In addition, as shown below, there is a wide variation in the amount of spectrum allocated across different countries, which also impacts on the cost of data. A country like Somalia has a high amount of spectrum used (and a network concentrated in the city) which also reduces costs.

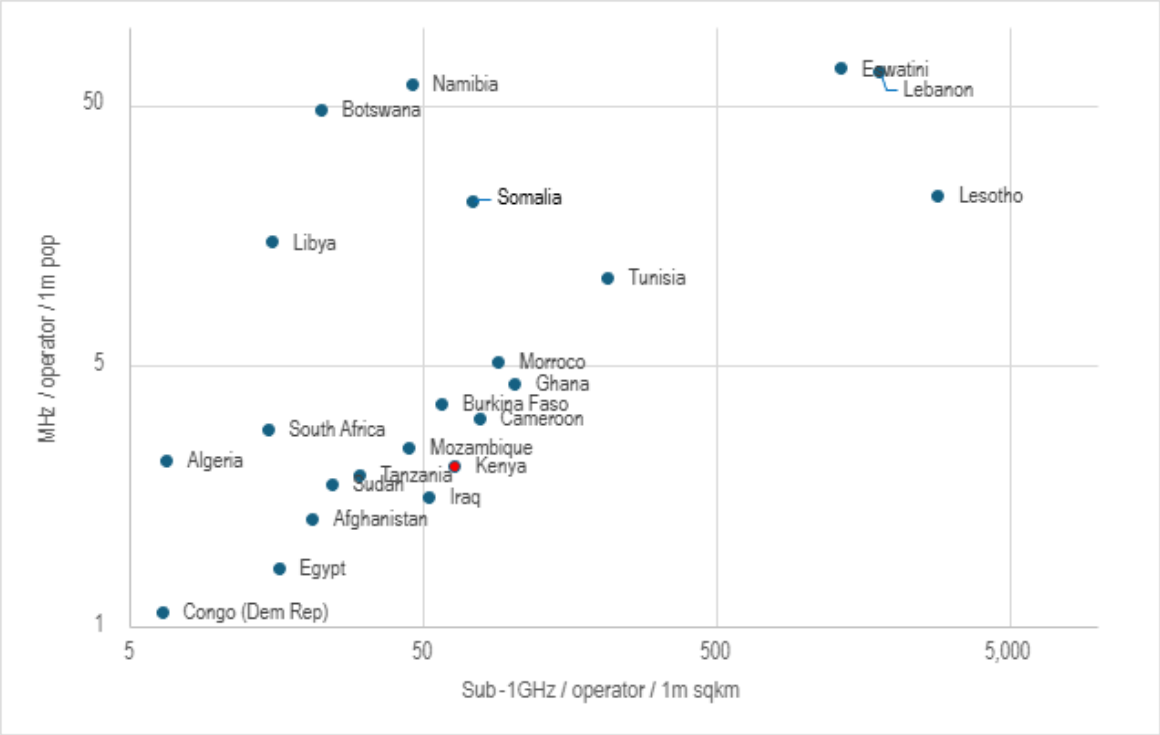



**Figure 14: Spectrum assignment across a subset of African countries**

Source: Acacia Economics

## 4.4 Subscriptions

41. Kenya has a high proportion of active mobile broadband subscriptions. As shown below, relative to a range of African countries for which data was available, Kenya has a relatively high number of mobile subscriptions.

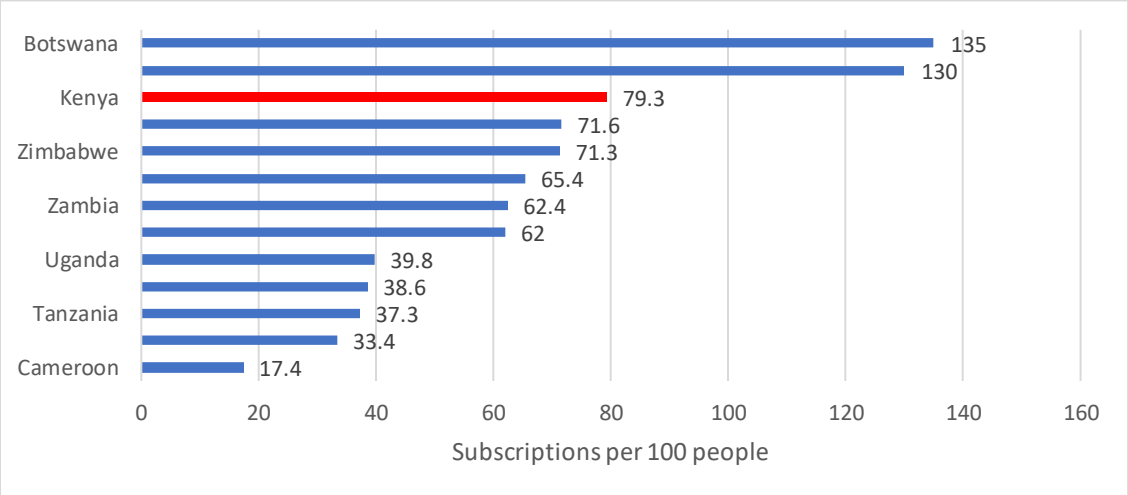



**Figure 15: Active mobile broadband subscriptions per 100 people (2024)**

Source: ITU Data Hub (2024)

42. However, fixed broadband subscribers as a proportion of the population in Kenya is very low, as it is in most other African countries (below 10 subscriptions per 100 subscribers).

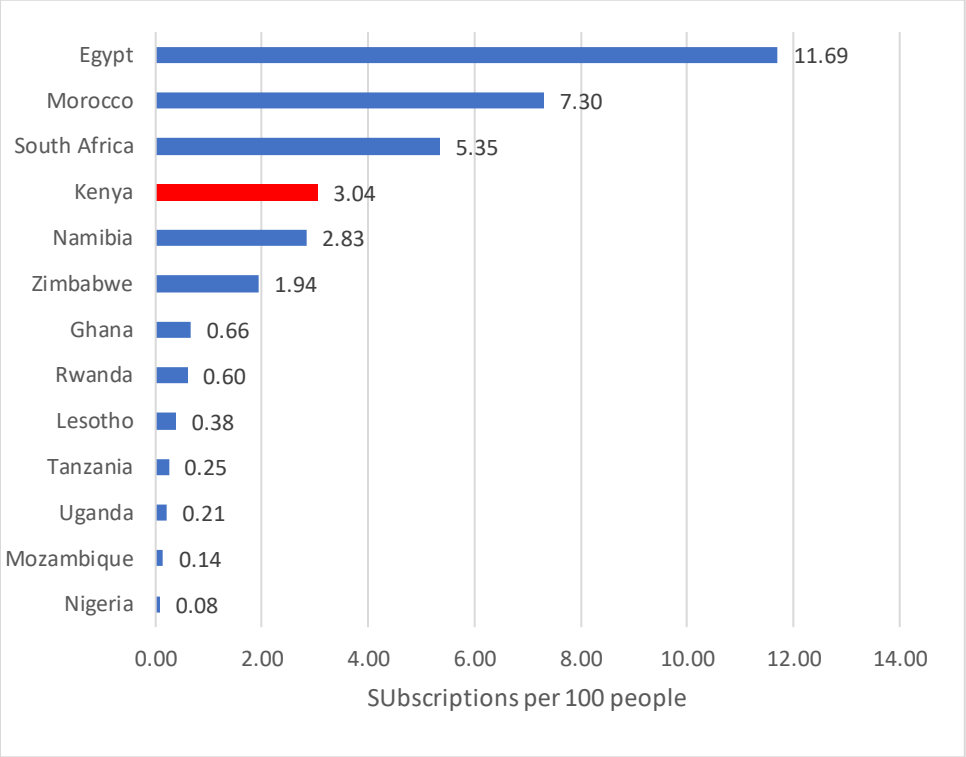



**Figure 16: Fixed Broadband Subscriptions per 100 people (ITU, 2024)**

Source: ITU Data Hub, refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s divided by population and multiplied by 100

## 4.5 Digital adoption and network readiness

43. Kenya scores well in terms of digital adoption (uptake of services made possible by access to data and the availability of digital devices) and network readiness.

43.1. The GSMI's Digital Nations Society Index (DNSI) ranks African countries' performance on digital adoption and use by consumers, business and governments. The index scores performance between 0 and 100 based on factors like mobile commerce, mobile 4G/5G adoption and internet usage. Compared to other African countries, Kenya scores relatively high, ranking second of the countries shown below at a score of 58.6.

43.2. The GSMI's Digital Policy and Regulatory Index (DPRI) is also scored between 0 and 100 and benchmarks the extent to which policies and regulations enable digital technology based on licensing and spectrum, consumer protection, taxation, network deployment and management and public policy. In 2025, Kenya ranked fourth among the African countries listed below with a value of 64.9.

43.3. The Digital Network Index measures the ability of countries to leverage digital technology for their countries' economic and social development, which is based on four pillars, namely technology (access, content, future technology), people (individuals, businesses, governments), governance (trust, regulation, inclusion), and impact (economy, quality of life, SDG inclusion). Overall, Kenya is ranked 73rd of 133 economies and 4th in Africa with a value of 59.4. It exceeds averages for Africa and for other lower-middle-income countries on all four pillars.[5]

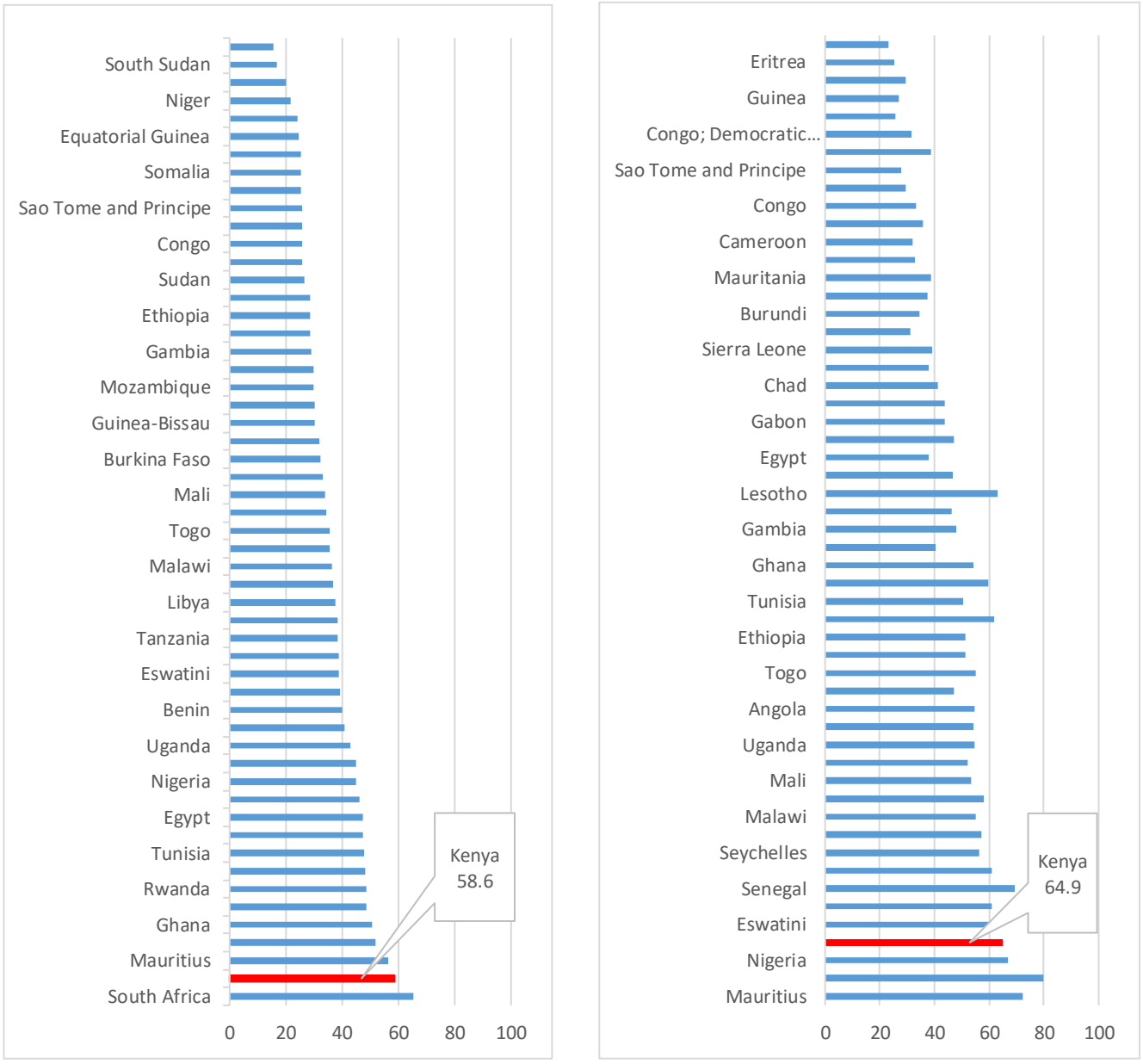



**Figure 17: Comparison of Digital Nations and Society Index (DNSI) (left) and Digital Policy and Regulatory Index (DPRI) (right) of select African countries**

Source: GSMA, 2025

[5]University of Oxford Portlulans Institute, Kenya – Network Readiness Index

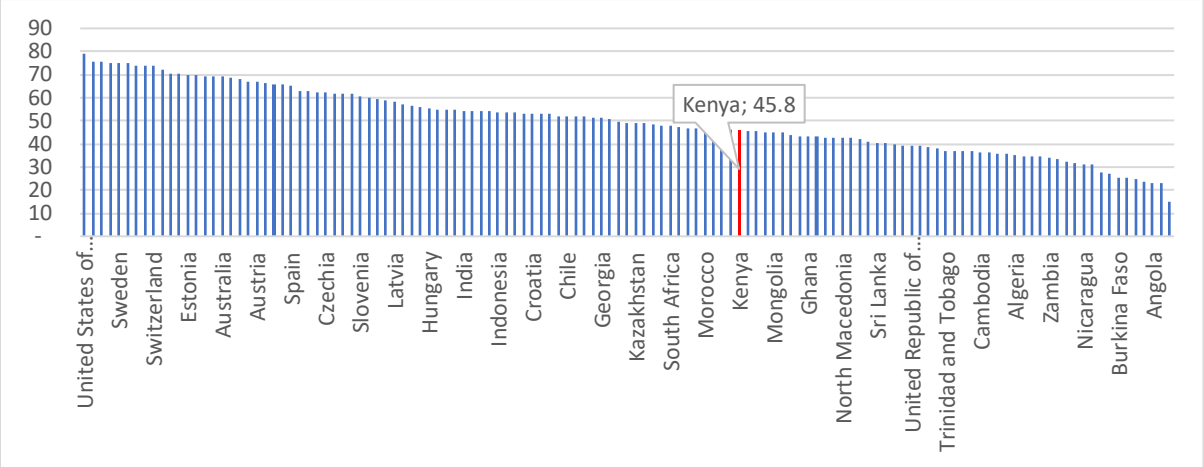



**Figure 18: Network readiness index (2024)**

Source: Digital Network Readiness Index (https://networkreadinessindex.org/)

44. Kenya also has high fixed and mobile data traffic levels compared to other African countries. However, this is still low relative to more developed countries. For example, the United Kingdom recorded 10.86 exabytes of mobile data traffic and 181 exabytes of fixed data traffic in 2023 and Germany had 9.59 exabytes of mobile data traffic and 149 exabytes of fixed data traffic in 2024.[6]

45. The figure below indicates the comparison between Kenya and African countries.

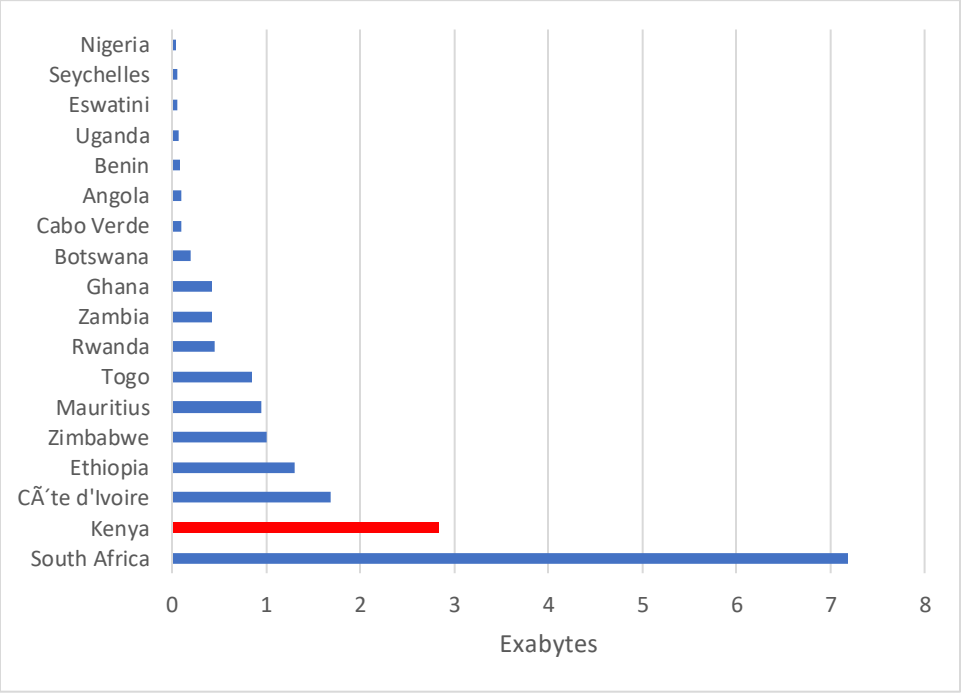



**Figure 19: Fixed data traffic (2024)**

Source: ITU Data Hub[7]

[6] ITU Data Hub

[7] This refers to traffic generated by fixed broadband subscribers at the end-user access point, measured by adding download and upload traffic.

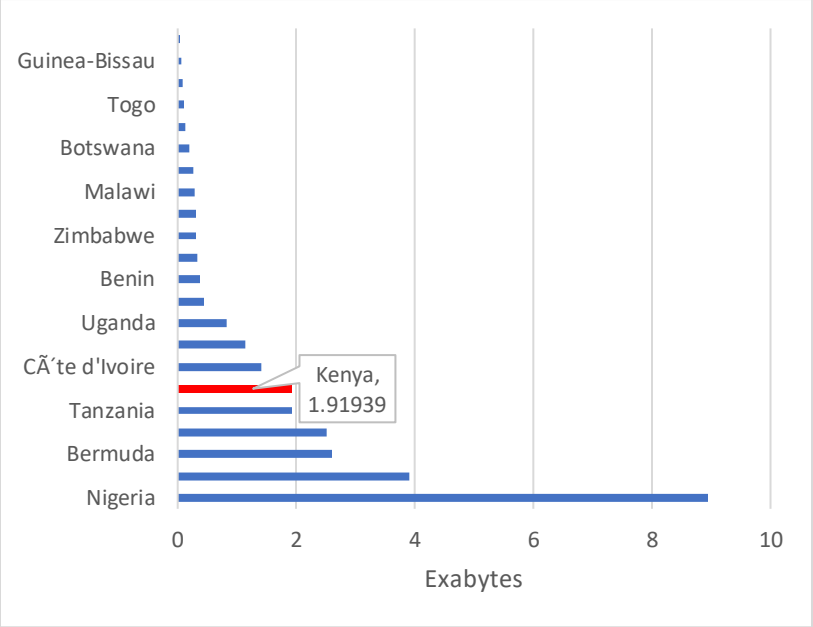



**Figure 20: Mobile data traffic (2024)**

Source: ITU Data Hub

## 4.6 Speed

46. Kenya has low speeds relative to international comparators for both fixed and mobile.

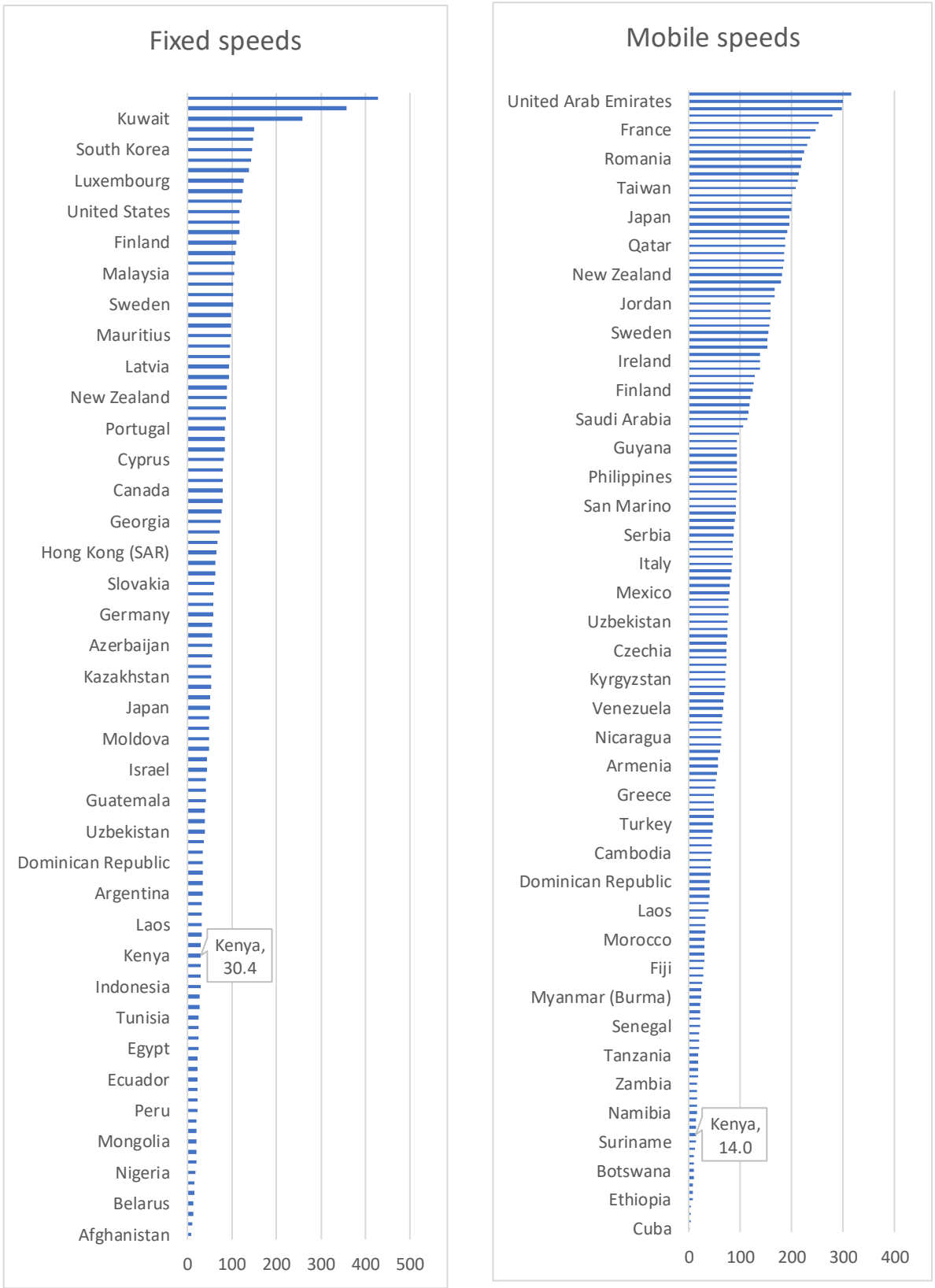



**Figure 21: Comparison of speeds for fixed (left) and mobile (right) in Mbps**

Source: Ookla, 26 November 2024

## 4.7 Pricing with speed

47. When you consider minimum pricing together with median speed Kenya fares fairly well, with low prices at high speeds relative to several comparator countries. This is particularly the case for mobile data where Kenya has high speeds at relatively low costs (though it can be noted that there is a small set of countries for which the relevant information was available). While fixed broadband is generally priced low, the median speeds do not compare favourably with competitor countries.

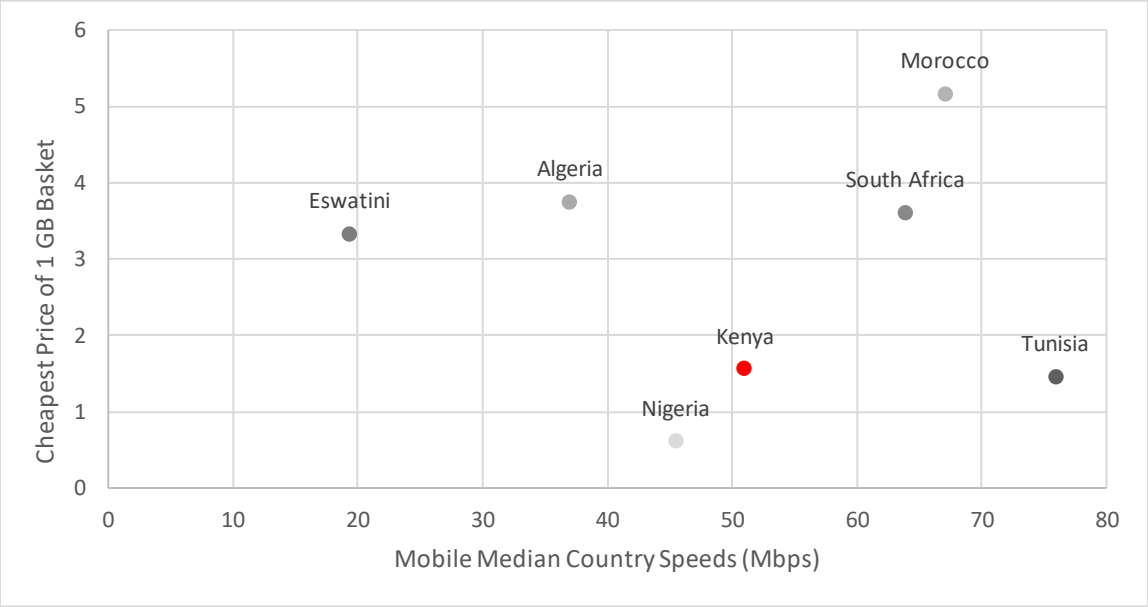



**Figure 22: Comparison of entry-level mobile data 1GB prices (USD) and median speed across select African countries (2024)**

Source: Ookla, July 2025 and Research ICT Africa Mobile Price Index Q3 2024

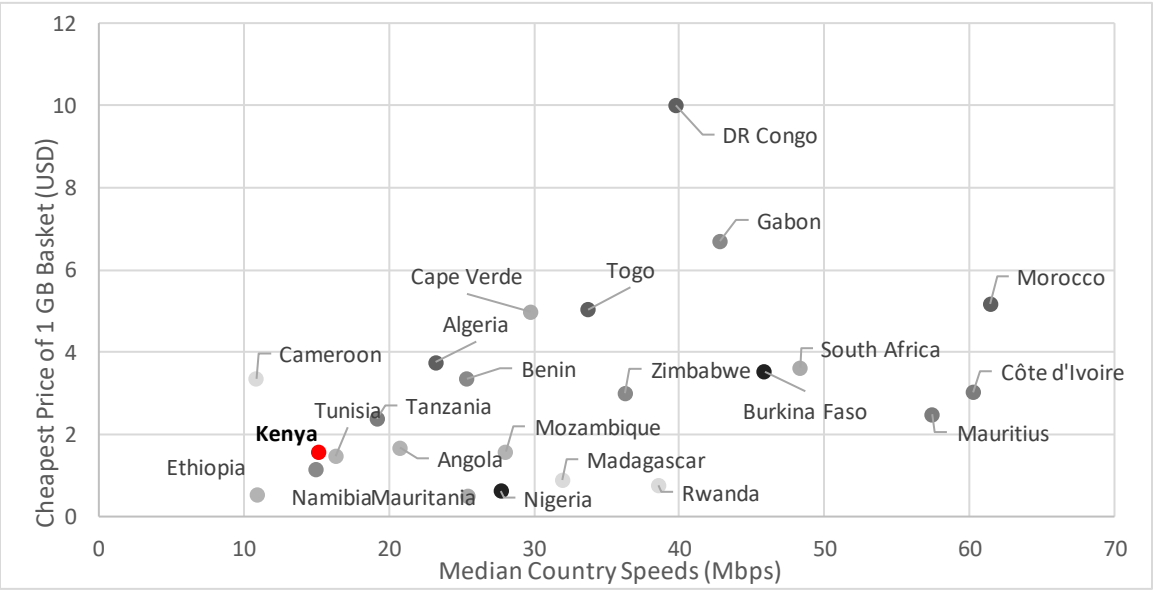


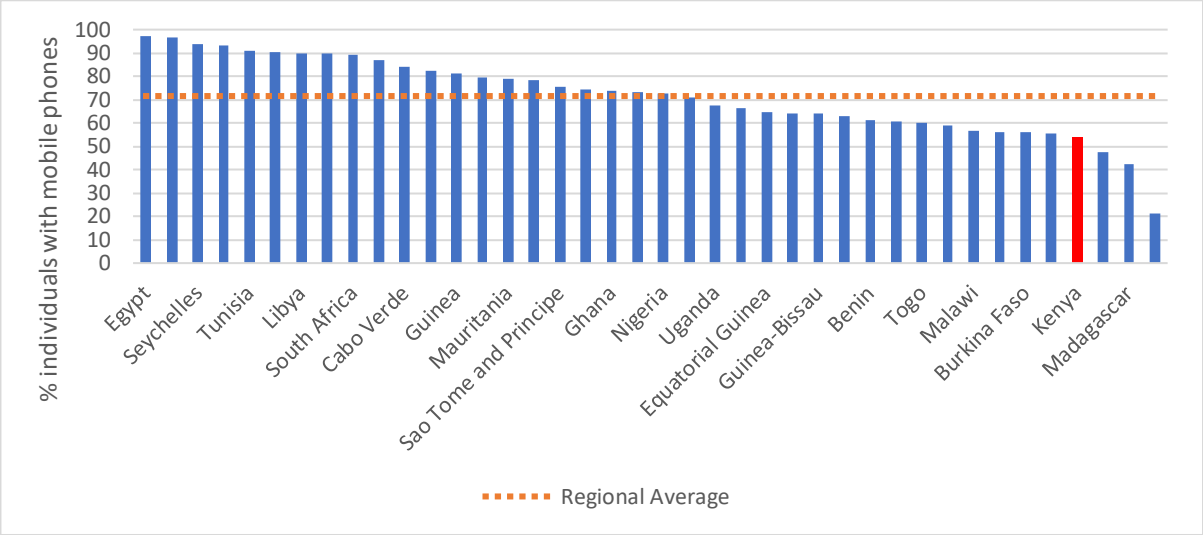

**Figure 23: Comparison of entry-level fixed data 1GB prices (USD) and median speed in select African countries (2024)**

Source: Ookla, July 2025 and Research ICT Africa Mobile Price Index Q3 2024

## 4.8 Access

48. Access appears to be an issue, however. ITU data suggests that in terms of **individual access to mobile phones, Kenya is below average** on the continent and in the world.

**Figure 24: Percentage of individuals with mobile phones across select African countries (2023)**




Source: ITU data of 40 African countries as of 2023 (no later data was available at the time of writing this report)

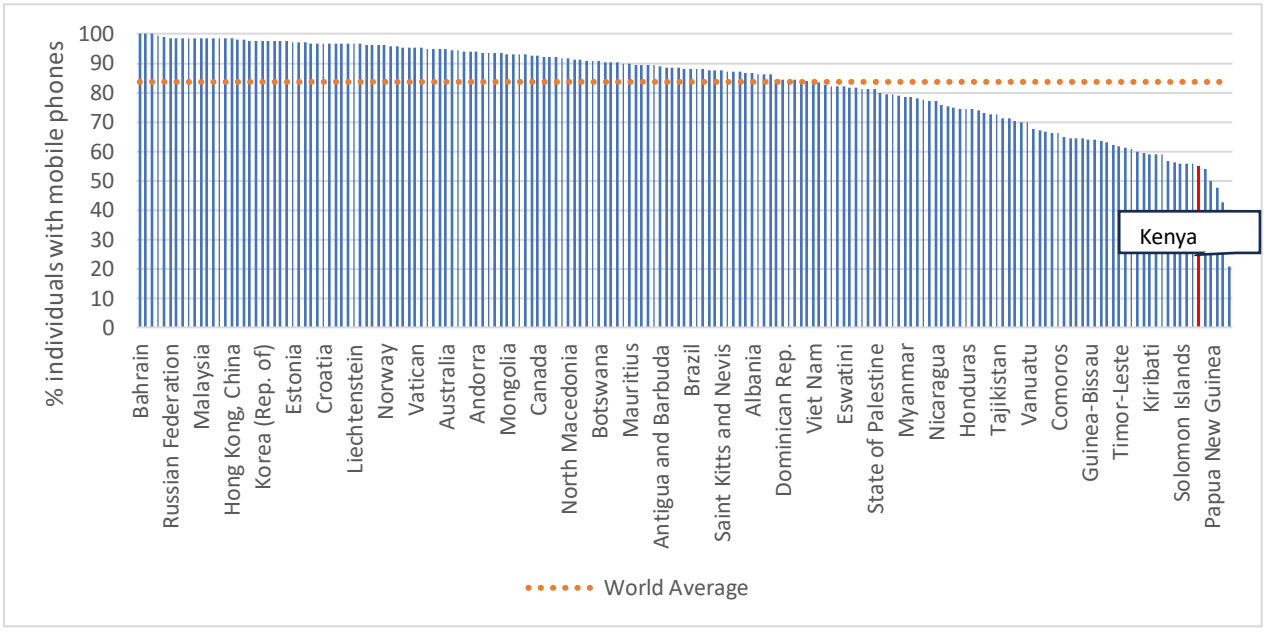



**Figure 25: Percentage of people with mobile phones across selected global countries (2023)**

Source: ITU data of 179 countries as of 2023 (no later data was available at the time of writing this report)

49. Further, household internet access (whether fixed or fixed wireless) is below average, and Kenya Ranks 6th lowest on this measure in Africa and 12th lowest in the world, as shown in the figures below. This is also noteworthy as it suggests that connectivity may be inadequate in some areas, or that reliability and quality of service is not optimal, or that the price of household access to the internet is regarded as high, or that households do not generally consider it necessary to have internet access at this level because individuals within the household have their own access. This last possibility does not seem likely given the low number of devices.

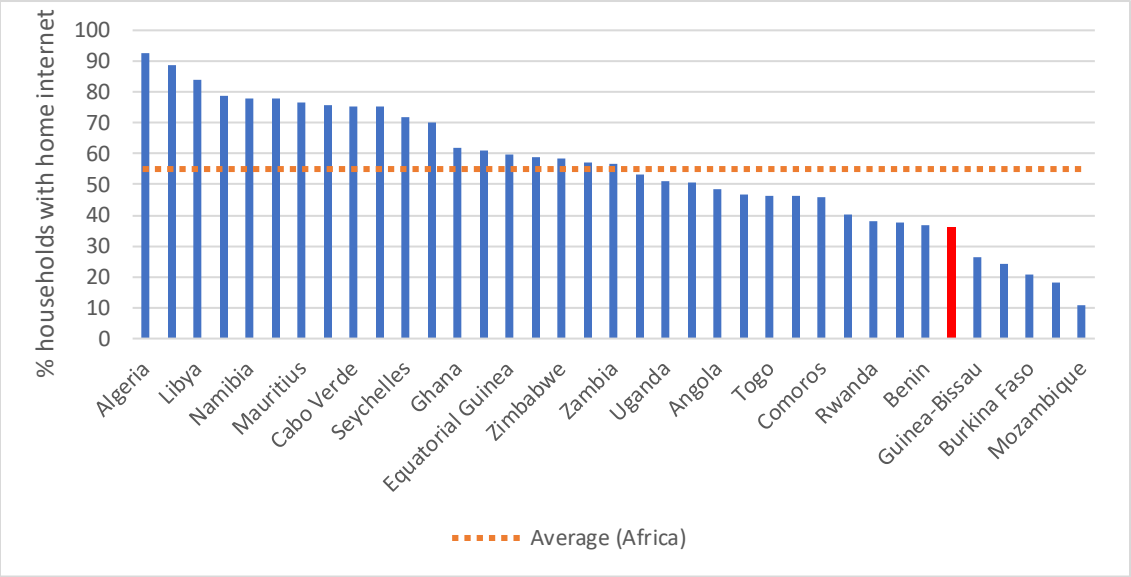



**Figure 26: Percentage of households with access to internet at home across select African countries (2023)**

Source: ITU Data of 37 African Countries as of 2023

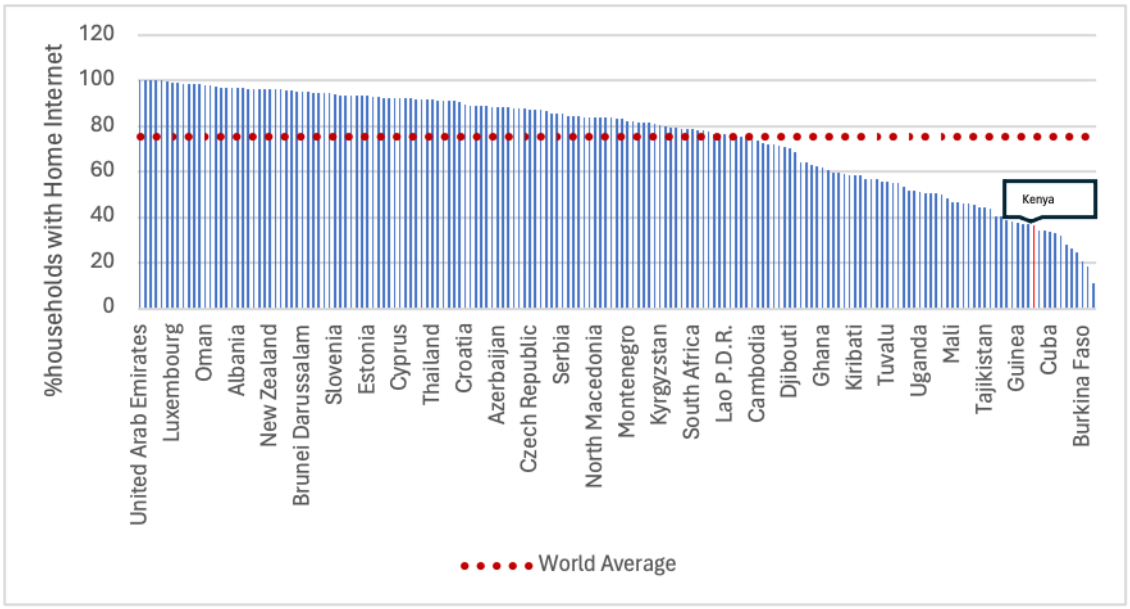



**Figure 27: Percentage of households with access to internet at home across select global countries (2023)**

Source: ITU Data of 177 Countries as of 2023

## 4.9 Selected general international trends related to data services and networks

50. In addition to the market trends and international benchmarks we have included selected general trends occuring in telecommunications markets internationally.

### 4.9.1 Infrastructure Investment

51. As technologies evolve, telecommunications companies that are focused on frontier technologies must invest significantly in infrastructure. In most countries this includes the cost of shifting to 5G technology (and even planned 6G investment in certain regions).

52. For example, for 5G additional spectrum, network densification and increased fibre expansion and investments in the core is required. This all requires substantial investment in infrastructure.[8] While it is expected that 4G will continue to play an important role in most African markets, many African countries are investing in 5G.[9] In Kenya, 5G spectrum was assigned and commercial offerings were launched in 2022 by Safaricom and in 2023 by Airtel.

53. The investment in infrastructure overall has risen significantly internationally. In some jurisdictions this has led to mergers or joint investments in order to reduce overheads and consolidate investments.[10]

### 4.9.2 Structural separation

54. Another trend that has emerged internationally is greater structural separation between parts of the value chain. In particular, there has been a move from vertical integration where each operator has their own towers, backhaul and other equipment, to scenarios in which operators sell off infrastructure components such as towers to third-party tower companies, or separate them into an infrastructure business that makes towers available on an open access basis to a broader customer base.

55. This has occurred to some extent in a range of African markets. In particular, companies such as American Tower Company ("ATC") as well as Eaton Towers historically have purchased towers from a range of operators in Africa. Other towercos have also entered markets independently i.e. without a relationship to an operator, and are leasing their towers to MNOs, as it is generally cheaper to lease than to build in the short-to-medium term.[11] This has also been the case in Kenya, though in contrast to other jurisdictions, as will be discussed later, operators such as Safaricom still maintain the majority of towers.

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[8] McKinsey (2018), The road to 5G: The inevitable growth of infrastructure cost.

[9] 5G in Sub-Saharan Africa – Mobility Report - Ericsson

[10] Font, V. (2023, February 2022). Decoding the Consolidation in Telecoms: Exploring Deals Rationale & Sizing Synergies. *Ftidelta. https://www.ftidelta.com/insights/perspectives/decoding-the-consolidation-in-telecoms-exploring-deals-rationale-and-sizing*

[11] Gopal, S. (2015, 11 May). Behind the rise of Africa's towercos. *Techcentral*. https://techcentral.co.za/behind-the-rise-of-africas-towercos/192368/#:~:text=Kamal%20Daswani%2C%20director%20at%20telecommunications,its%20options%20in%20this%20market; Graves, L. (2017, 9 September. TowerXchange who's who in African and Middle Eastern Towers. *Towerxchange*. https://www.towerxchange.com/article/2blg0c0egwe5k6lutjabk/towerxchange-whos-who-in-african-and-middle-eastern-towers#:~:text=Extensive%20experience%20advising%20on%20both,on%20acquisitions%20to%20its%20portfolio

### 4.9.3 Entry into infrastructure by technology companies

56. Large technology companies and "hyperscalers" like Amazon Web Services, Google Cloud and Microsoft Azure (large-scale technology providers offering access to storage and computing power) are increasingly investing in what was traditionally purely telecommunications infrastructure, sometimes in partnership with telecommunications companies and government entities. This includes investment in fibre, sub-sea cables, and other network infrastructure, with the addition of the cloud computing add-ons.[12]

57. Going forward, use of hyperscalers may increase the speed of infrastructure development and may, as a result, change the competitive landscape for data users.

[12] Microsoft and G42 announce $1 billion comprehensive digital ecosystem initiative for Kenya - Stories and Investing in connectivity and growth for Africa | Google Cloud Blog

# 5 Data value chain, market structure

58. This section is focused on the first part of TOR1: To "Identify the different services across the data value chain".

59. As noted previously, in terms of the TOR this study of the data market sub-segment encompasses fixed and mobile infrastructure and services, that allow customers to obtain **capacity in terms of internet bandwidth (data)** to facilitate communication, transfer of media or to access content such as social media or online entertainment via the internet.

## 5.1 Data value chain in Kenya

60. Data can be provided using a range of technologies and in Kenya, these are fixed internet networks, fixed wireless and mobile networks.

61. In this section, we provide an overview of the data value chain and services offered.

62. While data is often considered at the retail level where the service becomes available to consumers, the telecommunications value chain (encompassing fixed, fixed-wireless and mobile services) has various layers and data services require a range of wholesale inputs.

    62.1. **Fixed internet**: End users connect to fixed lines at home or at the office (often via WiFi on a local area network, within a house or building). This network is in turn connected to a nearby aggregation point, usually at a street cabinet, which is in turn connected to a local exchange (or point of presence).

    62.2. **Mobile and fixed wireless internet**: Where mobile or fixed-wireless (including satellite) connections are concerned, the end user connects from their smartphone or similar device to a radio at a high site, which is in turn connected, usually using a fibre optic cable, to a fixed line exchange or point of presence.

63. From the fixed line exchange connections (also known as backhaul connections) subscribers using data are then connected via long distance city to city links, to additional points of aggregation, including a mobile core network in the case of mobile networks.

64. Fixed, fixed-wireless and mobile internet connections then have an internet service provider function, which involves arranging international connectivity, including through peering and transit links to international sub-sea cables.

65. Underlying it is the physical infrastructure required. This includes ducts and poles which facilitate fibre connections, or dark fibre which can be leased as well as towers.

66. Services can be leased, purchased from a wholesale provider or self-provided at each segment of the value. For example, as will be discussed later a provider may use a leased line, or dark or lit fibre on the same segment. Similarly, a provider may choose to engage in a wholesale MVNO arrangement or national roaming arrangement or alternatively to utilise its own RAN network. Depending on the extent to which a provider has their own equipment they may also engage in a mix of types of technologies.

67. Within each layer or segment of the value chain there are therefore a range of products and services that can be provided. The key layers of the value chain, inputs and products sold are illustrated in the Figure below.

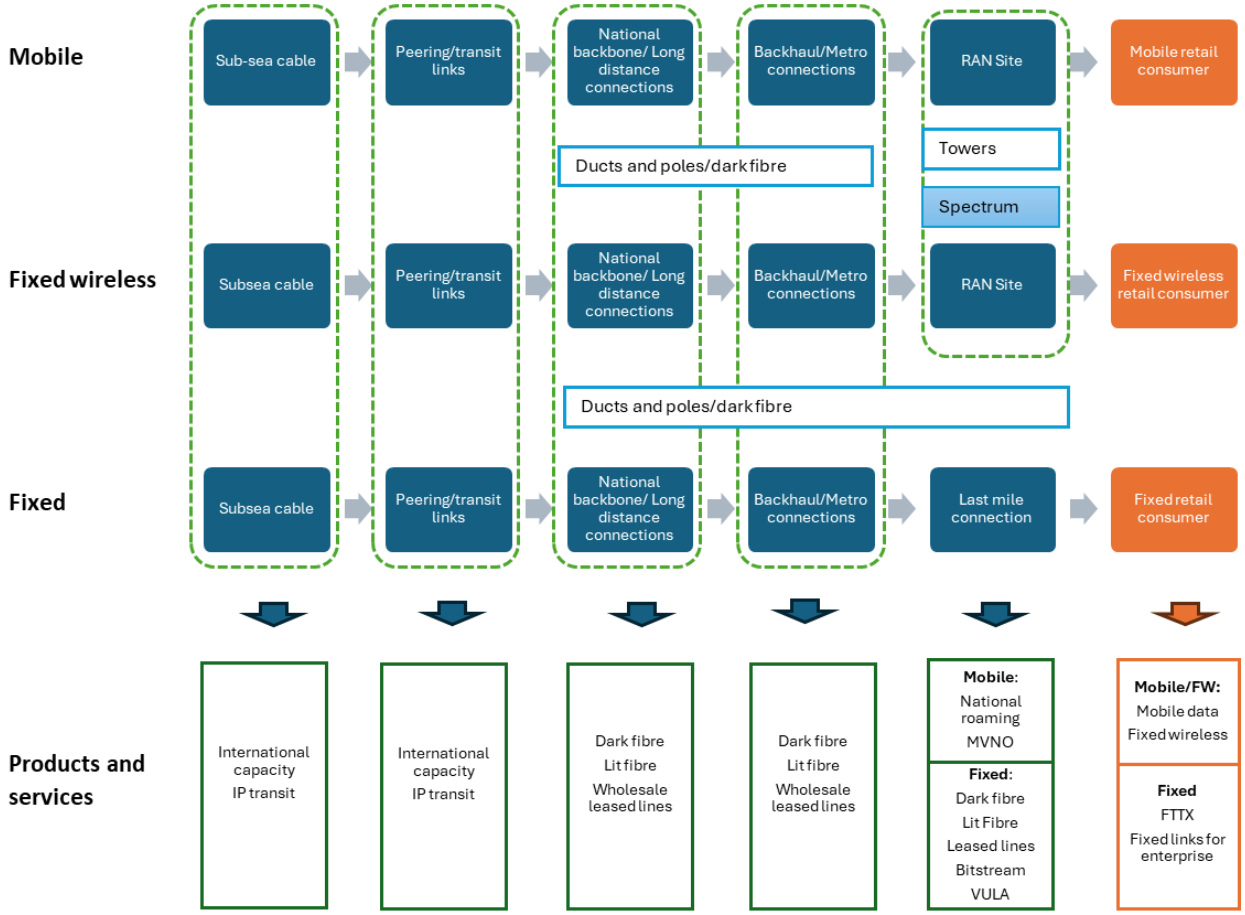



**Figure 28: Representation of telecommunications value chain, inputs and products**

Source: Acacia Economics

68. A key input into the supply of mobile and fixed-wireless services is radio frequency spectrum. Radio frequency spectrum has a substantial impact on the costs of supplying data services: the greater the amount of spectrum that a licensee has been assigned, the fewer mobile network sites that it needs, and the lower its costs. Lower costs, in turn, permit lower data prices. This is addressed further in Section 11.2.1.

69. A new service that is being provided in Kenya is data via satellite. The satellite network architecture and therefore value chain is slightly different as shown below. In many cases the satellite provider uses a retail internet service provider to provide the internet services to the final consumer. Some of the new satellite services offer direct-to-consumer communications, but this is dependent on device availability and compatibility.

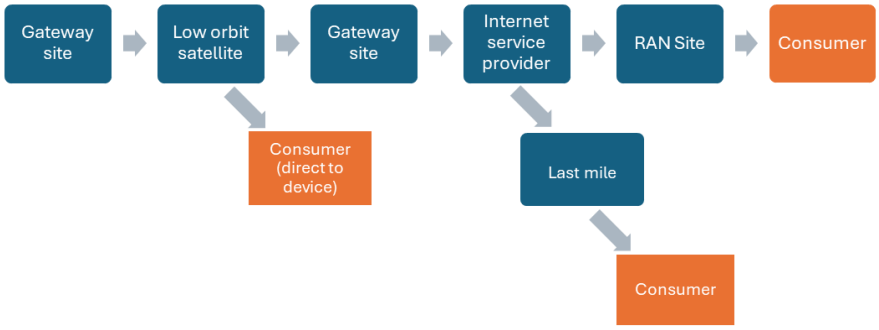



**Figure 29: Satellite network architecture**

Source: Acacia Economics

70. At present in Kenya the bulk of subscribers use mobile internet, with a range of technologies being used for fixed as shown below.

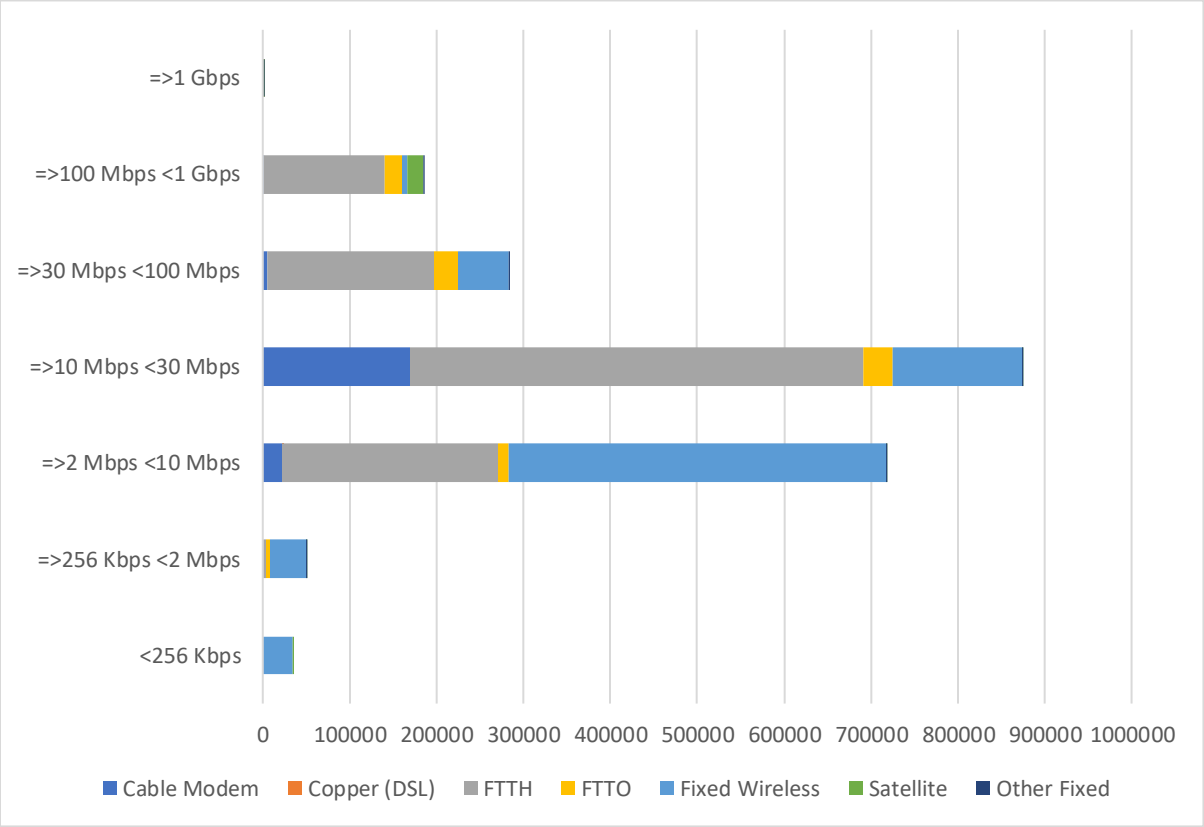



**Figure 30: Number of users by technology (June 2025)**

Source: CA Sector Statistics Report, June 2025

71. Each of these segments and technologies has different providers, competitive dynamics and components. In the study we will consider the following products and services and their role in the data ecosystem:

71.1. Mobile data;

71.2. Fixed data

71.3. Fixed wireless data (to business and consumers);

71.4. Fibre to the home;

71.5. Enterprise connectivity (including FTTB);

71.6. Wholesale mobile services (such as national roaming and MVNO);

71.7. Wholesale fixed services (including wholesale capacity and connectivity across backhaul/metro/long distance/national backbone);

71.8. Towers;

71.9. International connectivity (including capacity on subsea cables);

71.10. Satellite.

72. It should also be noted that licences in Kenya are categorised in a manner that has reference to the value chain. This is as follows:

72.1. International gateway systems

72.2. Submarine cable landing rights

72.3. Network facilities provider

72.4. Application service provider

72.5. Content service provider

72.6. Satellite Landing Rights

73. The current number of licensees per segment is shown below:

**Table 3: Number of licences by licence type**

| **Licence type** | **Description** | **Number of licensees** |
|---|---|---|
| International gateway systems licence | Establishment and operation of international gateway systems using satellite communications services | 12 |
| Submarine cable landing rights | Establishment of submarine cable systems for international connectivity | 5 |
| Network facilities provider | Tier 1: National communications infrastructure with national spectrum reservation (particularly mobile)<br>Tier 2: National communication infrastructure with regional spectrum allocation<br>Tier 3: Regional communications infrastructure with regional spectrum allocation | Tier 1: 4<br>Tier 2: 39<br>Tier 3: 149 |
| Application service provider | To provide service to end users using infrastructure leased from NFP such as voice, data, mobile, acting as an MVNO | 571 |

| | | |
|---|---|---|
| Content service provider | Provision of content to end users of application service providers | 527 |
| Satellite landing licence | Allows a satellite signal originating outside Kenya (or foreign satellite / space segment) to be "landed" into Kenyan territory — i.e., to import or transmit satellite broadcast or communication services into Kenya. | 4 |

Source: Acacia Economics, based on data provided by CA

# 6 Market participants and market shares

## 6.1 Introduction

74. This is aligned to TOR 3: Identify the different players across the value chain, and their respective market shares in Kenya.

75. In this section we consider the relative strength of different market participants in selected data market segments. This includes providing an overview of each product segment in terms of competing firms, their relative size and their number. We also assess market shares and concentration.

76. Market shares can be assessed in various ways including by volumes, revenues or capacity. In telecommunications markets this can include volumes (eg. of subscribers, data in bytes), capacity (for example, capacity on a cable) and revenues.

77. Concentration ratios such as Herfindahl-Hirschman Index (HHI) and n-firm concentration ratios are used to assess the levels of concentration in the identified data segments of the value chain both on a static basis and over time as well as in different sub-segments.

    77.1. The Herfindahl-Hirschman Index (HHI) measures the concentration of companies within a segment. It calculates this summing the squared market share of each firm competing within a market. Less companies and more skewed market shares result in a higher HHI while less companies and a more even distribution result in a lower HHI. According to best practice, product markets with HHIs of more than 1,000 are considered to be concentrated. Depending on the jurisdiction, markets with an HHI of above 2000 (or 1800 in some) are considered highly concentrated.[13, 14]

    77.2. The Concentration Ratio (CR(n)) is a different measure of concentration that sums the market shares of a specified number of firms (n) with the highest market shares. For example, a CR3 would sum the market shares of the three largest firms. As a result segments with companies with lower market shares would have a lower CR(n).

    77.3. Higher levels of concentration can be associated with less competitive restraints as there are less operators competing to incentive better pricing, quality and innovation.

## 6.2 Retail mobile data

### 6.2.1 Mobile data market participants

78. At present in Kenya there are four MNOs that offer data services. They are:

    78.1. Safaricom PLC (“Safaricom”): Safaricom launched mobile services in the Kenyan market in 2000.

    78.2. Airtel Networks Kenya (Airtel”)” Airtel entered Kenya in 2010 by acquiring Zain (previously Celtel and Kencell). Kencell, its earliest iteration, entered the market in 2000.

[13] Competition and Market Authority. (2022), *The State of UK Competition*, 29 April 2022.

[14] US Department of Justice and Federal Trade Commission. (2023), *Merger Guidelines,* 18 December 2023.

78.3. Telkom Kenya Limited ("Telkom"): Telkom is a part government owned MNO. It was previously branded Orange. Telkom was historically a fixed line operator.

78.4. Jamii Telecommunications Ltd ("Faiba"): Jamii launched services in 2017 and was awarded a full licence in 2019 under the brand Faiba.

79. There is also an mobile virtual network operator ("MVNO") that offers data services, namely Finserve (Equitel) Ltd ("Equitel"). An MVNO provides the services of an MNO under its own brand and in its own format, providing retail competition. Equitel is a subsidiary of a fintech company Finserve which is ultimately owned by Equity Group. Equitel launched in 2014. It utilises Airtel infrastructure to offer MVNO services. Finserve provides bundled data and voice services that are integrated with financial offerings such as payments, loans, person-to-person (P2P) transfers and remittances offered by Equity Bank.

### 6.2.2 Market shares, concentration

80. There are high levels of concentration in this broadly defined data market. This is despite the large number of licensees that are active in this markets (as can be seen from Table 3).

81. If we consider market shares by revenue or number of volumes (active SIMs on each network and data service subscriptions), the mobile market is largely dominated by two firms, namely Airtel and Safaricom as shown in the figures that follow. It can be noted that by all measures Safaricom has more than 60% of the market.

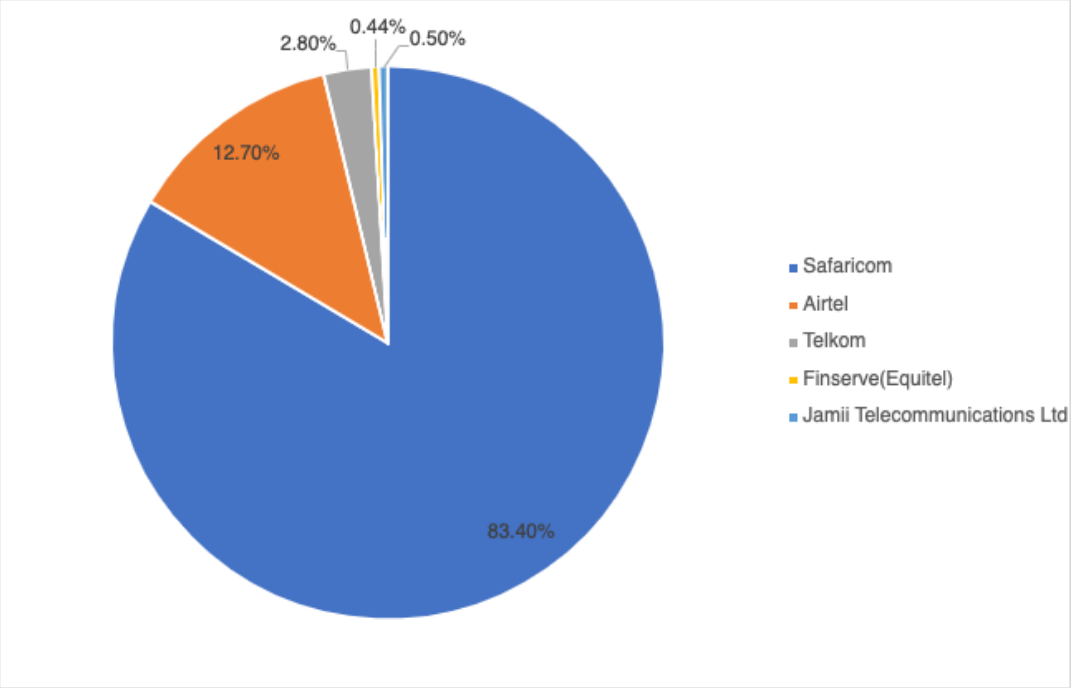



**Figure 31: Market shares by revenue FY 2023/24**

Source: CA Indicator dataset FY2023/24 (no later data was available at the time of writing this report) (Note, Airtel value includes Airtel Money)

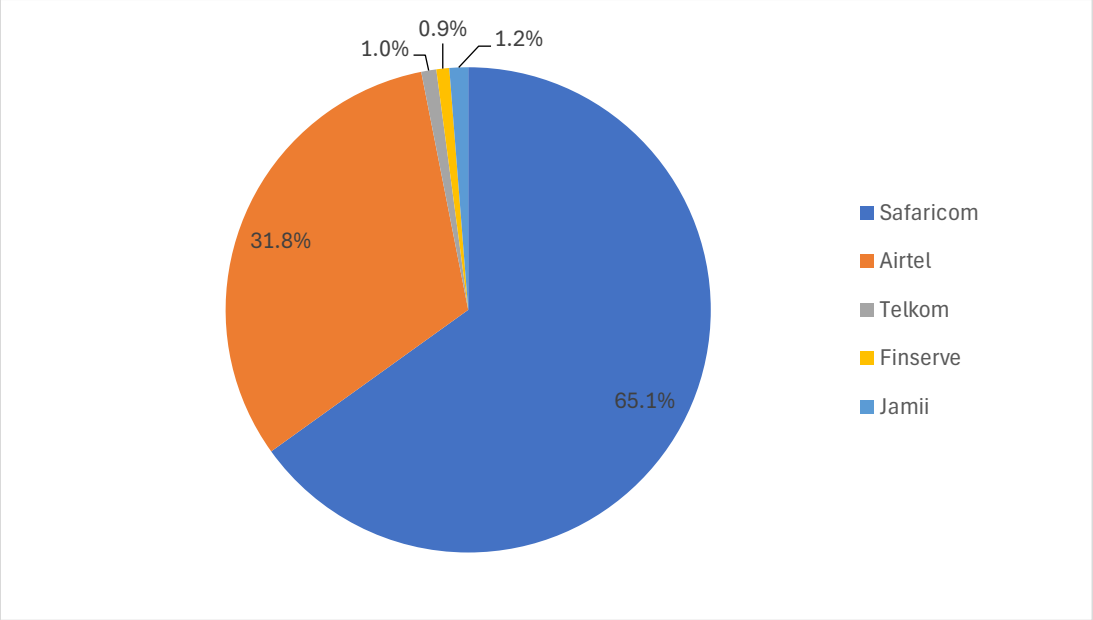



**Figure 32: Mobile data subscriptions FY 2024/25**

Source: CA Indicator dataset FY2024/25

82. The market would be considered concentrated by using various indicators as described in paragraph 77.

82.1. The HHI of the market calculated by using mobile data subscriptions is 5252.5. As noted previously markets with an HHI of above 2000 (or 1800 in some) are considered highly concentrated.[15] [16] This shows that on either of these examples, the Kenyan market for mobile data services is highly concentrated.

82.2. The CR4 indicator is 99. This indicates that 99% of the market is made up of the shares of the four largest competitors and also indicates high levels of concentration.

[15] Competition and Market Authority. (2022), *The State of UK Competition*, 29 April 2022.

[16] US Department of Justice and Federal Trade Commission. (2023), *Merger Guidelines,* 18 December 2023.

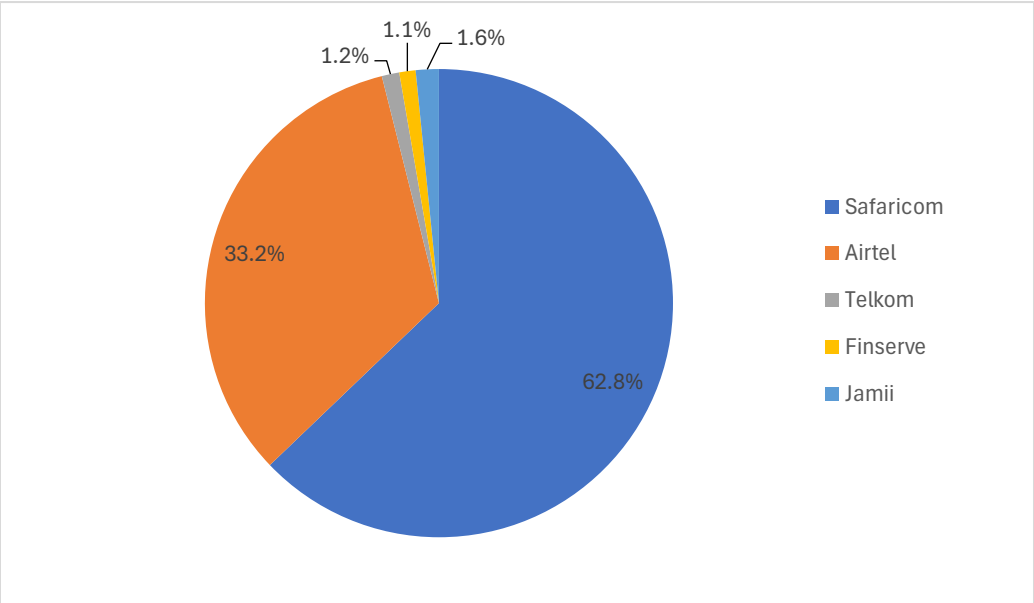



**Figure 33: Mobile broadband subscriptions FY 2024/25**

Source: CA Indicator dataset FY2024/25 (Note Airtel value includes Airtel Money)

## 6.3 Fixed consumer services

83. There are a greater number of fixed internet service providers that provide fixed data services in Kenya. These services are primarily provided through fibre to the premises.

84. The fixed data market for consumers is concentrated, though to a lesser extent than the mobile, with the three largest operators comprising 75% of the subscribers in the market and the five largest operators comprising over 90% of the subscribers in the market. The operators are as follows:

    84.1. Safaricom: Safaricom is the largest operator in fixed markets by subscribers. Safaricom has a large network of fibre that is predominantly provided over power lines. They offer a range of data packages to the market.

    84.2. Jamii: Jamii is historically one of the larger fixed internet providers. They have infrastructure that is used by various mobile operators for backhaul across the country. They also provider fibre data packages to the home under the Faiba brand.

    84.3. Wananchi: Wananchi has a fibre and satellite system in east Africa. They have a range of wholesale and carrier services. They also have various retail and business products under the Zuku brand including high speed internet and 'triple play' which combines internet with Zuku broadcasting services.

    84.4. POA!: POA! Is an internet services provider that has a range of products that are targeted at lower income customers and are at a lower price point. They also have street WiFi offerings.

    84.5. Mawingu: Mawingu is focused on expanding internet service coverage in rural and per-urban areas.

**Table 4: Market shares and concentration for fixed internet providers**

| | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Number of competitors | 31 | 42 | 44 | 69 |
| HHI | 2 543 | 2494 | 2391 | 1853 |
| CR5 | 0.959 | 0.937 | 0.936 | 0.875 |

Source: Acacia Economics, utilising CA data

85. As indicated above, the HHI is 2391. Therefore, the Kenyan fixed data market can also be considered to be highly concentrated though less concentrated than the mobile data market. Furthermore, the market shares of the largest operators are not as high as in the mobile market.

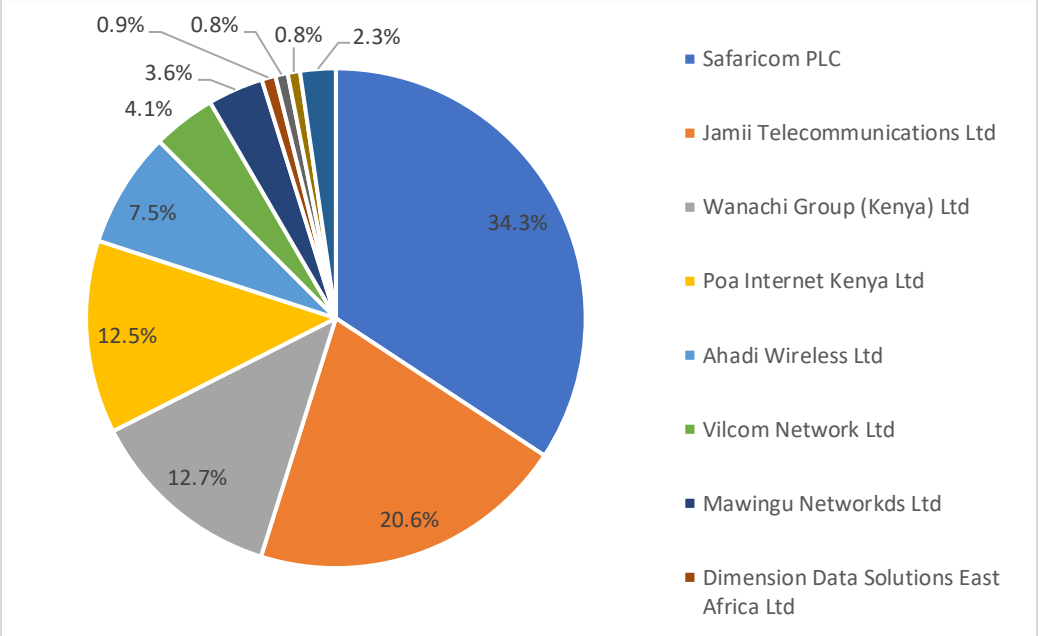



**Figure 34: Market share of fixed data subscriptions (number of subscribers) FY 2024/25**

Source: CA Q4 2024/2025 Sector Statistics reports, *Includes Wananchi Group Ltd, Simbanet, and Wananchi Telecom Ltd.

86. Fixed internet services can be broken down by customer type because some customers are enterprise customers. The largest include Safaricom, Liquid, Airtel, Seacom. Within fixed internet services there are also two main quality offerings, namely, shared and dedicated internet lines.

87. Services are also provided to customers by community network service providers. These are small, non-profit companies focused on enhancing connectivity within a community. While they do not currently have significant market shares, as a category they play an important role in the data ecosystem by providing connectivity to communities that may not otherwise have such access, and typically engaging in complementary educational projects within those communities. These services are beneficial to consumers.

## 6.4 Wholesale mobile services (such as national roaming and MVNO)

### 6.4.1 Market participants

88. Companies that wish to provide services to consumers at the retail level but do not have infrastructure may enter the market by purchasing wholesale access or capacity from MNOs that have the necessary infrastructure. Wholesale access to mobile networks may be provided through a variety of services, including national roaming, MVNO, and wholesale APN access. The type of access sought can vary dependent on the needs of the access seeker:

    88.1. *National Roaming*: National roaming allows companies (typically new entrants) to provide their customers with access to network services where they do not own their own infrastructure by roaming on the network of existing providers. Roaming is particularly useful for operators that are building out their networks and require coverage gaps to be filled. At present, operators in Kenya do not provide national roaming services, but only international roaming which is a different service.

    88.2. *MVNOs*: In some cases, service providers do not have their own infrastructure and operate as mobile virtual network operators (MVNOs), buying access to voice minutes and bytes of data, for example, on a wholesale basis. There are various kinds of MVNOs, including 'full' MVNOs which have their own core networks, product design, billing and customer service capabilities, and 'light' MVNOs that do not have their own core networks but offer their own branded packages and separately bill their own customers. In Kenya at present there is one MVNO, Equitel that utilises Airtel's infrastructure.

    88.3. *RAN-sharing*: RAN-sharing is a complex version of access which enables the access provider to share the radio access network ("RAN") either as a Multi Operator Core Network (MOCN) sharing or Multi Operator Radio Access Network (MORAN). This is not presently a model used in Kenya. However, RAN-sharing is becoming increasingly popular in other markets and this has implications for competition that we consider later.

89. In Kenya at present there are four MNO providers that have network infrastructure and can – technically – provide wholesale services. However, there may be differences in the extent to which they are able to do so or choose to do so. **At present only one provider (Airtel) is providing MVNO services**. The wholesale customer segments for these markets (such as MNOs looking for coverage, resellers, MVNOs) may vary depending on size and technological sophistication.

90. If considered superficially it is possible to conclude that Airtel has a 100% share of the market for MVNOs. However, this would be incorrect as the correct measure of market share for this would be by ability to provide. At present Airtel and Safaricom are able to provide wholesale services across the country (which would imply 50% market shares). In addition, Telkom and Jamii are able to provide them across their more limited footprint (in these areas there would be a 25% market share). Simply because some operators choose not to provide a service, does not render the operator or operators that choose to provide the service dominant in the market.

91. Therefore, the key issue here is not the level of concentration in this market, but the absence of any meaningful competition within these segments of the wholesale market within the Kenyan environment.

## 6.5 Wholesale fixed services (including wholesale capacity and connectivity across backhaul/metro/long distance/national backbone)

92. In order to create wholesale services across the value chain, providers can use a mix of building infrastructure and installing equipment, leasing different network elements, and buying capacity.

92.1. Firstly, the service provider can build the physical access infrastructure such as ducts and poles, and install optical fibre and equipment, and utilise the capacity that is generated.

92.2. Secondly, they can lease the physical access infrastructure, install their own fibre and equipment, and utilise the resulting capacity.

92.3. Thirdly, they could lease dark fibre and install active equipment and use the resulting capacity.

92.4. Fourth, they can buy the capacity, avoiding investments in physical infrastructure and equipment.

93. Providers can also choose different solutions for different segments of their networks. For example, they may build the infrastructure at the access segment and lease it on the other segments.

94. For service providers seeking access to wholesale fixed services different forms of wholesale infrastructure are not necessarily substitutes for each other. For example, a licensee seeking access to ducts to install its own fibre will not be satisfied with being offered access to the duct owner's optical fibre instead. However, companies with their own infrastructure may also lease from competitors for redundancy purposes.

95. There are a range of different operators in the capacity and infrastructure markets. However, a detailed assessment of the technology and network markets is complex as there is a mix of own build and leasing across companies along different routes. We therefore group the variations together, since providers and competitive dynamics are similar within each of the access, metro, long distance, and international geographic segments that we consider and since interviewees did not express concern over any of the specific segments.

96. The key providers are the following

96.1. Infrastructure and dark fibre providers: This includes companies like KPC, NOFBI- ICT Authority, KPLC and Kenya Railways.

96.2. Carrier and wholesale service providers: Liquid telecom, Baobab, Airtel, Safaricom, Telkom, Seacom.

97. Other sub-segments may be comprised of alternative operators, such as tower companies that provide fibre to the tower.

98. Based on interviews and information provided, the key market partipants appear to fall into the following categories.

**Table 5: Market participants for wholesale fixed networks**

| Network size | Providers | Size of network |
|---|---|---|
| Large networks | ICTA, Safaricom, Liquid, KPLC, | Over 10 000km |
| Medium networks | Airtel, Telkom, KETRACO, | 3 000 – 10 000km |

| | | |
|---|---|---|
| Smaller networks | KRC, Dimension Data, Frontier Optical | Under 1000km |

Source: Interviews and submissions

99. Public information related to fibre routes, excluding Safaricom for which information was not available, shows the following:

**Table 6: City to City Links**

| City-to-City | Jamii Telecommunications | Liquid Telecom | Gov of Kenya |
|---|---|---|---|
| Mombasa to Nairobi | ✓ | ✓ | ✓ |
| Nairobi to Nakuru | ✓ | ✓ | ✓ |
| Nairobi to Eldoret | ✓ | ✓ | ✓ |
| Nakuru to Eldoret | ✓ | ✓ | ✓ |
| Kisumu to Eldoret | ✓ | | |
| Nakuru to Kisumu | | ✓ | ✓ |
| Kisumu to Kakamega | | ✓ | ✓ |
| Mombasa to Mtwapa | | ✓ | ✓ |
| Mtwapa to Garissa | | ✓ | ✓ |
| Eldoret to Kapenguria | | ✓ | ✓ |
| | | ✓ | ✓ |
| | | | |
| **City-to-Region** | **Jamii Telecommunications** | **Liquid Telecom** | **Government of Kenya** |
| Nairobi to Eastern Region | ✓ | ✓ | ✓ |
| Mtwapa to North Eastern | | ✓ | |
| Garissa to North Eastern | | ✓ | ✓ |
| Mombasa to Central Region | ✓ | ✓ | ✓ |
| Nairobi to Western Region | ✓ | ✓ | ✓ |
| | | ✓ | ✓ |
| | | | |
| **City-to-Border** | **Jamii Telecommunications** | **Liquid Telecom** | **Government of Kenya** |
| Eldoret to Ugandan Border | ✓ | ✓ | ✓ |
| Kisumu to Ugandan Border | | ✓ | ✓ |
| Kakamega to Ugandan Border | | ✓ | ✓ |
| Nairobi to Tanzanian Border | ✓ | ✓ | ✓ |
| Kapenguria to South Sudan Border | | ✓ | ✓ |

Source: African Undersea and Terrestrial Fibre Optic Cables

## 6.6 Subsea cables

100. There are a range of subsea cables that land in Kenya. These are Seacom, TEAMs, EASSy, Lion2, DARE 1, PEACE, Seacom, 2 Africa, Daraja, Africa-1, Blue Raman and IOX. Those active as at 2024 are shown below.

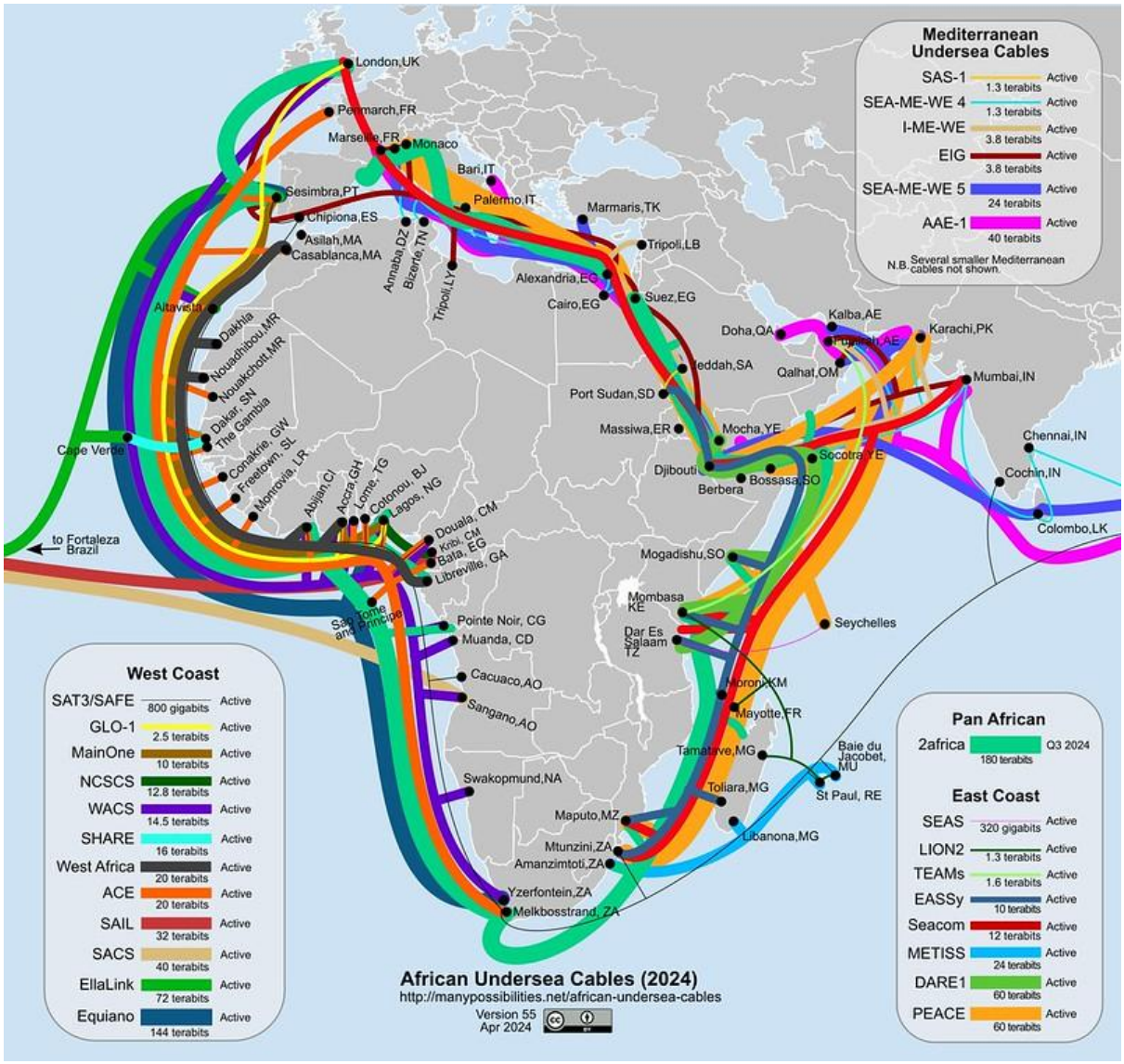



**Figure 35: African undersea cables (2024)**

Source: African Undersea Cables (2024), version 55, available at African Undersea Cables - Many Possibilities

101. The figure below shows the relative shares of capacity by subsea cable as at end FY24/25. A large part of the capacity utilised in Kenya is through the SEACOM and TEAMS cables with a large amount of capacity available on EASSY. Note that further cables have landed subsequently but are not reflected in the data for FY2024/2025.

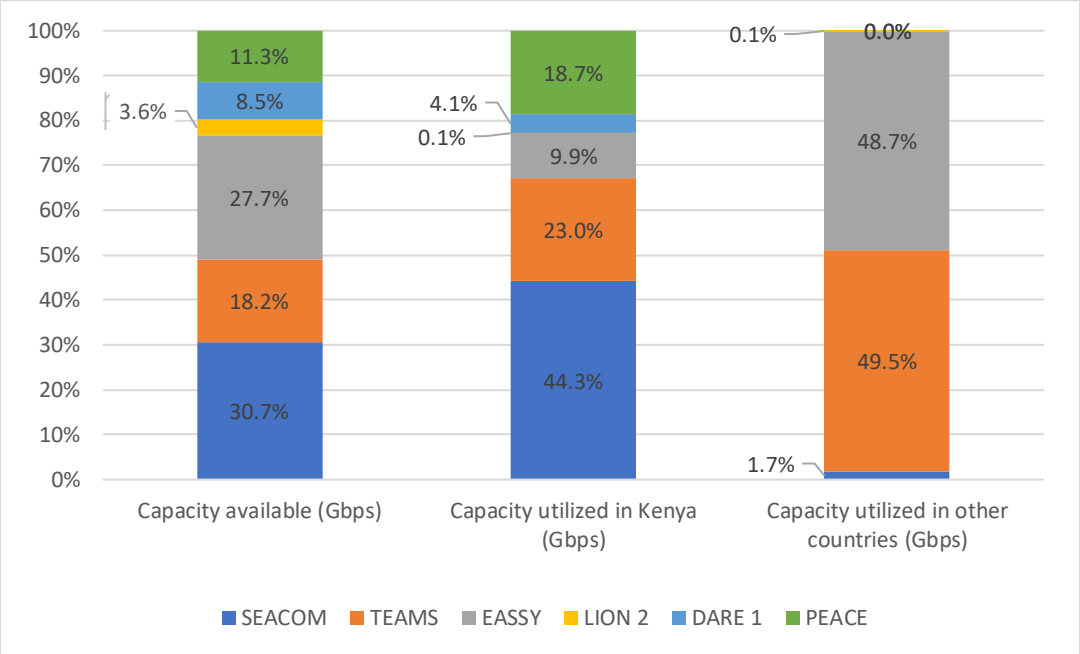



**Figure 36: Share of capacity of subsea cable FY 2024/25**

Source: CA data FY 24/25 report

102. We consider market shares and concentration by capacity available and by volume used. As noted previously, the HHI is the sum of square of the market shares. We see that the subsea cable market is concentrated in terms of HHI. However, there is a spread of companies that have available capacity at a wholesale level.

**Table 7: HHI of subsea cables by capacity**

| | |
|---|---|
| Capacity available Gbps | 2254 |
| Capacity utilized Kenya (Gbps) | 2970 |
| Capacity utilized in other countries (Gbps) | 4825 |

Source: CA data FY 24/25 report

103. While we will discuss this further in section on competition we can observe the following.

103.1. We would expect there to be a high concentration of subsea cable ownership given the high investment costs.

103.2. Often multiple cables are required by the same ISP or MNO for redundancy purposes and as such the operators do not necessarily compete but are more often considered to provide complementary services.

103.3. Within a cable, capacity may be sold through different operators that have share, at prices that they determine. As such, if a customer wishes to buy capacity on a particular subsea cable, it is often possible to negotiate across different providers with a share in that cable.

There may therefore be competition for selling capacity even within a single cable, by different shareholders. This complicates the simple analysis of market shares.

## 6.7 Towers

104. Towers are a key input into the provision of mobile and fixed wireless services. Towers are used by MNOs, ISPs and broadcasters. Infrastructure classed as towers includes masts of different heights, so-called lollipops for small area coverage, monopoles and concealed towers. Tower companies may also provide value added services such as fibre to the tower and power, though we do not consider these further. Access to towers in Kenya is made up of two models, self-supply by a vertically integrated MNO and leasing, typically from a dedicated tower company.

104.1. Self-supply: MNOs in Kenya historically built towers for their own networks. Various MNOs still own some of their own towers while others have sold and leased back their towers to tower companies. At present Safaricom self-supplies a large proportion of its towers, and Airtel predominantly leases its towers from American Tower Company (ATC) and Atlas.

104.2. 3rd party operators: Another business model is that of independent tower companies. These companies provide MNOs, ISPs and broadcasters with services including building custom towers required and leasing them, and collocation services on towers that they have built or own. They can also provide additional services such as power, fibre links etc. Independent tower companies in Kenya include ATC, Atlas, and AlanDick and Company. It is estimated that AlanDick and Company have a 5% share, Atlas has a 3% share and ATC has 33% of the total tower market.

105. The total tower market in Kenya is concentrated. This can be seen from the information below.

105.1. Safaricom maintains a large number of its own towers, controlling access to [Confidential] and it is estimated that they own over 50% of all the towers in Kenya.

105.2. Airtel sold its towers in 2015 to Eaton Towers and ATC. ATC also purchased Telkom's towers in 2018 and then purchased Eaton towers thereby increasing their market share through acquisitions. ATC is estimated to own [Confidential] which is estimated to be around 33% of the total tower market.

105.3. AlanDick & Company and Atlas are tower companies with smaller market shares.

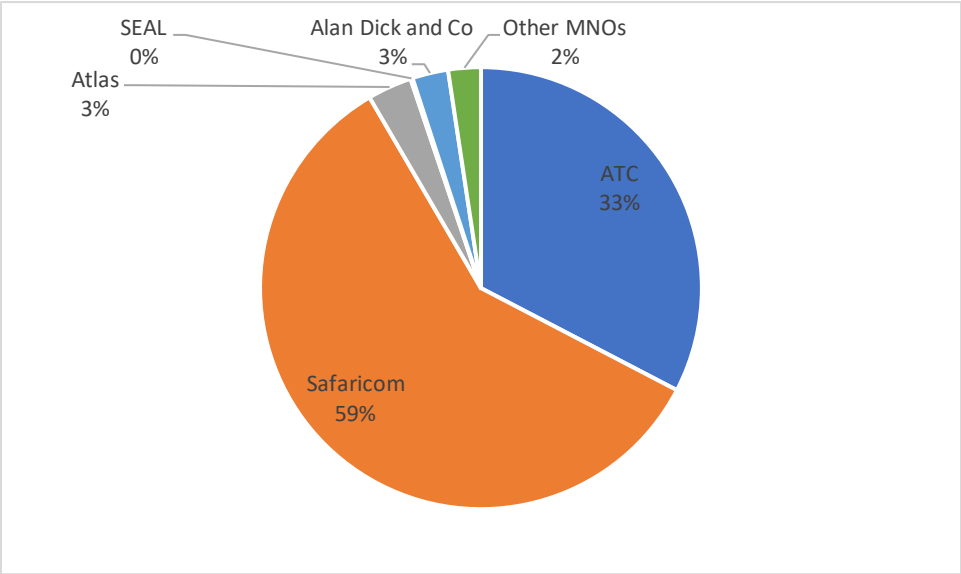



**Figure 37: Market shares of tower companies in Kenya (2024)**

Source: TowerXchange, Q3 2024

106. As such, the tower market has an HHI of 4562 and a CR4 of 97%. In other words, it is highly concentrated. While there are various independent tower companies the majority of towers are owned by Safaricom.

## 6.8 Summary of findings on market share and concentration

107. Kenya's telecom sector remains highly concentrated across most mobile service segments, with Safaricom having a clearly dominant market share in mobile data (measured by SIMs, volumes, and revenue). However, fixed broadband shows greater diversification, with multiple medium-sized providers (Jamii, Poa, Wananchi, Ahadi) reducing concentration over time by increasing their share in the market.

**Table 8: Summary of concentration across segments**

| Segment | Number of Operators | Level of Concentration |
|---|---|---|
| Mobile Data Subscriptions (number of SIMs) | 5 | Highly concentrated – Safaricom 65.1%, Airtel 30.9% |
| Mobile Broadband Subscriptions (3G/4G/5G) | 5 | Highly concentrated – Safaricom 62.8%, Airtel 33.2%; limited smaller players |
| Mobile Revenues (FY 2024/25) | 5 | Highly concentrated – Safaricom 83.4% of total revenue |
| Fixed Data / Internet Subscriptions | Over 10 | Moderately concentrated – Safaricom 34.3%, Jamii 20.6%, Poa 12.5%, Wananchi 12.6% |
| Subsea cable | 11 cables | Moderately concentrated |

| | | |
|---|---|---|
| Towers | More than 5 | Highly concentrated- Safaricom 59%, ATC 33% |

108. Market shares are an important indicator that should be triangulated with other information to understand competitive dynamics in a market. However, the market shares of Safaricom in the mobile data sub-segment and the tower segment are very high. This is a strong indicator that competition may not be sufficiently effective.

# 7 Cost drivers

109. There are a range of factors that impact on the cost of data provision in Kenya. This relates to the following TOR:

109.1. TOR 10: Ascertain costs of elements involved in various layers including methods of costing used for cost accumulation and techniques used for cost optimization and suggest methodologies for provision of affordable connectivity in line with the Authority's mandate.

109.2. TOR 11: Identify all cost drivers for the provision of data based on the various technical and business models, including assessing the empirical magnitude of the contribution of the respective drivers on the overall wholesale and retail prices for data services This is aimed at enhancing the affordability of Internet services and bridging the digital divide.

110. In this section we consider the cost drivers based on a mix of qualitative and quantitative information. The main cost drivers reported by the telecommunications operators can be divided into two main parts of the value chain:

110.1. wholesale and carrier cost drivers; and

110.2. retail cost drivers.

111. We unpack costs using the following

111.1. First, we discuss cost drivers using qualitative information provided by operators in written submissions and interviews supplemented by modelled costs using the model developed for the Authority's 2022 cost study.

111.2. Second, we discuss the contribution of costs using operator annual financial statements.

111.3. Third we assess the costs of elements in different layers using quantitative allocations provided by operators.

## 7.1 Wholesale and Carrier Cost Drivers

112. Wholesale and carrier cost drivers primarily relate to the structural aspects of the business that affect a firm's ability to produce products and services. Data costs are impacted by a range of factors. This includes factors unrelated to the equipment itself such as spectrum, data or voice volumes and network topology which can impact on the type and amount of equipment required. An assessment of costs, as indicated earlier in this report, can also provide insight into the factors affecting the struture of a market and why it is or is not as competitive as it could be. This in turn can affect the price charged to consumers and the terms on which services are provided to consumers

### 7.1.1 Network infrastructure and capacity capital investment

113. Network infrastructure cost drivers refer to expenses associated with acquiring, deploying, operating, and maintaining telecommunication networks. These costs vary depending on the technology used, number of subscribers anticipated, and geographic conditions. This category includes the following:

113.1. Fibre and cable deployment costs: This includes laying and maintaining terrestrial or overhead fibre networks.

113.2. Site infrastructure such as towers: This includes the cost of building the tower, the cost of power supply etc.

113.3. Network equipment: This includes routers, switches, transmission equipment, and 4G/5G infrastructure (antennae, masts, microwave links).

113.4. Data centres and interconnection points: These are necessary for colocation, peering, and internet exchange points.

113.5. Last-mile connectivity: This part of a network is relevant to fixed and connects end-users, networks or other carriers to the nearest point of presence on their provider's network.

114. As indicated earlier, infrastructure can be built or can be leased. Furthermore, capacity can be bought for resale depending on the business model. Wholesale and carrier capacity is an additional cost that drives data prices.

115. Using the Authority's 2022 cost model based on a hypothetical operator with a 33% market share we see the estimated cost breakdown as follows:

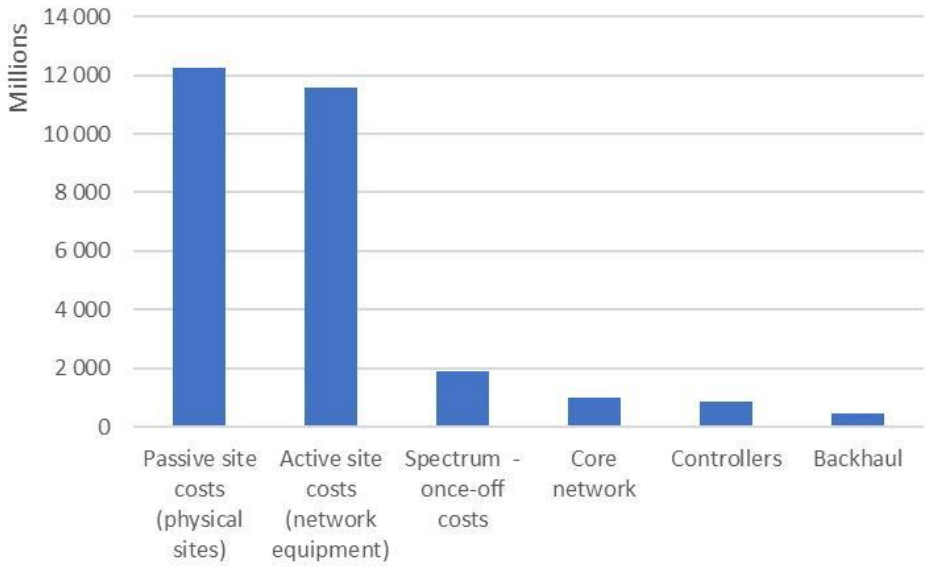



**Figure 38: Annualised costs of assets by hypothetical operator with a 33% market share in Kenya (CA cost model, 2022) - estimated for the year 2024/25**

Source: Acacia analysis of CA 2022 cost model

116. The largest single asset-related cost for a mobile network operator is typically on passive site infrastructure. This cost can be reduced through sharing and leasing infrastructure from another licensee such as a tower company (see, for example, the annualised costs of assets modelled in the Authority's 2022 Call termination, Roaming, and Tower sharing Costing Study).

117. Sharing the costs of passive infrastructure results in significantly lower costs for mobile network operators, with very little reduction in competition since there is relatively little innovation in respect of passive infrastructure (ie. tower technology is largely standard).

118. Radio network and related equipment on sites is the second largest asset-related cost item. Sharing active infrastructure, such as through radio access network (RAN) sharing, while resulting in lower costs, may come at a significant cost to rivalry, since MNOs do compete on the technology and services made available through their RAN infrastructure using their respective spectrum allocations.

119. Consider, for example, a market with only two operators that currently compete in rolling out new 5G sites to offer higher speeds and throughput to customers. While those two network operators cooperating through a RAN sharing agreement would have lower costs, they would no longer compete for customers by rapidly rolling out 5G services in competition with one another. This would have a negative effect on competiiton in general. This is discussed in more detail in Section 11.2.4.

### 7.1.2 Operational costs

120. Operational cost drivers refer to costs that are necessary for the every-day running of the business and not the network infrastructure cost drivers. This includes the following:

    120.1. Energy, mainly related to network electricity consumption.

    120.2. Maintenance and repairs for network uptime periods and in the event of any fault and failures.

    120.3. Network monitoring and security, including cybersecurity, distributed denial of service (DDoS)[17] protection and network management systems.

    120.4. Labour and technical expertise which can include salaries of engineers, technicians and support staff.

    120.5. Site lease costs.

    120.6. Interconnection charges between carriers for traffic exchanges (while this is usually a cost associated with voice services it impacts on the general financial flows).

121. Using the Authority's 2022 Cost model, we see that the largest single operating expenditure item for mobile network operators is the cost of operating passive site infrastructure which is also the largest asset-related cost item, as discussed above. Again, as above, active network equipment at high sites is the second largest operating expenditure cost item. Spectrum fees can also account for a substantial proportion of operating costs.

122. As discussed above, while sharing passive site infrastructure results in substantial cost reductions with only a limited reduction in rivalry among MNOs, sharing active infrastructure needs to be approached with more caution given the risks to competition. This is discussed in more detail in Section 11.2.4.

123. Spectrum fees form a substantial component of costs and are discussed more in Section 9.1.

17 DDoS is usually caused by malware that disrupts the usual pattern of traffic and can be caused by bots.

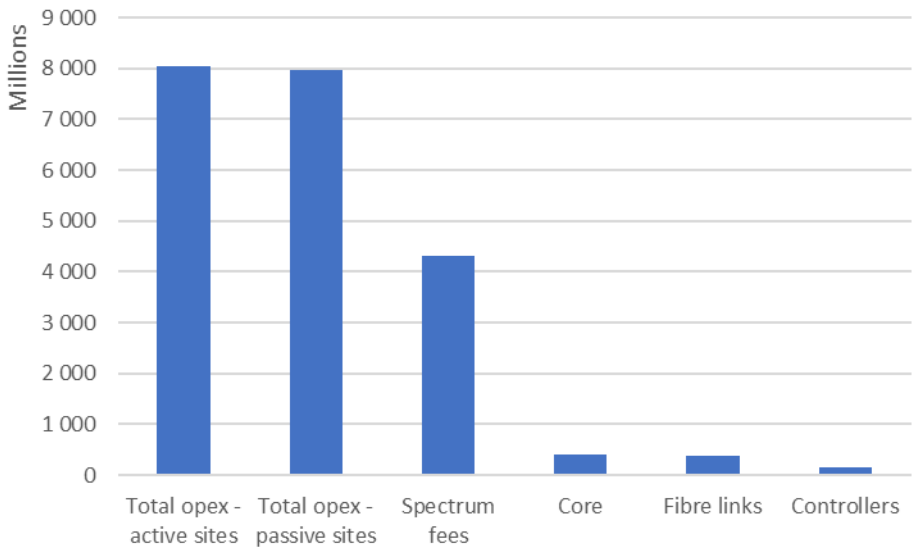



**Figure 39: Operating expenditure by hypothetical operator with a 33% market share in Kenya (CA cost model, 2022) - estimated for the year 2024/25**

Source: Acacia analysis of CA 2022 cost model

124. Some other factors noted by operators include the fact that there are high costs for power in Kenya due to the high cost of backup power and the instability of grid power in rural areas which requires expensive backup systems. Safaricom, for example noted in their Annual report that their operating costs had grown by 11%YoY, but that absent energy costs this increase would have only been 4.3%.[18] These costs were driven by fuel and electricity. In submissions, multiple firms reported facing challenges related to energy and power supply.

### 7.1.3 Regulatory compliance and spectrum costs

125. Regulatory cost drivers refer to fees and payments that are made to satisfy rules or laws set up by a regulatory body such as the Authority. For telecommunication firms, these come in the form of :

125.1. Interconnection fees (relevant to voice markets);

125.2. Spectrum fees for frequency allocation (which we have discussed in the section above);

125.3. License application and annual fees to the Authority;

125.4. Contributions to the universal service fund in Kenya of 0.5% of gross annual revenue;

125.5. County wayleaves and permit charges;

125.6. General taxes such as excise duty, VAT and other government levies.

126. At present, a mobile operator would typically require a few different licences (such as NFP, ASP, CSP and IGSS).

127. Levies by county governments are an additional layer of costs:

[18] Our Kenyan business – Safaricom

127.1. County Telecommunication Mast Licensing Fee: Counties including Kiambu, Laikipia, Mombasa etc have instituted County License Fees. In its December 2024 investigation, which included site visits to premises and installations, the Commission Authority found that licensed operators cited the high cost of levies imposed by county governments for erecting masts.[19] These charges reportedly can reach up to KSHS 200,000 per mast, significantly increasing the cost of operating.

127.2. County High Physical Planning Permit (PPA2) Fees: This is a fee that requires payment to county Authorities. Certain operators have submitted that this is leading to increased data costs.

127.3. These levies vary significantly from one county to another, are not standardised, and create substantial uncertainty and financial strain for operators.

**Policy proposition 1:**

The Authority should lead a co-ordinated approach to streamline access and costs of permits and access and engage in targetted interventions to reduce barriers related to rollout.

128. Spectrum also forms a large cost (as noted above). Spectrum requires once off purchase costs as well as annual fees. It can be noted though that spectrum assignment can reduce other costs as more spectrum can reduce the number of sites required. This is discussed in more detail in section 9.1. At present spectrum fees are set according to a fixed formula that includes a fee for exclusive use of a specific bandwidth and spectrum usage fee depending on the number of transmitters (TRXs) in the network.[20] After a consultation in 2024, a new pricing policy was developed by the Authority but is currently being litigated. An important change that has been proposed is to change the basis of spectrum pricing away from calculating the number of a licensee's transceivers, which reduces incentives to roll out network infrastructure, including in under-served areas. A new fee structure de-linked from network size may have the effect of increasing spectrum licence fees among licensees that have smaller networks. It is therefore important for the **Authority to ensure that any spectrum pricing regime is competitively neutral**, i.e. that does not risk the exclusion of smaller rivals, and thus the reduction of competition. This is discussed in more detail later in the document in section 11.2.1.

129. Licence fees and spectrum fees together comprise a significant portion of costs.

129.1. [Confidential information redacted]

### 7.1.4 Technology and Innovation Costs

130. Technology and innovation costs are the costs accompanying the updating and expanding of existing technology. This can include next generation technologies such as 4G and 5G, and nationwide fibre rollouts, which demand a high amount of capital expenditure. In addition to

[19] Communications Authority of Kenya. (2025, January). *Compliance and enforcement report for the second quarter, financial year 2024/25 (October–December 2024).* https://www.ca.go.ke/sites/default/files/2025-04/Compliance%20and%20Enforcement%20Report%20for%20Quarter%202%20FY%202024-2025.pdf

[20] Communication Authority, Frequency Fee Schedule Effective 1 July 2018.

the rollout of new technologies, there are also investments to support digital services such as AI, chatbots, app-based services and even the automation of certain processes. Along with digital transformation comes the need to ensure that users' data is protected when they are online, and that services provided digitally are secured against cyber-attacks. Research and development costs may also be necessary.

## 7.2 Retail Cost Drivers

131. In addition to wholesale costs, there are retail cost drivers which mainly relate to costs that are incurred in relation to interaction between the service provider and the customer. These costs can be divided into the following categories.

### 7.2.1 Customer Acquisition and Retention Costs

132. Customer acquisition and retention costs refer to the costs incurred by the licensee to attain customers. This includes marketing and advertising through various mediums such as hard copy and digital advertisements, television and radio commercials, sponsorships of people or entities and promotions with the end goal of attracting more subscribers. In addition to advertising, commissions are also paid to workers such as sales agents, retailers and the direct sales teams to incentivise them to bring in more new subscribers. Retention costs include churn reduction costs spent on incentive programmes such as loyalty programmes, discounts and retention campaigns.

133. In addition to marketing and advertising campaigns, there are general marketing and branding costs.

### 7.2.2 Network and Service Delivery Costs

134. Retail level network and service delivery costs relate to costs that are associated with physically bringing the service to customers, as discussed above. This involves last-mile connectivity where the networks to end-users are deployed and must be maintained. In addition, a functioning billing and IT system is required. This includes the costs for billing platforms and infrastructure for service management which is often cloud-based. Off or on-site backup and storage of customer data (along with associated data protection activities) is also part of this category.

### 7.2.3 Operational and Support Costs

135. The operational and support costs refer to the costs associated with day-to-day activity, particularly in the process of communicating with customers. A common cost for this category is the maintaining and functioning of call centres and customer support. This may include salaries, training programmes and outsourced support services. Another point of customer contact outside of call centres are retail stores and distribution points. These require costs such as the costs of running and maintaining a physical store, kiosks, and logistics for SIM registration and activation.

136. In addition, managing fraud and security also incurs costs. This includes the costs of preventing unlawful SIM swaps, phishing, or unauthorised usage among other undesirable actions which can affect the customers.

### 7.2.4 Retail regulatory and Compliance Costs

137. In addition to the regulatory costs already mentioned above for the wholesale and carrier cost drivers, there are also compliance costs related to implementing consumer protection laws, data privacy and billing information obligations such as itemised billing.

### 7.2.5 External and Economic Factors

138. Costs can fluctuate based on external and economic factors. This refer to changes and shocks that occur outside of the licensee and are due to either a gradual shift or shock in the economic environment. This includes overarching issues such as inflation spikes, changes in supply chain costs and exchange rate fluctuations.

139. Inflation and supply chain costs can result in particular costs of equipment for operations, energy or labour becoming more expensive. In Kenya there have been periods during which inflation has been fairly high.

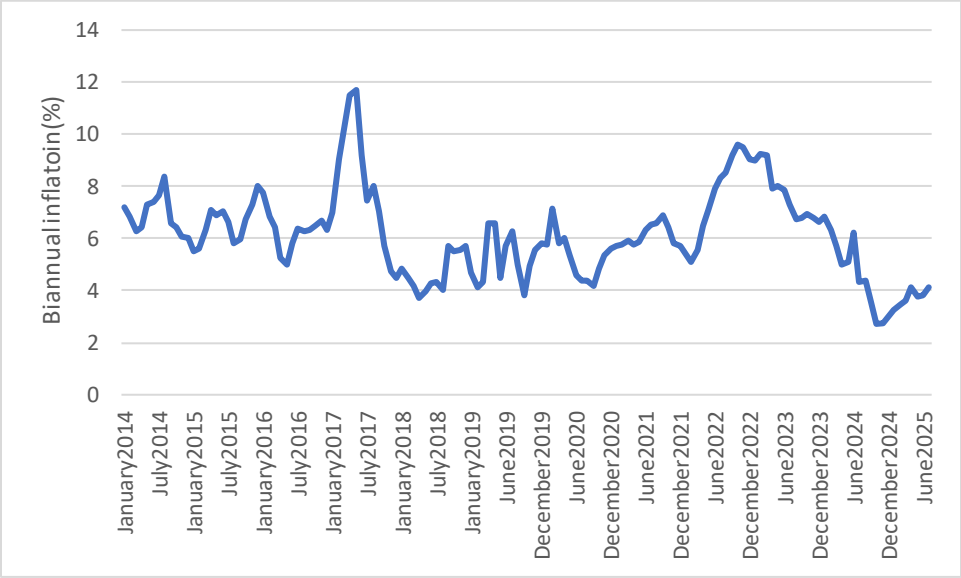



**Figure 40: Inflation (2014-2025)**

Source: Central Bank of Kenya

140. Exchange rate fluctuations are also an important driver of costs. Exchange rate fluctuations impact the buying power of the Kenyan Shilling when importing network equipment. As many inputs are imported, the depreciation of the Kenyan Shilling, significantly increases the cost of equipment priced in US dollars. This can be significant given the high costs of network infrastructure and maintenance. Furthermore, firms often require foreign support for installation and servicing which is also affected by currency fluctuations.

141. The figure below indicates the changes in the strength of the Kenyan Shilling relative to the United States dollar. Between 2009 and 2024, the Kenyan Shilling has gone from 77 Kenyan Shillings for 1 USD to 135 Kenyan Shillings for 1 USD, a 75% depreciation over 15 years. The currency depreciation made the cost of importing equipment more expensive.

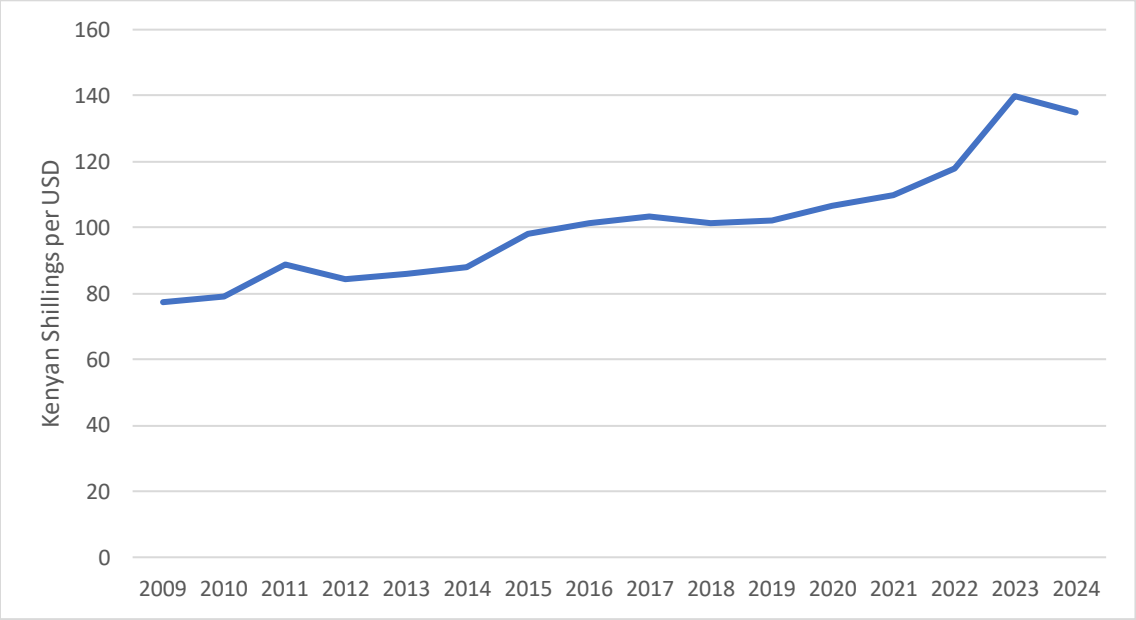



**Figure 41: Average official exchange rate (Kenyan Shillings per USD)**

Source: World Bank, 2025

142. Import duties on devices and network components or associated infrastructure such as steel or concrete also affect the sector.

## 7.3 Analysis of Annual Financial Statements

143. We next analysed financial statements to ascertain the trends for cost drivers of telecommunication firms in Kenya.

144. Operators in Kenya have very different business models from each other. For example, some invest heavily in infrastructure while others purchase capacity or wholesale services. Furthermore, there are a range of products and services provided. This often utilises the same infrastructure and as a result there are joint and common costs. This means that disentangling the drivers of data prices alone from the financial statements is complex. For example, a fixed licensee that engages in provision to enterprises may have cloud service and managed network services, some may include content and others provide mobile money. While these are different product lines and revenue may be split out, often expenses and costs are not. As such, analysis from financial statements likely overestimates costs and therefore should be combined with analysis from operator allocations in the next section in order to reach conclusions.

145. As discussed above there are a range of costs that are significant for operators. For full service mobile operators the key expenses listed in financial statements include the following categories:

145.1. Network operating costs

145.2. Access charges

145.3. License fee and spectrum charges which includes all fees in relation to acquiring or renewing a license and also includes amortization of spectrum licence fees as well as annual fees.

145.4. Sales and marketing expenses which includes costs associated with drawing in and retaining new consumers

145.5. Employee costs which includes costs associated with maintaining employees such as salaries/wages; allowances, contributions to retirement, insurance or medical funds recruitment; training; and the general welfare of the staff.

145.6. Depreciation

146. We utilised financial statements available to the Authority and analysed the costs for the largest operators. We have analysed the most recent for each operator. We concentrated on the Income and Expense statement and the breakdown of costs.

147. Given the vast discrepancies across business models and reporting styles we have provided some examples of the breakdown of different operators with varying models.

147.1. Safaricom has a large coverage footprint, with a large allocation of spectrum (discussed later) is vertically integrated, owns most of own towers and infrastructure.

147.2. Airtel has a large coverage footprint, medium spectrum allocation and leases most of its towers.

147.3. JTL has a more limited footprint, limited spectrum and leases its towers.

148. It is important to note that in the annual financial statements data shares and common costs with voice and SMS as well as a range of other products including value added service (VAS) and even mobile money at times. As such, these breakdowns are estimates per company and are not limited to data. However, various patterns emerge.

149. For [Confidential], the largest cost is network operations and maintenance costs, comprising [Confidential]. Similarly, depreciation accounts for [Confidential]of its costs. This reflects its investment. Other sizeable costs include interconnect charges which are close to [Confidential] and licence and spectrum fees which including the amortized portion of the licence also makes up just [Confidential].

Confidential information redacted

**Figure 42: Cost breakdown for [Confidential] (FY 2024)**

Source: Acacia calculations based on AFS 2024 supplied by CA

150. We also considered [Confidential] financial statements. Over [Confidential] their costs relate to depreciation and employee and director related costs. However, licence fees, levies and amortisiation of the 4G licences comprises over [Confidential] of costs.

Confidential information redacted

**Figure 43: Cost breakdown for [Confidential] FY 2024**

Source: Acacia calculations based on AFS 2024 supplied by CA

151. This is slightly different for [Confidential] whose costs comprise [Confidential] network licence amortisation and licence fees. They also have a [Confidential] percentage related to interconnect and roaming. They have smaller proportion allocated to depreciation which likely reflects their higher spend on other cost categories in comparison to the other operators.

[Confidential information redacted]

**Figure 44: Cost allocation for [Confidential] FY 2024**

Source: Acacia calculations based on AFS 2024

152. As is aligned with expectations, large costs reflect network investment. In addition, licence fees (and licence spectrum costs) are both sizeable. While interconnection is not related data but is rather related to voice, the amount spent on interconnection impacts on overall costs faced by operators which has a direct impact on their investment and costs. Interconnection is a sizeable cost. As these are factors that are directly impacted on by the Authority, these cost drivers can be affected through regulatory decisions and enforcement.

## 7.4 Costs of elements as per value chain

153. To understand cost drivers in a different way we requested that operators provide us with a breakdown of OPEX and CAPEX costs categorised by the layer that they relate to. CAPEX can differ annually depending on the projects and investments that are required at that time and the business model used (for example, the extent to which they build or buy in different elements of the network). As such, network operators' costs may differ on a yearly basis. However, general patterns emerge.

**Figure 45: Confidential Operator CAPEX breakdown**

Source:– response to data request

**Figure 46: Confidential Operator CAPEX breakdown**

Source: Safaricom – response to data request

**Figure 47: Confidential Operator OPEX breakdown**

Source: Airtel – response to data request

**Figure 48: Confidential Operator OPEX breakdown**

Source: Safaricom – response to data request

154. We see from an analysis of [Confidential] information that network sites/RAN accounts for an extremely high proportion of CAPEX costs. Spectrum costs are also substantial. For [Confidential], these form a high proportion of CAPEX while [Confidential], lists spectrum costs as OPEX, of which it also comprises a large amount. In addition, [Confidential]OPEX costs are mostly at head office level.

155. We contrast this with a stylised cost model developed for the South African regulatory authority to calculate the cost of mobile termination and enable it to arrive at a cost-related

rate.[21] In contrast to the model in which spectrum costs are around 2-3% of operating costs, the [Confidential] data shows 18-24%.

156. In conclusion, we note the following:

156.1. Licence and spectrum fees make up a significant proportion of costs.

156.2. Infrastructure costs including site acquisition are a significant cost driver.

157. Recommendations related to these costs are discussed in the final section.

[21] Available at Call Termination Rate Review — Independent Communications Authority of South Africa

# 8 Pricing

158. We have considered the pricing of mobile and fixed services in Kenya. There are various ways in which prices differ. This chapter provides insight into a component of TOR 1: Identify the different services across the data value chain and determine, cost drivers, pricing structures, considerations in product development

159. It also provides insight into the TOR 5: Analyse the impact on pricing of data services in the context of competition issues arising due to convergence in digital technologies

160. Pricing by firms is determined by different variables, with operators needing to balance affordability and profitability while accounting for the differing costs faced by firms, along with their competition and demand. Differences between firms that affect their pricing can include:

    160.1. Spectrum assignment and infrastructure

    160.2. Demand and maturity of the market

    160.3. Competitive Intensity among the firms

161. On the consumer side, data prices that consumers see have different product characteristics:

    161.1. Service and usage-based factors, which can include the composition of the bundle purchased, speed, roaming needs and length of expiration;

    161.2. Bundling and value-added services;

    161.3. Time-based and promotional pricing;

    161.4. Installation and connection fees.

162. As such, it is not straightforward to compare prices across different companies. This is particularly in instances in which pricing is personalised and dynamic. However, in this section we provide a comparison across various forms of pricing based on finding the most similar packages provided across providers.

## 8.1 Pricing of mobile products in Kenya

163. Pricing of mobile data in Kenya varies. Data is sold in bundles that varies by size of bundle, expiration and whether it includes other services (such as voice and SMS) or alternatively on a pay-as-you-go basis.

    163.1. Data is sold in daily, weekly and monthly bundles. These can include SMS and voice additions.

    163.2. Data bundles with shorter expiry are typically cheaper than those with a longer expiry

    163.3. Data bundles are typically cheaper per MB as the amount of data increases

164. From an analysis of the data we have available it appears that a higher proportion of customers in Kenya purchase daily bundles. These bundles include data along with some voice and SMS. This highlights firstly, that consumers are price sensitive (as daily bundles are the cheapest) and that they currently value bundles that incorporate voice. This shows that the voice market still has a strong impact on data.

165. The figure below illustrates the daily data price bundles of Kenya's four main telecommunication firms. We note that where operators did not submit sufficient data we used public data. As such, there may be additional packages that are available that are not shown.

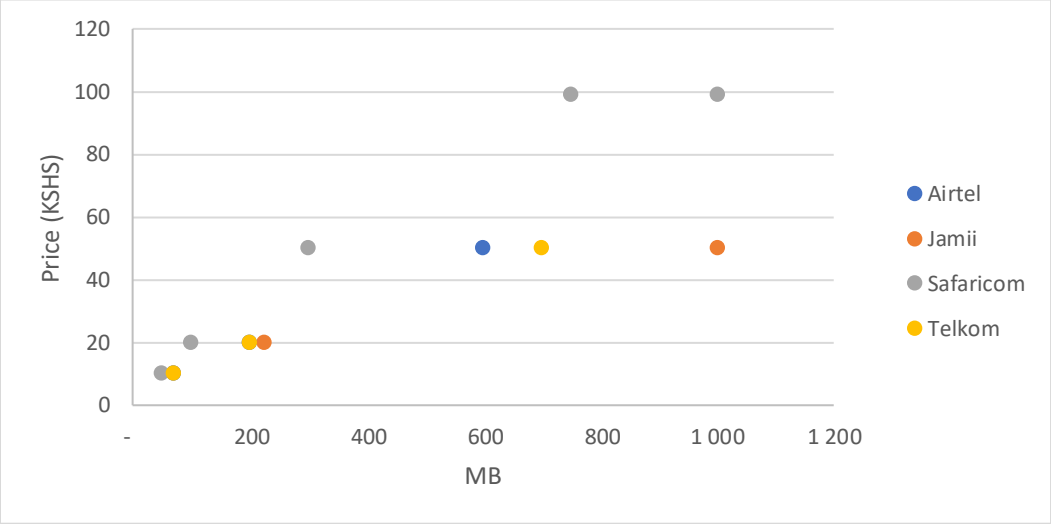



**Figure 49: Prices of daily data bundles in Kenya**

Source: Operator Websites, collected on 21 July 2025, Operator data submitted

Note: there is differentiation as the Safaricom bundles with the exception of 1GB include free whatsapp and a fixed amount of free SMS. Telkoms 2GB bundle is night only with Telkom 60 minutes

166. We see the following:

166.1. Safaricom prices are typically higher than other operators. However, many of their bundles are not directly comparable to the others listed as they include an SMS bundle and free Whatsapp. Where we do compare like for like we see a 1GB data-only bundle on Safaricom is double the price as Jamii.

166.2. For KSH 50 Shilling, a consumer would get 1GB of data from Jamii, 700MB from Telkom, 600MB from Airtel and only 300MB from Safaricom (though they include 150 SMS and free Whatsapp).

166.3. The pricing patterns show that there is differentiation and that companies have different types of bundles and price points with some appearing to compete more on price.

167. There are similar patterns if we compare weekly bundles. The figure below illustrates the weekly data bundle prices of Kenya's four main telecommunication firms.

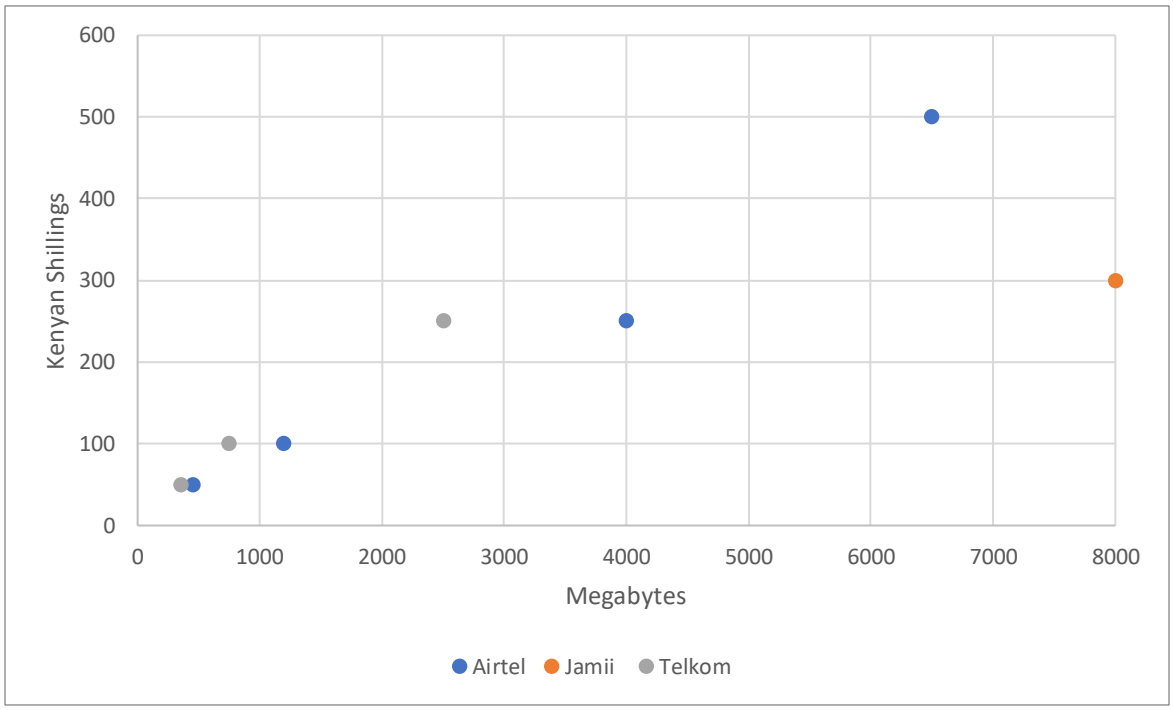



**Figure 50: Prices of weekly data bundles in Kenya**

Source: Operator Websites, collected on 21 July 2025

168. The following patterns emerge:

168.1. Safaricom did not offer weekly data bundles in the period of time for which data was collected, though they have historically. As such they are not represented.

168.2. Jamii is cheaper than Airtel as their 8000 MB bundle is 200 Kenyan shillings less than Airtel's 6500 MB bundle. Despite being more cost effective on a per unit basis, Jamii only offers one, fairly large weekly bundle.

168.3. Airtel remains cheaper than Telkom in the weekly bundle offerings as they offer packages for the same price but with higher bundle offerings as Telkom. For example, Airtel's 4000 MB bundle is the same price as Telkom's 2500 bundle and Airtel's 1200 MB bundle is the same price as Telkom's 750 MB bundle.

169. The figure below illustrates the monthly data pricing strategies of Kenya's four main telecommunication firms.

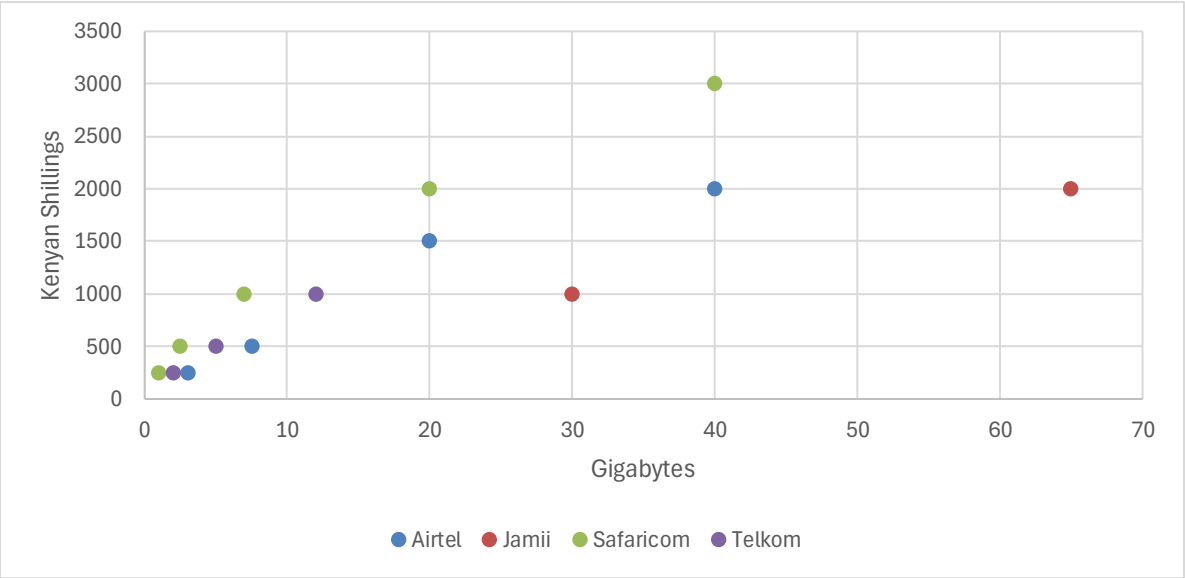



**Figure 51: Prices of monthly data bundles in Kenya**

Source: Operator Websites, collected on 30 June 2025

170. We see the following:

170.1. Safaricom has the highest prices across data bundle offerings. This is particularly evident in the case of smaller bundles, where Safaricom's 2500 MB bundle is priced at twice the cost of Airtel's 3000 MB bundle. This pattern persists for larger bundles, with Safaricom's 40000 MB bundle priced at one and a half times more than Airtel's equivalent. It can be noted that Safaricom often includes Whatsapp and free SMSs and have different bundles at the same price and as such it is difficult to make accurate comparisons. However, the overall pattern is that their prices are higher.

170.2. Jamii appears to be cheaper than other operators. At Kshs.2000 Jamii provides far more data than any competitor. Furthermore, its 30000 MB bundle is cheaper or the same price as Airtel's 20000 MB bundle and Telkom's 12000 MB bundle respectively. However, Jamii has a limited number of bundles on the market.

170.3. Airtel appears to be cheaper than Telkom as it provides the same price for larger bundles as seen with their 3000 MB bundle compared to Telkom's 2000 MB bundle and their 7500 MB bundle compared to Telkom's 5000 MB bundle.

171. It is important to note that there are speed and coverage differences across operators and as such these comparisons are not always on a like-for-like basis. However, we note that the differences in pricing likely reflects quality differences or market power.

172. We did not get detailed data from all operators. However, we examined in some detail the purchase patterns of consumers from operators who provided data.

[Confidential information redacted]

## 8.2 Pricing for fixed broadband products in Kenya

173. Pricing of fixed broadband data services usually differs based on various factors:

173.1. Speed: Higher speeds are usually more costly

173.2. Length of contract: Longer contract durations are usually cheaper

173.3. Bundled Services: Additional services such as subscription television usually increase the price

173.4. Infrastructure type: Fibre connections are often priced differently to alternatives

174. In this section we considered the pricing of fixed products by speed, and consider home and enterprise plans.

### 8.2.1 Home plan fixed broadband

#### 8.2.1.1 Lower speeds

175. The price of fixed broadband in Kenya varies considerably within the same speed specification.

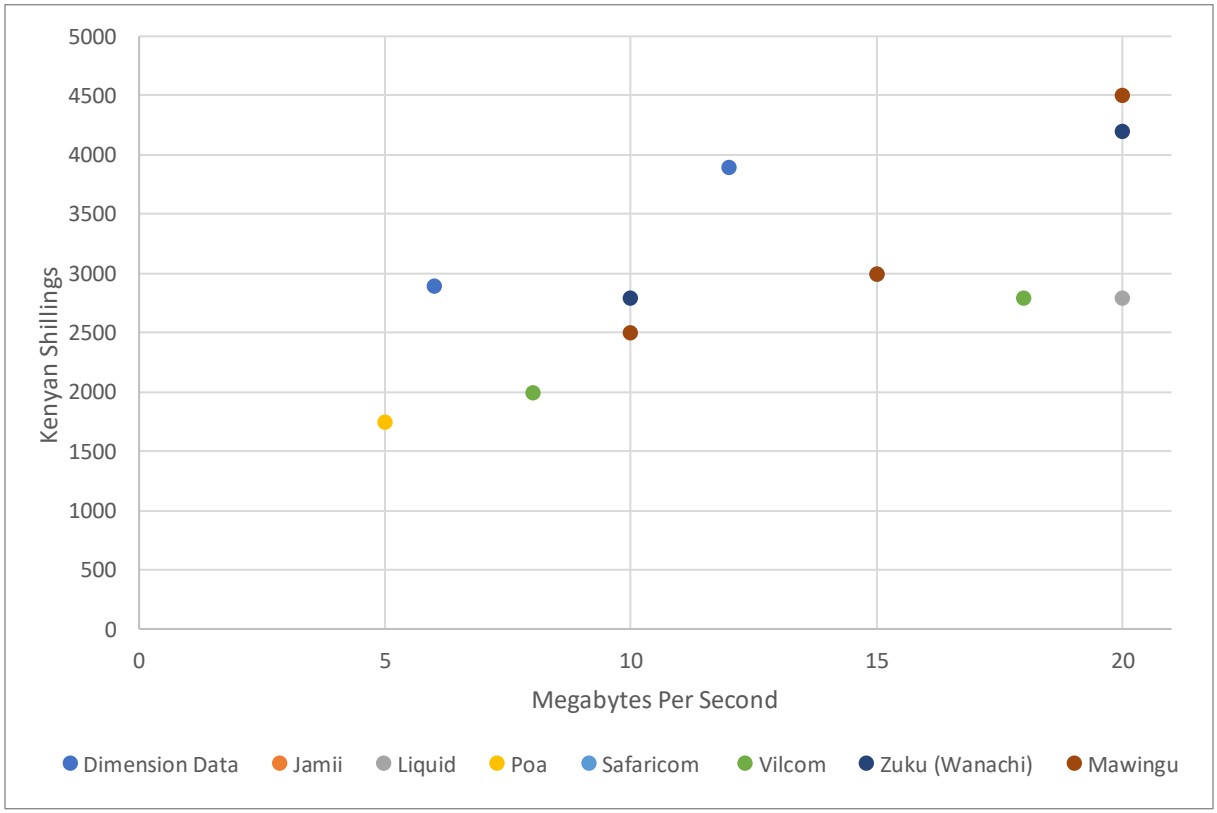



**Figure 52: Prices of fixed broadband in Kenya (5 Mbps - 20 Mbps)**

Source: Operator Websites, collected on 1 July 2025

176. As illustrated in the figure above, there are a range of options in lower speeds:

176.1. Poa stands as the most affordable provider across the entire lower-speed range, with its 5 Mbps plan being the lowest price but also the lowest speed offered. It is notable that Poa targets lower income households.

176.2. Vilcom also typically offers lower prices for speed in general.

176.3. Dimension Data offers some of the most expensive plans in the lower-speed category.

176.4. Zuku also stands out for its relatively high pricing

177. In general, Poa, Liquid and Vilcom have relatively low prices while Dimension Data and Zuku have high prices.

178. The next figure below illustrates pricing for higher-speed home plans (24 Mbps–150 Mbps).

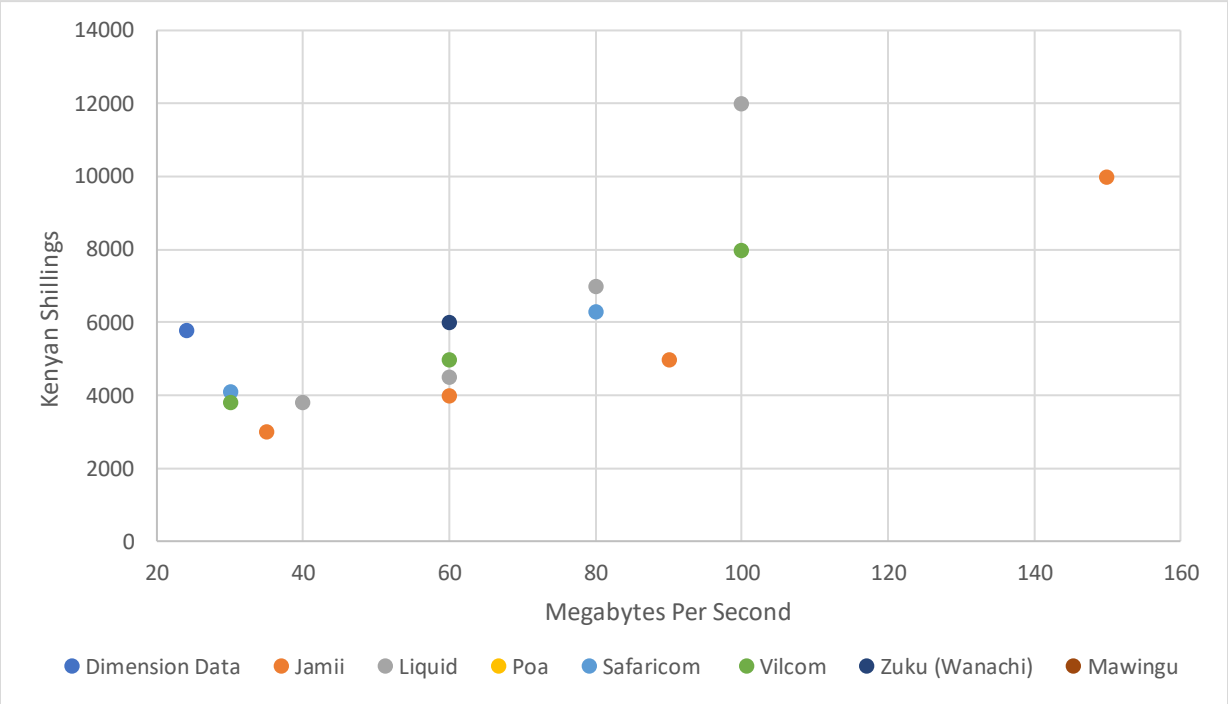



**Figure 53: Prices of fixed broadband in Kenya (24 Mbps - 150 Mbps)**

Source: Operator Websites, collected on 1 July 2025

179. A notable trend is the reduction in the number of providers offering services as the speed level increases. Dimension Data, Poa, Zuku, and Mawingu do not offer any plans beyond 60 Mbps, and Liquid does not offer plans above 100 Mbps.

179.1. Within the 20-60 Mbps range, Zuku appears to be the highest priced as it 60 Mbps plan is more expensive than Jamii, Liquid and Vilcom's of the same speed with Jamii being the cheapest followed by Liquid and then Vilcom.

180. Dimension data also remains relatively expensive with a 24 Mbps plan being more expensive than faster speed plans from Jamii, Liquid, Safaricom and Vilcom.

181. Within the 80–100 Mbps range, Liquid is the most expensive provider. Its 80 Mbps plan is priced higher than both Safaricom's 80 Mbps and Jamii's 90 Mbps plans, and its 100 Mbps plan exceeds the cost of both Vilcom's 100 Mbps and Jamii's 150 Mbps offerings. Safaricom also remains relatively expensive in this tier, with its 80 Mbps plan priced higher than Jamii's 90 Mbps alternative.

182. The next figure below illustrates pricing for higher-speed home plans (200 Mbps–1000 Mbps).

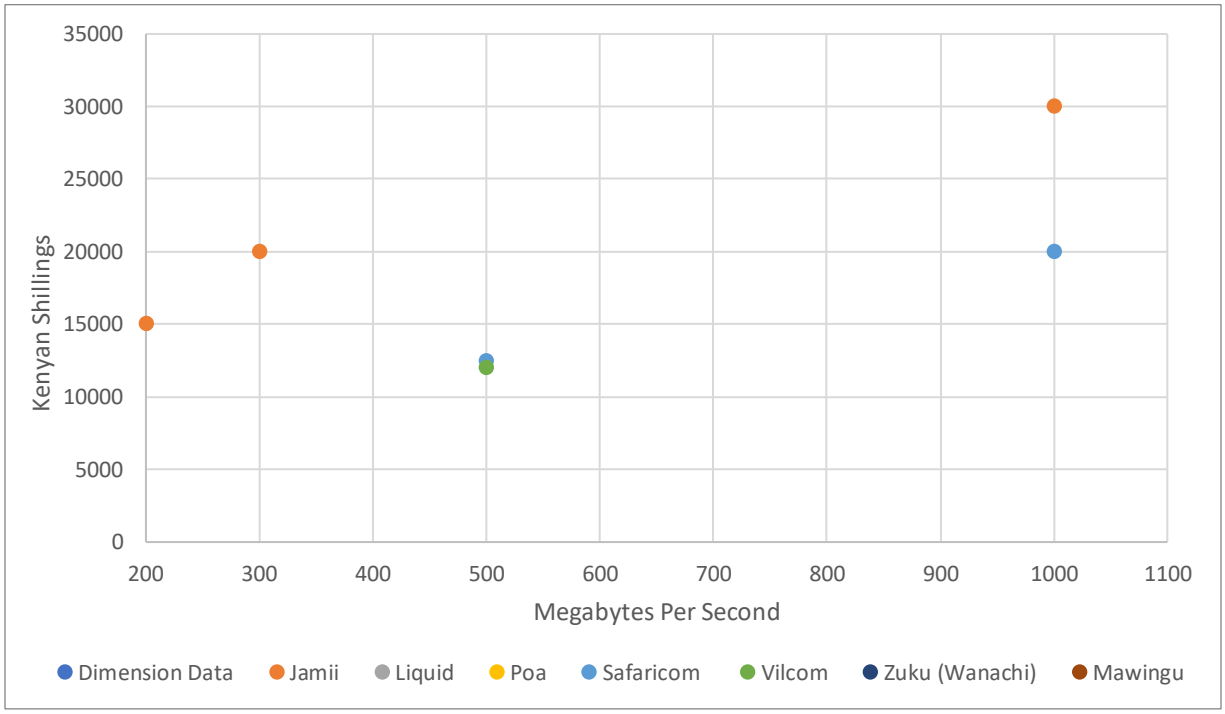



**Figure 54: Prices of fixed broadband in Kenya (200 Mbps - 1000 Mbps)**

Source: Operator Websites, collected on 1 July 2025

183. From 200 Mbps to 1000 Mbps, data was only available online for three providers: Jamii, Safaricom, and Vilcom. In this range, Jamii becomes the most expensive by a significant margin. Its 200 Mbps plan is priced higher than both Safaricom and Vilcom's 500 Mbps packages. Similarly, Jamii's 300 Mbps plan is priced equivalent to Safaricom's 1000 Mbps plan. While Safaricom is generally more expensive than Vilcom at these higher speeds, the difference is relatively modest—for example, their 500 Mbps plans differ by only KSh 500. This shift suggests that as speed increases, Jamii loses its pricing advantage and becomes less competitive.

184. Another competitor in fixed is Starlink. We have not incorporated it into the comparisons as Starlink is not sold by speed. However, they have various residential plans. This includes a 50GB plan at KSH 1 300 which is very cheap in comparison to most packages sold, Residential Lite at KSH 4 000 and Residential at 6500. They have unlimited data. Speeds promised in Kenya are advertised at between 50-500Mbps (typically 100Mbps) but lower priced packages are deprioritised and likely have lower speeds. This has been the evidence of speed tests that we have undertaken. However, this places the residential packages in direct competition with the other fixed packages. If the speeds are on the higher end of advertised speeds then Starlink would potentially be a cheaper option. However, these comparisons do not include the equipment required.

185. Overall it is clear that entry has largely been aimed at consumers requiring lower speed, lower price packages. This likely highlights customer demographics and affordability constraints which are factors relevant to data service takeup and demand.

### 8.2.2 Enterprise plan fixed broadband

186. Enterprise packages are also differentiated into two different types, dedicated packages and shared packages. Liquid is the only firm that advertises both while the rest advertise one or the other. Jamii and Vilcom advertise dedicated packages while Safaricom and Zuku advertise shared packages.

187. A shared internet package occurs when more than one business is using the same connection while a dedicated package is one where the internet connection is through a private line and is not shared by other businesses. We found limited data on enterprise prices.

188. There are different providers in the market for fixed home and fixed enterprise. In particular, Dimension Data and Poa do not compete in the fixed enterprise broadband market, and Mawingu's enterprise packages are not readily available on their website.

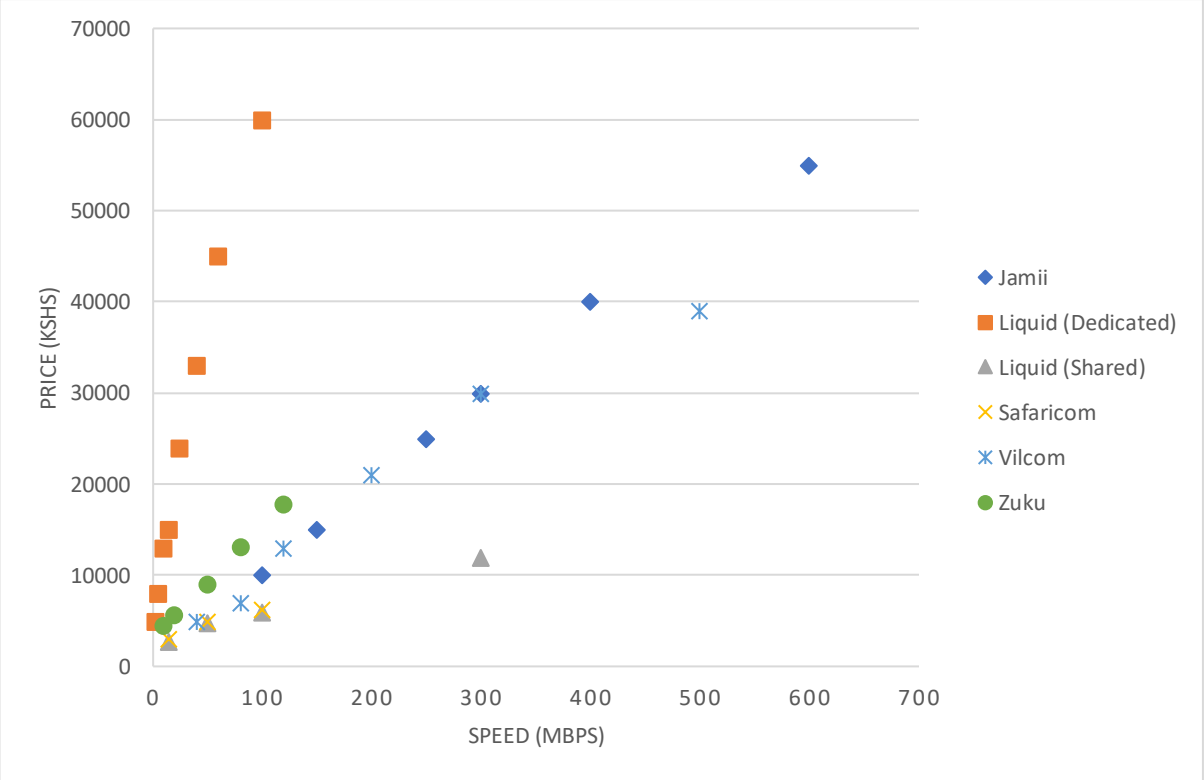



**Figure 55: Prices of fixed enterprise broadband in Kenya**

Source: Operator Websites, collected on 1 July 2025

189. Overall Liquids dedicated package is higher than the others and they provide a lower speed range. However, it is a dedicated line which is not entirely comparable (though it is higher than Zuku for 10Mbps). In contrast, their shared package is the cheapest at a given speed level and Safaricom is similarly low.

190. We also consider differences in installation prices and promotions. A range of companies offer some form of installation or router. This excludes some of the lower priced packages such as Poa and Mawingu.

**Table 9: Installation prices and add-ons**

| Name of Firm | Home Plan Installation Costs | Enterprise Plan Installation Costs |
|---|---|---|
| Dimension Data | Free Installation and Wireless Router<br>No Fair Usage Policy and data usage caps | N/A |
| Jamii Telecommunications | Free Welcome and Service Renewal Bundles<br>Installation Costs Applicable but Amount not stated | Free Welcome and Service Renewal Bundles<br>Installation Costs Applicable but Amount not stated |
| Liquid (Shared) | Free Wi-Fi router<br>Installation Costs not Stated | Not Stated |
| Liquid (Dedicated) | N/A | Free Wi-Fi Router<br>One Time Configuration Fees (KSHS 5000) |
| Poa Internet | KSHS 2500 Installation Fee<br>No Fair Usage Policy<br>Access to street Wi-Fi Network (40000 hotspots) | N/A |
| Safaricom | Not Stated | Free Router<br>Free Installation |
| Vilcom | Free Wi-Fi Router (Router recollected after no longer in use)<br>Installation Fee not Stated | Free Wi-Fi Router (Router recollected after no longer in use)<br>Installation Fee not Stated |
| Mawingu | KSHS 3000 one-time refundable deposit | N/A |
| Zuku | Free Installation<br>Free Modem | Free Wi-Fi Router<br>Installation Fee not Mentioned |

Source: Operator Websites, collected on 10 July 2025

191. The analysis above offers various insights:

191.1. The pricing patterns show that there is differentiation in both the mobile and fixed markets and that companies have different types of bundles and price points with some appearing to compete more on price.

191.2. Safaricom mobile data prices are higher than competitors and Jamii is the cheapest. However this is not reflected in market shares.

191.3. Consumers appear to prefer smaller (and cheaper) bundles.

191.4. Combination bundles are commonly used in the mobile market which means that the voice and SMS costs and dynamics in the voice and SMS market has an impact on data purchases.

192. This has some implications for competition in the data services market as is discussed in the section that follows.

# 9 Market barriers and competition

193. This section relates to the TOR 6: Identify the market barriers, if any, that influence pricing, competition and the growth of the players in the era of changing technologies.

194. A key consideration in competitiveness of the market is market barriers. In telecommunications markets there are a range of barriers to entry, competition and growth. These include economies of scale and scope, capital requirements, switching costs, access to vital inputs (such as spectrum), and access to certain geographical locations. The cost of setting up networds in remote and unserved areas in particular may be high.

195. Other barriers can include the following:

195.1. Structural: This includes the nature of the network and cost structure including economies of scale and scope, capacity constraints and sunk costs etc. This is particularly important where there are high costs to network deployment and these affect fixed networks and infrastructure layers, and rollout in low density or outlying areas. It may also impact on the extent to which companies may benefit from first mover advantages.

195.2. Legal and regulatory: Legal barriers to entry include factors such as licence requirements and other permissions (such as planning permission for infrastructure rollout) and spectrum scarcity.

195.3. Behavioural: This can include behaviour by market participants that affects the ability of competitors to enter or compete effectively including the following:

195.4. Pricing structures in the market and extent to which they create network externalities: This can include for example, the extent to which there are sizeable differences between on-net and off-net rates (on-net being calls made from consumers on one network to other consumers on the same network, off-net meaning calls made between consumers on different networks), and the extent to which bundling impacts on competition;

195.5. Switching costs and other forms of customer lock-in.

195.6. Exclusive contracting (for inputs, at wholesale level and at distribution level) which may impact on competition in the market.

196. There are a range of barriers to entry and expansion that exist in the telecommunications industry more generally, as well as particular barriers that apply to each of mobile networks or fixed networks specifically. This is due to a range of features. For example, mobile networks often require licenses, have high capital costs (which are often sunk) and have various features related to networks which can lead to dominance. In this section we discuss some of the key barriers that have been raised by market participants or that have emerged in our analysis. In particular we discuss barriers in terms of the following five categories:

196.1. Spectrum costs and asymmetry

196.2. Barriers to rollout of infrastructure

196.3. Impact of illegal activities

196.4. Impact of inadequate competition

196.5. Regulatory barriers

197. While it has been suggested that we estimate the impact that the removal of particular barriers have on costs this is not straightforward. Assessing the impact of different factors on markups and prices is challenging as it depends on a range of factors specific to an operator. This can include the spectrum that they have access to, the type of network technology that they invest in, the volumes on the network which in turn relates to the number of consumers (influenced, in turn, by a range of factors including network effects, promotions, marketing etc). We note that barriers may not lead to cost increases directly but may indirectly do so through affecting competitive dynamics. As such, putting a shilling amount on an increase would be highly inaccurate. As such, we describe the key barriers within the environment without definite quantification. However, where possible we utilise a stylised model to estimate possible effects on price.

## 9.1 Spectrum costs and asymmetry

198. Spectrum is a scarce resource that is regulated, limited (as it is a resource which cannot be manufactured) and costly, typically comprising a significant network cost. There are two elements of competition that are impacted by spectrum.

198.1. Firstly, the high cost of spectrum can be a barrier to entry.

198.2. Secondly, spectrum asymmetry can impact on the shape of competition in the market.

199. As such, access to sufficient spectrum in the correct bands and at an appropriate price can be a barrier to entry or expansion.

200. **Spectrum as a barrier to entry and expansion:** Within Kenya spectrum is one of the larger costs to providers. The cost of spectrum includes the spectrum acquisition cost as well as annual usage charges. As discussed in the previous chapter, the cost of spectrum was identified by multiple firms in the market as a key driver of data costs. The high initial spectrum fees make this a significant barrier to entry for smaller companies. Spectrum often comprises a high proportion of costs, as shown in the previous section. Spectrum is a factor that maintains and even increases in importance in the world of changing technologies as increased demand for data increases volumes and shifts to 5G can enable use of wider spectrum.

201. Concerns over spectrum costs for smaller entrants have risen. As briefly discussed in Section 0, while spectrum charges in the past were historically calculated based on the expansiveness of the network (linked to the number of transmitters), a new price structure for spectrum has recently been introduced for comment. While this pricing structure may create more transparency in spectrum costs it is likely to considerably increase the price of spectrum for smaller players. This is likely to have an impact on competition in the market and the costs paid by smaller operators. For example, [Confidential] has noted that their spectrum fees are likely to increase by [Confidential] which will impact significantly on their margins, and this may result in higher prices to consumers. This is currently under litigation.

202. As an exercise we modelled the impact on changes in spectrum pricing on prices using a model of a hypothetical operator in Kenya based on a model developed by Acacia Economics. We find that a 50% reduction in spectrum fees (once off and continual) in the model would lead to an 8.7% drop in the cost of a GB of data for a hypothetical operator. The impact of greater spectrum assignments for mobile operators in Kenya is discussed further in Section 11.2.1.

203. **Spectrum asymmetry:** As shown in the table below, at present there are high levels of spectrum asymmetry in the market. Market participants highlighted this as a concern.

204. In particular, certain optimal spectrum bands not available to entrants or operators. For example, JTL initially was unable to acquire spectrum in bands commonly used (such as 900mHz) and instead acquired spectrum in the 700MHz band. This was problematic from a device compatibility perspective which impacted on their initial entry. While they have received more spectrum there is no capacity in bands such as 900MHz, 1800MHz and 2100MHz creating an entry barrier.

205. Allocations in higher frequency bands can increase the costs relative to alllocations in lower bands as more network investment is required.

206. We understand from interviews that the asymmetry is partially a result of strategic acquisition and investment in spectrum by Safaricom over time. This is because while spectrum was often offered to other market participants, the cost of further spectrum was often prohibitive and not always taken up while Safaricom appears to have always purchased all spectrum offered. This is not merely a historical effect but a continuing pattern with Safaricom being assigned 5G spectrum as recent as 2024. The fact that only one operator could afford to purchase spectrum is concerning and suggests that the spectrum allocation process requires serious consideration. The resulting allocation is extremely asymmetric and likely to be problematic from a competition perspective since it contributes to the benefits that are vested in the largest operator, Safaricom, that other operators do not have..

**Table 10: Spectrum assignments by operator**

| MHz | Safaricom | Airtel | Telkom | Jamii |
|---|---|---|---|---|
| 700 | 2x20 | | | 2x10 |
| 800 | 2x10 | 2x10 | 2x10 | |
| 900 | 2x17.5 | 2x10 | 2x10 | |
| 1800 | 2x45 | 2x10 | 2x10 | 2x10 |
| 2100 | 2x30 | 2x20 | 2x20 | |
| 2600 | 60 | 60 | 60 | |
| 3500 | 80 | | | |

Source: CA data as of 23 April 2025

207. Some comments from licensees indicated that the assignment process is not sufficiently transparent, often favouring certain operators, and the prices limiting entry. While transparency of pricing is likely to be addressed by the new framework, there seems to be consternation that the price will still be too high and that the barrier posed by expensive spectrum assignments will continue.

208. Overall spectrum prices can have a feedthrough effect on the price of data. Furthermore, the way in which spectrum is allocated can impact on competitive dynamics in the market. As such, it may be necessary to consider spectrum pricing in a manner that is transparent but also takes competition dynamics into consideration as part of the allocation process. We discuss spectrum further in the recommendations.

Policy proposition:

The Authority should make available and rapidly assign additional IMT spectrum, including bands identified for IMT at WRC-23, through a market-based assignment mechanism (e.g. auction). The assignment process should be informed by a competition assessment and incorporate spectrum caps to prevent excessive concentration and support smaller operators' ability to compete.

This is discussed in more detail in section 11.2.1.

## 9.2 Barriers to rolling out infrastructure

209. Infrastructure rollout is a necessary part of building a network. However, there are various permissions and permits typically required in order to do so across public and private land and in or next to buildings, bridges, roads and railways. In addition, there are often negotiations required with a variety of landlords depending on the premises, site or structure concerned. These are often a barrier to expansion and can contribute to increased data costs because they raise the prices of provision and delay rollouts. There are three main categories that were raised by operators:

210. Firstly, operators raised concerns over barriers to infrastructure rollout due to the actions of government and regulatory agencies.

    210.1. Regulatory permits from other agencies: Various permits and regulatory requirements are needed in order to roll out infrastructure. There are also various other permits required including height approvals from the Kenya Civil Aviation Authority (sometimes subject to further approvals from the Ministry of Defense), and environmental permits from the National Environmental Management Authoirty which requires public participation and can have long delays (up to 18 months at times) that impact on infrastructure rollout.

    210.2. County approvals and fees: One regulatory barrier at the county level is the absence of standardized processing periods for permit application outcomes. While some counties process applications within 2 to 3 weeks, others take over three months, creating uncertainty and delays for operators. These prolonged timelines hinder market efficiency, limiting firms' ability to expand and grow at pace. In some counties there is parallel licensing such as the County Telecommunication Mast Licensing fee which is to paid in addition to Physical Planning Fees. Furthermore, High Physical Planning Permit fees for telecommunication masts have increased.

211. Secondly, concerns were raised about infrastructure barriers from landlords and neighbours. Infrastructure typically requires space to be bought or leased. Leasing rooftops and rental fees for equipment and laying infrastructure in buildings can be priced at levels which increase the costs to operators. In addition, there wree specific concerns over leasing.

    211.1. Lease fees are often determined on a per building basis. This is based on existing rental arrangements with the first operators. As a result, a new entrant often has to pay a large lease fee to gain access to service their first few customers. Often this does not make financial sense and as a result they may choose not to service customers in that building therefore limiting consumer options for internet service providers. While this is not exclusivity, it creates a similar effect.

    211.2. This includes cross connect where developers create their own last mile infrastructure to customers (by running fibre in their developments) and charge operators rental for the access to facilities and ducts as well as charging an amount per customer. This ultimately increases customer costs. In addition, it was reported that the provider denies responsibility for outages etc and therefore these impacts on the customer experience,

while adding additional costs to the value chain. Some efforts have been made by the Authority to regulate this area.

211.3. Unclear or disputed ownership pose an obstacle for telecommunications firms. This is can arise from a range of complexities including fraudulent title deeds and unresolved family inheritance disputes. These issues create substantial legal and operational risks that restrict access to critical sites and delay infrastructure deployment.

211.4. Disputes with landlords are also a persistent challenge for operators. Building owners at times impose lease fee increases for rooftop installations. Furthermore, landlords sometimes disconnect telecommunications equipment due to delayed rental payments, often without following proper legal procedures. These actions disrupt service continuity and complicate the maintenance of reliable infrastructure.

211.5. Consumer opposition to towers: Another barrier consumers concerns over proximity of electromagnetic frequencies. Consumer concerns about potential health effects from prolonged exposure near cell towers, has led to resistance against the construction of new towers in residential areas. This opposition is especially pronounced in affluent neighbourhoods. Despite efforts by firms to address these concerns, such as conducting community engagement and training initiatives, public pushback continues to hinder network expansion.

212. There can also be disruptions of operational infrastructure by roads, water and other contractors and obstructions of the line of sight due to new tall buildings.

213. Thirdly, cost of rollout can be a barrier, particularly given coverage requirements.

213.1. As is shown in the section on cost drivers, telecommunications networks are extremely capital intensive. As such, the cost of infrastructure can also be a barrier to entrants that have limited capital. This can be compounded in instances in which newer entrants are subject to rollout requirements that prevent them from building out infrastructure in the most lucrative areas first as they expand. This is particularly the case if there is no form of infrastructure sharing or roaming on offer as a coverage measure until rollout is achieved. The rollout requirements were raised as a concern by smaller operators.

213.2. The rollout of infrastructure in rural areas in particular can be more costly as fibre routes are longer, and there are fewer customers, often with lower levels of usage due to differences in population density (lower in rural areas) which increases the time taken to recover investments.

214. Finally, rollout can be hindered due to challenges with obtaining equipment. Telecommunication firms frequently face delays in sourcing inputs from abroad. These include import delays caused by dependence on international vendors, which exposes firms to geopolitical risks such as US-China trade restrictions. Delays are also common at ports, where slow customs clearance of network equipment disrupts rollout schedules and hampers operational efficiency

Policy Proposition:

The Authority should lead a coordinated approach to streamline access to public land, rights of way, and permits across national and county governments through different initiatives. This is discussed in section 11.3.

## 9.3 Impact of illegal activities

215. Operators have faced challenges relating to illegal behaviour as well as damage to equipment from vandalism and theft.

### 9.3.1 Illegal operators

216. The market in Kenya consists of the formal market, comprsing licensees, but there is anecdotally, an informal market of providers (sambazas) that operate illegally by purchasing capacity from a licensed operator and illegally selling it to end users. While there is a lack of factual information on this market interviews suggest that it is widespread and particularly prevalent in lower income areas. Furthermore, in the 2024/25 period the Authority identified 90 illegal operators resulting in enforcement notices, with enforcement action taken against 42 entities that did not comply.[22]

217. Illegal operators create particular issues for competition in the market

217.1. Firstly, it creates an **uneven playing field**. Licensed operators pay a range of costs including license and compliance fees and taxes including county fees. Illegal providers are therefore able to undercut legal providers prices as they face a lower level of costs and are therefore able to provide customers with lower prices. This undermines investment incentives for legal operators.

217.2. Secondly, it creates a **poor customer experience**. This is particularly in instances in which the illegal provider alleges it is providing the product of a licensed operator or is unable to rectify quality issues because the arrangements are not legally valid and there is no solution for the customer.

217.3. Thirdly, it creates an **incentive for vandalism** which increases the costs of operations. For example, several licensees interviewed stated that their equipment gets stolen and appears in illegal connections. This is even more challenging for community networks that often do not have branding on their equipment and cannot therefore trace stolen equipment at all. However, vandalism can occur regardless of whether illegal connections are established, or third parties use the equipment for other purposes, as discussed in the next subsection.

218. This appears to be contributing factor to a reduction in competition in the market, compromising quality and affecting investment incentives.

### 9.3.2 Vandalism and damage to equipment

219. Another issue that impacts on costs is the impact of vandalism and theft on network rollout.

220. Widespread reports of vandalism and copper cable theft have created structural challenges on two key fronts.

220.1. The cost of replacing and repairing stolen and damaged equipment.

[22] CA Annual Report for the Financial Year 2024/25

220.2. The cost of enhanced security measures, including the deployment of guards, surveillance systems, and other protective protocols to safeguard infrastructure and assets.

221. The costs to a company can be significant. For example [Confidential]. The Authority has documented this as creating a challenge to the rollout, noting that operators had built infrastructure in sub-locations in terms of licence conditions and these were vandalized.[23] There have also been illegal monetary demands for access to already areas already owned or leased areas by companies, particularly within certain areas.

Policy proposition:

The Authority should intensify enforcement and compliance actions, focusing on enhanced enforcement and policing, engagement with licensed operators, a structured regularisation pathway, consumer awareness campaigns and the protection of telecommunications infrastructure. This is discussed in more detail in section 11.4.4.

## 9.4 Barriers as a result of competition challenges

222. In a healthy market competition between companies encourages innovation and choice and lowers pricing. A firm can build its market shares as a result of a variety of factors including innovation, competitive pricing, responsive products, and excellent management. However, the telecommunications industry is characterised by market features such as economies of scope and scale, network effects, and barriers to entry that make it challenging for entrants to compete effectively. Where a firm has a high market share that is maintained despite the introduction of competition it is necessary to understand whether there are market features that need to be regulated in order to create a competitive environment for the benefit of consumers. The challenges in the mobile market in Kenya have been acknowledged in previous studies.[24]

223. While this study is not specifically intended to formally identify dominant licensees, it is inherent in considering barriers to the takeup and provision of data services, to note features of markets and sub-segments of markets, one of which is dominance.

224. To improve price and choice for consumers and to ensure that the terms on which service is provided to them are fair and reasonable, market features which have been observed in the Kenya data services market have to be considered to determine whether competition is active and if it is not, to understand why. It is noted that this study shows that there are high market shares in various segments and sub-segments of the data market, with over 60% shares held by the largest operator in retail data markets. This needs to be considered together with other market features such as

224.1. Significant spectrum asymmetry;

[23] Communications Authority of Kenya. (2025, January). *Compliance and enforcement report for the second quarter, financial year 2024/25 (October–December 2024).* https://www.ca.go.ke/sites/default/files/2025-04/Compliance%20and%20Enforcement%20Report%20for%20Quarter%202%20FY%202024-2025.pdf

[24] This includes the Communications Authority (2018) Telecommunication competition market study in Kenya.

224.2. High market shares in infrastructure such as towers;

224.3. Network effects in adjacent markets (discussed below);

224.4. Non-provision of wholesale inputs such as national roaming (discussed below)

225. The presence of these features strongly suggests market failure in one or more segments relating to the provision and take up of data services as a result of operator dominance. This is in line with previous findings such as those resulting from the 2018 Market Study[25] and underpins certain recommendations made in the 2022 costing study.[26] Furthermore, several operators have raised concerns relating to the impact of market structure on their ability to compete and have alleged that there are competition issues resulting from dominance.

226. As such, this study suggests that concerns over dominance in the market and competitive effects noted in earlier studies are still likely to be relevant and intervention by the Authority will be required to ensure a competitive environment for the benefit of consumers.

Policy proposition:

The Authority should prioritize a formal dominance assessment and declaration in the data services market, where justified by evidence.

The Authority should implement an ex-ante monitoring and approval framework.

This is discussed further in section 11.4

227. We discuss some of the specific concerns raised over barriers as a result of competition issues and dominance in the sections that follow.

### 9.4.1 Impact of behaviour in adjacent markets

228. Network effects relating to mobile money: One barrier to entry is the link between mobile money and telecommunications markets. M-Pesa is a large ecosystem of products and services which is essential to most Kenyans. In Q4 2025, M-Pesa had a market share of 90.9%. There are also strong network effects in mobile money. Studies have found M-Pesa to be dominant. For example, a market study for the Competition Authority of Kenya into the USSD market in 2016 finds Safaricom "overwhelmingly dominant in the mobile money services market segment."[27]

229. As M-Pesa requires a Safaricom SIM card, its customers typically will purchase a Safaricom SIM in order to send or receive money. This provides Safaricom with a comparative advantage in the market. While the CBK has engaged in various reforms to ensure interoperability across mobile money providers this has not translated into a large reduction in the M-Pesa share in the market. While many consumers maintain a dual SIM phone newer entrants are often competing to be the second operator. This is a strong and enduring barrier to entry.

[25] Presentation-on-Telecommunication-Competition-Study-to-Stakeholders-.pdf

[26] Tilil Technologies and Acacia Economics (2022), "Provision of Consultancy Services for National Roaming, Telecommunications Tower Sharing and Termination Rates Network Cost Study".

[27] Competition Authority of Kenya Market Inquiry into USSD market (2016) Microsoft Word - Redacted Version - USSD findings - Final - 160718.docx

Policy proposition:

Given that mobile money falls primarily under the regulatory mandate of the Central Bank of Kenya (CBK), the Authority should pursue a joint competition inquiry with CBK into the mobile money sub-segment. This is discussed further in 11.4.5.

230. Bundling and on-net/off-net pricing in voice markets: Bundling of voice or SMS and data is common in the Kenyan market as shown in the section on pricing. A concern raised in consultations is that certain companies effectively have tariffs that are below the mobile termination rate which is possible due to their on-net and off-net traffic split being skewed to on-net calls or SMS. For companies with a higher level of off-net calls/SMS, offering bundles prices below the MTR is challenging.[28] This can have the impact of reinforcing dominance.

231. There are particular concerns raised that the prices offered by some operators are non-replicable by competitors given the level of MTRs. For example, the rates charged for SMS-only bundles by Safaricom have an weighted average per SMS rate of KSh 0.03 which is below that of the MTR of KSh 0.05. As shown in the table below there are various bundles with SMS rates below the termination rate.

**Table 11: SMS effective price for Safaricom packages**

| Offering Name | Price (KES) | SMS | Validity | Validity2 | Validity category | Price per SMS |
|---|---|---|---|---|---|---|
| Unlimited SMS Daily Bundle Oneoff | 20.00 | 1000 | 24 | hours | Daily | 0.02 |
| Weekly 100 SMS | 20.00 | 100 | 7 | days | Weekly | 0.20 |
| Weekly 100 SMS Autorenew | 20.00 | 100 | 7 | days | Weekly | 0.20 |
| Weekly 1000 SMS | 30.00 | 1000 | 7 | days | Weekly | 0.03 |
| Weekly 1000 SMS Autorenew | 30.00 | 1000 | 7 | days | Weekly | 0.03 |
| Unlimited Weekly SMS | 50.00 | 7000 | 7 | days | Weekly | 0.01 |
| Unlimited Weekly SMS Autorenew | 50.00 | 7000 | 7 | days | Weekly | 0.01 |

232. While this relates to voice or SMS markets, the impact can translate into data markets as customers often purchase through bundles and high voice costs mean that if they compete head-on they are more likely to struggle to compensate for additional costs in the voice or SMS component. While bundles may lead to lower prices for customers, in the long run they may have the effect of entrenching market power. This in turn could distort competition and lead to higher prices. As such, maintaining a strong glide path on mobile termination rates is important to the data market as long as bundles are commonly used as is discussed in the recommendations.

233. It can be noted that providers may also create other bundles, for example, combining data with content such as YouTube or Netflix etc. In general, the economic regulatory approach to bundling is that it is pro-competitive unless it meets particular criteria. Typically, bundling would be an issue if a monopolist ties the purchase of a product in which it is dominant to one

[28] The Authority has published several determinations in relation to call termination. The most recent of these is Determination No. 4 of 2023 on Mobile Termination Rates and Fixed Termination Rates, which provides that all mobile and fixed telecommunications operators in Kenya shall implement the MTR/FTR to local voice traffic for a period of 2 years with effect from 1st March 2024

that is part of a more competitive market.[29] In the case of YouTube or Netflix bundling would be a concern if they were owned directly by one of the operators that tied them in a way that was predatory on the competitive components. It could also be problematic if these bundles are being offered to one operator at a very different price to others due to their monopoly power in an exclusionary manner. In the case of the Kenyan market all operators should be able to provide similar services unless there are different agreements with the companies that have not been disclosed. Another theory of harm may be that these bundles are being offered at predatory rates. However, we did not find evidence or complaints presented in relation to this and as such it is unlikely to be a concern from a competition perspective.

Policy proposition:

Given the widespread use of bundled voice and data offers, the Authority should address competition concerns that, while not data-specific, have a material impact on data pricing and market entry. This is discussed further in 11.4.311.4.

### 9.4.2 Capacity and wholesale inputs

234. One of the key costs to downstream operators is the cost of purchasing fixed capacity from providers. The price of wholesale capacity varies a lot depending on the operator. While some operators used standardised prices others have prices that vary across the country. There is far more competition in urban areas than in more outlying areas. The price of capacity in more remote areas can be high in certain instances. This may reflect competitive dynamics or be a result differences in cost and volumes in more remote areas. Overall, most stakeholders did not raise concerns over a lack of access to wholesale inputs.

235. Some licensees indicated that the gap between wholesale and retail prices is very narrow. As a result, it is often difficult for providers to make a margin. Unfortunately, we were not provided with any data to substantiate these claims.

236. Another factor is the non-provision of wholesale mobile inputs. For mobile, national roaming, for example, is vitally important to new entrants that require coverage and need to therefore roam on the network of an incumbent provider while filling the gaps or for longer periods of time while they increase their subscriber base and recover their existing investment in order to expand further. In Kenya at present this is not appear to be provided except to one MVNO. [Confidential]. We understand that regulated roaming for a fixed period for specific geographic areas was a recommendation in the 2016 Market study[30] highlighting that this is a challenge that has existed for some time. National roaming was recommended for fixed geography and time periods for new entrants and areas with low volumes in the more recent Report on Roaming, Towers and Interconnection rates. Concerns have also been raised over infrastructure sharing more generally.

237. As is discussed in further detail in the recommendations, an important regulatory intervention to reduce costs of infrastructure investment and rollout in general and to reduce the burden

[29] See, for example, Nalebuff (2004), Bundling as an entry barrier, Quarterly Journal of Economics, February 2004.

[30] This includes the Communications Authority (2018) Telecommunication competition market study in Kenya. Presentation-on-Telecommunication-Competition-Study-to-Stakeholders-.pdf

on the enviroment, is to impose infrastructure-sharing obligations on licensees including national roaming.

Policy proposition

The Authority should mandate national roaming at cost less subsidy in USF sites, should actively facilitate and, where necessary, mandate national roaming in geographic areas where there is a clear imbalance in network coverage, especially in locations not currently supported through the Universal Service Fund (USF). This would allow new entrants and expanding operators to leverage existing infrastructure of incumbents with established networks, thereby reducing duplication costs and accelerating service availability.

Roaming charges should be fair, cost-oriented, and not exceed prevailing retail prices, to ensure that roaming is a viable tool for market entry and expansion rather than a barrier.

This is discussed further in 11.2.3.

### 9.4.3 Exclusive arrangements for fixed providers

238. One of the concerns that has arisen in the fixed market is exclusive dealing. For example, operators at times are limited in accessing estates which have an exclusive agreement with a single operator. However, there appears to be a regulatory response to this. In particular the Competition Authority of Kenya recently issued a public notice dated 24 June 2025.[31] The notice highlights that exclusive dealing between ISPs and real estate developers may contravene the Act as they limit "fair pricing, enhanced service quality and innovative solutions". They therefore direct property developers, real estate managers and ISPs to

238.1. cease engaging in exclusive conduct and prevent its recurrence

238.2. facilitate the entry of competitor ISPs in their developments.

## 9.5 Other regulatory issues

239. Some challenges faced by firms are a result of regulations that have a positive intent, but inadvertent consequences.

240. Taxation: Tax structures can present challenges to the telecommunications sector by limiting how capital can be utilised. For instance, when a customer collocates on a tower, operators are required to pay a service fee and withhold 10 percent for taxes. This creates difficulties for capital-intensive firms, particularly when losses occur due to high upfront expenditure. The withheld tax is recorded as a credit, but it can only be offset against taxes, offering no direct savings or cost reduction.

241. Coverage obligations: Licences have various coverage obligations attached to their licenses. These can be onerous as they also seem to require new entrants as well as incumbents to expand into areas that are not commercially viable for them rather than allowing new entrants to build up a sustainable network in more profitable areas and increasing their subscriber base

[31] Competition Authority of Kenya (2025), Public Notice, Denial of Market Access to Internet Service Providers by Real Estate Developers and Residential Estate Management, 24 June 2025, available at Competition Authority of Kenya Public Notice to Property Developers, Real Estate Managers and ISPs.pdf

and therefore also their revenues. This is compounded by the lack of reasonable roaming offers from incumbents to allow new entrants to attain coverage objectives.

## 9.6 Conclusion on market barriers

242. We have identified a range of market barriers which can limit competition including the following:

242.1. Spectrum costs and asymmetry

242.2. Barriers to rollout of infrastructure

242.3. Impact of illegal activities

242.4. Impact of inadequate competition

242.5. Regulatory barriers

243. In the recommendations section we consider responses to these barriers in further detail.

# 10 Transparency and consumer protection

244. This chapter is focused on the following two TORs:

244.1. TOR 14: Examine advertising of data offers and the level of "honesty" in what is being said about the different price offers, including the expiration of data bundles.

244.2. TOR 9: Review existing price comparison platforms/mediums in other markets and make recommendations on an appropriate mechanism to enhance transparency, help consumers make informed choices, and help the Authority monitor tariffs for communications services.

245. Another important aspect of the study is consumer protection. Both the Authority and the Competition Authority of Kenya have a role to play with respect to consumer protection. However, we will specifically consider the degree to which it appears that licensees are complying with the Consumer Protection Regulations, 2010, published by the Authority.

246. Regulation 3 provides that in relation to terms and conditions a customer “shall have the right to:

(a) receive clear and complete information about rates, terms and conditions for available and proposed products and services;

(b) be charged only for products they subscribe to;

(c) Where possible, select a service provider and service of the customer’s choice;

(e) accurate and understandable bills for products and services authorised by the customer, and to fair prompt redress in the event of a dispute in the provision of the products and services;

(f) protection from unfair trade practises, including false and misleading advertising and anti-competitive behaviour by licensees;...”

247. Regulation 6 addresses the provision of equipment.

248. Regulation 10 deals with provision of information for customers and specifically publication of terms and conditions.

249. Regulation 14 addresses the requirements of a ‘standard’ subscriber service agreement which is to be approved by the Authority.

250. Regulation 21 authorises the Authority to make guidelines.

251. The components of this part of the work are therefore focused on:

251.1. Transparency: Examining the transparency with which tariffs are advertised, and the extent to which they can be understood by customers, taking into account insights from the behavioural economics literature.

251.2. Customer experiences: Case studies of how selected packages are advertised and what they entail in practice will allow us to understand the advertising of data and consumer focused issues including the level of honesty in describing the terms and conditions of expiration.

## 10.1 The customer journey

252. For individuals purchasing mobile or fixed internet services in Kenya there are two key phases.

252.1. Firstly, they need to choose their provider across the different providers.

252.2. Secondly, they need to choose their package or bundle.

253. For fixed packages the comparison is more likely to be across both packages and providers simultaneously while for mobile, if there is multiple SIMS the choice of bundle may be a second stage question.

254. Prior to purchase there are range of means of comparing products. This includes physically shopping at different agents or stores, looking at websites to compare offers and looking at physical brochures. At present in Kenya this information is not presented in standardized form and there are no portals on which they can be compared directly to each other. However, websites such "techcabal" do provide price comparisons occasionally.[32] However, this is systematic.

## 10.2 Access to accurate information

255. Transparent communication between telecommunications providers and consumers are essential for promoting fair competition and protecting consumer welfare. This section is structured as follows:

255.1. Firstly, we consider transparency in online product listings.

255.2. Secondly, we consider transparency in the terms of purchases on devices

256. In assessing transparency in online listings we examined the websites of key market participants. We considered the following:

256.1. Whether key product information is included eg. expiry and terms and conditions.

256.2. Whether product information is accessible and whether there are missing products and services for which information is not available online.

257. In the Kenyan telecommunications market, several transparency gaps have been observed, ranging from missing terms and conditions to hidden limitations and ambiguous billing practices. These gaps can distort consumer choice, reduce trust in service providers, and ultimately impair regulatory oversight.

### 10.2.1 Online information on products and services

258. One key issue in transparency between telecommunication firms and consumers is that product listings often omit information that could influence a consumer's decision to purchase one product over another, potentially to the detriment of consumer welfare. The information missing often includes expiration dates and the terms and conditions of advertised benefit of a product.

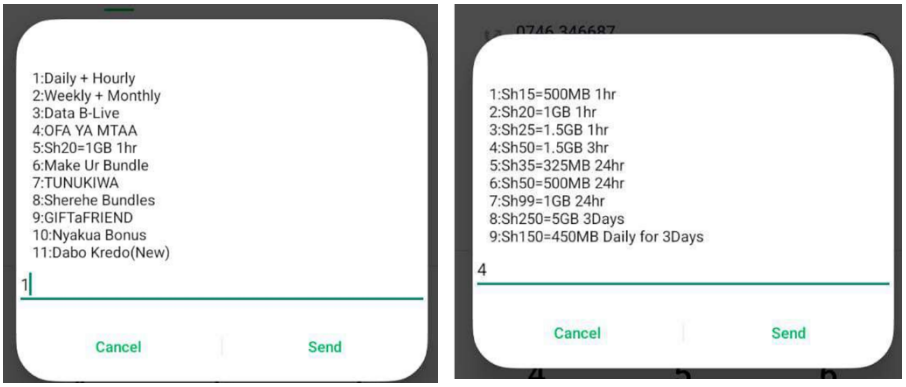
259. This section considers the extent to which a customer that is doing online comparisons is able to find the information that they require. This is done through an analysis of the information

[32] Best data bundles in Kenya (August 2025)

provided on different provider websites. We find that various pieces of information that would be important to consumers is missing, preventing effective shopping between providers. This could lead to consumer concerns over a lack of "honesty".

260. **Data expiry:** One example of missing information is found in Safaricom's service description which allows users to input their desired expenditure, after which the website returns the corresponding data allocation in megabytes. However, the expiry period of this data is not explicitly stated.[33] We note that in contrast, a consumer browsing on USSD or on the app would see the information on the expiry date and time on standard bundles. However, this would be after they have committed to a Safaricom SIM.

**Figure 56: Screenshots of data purchases via USSD**




Source: Tilil technology

261. **Restrictions not listed:** A related issue with respect to consumer transparency relates to whether sufficient information is provided on restrictions in relation to bundles and promotional plans. While many operators provide sufficient information, some do not show their restrictions.

261.1. For example, online, Telkom markets a variety of bundles under the label 'Freedom Daily Bundles', ranging from 70MB to 5GB, each of which advertises additional benefits such as free WhatsApp access, free Telkom-to-Telkom calls, and supplementary night-time data. However, these benefits are subject to notable limitations: the 'free' WhatsApp access is capped at 50MB per day, and the free Telkom calls are restricted to 60 minutes.[34] These limitations are not disclosed near the main product listing but are instead located in separate sections of the website, such as in the Q&A or support pages. This separation makes it unlikely that a typical consumer would be aware of the restrictions at the point of decision-making, thereby undermining the transparency of the offer. Comparable practices are evident in the 'Pawa' bundle range, where the term 'free' is used to describe SMS allowances and on-net calling minutes. However, there are limitations that are not clear to consumers. For instance, 'Pawa 20' and 'Pawa 20 Extra' offer only 100 SMS messages, while 'Pawa 50' provides 200 SMS messages despite all three bundles being marketed as including "free" SMS. Likewise, on-net call minutes vary significantly, with 'Pawa 10' offering 30 minutes, 'Pawa 20 Extra' 100 minutes, and 'Pawa 50' 600 minutes. As with the

[33] Safaricom PLC. (n.d.*). Data with no expiry*. Safaricom. Retrieved June 19, 2025, from https://www.safaricom.co.ke/personal/data/data-tariffs/data-with-no-expiry

[34] Telkom Kenya. (2017, October 18). *Telkom introduces Freedom Bundles* [Press release]. Retrieved June 25, 2025, from https://telkom.co.ke/press-release/telkom-introduces-freedom-bundles/

Freedom bundles, these limitations are not prominently disclosed at the point of selection and leave room for misunderstandings.

262. **Terms and conditions of bundled products:** Another area in which there is insufficient disclosure by certain operators relates to certain bundled products.

262.1. For example, Telkom offers the 'Life Bila Noma' bundle, which includes 1GB of data, 200 SMS, and both on-net and off-net minutes valid for 30 days, along with a personal accident or accidental death insurance cover valued at up to 20,000 Kenyan Shillings. However, the terms and conditions governing the insurance component are not easily accessible to consumers, nor is it clearly indicated that such terms and conditions apply. This lack of transparency may limit the consumer's ability to make a fully informed decision regarding the value and limitations of the bundled insurance benefit.

### 10.2.2 Inaccessible and Incomplete Product Listings

263. A second issue for customers trying to compare products to shop between providers or to choose products for a particular provider is that complete product listing are not always presented. This includes some pay-as-you-go rates.

264. For example, the Safaricom website primarily displays 30-day data bundle offers, despite also offering daily and weekly bundles. While these additional plans are technically available, their presence is not immediately apparent to the average consumer and requires active navigation to locate. In addition, the pay as you go rates are not easily accessible on the website. While there is an option to put in a budget and see how much data you will get, this is not transparent or comparable on a per MB basis.

265. Additionally, although there is a page labelled "All Products," several bundle types are notably absent from this section. These include various special offers such as Blaze Bundles, which are targeted at pre-pay subscribers aged 10 to 26 registered on the Blaze Platform; Bonga Bundles, which are 7-day bundles purchasable with Bonga points and available to both pre-pay and post-pay subscribers enrolled in the Bonga Loyalty Scheme; and Okoa Bundles, which are credit-based bundles accessible to all non-roaming pre-pay subscribers. The omission of these products maKShs it more difficult for customers to find the information that they require.

266. Similar challenges arose when attempting to find information on fixed packages through visiting a physical Airtel store. Information on the different packages for fixed data was difficult to access and relied on scrolling through a physical device provided by the staff.

### 10.2.3 Lack of Transparency in 'Unlimited' Broadband Plans

267. Fair usage policies (FUPs) are policies that allow service providers to manage usage of customers on "unlimited" data plans by limiting or throttling usage when it exceeds a certain limit. Among Kenya's six main fixed internet service providers, only two, Telkom and Poa Internet, display their fair usage policies (FUPs) directly alongside their package offerings on their websites. This level of transparency is likely linked to the fact that these providers do not enforce FUP restrictions on their fixed internet services. In contrast, the other major providers, Safaricom, Jamii Telecommunications, Zuku, and Airtel, offer services marketed as "Unlimited Plans" that are subject to usage limitations. However, these restrictions are not disclosed at

the point of product display, consumers must actively locate them in separate sections, such as the general terms and conditions on Safaricom's website.[35] This fragmented presentation of key service information reflects the absence of clear, accessible, and standardized product disclosures that allow consumers to make informed choices and therefore maximize their welfare.

### 10.2.4 Allegations on Subscription and Billing Practices

268. A further dimension of the consumer experience in Kenya concerns allegations that have been made by consumers in relation to unclear and allegedly deceptive subscription practices. Airtel, Safaricom, and Telkom have all faced allegations from consumers claiming that enrolment into subscriptions sometimes occurs without informed consent, or through processes that are ambiguously presented at the point of interaction. These subscriptions are not necessarily automatic, but are said to result from vague prompts, misleading interfaces, or unclear opt-in mechanisms. Once subscribed, consumers reportedly struggle to identify the origin of deductions or to easily cancel the services.

269. In 2025, the Youth Advocacy Africa group filed a lawsuit against the three operators, seeking to end alleged unauthorised deductions, unclear subscription practices, and insufficient consent mechanisms.[36] These allegations are not new. According to a Safaricom press release issued in 2021, the former CEO had acknowledged the emergence of such complaints. The statement, released 9 November 2021, noted that internal investigations had been undertaken on a case-by-case basis, with resolutions being reached for consumers who had reported these issues.[37] While we have not found evidence of this, this points to the importance of ensuring that there is sufficient information and meaningful consent in relation to billing and subscription processes.

## 10.3 Assessment of consumer experience

270. A second strand of the analysis uses a practical assessment of customer experience by examining two areas, namely data depletion and consumer transparency focused on devices once a customer has subscribed (as opposed to the previous section which focused on information available prior to subscription).

271. This is focused on the TOR: Examine advertising of data offers and the level of "honesty" in what is being said about the different price offers, including the expiration of data bundles.

272. There have been complaints in Kenya and in other countries (such as Nigeria) about the high speed at which data bundles are depleted.[38]

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[35] Safaricom PLC. (2021, July 6). *Terms and conditions for Safaricom home fibre service and 4G home plans*. Safaricom. https://www.safaricom.co.ke/images/Downloads/TsCs_FTTH_Packages_4G_Home_plans_and_Internet_Plus_06_Jul_2021.pdf

[36] Kubwa, C. (2025, May 20). *Lobby group sues Safaricom, Airtel over unauthorised deductions and subscriptions*. Eastleigh Voice. https://eastleighvoice.co.ke/business/152870/lobby-group-sues-safaricom,-airtel-over-unauthorised-deductions-and-subscriptions

[37] Safaricom PLC. (2021, November 9). *Customer complaints on premium rate services*. Safaricom. https://www.safaricom.co.ke/media-center-landing/press-releases/customer-complaints-on-premium-rate-services

[38] Chukwuneke, B. (2024, June 18*). NCC: 7 reasons why your data depletes speedily and how to stop it*. Crisp Nigeria. Retrieved from https://crispng.com/ncc-7-reasons-why-your-data-depletes-speedily-and-how-to-stop-it/

273. We have aimed to provide data across the main operators including all mobile operators and a sample of fixed operators. In order to engage in comparative tests we have purchased four identical handsets (INFINIX X6725). Each handset has been set up with a prepaid SIM card from a different operator. The operators are Safaricom, Airtel, Telkom and Jamii. These have been loaded with identical apps listed in the footnote.[39] In addition, each handset has downloaded the operator-specific airtime app. We note that we have a very limited sample and that as a result conclusions need to be considered in conjunction with other information.

## 10.4 The purchase experience

274. Transparency and "honesty" are a key component of the consumer experience. In order to test this we have engaged in a process of looking at the customer journey to purchasing data and the disclosures involved.

275. We engage in the purchase of data using two modes.

275.1. USSD

275.2. Using the App.

276. We consider the following:

276.1. What is the value of data if you purchase KSH 50 with a weekly validity.

276.2. How many menus or clicks does it take to get the sale through from beginning to the end of purchase?

276.3. Does it allow for the purchase of the data amount easily or does it steer to other products and advertisements first?

276.4. Are promotions and other products with good value advertised?

276.5. We furthermore aimed to take note of any unclear or misleading subscription options that present themselves if they occur.

277. The results of across operators are shown in the table below. We note that Jamii did not offer smaller bundles to purchase with a minimum of 8GB.

**Table 12: Comparative purchase across operators**

| | **Safaricom** | **Airtel** | **Telkom** |
|---|---|---|---|
| What is the data value at KShs. 50 if you buy it directly. (Validity – Weekly) | 200 MB | 450 MB (plus free Whatsapp) | 350 MB (plus free Whatsapp) |

[39] Google Play Services, Speech Recognition and Synthesis From Google, WhatsApp, Gmail, YouTube, Maps, Gboard, Google Play Store, Android System WebView, Speedtest, Meet, Messages, You Tube Music, Drive, Carlcare, Calendar, Phoenix, Google Go, Android Accessibility Suite, Chrome, Files by Google, Digital Wellbeing, Personal Safety, XClub, XOS Launcher, Private Computer Services, Android Switch, Google Assistant, Find Hub, Settings,IR Remote, XPARK, Clock, Android system Safetycore, Gallery, Weather, Palm Store, XTheme, Files, Phone, Recorder, Phone Master, Camera, Google Partner Setup, Feedback, SIM Toolkit, Wireless Emergency Alerts, PlayAutoInstall , Themes, AI Gallery, UltraLink, Contacts

| | **Safaricom** | **Airtel** | **Telkom** |
|---|---|---|---|
| How many menus or clicks does it take to get the sale through from beginning to the end of purchase? Please take screenshots. | 5 Clicks | 7 Clicks | 5 Clicks |
| Does it allow for the purchase of the data amount easily or does it steer to other products and advertisements first? | Easy | Easy | Easy |
| Are the other products better value or worse value? | The higher price bundles present better customer value. | The higher price bundles present better customer value. | The higher price bundles present better customer value. |
| Promotions with better value | Value is better at higher amounts. For KSH99 there is 500MB data and 500MB Free Youtube. The average price per GB reduces further as the size of packages increase (KSH 250 for 1.5GB, KSH 500 for 3.5GB and KSH999 for 10GB) all including the 500MB free Youtube | Value is better at higher amounts. 7 day validity bundles are advertised. For example, for KSH 300 7GB and 800 minutes are offered. 1.2GB is offered for 100KSH. They also offer calls (for example, 20 minutes all network calls with free airtel calls) | Value is better at higher amounts. For KSH 100 there is 750MB, for 250KSH there is 2.5GB. |
| Take note of any unclear or misleading subscription options that present themselves if they do occur. | None | None | None |
| What notifications are provided on the purchase immediately after purchase when the bundle comes into effect- please take screenshot. | Thank you for purchasing x MB data bundle. Expiry date ddmmyyyy Time | You have successfully subscribed to xxMB+Whatsapp plan. Expiring on ddmmyy time. | You have successfully subscribed to xxMB+Free Whatsapp plan valide until yyyymmdd time. Dial *144# to check balance. |

278. We find the following:

278.1. There is easy navigability though Airtel takes slightly more clicks to purchase data.

278.2. There were no misleading subscription options

278.3. Expiry dates were clearly listed.

279. As such, there appears to be transparency on purchase.

280. We engaged in the same purchase pattern using the app. While there were slightly different numbers of clicks, our other conclusions were the same as for USSD.

## 10.5 Data depletion

281. Data can be consumed with and without one's knowledge, and when consumption occurs without the consumers knowledge, it can leave the impression that data is depleting faster than it should be. Data consumption activities that tend to occur without the knowledge of the consumer includes automatic software updates and app synching, background apps, location services, advertisements and malware among other issues.[40] Data could also be depleted for other reasons. As data depletion creates a high level of concern for customers as the data purchased does not synchronise with data used. We therefore attempted to test whether data depletion occurs.

282. Data depletion activities "without knowledge" include:

282.1. Background Usage (Apps such as social media)

282.2. Automatic Updates

282.3. Location and GPS Services

282.4. Advertisements displayed by Apps

282.5. Malware

282.6. General excessive usage such as 4k video streaming

283. These activities were deactivated or removed from the handsets. In addition, there was no data on the phones and all roaming services and network services were uniform across the handsets.

284. We then aimed to test the speed of data depletion. This was done using three scenarios. In the first we loaded data but there was no usage. In the second we utilised the phones. In the third we loaded data but switched the phone off to prevent any background applications.

### 10.5.1 Scenario 1: Depletion without usage of data

285. We hypothesise that if there is not activity and background usage and updates have been disabled the data depletion should be small or non-existent.

285.1. Our measurement or dependant variable is the amount of data available

285.2. Our independent variable is time at 24 hour intervals.

285.3. Our control variables is the amount of data, the activities engaged in, the type of phone and the type of apps downloaded. These have been loaded with identical apps.[Google Play Services, Speech Recognition and Synthesis From Google, WhatsApp, Gmail, YouTube,

[40] Nigerian Communications Commission. (2024, June 14). *What depletes consumer's data – Part 1*. NCC Consumer Portal. Retrieved from https://consumer.ncc.gov.ng/articles/75-what-depletes-consumer-s-data-part-1

Maps, Gboard, Google Play Store, Android System WebView, Speedtest, Meet, Messages, You Tube Music, Drive, Carlcare, Calendar, Phoenix, Google Go, Android Accessibility Suite, Chrome, Files by Google, Digital Wellbeing, Personal Safety, XClub, XOS Launcher, Private Computer Services, Android Switch, Google Assistant, Find Hub, Settings,IR Remote, XPARK, Clock, Android system Safetycore, Gallery, Weather, Palm Store, XTheme, Files, Phone, Recorder, Phone Master, Camera, Google Partner Setup, Feedback, SIM Toolkit, Wireless Emergency Alerts, PlayAutoInstall , Themes, AI Gallery, UltraLink, Contacts]. In addition, each handset has downloaded the operator-specific airtime app.

286. The process was as follows:

286.1. Each phone has been loaded with seven-day validity data. We begin by recording the amount of data on the phone.

286.2. We keep the phones charged and check the airtime balance on a daily basis at 24 hours, 48 hours and 72 hours and list the data levels per day.

287. We find that there are large amounts of data depleted in the Telkom bundle. We therefore repeated the experiment and this depletion was not replicated the second time. However, we noted that there was depletion from other operators. This suggests that background processes may be in effect. We note that there are limitations

**Table 13: Data depletion without usage (MB)**

| Test 1 | 24 hours | 48 hours | 72 hours |
|---|---|---|---|
| Safaricom | 10 | 13 | 19 |
| Airtel | 8 | 7 | 32 |
| Telkom | 11.16 | 767.7 | 354.23 |
| Jamii | 30 | 30 | 10 |

| Test 2 | 24 hours | 48 hours | 72 hours |
|---|---|---|---|
| Safaricom | 58 | 9 | 6 |
| Airtel | 118 | 9 | 17 |
| Telkom | 49 | 119 | 55 |
| Jamii | 10.24 | 55 | 51.5 |

Source: Tilil Technologies

288. In Scenario 1 we therefore conclude that there appears to be some depletion of data. This may be the result of background processes or updates. However, it is concerning from a consumer perspective given that consumers that do not actively allow updates may find that they have depletion of data that places them at a financial disadvantage. This is particularly the case for consumers that purchase small amounts of data and do not have access to wifi as they may find that a sudden depletion

### 10.5.2 Scenario 2: Depletion with usage of data

289. We hypothesise that if we use the phones for the same activities the level of data depletion should be consistent across all operators.

289.1. Our measurement or dependant variable is the amount of data available

289.2. Our independent variable is the activity engaged in.

289.3. Our control variables are the amount of data, the activities engaged in, the type of phone and the type of apps downloaded. These have been loaded with identical apps.[Google Play Services, Speech Recognition and Synthesis From Google, WhatsApp, Gmail, YouTube, Maps, Gboard, Google Play Store, Android System WebView, Speedtest, Meet, Messages, You Tube Music, Drive, Carlcare, Calendar, Phoenix, Google Go, Android Accessibility Suite, Chrome, Files by Google, Digital Wellbeing, Personal Safety, XClub, XOS Launcher, Private Computer Services, Android Switch, Google Assistant, Find Hub, Settings,IR Remote, XPARK, Clock, Android system Safetycore, Gallery, Weather, Palm Store, XTheme, Files, Phone, Recorder, Phone Master, Camera, Google Partner Setup, Feedback, SIM Toolkit, Wireless Emergency Alerts, PlayAutoInstall , Themes, AI Gallery, UltraLink, Contacts] In addition, each handset has downloaded the operator-specific airtime app.

290. The methodology is as follows:

290.1. We begin by recording the amount of data on the phone. We keep the phones charged and check the airtime balance daily for 2 days

290.2. Day 1: Watch a Youtube video – (https://youtu.be/39ColarOWKo?si=r3tpfBEiqJ9sRku5)

290.3. Day 2: Look at a news website (https://www.citizen.digital/) with 3 different clicks. Download a whatsapp video (same video to be sent to each phone number by whatsapp https://youtu.be/5nmvvYGfG0k?si=P1peCmUNWLcQw-8q)

291. On each day at the same time we record the data remaining. We record the final data at the end of Day 2.

**Table 14: Data depletion with usage (MB)**

| | Safaricom | Airtel | Telkom | Jamii |
|---|---|---|---|---|
| Watch Youtube Video | 48 | 22 | 42.5 | 57.6 |
| Read news website with 3 clicks and download whatsapp video | 126 | 106 | 110 | 140 |

Source: Tilil Technologies

### 10.5.3 Scenario 3: Depletion with phone switched off

292. We hypothesise that if there is not activity and and the phone is off, data depletion should be non-existent as there are no background apps or activity that could deplete data.

292.1. Our measurement or dependant variable is the amount of data available

292.2. Our independent variable is time at 24 hour intervals.

292.3. Our control variables is the amount of data, the activities engaged in, the type of phone and the type of apps downloaded. These have been loaded with identical apps.[Google Play Services, Speech Recognition and Synthesis From Google, WhatsApp, Gmail, YouTube, Maps, Gboard, Google Play Store, Android System WebView, Speedtest, Meet, Messages, You Tube Music, Drive, Carlcare, Calendar, Phoenix, Google Go, Android Accessibility Suite, Chrome, Files by Google, Digital Wellbeing, Personal Safety, XClub, XOS Launcher, Private Computer Services, Android Switch, Google Assistant, Find Hub, Settings,IR Remote, XPARK, Clock, Android system Safetycore, Gallery, Weather, Palm Store, XTheme, Files, Phone, Recorder, Phone Master, Camera, Google Partner Setup, Feedback, SIM Toolkit,

Wireless Emergency Alerts, PlayAutoInstall , Themes, AI Gallery, UltraLink, Contacts]. In addition, each handset has downloaded the operator-specific airtime app.

293. The process was as follows:

293.1. We begin by recording the amount of data on the phone.

293.2. We switch the phones off and check the airtime balance on a daily basis at 24 hours, 48 hours and 72 hours and list the data levels per day.

294. In this variation there was no data depletion at all. This suggests that depletion is not something that is occuring at operator level but rather due to background activities in handsets when the phone is on.

Given the three experiments it is apparent that from a consumer perspective there is data depletion. However, this appears to be due to background activity as when Authorities should engage with consumers and provide easily accessible education about the systems that may be depleting consumers data without their knowledge as these complaints are common.

295. This should include education on the existence of background apps, advice to use phone settings to minimise automatic updates and to update when connected to Wifi or when purchasing a bundle for that purpose.

## 10.6 Data expiry notifications

296. We also measured the notifications and process provided for when data was being depleted. The following occurs:

296.1. Safaricom: Notification when 75% is used

296.2. Airtel: Notification when 50% is used

296.3. Telkom: No automatic notification- expiry can be checked through balance inquiry

296.4. Jamii: No automatic notification- expiry can be checked through balance inquiry

297. No notification was sent when data is completely depleted. On data depletion there is no option to renew. However, for certain operators (such as Airtel) purchase of bundles can occur with an option to auto renew.

298. This is an area in which there is potential for greater consumer transparency and information to be provided. In particular, requiring operators to give customers the option of opting into a new bundle rather than migrating to out of bundle fees could be considered.

## 10.7 Speeds

299. Furthermore we engaged in speed tests to determine whether the speeds advertised were reached.

300. In order to do so we engaged in a speed test across all devices using Ookla standardized test.

301. We see that there is substantial variation in the speed provided across different providers in different areas. However, speeds provided by Jamii are typically far lower than other

operators. In addition, Telkom only performs well in one of the three locations.[41] We note again that this is a limited sample test and therefore should be used with care.

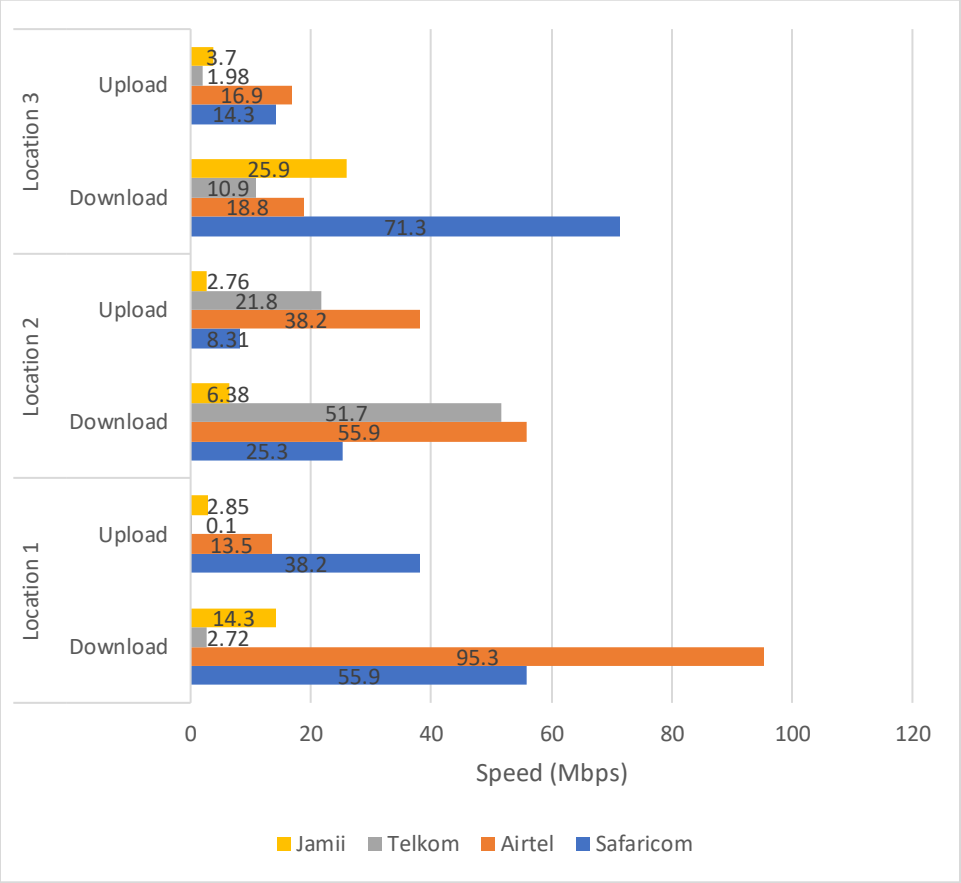


**Figure 64: Speed tests for mobile across three locations**

Source: Tilil Technologies

### 10.7.1 Speed tests for fixed

302. Using lines for each provider we tested the speeds and compared them to advertised speeds. We see that many lines are not at the level that are advertised, but are not significantly worse.

[41]Location 1: Lat-1.445 Lon-36.976- Athi River, Location 2: Lat-1.263 Lon-36.784 Rhapta Heights, Nairobi, Location 3: Lat-1.259 Lon-36.801 Westgate Nairobi

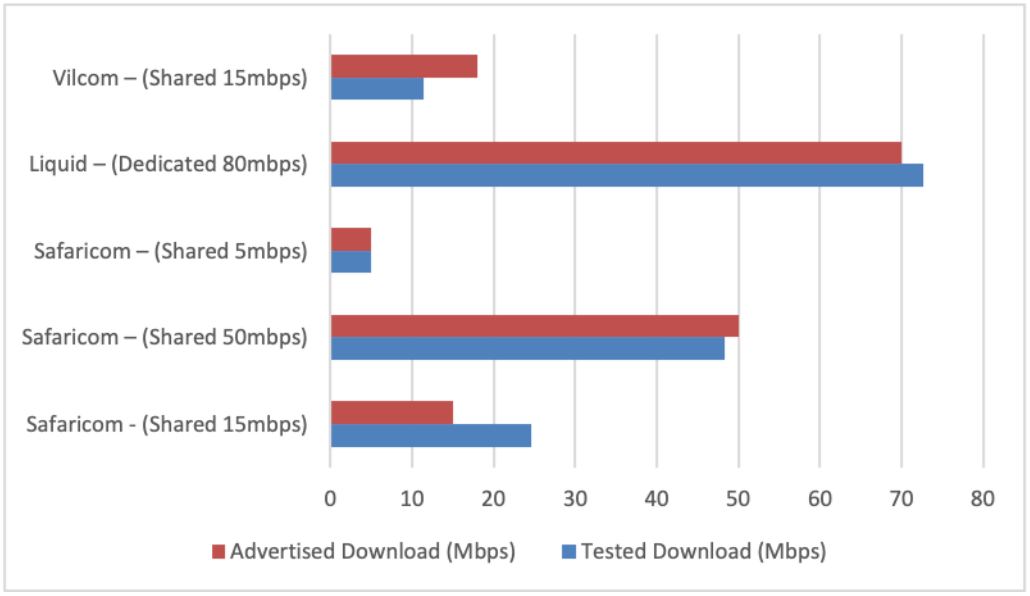


**Figure 65: Download speeds**

Source: Tilil Technologies

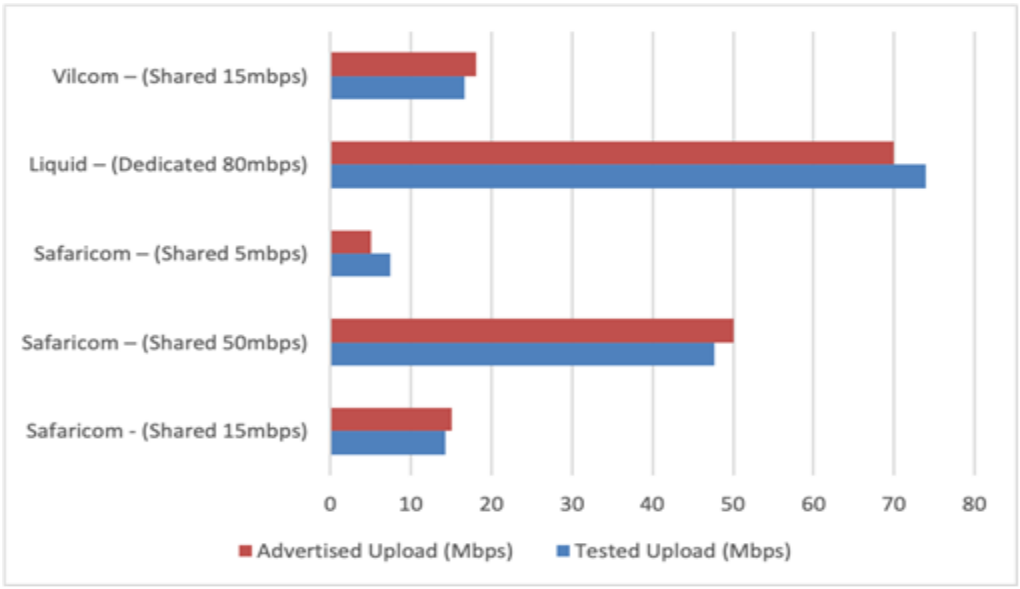


**Figure 66: Upload speeds**

Source: Tilil technologies

### 10.7.2 Speed tests for satellite

303. We also engaged on speed tests on Starlink. We found that speeds were below the advertised speeds far more than for mobile.

| | **Download** | **Upload** |
|---|---|---|
| Tested Satellite speeds | 157.0 | 21.5 |
| Advertised Satellite speeds | 200 | 200 |

304. We conclude that there are no major concerns in relation to consumer transparency. However, there is potential for greater levels of consumer information.

## 10.8 Policies to enhance transparency

305. Kenya has a general consumer protection framework established under the Consumer Protection Act, 2012, which was amended in 2022. This is designed to safeguard consumers from unfair, misleading, or harmful business practices across all sectors of the economy, unless specific exemptions are provided by law.[42] In addition to this general framework, the telecommunications sector is governed by regulations related to licensing, service provision, and consumer rights which are published under the KICA, as discussed in previous sections.[43]

306. Certain other jurisdictions, however, have developed specific regulations that directly address transparency in telecommunications. These frameworks seek to standardize the presentation of product information, requiring companies to clearly disclose essential details for consumer choice. Such regulations enhance consumer empowerment by making information more accessible and comparable.

### 10.8.1 Standardised information summaries

307. One of the common interventions used relates to a standardised presentation of key terms and conditions

307.1. Australia: The Australian Communications and Media Authority requires that all telecommunications products, services, and plans listed on company websites be accompanied by a Critical Information Summary (CIS).[44] Furthermore, postpaid services should be accompanied with a copy of the CIS before the consumer commits to a purchase, with a few exceptions and provisions for circumstances such as a purchase over the phone. This requirement ensures that consumers can easily compare products by providing clear and standardized information on price, features, limitations, exclusions, fees, minimum contract length, roaming details, and complaint procedures, thereby enabling informed decision-making.

307.2. European Union: The European Union's Directive (EU) 2018/1972, which established the European Electronic Communications Code, mandates in Article 102 that providers must present customers with an easily readable contract summary before a contract is concluded.[45] The contract summary must include key features such as the main characteristic of each service provided, the prices for using the service, the duration and any other recurring or consumption-related costs, among other requirements. Furthermore, Article 103 requires national authorities to ensure that end-users have access to at least one free, independent comparison tool to facilitate transparency, enable offer

[42] Consumer Protection Act, No. 46. (2012). (Kenya). https://www.parliament.go.ke/consumer-protection-act-no-46-2012

[43] Kenya Information and Communications Act, Cap. 411A. (1998). (Kenya). https://www.ca.go.ke/wp-content/uploads/2018/02/Kenya-Information-and-Communications-Act.pdf

[44] Australian Communications and Media Authority. (2023, October 25). *Critical Information Summaries*. ACMA. Retrieved June 25, 2025, from https://www.acma.gov.au/critical-information-summaries

[45] European Parliament & Council. (2018, December 11). *Directive (EU) 2018/1972 establishing the European Electronic Communications Code* (Official Journal L 321, pp. 36–214). EUR-Lex. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L1972

comparisons, and promote information publication across internet and communication services.

308. We can note key structural differences between the Kenyan telecommunications market and those of Australia and the EU. As of June 2025, Kenya had approximately 76.6 million active mobile subscriptions, of which about 98.1% were prepaid, with only a small fraction with postpaid.[46] In contrast, Australia's market consists of around 61% postpaid mobile subscriptions, while the UK has approximately 74.5% postpaid subscribers.[47][48] Therefore, although transparency remains crucial for consumer protection, information summary frameworks designed around postpaid contract dominance may be less effective in Kenya's predominantly prepaid market that is far more dynamic and fast-changing. As such, an approach tailored specifically to prepaid product advertising could still significantly enhance transparency, and existing regulations under KICA and the Competition Act continue to be relevant.

### 10.8.2 Price comparison websites

309. In recent years, the rise of Price Comparison Websites (PCWs), also referred to as digital comparison tools, has introduced an additional layer of market transparency.

310. PCWs are defined as digital tools that enable users to compare the costs and features of products and services across multiple providers. Ideally, but not always, these platforms operate independently of the providers they list, thereby enhancing neutrality and consumer trust. Examples include the Price Barometer in Czech Republic, Kompare in Uganda, Finder in Australia, and Phone Finder and Hippo in South Africa.

311. Despite differing in purpose and governance, the price comparison platforms examined generally share a common structure. Most adopt a spreadsheet-style layout that includes key columns such as the service provider's name, the product on offer, and its price. These platforms typically cover mobile plans/contracts, fixed broadband packages, or data bundles.

312. However, they still have key differences which affect their usefulness for consumers in the market, particularly regarding who operates them, their underlying business model, and their usability.

313. Government or regulator directed websites include the following:

313.1. Czech Republic: The Price Barometer, developed by the Czech Telecommunications Office, is non-commercial and operated by a government body.[49] The platform presents data in annual intervals, with historical prices recorded for each December 31st from 2012 to 2023 and does not include direct links to providers, making it more useful for academic and regulatory monitoring than for immediate consumer decision-making.

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[46] Communications Authority of Kenya. (n.d.). *Statistics*. Retrieved June 25, 2025, from https://www.ca.go.ke/statistics

[47] Australian Competition and Consumer Commission. (2024, December 18). *Communications market report 2023–24*. from https://www.accc.gov.au/system/files/communications-market-report-2023-24.pdf

[48] Ofcom. (2025, April 10). *Q4 2024 telecommunications market data update*. from https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/telecoms-research/telecoms-data-updates/q4-2024-telecommunications-market-data-update.pdf?v=394053

[49] Czech Telecommunications Office. (n.d.). *Price Barometer*. Czech Telecommunications Office. Retrieved June 25, 2025, from https://ctu.gov.cz/en/vyhledavaci-databaze/srovnavaci-prehled-cen-a-podminek/cenovy-barometr

313.2. Uganda: Kompare, which was commissioned by the Ugandan Communications Commission (UCC) in 2015 is more interactive and consumer oriented.[50] Importantly, it is regularly updated and offers customization tools that allow users to filter by provider, data type (fixed or mobile), payment model (prepaid or postpaid), and bundle duration. Users can also rank products by minutes, SMS, data, or price. While it is not overtly commercial, it does feature privacy terms indicating potential third-party advertising and the sharing of personal information, however neither the UCC nor Kompare have reported earning any profits from the platform.[51]

313.3. India: The Telecom Regulatory Authority of India (TRAI) has a platform to facilitate comparisons across ISPs[52]. TRAI requires mobile operators to publish prepaid tariff data in a standardized table format, showing recharge price, validity, data caps, and post-throttle speeds[53].

313.4. Ireland: ComReg Ireland's "ComReg Compare" tool is regulator facilitated. It enables users to compare packages for mobile and broadband. It allows users to filter packages exclusively by prepaid options, helping consumers navigate top-up bundles more easily.

314. These systems enhance clarity, reduce decision fatigue, and promote fair comparisons in fast-changing prepaid markets.[54]

315. In contrast, some platforms are privately operated and commercial with differing business models.

315.1. Australia: Finder, last updated on the 3rd of June 2025, earns revenue through referral commissions paid by providers when users are directed to their services and no direct fee is charged to the consumer.[55] [56]

315.2. South Africa: Hippo instead charges providers a fee to be listed but disclose that not all large providers are on the platform, which could be due to the fee or unrelated reasons.[57] [58] Phone Finder does not disclose its revenue model but appears to operate under a similar structure.[59]

315.3. These platforms are not affiliated with any regulatory authority. Additionally, in cases such as Hippo, consumers must first submit personal information (e.g., name, email, phone number) to access comparisons, raising concerns about data privacy. Both Phone Finder

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[50] Kompare Uganda. (2024). *Mobile internet rates*. Retrieved June 25, 2025, from https://kompare.ug/data/mobile-internet-rates/

[51] Kompare Uganda. (n.d.). Privacy policy. Retrieved June 25, 2025, from https://kompare.ug/wp-content/themes/minzaani/docs/kompare_pp.pdf

52 Telecom Regulatory Authority of India (TRAI). (2020). *Directive on transparent marketing and disclosure of tariffs.* Medianama. https://www.medianama.com/2020/09/223-trai-telecom-tariff-guidelines/

53 ibid

[54] Compare | Commission for Communications Regulation

[55] Finder. (2025, June 3). *Compare mobile phone plans & deals*. Retrieved June 25, 2025, from https://www.finder.com.au/mobile-plans

[56] Finder. (2025). *About us – 18+ years of helping you find better*. Retrieved June 25, 2025, from https://www.finder.com.au/about-us

[57] Hippo.co.za. (2025). *Compare fibre to the business deals*. Retrieved June 25, 2025, from https://www.hippo.co.za/business-fibre-in-your-area/

[58] Hippo. (2022, November 22). *The truth about who owns Hippo and how it works*. Hippo.co.za. Retrieved June 25, 2025, from https://www.hippo.co.za/blog/insurance/the-truth-about-who-owns-hippo-and-how-it-works/

[59] Phonefinder (Pty) Ltd. (2025). *Mobile phone contract deals*. Retrieved June 25, 2025, from https://phonefinder.co.za/deals

and Hippo do not include update dates, however, it is reasonable to assume that the products displayed are up to date, given that these platforms generate revenue by providing network providers with consumer.

### 10.8.3 The Effectiveness of Price Comparison Websites

316. As there are costs related to creating price comparison platforms there are questions as to whether there is sufficient benefit. We have therefore reviewed the literature related to the effectiveness of price comparison platforms.

317. To evaluate the effectiveness of digital comparison tools (DCTs) in the United Kingdom, a study was commissioned by the United Kingdom's Competition and Markets Authority (CMA) in 2017. This research spanned eight sectors, including broadband services, and employed a mixed-methods approach, comprising an online survey with 4,083 respondents and follow-up qualitative interviews with 32 participants.[60]

318. Several benefits of price comparison websites or digital comparison tools were noted.

318.1. Better purchasing decisions: The CMA study revealed that over 80% of respondents who had used DCTs believed they had made a better purchasing decision as a result, with only 1% reporting that they had made a worse decision.

318.2. Lower prices: Lindgren, Daunfeldt, and Rudholm (2021), using data from a Swedish PCW, found that lower price levels were associated with increased consumer use of the PCW and with greater retailer participation. Importantly, the entry of additional firms onto the platform had a larger association with lower price levels than an increase in consumer search activity.[61] This suggests that PCWs not only improve consumer access to information but also intensify competition between firms by lowering barriers to comparison.

318.3. Benefits to firms: In a complementary study, Lindgren, Li, and Rudholm (2021) evaluated the firm-level effects of participating on a PCW, using a panel dataset of Swedish retail firms between 2009 and 2016.[62] Their analysis showed that firms listed on the PCW experienced increased operating profits and rising gross wages over time. These findings indicate that PCW participation may lead to long-term profitability for firms, while consumers benefit from lower prices and more accessible market comparisons.

319. However, there are certain drawbacks and concerns as well.

319.1. Treatment of data. There appear to be concerns over how consumer data is collected, used, or protected. This is reflected in the CMA's findings, where 38% of respondents reported not trusting comparison tools to treat all providers equally, 40% expressed

[60] Competition and Markets Authority. (2017, March). *Digital comparison tools: Consumer research final report*. https://assets.publishing.service.gov.uk/media/58e224f5e5274a06b3000099/dcts-consumer-research-final-report.pdf

[61] Lindgren, C., Daunfeldt, S.-O., & Rudholm, N. (2021*). Pricing in retail markets with low search costs: Evidence from a price comparison website* (HFI Working Paper No. 18). Hans B. Håkansson Foundation. https://hfi.se/wp-content/uploads/2021/03/huiwpno.18.pdf

[62] Lindgren, C., Li, Y., & Rudholm, N. (2021). *Why do firms compete on price comparison websites? The impact on productivity, profits, and wages* (HFI Working Paper No. 18). Hans B. Håkansson Foundation. https://www.diva-portal.org/smash/get/diva2:1542021/FULLTEXT01.pdf

concern about the secure collection and storage of their personal information, and 49% did not trust that their data would not be shared with third parties without permission.

319.2. Access to technology: Awareness of DCTs was lower among individuals with limited internet usage, indicating that digital inequality can restrict the reach and impact of these tools. These findings pose notable concerns for the Kenyan context, particularly due to only 35% of the population using the internet in 2023 compared to the United Kingdom's 96% potentially reducing both the awareness and effective usage of such tools.[63]

319.3. Price distortions: Other areas of the literature suggest that the business models of these platforms, often reliant on commissions or provider-paid fees, can potentially distort pricing dynamics. It is argued that the commissions charged by PCWs results in the price level being pressured upwards and therefore the net effect is that prices of consumers for both who use and don't use the platforms increase.[64] This is made worse as consumers are unable to observe which platforms charge higher commissions than others and are indirectly affected. Therefore, consumers cannot easily observe or evaluate the cost pass-through effects, making it difficult to account for these effects in their decision-making. This dynamic may generate what researchers describe as a "parasite market", a competitive market that emerges and degrades consumer welfare if not regulated.[65]

319.4. Potential for collusion. In certain instances PCWs or DCTs can be used to find a focal price and used to monitor price collusion between companies.

320. To mitigate these effects, various policy recommendations have been proposed. Among them is the need for greater transparency from PCWs.

321. One solution may be the establishment of a single, non-commercial comparison tool monitored by regulators. Such a platform would be free from commercial pressures, would be centrally updated, and would offer consumers neutral access to pricing and product information. Several countries have developed public or regulator-backed platforms that offer reliable, up-to-date, and prepaid-focused mobile tariff comparisons.

322. Uganda's Kompare platform offers a useful model in this regard, illustrating how publicly backed platforms can provide trustworthy, regularly updated information without the risks associated with profit-driven comparison tools. These tools help consumers navigate increasingly complex bundles, reduce information asymmetry, and support price transparency.

323. At present operators are required to provide the Authority with all bundles and prices. As such, a price comparison website that draws on the database and is updated live could be a valuable tool for customers. Ideally, such a tool should consider the following factors to ensure the tool has a high probability of success in the Kenyan context:

324. Governance and institutional design options:

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[63] World Bank. (n.d.). Individuals using the Internet (% of population). *International Telecommunication Union (ITU) World Telecommunication/ICT Indicators Database*. Retrieved June 25, 2025, from https://data.worldbank.org/indicator/IT.NET.USER.ZS

[64] Ronayne, D. (2021). *Price comparison websites*. International Economic Review, 62(3). https://doi.org/10.1111/iere.12504

[65] Houde, J.-F., & Foucault, T. (2020). *A competitive market of energy price comparison websites reduces consumer prices*. Energy Economics, 85, 104560. https://doi.org/10.1016/j.eneco.2019.104560

324.1. The first option includes a regulator developed and controlled PCW which would not be commercial and function as a public good.

324.2. The second option would include a regulator creating an independent and separate organisation dedicated to the developing and controlling of the PCW. Although independent, the organisation would function in partnership with and receive funding from the regulator to allow the PCW to remain a public good.

324.3. The third option consists of an accredidation system where commercial PCWs have to follow a specific set of rules and requirements to be accredited. This would allow for the the increased trust in accredited PCWs by consumers, and therefore a higher usage willingness. It would need to be decided whether accredidation is voluntary or compulsory. However, this is not entirely relevant at present in Kenya as there do not appear to be commercial PCWs.

324.4. The legal status of the PCW would also need to be established, indicating whether it is a trader or intermediary. In other words, does it allow for direct purchasing or redirection to provider.

325. Regardless of the model chosen, some of the factors below are relevant.

326. Accuracy and completeness:

326.1. To ensure accuracy and completeness, the prices shown should represent the final price including all fees and taxes with no hidden costs. For contexts such as broadband services, any installation and equipment costs must also be disclosed along with regional usage and speed information. Clear distinctions should be made between recurring payments/subscriptions compared to one time purchases, promotional and original prices, along with any expiry date or fair usage policies.

326.2. The services being displayed must also be very clear in who is eligible where restrictions do occur for example, a promotion only being offered to consumers who subscribe to a different service such as the e-wallet or partnerships with other brands.

326.3. In addition, the PCW should be updated frequently to ensure information is relevant, and last updated time stamps can be included.

327. Impartiality and transparency:

327.1. The PCW must ensure that comparisons are as impartial as possible with minimal external influences unknown by consumers. This would be achieved by disclosing the ranking methodologies and any external factors affecting rankings. Ideally, consumers should have the ability to either choose neutral rankings such as price and quantity, or customize their rankings to their preferences with tools such as filters.

327.2. If the PCW is commercial, the business model of the PCW should also be clearly disclosed. This is particularly important for disclosing revenue sources which can include advertising, pay-per-click, commissions or the authorised sale of data to third parties. Other practises to be disclosed for consumers can include price parity deals, non brand-bidding, negative matching and non-resolicitation agreements. The PCW must also be transparent about all ownership linkages.

327.3. The PCW must also disclose the extent of the market participants it has included. It is preferred for a PCW to have a significant proportion of market coverage and being open to any provider interested in being represented on the platform.

327.4. All the disclosures considered should be located in areas consumers can easily locate such as the “About Us” or “FAQ” sections

328. Consumer friendly design principles:

328.1. The first principle is ease of use and navigation. This means that the PCW should allow for searching by price, duration, bundle size and combinations along with any other simple differentiators the average consumer can navigate and rank. In addition, the closest alternatives to a consumers search should also be displayed.

328.2. The second principle is information design and clarity. This can be achieved by the usage of plain uncomplicated language, layered information where the key metrics are initially shown for easy comparison with a second layer being available for more detailed information, and it should be clear when products are not identical (example, if product accompanied with ‘free nightime data’). For unavoidable technical terminology, there should ideally be accompanied with easily accessible simple explanations. In addition, Kenya has two official languages, english and swahili, therefore the availability of both languages for key information would improve clarity for some consumers.

328.3. The third principle is personalisation, where consumers are able to compare products based on selected criteria and adjustable rankings.

328.4. The fourth principle is accessibility and inclusion. This requires for the PCWs to still be reasonably accessible to vulnerable consumers such as the elderly or disabled. In addition, there should be device neutrality where the hardware or software of the device does not impact the usage of the PCW. Generally, international accessibility standards should be observed where reasonable.

329. Data protection:

329.1. The PCWs should not sell consumer data to advertisers or licensees, and ensure it is clear to consumers which data is being collected and what is is being used for. In addition, consumers should not be required to enter any personal information such as name, surname, contact details and location to be able to view comparisons but can willingly do so for increased accuracy or convenience.

330. Complaints handling and redress:

330.1. There should be a clear complaint handling procedure with efficient timelines and contact details for escalation where a query has not been resolved. This is particularly important for where incorrect and outdated prices can be reported.

331. General operations and data management:

331.1. The data collection for the PCW can be done in different ways. First, the manual collection by PCW employees through either a standardized submission/questionaire providers are required to answer or through using publicly available sources such as operator websites if sufficient. The employees would then manually input this data.

331.2. Alternatively, providers could be given login details where they are required to report and update their prices. PCW staff would then ensure that prices being submitted are correct and match what is on provider websites. A live regulatory tariff database would

331.3. The data updating must be regular, however it can either occur on a scheduled basis or continous basis. The decision should be based on the expected compliance of providers and whether it can be trusted that continous updating will occur.

331.4. Monitoring and market surveillance must also be implemented to ensure that collusion is not occurring, as signalled by price convergence. In addition, random spot checks and audits to ensure providers are accurate in their reporting.

331.5. It can be noted that an ideal outcome would be providers updating their tariffs on a live basis with the regulator and that database feeding into a PCW. This may be possible given the Authority's plans for a tariff monitoring platform.

Policy proposition

We recommend the development of a price comparison website. This should be developed by the regulator as opposed to through private, for profit purposes. The website should be live and tariffs should be accurate. The website should be created in a way that allows for easy filtering, search and comparisons. Factors such as data protection should be adhered to..

### 10.8.4 Subscriber regulations on credit or data expiry and notifications

332. Another approach taken is to embed forms of consumer protection in regulations.

333. For example, South Africa has published draft amendments to its End-user and Subscriber Service Charter Regulations[66]. These have not been finalised and are still being consulted on. However, some of the requirements were as follows:

333.1. Firstly, notifications are provided at 50%, 80% and 100% depletion.

333.2. Secondly, there is an option to opt in or opt out of out-of-bundle usage charges. If a bundle is depleted the Licensee is not allowed to automatically charge out of bundle rates until the subscriber opts in.

333.3. Thirdly it allows for roll-over of a portion of the bundle for medium and longer term bundles and the transfer of data.

334. Submissions thus far have been critical of various regulations, particularly, the roll-over requirement and the regulations have not been finalised.

334.1. Submissions by operators note that the roll-over requirements change the nature of the bundle by altering the duration required and that this in turn would increase the costs. [67]

334.2. They also highlight that short duration bundles allow them to predict traffic and peaks more accurately and this allows for lower costs. [68]

334.3. They argue that such a requirement would ultimately lead to higher priced bundles being offered as it will lead to the removal of short-duration special offers. [69]

[66] Government Gazette No. 50241, 29 February 2024, available at Draft-End-User-and-Subscriber-Service-Charter-Amendment-Regulations-2024.pdf

[67] Vodacom (2024). Submission to ICASA, Vodacom-EUSSC-Submission-24042024-Non-confidential-Final_Redacted.pdf

[68] Vodacom (2024). Submission to ICASA, Vodacom-EUSSC-Submission-24042024-Non-confidential-Final_Redacted.pdf

[69] Vodacom (2024). Submission to ICASA, Vodacom-EUSSC-Submission-24042024-Non-confidential-Final_Redacted.pdf

335. These critiques of the regulations are important. Operators often use shorter duration bundles at a lower price to enable them to price discriminate and discount during quieter periods. As such, the revised Regulations in South Africa removed bundles of 7 days and under from the regulations to allow deep discounting. A concern that arises is whether requiring extended rollovers would simply increase the price of data. Regulations requiring non-expiry (as opposed to a lengthened expiry) are also a concern as they would allow for data hoarding leading to unpredictability from an operator's point of view when provisioning their networks.

336. Other jursidictions while intervening on validity in different areas, do not consider depletion of data.

336.1. The Nigerian Communications Commission has published its *Draft Guidance on Unutilised and Unclaimed Subscriber Recharges in the Nigerian Communications Sector*. However, this is focused on airtime that expires due to line disconnection which is a very specific case.

336.2. Anatel in Brazil, for example had published Resolution 765 which has (i) a minimum validity of 30 days for prepaid recharges (ii) the possibility of longer duration options such as 90 and 180 days. However, this appears to apply to monetary credit as opposed to data or voice credits. The operators still offer short duration bundles that expire. The limitations are on your money credits expiring.

337. While operators in Kenya currently have notifications relating to depletion, we note that the option to opt-in or out of bundle charges may be pro-consumer. It can be noted that there were objections to this as well in the South African instance (for example, some submissions were made that it would be better to allow consumers to continue at the in-bundle rate than cut them off entirely). However, this opt-in/ opt-out mechanism for out-of-bundle charging (allowing customers to avoid unitented charges) could potentially enhance transparency and consumer control.

338. Transfer and roll-over of data has not been shown to be beneficial as yet and we would be concerned about implementing it if the unexpected result is the removal of special offers for short-duration bundles or increased prices over longer periods. It can, however, also be a point of differentiation for operators.

339. We discuss recommendations related to consumer transparency in the Recommendation section.

# 11 Recommendations

340. The TOR requires that we consider some recommendations as follows:

340.1. TOR 7: Provide a proposal on the best ways by which the identified barriers and factors acting as a hindrance to growth can be considerably minimized or eliminated.

340.2. TOR 8. Identify specific stimulus that can be injected in the internet/data sub-segment in order to ensure that there is effective competition, accessibility, affordability and growth.

340.3. TOR 12. Recommend the optimal or appropriate and proportionate regulatory interventions to pricing issues identified within the existing regulatory and legal framework.

340.4. TOR 13. To recommend economic and fiscal incentives for proliferation of affordable data services in Kenya.

341. As such, the TOR do not necessarily focus on regulations alone, but also broader stimulus incentives.

## 11.1 Legal framework for recommendations

342. Regulation is not an end in itself, but is required to promote a specific outcome in the public interest or to remedy a market failure or other market issue which requires intervention because it is unlikely that the market will self-correct. As indicated earlier in this Report, regulation in relation to competition matters can be said to be 'ex ante', signifying early intervention in anticipation of a poor market outcome, or 'ex post', to rectify a market failure that has already had an effect on a market.

### 11.1.1 Regulating for competition

343. In the context of competition and specifically an inquiry into the degree of effective competition in a particular market, various criteria test are used to indicate whether or not ex ante regulation is required. The criteria are (i) high and non-transitory barriers to entry in a particular market and (ii) whether there is likely to be effective competition in a relevant time horizon, given the current structure of the market and its likely path of development in the near term. In some jurisdictions, a third criteria related to whether competition law alone is sufficient to adequately address it is also included (eg. this is considered by the European Commission).[71] The third criteria reflects the likely difficulty in relying on competition law after harm has already occurred in a market. However, these criteria are typically used where deregulation from sectoral regulation in favour of ex-post competition regulation is being encouraged, with the EC Directive stating that *"One of the aims of the new regulatory framework is to progressively reduce ex ante sector-specific rules as competition in the markets develops and, ultimately, to ensure that electronic communications markets are governed only by competition law."* In countries in which this is not the objective, such as Kenya, the approach to ex ante regulation may be more expansive. Certainly this is the approach taken in Kenya over the past decade and the path provided for in the KICA and associated regulations.

344. This approach requires an inquiry to be undertaken into a specific and defined market or market sub segment, with a view to determining if that market is competitive and if not, why not. Reasons why a market may not be competitive include barriers such as those we have

considered thoroughly in this report, and high market shares or a highly concentrated market (as has been found in this study for several retail and wholesale markets).

345. As indicated in the introduction to this report, the Authority has passed regulations in relation to competition which empower it:

345.1. to define a market – regulation 6, Fair Competition Regulations, 2010 read with regulation 3A of the Tariff Regulations, 2010;

345.2. to assess the level of competition in the market – regulations 3(2), 5, 8, and 8A(2) of the Fair Competition Regulations, 2010 read with the Schedule to the Tariff Regulations, 2010;

345.3. to determine dominance – regulation 8 of the Fair Competition Regulations, 2010 read with regulation 3A(2) of the Tariff Regulations, 2010; and

345.4. to determine and impose remedies – regulations 9, 10 and 11 of the Fair Competition Regulations, 2010; regulations 6 and 10 read with the Schedule to the Tariff Regulations 2010; and regulation 18 of the Interconnection and provision of Fixed Links, Access and Facilities Regulations, 2010.

346. Remedies may be required to level the playing field, to rectify a skewed market structure and to allow competition to develop, while restraining the actual or potentially damaging behaviour of one or two operators with high market shares. The selection of remedies will depend on the actual harm observed in the market. High market shares alone are not decisive in determining if a market is competitive or not or if one or two operators with high market shares are dominant, or if that or those dominant operators have the abilty to or are already distorting competition in the market under review. From this point on we focus only on single-operator dominance.

### 11.1.2 Characteristics of a dominant operator

347. Characteristics that are indicative of markets in which a dominant operator can be presumed to be present are often when one operator has a large market share, above 50%, although operators may be dominant with smaller market shares; and stable market shares may confirm a situation of dominance. However, market shares and changes over time need to be considered in order to provide a clear picture of the relevant market dynamics[70].

348. The definition of a dominant operator, regardless of the percentage of market share, is often summarised as the power of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers. Certain indicators may suggest that an operator is dominant in a market. They are, among others which have been considered in this report:

348.1. overall size of the undertaking,

348.2. control of infrastructure not easily duplicated,

348.3. technological advantages or superiority,

348.4. absence of or low countervailing buying power,

348.5. easy or privileged access to capital markets/financial resources,

348.6. product/services diversification (e.g. bundled products or services),

[70] ICT Market analysis and determination of dominance guidelines | Digital Regulation Platform

348.7. economies of scale,

348.8. economies of scope,

348.9. vertical integration,

348.10. a highly developed distribution and sales network,

348.11. absence of potential competition,

348.12. barriers to expansion.

349. A finding of dominance is not itself reason to regulate a market –the presence of these other problems is key to determining that regulation is required on an ex ante basis.

### 11.1.3 When and how to regulate

350. Regulatory intervention is typically focused on wholesale markets rather than retail to limit distortions in the retail market. Recommendations can include a range of potential remedies and monitoring approaches, if necessary and indicated and taking into account the harm that is sought to be prevented or mitigated and the type of behaviour that is observed. Remedies typically include:

350.1. Interventions related to wholesale access such as reference offers, transparency, non-discrimination and accounting separation;

350.2. Pricing interventions including tariff approval or tariff-setting;

350.3. Monitoring and informational remedies.

350.4. Obligations to provide specific information to the Authority on request or at regular intervals.

350.5. In this instance, the type of recommendations requested are broader and includes economic and fiscal interventions, and other forms of stimulus.

351. The analysis conducted and the outcomes reflected in this Report indicate a range of barriers and concerns in the Kenyan data market. While some issues can be addressed by using the existing powers provided to the Authority in the KICA, other interventions to promote the take-up and use of data, make it more accessible and affordable, and stimulate the market for data services may require forms of regulation not currently in use or changes to existing regulatory instruments. It is also noted that the spend available to the average Kenyan will also affect the level of takeup of data services and the demand for larger bundles. The report comments on this aspect in relation to rural rollout where demand is more subdued. While there may be price issues in rural areas (i.e. the price may be high) the available spend may be low in any event.

352. Key concerns observed in the Kenyan data service market which are relevant to the consideration of the factors affecting the markets for retail and wholesale data services include the following:

352.1. Spectrum availability and pricing: the price of spectrum is high resulting in a significant cost to operators, and there is asymmetry in the assignment at present. This creates an environment where competition cannot flourish because some operators have greater benefits than others, enabling them to provide better services at a lower cost

352.2. Challenges relating to infrastructure rollout: There are various challenges including the need for, cost to obtain and delays in receiving permissions and permits required for land

access and use. This access includes rights of way, and permits for construction for which each county charges different fees. A harmonized or more consistent approach to permitting and land use would assist in reducing delays in and costs of network rollout. However, as the report has noted, the larger operators may be able to rollout their network faster because they have access to capital and a larger subscriber base to secure loans against, and then block or deny access to that network by third parties and new entrants. Similarly a decision not to permit MVNO access or national roaming would also be indicative of dominance which allows the larger operator to determine whether and on what terms capacity and its network may be accessed. As such, there may be links to competition related challenges.

352.3. Illegal operators, vandalism and damage: There are several unlicensed entities that take up data services from licensees but then split and sell that data undercutting the prices charged by licensed entities. This creates a playing field for data services which is not level in that some providers are obliged to comply with licence obligations and legal instruments while other providers are not, and consumers taking up services from licensed operators are protected by rules that apply to the treatment of subscribers and end users while consumers buying services from unlicensed providers are not protected in the same way. Furthermore, there are other illegal activities such as vandalism or damage to property that increase costs;

352.4. Competition related challenges: This includes the impact of a large and dominant operator on the market and concerns raised by competitors regarding the impact of the conduct of the dominant firm, or failure to take action when market trends indicate the potential for abuse by operators with high market shares. This suggests that a forward-looking assessment is required in order to declare that operator dominant, having regard to the behaviours listed above, and take action under the legal framework;

352.5. Consumer issues: There are concerns that consumer protection measures should be implemented in relation to issues such as high costs, the lack of transparency in pricing, high out-of-bundle charges, and unexplained data depletion (meaning data seems to be used up faster than the consumer expects, based on their usage patterns).

353. In what follows we discuss some recommendations related to these themes in more detail.

## 11.2 Recommendations aimed at reducing costs

### 11.2.1 Reducing data costs through spectrum

354. An important input into mobile network services is radio frequency spectrum. Larger assignments of radio frequency spectrum substantially reduce the costs of offering data services, since fewer sites are required, and more capacity is made available with more spectrum, allowing higher data throughput speeds and thus greater volumes of data. Lower costs as a result of greater spectrum assignments are to some extent mitigated by:

354.1. Spectrum fees, since additional spectrum assignments will attract higher regulatory fees. However, provided that spectrum fees are set at the valuation of the marginal operator, it is unlikely that the regulatory fees would outweigh the cost savings from avoided sites(not having to build as many sites because the licensee has more spectrum).

354.2. .A lack of competition, which means that not all cost-savings may be passed on to final consumers. Pro-competitive spectrum management policies are very important in this

regard. For instance, mobile network operators in Kenya responded to Starlink's entry by expanding their data allowances increasing bundle sizes. This means that promoting competition has an important role to play in ensuring that cost savings, such as through greater spectrum assignments, are passed on to consumers.

355. It is important to consider the impact of greater coverage (sub-1GHz) and capacity (above 1GHz) radio frequency spectrum, which have different effects on operator costs. While greater coverage spectrum means that fewer sites are needed to offer quality services over large distances particularly in rural areas, greater capacity spectrum permits substantially higher speeds and throughput in denser urban settings, through fewer sites.

356. Currently in Kenya, approximately 1075MHz of high-demand international mobile telecommunications (IMT) spectrum has been assigned to licensees (see Section 9.1). However, there is approximately 480MHz allocated to IMT in region by virtue of treaties agreed at the ITU's World Radio Conference 2023 (WRC-23 between the 1500MHz and 4990MHz bands that has not been assigned yet for IMT purposes in Kenya, or approximately 120MHz for each of the four current IMT spectrum licence holders. There is a further 700MHz between 6425-7125MHz allocated to IMT but not assigned for IMT purposes in Kenya, and 3250MHz and 6500MHz of spectrum in the 26GHz and 40GHz mmWave IMT bands respectively. In other words, there is an additional amount of additional IMT spectrum that could be assigned to licensees that would bring down the costs of data in Kenya. While the device ecosystem for certain of these bands, such as the 4800-4990MHz band, is still developing, these bands have been identified for IMT are therefore highly likely to mature from a device ecosystem perspective in the coming years. For example, parts of the 3600-3800MHz band have been auctioned in Tanzania[71] and Nigeria[72].

**Table 15: IMT spectrum assigned and available in Kenya**

| Band | Total assigned in Kenya | Total possible / allocated to IMT - region 1 | Not assigned in Kenya |
|---|---|---|---|
| 700MHz | 60 | 60 | 0 |
| 800MHz | 60 | 60 | 0 |
| 900MHz | 75 | 75 | 0 |
| 1500MHz | 90 | 90 | 0 |
| 1800MHz | 150 | 150 | 0 |
| 2300MHz | 100 | 100 | 0 |
| 2100MHz | 140 | 140 | 0 |

[71] See Tanzania Communications Regulatory Authority Public Notice: Results of the auction of radio frequency spectrum in IMT band (3600-3800 MHz), available at: https://tcra.go.tz/uploads/documents/en-1752158214-Public_Notice_Spectrum_Auction_10321076433818144766410299463691023763317521548746 96.pdf

[72] See 5G: Mafab, MTN Emerge Winners in Nigeria's 3.5GHz Spectrum Auction. Available at: https://ncc.gov.ng/media-centre/press-releases/breaking-press-statement-35ghz-spectrum-mtn-mafab-pay-licences

| | | | |
|---|---|---|---|
| 2600MHz | 190 | 190 | 0 |
| 3300-3400MHz | 60 | 100 | 40 |
| 3400-3600MHz | 150 | 200 | 50 |
| 3600-3800MHz | | 200 | 200 |
| 4800-4990MHz | | 190 | 190 |
| 6425-7125MHz | | 700 | 700 |
| 26GHz | | 3250 | 3250 |
| 40GHz | | 6500 | 6500 |
| Total | 1075 | 12005 | 10930 |

Source: Communications Authority

357. Based on simulations using the cost model developed for the Authority in 2022, assigning additional spectrum taking account of spectrum already assigned would likely substantially reduce the costs of data in Kenya. This is depicted in the graph below, which shows nine different scenarios of the costs per GB. The simulations begin on the top line with a licensee using 170MHz of IMT spectrum (the baseline). The line below that shows the impact of assigning 2x5MHz in the sub-1GHz bands to the baseline licensee holding only 2x30MHz of spectrum in those bands and adding 30MHz of mid-band spectrum to the same licensee. The lines below that show the impact of adding 30MHz of mid-band spectrum incrementally. As is apparent from the graph, data costs per GB fall as additional spectrum is added.

358. For instance, if the modelled licensee received an additional 205MHz of spectrum, its costs in 2027/28 would likely fall from approximately KSH 20.9 / GB to approximately KSH 16.4/GB, or approximately 20%. Assigning additional IMT spectrum to licensees in Kenya is thus highly likely to reduce the costs of providing data in Kenya, and is therefore also likely to result in lower data prices, provided this saving is passed on to consumers, is therefore also likely to

result in lower data prices and greater availability of service (particularly where licensees are allocated a mix of coverage and capacity spectrum

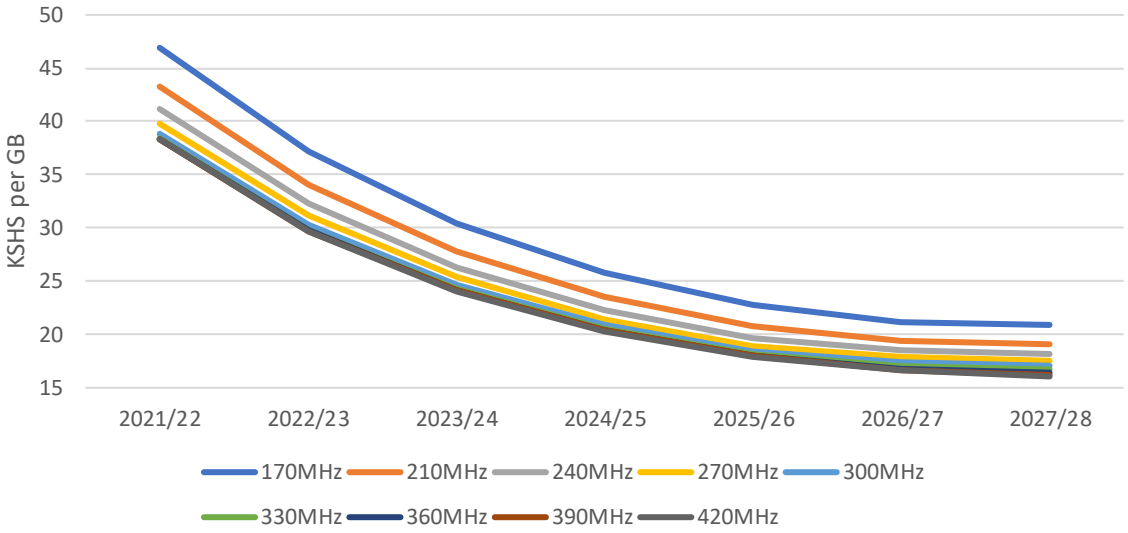


**Figure 57: Impact of additional spectrum assignments on data costs per GB**

Source: Acacia Economics

359. A key recommendation is therefore **to make available and rapidly assign additional IMT spectrum**, such as those bands identified for IMT at WRC-23.

360. This should be a market-based assignment (such as an auction) taking into account a competition assessment which could, for example, allow for spectrum caps to create a procompetitive environment. This would also permit price discovery for the value of radio frequency spectrum in Kenya, which would assist the Authority in determining spectrum fees.

361. At present, spectrum assignment is highly asymmetric. This has real effects on operators and their ability to compete given that spectrum can confers cost advantages if priced correctly. There are indications that at present smaller operators cannot afford spectrum creating a cycle. As such, spectrum assignment needs to take this into account. In various jurisdictions spectrum auctions are designed in a manner that encourages competition. This is done by capping the amount of spectrum that a buyer can have overall allowing smaller operators to compete for more, but limiting operators that have sufficient spectrum . Such spectrum caps could be set for different band ranges, such as sub-1GHz, 1-3GHz, and 3-7GHz, and would need to follow a competition assessment in order to design the market post-auction.

362. For instance, at present, there are four licensees in Kenya that have access to high-demand IMT spectrum, which implies a spectrum cap of 25% per licensee. Such a spectrum cap would need to be applied to within each of the sub-1GHz, 1-3GHz, and 3-7GHz band ranges, and bidders in an auction would only be permitted to bid on spectrum up to its spectrum cap. This would have the effect not only of addressing asymmetry between licensees at present, but also would encourage participation in the auction process by rival bidders, which would enable effective price discovery during the auction process.

363. A further important aspect of ensuring a pro-competitive spectrum assignment process is that reserve prices for spectrum are not set too high such that prospective bidders are discouraged

from participating in the auction. Reserve prices for an auction, and spectrum pricing in general, should take into account the value of the spectrum in the hands of the smallest mobile network operator, so as to ensure that they are able to participate effectively in the market.

364. High-speed data services will improve if more spectrum is available:

364.1. Because coverage spectrum can enable rollout in more areas;

364.2. Because capacity spectrum can increase quality of service and speed;

364.3. Because well-priced spectrum can reduce costs to operators if regulatory fees are set at a reasonable level or if more spectrum is made available which reduces the need for more sites, or both, which can have a positive knock-on effect on the cost of data services.

365. This approach can act as an incentive to increase the availability and affordability of data services which is likely, based on trends in other countries considered, to increase takeup and therefore stimulate demand. If asymmetry is addressed this may also address some of the competition concerns.

### 11.2.2 Reducing infrastructure costs

366. From our assessment of the market including interviews with stakeholders, it appears that one of the key barriers to expansion for new entrants relates to the cost of coverage and infrastructure rollout which are then typically passed on to consumers. In the next few sections we examine ways in which costs can be reduced or better-managed with a view to increasing network coverage while reducing costs to the operator and therefore to the consumer in order to stimulate demand for data services. .

### 11.2.3 Reducing costs through national roaming

367. National roaming occurs when traffic from one operator's subscriber is carried and routed on another operator's network. Roaming is most often necessary or appropriate where new entrants or smaller operators are unable to achieve national coverage and cost-savings can be achieved by using existing networks. The most common roaming arrangement only require an agreement between operators and no shared investment in infrastructure is necessary. The agreements can be regulated as to terms.

368. This type of sharing may be useful in areas of low population density where investments in several competing sets of infrastructure may not be viable. In the context of Kenya where there are coverage obligations, national roaming has the potential to greatly enhance the ability for new operators to provide full national coverage to their consumers while they roll out infrastructure in areas that are not economically viable.

369. This has the potential to improve competition by facilitating effective entry. The existing operator charges the roaming operator for access, but the charges, if fair would be less than the cost of new network build for the roaming operator. The roaming operator can provide data services by using the roamed operator's network (this works if the agreement ensures that the quality of service provided to roaming users is the same as that offered to subscribers to the roamed operator, to ensure that competition is not negatively affected).

370. In the Kenyan context, regulated roaming on a cost basis for a time limited period may assist in enhancing competition. A previous study for the regulator notes the following:[73]

*"National roaming should be supported in Kenya where it assists with new entry or coverage in remote areas. Accordingly, any roaming agreements should be limited by time and geography."*

371. The study further notes that the Authority should monitor roaming charges that are agreed to against retail rates.

372. This is aligned with the previous study which required roaming in particular rural sites.

373. However, at present operators have not been able to negotiate national roaming. It is therefore limited and thus the potential for roaming to facilitate entry and competition is limited.

374. We recommend that operators that are dominant such as Safaricom should be mandated to provide roaming services in areas in which volumes are low to allow newer entrants to attain coverage obligations as they build out. While these types of sharing agreements can be commercially negotiated, in instances where access seekers are unable to get any response it is necessary for the Authority to step in to mandate it.

375. It therefore is necessary to intervene in national roaming in areas in which there are low volumes and that are not serviced by USF. While pricing can be negotiated commercially, given the market concentration, the Authority should have sight of the agreements and ensure that roaming is not priced at a level that makes it impossible for access seekers to utilise it to compete. In particular, roaming prices should not be higher than retail prices. Deeper regulation of rates in the initial stages of roaming regulation may be premature.

376. However, roaming on USF funded sites should be mandated at a price that is based on the cost adjusted for subsidies received.

377. National Roaming is provided for in the Draft Infrastructure Sharing Regulations.[74] S14 describes a request to facilitate national roaming as a request for active infrastructure. It further notes that the Authority may require an operator to enter into national roaming in areas where there is a coverage imbalance to enter into national roaming agreements. The Draft regulations note that the Authority may require an operator in a geographic area where there is an "imbalance in network coverage" to enter into a national roaming agreement so as to ensure seamless communication across all networks". Indications are that there is a challenge at present and that the Authority should consider intervening to ensure that seekers (new entrants and and companies that are looking to expand coverage into areas with volumes that cannot sustain operations) are able to access national roaming.

378. From our assessment of the market it appears that one of the key barriers to expansion for new entrants relates to the cost of coverage and infrastructure rollout. At present smaller operators do not appear to be able to negotiate roaming at a reasonable rate. As such, it would be helpful for new entrants to meet their rollout obligations by being able to **roam on the networks of incumbent firms that are dominant and have the required infrastructure**.

[73] Tilil Technologies and Acacia Economics (2022), "Provision of Consultancy Services for National Roaming, Telecommunications Tower Sharing and Termination Rates Network Cost Study".

74 The Kenya Information and Communications Act (Draft Infrastructure Sharing Regulations) 2025

However, insofar as it requires a declaration of SMP and dominance for Safaricom, this is something that needs to be acted on with urgency by the regulator.

379. We therefore support the finalisation and implementation of Infrastructure Regulations that facilitate roaming outlying areas to enable smaller operators to expand coverage for a time limited period while they build out their infrastructure and grow.

### 11.2.4 Reducing costs through infrastructure sharing

380. Infrastructure sharing, particularly the sharing of passive infrastructure can significantly reduce network costs or input costs. In this study operators have raised site acquisition as being a challenge. There is evidence of some sharing at the wholesale level.

381. Site acquisition challenges could be caused by a variety of factors, one of which is that operators with good sites do not share them, which is also a competition problem, and operators seeking to construct network infrastructure prefer not to share but to control their own networks. This can result in duplication of facilities and a burden on the environment, unnecessary delays in network rollout while permits are issued for other areas when existing sites could be shared, and increases in the cost of wholesale inputs which increases price.

382. Stronger regulatory intervention is required to mandate infrastructure-sharing including site-sharing, in both urban and rural areas, where required. In rural areas, costs may be likely to be higher to build out infrastructure, and volumes are likely to be lower so sharing can reduce costs, while in urban areas, there are likely to be fewer sites available, so sharing makes sense to avoid costly site acquisition and a likelihood that more permits will be needed. This is especially true of sites that are funded by USF which should be shared on the basis of cost, taking into account any subsidy.

383. Given the concentration in the tower sub-sector and the issues related to the costs of site acquisition for this purpose, this is one area in which infrastructure sharing may significantly reduce costs. Previous recommendations have been that dominant operators be mandated to share sites where requested. Furthermore, that the Authority monitor site sharing agreements including turnaround times, and review commercially agreed prices and terms to ensure that there is no constructive refusal to supply. [75]

384. The Draft Regulations on Infrastructure Sharing have been published and provide a mechanism for infrastructure sharing . Under the Draft Regulations the Authority may impose specific obligations on an infrastructure provider who has significant market power or is declared dominant. There is also a requirement for public reference offers relating to the terms of access to infrastructure and sharing to be displayed on on websites. We support the finalisation and implementation of infrastructure sharing regulations and provide comments on the draft Regulations below. However, insofar as it requires a declaration of SMP and dominance, this is something that needs to be acted on with urgency by the regulator.

385. Supporting and monitoring infrastructure sharing in the absence of mandatory terms imposed in licence conditions or the draft Regulations is critical to ensure that there is no abuse of a dominant position which could manifest as constructive refusal to supply, or delays in

[75] Tilil Technologies and Acacia Economics (2022), "Provision of Consultancy Services for National Roaming, Telecommunications Tower Sharing and Termination Rates Network Cost Study".

responding to access seekers, or the imposition of unnecessary restrictions on the type of access, or conditions that must be met before access will be granted such as having a minimum number of towers in certain geographic areas, or offering reciprocal sharing, or paying large deposits to gain access.

### Draft Infrastructure-sharing Regulations

The draft Infrastructure-sharing Regulations[76] are available on the website of the Minister of ICT and the Digital Economy[77]. We provide brief comments on them here.

"infrastructure" means "both tangible and intangible facilities, which enable provision of Information, Communications and Technology services"; and "infrastructure sharing" means "the provision to other licensees of access to— (a) tangible network elements used in connection with a public Information Communications and Technology network and includes lines, cables or wires whether fiber optic or other, equipment, power supply, apparatus, towers, masts, tunnels, ducts, risers, holes, pits, poles, landing stations, huts, lands, buildings or facilities; or (b) intangible network elements facilitating the utilization of a public Information, Communications and Technology network and includes agreements, arrangements, licenses, franchises, rights of way, easements or other such interests."

Other definitions include "active infrastructure sharing" which means the "sharing of electronic infrastructure elements including antennas, backbone transmission network, base transceiver station, base station controller, bit stream, databases, radio access network, radio network controller (RNC), feeder cables, microwave radio equipment, mobile switching centre, registers, spectrum, optical fibre or wired access". The obligations to share active infrastructure arise in both the context of mobile virtual network operators and national roaming however it is not always necessary to provide access to active elements in either of these arrangements and arguably these – as mandatory and not subject to agreement – impose extraordinary obligations on providers. It is also unclear whether ordinary facilities-leasing constitutes 'infrastructure-sharing' which would usually be the case. Where this is the case, active and passive sharing should be dealt with differently.

Taken together these concepts and their treatment ensure that the Regulations extend beyond infrastructure-sharing to address the provision of access to mobile virtual network operators, and national roaming[74] and arguably impose obligations on operators that apply without specific market inquiries having taken place. A "reference access offer" means a document setting out the terms and conditions by which an interconnect licensee undertakes to permit access to its telecommunications network in a non-discriminatory manner; a definition which takes interconnection obligations and extends them to facilities-sharing in the sense that both are now subject to the provision of reference offers[78].

Regulation 14 describes a request to facilitate national roaming as a request for access to active infrastructure. It further notes that the Authority may require an operator to enter into national roaming in areas where there is a coverage imbalance. The Regulations are well-constructed but very broad in their scope As a general observation, regulation 14 appears to include

[76] Kenya unveils draft rules compelling telcos and ISPs to share infrastructure

[77] 30-7-25 Infrastructure Sharing Regulations 2025 Final.pdf

[78] Regulation 16 uses the term "Reference Infrastructure Sharing Offer" as well as "reference access offer".

provisions more suited to international than national roaming, such as notifying subscribers about costs when roaming, whereas the cost to consumers when roaming should be the same as roaming should enable a seamless service to the consumer.

The Regulations provide for "just and reasonable charges" which means "charges that enable a licensee maintain its financial integrity, attract capital, operate efficiently and fully compensate investors for risks borne". This may be capable of subjective interpretation which will undermine their intent. It would be helpful for new entrants to meet their rollout obligations with pricing that is not exploitative. We therefore recommend that the Authority monitors the prices provided for national roaming to ensure that they do not result in a margin squeeze or pricing that is unrelated to costs.

The Regulations may also benefit from clearer distinctions between types of access and types of obligations depending on whether licensees are dominant or not.

## 11.3 Recommendations to facilitate rollout

386. As noted previously, there are several concerns raised by operators relating to the impact on rollout of different fees and permits required (with particular reference to county governments) both in terms of cost of multiple permission, as well as time taken to attain the different permits. There are also concerns over damage to infrastructure as a result of road or port expansion and high prices charged by owners.

387. One of the areas in which the Authority can create improvements in the market could be the process of facilitating agreement across different arms of government, particularly at county level in order to create market certainty, reduce the time to infrastructure rollout and reduce the extent of exploitative pricing, which will potentially be passed on to consumers.

388. Currently, a relevant piece of legislation developed by the Authority is the Code of Practise for Deployment of Communications Infrastructure prepared by the Authority ("Code"). The Code describes itself as aiming "to create a framework that will guide the rollout of communications network infrastructure throughout the Republic of Kenya in such a way that commercial, environmental as well as consumer concerns are addressed in a sustainable way for the benefit of all. This Code shall be mandatory and should be adhered to by all communication service providers and specifically those that have ad will be rolling out communication facilities and infrastructure." The Code covers numerous relevant tasks that must be undertaken when rolling out infrastructure. These include environmental impact assessments, referred to as Strategic Environmental Assessments (SEAs), public consultations, an assessment of waste-water to be generated by infrastructure, radiation and emission limits, rules on site-sharing and collocation, duct-sharing, and sharing of cable infrastructure.

389. It is recommended that the code is amended to create a more conducive environment for operator rollout,

390. Several countries have introduced frameworks to accelerate telecom infrastructure deployment by streamlining permits, enforcing approval timelines, and improving coordination across government agencies. Policies and reforms that could potentially be incorporated into a new or existing infrastructure deployment frameworks or legislation include the following:

391. **Give effect to the legal right for licensees to access land for the deployment of infrastructure (sections 85-87, KICA).** For example, the South African Rapid deployment policy provides licensees with the right to utilise land for the deployment of infrastructure, with guidance as to how to access it. This limits compensation payable by the licensee to that which is reasonable and does not enrich owners and exploit licensees.

392. **Streamline processes** for the purposes of infrastructure including county, and national land.

392.1. Require **public sector or government entities to permit use of servitudes** (such as roads etc) and to **share physical infrastructure (**such as ducts, pipelines, masts etc) with licensees (section 86, KICA). Pricing should preferably be based on the administrative cost of processing an application and should avoid becoming rent-seeking. Information on the physical infrastructure available can be published on a portal to create ease of access to the information. This is required in the EU, for example.[79] Section 86 offers minimal rights to licensees and the same considerations regarding amendments to KICA apply.

392.2. **Leasing of state land** should be offered on a non-discriminatory basis. Any rentals should be cost-based in line with government objectives to enhance connectivity. Infrastructure sharing should be encouraged in these leases.

392.3. **Streamline and limit processes and permits** for building infrastructure across the different levels of government, particularly at county level. Streamlining can also be facilitated through the creation of a centralised portal for rights of way. Various jurisdictions have single information point for rights of way or permits (for example, the EU, India, Phillipines). Fees for permits should ideally be uniform and based on the cost of processing applications and not provide an additional regulatory tax on telecommunications companies.

392.4. **Suspension of county licence fees:** The Authority should engage with county governments to suspend implementation of county licence fees for telecommunications infrastructure as a national function.

392.5. Wayleave and county administration **fees and tariffs and terms and conditions should be uniform**. Some countries have regulated prices. For example, the UK has published guidance on wayleave payments for Openreach based on different types of apparatus and different types of land.[80] We strongly recommend that regulations or a Memorandum of Understanding be put in place to create a price and threshold for PPA2 fees and development fees that is uniform across the counties .

392.6. Streamlining can also be facilitated through the creation of **a centralised portal** for rights of way. Various jurisdictions have single information point for rights of way or permits (for example, the EU, India, Phillipines).

392.7. **Limitations on approval windows** Given the impact of delays on infrastructure rollout, approval times should be standardised among different agencies and time periods should be legislated. For example, in South Africa the Infrastructure Development Act sets out a process with timeframes for approvals included in the schedule. In the EU a maximum of 4

[79] European Union. (2014). Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks. Official Journal of the European Union L 155/1.

[80] A Rural Fixed Line Network Access Framework - GOV.UK

month for approval is provided for, Phillipines has reduced its average approval time to 16 days, and India provides for a period of 60 days.

392.8. Details of the legislation referred to above is in the appendix

393. The KICA is, even on a generous interpretation, more protective of land owners rather than facilitating access to land for network construction. We note that amendments may be required to the KICA to give effect to the recommendations above. However, any policy that precedes a legislative amendment process must have considered the possible impact of these changes on each of landowners, operators, and government agencies in more detail than has been possible in the course of this study. We also note that any amendments should follow deeper consideration of the extent to which access to land, site permits (including pricing and time to approve) are specifically and materially affecting network rollout (and thereby having an effect on the availability and price of data services). We also note that the KICA refers to the Commissioner of Lands which is part of the National Lands Commission in relation to the acquisition of government land. It is not our recommendation that land be acquired by operators, but rather that it be made available for use.

394. However, it is recommended that even outside of the regulatory process the Authority engage other governmental institutions and agencies in order generate consensus on the need to facilitate telecommunications infrastructure buildout for the public interest and to discuss means of enabling smoother processes.

## 11.4 Recommendations relating to competition

### 11.4.1 Dominance

395. We note that in this project various concerns were raised by licensees relating to issues of competition that they believe is linked with dominance. This includes difficulties in being able to engage in infrastructure sharing and other forms of access, either in the form of a refusal to supply or constructive refusal to supply through high prices as well as the impact of bundled offers with voice prices that are below the MTRs. There were also complaints raised over predation. According to licensees, complaints in this regard are not being addressed to the extent they believed necessary to ensure a competitive environment. However, we did not engage in assessing specific instances of abuse in the course of this study.

396. However, what is noted is that the study confirms that there are exceptionally high market shares in the data market combined with various market features such as high shares in the tower market, a lack of provision of roaming services that suggests that there is dominance in the market in line with findings in previous studies.

397. Various parts of this study highlight the importance of competition. As discussed in the next section, it also highlights the role that infrastructure-sharing by licensees with large networks and extensive coverage can play in order to stimulate and support growth in the data services market, at affordable prices.

398. There are concerns raised by competitors in the market that could potentially be responded to with some of the recommendations aimed at infrastructure sharing. However, it seems possible that some concerns may require further investigation under other regulations. [Confidential].

399. It can be noted that existing regulations provide a means of addressing some of the market challenges.

399.1. For example, the Tariff Regulations have been considered over the years as a vital tool in relation to imposing price controls and in general, monitoring and approving tariffs. This may be necessary in wholesale markets if pricing offered is considered by access-seekers to be excessive. However, these Regulations require a finding of dominance before price controls can be imposed. Where there are pricing concerns, this will require an assessment of the relevant market (in this case, the data service market) before tariffs can be regulated.

399.2. Similarly, the Fair Competition Regulations can be utilised to address concerns in the market that relate to anticompetitive practices by licensees.

400. This study is not a competition review, but as indicated in the report, it is clear that there are asymmetrical market shares, heavily skewed in favour of one licensee in the data sub-segment. We note that remedies are available under the Fair Competition Regulations as well as the Tariff Regulations if dominance is detected, resulting in a market failure. However their application depends on having carried out the necessary steps, an in particular, engages in the steps to declare dominance. It is vital that the Authority respond to complaints from third parties about operators which do not provide or which frustrate access (refuse to supply). This includes ensuring that exclusionary or abusive practices are immediately responded to and that the necessary steps are taken to ensure that the Authority is able to use the legislative tools at its disposal. For example, if a dominance declaration is required to enable use of certain regulations, this process should be undertaken with urgency.

401. In addition, other recommendations such as those on infrastructure sharing are likely to assist in improving the competitive landscape.

### 11.4.2 Access rights: Site sharing and roaming

402. As discussed in the previous section, it is important that regulations are implemented in order to facilitate roaming and infrastructure sharing. The cost to build networks has been considered and as stakeholders have submitted, this cost can be prohibitive. This means that if small licensees face challenges in building out, gaining market share and competing on price and quality of service, and are unable to seek access through sharing the net result is less choice for consumers.

403. Options to stimulate competition at a lower cost, such as national roaming and MVNOs, which also constitute access rights, must be supported and defended by the Authority. Once regulatory or licence obligations are in place to make access available (in whatever form) it then falls to the Authority to enforce these obligations. The Authority can do this of its own accord by undertaking frequent monitoring and ensuring compliance reporting.

404. The 2022 National Roaming, Telecommunications Tower Sharing and Termination Rates Network Cost Study considered infrastructure sharing and roaming. There were a range of recommendations provided. These included an ex-ante monitoring framework and guidelines in relation to the Infrastructure Sharing regulations when they are finalised. Importantly it supports national roaming in a time and geographically limited manner to support new entry as well as and coverage in remote areas.

405. We support the finalisation and implementation of Infrastructure Sharing Regulations as well as enforcement where there are breaches of the Fair Competition Regulations that relate to infrastructure.

### 11.4.3 Other recommendations relating to competition

406. Vertical separation between physical sites and radio access network owners is a growing trend, and we support this, provided that a monopoly physical site owner is not created in Kenya. This means that an ex-ante monitoring framework is needed for needed for transactions relating to tower sales and mergers involving any tower companies or MNOs. Acquisitions by operators with high market shares should not be encouraged.

407. Given the prevalence of bundles in the market there is the need to consider the impact of the following competition concerns that do not relate to data but have an impact on it and the remedies that may be appropriate:

408. **Monitoring and reducing mobile termination rates.** This is to enable competitors with more off-net calls to compete on price in offering mixed bundles.

409. **Prohibition of differences between on-net/off-net pricing for the dominant entity**. Given the differences in market share, high off-net prices are likely to cement dominance of the largest company and not allow for competitive entry. This may be less relevant if the MTR prices are low.

410. We recommend that the Authority engage in processes to create an ex ante level playing field utilising existing instruments. Again the imposition of these remedies necessitates a declaration of dominance and this should be prioritised.

### 11.4.4 Unfair competition from illegal operators, theft and vandalism

411. One of the key areas in which operators strongly requested and required regulatory intervention and assistance relates to the prevalence of unlicensed operators that compete within the market. At present the existence of these operators is contrary to the law. Unlicensed operators distort the competitive environment as they do not face the same costs as licensed operator. Furthermore, at times they impersonate licensed operators thereby creating reputational harm if quality of service is inadequate. They have also been accused of stealing equipment. It is important that the regulatory authorities strongly enforce the law to ensure that the incentive for licensed operators to comply is maintained. This could include the following:

411.1. Policing: Engagement with law enforcement services to enhance policing of unlicensed operators. While there appears to be various enforcement actions in place, this needs to be increased and heightened.

411.2. Engagement with legal operators: As a portion of the illegal operators buy capacity from licensed operators and then run illegal connections to final customers, engaging with operators on vetting and auditing downstream customers with high usage patterns will provide the authority with better indicators. This may involve greater monitoring of customers purchasing capacity from Tier 2 operators.

411.3. Regularisation: Engagements with unlicensed operators with a view to transitioning them to a licence will allow them to resell packages from existing providers if these providers are willing to supply them such as an ISP or CSP licence. This would require compliance with existing laws and allow the authorities sight over them. At present it is not clear whether the price of licensing is a concern for these operators. As noted previously there are various licence and regulatory fees that impact on entry. At present a Tier 3 licence requires a KSH 5000 application fee, a once-off KSH 200 000 initial operating fee and an annual fee of KSH 160 000 or 0.4% of turnover, whichever is higher. We have been unable to engage with Sambazas to understand if the level of the licence fee is a concern. However, in addition to licensing there is likely to be other costs from regularisation including taxation and reporting requirements which may disincentivise regularisation. A study into this particular area may be beneficial as a precursor to reassessing licence categories.

411.4. Education campaigns: Educational campaigns sensitising customers to the illegality of purchasing from unlicensed providers can also assist.

412. In addition, stronger enforcement is required to prevent damage to equipment. This can include adherence to penalties for inteference with telecommunications equipment. Section 32 of KICA has a provision that provides minimum fines or imprisonment for tampering with or severing equipment with intent to steal. This should be enforced. It may require advocacy and sensitisation of the judiciary. It can also include an amendment to itemise the degree of tampering which will assist the judiciary in terms of appropriate charges. Designating telecommunications infrastructure as Critical Infrastructure may also be of benefit.

### 11.4.5 Competition and the mobile money subsegment

413. A core issue in Kenya is the link between the mobile money and telecommunications markets. Dominance in mobile money is linked to dominance in telecoms as consumers may choose keep a particular SIM card and use an operator due to their use of the related mobile money ecosystem or offering. Given the high levels of concentration in mobile money this can create challenges in the telecommunications market.

414. We note that the Authority is not the primary regulator of mobile money and as such has a limited ability to regulate that market. It is therefore recommended that an inquiry into the mobile money subsegment is engaged in together with the Central Bank of Kenya as the regulator of mobile money markets, to better understand the competition issues and the extent to which reforms relating to mobile money can improve outcomes in telecommunications.

## 11.5 Recommendations relating to consumers

415. The Consumer Protection Regulations together with the existing Tariff Regulations constitute the current framework for review of behaviour in the market that may harm or does harm consumer interests. The Consumer Protection Regulations specify in detail how licensees should formulate their agreements with consumers, providing an adequate level of detail about their services and prices. A complaints handling mechanism must be put in place and statistics about complaints must be provided to the Authority. The Authority may also publish information about services and prices, and must approve all subscriber agreements. The role of the Authority is therefore already described in reasonable detail.

416. From a consumer perspective there are some interventions or additions that can be undertaken. We suggest the following:

416.1. Additions to consumer terms and transparency guidelines, particularly, standardising the format of information provided for different bundles.

416.2. Alerts if data is depleted with an option to opt into a new bundle or opt into out of bundle rates.

416.3. Informational campaigns related to background apps that may use data without the user being aware of the setting and its effect.

416.4. The benefits vs costs of a standardised portal would need to be considered as it is not clear that a lack of transparency is impeding the market. However, if it was possible to link the live tariff database with a consumer portal there may be consumer benefits.

## 11.6 Summary of recommendations

417. Our nine key groups of recommendations made are summarised below:

| Evidence & Rationale | Regulatory / Policy Actions |
|---|---|
| **1. Address Market Dominance to Safeguard Competition in the Data Market** | |
| The study identifies very high and asymmetric market shares in the data sub-segment, reinforced by structural features such as concentration in the tower market, limited availability of national roaming, and restricted access to essential infrastructure. These characteristics are consistent with market dominance, as also indicated in previous sector studies.<br><br>Licensees raised concerns relating to refusal or constructive refusal to supply infrastructure, excessive wholesale pricing, bundled offers that may undermine competition, and predatory conduct. While this study did not engage in a detailed investigation of these allegations, it confirms that the absence of a formal dominance declaration limits the Authority's ability to apply asymmetric regulation and to effectively utilise existing competition tools. | The Authority should prioritize a formal dominance assessment and declaration in the data services market, where justified by evidence. This is a necessary regulatory step to unlock the full application of:<br>• Tariff Regulations, including wholesale price oversight and cost-oriented pricing where excessive pricing concerns arise; and<br>• Fair Competition Regulations, to address exclusionary, abusive, or predatory conduct.<br><br>The Authority should also ensure that complaints relating to access refusal, delays, or exclusionary practices are acted upon promptly, and that regulatory processes are not stalled by the absence of a dominance determination where such a determination is required. |
| **2. Strengthen Ex-Ante Competition Safeguards in the Data Market** | |
| The study supports emerging market trends such as vertical separation between tower infrastructure and radio access networks, as this can improve efficiency and reduce duplication. However, this must be carefully managed to avoid the creation of a monopoly physical infrastructure provider. | The Authority should therefore implement an ex-ante monitoring and approval framework for tower sales, mergers and acquisitions involving mobile network operators and tower companies, with particular scrutiny of transactions involving high-market-share operators.<br><br>In addition, given the widespread use of bundled voice and data offers, the Authority should address competition concerns that, while not data-specific, have a material impact on data pricing and market entry: |

| Evidence & Rationale | Regulatory / Policy Actions |
|---|---|
| | • Continued monitoring and reduction of Mobile Termination Rates (MTRs) to enable smaller operators with higher off-net traffic to compete effectively on bundled offers.<br>• Restrictions on on-net/off-net price differentials for dominant operators, as large pricing gaps can entrench market power and limit competitive entry, particularly in markets with highly asymmetric shares.<br>To implement these measures effectively, the Authority should prioritize the declaration of dominance where supported by evidence, enabling the application of ex-ante remedies under existing regulatory instruments. |
| **3. Address Competition Spill-Overs from Mobile Money into Telecommunications** | |
| The study finds that high concentration in the mobile money market has material spill-over effects on competition in the telecommunications market, as consumers often retain SIM cards primarily to access a dominant mobile money ecosystem. This linkage can reinforce market power in telecoms and limit effective competition in data and voice services. | Given that mobile money falls primarily under the regulatory mandate of the Central Bank of Kenya (CBK), the Authority should pursue a joint competition inquiry with CBK into the mobile money sub-segment. The inquiry should assess the extent to which mobile money dominance affects consumer choice, switching behaviour, and competition in telecommunications services, and identify whether targeted reforms in mobile money could improve outcomes in the data market. |
| **4. Reduce Data Costs Through Pro-Competitive Spectrum Assignment** | |
| The study finds that assigning additional IMT spectrum would significantly reduce the cost of providing mobile data in Kenya. Model results indicate that an additional ~205 MHz of significantly. If these efficiencies are passed on, this is likely to result in lower retail data prices and improved service availability, particularly where operators receive a balanced mix of coverage and capacity spectrum. | The Authority should make available and rapidly assign additional IMT spectrum, including bands identified for IMT at WRC-23, through a market-based assignment mechanism (e.g. auction). The assignment process should be informed by a competition assessment and incorporate spectrum caps to prevent excessive concentration and support smaller operators' ability to compete. Spectrum caps may be differentiated by band range (e.g. sub-1 GHz, 1–3 GHz, and 3–7 GHz) to reflect their differing competitive and economic impacts.<br><br>The assignment framework should incorporate spectrum caps by band range (e.g. sub-1 GHz, 1–3 GHz, 3–7 GHz) to prevent excessive concentration and enable smaller operators to compete effectively. In addition, reserve prices should be set at levels that do not exclude smaller operators, taking into account the value of spectrum in the hands of the least-resourced operator. |
| **5. Reduce Infrastructure Costs Through Targeted National Roaming** | |
| The study finds that high network rollout and coverage costs remain a major barrier to expansion for new and smaller operators, particularly in low-traffic and commercially marginal areas. Evidence indicates that smaller operators are often unable to negotiate national roaming agreements on reasonable terms, limiting their ability to meet rollout obligations and compete effectively. | National roaming for USF sites should be mandated at cost less any subsidy.<br>The Authority should actively facilitate and, where necessary, mandate national roaming in geographic areas where there is a clear imbalance in network coverage, especially in locations not currently supported through the Universal Service Fund (USF). This would allow new entrants and expanding operators to leverage existing infrastructure of incumbents with established networks, thereby reducing duplication costs and accelerating service availability. Roaming charges should be fair, cost-oriented, and not exceed prevailing retail prices, to ensure that roaming is a viable tool for market entry and expansion rather than a barrier. |
| **6. Reduce Network Costs Through Mandatory Infrastructure Sharing** | |

| Evidence & Rationale | Regulatory / Policy Actions |
|---|---|
| The study finds that limited infrastructure sharing, particularly site and passive infrastructure sharing, significantly increases network rollout costs, delays deployment, and contributes to higher wholesale and retail prices. Operators identified site acquisition as a key challenge, driven by reluctance to share existing sites and the high cost and delays associated with new permits, especially where suitable sites already exist. | Infrastructure sharing should be mandated at USF sites at cost less subsidy.<br><br>The Authority should strengthen regulatory intervention to facilitate and mandate, if necessary, infrastructure sharing, including site sharing, in both urban and rural areas. In rural and low-demand areas, sharing is essential to lower costs where traffic volumes cannot sustain standalone infrastructure. In urban areas, sharing helps address site scarcity, reduces duplication, and mitigates environmental and planning constraints.<br><br>Given the high concentration in the tower sub-sector, infrastructure providers and operators should be required to share sites upon request, subject to fair and reasonable terms. The Authority should actively monitor site-sharing agreements, including response times, access conditions and pricing, to prevent constructive refusal to supply through delays, restrictive conditions, excessive deposits, or non-competitive pricing.<br><br>The Authority should continue to exercise oversight of infrastructure sharing arrangements to prevent abuse of dominance and ensure that sharing delivers measurable cost reductions. |
| **7. Streamline Land Access, Wayleaves and Permitting for ICT Infrastructure** | |
| The study finds that fragmented land access, permitting, and county-level approval processes significantly increase infrastructure rollout costs and delays, which ultimately raise the cost of data services. | The Authority should lead a coordinated approach to streamline access to public land, rights of way, and permits across national and county governments through initiatives that promote:<br>**Mandatory access to public servitudes and infrastructure**<br>Public sector entities should be required, under Section 86 of KICA, to permit access to servitudes (e.g. roads) and share physical infrastructure (ducts, masts, pipelines) with licensees. Charges should be administrative and cost-based, avoiding rent-seeking. Information on available public infrastructure should be published through a central access portal to improve transparency and planning.<br>**Non-discriminatory access to state land**<br>Leasing of national and county government land for ICT infrastructure should be transparent and non-discriminatory, with rentals set on a cost-based basis aligned to national connectivity objectives, and leases structured to encourage infrastructure sharing.<br>**Harmonization of permits and fees across counties**<br>The Authority should work with county governments to standardize and simplify permit requirements, fees, and conditions for ICT infrastructure. Permit fees should reflect the cost of processing applications, not act as an additional tax on telecommunications operators.<br>**Suspension of county licence fees for ICT infrastructure**<br>The Authority should engage counties to suspend county licence fees relating to telecommunications infrastructure, recognizing ICT infrastructure deployment as a national function.<br>**Uniform wayleave and development charges** |

| Evidence & Rationale | Regulatory / Policy Actions |
|---|---|
| | Wayleave charges, development fees and associated terms should be uniform across counties. This may be achieved through regulations or a national MoU, drawing on international examples where wayleave pricing is regulated or guided.<br>**Centralized rights-of-way and permitting portal**<br>Establish a single national portal for rights-of-way and infrastructure permits to act as a one-stop information and application point, reducing duplication and administrative friction.<br>**Standardized approval timelines**<br>Approval windows for infrastructure permits should be clearly defined and time-bound across all relevant agencies, with statutory timelines to prevent rollout delays.<br>Engage other governmental institutions and agencies in order generate consensus on the need to facilitate telecommunications infrastructure buildout for the public interest and to discuss means of enabling smoother processes. |
| **8. Strengthen Enforcement and Regularisation of Unlicensed Operators** | |
| The study finds that the prevalence of unlicensed operators poses a significant threat to fair competition in the data market. These operators operate contrary to the law, avoid regulatory and tax obligations and therefore undercut licensed operators, distorting prices and investment incentives. There are also concerns relating to impersonation of licensed operators, poor quality of service, and damage or theft of telecommunications equipment, resulting in reputational and service risks to the sector. | The Authority should intensify enforcement and compliance actions, focusing on the following:<br>**Enhanced Enforcement and Policing** Strengthen collaboration with law enforcement agencies to increase inspections, shutdowns, and prosecutions of unlicensed operators, ensuring that non-compliance is no longer commercially attractive.<br>**Engagement with Licensed Operators**<br>Work with licensed operators to strengthen vetting and auditing of downstream customers, particularly where capacity is resold, to identify illegal resale and distribution networks.<br>**Structured Regularization Pathway**<br>Where feasible, the Authority should engage unlicensed operators with a view to transitioning them into the formal licensing regime (e.g. ISP or CSP licences), subject to full compliance. A targeted review may be undertaken to assess whether licensing costs, taxation, and reporting obligations are acting as barriers to regularization and whether licence categories require refinement.<br>**Consumer Awareness Campaigns**<br>Conduct public awareness initiatives to sensitize consumers on the risks and illegality of obtaining services from unlicensed providers, reinforcing demand for compliant operators.<br>**Protection of telecommunications infrastructure**<br>Strengthen enforcement of Section 32 of KICA relating to interference with telecommunications equipment, including advocacy and sensitization of enforcement agencies and the judiciary. |
| **9. Consumer transparency** | |
| | **Standardized presentation of bundles** |

| Evidence & Rationale | Regulatory / Policy Actions |
|---|---|
| The study notes that the Consumer Protection Regulations and Tariff Regulations already provide a strong framework for safeguarding consumer interests, including requirements on tariff transparency, subscriber agreements, complaints handling, and Authority approval of consumer terms. Building on this framework, targeted enhancements can further improve consumer understanding and usage of data services. | Update consumer transparency guidelines to require uniform formats for presenting data bundles, including data volume, validity period, effective price per GB, and applicable out-of-bundle rates, to support informed consumer choice.<br><br>**Mandatory data-depletion alerts**<br>Require operators to provide real-time alerts when data is depleted, with clear options for consumers to opt into a new bundle or accept out-of-bundle charges.<br><br>**Consumer awareness campaigns on data usage**<br>Implement targeted education initiatives to inform consumers about background applications and device settings that may consume data unknowingly, helping users manage costs more effectively.<br>**Price comparison platform**<br>Develop a standardized consumer price-comparison portal, potentially linked to the Authority's live tariff database, to enhance transparency where it adds demonstrable consumer value. |

# Annexure A: Terms of Reference Section mapping

| No | Terms of reference | Chapter or section number |
|---|---|---|
| 1 | Identify the different services across the data value chain and determine, cost drivers, pricing structures, considerations in product development | Data value chain, market structure 5, 7, 8 |
| 2 | Benchmark Kenya's data services pricing models against representative selection of other countries. | 4 |
| 3 | Identify the different players across the value chain, and their respective market shares in Kenya. | 6 |
| 4 | Identify market trends and emerging issues in the data sub-segment in Kenya. | 3 |
| 5 | Analyse the impact on pricing of data services in the context of competition issues arising due to convergence in digital technologies. | 8 |
| 6 | Identify the market barriers, if any, that influence pricing, competition and the growth of the players in the era of changing technologies. | 9 |
| 7 | Provide a proposal on the best ways by which the identified barriers and factors acting as a hindrance to growth can be considerably minimized or eliminated. | 0 |
| 8 | Identify specific stimulus that can be injected into the internet/data sub-segment in order to ensure that there is effective competition, accessibility, affordability and growth. | 0 |
| 9 | Review existing price comparison platforms/mediums in other markets and make recommendations on an appropriate mechanism to enhance transparency, help consumers make informed choices, and help the Authority monitor tariffs for communications services. | 10.8 |
| 10 | Ascertain costs of elements involved in various layers including methods of costing used for cost accumulation and techniques used for cost optimization and suggest methodologies for provision of affordable connectivity in line with the Authority's mandate. | 7 |
| 11 | Identify all cost drivers for the provision of data based on the various technical and business models, including assessing the empirical magnitude of the contribution of the respective drivers on the overall wholesale and retail prices for data services This is aimed at enhancing the affordability of Internet services and bridging the digital divide. | 7 |
| 12 | Recommend the optimal or appropriate and proportionate regulatory interventions to pricing issues identified within the existing regulatory and legal framework. | 0 |
| 13 | Recommend economic and fiscal incentives for proliferation of affordable data services in Kenya. | 0 |
| 14 | Examine advertising of data offers and the level of "honesty" in what is being said about the different price offers, including the expiration of data bundles. | 10.2, 10.3 |
| 15 | Recommend any other relevant intervention(s) that would go along towards enhancing effective management of competition and affordability in the data segment in Kenya. | 0 |

# Annexure B: Information on interviews and data collection

418. Members of the Acacia team (Sha'ista Goga and Rahma Leuner) together with members of the Tilil team (Emanuel Tarus) engaged in stakeholder interviews and meetings.

| Sub-sector | Interviews engaged in or planned | Date of one-on-one | Notes |
|---|---|---|---|
| *Retail mobile data (Tier 1)* | Safaricom<br>Airtel<br>Jamii<br><br>Telkom<br>Equitel | 5 June<br>4 June<br>5 June<br><br><br>Not available<br>Not available | We have met with operators including the two largest operators and one new entrant |
| *Retail and wholesale fibre* | Safaricom<br>POA!<br>Jamii<br>Wananchi<br>Mawingu<br>Seacom | 5 June<br>3 June<br>4 June<br>6 June<br>18 June<br>3 July | We have met with the five largest operators by market share |
| *Towers* | ATC | 3 July | The largest tower company |
| *Subsea* | Seacom<br>TEAMS | 3 July<br>18 June | Two operators with the largest usage in Kenya |
| *Satellite* | Starlink | 19 June | We have met with the largest entrant |
| *Community network service providers* | Tanda community-based organisation<br>Siaya community library<br>Dunia Moja community network | 25 June<br><br>24 June<br>25 June | We have met with a sample of licensees incorporating urban and rural licensees |

419. Data was provided by the three mobile operators (two who are also fixed operators) and one tower company. Smaller operators verbally responded to the qualitative parts of the questionnaire.

420. Where data has not been provided, we triangulated the following alternative data sources:

- Data from the CA: The CA has data from quarterly reports, annual financial statements and other information collected from licensees for various processes. We utilize this data as it provides a wealth of information. Furthermore, it provides a view of the whole industry, which is useful, particularly for calculation of market shares, in instances in which some stakeholders reply and others do not.
- Data from international databases and public sources: In some instances, it is possible to collate data from international databases such as the ITU, World Bank, Research ICT Africa etc.

- Data collated from interviews: Interviews with stakeholders yields a range of qualitative insights that assist greatly in understanding the market.

# Annexure C: Regulatory instruments relevant to the project

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| | | **Regulations**[81] |
| 1. | Licensing and quality of service Regulations, 2010 | • These Regulations define "market structure" as "the state of a telecommunications market in relation to competition", and they are therefore relevant to the data market. The Authority is required to consider the market structure when issuing licences.<br>• Various documents are set out which must be submitted with the application for a licence, to the Authority (the Authority's website sets out the forms and fees in detail)<br>• Shareholding within licensees must always comply with the Sector Policy and any change in shareholding of >15% of the issued share capital or the acquisition by an existing shareholder of >5% of additional shares, requires the Authority's prior consent. No transfers or assignments of licences may take place without consent.<br>• Decisions on licensing must be made within 30 days.<br>• Terms and conditions may include service quality parameters, compatibility of standards, and increasing user satisfaction. Quality of service will be measured by the Authority and targets may apply, and licensees must meet compliance and reporting obligations in this regard. |
| 2. | Dispute resolution Regulations, 2010 | • The Authority may resolve disputes between consumers and service providers, two or more service providers, or any other persons as prescribed under the Act.<br>• A complaint must be made in writing<br>• Various time periods apply for the filing of documents<br>• The Authority may determine the matter on the basis of documents provided to it by the parties<br>• Parties may reach a settlement agreement, and may appeal the decision of the Authority |
| 3. | Tariff Regulations, 2010 | • The regulations seek to –<br>a. ensure licensees maintain financial integrity and attract capital;<br>b. coprotect interests of investors, consumers and other stakeholders;<br>c. provide market incentives for licensees to operate efficiently; and<br>d. promote efficient and fair competition within the framework for a free market economy; [and]<br>e. ensure compliance with all competition laws."<br>• "**regulated services**" are defined to mean "a service offered or supplied by a licensee –<br>a. in a market or market segment that is uncompetitive; or<br>b. subject to price controls by the Authority on the basis that the provider of the service has been found to be dominant in the relevant market and the Authority has judged that the price control is appropriate, pursuant to both the Kenya Information and Communications (Fair Competition and Equality of Treatment) Regulations, 2010 and regulation 4 of these Regulations."<br>• An "**uncompetitive market**" is defined as a "market or market segment in which there is no competition in the provision of service or in which consumer choice of service provider or service is either absent, limited, |

[81] Sector Regulations | Communications Authority of Kenya

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| | | impeded, obstructed or constrained". The Authority may gazette a notice to notify the public that the service is no longer a "regulated service" if it no longer meets the conditions<br>• The Schedule to the Tariff Regulations contains various 'Guidelines':<br>1. to address regulation 3A(2)(c)(i), which requires the Authority to consider 6 factors when determining if competition 'cannot' develop with existing players; being current market shares and their evolution over time, price trends and pricing behaviour for the services under analysis, control of essential facilities[82], barriers to expansion, product or service diversification, or other factors determined by the Authority;<br>a. to address regulation 3A(2)(c)(ii), which requires the Authority to assess the existence of high and non-transitory barriers to entry, such as sunk costs, scale and scope economies, control of essential facilities, technological advantages, easy or privileged access to capital or financial resources, barriers to development of distribution and sales networks, switching costs and product diversification, vertical integration, licensing requirements, limits and conditions attached to the use of spectrum, and effects of general regulation over new entrants;<br>b. to address regulation 3A(2)(c)(iii), in terms of which the Authority should consider all the factors to follow to address the "insufficiency of competition law to address the competition concern identified in sub-regulations 4(c), condition 3A(2) of these Regulations"; being degree of 133restriction of non-competitive behaviour associated to the competition concern, degree of difficulty to address the competition concern, expected damage created by non-competitive behaviour associated to the competition concern, need of regulatory intervention to ensure the accomplishment of the objectives stated in Regulation 3(2)"; and<br>c. to address regulation 3(2)©(iv), in relation to a retail service, whether the identified competition concern can be addressed with existing remedies imposed in related wholesale markets or alternative wholesale remedies.<br><br>The Guidelines also provide for the Authority to consider whether the identified concern can be addressed with existing remedies or alternative remedies, following a regulatory impact assessment. Despite the fact that the Schedule to the Regulations is situated within the Tariff Regulations, the Authority has previously relied on this to support a market review process, and it is sufficiently broad to support this application. |
| 4. | Fair Competition and Equality of Treatment Regulations, 2010 | • These regulations provide a framework for the promotion of fair competition and equality of treatment in the communications sector. Competition "concerns" arise "where there is a likelihood that a licensee will engage in any of the following practices", which practices include directly or indirectly imposing purchase or selling prices or other trading conditions that unfairly prevent, restrict or distort competition; limiting production, markets or technical developments to the prejudice of consumers and other licensees; placing third parties at a competitive disadvantage by applying different conditions to equivalent transactions; and other conditions determined by the Authority.<br>• The Authority may designate "communications market segments", which designation requires an assessment of demand and supply-side substitutability and the geographic scope of a market for a given group of consumers, taking various factors into consideration[83] as well as "any other factors or issues which are, in the opinion of the [Commission] relevant". |

[82] The provisions of (c) are "control of an infrastructure not easily duplicated".

[83] Regulation 6(2)(b)((i) to (iv).

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| | | • A number of different factors can be considered by the Authority when making a determination and the Authority may publish guidelines to be followed when determining "if a licensee is in a dominant market position in a specific communications market" (although no such guidelines appear to have been published).<br>• Market concentration or market shares may be determined by reference to revenues, numbers of subscribers or volumes of sales; the degree to which a licensee's prices vary over time; the ability of the licensee to maintain or erect barriers to entry including by control of essential facilities, access to superior technology, privileged access to resources or capital markets or superior buying or negotiating power; the licensee's ability to earn super-normal profits; global technology and commercial trends affecting market power; the licensee's power to make independent and rate-setting decisions; the degree of product or service differentiation and sales promotion in the market; the ability to materially raise prices without suffering a commensurate loss in service demand to other licensees; but importantly, also "any other matters which the [Commission] considers relevant."<br>• The Authority may determine the anti-competitive/abusive practices it considers relevant from time to time, such as unfair discrimination, bundling, and unfairly preventing, restricting or distorting competition. |
| 5. | Interconnection and provision of fixed links, access and facilities Regulations, 2010 | Interconnection<br>• The Regulations contain definitions including –<br>a. "access", meaning availing facilities or services to another service provider under specified conditions, an exclusive or non-exclusive basis, for the purpose of providing telecommunications services;<br>b. "collocation", meaning accommodation of two or more switches, transmission equipment, antennas or any other electronic communications equipment in, or on a single building, tower or other structure for the purpose of interconnecting communications networks;<br>c. "interconnect capacity", meaning a transmission and switching capacity and any other facility for connecting telecommunications networks of two or more telecommunications service licensees;<br>d. "network facility", meaning any element that forms part of an electronic communications network and includes any wire, cable, antenna, mast or other thing which is or may be used for or in connection with communications;<br>e. "just and reasonable charges", meaning charges that enable a licensee to maintain its financial integrity, attract capital, operate efficiently and fully compensate investors for risks borne; and<br>f. "reference interconnection offer" and "reference access offer", each meaning very similar things, namely a document setting out the terms and conditions under which a licensee undertaKShs to permit access or interconnection or both (as the case may be) in a "non-discriminatory" manner.<br>• Licensees that provide interconnection are obliged to negotiate interconnection to provide end-to-end connectivity and interoperability of services to all customers. Providers are obliged to accept "all reasonable requests" for access at NTPs offered to the majority of interconnecting operators. The Authority can exempt a licensee from this obligation if the interconnection is rendered impossible as a result of technical specifications, or would endanger life or safety or result in harm to property or injury, or hinder the quality of service of the provider. The Authority can also require a licensee to conclude an agreement on specific terms and conditions, within a specified time. Agreements must be filed.<br>• Forecasting, ordering and provisioning must be efficient and take place within a reasonable timeframe.<br>• Data traffic and calls must be routed to international destinations through licensees providing interconnection.<br>• Terms and conditions for interconnection must be based on agreement between the parties and promote increased access and efficient use of telecommunications systems, services and facilities. The Regulations set out a long list of required terms forming part of an agreement. Agreements should be reached within 6 weeks and can be referred to the Authority if the time period is longer. |

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| | | • Agreements must not directly or indirectly:<br>a. Preclude or frustrate rights and privileges under licences or the Act<br>b. Impose penalties, obligations or disadvantages on any person, prohibit a person from providing an interconnection service, frustrate the provision of that service.<br>• Non-discrimination: In similar conditions, the provider must make interconnection available on a non-discriminatory basis and ensure rates do not vary depending on the class of customer to be served; the same conditions and facilities must be provided at the same quality to subsidiaries, affiliates and similarly situated interconnecting licensees; all necessary information must be provided; MFN conditions apply.<br>• Charges: must be objective, independently verifiable and fair, for each type of service related to interconnection, not facilitate cross-subsidies, not be below the retail charges for a retail service that makes use of those network elements required by retail services and related interconnection; be sufficiently below retail service charges to allow for recovery of incremental retail costs associated with provision of the retail cost associated with the provision of the related service that the interconnection provider would have to incur in order to compete effectively with the provider at the retail level.<br>• Prices: must distinguish between fixed charges to establish physical interconnection, period rental charges for use of facilities; variable charges for supplementary services.<br>• Providers are liable for the costs of provision of POI, data fill and switching capacity support<br>• Disputes can be referred to the Authority.<br><br>Collocation<br>• Sharing is encouraged particularly where some licensees do not have access to viable alternatives<br>• Service providers offering collocation must file fees to be charged with the Authority; agree on a meet-me point; provide reasonable and non-discriminatory rates, terms and conditions for physical collocation; provide virtual collocation if necessary, and agree on other terms and conditions, and the regulation sets out various terms that should be included.<br>• Access is obligatory provided the request is reasonable, and a request is not reasonable if it is not economically or technically feasible or may result in the provider being unduly prejudiced, or in the Authority's view, there are circumstances beyond the provider's control that prevent access being given or it is not reasonably practicable.<br>• The Authority may authorize access to essential facilities of dominant service providers. Access must be non-discriminatory, MFN applies specifically as regards access provided to subsidiaries of the provider, affiliates, and the provider's own customers<br>• Charges can enable recovery of economic costs, ensuring a reasonable rate of return<br>• Disputes can be referred to the Authority |
| 6. | Consumer Protection Regulations, 2010 | • These Regulations refer to the rights of customers to receive clear and complete information about price, terms and conditions of service and products, and to have a choice of provider. Billing must be clear and understandable and include charges for peak and off-peak, minimum charges, charges for weekends and week days, night-rates, and international or other prices determined by distance; all equipment must be correctly described and type-approved, and whether it is new or used must be disclosed. |

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| | | • They also address privacy and protection against unauthorized use of personal information, including safety and security of systems, and protection of customers from unfair trade practices including false and misleading advertising by licensees.<br>• In addition, customers are subject to certain obligations including the responsible use of systems and services.<br>• Customer care systems must be established by licensees, and the Regulation imposes timeframes on licensees within which they must deal with complaints, escalate them – if necessary, and if the matter is still not resolved, then refer them to the Authority. Licensees must also produce a code of conduct and its standard service agreement, both for approval by the Authority.<br>• People with disabilities (PWDs) are also protected and the Authority may impose special conditions on licensees in relation to PWDs.<br>• Part of the provisions are directed at broadcasters and content providers. |
| 7. | Universal access and service Regulations, 2010 | • As is common in most countries, there is a universal service fund (Fund) in place which is funded by a levy charged to licensees of not greater than 1% of gross revenue, although it may be funded by other sources<br>2. The Authority is required to establish a programme of universal service and access projects[84] to give effect to the KICA. The terms "universal service" and "universal access" are defined in the Regulations with reference to "systems and services".<br>a. Universal access is "access of 100% by a designated population that can obtain, at the minimum, public access to quality and affordable communication systems and services";<br>b. Universal service means "access of 100% by a designated population that is reasonably able to privately subscribe to and use particular communications systems and services of a specified quality on an individual, household or institutional basis, including among others, to the provision of – (i) public voice telephony, (ii) internet access; or (iii) other services by which people access efficient, affordable and modern communications systems and services".<br>3. |
| | | **Guidelines[85]** |
| 8. | Consumer Protection Guidelines and Customer Care Standards, 2025 | • These Guidelines deal in detail with the establishment of a customer care system and quality of service parameters for service availability, period of time within which a call is answered, acknowledgement and resolution of a complaint. Licensees must have a feedback mechanism via SMS, calls, website, social media and e-mail.<br>• The Guidelines also contain rules about advertising and marketing and in general, expand on the provisions of the Regulations (service price and description) |

[84] Universal Service Fund | Communications Authority of Kenya

[85] Sector Guidelines | Communications Authority of Kenya

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| 9. | Guidelines on the use of IOT devices, 2023 | • These Guidelines apply to Internet of things (IoT) devices, Machine-to-Machine based devices and devices with embedded Universal Integrated Circuit Card (eUICC). They deal briefly with number ranges, type approval and registration with the Authority. |
| 10. | Guidelines for undertaking ICT Infrastructure Works, 2018 | • The objective of these Guidelines is to ensure that new and existing ICT infrastructure does not negatively affect human health and the environment; does not expose the users or other persons near the ICT infrastructure to any danger, and does not adversely affect the integrity (proper end-to-end functioning) of other ICT networks.<br>• The Guidelines must be read in conjunction with regulations and guidelines from other regulatory agencies such as Energy Regulatory Commission (ERC), Kenya Bureau of Standards (KEBS), National Environmental Management Authority (NEMA) and Radiation Protection Board (RPB) as well as the Planning and Buildings Code/Regulations. Various of the relevant standards published by these bodies are included in these Guidelines, including environmental requirements and restrictions on emissions.<br>• Other laws are referenced namely the Building Code (1997), Local Government Regulations (1963), Public Health Act, Occupational Health and Safety Act, 2007, Water Act, 2002, Land Planning Act (CAP 403), Public Roads and Roads Act (CAP 22), Forests Act (CAP 385), Local Government Act (CAP 265), Penal Code (CAP 63), Radio Protection Act (CAP 243), and the Civil Aviation Act (CAP 394).<br>• The Guidelines apply to every individual and entity which undertaKShs ICT infrastructure works, and which owns or operates ICT infrastructure. |
| 11. | Guidelines for Network redundancy, resilience and diversity for ICT networks in Kenya, 2017 | • The so-called NRRD Guidelines are intended to assist the Authority in monitoring the following network aspects: redundancy to improve the availability and fault tolerance of a system or service by duplicating one or more components of the system; resilience to enable a network to provide and maintain an acceptable level of service in the face of various faults and challenges to normal operation by providing a set of defences against failure and reducing the impact of an adverse event on network service delivery; and diversity to ensure that alternatives are available when challenges impact particular elements or processes to prevent network degradation from normal operational parameters.<br>• A 3-year phase-in period was envisaged to collect data and engage with operators.<br>• The Guidelines are to apply to Mobile Network Operators (MNO); Internet Service Provider (ISP) Networks; Fixed Wireless Access (FWA) Networks; International Gateway (IGW) Networks; Submarine Cable Networks (SCN); Internet Exchange Point (IXP), and Fixed Network Operators (FNO).<br>• We will engage with the Authority regarding the application of these Guidelines and their relevance to the project |
| 12. | Guidelines for supply, installation and maintenance of external communications infrastructure, 2012 | These two Guidelines are extremely detailed information and obligations in relation to the construction and installation of networks and facilities in and outside buildings, However, they are relatively old. |
| 13. | Guidelines for supply, installation and maintenance of internal communications infrastructure, 2012 | |
| 14. | Guidelines on the implementation and provision of VOIP Services, 2005 | These far-seeing Guidelines have been in place for many years as the VOIP market has developed. We will need to check if they remain relevant as it is likely that the market, particularly the data market, will have overtaken them. |

| No. | Name of regulatory instrument | Brief description |
|---|---|---|
| 15. | Framework for Assessment of Quality of Service of Telecommunications Systems and Services and Annex 1 – Framework, 2017 | • The Guideline notes that there are three main components that constitute quality of the ICT service: Overall Network Performance (NP) - quality of the network infrastructure; End-to-End (QoS) - QoS for network infrastructure working with the end user devices (Recommendation ITU-T E.800 defines QoS as; "Totality of characteristics of a telecommunications service that bear on its ability to satisfy stated and implied needs of the user of the service"); and Quality of Experience (QoE) – quality of service of networks & devices plus Customer Perception. (QoE is defined under ITU-T P.10 as "the overall acceptability of an application or service, as perceived subjectively by the end user")<br>• It is likely that these standards may have been adjusted over time and we will discuss this with the Authority |

# Annexure D: International experiences with infrastructure deployment policies

| Policy / Law (Year) | Scope & Mechanisms | Relevance to Kenya |
|---|---|---|
| European Union: Broadband Cost Reduction Directive 2014/61/EU (2014)i(Gigabit Infrastructure Act 2024 will update this)[ii] | Cross-sector access to existing infrastructure (utilities must share ducts, poles, etc.).<br>Coordinated civil works: mandatory accommodation of telecom fiber in public works.<br>Single Information Point for permits and infrastructure data.<br>Max 4-month permit approval window by authorities; info on all procedures in one place. | Provides a blueprint for sharing and streamlining. Kenya can adopt "dig-once" practices: require roads, power, etc., to allow fiber on reasonable terms. A one-stop permit portal and strict timelines would cut delays. The 4-month rule shows the value of a clear deadline for local approvals. |
| Phillipines: Joint Memorandum Circular No. 1 (2020, rev. 2021)[iii] | Unified permitting guidelines across agencies (ICT, local govt, public works, etc.) – all signed on one memoiv.<br>- Reduced required permits/docs from 86 to 35[46]; combined processes.<br>- Cut average approval time from ~8 months to 16 days by parallel processing and deadlines.<br>- Results: 36k+ permits in one year (3.6× increase). | Demonstrates that inter-agency cooperation and cutting red tape yields immediate gains. Kenya can form a multi-agency taskforce to simplify tower/fiber approvals. Setting an ambitious target (e.g., <30 days for permits) is feasible with standard forms and concurrent approvals. Shows need for top-down push (Philippines had presidential directive) to get all local authorities in line. |
| India: Indian Telegraph Right of Way Rules (2016; amended 2021)[v] | National framework binding on states for tower and fiber approvals.<br>- Capped fees: e.g. ₹1000/km for fiber, flat ₹10k for towers – prevents overcharging.<br>- 60-day decision timeframe; silence = approval in many cases.<br>- Single-window portal (GatiShakti Sanchar): central online platform to apply for RoW across all jurisdictions[vi].<br>- Removed hurdles: no local structural safety certificate needed (self-certification)[vii], streamlined overhead cable permissions, etc., to speed up 5G rollout. | Offers a uniform nationwide solution – ideal for Kenya to avoid 47 different county rules. Key takeaways: implement nominal statutory fees (making broadband rollout affordable), and use an e-government portal for transparency and tracking. India's example suggests Kenya should also eliminate redundant approval steps and empower the national regulator to override unreasonable local barriers. |
| South Africa: Rapid Deployment Policy (2020) and ECA provisions[viii] | Rights of way: Telecom operators can use public roads and private land for networks (with notice and fair care) without owner consent – treating telecom like a utility.<br>- Standard draft by-law for municipalities to unify permit process (though voluntary).<br>- Government entities (road agencies, utilities) directed to share infrastructure and servitudes for broadband rollout[ix].<br>- Plan for ICASA-led dispute resolution for deployment conflicts (implementation pending). | Highlights the importance of legal rights to infrastructure access. Kenya can incorporate similar rights so that fiber can be laid along any road or public land as of right (with notification). Also, standardizing county regulations (perhaps via national law) will be critical – voluntary adoption may not be enough. SA's partial success shows Kenya should enforce compliance, not just recommend it. Sharing of public infrastructure in SA aligns with Kenya's needs to use existing corridors for faster deployment. |

# Annexure E: International experiences with price comparison regulations

| Price Transparency Tool or Law | Focus on Prepaid Users? | Relevance to Kenya's Market |
|---|---|---|
| European Union (e.g. Ireland, Czechia): Independent price comparison websites mandated by regulators (per EU law)[x]. Example: Ireland's ComReg Compare site and Czech CTU's tariff portal with operator-uploaded plans. | Yes. Covers prepaid and postpaid mobile offers; tools are free and impartial. Regulators also require clear contract summaries and truthful advertising[xi]. | Provides a model for a Kenyan plan comparison portal to list all bundles side by side. Would increase transparency and force operators to compete on clear pricing and terms. Shows value of legally requiring standardized info for all plans. |
| India: TRAI's transparency directives and tariff comparison portal[xii]. All telcos must publish every prepaid/postpaid plan with details (data, validity, post-limit charges, FUP)[xiii]. Unique plan IDs and prior notice for new tariffs. Usage alerts on every deduction. | Yes. Specifically targets prepaid complexity: full disclosure of vouchers, combo packs, etc.[xiv]. TRAI portal lets users compare 4G data packs or talktime easily. | Demonstrates that in a huge prepaid market, a central tariff database and strict disclosure rules can work. Kenya can replicate TRAI's portal and require operators to list all bundles with key details, helping users find affordable options and avoid misleading offers. |
| South Africa: Consumer Protection Act (general) plus ICASA's 2018 regulations on data expiry and OOB usage[xv]. Operators must allow data rollover and transfer, send 50/80/100% usage SMS, and cannot charge out-of-bundle without consent[xvi]. | Yes. Focus on prepaid data customers who were losing unused data or airtime. New rules protect prepaid balances and ensure users know and control how credit is used. | Offers data management safeguards Kenya can adopt: e.g. rollover unused data, no unsolicited out-of-bundle charges, and standard usage notifications. These steps would address Kenyan consumers' complaints about disappearing data/airtime and improve faimess for prepaid users. |
| Australia: Telecom Consumer Protections Code (industry code enforced by ACMA)[xvii]. Requires Critical Information Summary for plans, standard unit pricing in ads, and usage alerts at 50/85/100% to prevent bill shock[xviii]. ACCC monitors marketing (e.g. 28-day expiry trick deemed misleading)[xix]. | Partly. Code covers all customers, but prepaid users benefit from clearer ads and notifications. E.g., a prepaid pack must be advertised with key charges upfront, and many providers send data use SMS alerts. | Emphasizes self-regulation with oversight – Kenya could introduce a code of practice for mobile operators on advertising transparency (no hidden fine print, clear validity and fees). Also reinforces the need for usage alerts and scrutiny on practices like overly short validity (28-day month) that effectively raise prices[xx]. |
| Philippines – Joint Memorandum streamlined telco offers and consumer info as part of its pro-consumer reforms[xxi]. Brazil/LatAm – laws prevent expiry of prepaid credits before a minimum period[xxii]. Middle East – some regulators provide mobile plan comparison apps[xxiii]. | Yes. Many aimed at prepaid which is dominant in these markets. | Affirms global best practice: prevent arbitrary expiry of prepaid credit and give consumers easy ways to compare and understand services. Kenya can align with these practices to protect its large base of pay-as-you-go users. |

i Belgian Institute for Postal Services and Telecommunications (BIPT). (n.d.). *Broadband Cost Reduction Directive (2014/61/EU).* https://www.infofibre.be/en/rights-and-duties/broadband-cost-reduction-directive

European Commission. (2024). *Gigabit Infrastructure Act (GIA) – Proposal to replace Directive 2014/61/EU.* COM(2023) 94 final. Retrieved from https://digital-strategy.ec.europa.eu/en/library/gigabit-infrastructure-act

ii Belgian Institute for Postal Services and Telecommunications (BIPT). (n.d.). *Broadband Cost Reduction Directive (2014/61/EU).* https://www.infofibre.be/en/rights-and-duties/broadband-cost-reduction-directive

European Union. (2014). *Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks.* Official Journal of the European Union L 155/1. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0061

iii BusinessWorld Online. (2022, December 7). *Telcos seek EO for permanent expedited tower permit process.* https://www.bworldonline.com/economy/2022/12/07/491768/telcos-seek-eo-for-permanent-expedited-tower-permit-process/

Republic of the Philippines. (2020). *Joint Memorandum Circular No. 1, Series of 2020 (Amended 2021): Streamlining Requirements for the Construction of Local Telecommunications and Internet Infrastructure*. Manila: DICT, ARTA et al.

iv BusinessWorld Online. (2022, December 7). *Telcos seek EO for permanent expedited tower permit process.* https://www.bworldonline.com/economy/2022/12/07/491768/telcos-seek-eo-for-permanent-expedited-tower-permit-process/

v Medianama. (2021, October 18). *Indian Telegraph ROW Rules amended: What are the major changes?* https://www.medianama.com/2021/10/223-mobile-tower-rules-amended-india/

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vi Department of Telecommunications (DoT), Government of India. (n.d.). *GatiShakti Sanchar Portal – Department of Telecommunications.* https://www.india.gov.in/gatishakti-sanchar-portal-department-telecommunications

vii Medianama. (2021, October 18). *Indian Telegraph ROW Rules amended: What are the major changes?* https://www.medianama.com/2021/10/223-mobile-tower-rules-amended-india/

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